Gibellini Vanadium Project
Nevada, USA
NI 43-101 Technical Report

Prepared by:
Mr Edward J.C. Orbock III, RM SME

Report Effective Date:
10 November, 2017

Project Number:
197012

CERTIFICATE OF QUALIFIED PERSON

I, Edward J.C. Orbock III am employed as a Principal Geologist and US Manager, Consulting with Amec Foster Wheeler E&C Services Inc. (Amec Foster Wheeler), 10615 Professional Circle, Suite 100, Reno, NV 89521.

This certificate applies to the technical report titled “Gibellini Vanadium Project, Nevada, USA, NI 43-101 Technical Report” that has an effective date of 10 November, 2017 (the technical report).

I am a Registered Member of SME (#4038771). I graduated with a degree in Master’s of Science in Economic Geology from the University of Nevada, Reno, in 1992 and a Bachelor’s of Science degree in Geology from the University of New Mexico, in 1981.

I have practiced my profession for over 30 years since graduation. I have been directly involved in exploration, operations, and resource modeling for precious, base metals and specialty metals projects in North and South America and Africa. I have experience in the geology and modeling of Mineral Resources for the following sedimentary-type deposits: vanadium and phosphate in Idaho, vanadium in Nevada, Carlin-type precious metals in Nevada, and limestone replacement-skarn-hosted precious metals in Mexico. I have geological and exploration experience in Mississippi-Valley type lead-zinc deposits in Nevada.

As a result of my experience and qualifications, I am a Qualified Person as defined in National Instrument 43–101 Standards of Disclosure for Mineral Projects (NI 43–101).

I visited the Project site on 23 June 2008, 17 November 2010, and again on 7 November, 2017.

I am responsible for all sections of the technical report.

I am independent of Prophecy Development Corp. as independence is described by Section 1.5 of NI 43–101.

I have had involvement with the Gibellini Project since 2007, and have previously co-authored the following technical reports on the Gibellini Project:

- Hanson, K., Orbock, E., Hertel, M., and Drozd, M., 2011: American Vanadium, Gibellini Vanadium Project, Eureka County, Nevada, USA, NI 43 101 Technical Report on Feasibility Study: technical report prepared by AMEC E&C Services Inc. for American Vanadium, effective date 13 August, 2011
- Hanson, K., Wakefield T., Orbock, E., and Rust, J.C., 2010: Rocky Mountain Resources NI 43-101 Technical Report Gibellini Vanadium Project Nevada, USA:

technical report prepared by AMEC E&C Services Inc. for RMP Resources Corporation, effective date 8 October, 2008

- Wakefield, T., and Orbock, E., 2007: 43-101 Technical Report Gibellini Property Eureka County, Nevada: technical report prepared by AMEC E&C Services Inc. for RMP Resources Corporation, effective date 18 April, 2007.

I have read NI 43–101 and the sections of the technical report for which I am responsible have been prepared in compliance with that Instrument.

As of the effective date of the technical report, to the best of my knowledge, information and belief, the sections of the technical report for which I am responsible contain all scientific and technical information that is required to be disclosed to make those sections of the technical report not misleading.

Dated: 10 November, 2017.

"Signed and stamped"

Edward J.C. Orbock, III, RM SME.

IMPORTANT NOTICE

This report was prepared as National Instrument 43-101 Technical Report for Prophecy Development Corp. (Prophecy) by Amec Foster Wheeler E&C Services Inc. (Amec Foster Wheeler). The quality of information, conclusions, and estimates contained herein is consistent with the level of effort involved in Amec Foster Wheeler's services, based on i) information available at the time of preparation, ii) data supplied by outside sources, and iii) the assumptions, conditions, and qualifications set forth in this report. This report is intended for use by Prophecy subject to terms and conditions of its contract with Amec Foster Wheeler. Except for the purposed legislated under Canadian provincial and territorial securities law, any other uses of this report by any third party is at that party's sole risk.

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1.1 Introduction

Amec Foster Wheeler was requested to prepare an independent technical report (the Report) on the Gibellini Vanadium Project (the Project) for Prophecy Development Corp. (Prophecy). The Project is located within Eureka County, Nevada.

1.2 Terms of Reference

This Report was prepared to support first-time disclosure by Prophecy of Mineral Resource estimates for the Gibellini and Louie Hill vanadium deposits.

1.3 Project Setting

The Project is situated on the east flank of the Fish Creek Range in the Fish Creek Mining District, about 25 miles south of Eureka, and is accessed by dirt road extending westward from State Route 379.

The 24.5 miles leading to the mine site is State owned and is either paved or improved gravel. The three miles of road access from Nevada State Route 379 to the mine is a two-track dirt road, however, it can be upgraded to service the mine. This upgraded road would be the prime method of transport for goods and materials in and out of the Project.

The climate is typical of the dry Basin-and-Range conditions of northern Nevada. Exploration is possible year-round, though snow levels in winter and wet conditions in late autumn and in spring can make travel on dirt and gravel roads difficult. It is expected that any future mining operations will be able to be conducted year-round.

Nevada has a long mining history and a large resource of equipment and skilled personnel. Local resources necessary for the exploration and possible future development and operation of the Project are located in Eureka. Some resources would likely have to be brought in from the Elko and Ely areas.

The nearest power line to the Project is located approximately seven miles north and services the Fish Creek Aradan Ranch. Exploration activities have been serviced by diesel generator as required, and this approach is likely to be used on recommencement of exploration activities.

Water was supplied for exploration purposes from wells, and this water source remains an option for future work programs.

As part of work completed in 2010–2011, baseline studies to document the existing conditions of biological resources, cultural resources, surface water resources, ground water resources, and waste rock geochemical characterization were undertaken, and are considered preliminary.

Prior to commencing any mining operations on public lands administered by the BLM, a Plan of Operations (Plan) describing how a proponent will prevent unnecessary and undue degradation of the land and reclaim the disturbed areas must be submitted to the BLM.

Prophecy to date has had no community consultations. The company plans to take all the necessary steps to engage the local community to create awareness regarding the Project.

1.4 Mineral Tenure, Surface Rights, Water Rights, Royalties and Agreements

The Project consists of 50 unpatented lode mining claims, not all of which are contiguous. Within Nevada, claims can have a maximum area of 20.66 acres.

Unpatented mining claims are kept active through payment of a maintenance fee due by 1 September of each year. There has been no legal survey of the Project claims. Under Nevada law, each unpatented claim is marked on the ground, and does not require survey.

Prophecy signed a 10-year term mineral lease agreement (the Dietrich Lease) on 22 June, 2017, with the registered owner, Janelle Dietrich. The lease can be extended for a second 10-year term with appropriate notice given. Extensions of one-year durations can thereafter be undertaken if mining operations are underway on the Dietrich Lease, or if the Dietrich Lease is needed to support mining operations on adjacent lands. The lease comprises 40 unpatented lode mining claims (Dietrich Claims). The claims are located within unsurveyed Sections 1, 2 and 3, Township 15 North, Range 52 East, and unsurveyed Sections 26, 34, 35 and 36, Township 16 North, Range 52 East, MDM, Eureka County, Nevada.

The Dietrich Lease contains both an advance royalty and a production royalty. Under the advance royalty provision, Prophecy was required to pay Ms Dietrich $35,000 upon execution of the lease. Thereafter, on the anniversary date of the execution of the lease, Prophecy must pay a sliding scale advance royalty as follows:

- If the average vanadium pentoxide price per pound, as quoted on Metal Bulletin, is below $7.00/pound during the preceding 12 months, $35,000 during the initial term and $50,000 during the additional term; or
- If the average vanadium pentoxide price per pound, as quoted on Metal Bulletin, is equal to or above $7.00/pound during the preceding 12 months, $10,000 times the average vanadium pentoxide price per pound, up to a maximum of $120,000 annually.

Prophecy signed a 10-year term mineral lease agreement (the McKay Lease) on 10 July 2017 with the registered owners, Richard A. McKay, Nancy M. Minoletti, and Pamela S. Scutt (the owners). The lease can be automatically extended for a second 10-year term. Extensions of one-year durations can thereafter be undertaken if mining operations are underway on the McKay lease, or if the McKay Lease is needed to support mining operations on adjacent lands. The lease covers 10 unpatented lode claims (McKay Claims). These are located within unsurveyed Sections 2, 3 and 10, Township 15 North, Range 52 East, MDM, Eureka County, Nevada.

The McKay Lease contains an advance royalty and a production royalty. Under the advance royalty provision, Prophecy was required to pay the owners $10,000 upon execution of the lease. Thereafter, on the anniversary date of the execution of the lease, Prophecy must pay a sliding scale advance royalty as follows:

- If the average vanadium pentoxide price per pound, as quoted on Metal Bulletin, is below $7.00/pound during the preceding 12 months, $12,500 during both the initial term and the additional term; or
- If the average vanadium pentoxide price per pound, as quoted on Metal Bulletin, is equal to or above $7.00/pound during the preceding 12 months, $2,000 times the average vanadium pentoxide price per pound, up to a maximum of $28,000 annually.

No surface rights are currently held in the Project area.

1.5 Geology and Mineralization

Similarities with the style of mineralization for the Project exist in the USGS manganese nodule model, model 33a of Cox and Singer (1986). Vanadium mineralization is thought to be the result of syngenetic and early diagenetic metal concentration in the marine shale rocks.

The Gibellini Project is located on the east flank of the southern part of the Fish Creek Range. The historic limestone-hosted Gibellini manganese-nickel mine and the Gibellini and Louie Hill black-shale hosted vanadium deposits are the most significant deposits in the district and all occur within the Gibellini property boundary.

The vanadium-host black shale unit ranges from 175 to over 300 ft thick and overlies gray mudstone. The shale has been oxidized to various hues of yellow and orange up to a depth of 100 ft. Alteration (oxidation) of the rocks is classified as one of three oxide codes: oxidized, transitional, and reduced. Vanadium grade changes across these boundaries. The transitional zone reports the highest average vanadium grades and American Vanadium geologists interpret this zone to have been upgraded by supergene processes.

Mineralization is tabular, conformable with bedding, and remarkably continuous in grade and thickness between drill holes. In the oxidized zone, complex vanadium oxides occur in fractures in the sedimentary rocks including metahewettite ($CaV_6O_{16}{\cdot}H_2O$), bokite ($KAl_3Fe_6V_{26}O_{76}{\cdot}30H_2O$), schoderite ($Al_2PO_4VO_4{\cdot}8H_2O$), and metaschoderite ($Al_2PO_4VO_4{\cdot}6\text{-}8H_2O$). In the reduced sediments, vanadium occurs in organic material (kerogen) made up of fine grained, flaky, and stringy organism fragments less than 15 µm in size.

1.6 History

Work completed on the Project prior to Prophecy's involvement was undertaken by a number of companies, including the Nevada Bureau of Mines and Geology (NBMG, 1946), Terteling & Sons (1964–1965), Atlas and TransWorld Resources (1969), Noranda (1972–1975), and Inter-Globe (1989). Rocky Mountain Resources (RMP), later renamed to American Vanadium, conducted work from 2006–2011.

The Nevada Bureau of Mines and Geology completed four core holes in 1946. Work in the period 1964–1989 comprised rotary drilling, trenching, mapping, metallurgical testing, and mineral resource estimation. From 2006 to 2011, work programs included review of existing data, geological mapping, an XRF survey, reverse circulation (RC) and core drilling, additional metallurgical test work, and Mineral Resource estimation.

A preliminary assessment was completed in 2008 and a feasibility study was commissioned in late 2010. Both studies were based on the Gibellini deposit, and did not include the Louie Hill deposit. These studies are not considered by Prophecy to be current.

Prophecy has completed no exploration or drilling activities since Project acquisition.

1.7 Drilling and Sampling

A total of 280 drill holes (about 51,265 ft) have been completed on the Gibellini Project since 1946, comprising 16 core holes (4,046 ft), 169 rotary drill holes (25,077 ft; note not all drill holes have footages recorded) and 95 RC holes (22,142 ft).

All legacy drill and trench data in the Gibellini Project resource database were entered by AMEC and accurately represent the source documents. Documentation of drilling methods employed by the various legacy operators at Gibellini is sparse. No cuttings, assay rejects, or pulps remain from these drilling campaigns. No records remain for the drill sampling methods employed by NBMG (core), Terteling (rotary), or Atlas (rotary). Noranda and Inter-Globe collected drill samples on 5 ft intervals. American Vanadium has performed drill twins on selected Noranda and Atlas drill holes. For portions of the legacy data, the names of the laboratories that performed the assays are known; however, no information is available as to the credentials of the analytical laboratories used for the drill campaigns prior to the RMP drilling.

Drill data collected by American Vanadium meets industry standards for exploration of oxide vanadium deposits. No material factors were identified with the drill data collection that could affect Mineral Resource estimation. RC and core methods sampling employed by RMP and American Vanadium were in line with industry norms. Sample preparation for samples that support Mineral Resource estimation followed a similar procedure for the RMP and American Vanadium drill programs. The RMP and American Vanadium core and RC samples were analysed by reputable independent, accredited laboratories using analytical methods appropriate to the vanadium concentration. Drill data were typically verified prior to Mineral Resource and Mineral Reserve estimation, by running a software program check.

Drill sampling was adequately spaced to first define, then infill, vanadium anomalies to produce prospect-scale and deposit-scale drill data. Drill hole spacing varies with depth. Drill hole spacing increases with depth as the number of holes decrease and holes deviate apart. Drilling is more widely-spaced on the edges of the Gibellini and Louie Hill deposits. Sample data collected adequately reflect deposit dimensions, true widths of mineralization, and the style of the deposits.

