NI 43-101 Technical Report on Resources
EMC Metals Corp.
Carlin Vanadium Project
Carlin, Nevada

Prepared for:

EMC Metals Corp.
11th Floor – 888 Dunsmuir St.
Vancouver, British Columbia
Canada V6C 3K4
604-648-4653

SRK Project Number: 198300.010

Prepared by:

SRK Consulting
Engineers and Scientists

7175 W. Jefferson Ave.
Suite 3000
Lakewood, CO 80235

Effective Date: April 9, 2010
Report Date: April 30, 2010

Endorsed by QP:
Bart Stryhas PhD, CPG

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Summary (Item 3)

SRK Consulting (U.S.), Inc. (SRK) has been commissioned by EMC Metals Corp. (EMC) to prepare a Canadian National Instrument 43-101 (NI 43-101) compliant Technical Report for the Carlin Vanadium Project (or the Project), located in Elko County Nevada near the town of Carlin.

This Technical Report is prepared using the industry accepted Canadian Institute of Mining, Metallurgy and Petroleum (CIM) “Best Practices and Reporting Guidelines” for disclosing mineral exploration information, the Canadian Securities Administrators revised regulations in NI 43-101 (Standards of Disclosure For Mineral Projects) and Companion Policy 43-101CP, and CIM Definition Standards for Mineral Resources and Mineral Reserves (December 11, 2005).

Property Description and Location

The Project consists of 72 unpatented mining claims covering 1,140ac. The Project was explored and drilled by Union Carbide Corporation (UCC) in the late 1960’s resulting in a defined vanadium resource. The claim group is located in North-Central Nevada in Elko County, 7 air miles south of Carlin. The vanadium resource is centered about UTM Zone 11N geographical coordinates 574,328E, 4,495,637N (Lat 40°36’29”N, Long 116°07’17”W). Carlin, with a population of 2,500 is the largest town in the area.

Ownership

The claims are owned by Great American Minerals Inc, a Nevada corporation and wholly owned subsidiary of EMC (TSX: EMC). EMC acquired Great American Minerals Inc. (GAM) in 2008. The property is composed of 72 unpatented mineral claims in a single contiguous claim block totaling 1,140 acres.

Geology and Mineralization

The Carlin Vanadium Property is located on the western flank of the Piñon Range, a block faulted horst of the basin and range tectonic province. The local lithologies are predominantly Paleozoic age, western assemblage, siliceous rocks transported above the Roberts Mountain Thrust. These are overlain by Tertiary age rhyolite flows and Pliocene lake sediments. The mineralized zones are certain stratigraphic sections of the Woodruff Formation hosting elevated concentrations of vanadium. There do not appear to be any physical markers in the lithology which indicate areas of mineralization. All the mineralized zones are defined by chemical analysis. The mineralization is stratigraphically controlled and appears to follow the strike and dip of the host lithology. Drilling to date has defined a zone of mineralization striking north-south over 6,100ft of length and dipping 5°-30° west averaging 2,500ft of down dip extent.

Exploration

All of the exploration and development on the project has been completed by previous owners. UCC began exploration in September of 1966 and continuing into the next two years. The work included; surface mapping, trenching and sampling was conducted accompanied by auger and rotary drilling. At least, 152 rotary drillholes were completed by the end of 1967. There are three series of drillhole identifications, each designating the claim ownership within which it was located. The R-1 through R-125 holes are all located on the historic IZA claims all located within Section 34 T32E, R52E. These holes lie within the current claim block controlled by EMC.

Resource Estimation

The resource estimation is supported by information from the 152 rotary drillholes totaling 36,525ft. The drillhole database was compiled by EMC and verified by SRK. The resource estimation is based on a generalized geologic model and confined within a V_2O_5 grade shell. Each model block was assigned an average density based on the lithologies present. Mineralization is interpreted to follow along the plane of bedding with a general orientation striking N-S dipping 5°to25° west.

Drillhole samples were composited into 25ft bench lengths without breaks at geologic contacts. The raw V_2O_5 assays were capped at 2.2% prior to compositing. The model blocks are 50ft x 50ft x 25ft in the x,y,z directions, respectively. V_2O_5 grades were estimated using an Inverse Weighting to the second power. A minimum of 3 and maximum of 12 composites were required for the block grade estimations.

The results of the resource estimation provided a CIM classified Inferred Mineral Resource as shown in Table 1 below. The quality of the historical data is good and the Mineral Resource was classified as inferred mainly due to the fact that the rotary drilling has not been verified by modern program.

Table 1: Carlin Vanadium Mineral Resource Statement

Resource Category	% CoG	Total (Mst)	V_2O_5 Grade (%)	Contained V_2O_5 (Mlb)
Inferred	0.3	28	0.515	289

The 0.3% V_2O_5 cut-off-grade (CoG) was chosen for resource reporting based on the reasonable potential for economic extraction under a conceptual open pit mining and milling scenario. The CoG was calculated using $2.30/st mining cost, $35/st milling cost, $0.50/st admin cost, 65% recovery, 95% selling pay-for, 1% freight charge, 0% royalty and a $10.46/lb V_2O_5 value. The V_2O_5 price is based on a five year trailing average value. This analysis resulted in a break-even CoG of 0.30%. The results reported in the resource statement are rounded to reflect the approximation of grade and quantity, which can be achieved at this level of resource estimation.

Recommendations

SRK recommends a two-stage development plan. The first stage should include diamond core drilling on wide spacing. These will serve to confirm the mineralized intervals and grades reported from the historic rotary drilling and to collect fresh samples for metallurgical testing. The metallurgical work should be focused on bench scale tests to development a general process method for oxidized and reduced material. If the results from the first stage of work provides positive findings, a second stage of development should be completed. The second stage would be a comprehensive drilling program designed to confirm the entire extents of the mineralization and increase the confidence of the resource classification. This work would also include delineation of the oxidation/reduction boundary and identify areas for bulk sampling.

1 Introduction (Item 4)

1.1 Terms of Reference and Purpose of the Report

SRK Consulting (U.S.), Inc. (SRK) has been commissioned by EMC Metals Corp. (EMC) to prepare a Canadian National Instrument 43-101 (NI 43-101) compliant Technical Report on Resources for the Carlin Vanadium Project (or the Project), located in Elko County Nevada near the town of Carlin. EMC is a precious metals exploration company with a focus on developing advanced stage projects. Its principal assets are the Springer Tungsten Project near Winnemucca Nevada. The Carlin Vanadium Project was acquired by EMC through the acquisition of Great American Minerals Inc. (GAM) in 2008 This document discloses the current resources for the Project within a Technical Report on Resources, prepared according to the NI 43-101 standard. Form NI 43-101F1 was used as the format for this report. The intent of this Technical Report on Resources is to provide the reader with a comprehensive review of the exploration activities and a current, independent NI 43-101 resource estimate completed by SRK, based on 152 drillholes totaling 36,525ft.

This Technical Report is prepared using the industry accepted Canadian Institute of Mining, Metallurgy and Petroleum (CIM) "Best Practices and Reporting Guidelines" for disclosing mineral exploration information, the Canadian Securities Administrators revised regulations in NI 43-101 (Standards of Disclosure For Mineral Projects) and Companion Policy 43-101CP, and CIM Definition Standards for Mineral Resources and Mineral Reserves (December 11, 2005).

1.2 Reliance on Other Experts (Item 5)

The Qualified Person (QP) of the resource estimation, Dr. Bart Stryhas, has examined the current data for the Project provided by EMC, and has relied upon that basic data to support the statements and opinions presented in this Technical Report with respect to the resources. In the opinion of this QP, the data is present in sufficient detail, is credible and verifiable in the field, and is an accurate representation of the Carlin Vanadium Project.

This Technical Report on Resources includes technical information, which requires subsequent calculations to derive sub-totals, totals, and weighted averages. Such calculations inherently involve a degree of rounding and consequently can introduce a margin of error. Where these rounding errors occur, SRK does not consider them to be material.

SRK has relied on EMC to provide valid mineral claim information as described in Section 2.2 of this report.

The QP of this Technical Report on Resources and SRK are not insiders, associates, or affiliates of EMC. The results of this Technical Report on Resources are not dependent upon prior agreements concerning conclusions to be reached, nor are there any undisclosed understandings concerning future business dealings between EMC and the QP's. SRK will receive a fee for its work in accordance with normal professional consulting practice.

1.2.1 Sources of Information

Standard professional review procedures were used in the preparation of this report. SRK reviewed data provided by EMC, conducted a site visit to confirm the data and mineralization, and reviewed the project site. The entire content of this report is based on historical data files produced by UCC during the late 1960's. There are no drill cuttings or pulp samples from any of the drilling campaigns remaining. Specific sources of information are presented throughout the body of the text and in Section 20 References.

1.3 Qualifications of Consultants (SRK)

Bart Stryhas, PhD, CPG

Dr. Bart Stryhas is responsible all sections of this Technical Report on Resources. He conducted an onsite review of the property, constructed the geologic and resource model, database verification, resource estimation methodology and the resource statement. Dr. Stryhas is a QP as defined by NI 43-101.

1.3.1 Site Visit

Dr. Stryhas visited the Carlin Vanadium Project on February 10, 2010 for one day. He was accompanied by Mark Beaman of EMC. The site was accessed with a four wheel drive pickup to the southern end of the exploration area. Numerous drill roads, pads and trenches were clearly visible. Two mineralized outcrop located along the north side of Cole were cleared off and sampled. The outcrops were both composed of dark gray-black shale. One was cut by a high angle fault structure and displayed evidence of minor oxidation. Approximately five drill pads were visited. The drill pads were observed to contain old drill cuttings and sumps, no drill casing was found. An old piece of wooden lathe, was found at one drill site. A total of five hours were spent on site.

1.4 Effective Date

The effective date of this report is April 9, 2009.

1.5 Units of Measure

All units of measure in this report are in U.S. standard units, unless otherwise stated.

2 Property Description and Location (Item 6)

2.1 Property Location

The Project is located in North-Central Nevada in Elko County, 7 air miles south of Carlin (Figure 2-1). The project area covers approximately 1,140 acres of unpatented mining claims with a vanadium resource centered about UTM Zone 11N geographical coordinates 574,328E, 4,495,637N (Lat 40°36’29”N, Long 116°07’17”W). Carlin, with a population of 2,500, is the largest town in the area.

Geographically, the Project is located in Basin and Range Province

2.2 Mineral Titles

SRK reviewed a limited amount of correspondence, pertinent maps and agreements to assess the validity and ownership of the unpatented mining claims. Edward Devenyns, EMC’s Vice President Lands has provided the claim information detailed in Table 2.2.1 and shown in Figure 2-2.

Table 2.2.1: Carlin Vanadium Lode Mineral Claims

Claim Name	BLM Serial Number
Pot-1 through Pot-36	NMC-841816 through NMC841851
BK-5 through BK21	NMC-844505 through NMC-844521
BK-22 through BK-24	NMC-821342 through NMC-821344
BK-25 through BK-28	NMC-844522 through NMC-844525
BK-100 through BK-108	NMC-844526 through NMC-844534
BK-200	NMC-844535
BK-300	NMC-844536
BK-400	NMC-844537
Total 72	

All unpatented mining claims have had the 2009-10 federal mining claim maintenance fees paid on July 14, 2009 and the Notice of Intent to Hold recorded in Elko County, NV on October 13, 2009 as document 618583.

2.3 Location of Mineralization

The vanadium-bearing zones of the Project are located within carbonaceous shales of the Woodruff Formation. The known mineralization is located both within mineral concessions owned by EMC and on claims to the west owned by US Gold and Newmont Mining Corp. (Figure 2-2).

2.4 Royalties, Agreements and Encumbrances

There are no known royalties, agreements or encumbrances that EMC is aware of at this time.

2.5 Environmental Liabilities and Permitting

Existing environmental liabilities are not described in the project files and the author is not a Qualified Persons with respect to environmental issues. The site visit revealed no potential environmental liabilities related to historical surface disturbance or any related reclamation obligations. Historical drill access roads and drill sites were left as constructed, as was the standard industry practice at the time. These have been reclaimed by four decades of natural plant growth that have essentially removed most traces of prior activities.

2.5.1 Required Permits and Status

At this time there is no recent or ongoing exploration or development at the project and therefore no permits have been issued nor are pending.

2.5.2 Compliance Evaluation

At this time there is no recent or ongoing exploration or development at the project and therefore no permits have been issued nor are pending.