A total of 63 core intervals from the 2007 drilling campaign at Gibellini were submitted by RMP for determination of specific gravity (SG). Specific gravity values were partitioned by oxidation type and average values were computed. These average values were used to calculate tonnage in the mineral resource model. Amec Foster Wheeler used the oxide density data from the Gibellini deposit to define density within the Louie Hill model.

1.8 Data Verification

AMEC, a predecessor company to Amec Foster Wheeler, completed a database audit in 2008. Conclusions from that audit were that the data were generally acceptable for Mineral Resource estimation. Data made available after the 2008 review were audited in 2010. Conclusions from that audit were that corrections were required to Noranda and Atlas assay data, and that additional twin holes should be drilled to verify Atlas data.

In the opinion of the QP, who had involvement with both data audits, the quantity and quality of the lithological, geotechnical, collar survey and downhole survey data collected in the exploration and infill drill programs completed by American Vanadium on the Project are sufficient to support Mineral Resource estimation. Legacy data are appropriate for use in estimation, but Atlas assays within the transition domain and Noranda assays within the reduced domain were down-graded.

1.9 Metallurgical Test Work

Metallurgical test work and associated analytical procedures were performed by recognized testing facilities, and the tests performed were appropriate to the mineralization type.

Samples selected for testing were representative of the various types and styles of mineralization at Gibellini. Samples were selected from a range of depths within the deposit. Sufficient samples were taken to ensure that tests were performed on sufficient sample mass.

For the purposes of the Mineral Resource estimate, recoveries of 60% for oxide material and 70% for transitional material were considered appropriate.

No processing factors were identified from the completed metallurgical test work that would have a significant effect on extraction.

1.10 Mineral Resource Estimation

Two Mineral Resource estimates were performed, one at Gibellini and the second at Louie Hill. The QP personally undertook the Gibellini Mineral Resource estimate, and reviewed the estimate for Louie Hill that was performed by Mr Mark Hertel, RM SME (a Principal Geologist at AMEC at the time the Louie Hill estimate was performed), and takes responsibility for that estimate.

1.10.1 Gibellini

Geological models were developed by American Vanadium geologists, and included oxidation domains and a grade envelope. Assays were composited along the trace of the drill hole to 10 ft fixed lengths at Gibellini; oxidation boundaries were treated as hard during composite construction.

Tonnage factors were calculated from specific gravity measurements and assigned to the blocks based on oxidation domain.

AMEC did not cap Gibellini assays, but capped three high-grade composites greater than 1.5% V_2O_5 to 1.5% V_2O_5. AMEC allowed all composites to interpolate grade out to 110 ft and capped composites greater than 1% V_2O_5 to 1% V_2O_5 beyond 110 ft.

Variography, using correlograms, was performed to establish anisotropy ellipsoids and the nugget value.

Only composites from RMP, Noranda, Inter-Globe, and Atlas were used for grade interpolation at Gibellini. Hard contacts were maintained between oxidation domains: oxide blocks were estimated using oxide composites; transition blocks were estimated using transition composites; and reduced blocks were estimated using reduced composites. A range restriction of 110 ft was placed on composites with grades greater than 1% V_2O_5 for each of the domains.

Ordinary kriging (OK) was used to estimate vanadium grade into blocks previously tagged as being within the 0.05% V_2O_5 grade domain solid. Two kriging passes were employed to interpolate blocks with vanadium grades.

AMEC interpolated blocks for grade that where outside of the grade shell using only composites external to the 0.05% V_2O_5 grade shell. These composites generally contain values of less than 0.05% V_2O_5. Mine block tabulation indicates that there were no oxide or transition blocks above the resource cut-off grades and only 2,645 Inferred tons of reduced material above a cut-off grade of 0.088% V_2O_5 averaging 0.120% V_2O_5 were interpolated.

No potential biases were noted in the model from the validations performed.

AMEC was of the opinion that continuity of geology and grade is adequately known for Measured and Indicated Mineral Resources for grade interpolation and mine planning. Classification of Measured Mineral Resources broadly corresponds to a 110 x 110 ft drill grid spacing, Indicated Mineral Resources a 220 x 220 ft drill grid spacing, and Inferred Mineral Resources required a composite within 300 ft from the block.

AMEC determined the extent of resources that might have reasonable prospects for eventual economic extraction by applying a Lerchs–Grossmann (LG) pit outline to the block model. Amec Foster Wheeler reviewed these factors for reasonable prospects for eventual economic extraction, using the 2014 CIM Definition Standards, and updated the assumptions as required.

1.10.2 Louie Hill

Geological models were developed by American Vanadium geologists as a grade envelope that differentiated mineralized from non-mineralized material.

Assays from Louie Hill were composited down-the-hole to 20 ft fixed lengths; no oxidation boundaries were interpreted, and the composite boundaries were treated as “hard” between mineralized and non-mineralized domains.

As no density measurements have been completed to date on mineralization from Louie Hill, the Gibellini data were used in the Louie Hill estimate. No grade capping was employed for Louie Hill.

Variography, using correlograms, was performed to establish anisotropy ellipsoids and the nugget value.

Ordinary kriging was used to estimate V_20_5% grades into blocks domain tagged as mineralized and non-mineralized. A range restriction of 200 ft was placed on grades greater than 0.15% V_20_5, for blocks within the non-mineralized domain. Two kriging passes were employed to interpolate grades into the mineralized domain blocks. Blocks that contained both percentages of mineralized and non-mineralized material were weight averaged for a whole block V_20_5% grade.

No potential biases were noted in the model from the validations performed.

Because of the uncertainty in the drilling methods, sample preparation, assay methodology, and the slight grade bias of the Union Carbide's assays as compared to the American Vanadium assays, AMEC limited the classification of resource blocks to the Inferred Mineral Resource category.

As with the Gibellini estimate, AMEC determined the extent of resources that might have reasonable prospects for eventual economic extraction by applying an LG pit outline to the block model. Amec Foster Wheeler reviewed these factors for reasonable prospects for eventual economic extraction, using the 2014 CIM Definition Standards, and updated the assumptions as required.

1.10.3 Reasonable Prospects for Eventual Economic Extraction

Mineralization was confined within a Lerchs–Grossmann (LG) pit outlines that used the following key assumptions, where applicable:

- Mineral Resource V_2O_5 price: $10.81/lb
- Mining cost: $2.21/ton mined
- Process cost: $13.14/ton processed
- General and administrative (G&A) cost: $0.99/ton processed
- Metallurgical recovery assumptions: 60% for oxide material, 70% for transition material and 52% for reduced material
- Tonnage factors: 16.86 ft^3/ton for oxide material, 16.35 ft^3/ton for transition material and 14.18 ft^3/ton for reduced material
- Royalty: 2.5% NSR
- Shipping and conversion costs: $0.37/lb V_2O_5

For the purposes of the resource estimates in this Report, an overall 40º pit slope angle was used.

1.11 Mineral Resource Statement

Mineral Resources take into account geological, mining, processing and economic constraints, and have been confined within appropriate LG pit shells, and therefore are classified in accordance with the 2014 CIM Definition Standards for Mineral Resources and Mineral Reserves (2014 CIM Definition Standards).

Mr. Edward J.C. Orbock III, an Amec Foster Wheeler employee, and an SME Registered Member, is the Qualified Person (QP) for the Mineral Resource estimates. The estimates have an effective date of 10 November, 2017.

Mineral Resources for Gibellini are included as Table 1-1, whereas the Mineral Resources for Louie Hill are included as Table 1-2. Mineral Resources at Gibellini are stated using cut-off grades appropriate to the oxidation state of the mineralization. Oxidation domains were not modeled for Louie Hill.

Factors which may affect the conceptual pit shells used to constrain the mineralization, and therefore the Mineral Resource estimates include commodity price assumptions, metallurgical recovery assumptions, pit slope angles used to constrain the estimates, assignment of oxidation state values, and assignment of density values.

The Gibellini resource model has a known error that has effectively reduced the overall grade for Measured and Indicated by approximately 1%. Adjustments to Atlas's transition assays between zero percent and 0.410% V_2O_5 were implemented twice. In 2011, AMEC reran the model with the correction and the results indicate an approximate error of 1%. AMEC was of the opinion that the error was not material to the estimate; the review conducted by Amec Foster Wheeler of the model in support of the current Mineral Resource estimate also concurs that the error is not material. The QP concurs with this view.

Factors which may affect the conceptual pit shells used to constrain the Mineral Resources, and therefore the Mineral Resource estimates include changes to the following assumptions and parameters:

- Commodity price assumptions
- Metallurgical recovery assumptions
- Pit slope angles used to constrain the estimates
- Assignment of oxidation state values for Gibellini only
- Assignment of SG values.

Table 1-1: Mineral Resource Statement, Gibellini

Confidence Category	Domain	Cut-off V_2O_5 (%)	Tons (Mt)	Grade V_2O_5 (%)	Contained V_2O_5 (Mlb)
Measured	Oxide	0.116	3.90	0.253	19.74
	Transition	0.105	3.95	0.379	29.88
Indicated	Oxide	0.116	7.04	0.235	33.12
	Transition	0.105	7.12	0.327	46.55
Total Measured and Indicated			***22.01***	***0.294***	***129.28***
Inferred	Oxide	0.116	0.14	0.179	0.50
	Transition	0.105	0.01	0.179	0.03
	Reduced	0.134	9.68	0.190	36.75
Total Inferred			***9.82***	***0.190***	***37.27***

Notes to accompany Mineral Resource table for Gibellini:

1. The Qualified Person for the estimate is Mr. E.J.C. Orbock III, RM SME, an Amec Foster Wheeler employee. The Mineral Resources have an effective date of 10 November, 2017.
2. Mineral Resources are reported at various cut-off grades for oxide, transition, and reduced material.
3. Mineral Resources are reported within a conceptual pit shell that uses the following assumptions: Mineral Resource V_2O_5 price: \$10.81/lb; mining cost: \$2.21/ton mined; process cost: \$13.14/ton processed; general and administrative (G&A) cost: \$0.99/ton processed; metallurgical recovery assumptions of 60% for oxide material, 70% for transition material and 52% for reduced material; tonnage factors of 16.86 ft^3/ton for oxide material, 16.35 ft^3/ton for transition material and 14.18 ft^3/ton for reduced material; royalty: 2.5% net smelter return (NSR); shipping and conversion costs: \$0.37/lb. An overall 40º pit slope angle assumption was used.
4. Rounding as required by reporting guidelines may result in apparent summation differences between tons, grade and contained metal content. Tonnage and grade measurements are in US units. Grades are reported in percentages.

Table 1-2: Mineral Resource Statement, Louie Hill

Confidence Category	Cut-off V_2O_5 (%)	Tons (Mt)	Grade V_2O_5 (%)	Contained V_2O_5 (Mlb)
Inferred	0.116	7.06	0.284	40.16

Notes to accompany Mineral Resource table for Louie Hill:

1. The Qualified Person for the estimate is Mr. E.J.C. Orbock III, RM SME, an Amec Foster Wheeler employee. The Mineral Resources have an effective date of 10 November, 2017. The resource model was prepared by Mr. Mark Hertel, RM SME.
2. Oxidation state was not modeled.
3. Mineral Resources are reported within a conceptual pit shell that uses the following assumptions: Mineral Resource V_2O_5 price: \$10.81/lb; mining cost: \$2.21/ton mined; process cost: \$13.14/ton processed; general and administrative (G&A) cost: \$0.99/ton processed; metallurgical recovery assumptions of 60% for mineralized material; tonnage factors of 16.86 ft^3/ton for mineralized material, royalty: 2.5% net smelter return (NSR); shipping and conversion costs: \$0.37/lb. For the purposes of the resource estimate, an overall 40º slope angle assumption was used.
4. Rounding as required by reporting guidelines may result in apparent summation differences between tons, grade and contained metal content. Tonnage and grade measurements are in US units. Grades are reported in percentages.

1.12 Recommendations

The recommendations are envisaged as a two-stage program, with no area of work dependent on the results of another. The first phase consists of a claim boundary survey; the second phase comprises recommendations pertaining to geology, block modelling, and Mineral Resource estimation. The total program is estimated at \$307,500 to \$360,000.

Phase 1 is estimated to cost about \$7,500 to \$10,000. The recommendation is that the claim outlines be legally surveyed so as to support open pit designs and potential sites for infrastructure. The survey should be performed by a licenced surveyor.

The total cost to carry out the Phase 2 work program is projected to be approximately \$300,000 to \$350,000, depending on the amount of condemnation and angled drilling that may be required. The recommendations pertain to geology, block modelling, and Mineral Resource estimation, as follows:

- Update data on the drill logs when new data are collected, or the old data are revised or reinterpreted
- Document relogging efforts and place updated copies of drill hole logs in the drill log folders
- The insertion rates of the control samples are low when compared to industry best practice; the insertion rate of standard reference materials (SRM), duplicates, and blanks should be increased to 5% each

- Additional condemnation drilling is recommended for infrastructure sites that could be used for buildings and waste rock storage facilities
- The Reduced mineralization should be re-classified with respect to resource confidence categories once metallurgical test work data on projected recoveries from this material are available
- Oxidation domains should be modeled for Louie Hill
- Twin drill an additional four to five Atlas drill holes through the transition zone and evaluate the results in conjunction with the previous completed twins
- Test and evaluate the potential for high-angled structures to carry elevated vanadium grades by drilling a series of angled drill holes.