SRK Consulting
Engineers and Scientists

SRK Job No.: 198300.010

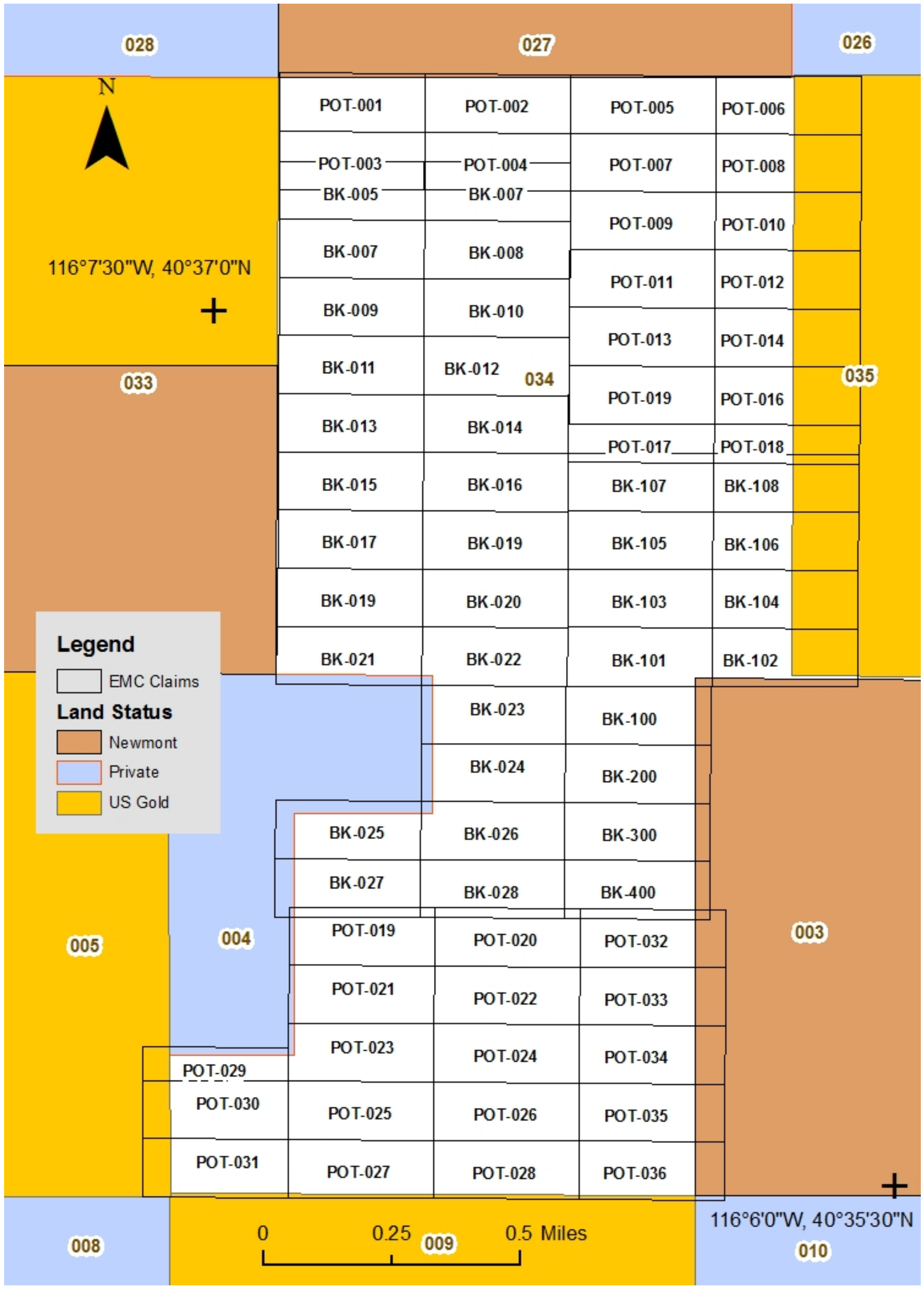
File Name: Figure 2-1

Carlin Vanadium Project, Carlin, NV

Source: EMC 2010

Carlin Vanadium Project, General Location Map

Date: 04/29/10 | Approved: BaS | **Figure: 2-1**



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SRK Job No.: 198300.010

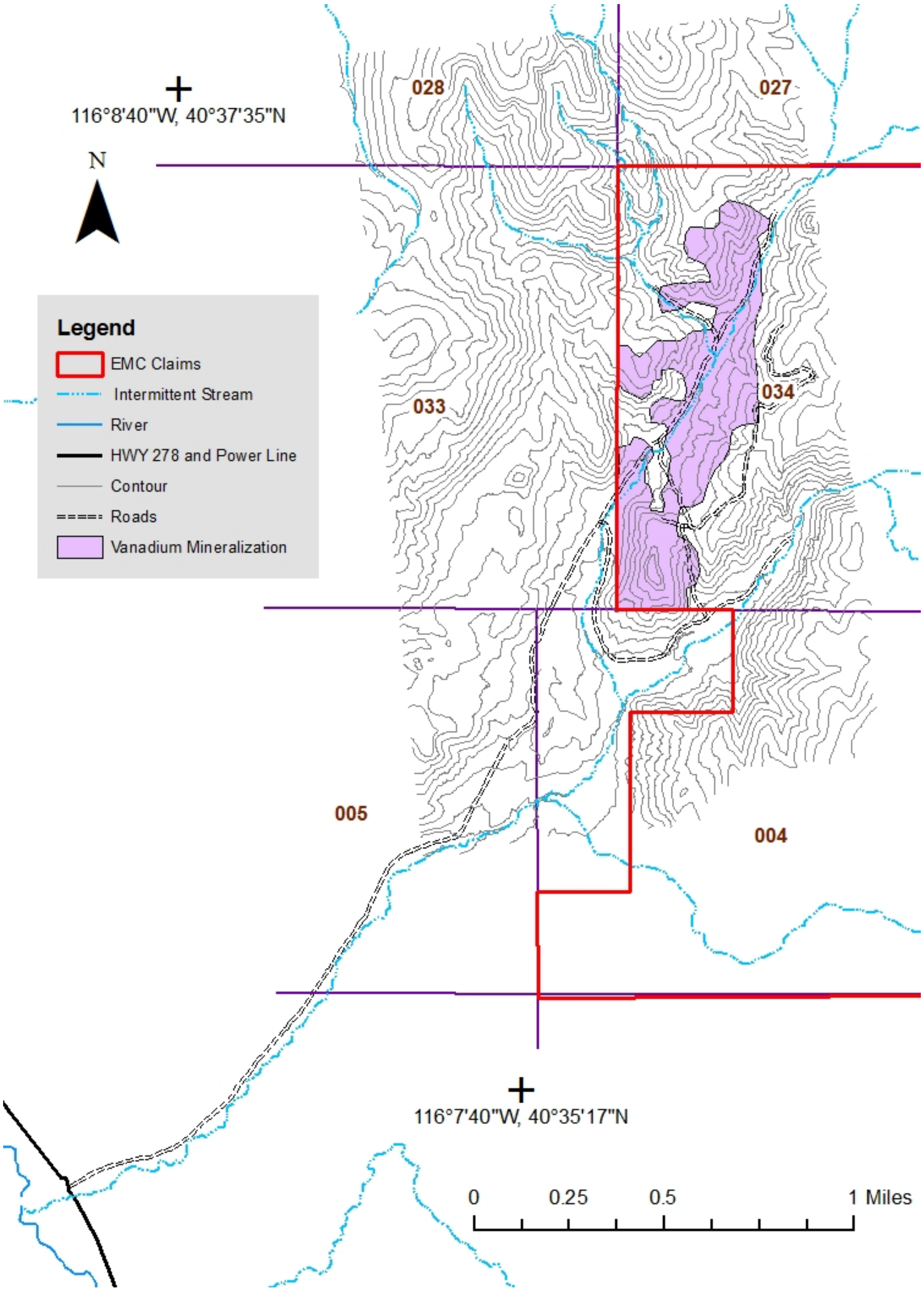
File Name: Figure 2-2

Carlin Vanadium Project, Carlin, NV

Source: EMC 2010

Carlin Vanadium Project, Claim Location Map

Date: 04/29/10 | Approved: BaS | **Figure: 2-2**



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SRK Job No.: 198300.010

File Name: Figure 2-3

Carlin Vanadium Project,
Carlin, NV

Source: EMC 2010

Carlin Vanadium Project,
Site Map

Date: 04/29/10

Approved: BaS

Figure: 2-3

3 Accessibility, Climate, Local Resources, Infrastructure and Physiography (Item 7)

3.1 Topography, Elevation and Vegetation

The Project lies within the Basin and Range physiographic province of West-Central Nevada. This province consists of northerly trending mountain ranges with 2,000 to 5,000ft of topographic relief above relatively broad and flat intervening valleys. The mineralized area is situated along the western flank of the Piñon Range within the headwaters of Cole Creek. Topography is characterized by moderate to steeply sloped hillsides at elevations ranging from 6,000ft to 6,500ft above sea level. The hills and ridges are covered by thin soil and coluvial sediments. Outcrop is generally moderate, perhaps 15-30% or less over the entire property.

Vegetation is typical of the Basin and Range Province, varying locally between none and sparse desert vegetation. The north facing slopes are slightly more vegetated than the south facing slopes. Typical vegetation found at the site includes Pinion Pine, Juniper, Creosote bush, sagebrush and a variety of desert grasses and flowers.

3.2 Climate and Length of Operating Season

Climate is typical for the high-desert regions of Central Nevada, with usually hot dry summers and cold snowy winters. Summer temperatures are typically in the mid 80ºF but highs can peak at 95ºF. Winter temperatures range between lows of 0-20ºF to highs of 30-40ºF. Most of the precipitation for the region falls as snow in the winter months. Snow many feet deep in the upper mountains above 7,000ft, occurs from December through February. Rainfall occurs as mild showers in the spring and as severe thunderstorms during the late summer.

The typical exploration season would be from mid March through the end of November. If snow removal equipment is used, the exploration season can be extended through the winter months.

3.3 Access to Property

The drive from Carlin is approximately 30 minutes over 14.25mi of paved and gravel roads. Immediately west of Carlin, turn south at Bush Street onto State Highway #278. Proceed south for 11.5mi and then turn east onto Cole Creek Road. Travel east for 2.75mi and you arrive at the Project. The roads leading up to Cole Creek are all Nevada state and county maintained providing year around access. The Cole Creek road is a privately maintained access to the property.

3.4 Surface Rights

The Project consists of unpatented mining claims, the surface estate of which is owned by the United States, and administered by the Department of Interior, Bureau of Land Management (BLM). The mining claimant has the right to utilize the surface estate of the lands to develop the mineral interest of the claim. These lands have guaranteed public access which is governed by United States law.

3.5 Local Resources and Infrastructure

Carlin, located 14mi by road is the closest town with significant businesses to support an exploration or mining program. Carlin has a population of 2,500 people mainly working in ranching, mining or service industries.

3.5.1 Access Road and Transportation

The Project is located 2.75mi from Nevada State highway #278 a major north south transportation route. From the highway, an all season, two-lane gravel road leads to the property. This public road is a single lane with turnouts. The Union Pacific Railroad and US Interstate Highway 80 both run through Carlin. Regularly scheduled air passenger service is available in Elko, Nevada, 21mi east of Carlin.

3.5.2 Power Supply

The Project site does not have electrical service. The closest electrical transmission line is located along highway #278 approximately 2.75mi to the west.

3.5.3 Water Supply

There is currently no developed water supply of water right attached to the project

3.5.4 Buildings and Ancillary Facilities

There are no buildings or ancillary facilities at the Project.

3.5.5 Tailings Storage Area

There are currently no tailings disposal areas located on site. There are several areas close to the Project that could be used for future tailings disposal. These would likely need to be located above the main drainages possibly on a mildly dissected plateau located to the northeast of the mineralization. This area is partially covered by the current claim group. Another alternative would be to comingle tailings with waste rocks as described below.

3.5.6 Waste Disposal Area

There are currently no waste rock disposal areas located on site. There are several areas close to the Project that could be used for future waste rock disposal. The nature of the mineralization defines several potential open pits. A likely starter waste dump could be designed immediately east of the southern pit and once this pit was mined out it could be back filled with waste from other pits located to the north. This area is covered by the current claim group.

3.5.7 Manpower

Carlin and Elko, Nevada are the closest towns with a significant population to provide manpower for a mining operation. Elko currently support numerous large scale mining operations.

4 History (Item 8)

4.1 Ownership

The original claims covering the vanadium mineralization during UCC's tenure are believed to have all lapsed. The current claim history begins with quitclaim deeds from November 18 2002. At this time, claims Pot-1 through Pot-36 were transferred from Teck/Cominco to GAM. On March 31, 2003, BK-5 through BK-28, BK-100 through BK-108, BK-22, BK-300 and BK-400 were deeded to GAM by Donald McDowell. On May 5, 2003, BK-22 through BK-24 were deeded to GAM from Donald McDowell. On August 11, 2003, Pot-1 through Pot-36 were deeded to GAM again via a "Corrected" quitclaim deed by Teck/Cominco. All of these claims were acquired by EMC through the acquisition of GAM in 2008.

4.2 Past Exploration and Development

All of the exploration and development on the Project has been completed by previous owners. UCC began exploration in September of 1966 with the staking of the IZA claims. Over the next two years surface mapping, trenching and sampling was conducted accompanied by auger and rotary drilling. At least, 150 rotary drillholes were completed during 1967. There are three series of drillhole identifications, each designating the claim ownership within which it was located. The R-1 through R-125 holes are all located on the historic IZA claims all located within Section 34 T32E, R52E. These holes lie within the current claim block controlled by EMC. The T33-1 through T33-14 holes are all located on the historic Tomera claims all located within the Northern half of Section 33 T32E, R52E. These holes lie within the current claim block controlled by Nevada Pacific Gold Corp. The SP33-1 through SP33-11 holes are all located on the historic Southern Pacific claims all located within the Southern half of Section 33 T32E, R52E. These holes lie within the current claim block controlled by Newmont Gold Corp.

4.3 Historic Mineral Resource and Reserve Estimates

Upon completion of the exploration work described above, UCC generated a polygonal "reserve" estimation base on both drilling and trenching results. The results are described within a UCC Internal Correspondence letter as 19,690,000st containing 0.83% V_2O_5 with a waste:ore strip ratio of 2:1 (Galli 1968). Note that these figures are historical in nature and do not meet the requirements of NI 43-101 reporting. They should not be considered reliable and are cited here only for historical record.

4.4 Historic Production

There has been no historic production from this project reported.

5 Geologic Setting (Item 9)

5.1 Regional Geology

The Carlin Vanadium Property is located on the western flank of the Piñon Range, a block faulted horst of the basin and range tectonic province. The area is underlain by Paleozoic meta-sedimentary rocks overlain by a variety of Tertiary volcanic rocks (Morgan 1969).

During the Cambrian through Devonian Periods, the study area was part of a large passive continental shelf forming the western margin of the North American Craton (NAC). At this time, two general sequences were formed. Predominantly shallow water mud, limey mud and sandy-mud were deposited in the eastern assemblage. To the west, a coeval continental rise sequence consisting of siliceous eugeosynclinal sediments formed the western assemblage. During the Carboniferous Period, the Antler Arc collided with the NAC creating the Antler Mountain Range mainly west of the study area. In the Triassic Period, the area was subject to over thrusting related to the collision of the Quesnel Fragment. Shallow thrust faulting displaced the entire western assemblage over the eastern assemblage along the Roberts Mountain Thrust Fault. As The Wrangellia oceanic plateau was subducted beneath the NAC, large batholiths and plutons began to form farther inland probably at the end of the Jurassic. The Tertiary Period brought about a change from compressional to extensional tectonics marked by the development of widespread volcanism and caldera development followed by the eventual development of the basin and range faulting which predominates the landscape today. Basin and range faulting has been active from Miocene to present day. The combination of compressional folding and thrust faulting overprinted by normal faulting has produced the complex structural setting which exists in the study area today. (Blakely 1997, Fergusson and Muller 1949, Nordin 1984, Ross 1961)

5.2 Local Geology

5.2.1 Local Lithology

The local lithologies are predominantly Paleozoic age, western assemblage, siliceous rocks transported above the Roberts Mountain Thrust. These are overlain by Tertiary age rhyolite flows and Pliocene lake sediments. The following lithologic descriptions are cited from Morgan (1969). The generalized geologic map is shown in Figure 5-1.

Vinini Formation

The unit considered as Vinini in this area consists principally of dark thin-bedded chert interbedded with dark shale. Moderately abundant glauconite is characteristic of rocks in this formation. These rocks in the report area are characteristic of the upper part of the formation and would therefore, probably be Middle Ordovician in age. The Vinini is known to be vanadiferous elsewhere, particularly in the Roberts Mountains where the type section of the Vinini Formation is located.

Woodruff Formation

The Woodruff Formation consists principally of siliceous mudstone and chert with lesser amounts of shale, siltstone, dolomitic siltstone and dolomite with some limestone and calcareous sandstone. These rocks are mostly dark gray to black and weather to various shades of these colors or tan pink or purple. Irregular bedding attitudes and the absence of marker beds precludes reliable thickness measurements in the Woodruff. It may be as much as several *thousand feet thick. The Woodruff is believed to be Devonian age and is the predominant vanadium host in the study area.*

<u>Chainman Shale and Diamond Peak Formation</u>

The Chainman Shale and Diamond Peak Formation are considered by some to be one sequence. In the report area, they have mapped rocks of this sequence as Chainman Shale when the rocks are predominantly shale and sandstone and as Diamond Peak Formation when they are predominantly conglomerate and sandstone. The total sequence is 6,000 to 7,000 feet thick and lies conformably on the Web Formation.

<u>Tertiary Formation</u>

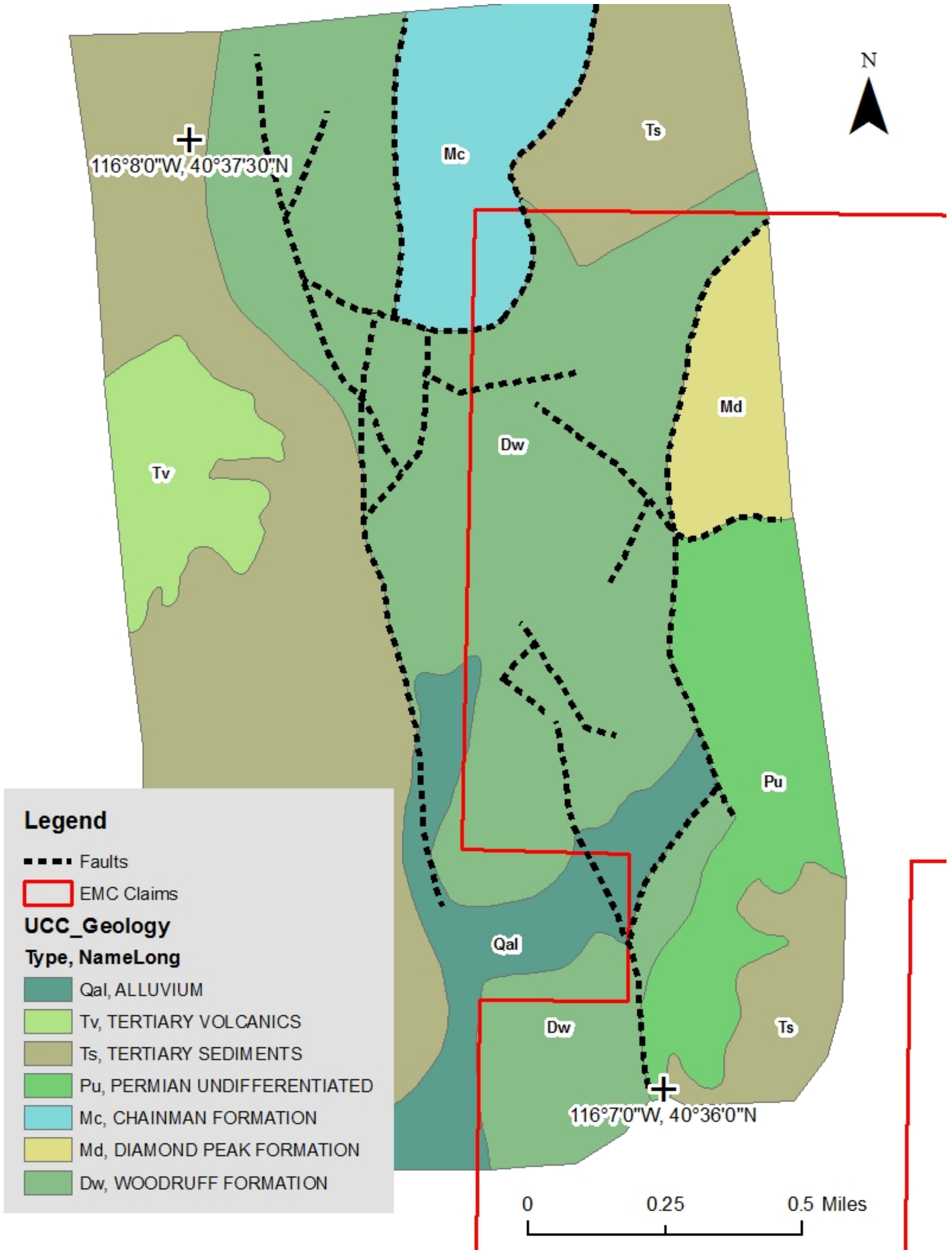
The oldest Tertiary Formation in the report area is the Palisade Canyon Rhyolite of Miocene age. This formation is not differentiated in the study area and is present only in the extreme western area.

5.2.2 Alteration

There is no alteration described within the study area.

5.2.3 Structure

There is no detailed information available on the structural geology of the area. The structure is described as very complex. The Vinini and Woodruff Formations were subjected to at least two periods of thrust faulting prior to basin and range faulting.



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SRK Job No.: 198300.010

File Name: Figure 5-1

Carlin Vanadium Project, Carlin, NV

Source: EMC 2010

Generalized Geologic Map of the Carlin Vanadium Area

Date: 04/29/10

Approved: BaS

Figure: 5-1

6 Deposit Type (Item 10)

6.1 Geological Model

Vanadium deposits in the Western United States fall under two general types; reduction-precipitation and syngenetic. The reduction-precipitation type are commonly associated with uranium. These and are formed by meteoric water leaching uranium and/or vanadium from a source material and then re-precipitation at the redox boundary or in association with organic material. These typically are sandstone hosted due high permeability requirements for development. An example is the vanadium –uranium deposit in the Henry Basin, Utah (Whitney and Northrop 1986)

The syngenetic type are typically associated with black shales and are believed to have formed by direct precipitation of vanadium from seawater. This method of mineralization is similar to the processes which form syngenetic copper or iron deposits. Typically a restricted basin develops containing seawater, which was already enriched with vanadium. Over time, evaporation or deepwater stagnation enriches the vanadium content within a primarily reducing environment and the vanadium precipitates out as the siliceous sediments are deposited in a low energy environment. Vanadium is commonly bound with Fe or Mn oxides or with Kerogen. Subsequent oxidation and remobilization of the vanadium can occur (Premovic et al 1988, Hanson et al 2008).

The Carlin Vanadium deposit is interpreted to be a syngenetic type. The Woodruff Shale within central Nevada host several other vanadium deposits all with similar characteristics. The vanadium is believed to have originally formed in a deep, restricted basin associated with the depositional environment of the western assemblage lithologies. Subsequently these lithologies were transported tectonically to their current location. Uplift and erosion has exposed the mineralization and oxidation by meteoric waters has resulted in an over printing redox boundary.

7 Mineralization (Item 11)

7.1 Mineralized Zones

The mineralized zones are certain stratigraphic sections of the Woodruff Formation hosting elevated concentrations of vanadium. There do not appear to be any physical markers in the lithology which indicate areas of mineralization. All the mineralized zones are defined by chemical analysis. The mineralization is stratigraphically controlled and appears to follow the strike and dip of the host lithology. Drilling to date has defined a zone of mineralization striking north-south over 6,100ft of length and dipping 5°-30° west averaging 2,500ft of down dip extent.

7.2 Surrounding Rock Types

The surrounding rock types are non mineralized sections of the Woodruff Formation. The Woodruff is flanked to the east by the Diamond Peak Formation and by undifferentiated Permian sediments. It is bordered to the north by the Chainman Formation and to the south and west by Tertiary sediments.

7.3 Relevant Geological Controls

The sedimentary environment within which the Woodruff Formation was deposited was the primary con troll on mineralization.

7.4 Type, Character and Distribution of Mineralization

The Carlin Vanadium deposit is interpreted to be a syngenetic type. The Woodruff Shale within central Nevada host several other vanadium deposits all with similar characteristics. The vanadium is believed to have originally formed in a deep, restricted basin associated with the depositional environment of the western assemblage lithologies. Subsequently these lithologies were transported tectonically to their current location. Uplift and erosion has exposed the mineralization and oxidation by meteoric waters has resulted in an over printing redox boundary.

8 Exploration (Item 12)

8.1 Surveys and Investigations

EMC has not conducted any recent exploration material to this property. During the site visit, two surface samples were collected from an outcrop where mineralized material was recorded within a nearby drillhole.

8.1.1 Procedures and Parameters

The two surface samples were collected by removing unconsolidated surface material and then collecting a composite of rock fragments from broken bedrock. Approximately 25lb of sample were collected from each outcrop. The two outcrops were located about 30ft apart. The samples both returned relatively high grades on mineralization as shown below in Table 8.1.1.1.

Table 8.1.1.1: Outcrop Sample Results

Sample Number	V_2O_5 %
CV001	0.845
Cv002	0.445

8.2 Interpretation

Significant work commitments will be required on behalf of EMC in order to validate the work conducted by UCC in order to bring the Carlin Vanadium resource up to a higher level of confidence.

9 Drilling (Item 13)

9.1 Type and Extent of Drilling

The UCC drilling was completed by truck mounted rotary drilling with an air circulated mud system used for sample recovery. All of the drilling was completed between May 1967 through October 1967. There are three series of drillhole identifications, each designating the claim ownership within which it was located. The R-1 through R-125 holes are all located on the historic IZA claims all located within Section 34 T32E, R52E. These holes lie within the current claim block controlled by EMC. The T33-1 through T33-14 holes are all located on the historic Tomera claims all located within the Northern half of Section 33 T32E, R52E. These holes lie within the current claim block controlled by Nevada Pacific Gold Corp. The SP33-1 through SP33-11 holes are all located on the historic Southern Pacific claims all located within the Southern half of Section 33 T32E, R52E. These holes lie within the current claim block controlled by Newmont Gold Corp.

The majority of the drilling is clustered along two zones of mineralization. The main zone strikes north-northeast for 6500ft and a smaller zone splays off to the north-northwest for 5,000ft (Figure 9-1). The average drillhole spacing is approximately 200ft within the more densely drilled areas.

9.1.1 Procedures

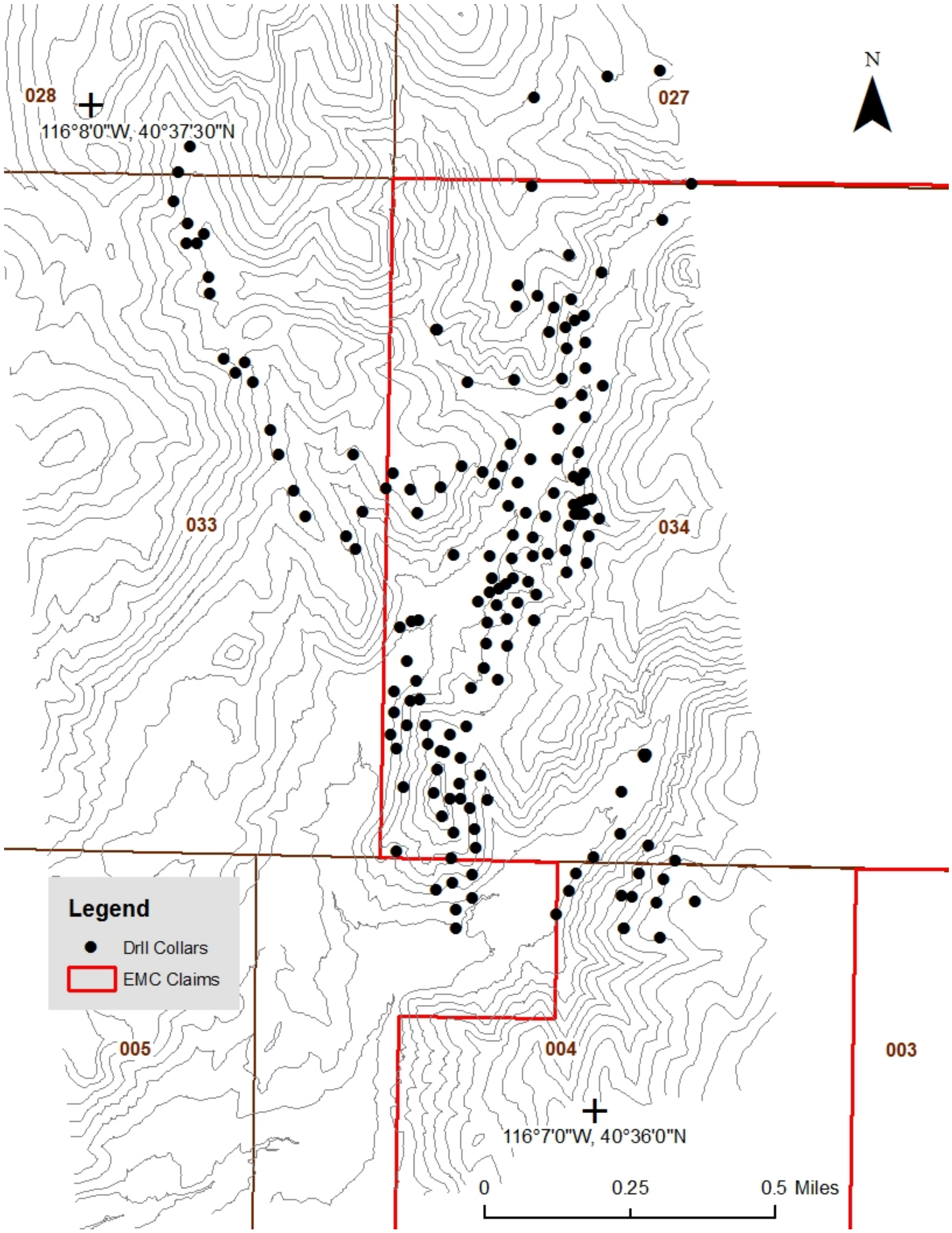
There is no detail describing the specific drilling procedures used at the Project. Various progress reports and internal notes describe the drill as a “rotary type” with samples recovered by an air, air-water or air-mud system. There are numerous notations in the drill logs describing relatively high water flows which impeded sample recovery and resulted in hole termination. Also, several holes encountered cavities which interrupted sample recovery. The holes range between 20ft and 500ft in length with an average of 240ft. The current drillhole database contains information from 152 holes totaling to 36,525ft.