2.0 INTRODUCTION

2.1 Introduction

Amec Foster Wheeler was requested to prepare an independent technical report (the Report) on the Gibellini Vanadium Project (the Project) for Prophecy Development Corp. (Prophecy). The Project is located within Eureka County, Nevada (Figure 2-1).

2.2 Terms of Reference

This Report was prepared to support first-time disclosure by Prophecy of Mineral Resource estimates for the Gibellini and Louie Hill vanadium deposits.

Mineral Resource and Mineral Reserve estimates were performed in accordance with the 2003 Canadian Institute of Mining, Metallurgy and Petroleum (CIM) Estimation of Mineral Resources and Mineral Reserves Best Practice Guidelines (CIM, 2003), and initially reported in accordance with the 2010 CIM Definition Standards for Mineral Resources and Mineral Reserves (2010 CIM Definition Standards). The estimates were subsequently reviewed and reported in accordance with the 2014 CIM Definition Standards for Mineral Resources and Mineral Reserves (2014 CIM Definition Standards).

2.3 Qualified Persons

The following Amec Foster Wheeler staff served as the Qualified Person (QP) as defined in National Instrument 43-101, *Standards of Disclosure for Mineral Projects*, and in compliance with Form 43-101F1:

- Mr. Edward J.C. Orbock III, RM SME, Principal Geologist and US Manager, Consulting.

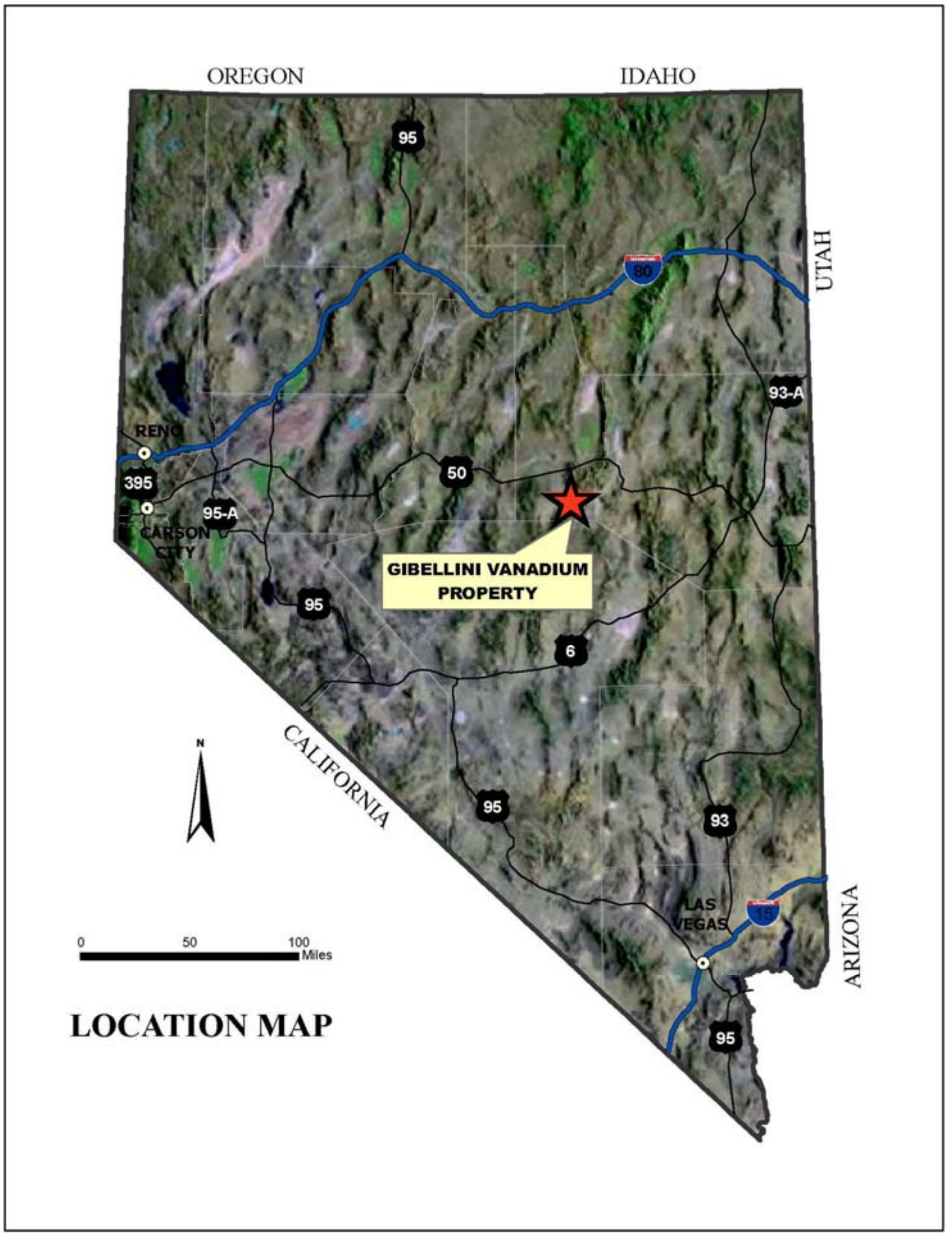
2.4 Site Visits and Scope of Personal Inspection

Mr. Orbock visited the Project site on 23 June 2008, 17 November 2010, and again on 7 November, 2017. During the 2010 visit he inspected surface geology, drill hole collars, diamond drilling, logging, and sampling protocols. During the 2017 visit, he inspected surface geology, surface oxidation, drill hole collars, and verified that no additional on-ground work had been undertaken at either Gibellini or Louie Hills.

2.5 Effective Date

The overall Report effective date is taken to be the date of the Mineral Resource estimates for Gibellini and Louie Hill, which is 10 November, 2017.

Figure 2-1: Project Location Plan



Note: Figure from Hanson et al., 2011

2.6 Information Sources and References

Reports and documents listed in Section 3 and Section 27 of this Report were used to support preparation of the Report.

The primary information sources for the Report are the following technical reports:

- Hanson, K., Orbock, E., Hertel, M., and Drozd, M., 2011: American Vanadium, Gibellini Vanadium Project, Eureka County, Nevada, USA, NI 43 101 Technical Report on Feasibility Study: technical report prepared by AMEC E&C Services Inc. for American Vanadium, effective date 13 August, 2011
- Hanson, K., Wakefield T., Orbock, E., and Rust, J.C., 2010: Rocky Mountain Resources NI 43-101 Technical Report Gibellini Vanadium Project Nevada, USA: technical report prepared by AMEC E&C Services Inc. for RMP Resources Corporation, effective date 8 October, 2008
- Wakefield, T., and Orbock, E., 2007: 43-101 Technical Report Gibellini Property Eureka County, Nevada: technical report prepared by AMEC E&C Services Inc. for RMP Resources Corporation, effective date 18 April, 2007.

AMEC E&C Services Inc. (AMEC) is a predecessor company to Amec Foster Wheeler. Where work was specifically undertaken by AMEC, that name is used in the Report. For all other purposes in this Report, the name Amec Foster Wheeler is used to refer to the current and predecessor companies.

During 2011, the following AMEC staff also visited the Project site as follows:

- Mr. Kirk Hanson, P.Eng., reviewed sites amenable for locating infrastructure, in particular sites that could potentially host future waste rock facilities, heap leach pads, and mine infrastructure from a mine engineering perspective
- Mr. Michael Drozd, RM SME, inspected drill core to provide a preliminary assessment of competency of the material down-hole as part of initial review for metallurgical crushing requirements. Mr. Drozd also reviewed sites that could potentially host heap leach pads and process infrastructure.

Information from these site visits was used when assessing considerations of reasonable prospects for eventual economic extraction in Section 14 of the Report.

3.0 RELIANCE ON OTHER EXPERTS

3.1 Introduction

The QP has relied upon the following other expert reports, which provided information regarding mineral rights, surface rights, property agreements, royalties, and marketing sections of this Report.

3.2 Mineral Tenure, Surface Rights, Property Agreements and Royalties

The QP has not independently reviewed ownership of the Project area and any underlying property agreements, mineral tenure, surface rights, or royalties. The QP has fully relied upon, and disclaims responsibility for, information derived from legal experts retained by Prophecy for this information through the following document:

- Parsons, Behle, Latimer, 2017: Gibellini Property: legal opinion provided to Prophecy Development Corp. and Amec Foster Wheeler, dated 2 October 2017, 100 p.

This information is used in Section 4 of the Report. The information is also used in support of the Mineral Resource estimate in Section 14.

3.3 Markets

The QP has not independently reviewed the marketing or metal price forecast information. The QP has fully relied upon, and disclaims responsibility for, information derived from experts retained by Prophecy for this information including the following document:

- Merchant Research and Consulting Ltd, 2017: Vanadium, 2017 World Market Review and Forecast: 97 p.

This information is used in support of the Mineral Resource estimate in Section 14.

Vanadium marketing and vanadium product price forecasting are specialized businesses requiring knowledge of supply and demand, economic activity and other factors that are highly specialized and requires an extensive database that is outside of the purview of a QP. The QP considers it reasonable to rely upon Merchant Research and Consulting Ltd for such information as the company is a well-known research firm specialising in market research for the chemical sector and specialty metals.

Based on the results of Prophecy's discussions with the investment community, and recent volatility in the vanadium price, a more conservative price, approximately 22% lower than the price based on Merchant Research and Consulting Ltd.'s forecast price, was used when estimating Mineral Resources.

4.0 PROPERTY DESCRIPTION AND LOCATION

4.1 Introduction

The Gibellini Project is located in Eureka County, Nevada; about 25 miles south of the town of Eureka. The Property is situated on the east flank of the Fish Creek Range in the Fish Creek Mining District and is accessed by dirt road extending westward from State Route 379.

The Project can be located on the USGS Summit Mountain 1:100,000 scale topographic map and the USGS Eightmile Well 1:24,000 scale, 7.5 minute series quadrangle map. It is centred at latitude 39° 13’ North and longitude 116° 05’ West. Mineralization at Gibellini is located within the southeast quadrant of Section 34 and the southwest quadrant of Section 35, Township 16 North, Range 52 East (T16N, R52E) Mount Diablo Base and Meridian (MDBM) and the northwest quadrant of Section 2 and the northeast quadrant of Section 3, Township 15 North, Range 52 East (T15N, R52E) MDBM.

4.2 Property and Title in Nevada

Information in this sub-section has been compiled from Papke and Davis, (2002). The QP has not independently verified this information, and has relied upon the Papke and Davis report, which is in the public domain, for the data presented.

4.2.1 Mineral Title

Federal (30 USC and 43 CFR) and Nevada (NRS 517) laws concerning mining claims on Federal land are based on an 1872 Federal law titled “An Act to Promote the Development of Mineral Resources of the United States.” Mining claim procedures still are based on this law, but the original scope of the law has been reduced by several legislative changes.

The Mineral Leasing Act of 1920 (30 USC Chapter 3A) provided for leasing of some non-metallic materials; and the Multiple Mineral Development Act of 1954 (30 USC Chapter 12) allowed simultaneous use of public land for mining under the mining laws and for lease operation under the mineral leasing laws. Additionally, the Multiple Surface Use Act of 1955 (30 USC 611-615) made “common variety” materials non-locatable; the Geothermal Steam Act of 1970 (30 USC Chapter 23) provided for leasing of geothermal resources; and the Federal Land Policy and Management Act of 1976 (the “BLM Organic Act,” 43 USC Chapter 35) granted the Secretary of the Interior broad authority to manage public lands. Most details regarding procedures for locating claims on Federal lands have been left to individual states, providing that state laws do not conflict with Federal laws (30 USC 28; 43 CFR 3831.1).

Mineral deposits are located either by lode or placer claims (43 CFR 3840). The locator must decide whether a lode or placer claim should be used for a given material; the decision is not always easy but is critical. A lode claim is void if used to acquire a placer deposit, and a placer claim is void if used for a lode deposit. The 1872 Federal law requires a lode claim for "veins or lodes of quartz or other rock in place" (30 USC 26; 43 CFR 3841.1), and a placer claim for all "forms of deposit, excepting veins of quartz or other rock in place" (30 USC 35). The maximum size of a lode claim is 1,500 ft in length and 600 ft in width, whereas an individual or company can locate a placer claim as much as 20 acres in area.

Claims may be patented or unpatented. A patented claim is a lode or placer claim or mill site for which a patent has been issued by the Federal Government, whereas an unpatented claim means a lode or placer claim, tunnel right or mill site located under the Federal (30 USC) act, for which a patent has not been issued.

4.2.2 Surface Rights

About 85% of the land in Nevada is controlled by the Federal Government; most of this land is administered by the US Bureau of Land Management (BLM), the US Forest Service, the US Department of Energy, or the US Department of Defense. Much of the land controlled by the BLM and Forest Service is open to prospecting and claim location. The distribution of public lands in Nevada is shown on the BLM "Land Status Map of Nevada" (1990) at scales of 1:500,000 and 1:1,000,000.

Bureau of Land Management regulations regarding surface disturbance and reclamation require that a notice be submitted to the appropriate Field Office of the Bureau of Land Management for exploration activities in which five acres or fewer are proposed for disturbance (43 CFR 3809.1-1 through 3809.1-4). A Plan of Operations is needed for all mining and processing activities, plus all activities exceeding five acres of proposed disturbance. A Plan of Operations is also needed for any bulk sampling in which 1,000 or more tons of presumed ore are proposed for removal (43 CFR 3802.1 through 3802.6, 3809.1-4, 3809.1-5). The BLM also requires the posting of bonds for reclamation for any surface disturbance caused by more than casual use (43 CFR 3809.500 through 3809.560). The Forest Service has regulations regarding land disturbance in forest lands (36 CFR Subpart A). Both agencies also have regulations pertaining to land disturbance in proposed wilderness areas.