All of the holes are drilled vertically and the mineralization is interpreted have a general strike northward and a gentle dip to the west. Therefore the drillhole length of interception is not exactly true thickness of the mineralization. The true thickness of the mineralization is about 80-90% of the drillhole interception length.

The drilling method used by UCC at the project is adequate to delineate an inferred resource.

9.2 Results

The drilling results were all recorded on standard hand written drill logs which were later transcribed to typed final manuscripts. The drill logs contain specifics information pertaining to; hole no., local x, y coordinates, elevation, claim location, orientation, date started, date completed, total depth, logged by and summary of results. Each 5ft interval is described by; from-to, interval length, % V_2O_5, anomalous % Zn values and comments. Typical comments relate to rock types, color and drilling conditions. The drilling methods used by UCC were typical of the time the exploration was completed. The rotary air-water-mud system was a commonly used procedure in soft rock exploration in the 1960’s. As drilling methods evolved and improved, rotary-mud systems were abandoned from use where analytical samples are collected. This was due to potential sample contamination problems. The rotary system circulates the samples from the face of the bit up along the outside of the drill steel in contact with the country rock. The abrasive nature of the air-water-mud had a tendency to cavitate and incorporate zones of soft country rock located above, therefore producing samples at the collar which were not truly representative of the material encountered at the bottom of the hole. There is no direct evidence that this was a problem at the Project however, without the benefit of modern confirmation drilling there remains some uncertainly with respect to sample integrity. The sample produced by the UCC rotary drilling are adequate to support an Inferred Resource.



SRK Consulting Engineers and Scientists	Carlin Vanadium Project, Carlin, NV	Drillhole Location Map
SRK Job No.: 198300.010		
File Name: Figure 9-1	Source: EMC 2010	Date: 04/29/10 | Approved: BaS | Figure: 9-1

10 Sampling Method and Approach (Item 14)

10.1 Sample Methods

The drilling samples were all collected using a rotary air, air-water or air-mud system. In this case air is forced down the center of the drill steel and it blows samples up the drillhole. Once water is encountered or drilling gets tight, the samples are circulated up the hole suspended in water. If the hole begins to cave, then mud is introduced to hold the hole open and the samples are circulated up suspended in mud. The drill cuttings were collected at the collar in 5ft increments. Each 5ft sample was referred to as the “regular sample”. An additional “grab” sample was also collected from every alternate 5ft interval.

10.2 Factors Impacting Accuracy of Results

In soft or broken rocks, rotary drilling samples are known to be subject of contamination from material located higher up in the drillhole. There is no direct evidence that this was a problem at the Project however, without the benefit of modern confirmation drilling there remains some uncertainly with respect to sample integrity.

10.3 Sample Quality

The samples collected by UCC at the project are adequate to delineate an inferred resource.

10.4 Sample Parameters

The samples were collected in 5ft intervals in order to adequately delineate variations in lithology and mineralization. In the author’s opinion, the sample length is appropriate for the nature of the mineralization as it would have isolated relatively higher grade samples from lower grade. The entire drillhole was sampled and therefore any potential mineralization encountered in the holes should have been identified.

10.5 Relevant Samples

The relevant samples are those with V_2O_5 content in excess of 0.1%. All drill intervals over 20ft in length with length weighted V_2O_5averages in excess of 0.1% are considered relevant to the mineral resources of this report.

11 Sample Preparation, Analyses and Security (Item 15)

11.1 Sample Preparation and Assaying Methods

There is no information currently available which describes the sample preparation methods. The samples were analyzed using a two stage approach. First, the alternate "grab" samples described above, were analyzed by X-ray fluorescence for V_2O_5 at Carlin Nv. If a particular grab sample or run of grab samples produced anomalous results, then the original sample for that interval and the two adjacent intervals were sent to Grand Junction, Co. for V_2O_5 and zinc analysis. It is unknown what analytical procedures were used at the Grand Junction laboratory.

11.1.1 Testing Laboratories

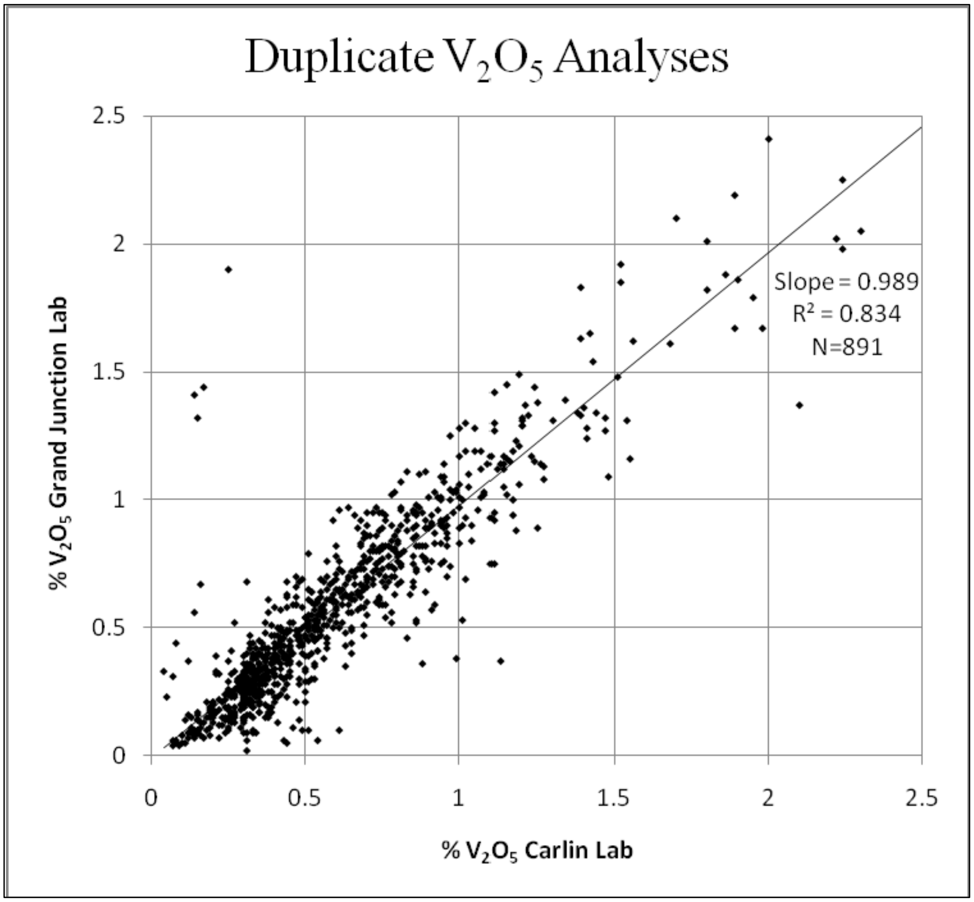
The Carlin Nv. laboratory and the Grand Junction Co. laboratories were both in house, UCC facilities. During the era of this work, it was common for large companies like UCC to operate their own analytical laboratories. In many cases, these laboratories were the best in the business at the time.

11.2 Quality Assurance and Quality Controls

At the time the exploration drilling was completed it was not a common procedure for the exploration department to conduct rigorous QA/QC programs on its in house laboratories. Each of the in house laboratories were held accountable for their own QA/QC programs. The existing assay certificates do not contain any data for internal duplicates or standards. The nature of the sampling at the Project does however provide for an incidental check on results. Since many of the samples originally analyzed at the Carlin laboratory were then rerun at the Grand Junction laboratory a direct comparison can be made. Figure 11-1 is a x-y scatter plot of the V_2O_5 results for duplicate analyses on 891 samples. The plot shows very good correlation between the two labs with no bias from either.

11.3 Interpretation

The analytical results produced by UCC are adequate to support an Inferred Resource.



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File Name: Figure 11-1

Carlin Vanadium Project, Carlin, NV

Duplicate Check Samples

Date: 04/29/10

Approved: BaS

Figure: 11-1

12 Data Verification (Item 16)

12.1 Quality Control Measures and Procedures

The electronic database supporting the resource estimation in Section 15 was compiled by EMC and validated by SRK. The database is dated as current on December 29, 2009. EMC possesses copies of the historical UCC drill logs, most assay certificates, cross-sections and plan maps used to compile the historical UCC "reserve estimation". The electronic database was generated by hand entry of information taken from the UCC drill logs. Drillhole collar locations were compiled into an Excel spreadsheet by x.y,z in the local coordinates as listed on the drill logs. EMC later transformed these locations by conducting a licensed field survey of the local control points and then transforming the historical coordinated to Nevada State Plane using ERSI software. There are no down hole surveys recorded on the drill logs. The descriptive data for each drillhole's logged interval was entered into Excel spreadsheets. This includes hole no., from, to, % V_2O_5 Carlin lab assay, % Zn Carlin lab for some intervals, % V_2O_5 Grand Junction lab assay, % Zn Grand Junction lab for some intervals, primary rock type, secondary rock type, primary color, secondary color and original remarks. The drillhole's easting and northing were originally logged in a local project coordinate system.

SRK conducted full validations of the collar coordinates and spot check validations of the assay, rock types and color within the electronic database. All local collar coordinates in the electronic database were verified to the original drill logs. A few minor typos were noted and corrected. A scan of the original UCC drillhole location map was also geo-referenced in the modeling software and comparisons were made between the local coordinate collar locations and the modified Nevada State Plane collar locations. The two agreed very well. Collar elevations were also compared to the digital topographic surface. Most of the collars matched well but a few were off by 50-200ft. In these cases, the collar elevations were modified to match the digital topography under the assumption the original elevation survey was incorrect. For each mineralized drillhole, several logged entries were verified to the original drill logs for %V_2O_5, % Zn and rock type. No errors were found.

As discussed in Section UCC drill logs contain V_2O_5 from two different laboratories. First, every other sample interval was grab sampled and analyzed at the Carlin laboratory. If it returned anomalous results, then the original sample for that interval and the two adjacent intervals were sent to Grand Junction, Co. for V_2O_5 and zinc analysis. The database used for the resource estimation was constructed primarily from the Grand Junction analyses if available. The intervals not sent to Grand Junction are supported by the Carlin analyses. In the later case, analyses are only available for every other sample interval.

12.2 Limitations

The database prepared by EMC, and verified by SRK, relies on the industry professionalism of information supplied by UCC and EMC. No discrepancies were noted to source data indicating that EMC has obviously taken significant internal QA/QC while compiling it.

SRK has handled the data with utmost regards to accurate transfer of the verified data entry, but does not take responsibility for the quality of the UCC source data.

13 Adjacent Properties (Item 17)

13.1 Statement

There are no adjacent V_2O_5 properties however, there is an adjacent property owned by EMC with anomalous gold mineralization. The Black Kettle Prospect (BKP) is located immediate south-east of the Carlin Vanadium property directly across Cole Creek. The creek valley is interpreted to harbor a major fault structure as indicated by contrasting lithologic characteristic of the Woodruff Formation on either side of it. This BKP prospect has been explored by two previous operators. In 1985, Santa Fe Pacific Mining drilled six holes totaling 1,865ft. There are currently no detailed records of the results of this work in the data files. A single cross section shows one of the holes encountered silicification associated with iron oxides. In 1991, Cambior USA Inc. optioned the BKP as a joint venture (JV) with Santa Fe Pacific Mining. Cambior recognized the iron stained surface alteration with leached sulfides as typical for the districts gold mineralization and believed the property could be highly prospective due to its 5mi proximity to Newmont's Rain Mine.