4.2.3 Environmental Regulations

All surface management activities, including reclamation, must comply with all pertinent Federal laws and regulations, and all applicable State environmental laws and regulations. The fundamental requirement, implemented in 43 CFR 3809, is that all hard-rock mining under a Plan of Operations (PoO) or Notice on the public lands must prevent unnecessary or undue degradation. The Plan of Operations and any modifications to the approved Plan of Operations must meet the requirement to prevent unnecessary or undue degradation.

Authorization to allow the release of effluents into the environment must be in compliance with the Clean Water Act, Safe Drinking Water Act, Endangered Species Act, other applicable Federal and State environmental laws, consistent with BLM's multiple-use responsibilities under the Federal Land Policy and Management Act and fully reviewed in the appropriate National Environmental Policy Act (NEPA) document.

4.3 Project Ownership

Prophecy holds a 100% interest in the properties discussed in Section 4.4 by way of lease agreements.

4.4 Mineral Tenure

The Gibellini Project ground holdings are shown on Figure 4-1.

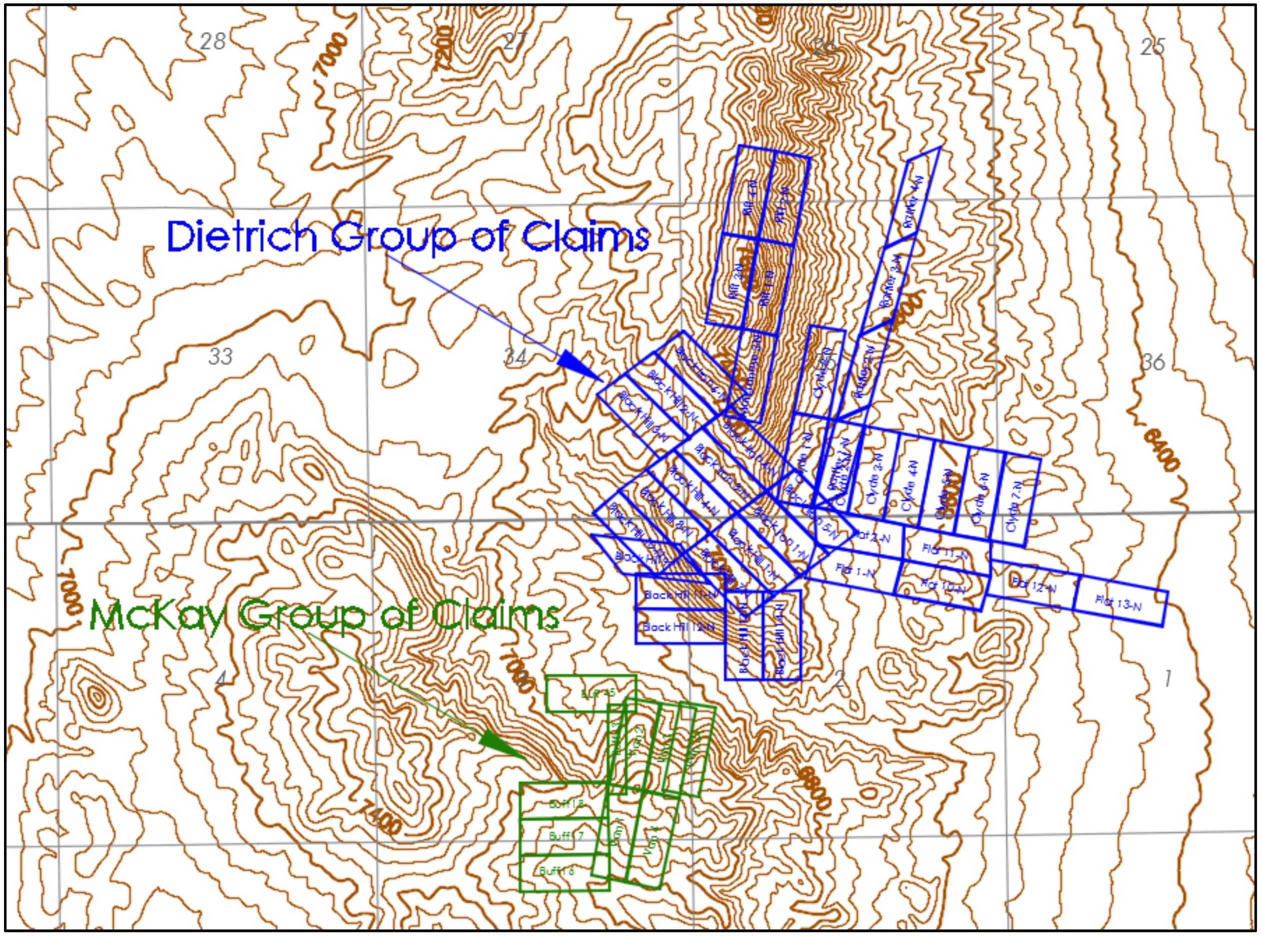
The Project consists of 50 unpatented lode mining claims, not all of which are contiguous. Within Nevada, claims can have a maximum area of 20.66 acres.

Unpatented mining claims are kept active through payment of a maintenance fee due by 1 September of each year. There has been no legal survey of the Project claims. Under Nevada law, each unpatented claim is marked on the ground, and does not require survey.

4.4.1 Dietrich Lease

Prophecy signed a 10-year term mineral lease agreement (the Dietrich Lease) on 22 June, 2017, with the registered owner, Janelle Dietrich. The lease can be extended for a second 10-year term with appropriate notice given. Extensions of one-year durations can thereafter be undertaken if mining operations are underway on the Dietrich Lease, or if the Dietrich Lease is needed to support mining operations on adjacent lands.

Figure 4-1: Mineral Tenure Plan



Note: Figure courtesy Prophecy, 2017. Grid squares shown on the figure are sections within townships and ranges which are typically 1 mile x 1 mile. Map north is to the top of the figure.

Table 4-1 shows the 40 unpatented lode mining claims (Dietrich Claims) that comprise the Dietrich Lease. The claims are located within unsurveyed Sections 1, 2 and 3, Township 15 North, Range 52 East, and unsurveyed Sections 26, 34, 35 and 36, Township 16 North, Range 52 East, MDM, Eureka County, Nevada.

According to the online BLM serial register pages for the claims that make up the Dietrich Lease, annual mining claim maintenance fees for the assessment years up to and including the assessment year beginning 1 September, 2017 have been paid.

Nevada law also requires that an affidavit in the county records is recorded on or before November 1 of the relevant assessment year providing information as to ownership name and owner address, as well as BLM claim assignment data, amongst other information. Affidavits have been recorded each year to 2016; however, no affidavit for the year commencing 1 September 2017 had been recorded as of the effective date of the legal opinion.

4.4.2 McKay Lease

Prophecy signed a 10-year term mineral lease agreement (the McKay Lease) on 10 July 2017 with the registered owners, Richard A. McKay, Nancy M. Minoletti, and Pamela S. Scutt (the owners). The lease can be automatically extended for a second 10-year term. Extensions of one-year durations can thereafter be undertaken if mining operations are underway on the McKay lease, or if the McKay Lease is needed to support mining operations on adjacent lands.

Table 4-2 shows the 10 unpatented lode claims (McKay Claims) that comprise the McKay Lease. These are located within unsurveyed Sections 2, 3 and 10, Township 15 North, Range 52 East, MDM, Eureka County, Nevada.

According to the online BLM serial register pages for the claims that make up the McKay Lease, annual mining claim maintenance fees for the assessment years up to and including the assessment year beginning 1 September, 2017 have been paid.

Affidavits have been recorded each year to 2016; however, no affidavit for the year commencing 1 September 2017 had been recorded as of the effective date of the legal opinion.

Table 4-1: Dietrich Lease Claims

BLM Serial Number	Claim Name	First Page (MR, Township, Range, Section)
NMC82892	Black Hill # 1-N	21 0150N 0520E 002
NMC82893	Black Hill # 2-N	21 0160N 0520E 034
NMC82894	Black Hill # 3-N	21 0160N 0520E 034
NMC82895	Black Hill # 4-N	21 0150N 0520E 002
NMC82896	Black Hill # 7-N	21 0150N 0520E 002
NMC82897	Black Hill # 8-N	21 0150N 0520E 002
NMC82898	Black Hill # 9-N	21 0150N 0520E 002
NMC82899	Black Hill # 10-N	21 0150N 0520E 003
NMC793247	Black Hill 11-N	21 0150N 0520E 002
NMC793248	Black Hill 12-N	21 0150N 0520E 002
NMC793249	Black Hill 13-N	21 0150N 0520E 002
NMC793250	Black Hill 14-N	21 0150N 0520E 002
NMC82900	Black Iron # 1-N	21 0150N 0520E 002
NMC82901	Black Iron # 3-N	21 0160N 0520E 034
NMC82902	Black Iron # 4-N	21 0150N 0520E 002
NMC82903	Black Iron # 5-N	21 0150N 0520E 002
NMC82904	Black Iron # 6-N	21 0160N 0520E 034
NMC82921	Clyde # 1-N	21 0150N 0520E 002
NMC82922	Clyde # 2-N	21 0160N 0520E 035
NMC82923	Clyde # 3-N	21 0160N 0520E 035
NMC82924	Clyde # 4-N	21 0160N 0520E 035
NMC82925	Clyde # 5-N	21 0160N 0520E 035
NMC82926	Clyde # 6-N	21 0160N 0520E 035
NMC82927	Clyde # 7-N	21 0150N 0520E 001
NMC82928	Clyde # 8-N	21 0160N 0520E 035
NMC82905	Flat # 1-N	21 0150N 0520E 002
NMC82906	Flat # 2-N	21 0150N 0520E 002
NMC82908	Flat # 10-N	21 0150N 0520E 002
NMC82909	Flat # 11-N	21 0150N 0520E 002
NMC82910	Flat # 12-N	21 0150N 0520E 001
NMC82911	Flat # 13-N	21 0150N 0520E 001
NMC82912	Manganese # 3-N	21 0160N 0520E 035
NMC82913	Rattler # 1-N	21 0160N 0520E 035
NMC82914	Rattler # 2-N	21 0160N 0520E 035
NMC82915	Rattler # 3-N	21 0160N 0520E 035
NMC82916	Rattler # 4-N	21 0160N 0520E 026
NMC82917	Rift # 1-N	21 0160N 0520E 035

BLM Serial Number	Claim Name	First Page (MR, Township, Range, Section)
NMC82918	Rift # 2-N	21 0160N 0520E 026
NMC82919	Rift # 3-N	21 0160N 0520E 035
NMC82920	Rift # 4-N	21 0160N 0520E 026

Table 4-2: McKay Claims

BLM Serial Number	Claim Name	First Page (MR, Township, Range, Section
NMC968757	VAN 1	21 0150N 0520E 010
NMC968758	VAN 2	21 0150N 0520E 003
NMC968759	VAN 3	21 0150N 0520E 002
NMC969607	VAN 3A	21 0150N 0520E 002
NMC968760	VAN 4	21 0150N 0520E 010
NMC954492	BUFF 16	21 0150N 0520E 010
NMC954493	BUFF 17	21 0150N 0520E 003
NMC954494	BUFF 18	21 0150N 0520E 003
NMC954500	BUFF 43	21 0150N 0520E 003
NMC954502	BUFF 45	21 0150N 0520E 003

The VAN 5 and VAN 6 claims overlie the Black Hills 11-N and 12-N claims held under the Dietrich Lease, and are considered to be senior to the two Black Hills claims based upon date of location.

4.5 Royalties

4.5.1 Dietrich Lease (Dietrich Royalty)

The Dietrich Lease contains both an advance royalty and a production royalty. Under the advance royalty provision, Prophecy was required to pay Ms Dietrich $35,000 upon execution of the lease. Thereafter, on the anniversary date of the execution of the lease, Prophecy must pay a sliding scale advance royalty as follows:

- If the average vanadium pentoxide price per pound, as quoted on Metal Bulletin, is below $7.00/pound during the preceding 12 months, $35,000 during the initial term and $50,000 during the additional term; or
- If the average vanadium pentoxide price per pound, as quoted on Metal Bulletin, is equal to or above $7.00/pound during the preceding 12 months, $10,000 times the average vanadium pentoxide price per pound, up to a maximum of $120,000 annually.

The advance royalty payments will continue until such time as Prophecy begins payment of the production royalty, provided, however, that if the production royalty payable in any year is less than the advance royalty otherwise payable for such year, the Prophecy will pay Ms Dietrich the difference between such amounts. All advance royalty payments, as well as the difference between the advance royalty payment made and the production royalty that would otherwise be due in such year, may be deducted as credits against Prophecy's future production royalty payments, provided that the credit will not be applied to payment of the difference between the production royalty paid during any year and the advance royalty that would otherwise be payable.

The Dietrich Lease does not specifically set forth what events trigger the payment of the production royalty, but a reasonable interpretation is that payment of such royalty is due upon commencement of commercial mining operations. The production royalty requires Prophecy to pay Ms. Dietrich 2.5% of net smelter returns (NSRs), as defined in the Dietrich Lease, on Mineral Substances, also defined in the lease, produced and sold from the claims until such payments have reached a total sum of $3 million. Thereafter, the production royalty is reduced to 2.0% NSR.

Under the Dietrich Lease, if Prophecy "*intends to develop a mine or to construct mine-related facilities*" on the lode mining claims that make up the lease, then Prophecy is required to notify Ms Dietrich as to which claim portions will be required for mining purposes. Ms Dietrich may then require Prophecy to "*acquire title to the portion*" of the Dietrich Claims "*required for [l]essee's proposed uses for nominal consideration of $*1." In the event that the Ms. Dietrich requires Prophecy to take title to all or any portion of such claims, the advance royalty and production royalty contained in the lease "*shall not be affected*." In the event that Ms Dietrich requires Prophecy to take title to all or any portion of the claims, this conveyance should be accomplished through a grant, bargain and sale deed that specifically reserves the advance royalty and production royalty to the grantor.

4.5.2 McKay Lease (McKay Royalty)

The McKay Lease contains an advance royalty and a production royalty. Under the advance royalty provision, Prophecy was required to pay the owners $10,000 upon execution of the lease. Thereafter, on the anniversary date of the execution of the lease, Prophecy must pay a sliding scale advance royalty as follows:

- If the average vanadium pentoxide price per pound, as quoted on Metal Bulletin, is below $7.00/pound during the preceding 12 months, $12,500 during both the initial term and the additional term; or
- If the average vanadium pentoxide price per pound, as quoted on Metal Bulletin, is equal to or above $7.00/pound during the preceding 12 months, $2,000 times the average vanadium pentoxide price per pound, up to a maximum of $28,000 annually.

The advance royalty payments will continue until such time as Prophecy begins payment of the production royalty, provided, however, that if the production royalty payable in any year is less than the advance royalty otherwise payable for such year, Prophecy will pay to the owners the difference between such amounts. All advance royalty payments, as well as the difference between the advance royalty payment made and the production royalty that would otherwise be due in such year, may be deducted as credits against Prophecy's future production royalty payments, provided that the credit will not be applied to payment of the difference between the production royalty paid during any year and the advance royalty that would otherwise be payable.

The McKay Lease does not specifically set forth what events trigger the payment of the production royalty, but a reasonable interpretation is that payment of such royalty is due upon commencement of commercial mining operations. The production royalty requires lessee to pay lessor 2.5% NSR, as defined in the lease, on Mineral Substances, also defined in the lease, produced and sold from the McKay Claims. Prophecy has an option to purchase 60% of the production royalty from the owners for $1,000,000.

Under the McKay Lease, if Prophecy "*intends to develop a mine or to construct mine-related facilities*" on the McKay Lease, Prophecy will notify the owners which portions of the claims will be required for Prophecy's purposes. The owners may then require Prophecy to "*acquire title to the portion*" of the claims within the McKay Lease "*required for [l]essee's proposed uses for nominal consideration of $1*." In the event that the claim owners require Prophecy to take title to all or any portion of such claims, the advance royalty and production royalty contained in the lease "*shall not be affected*." In the event the claim owners require Prophecy to take title to all or any portion of such claims, this conveyance should be accomplished through a grant, bargain and sale deed that specifically reserves the advance royalty and production royalty to the grantor.

4.6 Encumbrances

The legal opinion noted that a Notice of Federal Tax Lien, dated January 27, 2015 and recorded February 3, 2015 had been lodged against Ms. Dietrich for unpaid federal taxes for the year ending December 31, 2010.

The existence of such a tax lien gives the federal government a superior interest in the claims than Prophecy's interest. In the event Prophecy was to take title to the claims within the Dietrich Lease, and the taxes remained unpaid, the lien would continue to encumber the Dietrich Claims and the federal government could foreclose on its tax lien.

4.7 Surface Rights

The Gibellini Project is situated entirely on public lands that are administered by the BLM.

No easements or rights of way are required for access over public lands. Rights-of-way would need to be acquired for future infrastructure requirements, such as pipelines and powerlines.

4.8 Significant Risk Factors

The regulatory permitting process for a vanadium heap leach project may require additional geochemical baseline data collection and closure planning, as this type of project has not been permitted before in the State of Nevada. Therefore, any future agency concurrence with data collection protocols and the determination of data adequacy and closure design requirements could be subject to reviews and revisions.

4.9 Permitting Considerations

Prior to commencing any mining operations on public lands administered by the BLM, a Plan of Operations describing how a proponent will prevent unnecessary and undue land degradation and reclaim the disturbed areas must be submitted to the BLM.

4.10 Environmental Considerations

Baseline studies conducted in 2010–2011included studies to document the existing conditions of biological resources, cultural resources, surface water resources, ground water resources, and waste rock geochemical characterization. The baseline data collected would be subject to review and approval by the BLM and the Nevada Department of Environmental Protection (NDEP) and other cooperating agencies.

Additional work would be required in support of any future National Environmental Policy Act (NEPA) document.

4.11 Social License Considerations

Prophecy to date has had no community consultations. The company plans to take all the necessary steps to engage the local community to create awareness regarding the Project. Community consultation is required as part of NEPA documentation.

4.12 Comments on Section 4

Information provided by legal experts retained by Prophecy supports the following:

- Information from legal experts supports that the mining tenure held is valid and is sufficient to support declaration of Mineral Resources
- Mineral tenure is held by way of lease agreements.
- Royalties are associated with these agreements as follows:

- Dietrich royalty: an advance royalty and a 2.5% NSR production royalty; the 2.5 NSR is in place until such payments have reached a total sum of $3 million. Thereafter, the production royalty is reduced to 2.0% NSR
- McKay royalty: an advance royalty and a 2.5% NSR production royalty; Prophecy has an option to purchase 60% of the production royalty from the owners for $1,000,000

- There has been no legal survey of the Project claims. Under Nevada law, each unpatented claim is marked on the ground, and does not require survey
- Amec Foster Wheeler was supplied with legal opinion that indicates the annual claim maintenance fees have been paid for assessment year beginning 1 September, 2017
- Surface rights are held by the BLM
- Permits, environmental studies and public consultation will be required for any future Project development.

Prophecy advised that to the extent known, there are no other significant factors and risks that may affect access, title, or right or ability to perform work on the Project.

5.0 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE, AND PHYSIOGRAPHY

5.1 Accessibility

The Gibellini Project is accessed from Eureka by traveling southeast on US Highway 50 approximately 10 miles to Nevada State Route 379, then following SR 379 southwest for approximately eight miles to a fork in the road. At the fork, an improved gravel county road, on the right, is followed for approximately seven miles to where a two-track road on the west leads to the property. Access to the Project area is good, and is possible year-round.

5.2 Climate

The climate in the Gibellini area is typical for east–central Nevada. Average monthly high temperatures range from 74 degrees to 85 degrees Fahrenheit in the summer and 37 degrees to 47 degrees Fahrenheit in the winter. Yearly rainfall averages approximately 12 inches with nearly uniform distribution from September through May. June, July, and August are typically hot and dry months; December, January, and February receive the bulk of the snowfall.

Exploration is possible year-round, though snow levels in winter and wet conditions in late autumn and in spring can make travel on dirt and gravel roads difficult. It is expected that any future mining operations will be able to be conducted year-round.

5.3 Local Resources and Infrastructure

The nearest town to the Property is Eureka, Nevada, which is situated along US Highway 50 and hosts a population of 1651 (Census 2000 data). The nearest city is Reno, Nevada, approximately 215 miles to the west, which hosts a population of 180,480 (Census 2000 data). The most significant towns in the Project vicinity are Carlin, which has a rail-head, and Elko, which is the northeastern regional mining center.

Local resources necessary for the exploration and possible future Project development and operation are located in Eureka. Some resources would likely have to be brought in from the Elko area.

Nevada has a long mining history and a large resource of equipment and skilled personnel. Workers would likely be imported from Elko County (Carlin and Elko) to supplement the work force available in Eureka.

The nearest power line to the Project is located approximately seven miles north and services the Fish Creek Aradan Ranch. Exploration activities have been serviced by diesel generator as required, and this approach is likely to be used on recommencement of exploration activities.

Water was supplied for exploration purposes from wells, and this water source remains an option for future work programs.

There are currently no communications facilities on site.

5.4 Physiography

The Project is located on the east flank of the Fish Creek Range along a northwest-trending ridge. Elevation at the Project ranges from 6,600 to 7,131 ft above mean sea level and the topographic relief can be characterized as moderate to steep.

Vegetation is typical of the Basin and Range physiographic province. The Project is covered by sagebrush, grass, and various other desert shrubs. Fauna that have been observed in the Gibellini Project area are typical of those of the Great Basin area.

5.5 Comments on Section 5

Additional ground may be required to host some of the infrastructure that could be associated with any future open pit mining and heap leach operation.

6.0 HISTORY

6.1 Exploration History

In 1942, Mr. Louis Gibellini located claims covering the Gibellini manganese–nickel mine (also known as the Niganz manganese–nickel mine) immediately east of the Gibellini deposit. The deposit was intermittently mined until the mid-1950s. Workings at the mine consist of a shaft 37 ft deep, an adit 176 ft long, several shallow pits, and some trenches. Manganese mineralization consists of pyrolusite and dense nodules of psilomelane within Devonian limestone on the footwall of a northeast-trending fault zone. The average grade of the ore produced from the workings was about 9.5% manganese, 2.8% zinc, and 1.22% nickel. A shipment of 95.4 tons of mineralization in 1953 to the Combined Metals Company mill in Castleton, Nevada, reportedly contained 31.6% manganese (Roberts et al., 1967).

During 1946, the Nevada Bureau of Mines and Geology (NBMG) completed four core holes at the Gibellini manganese–nickel mine.

In 1956, Union Carbide discovered vanadium mineralization one mile south of the Gibellini manganese–nickel mine, on what is now known as the Louie Hill prospect. A resource estimate was completed in 1969 (Joralemon, 1969). The Gibellini deposit was discovered shortly thereafter.

The Gibellini deposit was first explored by Siskon Co. in 1960 to 1961 (Roberts et al, 1967). Cheschey & Co. (1960–1963), Terteling & Sons (1964–1965), and Atlas and TransWorld Resources (1969) reportedly worked one or both of the deposits during the 1960s (Morgan, 1989). Work during this period included rotary drilling, trenching, mapping and metallurgical testing. Terteling & Sons drilled 33 rotary holes in the Gibellini area and Atlas drilled 77 holes. Cheschey & Co. appear to have drilled several holes in the area, but no information from these holes remain beyond a drill hole location map. The low grade and complex metallurgy of the deposits, together with the low trading price of V_2O_5 at the time (about $2.50 per pound) discouraged further development (Morgan, 1989).

In 1972, Noranda optioned claims covering the Gibellini and Louie Hill areas. In the same year, metallurgical research on Gibellini drill hole composite samples and mine and market economic studies by the Colorado School of Mines Research Institute (CSMRI) indicated that the Gibellini deposit was potentially economic. In 1972 and 1973 Noranda drilled 52 rotary and reverse circulation (RC) drill holes in the Gibellini deposit to provide data for a mineral resource estimate and to provide material for additional metallurgical testing. Five holes were also drilled in the Louie Hill area at this time.

Based upon the drilling results, Noranda completed a resource estimate using polygonal methods (Condon, 1975). Noranda did not use the assays from the Terteling or Atlas drill holes in their resource estimate. Noranda's review of previous drilling noted 'serious discrepancies in grade and continuity of mineralization between holes' (Condon, 1975).

Noranda conducted extensive research into the metallurgy of the Gibellini mineralization. They found that acceptable extractions could be achieved by sulphuric acid extraction, but at that time, reagent costs were prohibitive. In 1974, after critical review of the CSMRI work and in-house investigations into the metallurgy of the vanadium ores, Noranda concluded the Gibellini deposit was not economically viable.

Noranda also completed a resource estimate on the Louie Hill prospect but noted that further work was required before an accurate resource estimate could be performed (Condon, 1975). Morgan (1989), using the Noranda drill plan and ore blocks, estimated a mineral resource for Louie Hill.

Inter-Globe picked up the Gibellini Project in 1989 and contracted James Askew Associates (JAA) to drill 11 vertical RC holes to confirm grades reported in the Noranda, Atlas, and Terteling drilling and to provide material for metallurgical test work (JAA, 1989a). JAA also mapped and sampled nine trenches and pits constructed by previous operators (JAA, 1989b).

Vanadium grades from the Inter-Globe drill holes confirmed the width and grade of the Noranda, Terteling, and Atlas drill holes (JAA, 1989a). There is no evidence that the planned metallurgical testing took place; the report/results were not provided to AMEC.

RMP acquired the property in March 2006. During 2006, RMP expanded the land position of the Gibellini Project, mapped the surface geology, collected surface and underground geochemical samples, and conducted preliminary metallurgical test work.

RMP commissioned AMEC to review exploration work completed on the Project and to develop a mineral resource estimate conforming to CIM Definition Standards for Mineral Resources and Mineral Reserves (2005), as referenced by Canadian National Instrument 43-101. This work was the subject of a Technical Report completed in April 2007.

Following this initial technical report, RMP completed RC and diamond drilling, and additional metallurgical test work. As a result of encouraging results, RMP commissioned AMEC in 2008 to complete a preliminary assessment (2008 PA) for the Gibellini deposit. The preliminary assessment indicated that a heap leach operation producing vanadium pentoxide was the most likely processing method.

In January 2011, RMP changed its name to American Vanadium Corp.

A feasibility study was commissioned in late 2010, and completed in 2011 (2011 feasibility study). The study assumed the following:

- A conventional open pit mine at Gibellini using a truck and shovel fleet

- Heap leach operation to produce V_2O_5 as a bagged product.

No work has been conducted on the Project since 2011. Prophecy has completed no exploration or drilling activities since Project acquisition.

Prophecy is not treating either the Mineral Reserves resulting from the 2011 feasibility study or the economic results of that study as current.