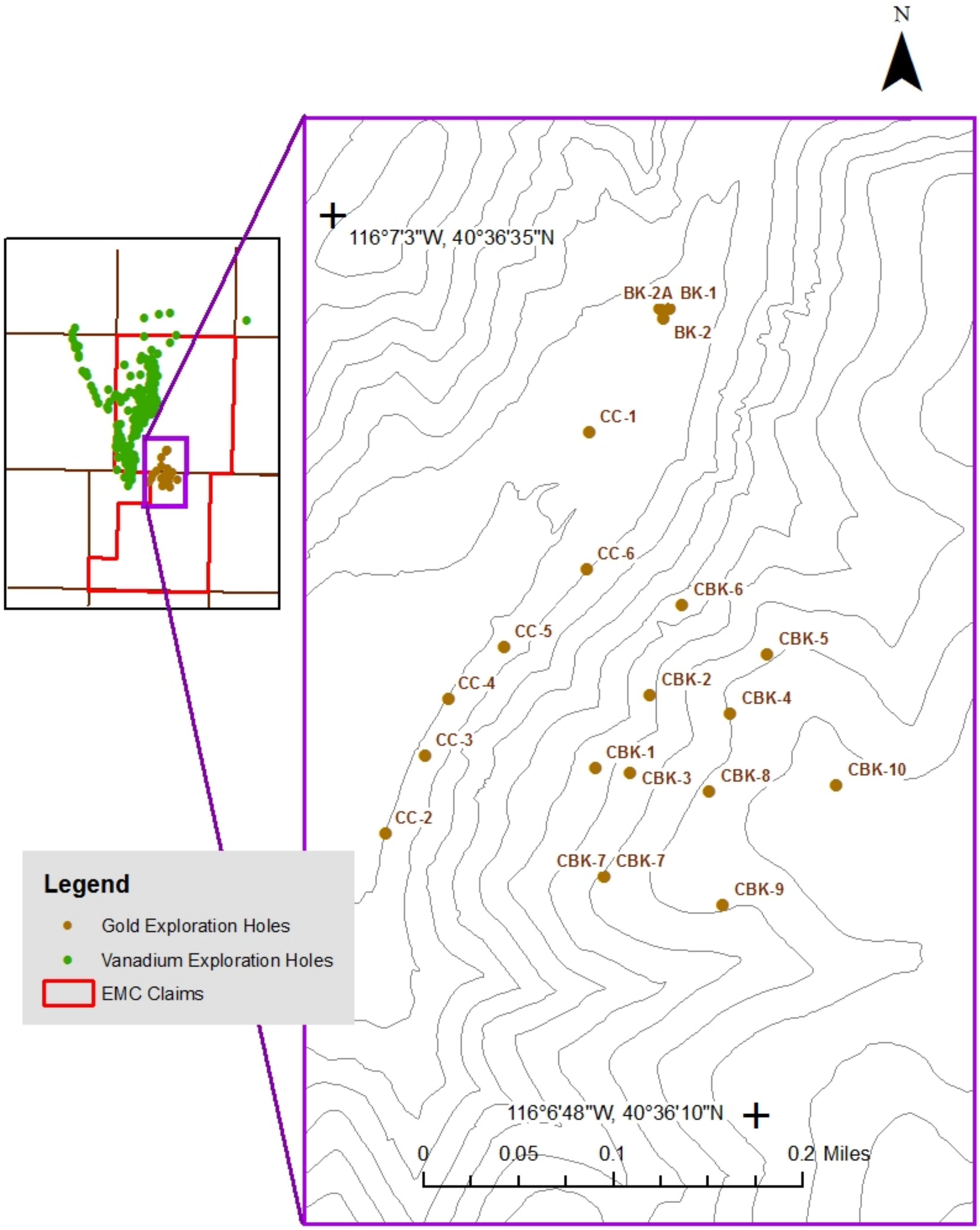
In 1991, soil geochemistry was completed followed by rock chip sampling. This work identified an anomalous gold zone within the Woodruff Formation. The gold zone, extended 550ft along strike and intensified at the contact with overlying Permian-Pennsylvanian Rocks. The soil geochemistry returned anomalous gold values between 30-300ppb. These were substantiated by rock chip samples ranging from anomalous to economic (0.033oz/st) gold values. The mineralization is believed to follow a north striking, steeply dipping fault structure and is best developed at the upper Woodruff contact. This geologic model is very similar to the mineralization controls at the Rain deposit which has historic production of 1.3Moz Au. (Gaborit 1993, Williams and others 2000).

In 1992, a five-hole, reverse circulation (RC) drilling program was completed. During construction of the drilling roads, the anomalous gold zone was extended another 100ft to the south-southwest. Forty nine additional rock chip samples were collected of which 26 returned gold values greater than 100ppb. The highest rock chip value was a 30ft composite with 0.015opt Au adjacent to the upper Woodruff contact. All five of the RC drillholes returned considerable interceptions of either anomalous gold or anomalous gold pathfinder elements. The largest gold intercept was drillhole CBK-2 which encountered 0.010oz/st Au from 5ft to 70ft. Hole CBK-1 encountered 105ft averaging 202ppb Au and CBK-3 intersected 75ft averaging 147ppb Au. Holes CBK-4 and CBK-5 both intercepted zones with high mercury values averaging 2,000ppb. (Gaborit 1993) The true strike and dip of the mineralized structures are unknown and the stated intercept lengths do not reflect the true thickness of mineralization. The true thickness of mineralization is unknown at this time.

In 1993, the JV completed six additional RC drillholes and conducted Scalar CSMT Controlled-Source Audio- Magnetotelluric Resistivity Surveys (MT) at the BKP. The MT surveys were conducted along seven section lines at an unknown spacing. The current data files do not contain an interpretation of the MT results. The results of the six additional drillholes are represented only in the drill logs, there is no compilation report in the current data files. All of the holes appear to be targeted at the upper Woodruff contact zone. Only five of the six reached this target, one hole was lost. Of the five successful drillholes, two encountered anomalous gold values in the target zone, two other encountered high mercury values and one was barren.

Drillhole CBK-6 encountered 55ft averaging 105ppb Au from 20ft to 75ft. Drillhole CBK-9 encountered 70ft averaging 113ppb Au from 130ft to 200ft. Drillhole CBK-8 encountered a broad zone of mercury ranging between 500-1,000ppb in a fault zone within the Woodruff. Drillhole CBK-11 encountered a broad zone of mercury ranging between 1000-2000ppb in the upper Woodruff. The location of the BKP drillholes are shown in Figure 13-1. The true strike and dip of the mineralized structures are unknown and the stated intercept lengths do not reflect the true thickness of mineralization. The true thickness of mineralization is unknown at this time.

The results of the 1991-1993 exploration programs identified a structural/stratigraphic target with anomalous gold and mercury mineralization. Of the eleven holes completed, eight encountered significant intervals with Au mineralization in excess of 100ppb or mercury mineralization in excess of 1,000ppb. There is no record of any additional exploration work conducted after the 1993 exploration season.



SRK Consulting Engineers and Scientists	Carlin Vanadium Project, Carlin, NV	Black Kettle Prospect Drillhole Locations		
SRK Job No.: 198300.010				
File Name: Figure 13-1	Source: EMC, 2010	Date: 04/29/10	Approved: BaS	Figure: 13-1

14 Mineral Processing and Metallurgical Testing (Item 18)

14.1 Mineral Processing/Metallurgical Testing Analysis

The most recent metallurgical test work was completed by the U.S. Department of Mines (Brooks and Potter 1974). The process they developed was a salt roasting, leaching with dilute sulfuric acid, solvent extraction and precipitation of vanadium as ammonium metavanadate. This work showed that 69% of the vanadium could be recovered from weathered dolomitic shale containing about 1% V_2O_5.

The bulk sample was composed of Woodruff Formation described as a gray weathered shale which contains less than 1% carbonaceous material. This sample is differentiated from the dark brown carbonaceous shale which contains about 10% carbonaceous material. The two are reported to have different responses to metallurgical treatment. The sample was collected from surface exposures of mineralization exposed in trenches.

14.1.1 Procedures

Several classic extraction methods were tested to determine the mineralized materials response. Physical beneficiation did not show significant benefits due to the very fine grained nature of the host rock. Simple salt roasting was not beneficial because the material contains in excess of 15% calcium and magnesium oxides which form water insoluble calcium vanadate. Nearly complete vanadium extraction was achieved by prolonged digestion in hot sulfuric acid but time and acid requirements were excessive. Simple roasting did not produce as desirable recovery results as did roasting with salt. The salt roasting test were done by hand rabbling thoroughly mixed charges of minus 35 mesh shale and minus 35 mesh salt typically in crucibles filled no more than an inch deep and a total 900°C furnace residence time of 2hrs. Extraction testing was done by stirring 20g charges for 1hr in 60mL of water plus various doses of 10% sulfuric acid.

14.1.2 Results

The vanadium extraction of the non-carbonaceous weathered shale was influenced by several factors. Larger hard particles were found to be more refractory than soft, friable or clay particles. Maximum extraction was achieved by grinding to 100% minus 35 mesh which coincidentally produced a grind with 65% minus 100mesh. Optimum salt usage was determined to be about 200lb/st. Acid consumption was determined to be about 10lbs for each pound of V_2O_5 extracted. These combined produced an average vanadium extraction of 69%.

The vanadium extraction of the carbonaceous shale was tested using similar procedures as those described above. The same grinding and standard roasting or salt roasting followed by standard acid leaching only recovered 45% of the vanadium. Increasing the acid concentration such that 40lbs of acid are required for each recovered V_2O_5lb only increased the total V_2O_5 recovery to 60%. Recovery was improved by pre-roasting the material to 700°C in order to drive of the carbonaceous material. In this case, 70% of the V_2O_5 was recovered with 11.0lbs of acid consumed for each V_2O_5 lb recovered.

There are two other vanadium projects located in Nevada with similar deposits hosted by the Woodruff Formation. The Gibellini Project has vanadium hosted within manganese nodules. Metallurgical test work here has shown that the vanadium can be recovered by curing the mineralized material with concentrated sulfuric acid at elevated temperature (110°C).

Recoveries vary between 50-65% depending on oxidation state. Acid consumption is in the order of 53lbs of acid per recovered V_2O_5lb (AMEC 2008). The Bisoni McKay deposit is very close Gibellinin, however, the vanadium does not occur with manganese rather it appears to be associated with carbonaceous material or iron oxides more similar to the Carlin deposit. Metallurgical test work completed in 2005 by Hazen Research showed that acid pugging, curing and leaching produced vanadium recoveries of 50-90% depending on the oxidation state. Salt roasting and leaching produced recoveries between 70-74% depending on oxidation.

The vast majority of the worlds vanadium supply is derived from magnetite-titanium-vanadium deposits which have very different mineralogy than the Carlin project and therefore very different processing techniques than those discussed above. To the authors best knowledge, there are no operating mine extracting vanadium from similar deposits using any of the metallurgical recovery processes described above.

The author has not attempted to verify the metallurgical test work described above, nor comment on its current relevancy. The work conducted by the U.S. Bureau of Mines has shown that the Carlin Vanadium is recoverable. This work is adequate to support the inferred mineral resources of this report. Certainly, an updated metallurgical test work program will need to be completed as part of any ongoing exploration/development program.

15 Mineral Resources and Mineral Reserve Estimates (Item 19)

15.1 Mineral Resource Estimation

15.1.1 Qualified Person for the Mineral Resource Estimate

Dr. Bart Stryhas constructed the geologic and resource model discussed below. He is responsible for the resource estimation methodology and the resource statement. Dr. Stryhas is independent of the issuer applying all of the tests in Section 1.4 of NI 43-101.

15.1.2 Drillhole Database

The drillhole database was compiled by EMC and is determined to be of good quality. The database consists of four, Microsoft Excel® spreadsheets containing collar locations surveyed in Nevada State Plane East NAD83 US Survey feet coordinates, drillhole orientations without down hole deviation surveys, assay intervals with V_2O_5 analyses and geologic intervals with rock types. The appropriate codes for missing samples and no recovery were used during the modeling procedures.

The drillhole database contains information from 152 drillholes totaling of 36,525ft. The drillholes are generally oriented along sections at azimuth 70° or 90°and are all oriented vertical. The drillhole depths range from 20ft to 500ft with an average of 240ft.

15.1.3 Geology

The mineralized zones are certain stratigraphic sections of the Woodruff Formation hosting elevated concentrations of vanadium. There do not appear to be any physical markers in the lithology which indicate areas of mineralization. All the mineralized zones are defined by chemical analysis. The mineralization is stratigraphically controlled and appears to follow the strike and dip of the host lithology. Drilling to date has defined a zone of mineralization striking north-south over 6,100ft of length and dipping 5°-30° west averaging 2,500ft of down dip extent.

There does not appear to be a significant lithologic control on the grade of the mineralization. Figure 15-1 is a box plot of the V_2O_5 within the mineralized lithologies. The mean grades vary slightly but are not significantly different. The predominant lithologies are siltstones and mudstones followed by shales and unlogged intervals. The resource estimation did not differentiate lithologies. Sample data from any lithologic type was to estimate all blocks. Additionally, there is no information available relative to the oxidation state of the vanadium mineralization. The drill logs do contain color description however it appears to be related primarily to the host lithology rather than the oxidation state. No redox boundary was used for the resource estimation.

15.1.4 Block Model

The block model was constructed within the Nevada State Plane East NAD83 US Survey coordinates limits listed in Table 15.1.4.1. A 50ft x 50ft x 25ft (x, y, z) block size was chosen as an appropriate dimension based on the current drillhole spacing and the smallest mining unit of a conceptual open pit mining scenario. A topographic surface generated from 10m USGS Digital Elevation Model data provided by EMC and was used to flag the top of bedrock in the block model. Soil thickness varies slightly over the deposit and the soil thickness is generally very thin or non-existent.

Table 15.1.4.1: Block Model Limits

Orientation	Minimum (ft)	Maximum (ft)	Block Dimension (ft)
Easting	506,100	508,400	50
Northing	28,379,400	28,385,100	50
Elevation	4,900	5,800	25

15.1.5 Compositing

The raw assay V_2O_5 data of was first plotted on histogram and cumulative distribution graphs to understand its basic statistical distribution. The histogram shows a strongly negative skewed distribution. The cumulative distribution curve illustrates a continuous population set with two very slight inflections in slope. The first occurs at 0.3% and the second at 0.65%. The population distribution is continuous up to about 2.2%. The raw assay data was capped at 2.2% resulting in 8 assays ranging from 2.25% to 3.34% being reduced to 2.2% prior to compositing. The original assay sample lengths are 5ft in length. For the modeling, these were composited into 25ft bench composites with no breaks at geologic contacts. This length was chosen to approximate a conceptual mining bench height so that one composite would comprise each 25ft block height. Where analyses were only available for every other sample interval as described in Section 12.1, the missing intervals were ignored and the composites were composed from the data available.

15.1.6 Density

There is no density test work available for any of the specific lithologies of the mineralized or non mineralized areas of the resource estimation. Average densities were used for each of the three predominant lithologies and these were weight averaged into a single density assigned to all blocks below topography in the block model. Table 15.1.6.1 lists the densities used for the block model.

Table 15.1.6.1: Block Model Density

Lithology	Average Density g/cm^3	Relative Abundance	Wt. Avg. Density Used in Block Model
Siltstone	2.3	62%	$2.34 g/cm^3$ or $0.073 st/ft^3$
Mudstone	2.5	26%	
Shale	2.2	12%	

15.1.7 Variogram Analysis and Modeling

A Variogram analysis was attempted using the 25ft bench composites. Experimental variograms were constructed for all directions within the plane of the mineralization, along the strike of the mineralization, down the dip of the mineralization, omni-directional and down hole. All of the variograms except the down hole displayed pure nugget properties.

15.1.8 Grade Estimation

The Carlin Vanadium property was modeled only for V_2O_5. All block grade estimates were made using the 25ft bench composites. The resource is constrained within a grade shell based on a 0.1% V_2O_5 threshold. The grade shell was constructed by generating cross-section polygon outlines at nominal 200ft spacing. The grade shell polygons respected various fault off sets interpreted from the historic UCC cross-sections and terminated at the claim boundaries. Once the polygons were competed, they were linked together into nine individual solids. The solids were then appended into a single grade shell.

The next step was to run the V_2O_5 grade interpolations using an Inverse Distance Squared (ID2) algorithm considering only the composites and blocks within the grade shell. The grade estimation considered all blocks with 50% or more of its volume within the grade shell. Two different search domains were used. In the southern 1/3 of the resource area, the search ellipsoid strikes north-south and dips 25° west and in the northern 2/3, the search direction strikes north-south and dips 5° west. A two pass estimation was used. The first pass was allowed to search 1,000ft north-south, 500ft east-west and 100ft across strike and dip. It required a minimum/maximum of 3/12 composites from at least two drillholes with a maximum of two composites from any single octant. The second pass was a nearest neighbor run allowed to search within the same ellipsoid but was only used to record the distance to the closest drillhole and the nearest neighbor block grade. Upon completion of the estimation runs, various model validations were made and the model was rerun if necessary.

Once the grade estimation was completed, all blocks located greater than 200ft from the closest drillhole had their V_2O_5 grades reset to zero. This was required so that the estimation could search far enough to find sufficient sample data from numerous drillholes to maintain a grade estimation based on interpolation rather than extrapolation. The final estimation used an average of nine composites from five drillholes to estimate grade in each block. A plan view of the estimated blocks is shown in Figure 15-2 and a representative cross section of the interpolated block model grades is shown in the Figure 15-3.

15.1.9 Model Validation

Three techniques were used to evaluate the validity of the block model. First, the interpolated block grades were visually checked on sections and bench plans for comparison to the composite assay grades. Second, statistical analyses were made comparing the estimated block grades from the final ID2 estimation to the composite drillhole data within eleven east-west oriented swath domains 200ft wide in the north-south dimension. Third, a nearest neighbor estimation was run and compared to the ID2 estimation. Table 15.1.9.1 lists the results of the statistical comparisons and Figure 15-4 shows a swath plot of the data. The final model results shows block grades which are slightly less or nearly equal to the composite grades as desired. The nearest neighbor estimation was run using a single composite to estimate each block with the same parameters used for the final ID2 grade estimation. The total contained V_2O_5 pounds, at a zero CoG in the nearest neighbor model were compared in the final ID2 model at the same CoG. The final model contained 19% less metal than the nearest neighbor estimation, indicating that metal is not being manufactured during the modeling process. All three model validation tests described above, provided good confidence in the resource estimation.

Table 15.1.9.1: Model Validation by Statistical Analysis

Swath Northing	Data	V_2O_5 Minimum	V_2O_5 Maximum	V_2O_5 Mean	V_2O_5 Variance	Num Samples
9400	Composites	0.040	1.738	0.366	0.094	67
	Blocks	0.081	1.435	0.347	0.041	928
9900	Composites	0.040	1.291	0.409	0.114	97
	Blocks	0.061	1.146	0.372	0.048	1252
10400	Composites	0.050	1.680	0.504	0.159	75
	Blocks	0.068	1.399	0.466	0.069	831
10900	Composites	0.082	1.804	0.401	0.174	74
	Blocks	0.098	1.576	0.343	0.058	1250
11400	Composites	0.060	2.200	0.411	0.222	101
	Blocks	0.085	2.138	0.306	0.053	1612
11900	Composites	0.050	1.760	0.330	0.111	173
	Blocks	0.068	1.646	0.293	0.027	1972
12400	Composites	0.080	1.337	0.450	0.098	154
	Blocks	0.097	1.224	0.370	0.027	1770
12900	Composites	0.100	2.102	0.411	0.128	83
	Blocks	0.124	1.513	0.343	0.028	1282
13400	Composites	0.080	2.132	0.369	0.137	87
	Blocks	0.103	1.376	0.363	0.065	1295
13900	Composites	0.050	1.091	0.317	0.060	71
	Blocks	0.064	1.212	0.320	0.034	1091
14400	Composites	0.060	0.710	0.244	0.021	56
	Blocks	0.061	0.676	0.258	0.013	908

15.1.10 Resource Classification

The Mineral Resources are classified under the categories of Measured, Indicated and Inferred according to CIM Guidelines. Classification of the resources reflects the relative confidence of the grade estimates and the continuity of the mineralization. This classification is based on several factors including; sample spacing relative to geological and geo-statistical observations regarding the continuity of mineralization, data verification to original sources, specific gravity determinations, accuracy of drill collar locations, accuracy of topographic surface, quality of the assay data and many other factors, which influence the confidence of the mineral estimation. No single factor controls the resource classification rather each factor influences the result. Generally, most of the factors influencing the resource classification at Butte Highlands are positive. The history of mining adds an additional level of confidence to continuity of the mineralization.

The resources of the Carlin Vanadium Property are classified as Inferred based primarily on the fact that the historical rotary drilling remain unverified and the lack of any site specific, density measurements. Because the drilling was all completed rotary type drills, there is uncertainty in downhole contamination. There are numerous references in the drill logs to caving ground and bad hole conditions which can but are not necessary, indicative of contamination. Future confirmatory drilling and collection of samples for density measurements will likely result in upgrading of the resource to a higher level of confidence.

15.1.11 Mineral Resource Statement

The Carlin Vanadium Mineral Resource statement is presented in Table 15.1.11.1. The 0.3% V_2O_5 CoG was chosen for resource reporting based on the reasonable potential for economic extraction under a conceptual open pit mining and milling scenario. The CoG was calculated using \$2.30/st mining cost, \$35/st milling cost, \$0.50/st admin cost, 65% recovery, 95% selling pay-for, 1% freight charge, 0% royalty and a \$10.46/lb V_2O_5 value. The V_2O_5 price is based on a five year trailing average value. This analysis resulted in a break-even CoG of 0.30%. The results reported in the resource statement are rounded to reflect the approximation of grade and quantity, which can be achieved at this level of resource estimation.

Table 15.1.11.1: Carlin Vanadium Mineral Resource Statement

Resource Category	% CoG	Total (Mst)	V_2O_5 Grade (%)	Contained V_2O_5 (Mlb)
Inferred	0.3	28	0.515	289

15.1.12 Mineral Resource Sensitivity

The grade versus tonnage distributions of the Inferred Mineral Resources are presented in Table 15.1.12.1 and Figure 15-5.

Table 15.1.12.1: Inferred Mineral Resource Sensitivity

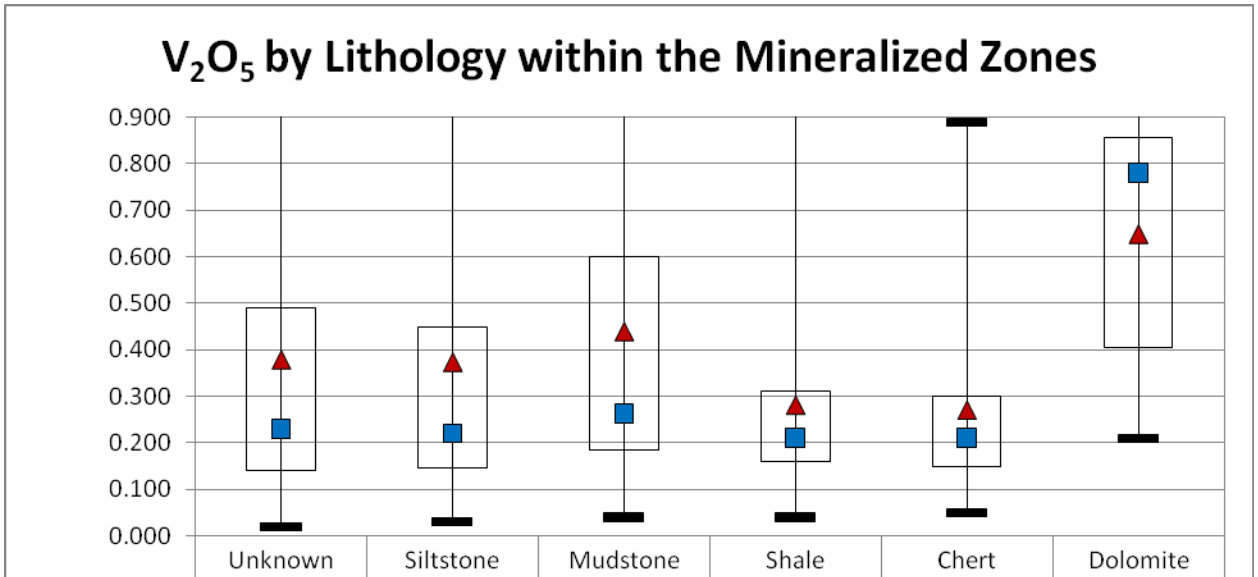
% CoG	Total (Mst)	V_2O_5 Grade (%)	Contained V_2O_5 (Mlb)
0.1	64	0.341	439
0.2	47	0.404	384
0.3	28	0.515	289
0.4	18	0.616	217
0.5	11	0.708	161
0.6	7	0.806	115
0.7	5	0.893	82

15.2 Reserve Estimation

A prefeasibility study is required to demonstrate the economic merit of mineral resources in order for their conversion to reserve. At this time, no such study has been completed and therefore the Carlin Vanadium project currently has no reserves.

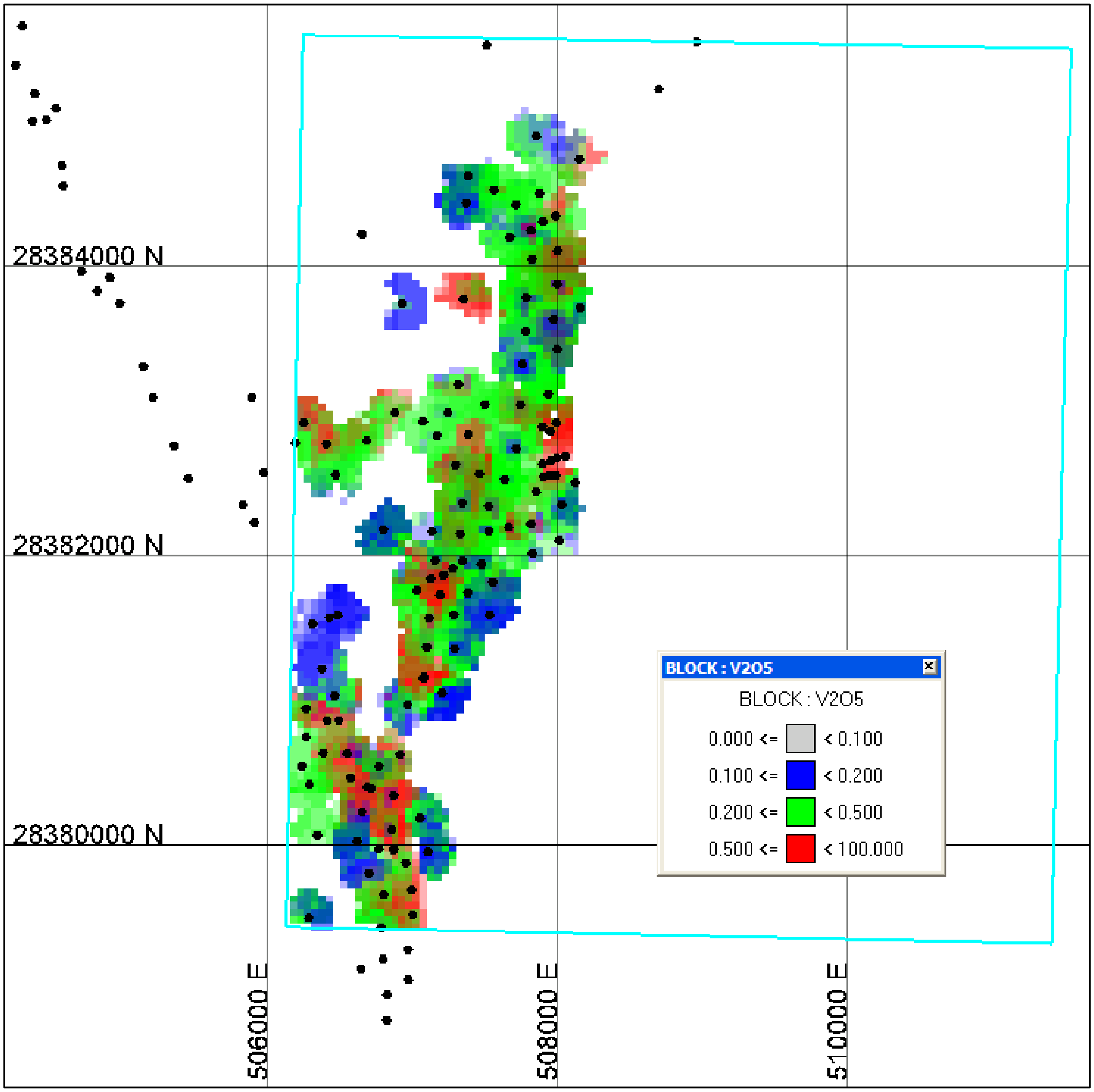
15.3 Material Affects on Mineral Resources

The mineral resources described in Section 15.12 above, constitute contained metal in the ground and have not been included in any formal plan of exploitation. There are no known material issues related to environmental, permitting, legal, title, taxation, socio-economic, marketing, political or other relevant issues which may affect the mineral resources. Additionally, there are no known material issues related to mining, metallurgy, infrastructure and other relevant issues, which may affect the mineral resources.