6.2 Production

There is no modern commercial production recorded from the Project.

7.0 GEOLOGICAL SETTING AND MINERALIZATION

7.1 Regional Geology

The Gibellini property occurs on the east flank of the southern part of the Fish Creek Range (Figure 7-1).

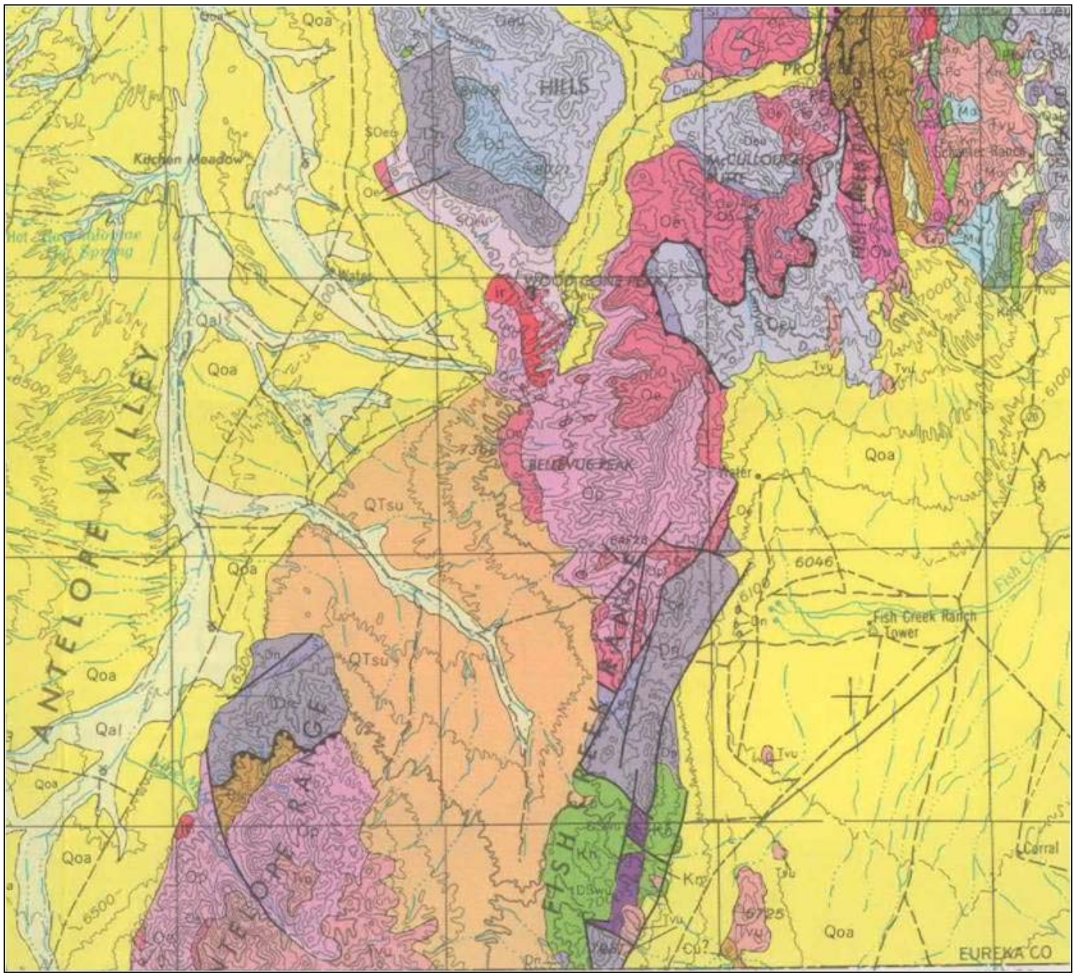
The southern part of the Fish Creek Range, consists primarily of Paleozoic sedimentary rocks of Ordovician to Mississippian Age of the eastern carbonate, western siliceous, and overlap assemblages. Tertiary volcanic rocks crop out along the eastern edge of the range and Tertiary to Quaternary sedimentary rocks and alluvium bound the range to the west and east in the Antelope and Little Smoky valleys, respectively. North to northeast-trending faults dominate in the region, particularly along the eastern range front (Roberts et al., 1967).

The Gibellini property lies within the Fish Creek Mining District. The limestone hosted Gibellini Manganese-Nickel mine and the Gibellini and Louie Hill black-shale hosted vanadium deposits are the most significant deposits in the district and all occur within the Gibellini property boundary. The Bisoni-McKay black-shale hosted vanadium deposit occurs several miles south of the Gibellini property. A fluorite–beryl prospect and silver–lead–zinc vein mines with minor production are also reported to occur in the district (Roberts et al., 1967).

7.2 Project Geology

The Gibellini deposit occurs within an allocthonous fault wedge of organic-rich siliceous mudstone, siltstone, and chert, which forms a northwest trending prominent ridge. These rocks are mapped as the Gibellini facies of the Woodruff Formation of Devonian Age (Desborough et al., 1984). These rocks are described by Noranda as thin-bedded shales, very fissile and highly folded, distorted and fractured (Condon, 1975). In general, the beds strike north-northwest and dip from 15 to 50° to the west. Outcrops of the shale are scarce except for along road cuts and trenches. The black shale unit which hosts the vanadium resource is from 175 ft to over 300 ft thick and overlies gray mudstone. The shale has been oxidized to various hues of yellow and orange up to a depth of 100 ft

Figure 7-1: Regional Geology Map



Qal	Qoa	QTsu	Tvu	Kn
Alluvium	Older Alluvium	Sedimentary deposits, undivided	Volcanic Rock, undivided	Newark Canyon Formation

Dn	DSwu	Oe	Op
Nevada Formation	Sedimentary rocks, undivided	Eureka Quartzite	Pogonip Group

Note: Figure from Hanson et al., 2011, after Roberts et al., 1967.

The Woodruff Formation is interpreted to have been deposited as eugeosynclinal rocks (western assemblage) in western Nevada that have been thrust eastward over miogeosynclinal rocks (eastern assemblage) during the Antler Orogeny in late Devonian time.

The Gibellini facies is structurally underlain by the Bisoni facies of the Woodruff Formation. The Bisoni unit consists of dolomitic or argillaceous siltstone, siliceous mudstone, chert, and lesser limestone and sandstone (Desborough and others, 1984).

Structurally underlying the Woodruff Formation are the coarse clastic rocks of the Antelope Range Formation. These rocks are interpreted to have been deposited during the Antler Orogeny and are attributed to the overlap assemblage.

The Louie Hill deposit is located in the same formation and lithologic units as the Gibellini deposit. The general geology in this area is thought to be similar to the Gibellini deposit area.

The ridge on which the Gibellini Manganese-Nickel mine (Niganz mine) lies is underlain by yellowish-gray, fine-grained limestone. This limestone is well bedded with beds averaging 2 ft thick. A fossiliferous horizon containing abundant Bryozoa crops out on the ridge about 100 ft higher than the mine. The lithologic and faunal evidence suggest that this unit is part of the Upper Devonian Nevada Limestone. Beds strike at N18E to N32W and dip at 18 degrees to 22 degrees west. The manganese–nickel mineralization occurs within this unit. Alluvium up to 10 ft thick overlies part of the area, and is composed mostly of limy detritus from the high ridge north of the mine. Minor faulting has taken place in the limestone near the mine. A contact between the mineralization and overlying limestone strikes northeast and dips at 25º northwest. This may be either a normal sedimentary contact or a fault contact (interpreted to be thrust fault but evidence is inconclusive).

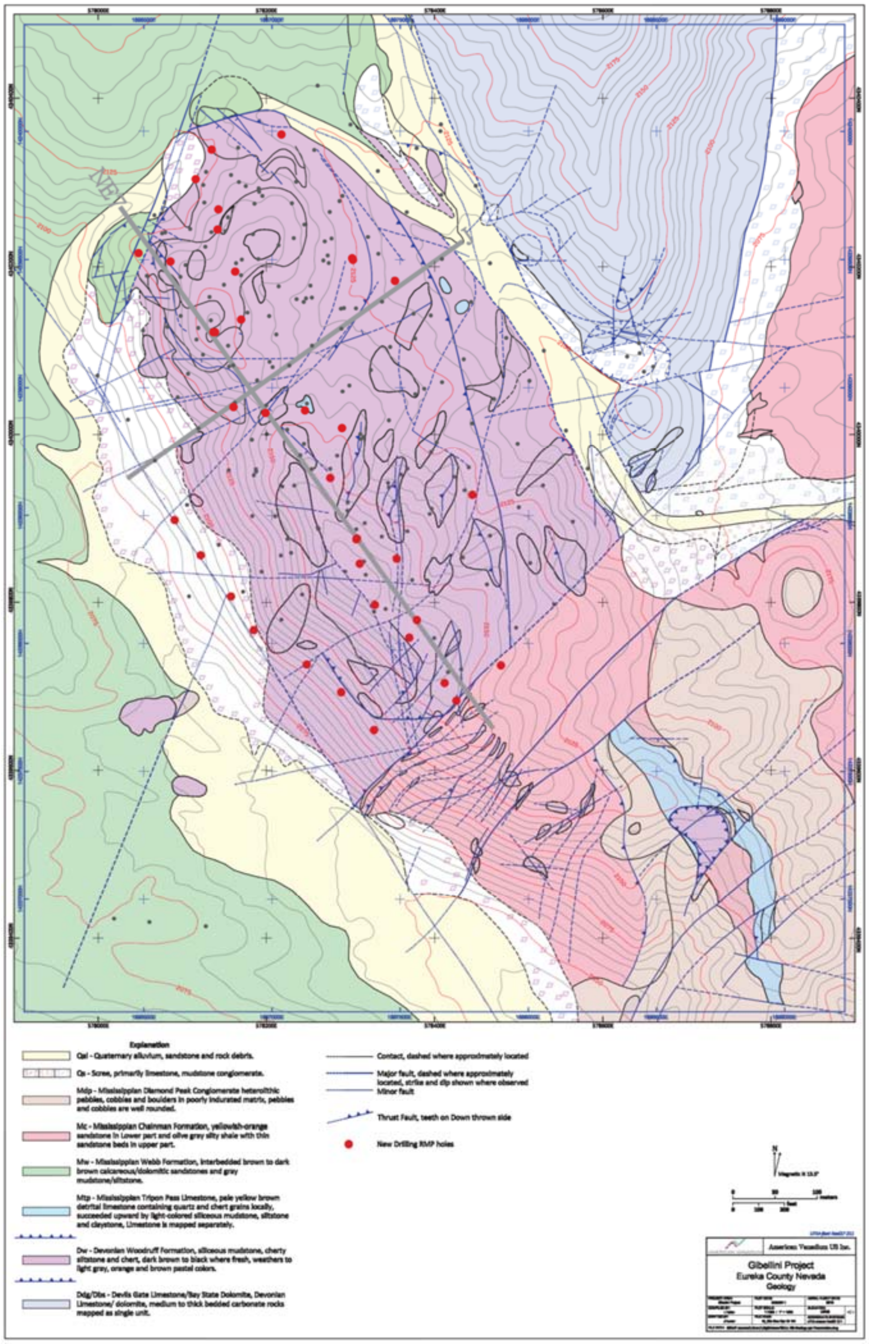
7.3 Deposit Descriptions

7.3.1 Gibellini Deposit

The Gibellini deposit occurs within organic-rich siliceous mudstone, siltstone, and chert of the Gibellini facies of the Devonian Age Woodruff Formation (Figure 7-2).

In general, the beds strike north-northwest and dip from 15º to 50º to the west. The black shale unit which hosts the vanadium Mineral Resource is from 175 ft to over 300 ft thick and overlies gray mudstone of the Bisoni facies. The shale has been oxidized to various hues of yellow and orange up to a depth of 100 ft.

Figure 7-2: Gibellini Deposit Geology Map



Note: Figure from Hanson et al., 2011. New drilling as indicated on the plan refers to drilling completed in 2010 (see Section 10).

Descriptions of the lithological units mapped at the Gibellini deposit are as follows:

- Qal – Quaternary alluvium, sandstone and rock debris,
- Qs – Scree, primarily limestone, mudstone and conglomerate,
- Mdp – Mississippian Diamond Peak Conglomerate heterolithic pebbles, cobbles and boulders in poorly-indurated matrix, pebbles and cobbles are well rounded,
- Mc – Mississippian Chainman Formation, yellowish-orange sandstone in lower part and olive gray silty shale with thin sandstone beds in upper part,
- Mw – Mississippian Webb Formation, interbedded brown to dark brown calcareous/dolomitic sandstones and gray mudstone/siltstone,
- Mtp – Mississippian Tripon Pass Limestone, pale yellow–brown detrital limestone containing quartz and chert grains locally succeeded upward by light-colored siliceous mudstone, siltstone and claystone,
- Dw – Devonian Woodruff Formation, siliceous mudstone, cherty siltstone and chert, dark brown to black where fresh, weathers to light gray, orange and brown pastel colors, and
- Ddg/Dba - Devonian Devils Gate Limestone/Bay State Dolomite, medium- to thick-bedded carbonate rocks. Forms resistant ledges up to 10 ft thick. Locally dolomitic where altered.