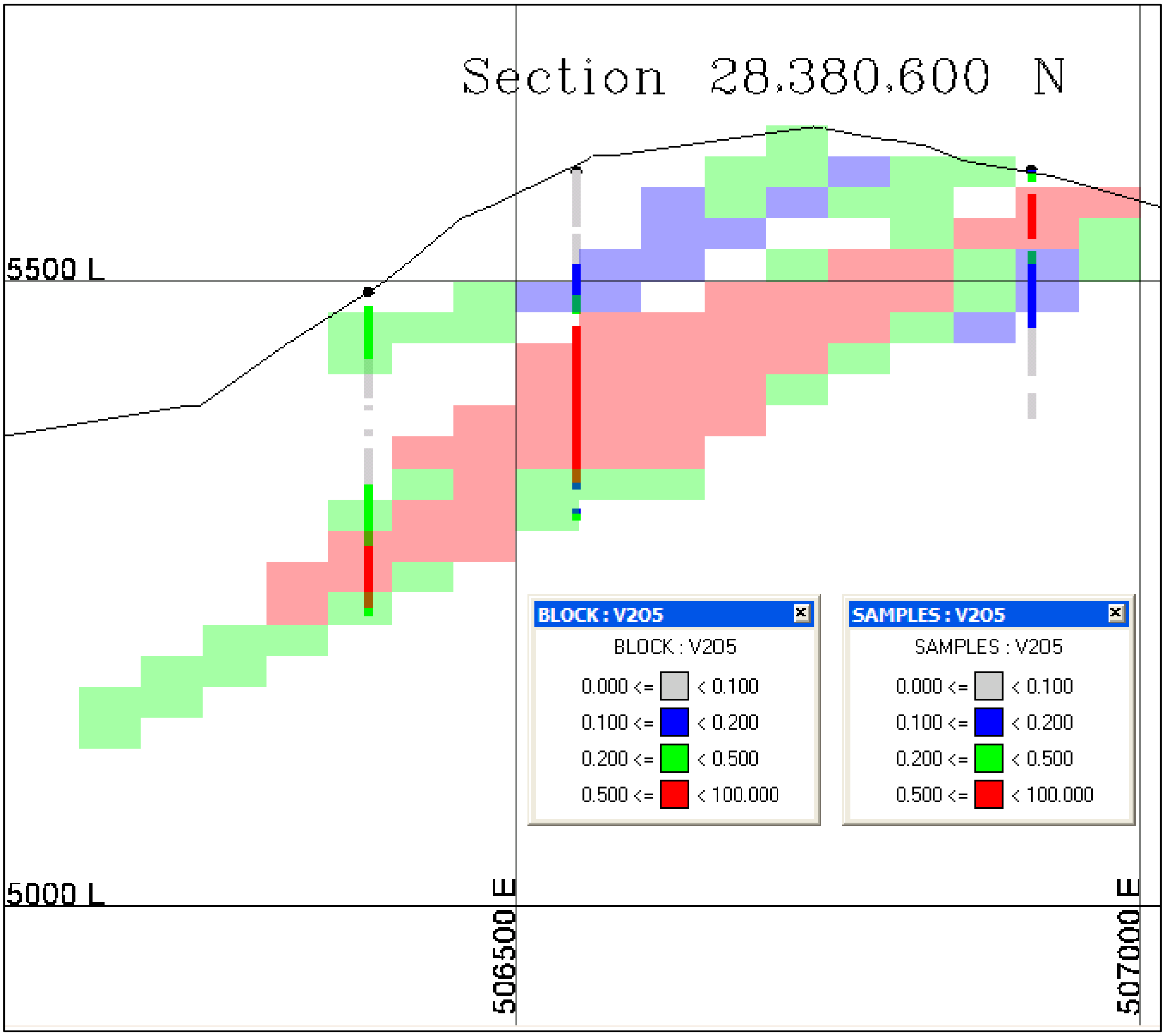
	Unknown	Siltstone	Mudstone	Shale	Chert	Dolomite
Q1	0.140	0.145	0.185	0.160	0.150	0.405
Min	0.020	0.030	0.040	0.040	0.050	0.210
Median	0.230	0.220	0.262	0.210	0.210	0.780
Mean	0.378	0.373	0.439	0.281	0.270	0.650
Max	3.100	2.450	3.340	1.670	0.890	0.970
Q3	0.490	0.450	0.600	0.313	0.300	0.858
NSamples	260	1721	722	341	70	5

SRK Consulting Engineers and Scientists	**Carlin Vanadium Project, Carlin, NV**	**Box Plot of V_2O_5 by Lithology**
SRK Job No.: 198300.010		
File Name: Figure 15-1		Date: 04/29/10 | Approved: BaS | **Figure: 15-1**



(Drill collars shown in black and claim boundary shown in teal)

SRK Consulting Engineers and Scientists	Carlin Vanadium Project, Carlin, NV	**Plan View of the Estimated Model Blocks**
SRK Job No.: 198300.010		Date: 04/29/10
File Name: Figure 15-2		Approved: BaS
		Figure: 15-2



(Topographic profile shown in black)

SRK Consulting
Engineers and Scientists

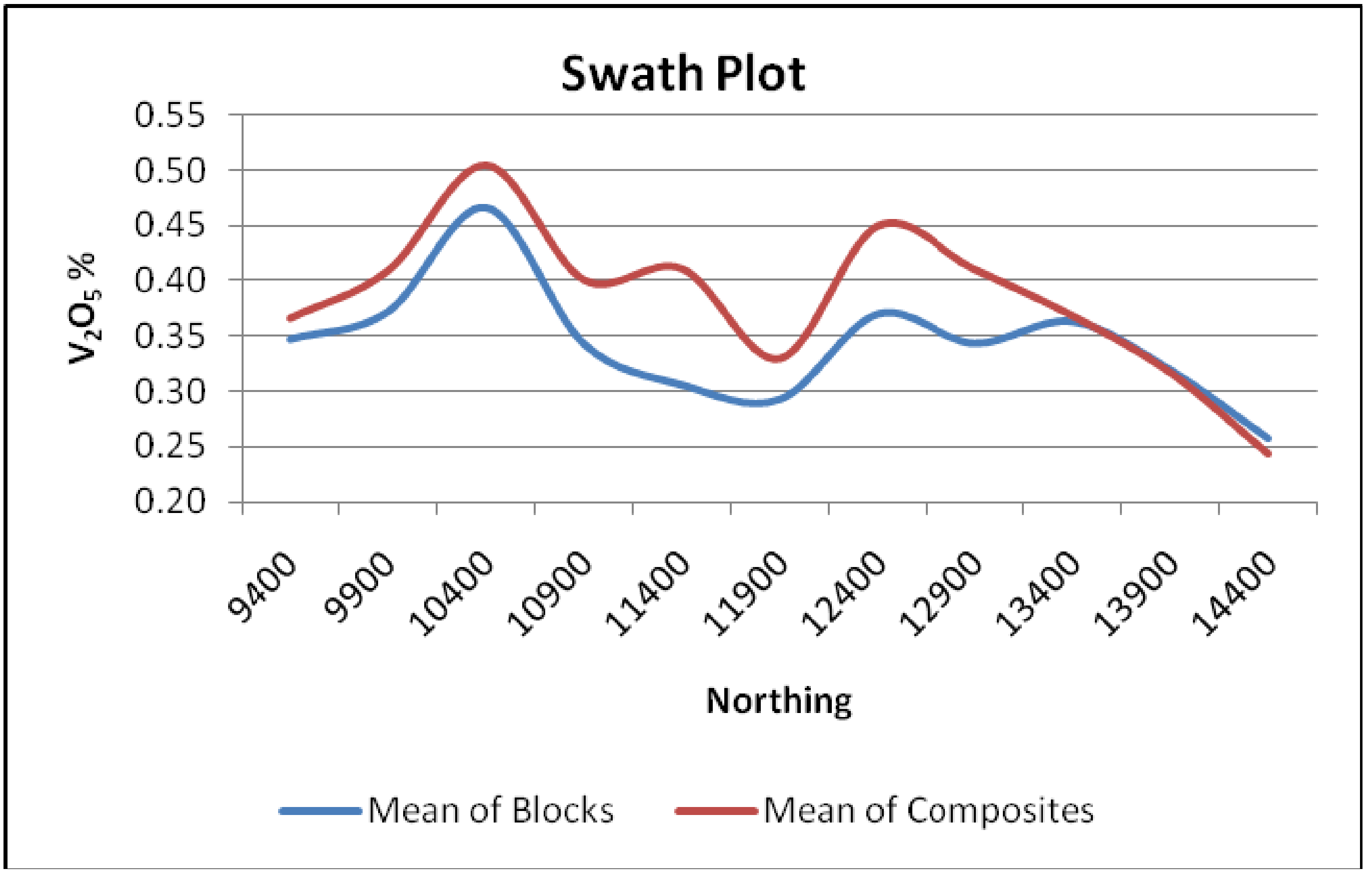
SRK Job No.: 198300.010

File Name: Figure 15-3

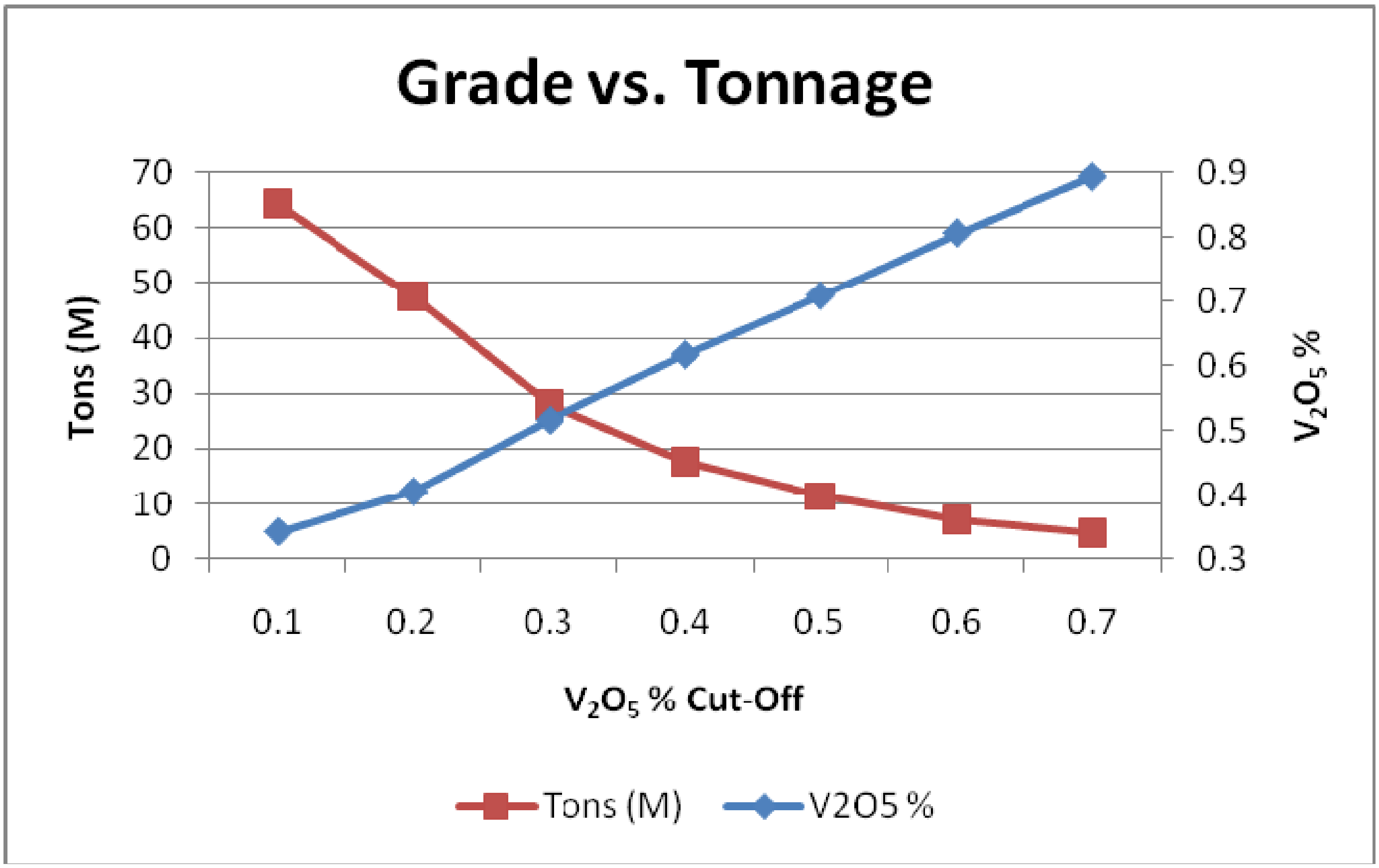
Carlin Vanadium Project, Carlin, NV

Cross-Section of the Estimated V_2O_5 Block Grades and Drillhole Composites

Date: 04/29/10 | Approved: BaS | **Figure: 15-3**



SRK Consulting Engineers and Scientists	Carlin Vanadium Project, Carlin, NV	Box Plot of V_2O_5 by Lithology		
SRK Job No.: 198300.010				
File Name: Figure 15-4		Date: 04/29/10	Approved: BaS	Figure: 15-4



SRK Consulting
Engineers and Scientists

SRK Job No.: 198300.010

File Name: Figure 15-5

Carlin Vanadium Project, Carlin, NV

Grade versus Tonnage Plot of the Inferred Mineral Resources

Date: 04/29/10 | Approved: BaS | **Figure: 15-5**

16 Other Relevant Data and Information (Item 20)

There is no other relevant data or information other than that which has been presented in this Technical Report.

17 Interpretation and Conclusions (Item 21)

17.1 Field Surveys

The UCC drilling was completed by truck mounted rotary drilling with an air circulated mud system used for sample recovery. All of the drilling was completed between May 1967 through October 1967. These were carefully logged, sampled and then tested for V_2O_5 concentrations. Although the exploration work conducted by UCC is historical and unverified it meets current CIM standards to support the inferred resource of this Technical Report on Resources.

17.2 Analytical and Testing Data

The sampling techniques and analytical procedures employed by UCC are adequate for the current level of study. Rotary drilling produces ample sample for the analytical testing. The Carlin Nv. laboratory and the Grand Junction Co. laboratories were both in house, UCC facilities. During the era of this work, it was common for large companies like UCC to operate their own analytical laboratories. In many cases, these laboratories were the best in the business at the time. Although specific QA/QC procedures employed by UCC are unknown, the duplicate analyses provided by the two labs indicates that no material bias is present in the analytical results.

17.3 Exploration Conclusions

The exploration drilling program appears to have been well planned and carried out in a prudent and careful manner. All drillhole logging and sampling appears to have been done by trained and professional personnel.

17.4 Resource Estimation

The resource estimation is supported by information from 152 drillholes totaling of 36,525ft of drilling. The drillhole database was compiled by EMC and verified by SRK. The resource estimation is based on a generalized geologic model and confined within a V_2O_5 grade shell. Each model block was assigned an average density based on the lithologies present. Mineralization is interpreted to follow along the plane of bedding with a general orientation striking N-S dipping 5°to25° west.

Drillhole samples were composited into 25ft bench lengths without breaks at geologic contacts. The raw V_2O_5 assays were capped at 2.2% prior to compositing. The model blocks are 50ft x 50ft x 25ft in the x,y,z directions, respectively. V_2O_5 grades were estimated using an Inverse Weighting to the second power. A minimum of 3 and maximum of 12 composites were required for the block grade estimations.

The results of the resource estimation provided a CIM classified Inferred Mineral Resource of 28Mst of material with 0.515% V_2O_5. The quality of the historical data is good and the Mineral Resource was classified as inferred mainly due to the fact that the rotary drilling has not been verified by modern program.

18 Recommendations (Item 22)

18.1 Recommended Work Programs

SRK recommends a two-stage development plan. The first stage should include diamond core drilling on wide spacing. These will serve to confirm the mineralized intervals and grades reported from the historic rotary drilling and to collect fresh samples for metallurgical testing. The metallurgical work should be focused on bench scale tests to development a general process method for oxidized and reduced material. If the results from the first stage of work provide positive findings, a second stage of development should be completed. The second stage would be a comprehensive drilling program designed to confirm the entire extents of the mineralization and increase the confidence of the resource classification. This work would also include delineation of the oxidation/reduction boundary and identify areas for bulk sampling. The proposed costs in US$ for each stage of work are outlined below in Table 18.1.1.1.

Table 18.1.1.1: Recommended Work Programs Costs

Phase	Program	Program Detail	Cost Detail	Total Cost
Stage I	Diamond Drilling	18 holes @ 240ft each = 4,320ft	69.44/ft (all in costs)	$300,000
	Metallurgical Testing	Bench Scale Test Work	$200,000	$200,000
Stage I Total				**$500,000**
Stage II	Reverse Circulation Drilling	141 holes @ 240ft each = 33,840ft	$29.60/ft (all in costs)	$1,000,000

19 References (Item 23)

AMEC 2008, *NI 43-101 Technical Report, Gibellini Vanadium Project, Nevada, USA*, AMEC E & C Services 187p.

Brooks, P. T. and Potter G. M., 1974, *Recovering Vanadium from Dolomitic Nevada Shale*, U.S. Dept of Interior, Bureau of Mines, 20p

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Morgan, J. E., 1969, *Summary Report Exploration of the Northern Area Carlin Vanadium Exploration Project, Elko County, Nevada*. Union Carbide Corporation Internal Company Report, 10p

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20 Glossary

20.1 Mineral Resources and Reserves

20.1.1 Mineral Resources

The mineral resources and mineral reserves have been classified according to the "CIM Standards on Mineral Resources and Reserves: Definitions and Guidelines" (December 2005). Accordingly, the Resources have been classified as Measured, Indicated or Inferred, the Reserves have been classified as Proven, and Probable based on the Measured and Indicated Resources as defined below.

A Mineral Resource is a concentration or occurrence of natural, solid, inorganic or fossilized organic material in or on the Earth's crust in such form and quantity and of such a grade or quality that it has reasonable prospects for economic extraction. The location, quantity, grade, geological characteristics and continuity of a Mineral Resource are known, estimated or interpreted from specific geological evidence and knowledge.

An 'Inferred Mineral Resource' is that part of a Mineral Resource for which quantity and grade or quality can be estimated on the basis of geological evidence and limited sampling and reasonably assumed, but not verified, geological and grade continuity. The estimate is based on limited information and sampling gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drillholes.

An 'Indicated Mineral Resource' is that part of a Mineral Resource for which quantity, grade or quality, densities, shape and physical characteristics can be estimated with a level of confidence sufficient to allow the appropriate application of technical and economic parameters, to support mine planning and evaluation of the economic viability of the deposit. The estimate is based on detailed and reliable exploration and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drillholes that are spaced closely enough for geological and grade continuity to be reasonably assumed.

A 'Measured Mineral Resource' is that part of a Mineral Resource for which quantity, grade or quality, densities, shape, physical characteristics are so well established that they can be estimated with confidence sufficient to allow the appropriate application of technical and economic parameters, to support production planning and evaluation of the economic viability of the deposit. The estimate is based on detailed and reliable exploration, sampling and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drillholes that are spaced closely enough to confirm both geological and grade continuity.

20.1.2 Mineral Reserves

A Mineral Reserve is the economically mineable part of a Measured or Indicated Mineral Resource demonstrated by at least a Preliminary Feasibility Study. This Study must include adequate information on mining, processing, metallurgical, economic and other relevant factors that demonstrate, at the time of reporting, that economic extraction can be justified. A Mineral Reserve includes diluting materials and allowances for losses that may occur when the material is mined.

A ‘Probable Mineral Reserve’ is the economically mineable part of an Indicated, and in some circumstances a Measured Mineral Resource demonstrated by at least a Preliminary Feasibility Study. This Study must include adequate information on mining, processing, metallurgical, economic, and other relevant factors that demonstrate, at the time of reporting, that economic extraction can be justified.

A ‘Proven Mineral Reserve’ is the economically mineable part of a Measured Mineral Resource demonstrated by at least a Preliminary Feasibility Study. This Study must include adequate information on mining, processing, metallurgical, economic, and other relevant factors that demonstrate, at the time of reporting, that economic extraction is justified.

20.2 Glossary

Table 20.2.1: Glossary

Term	Definition
Assay:	The chemical analysis of mineral samples to determine the metal content.
Capital Expenditure:	All other expenditures not classified as operating costs.
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 ore particle 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 an orebody or stope.
Gangue:	Non-valuable components of the ore.
Grade:	The measure of concentration of gold within mineralized rock.
Hangingwall:	The overlying side of an orebody or slope.
Haulage:	A horizontal underground excavation which is used to transport mined ore.
Hydrocyclone:	A process whereby material is graded according to size by exploiting centrifugal forces of particulate materials.
Igneous:	Primary crystalline rock formed by the solidification of magma.
Kriging:	An interpolation method of assigning values from samples to blocks that minimizes the estimation error.
Level:	Horizontal tunnel the primary purpose is the transportation of personnel and materials.
Lithological:	Geological description pertaining to different rock types.
LoM Plans:	Life-of-Mine plans.
LRP:	Long Range Plan.
Material Properties:	Mine properties.
Milling:	A general term used to describe the process in which the ore is crushed and ground and subjected to physical or chemical treatment to extract the valuable metals to 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.
Ongoing Capital:	Capital estimates of a routine nature, which is necessary for sustaining operations.
Ore Reserve:	See Mineral Reserve.
Pillar:	Rock left behind to help support the excavations in an underground mine.
RoM:	Run-of-Mine.
Sedimentary:	Pertaining to rocks formed by the accumulation of sediments, formed by the erosion of other rocks.
Shaft:	An opening cut downwards from the surface for transporting personnel, equipment, supplies, ore and waste.
Sill:	A thin, tabular, horizontal to sub-horizontal body of igneous rock formed by the injection of magma into planar zones of weakness.
Smelting:	A high temperature pyrometallurgical operation conducted in a furnace, in which the valuable metal is collected to a molten matte or doré phase and separated from the gangue components that accumulate in a less dense molten slag phase.
Stope:	Underground void created by mining.
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 statistical representation of the characteristics (usually grade).

Abbreviations

U.S. standard units have been used throughout this report unless otherwise stated. All currency is in U.S. dollars. Market prices are reported in US$, tons are reported as short tons, 2,000 pounds, unless otherwise stated. The following abbreviations are typical to the mining industry and may be used in this report.

Table 20.2.2: Abbreviations

Abbreviation	Unit or Term
A	ampere
AA	atomic absorption
A/m^2	amperes per square meter
ANFO	ammonium nitrate fuel oil
°C	degrees Centigrade
CCD	counter-current decantation
CIL	carbon-in-leach
CoG	cut-off grade
cm	centimeter
cm^2	square centimeter
cm^3	cubic centimeter
cfm	cubic feet per minute
ConfC	confidence code
CRec	core recovery
CSS	closed-side setting
CTW	calculated true width
°	degree (degrees)
dia.	diameter
EIS	Environmental Impact Statement
EMP	Environmental Management Plan
FA	fire assay
ft	foot (feet)
ft^2	square foot (feet)
ft^3	cubic foot (feet)
g	gram
gal	gallon
g/L	gram per liter
g-mol	gram-mole
gpm	gallons per minute
g/st	grams per short ton
ha	hectares
hp	horsepower
HTW	horizontal true width
ICP	induced couple plasma
ID2	inverse-distance squared
ID3	inverse-distance cubed
ILS	Intermediate Leach Solution
kA	kiloamperes
kg	kilograms
km	kilometer
km^2	square kilometer
koz	thousand troy ounces
kst	thousand short tons
kst/d	thousand short tons per day
kst/y	thousand short tons per year
kV	kilovolt
kW	kilowatt
kWh	kilowatt-hour
kWh/t	kilowatt-hour per metric tonne
L	liter
L/sec	liters per second

L/sec/m	liters per second per meter
lb	pound
LHD	Long-Haul Dump truck
LOI	Loss On Ignition
LoM	Life-of-Mine
m	meter
m^2	square meter
m^3	cubic meter
masl	meters above sea level
mg/L	milligrams/liter
mm	millimeter
mm^2	square millimeter
mm^3	cubic millimeter
MME	Mine & Mill Engineering
Mlb	million pounds
Moz	million troy ounces
Mst	million short tons
MTW	measured true width
MW	million watts
m.y.	million years
NGO	non-governmental organization
NI 43-101	Canadian National Instrument 43-101
OSC	Ontario Securities Commission
oz	troy ounce
%	percent
PLC	Programmable Logic Controller
PLS	Pregnant Leach Solution
PMF	probable maximum flood
ppb	parts per billion
ppm	parts per million
QA/QC	Quality Assurance/Quality Control
RC	rotary circulation drilling
RoM	Run-of-Mine
RQD	Rock Quality Description
SEC	U.S. Securities & Exchange Commission
sec	second
SG	specific gravity
SPT	standard penetration testing
st	short ton (2,000 pounds)
st/h	short tons per hour
st/d	short tons per day
st/y	short tons per year
TSF	tailings storage facility
TSP	total suspended particulates
tonne	tonne (metric ton) (2,204.6 pounds)
µm	micron or microns, micrometer or micrometers
V	volts
V_2O_5	vanadium
VFD	variable frequency drive
W	watt
XRD	x-ray diffraction
y	year

Appendix A

Certificate of Author

SRK Consulting (U.S.), Inc.
7175 West Jefferson Avenue, Suite 3000
Lakewood, Colorado
USA 80235
e-mail: denver@srk.com
web: www.srk.com
Tel: 303.985.1333
Fax: 303.985.9947

CERTIFICATE of AUTHOR

, Bart A. Stryhas PhD. CPG # 11034 do hereby certify that:

1. I am a Principal Resource Geologist of:

   SRK Consulting (U.S.), Inc.
   7175 W. Jefferson Ave, Suite 3000
   Denver, CO, USA, 80235

2. I graduated with a Doctorate degree in structural geology from Washington State University in 1988. In addition, I have obtained a Master of Science degree in structural geology from the University of Idaho in 1985 and a Bachelor of Arts degree in geology from the University of Vermont in 1983.

3. I am a current member of the American Institute of Professional Geologists.

4. I have worked as a geologist for a total of 25 years since my graduation from university.

5. 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 of NI 43-101.

6. I am responsible for all sections of the report titled *NI 43-101 Technical Report on Resources, EMC Metals Corp., Carlin Vanadium Project, Carlin, Nevada* and dated April 30, 2010 (the "Technical Report") relating to the Carlin Vanadium Project. I have visited Carlin Vanadium Project Property on February 10, 2010 for one day.

7. I have not had prior involvement with the property that is the subject of the Technical Report.

8. As of the date of the certificate, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the technical report not misleading.

9. I am independent of the issuer applying all of the tests in Section 1.4 of National Instrument 43-101.

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.

Dated April 30, 2010.

"Signed"

Dr. Bart A. Stryhas

NI 43-101 Technical Report on Resources, EMC Metals Corp., Carlin Vanadium Project, Carlin, Nevada, 9th Day of April, 2010.

Dated this 29th Day of April 2010.

"Signed"

Bart Stryhas, PhD, CPG