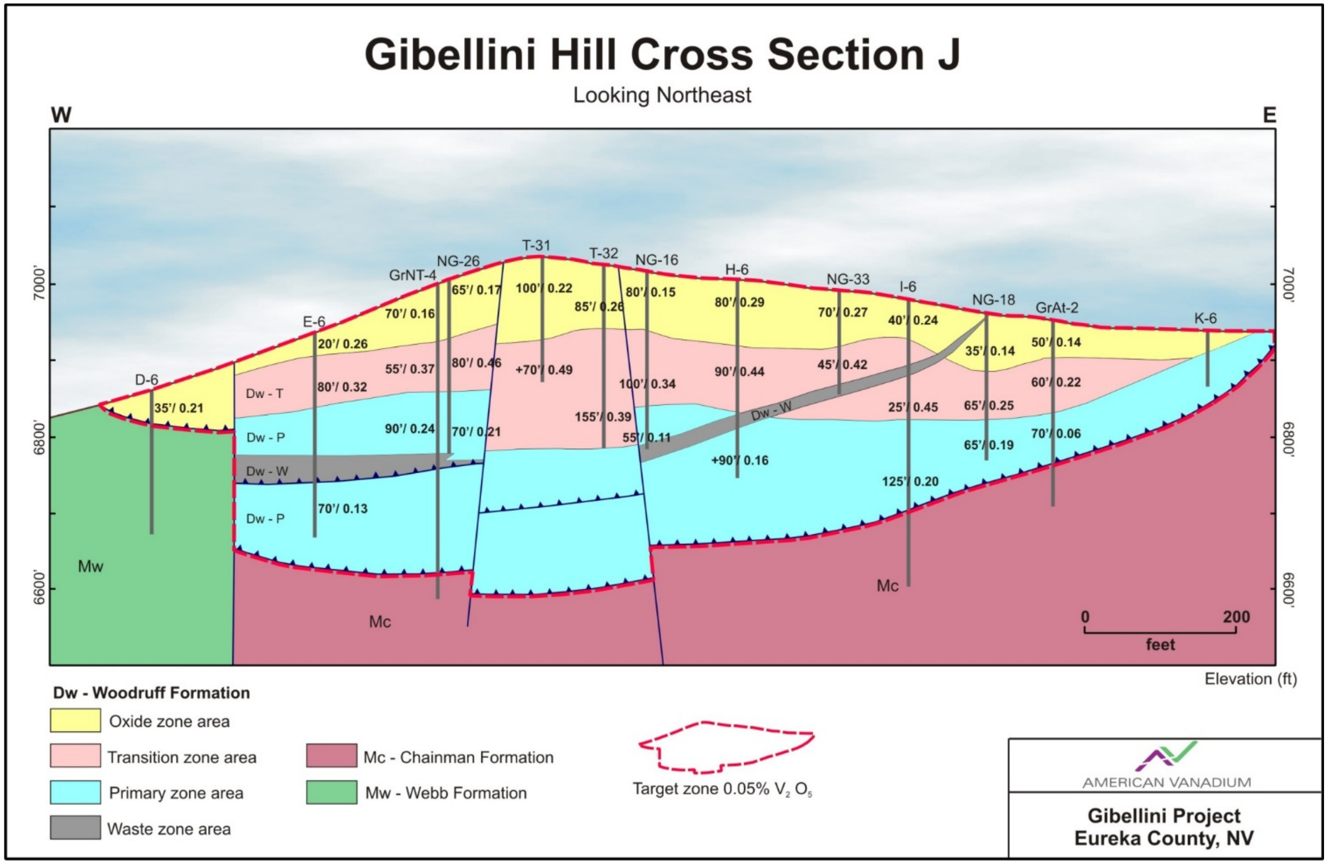
Figure 7-3 and Figure 7-4 are cross and long sections through the Gibellini deposit showing typical V_20_5 grades, alteration (oxidation), and lithologic units.

Alteration (oxidation) of the rocks is classified as one of three oxide codes: oxidized, transitional, and reduced. Vanadium grade changes across these boundaries. The transitional zone reports the highest average grades and RMP geologists interpreted this zone to have been upgraded by supergene processes.

7.3.2 Louie Hill

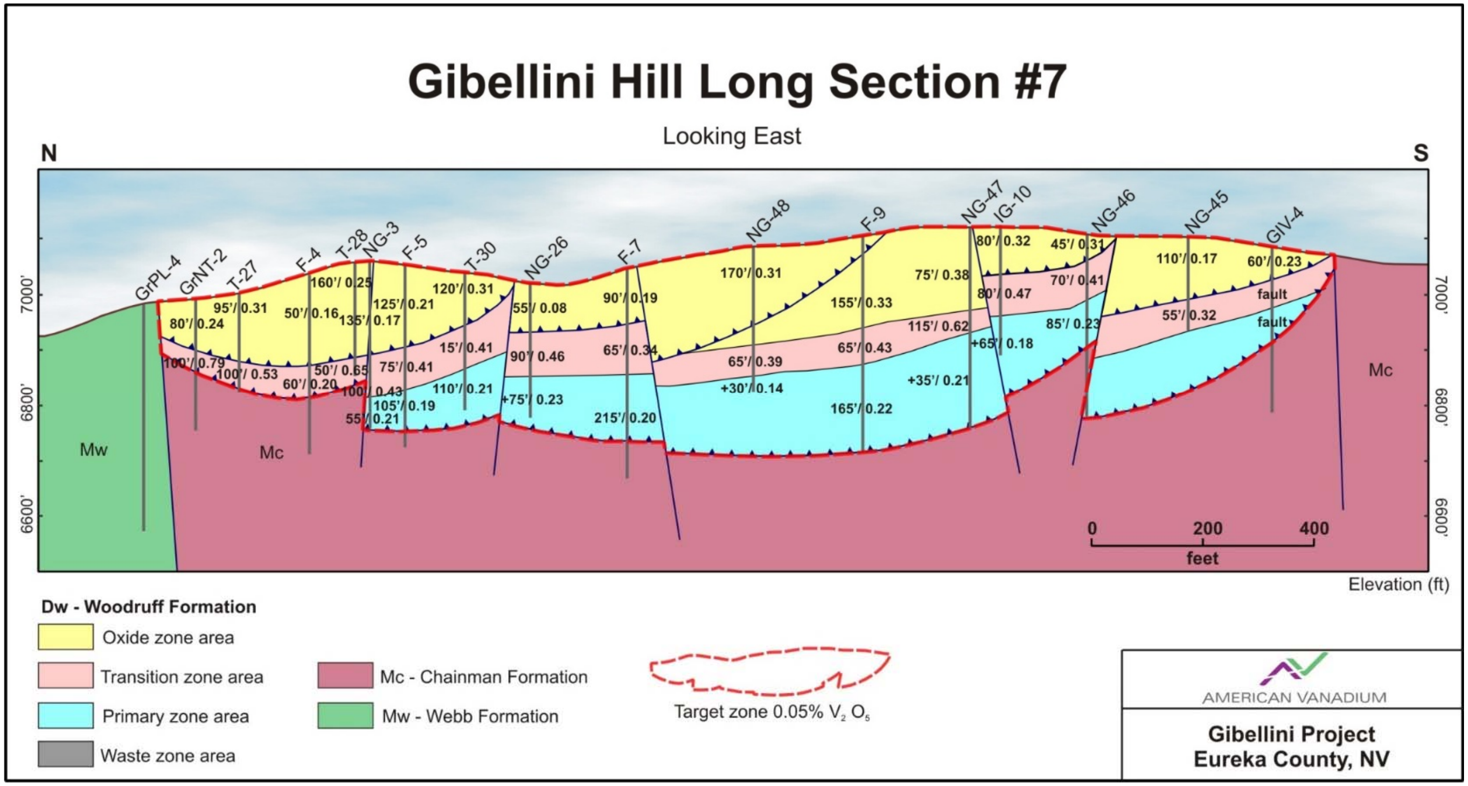
The Louie Hill deposit lies approximately 500 m south of the Gibellini deposit, being separated from the latter by a prominent drainage. Mineralization at Louie Hill is hosted by organic-rich siliceous mudstone, siltstone, and chert of the Gibellini facies of the Devonian Woodruff Formation and probably represents a dissected piece of the same allochthonous fault wedge containing the Gibellini deposit.

Figure 7-3: Cross Section Across Gibellini, Looking Northwest. Red Outline Shows the 0.050% V_2O_5 Grade Shell Outline with Drill Hole Trace



Note: Figure from Hanson et al., 2011

Figure 7-4: Long Section Across Gibellini, Looking Northeast. Red Outline Showing 0.050% V_2O_5 Grade Shell with Drill Hole Trace. East Grid Lines are Spaced 500 Ft Apart



Note: Figure from Hanson et al., 2011

Mineralized beds cropping out on Louie Hill are often contorted and shattered but in general strike in a north–south direction, and dip to the west 0 to 40º.

Rocks underlying the Louie Hill Deposit consist of mudstone, siltstone and fine-grained sandstone probably of Mississippian age (Webb and/or Chainman Formations).

Oxidation of the mineralized rocks has produced light-colored material with local red and yellow bands of concentrated vanadium minerals.

A geological section through the Louie Hill deposit is included as Figure 7-5.

7.4 Mineralization and Alteration

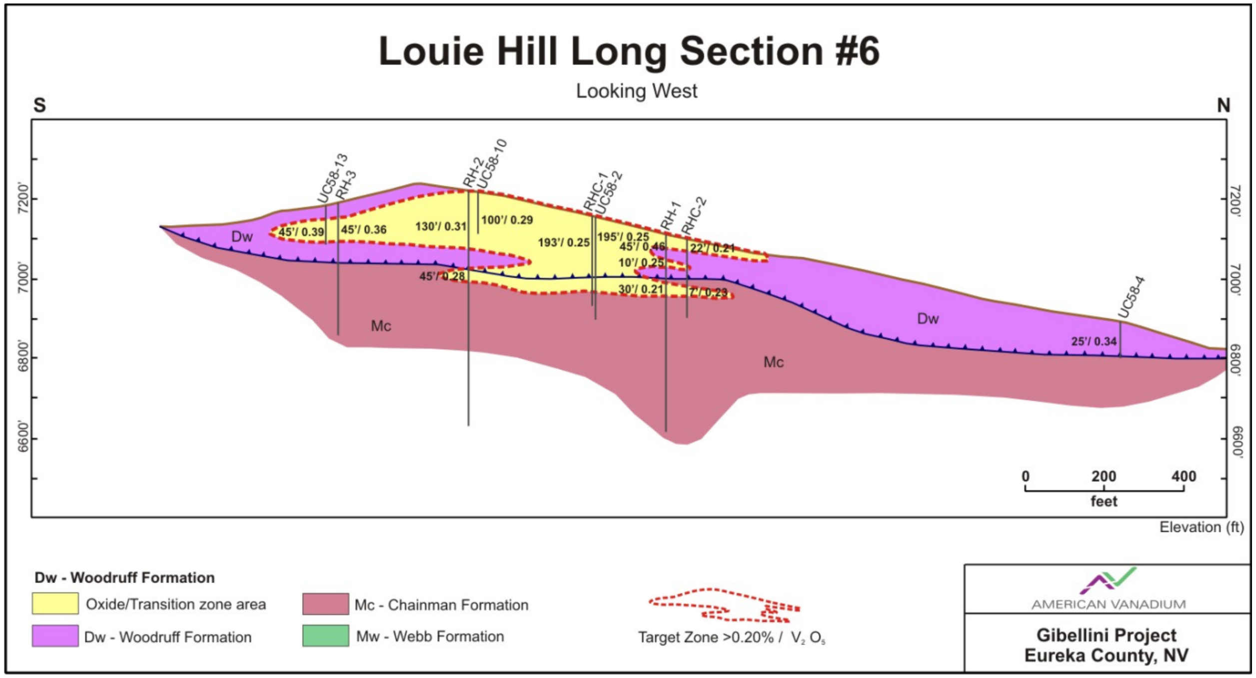
Vanadium mineralization at Gibellini and Louie Hill is hosted in black shale sedimentary rocks. Mineralization is tabular, conformable with bedding, and remarkably continuous in grade and thickness between drill holes.

Alteration of the rocks is limited to oxidation and is classified as one of the three oxide codes: 1 = oxidized, 2 = transitional, and 3 = reduced. Vanadium grades change across these boundaries. The transitional zone reports the highest average grades, the oxide zone reports the next highest average grades, and the reduced zone reports the lowest average grades.

In the oxidized zone, complex vanadium oxides occur in fractures in the sedimentary rocks including metahewettite ($CaV_6O_{16}\cdot H_2O$), bokite ($KAl_3Fe_6V_{26}O_{76}\cdot 30H_2O$), schoderite ($Al_2PO_4VO_4\cdot 8H_2O$), and metaschoderite ($Al_2PO_4VO_4\cdot 6\text{-}8H_2O$). In the reduced sediments, vanadium occurs in organic material (kerogen) made up of fine grained, flaky, and stringy organism fragments less than 15 µm in size (Bohlke et al., 1981).

Other workers found vanadium mineralization to occur within manganese modules (psilomene family) in the shale (Assad and Laguiton, 1973). X-ray diffraction (XRD) mineral identification by SGS Lakefield Research in Ontario, Canada reported the occurrence of the vanadium mineral fernandinite ($CaV_8O_{20}\cdot H_2O$) (SGS, 2007). Other minerals reported to occur at Gibellini are marcasite, sphalerite, pyrite, and molybdenite (Desborough et al., 1984).

Figure 7-5: Long Section Across Louie Hill, Looking West. Red Outline Showing 0.20% V_2O_5 Grade Shell with Drill Hole Trace.



Note: Figure from Hanson et al., 2011

7.5 Comments on Section 7

In the opinion of the QP:

- Knowledge of the deposit settings, lithologies, and structural and alteration controls on mineralization is sufficient to support Mineral Resource and Mineral Reserve estimation
- The mineralization style and setting of the Project deposit is sufficiently well understood to support Mineral Resource and Mineral Reserve estimation.

8.0 DEPOSIT TYPES

Similarities with the style of mineralization for the Project exist in the USGS manganese nodule model, model 33a of Cox and Singer (1986).

The vanadium mineralization of the Gibellini and Louie Hill areas is hosted in black shale sedimentary rocks. Mineralization is tabular, conformable with bedding, and remarkably continuous in grade and thickness between drill holes.

Limited mineralogical work conducted in the early 1970s suggests that the vanadium occurs within manganese nodules in the shale (Assad and Laquitton, 1973). Desborough et al. (1984) reported that vanadium occurs principally in association with organic matter and that metahewettite is the main vanadium mineral in the oxidized zone. Vanadium mineralization is thought to be the result of syngenetic and early diagenetic metal concentration in the marine shale rocks.

The mineralization at the Gibellini manganese–nickel mine forms a pipe-like structure hosted in limestone, is primarily enriched in manganese, zinc, and nickel, and may be hydrothermal or sedimentary in origin, or a combination of the two.

9.0 EXPLORATION

9.1 Grids and Surveys

In 1972, Noranda contracted Olympus Aerial Surveys (OAS) of Salt Lake City, Utah, to conduct an aerial photographic survey over the Gibellini Project and Bisoni-McKay deposit to provide a 1:1,200 scale (1"=100') base map for mapping and sampling activities. AMEC contacted OAS in an attempt to reclaim digital results from the original work and was informed that nothing remained from the original work. The 25 ft contour lines from the Noranda base map were digitized by AMEC to provide the topographic control for the Gibellini resource estimate in 2008.

During 2007–2008, topographic contours for Gibellini were digitized by AMEC on 25 ft contour intervals, using a locally-established mine grid coordinate system (Wakefield and Orbock, 2007). The topography encompassed the immediate mineralized area. The mine coordinate system has been converted to UTM NAD27. Grid coordinate conversion was conducted by RMP using a visual best-fit method by lining up contours and drill holes from one topographic map with the other.

In 2011, aerial photos and graphics were generated by Photosat of Vancouver, Canada. Satellite data were collected as 50 cm stereo satellite photos with a photo pixel size set at 50 cm. Topographic contours were produced at intervals of 1 m, 5 m, 10 m and 50 m. The topographic photos were delivered to American Vanadium in ASCII XYZ and 3D DWG file formats in both meters and US survey feet. Figure 9-1 shows an example of the contoured files.

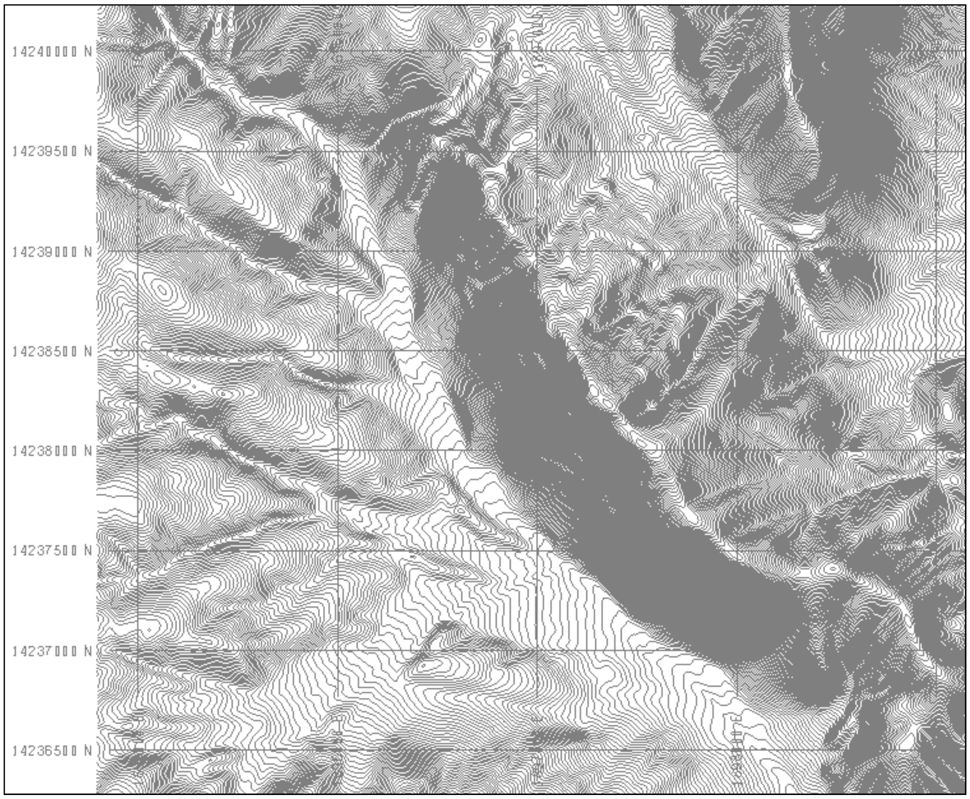
The PhotoSat-produced topography has an overall relative horizontal accuracy of ±6.6 ft (±2 m) over 6.2 miles (10 km). The vertical accuracy is approximately ±1 ft (±30 cm).

The topography is used in support of the conceptual pit shell used to constrain the Mineral Resource estimates in Section 14.

9.2 Geological Mapping

In 2006, RMP geologists mapped the Gibellini Project area at a scale of 1" = 200 m (656 ft). Results from this mapping effort are shown earlier in Figure 7-2.

Figure 9-1: Gibellini 2010 Surface Topography



Note: Figure from Hanson et al., 2011

9.3 Geochemical Sampling

RMP geologists collected 20 rock-chip samples from surface outcrops of strong mineralization around the historic Gibellini manganese–nickel mine, returning consistently elevated values of Mn, Zn, Ni, V, Mo, Co, and Cu. An additional 464 rock-chip samples from the Gibellini deposit and surrounding areas confirmed anomalous concentrations and thicknesses of vanadium mineralization.

9.4 Geophysics

During 2010–2011, American Vanadium completed a surface sampling program using a field portable XRF unit (Niton model XL3t) over the Project area. Approximately 1,800 determinations were made using the instrument; however, the majority of these readings are outside the current mineral claim areas.

9.5 Pits and Trenches

In August, 1989, Inter-Globe mapped and sampled nine bulldozed trenches and seven backhoed pits throughout the Gibellini area (Figure 9-2). The purpose of the program was to evaluate the near-surface oxide mineralization (JAA, 1989b). A total of 173 five foot horizontal and vertical channel samples were collected and assayed for V_2O_5. The exact locations of these trenches were not surveyed and so the trench results have not been incorporated into the current resource database. The length-weighted average V_2O_5 assays for the trenches are shown in Table 9-1.

Inter-Globe concluded from this work that:

- Vanadium mineralization occurs in bedrock up to the base of overburden
- The depth of overburden varies from 0.5 ft to 7.0 ft
- Most mineralized beds are gently folded and dip at shallow angles
- Trench V_2O_5 assays compare well on average with assays from the top of the RC holes in the vicinity of the trenches (0.43% V_2O_5 in trenches vs. 0.48% V_2O_5 in RC).

9.6 Geotechnical and Hydrological Studies

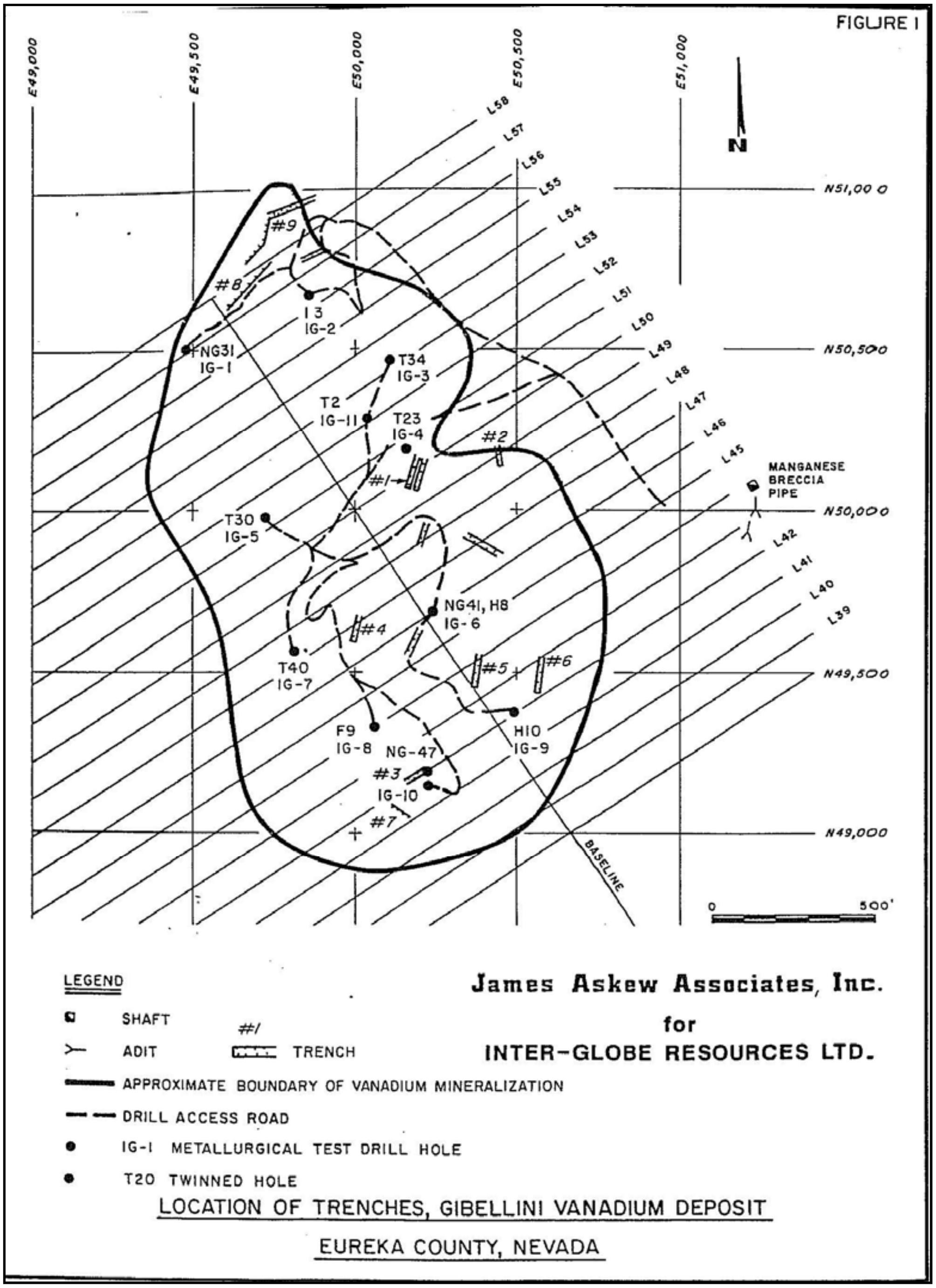
9.6.1 Geotechnical Studies

Site investigations have been undertaken to:

- Characterize and evaluate subsurface soil and groundwater conditions
- Evaluate potential borrow source materials and locations
- Provide preliminary foundation recommendations
- Identify seismic hazards.

The site investigation consisted of an extensive field program followed by laboratory test work and a seismic hazard analysis.

Figure 9-2: Inter-Globe Trench Mapping and Sampling Map



Note: Figure from Hanson et al., 2011

Table 9-1: Length-Weighted Average V_2O_5 Assays for Trenches Sampled by Inter-Globe

Trench	Length-weighted Assay V_2O_5 in %
BT-1	0.18
BT-2	0.35
BT-3	0.26
BT-4	0.34
BT-5	0.32
BT-6	0.14
BT-7	0.34
BT-8	0.56
BT-9	0.89

9.6.2 Hydrological Studies

Enviroscientists conducted a spring, seep, and riparian study to identify surface water resources within the Little Smoky Valley Basin (155A). No springs, seeps, or riparian areas were located within the current Project area or vicinity.

Specific data were collected from the Project area and vicinity. In addition, a water quality sample was collected from the Don Hull ranch well for comparison to the U.S. Environmental Protection Agency's Primary Drinking Water Standards.

9.7 Comments on Section 9

In the opinion of the QP, the exploration programs completed to date are appropriate to the style of the deposits.

10.0 DRILLING

10.1 Introduction

A total of 280 drill holes (about 51,265 ft) have been completed on the Gibellini Project since 1946, comprising 16 core holes (4,046 ft), 169 rotary drill holes (25,077 ft; note not all drill holes have footages recorded) and 95 RC holes (22,142 ft). Drilling is summarized by operator in Table 10-1. The Project drill collar location plan is included as Figure 10-1.

10.2 Legacy Drill Campaigns

A total of 35,789 ft of drilling in 173 drill holes was completed at Gibellini in four drilling campaigns by Terteling, Atlas, Noranda, and Inter-Globe. Of this, 120 holes totaling 25,077 ft (70%) were drilled using conventional rotary (rotary) methods and 53 holes totaling 10,712 ft (30%) were drilled using reverse circulation (RC) methods.

Terteling drilled holes in an uneven pattern in the central and northern parts of the vanadium resource area. Atlas drilled the main vanadium resource area in a rough 200 ft square grid pattern oriented parallel to the trend of the main ridge. Noranda re-drilled this same area with holes spaced 200 ft apart on sections oriented at 043° azimuth and spaced 200 ft apart. Inter-Globe drilled 11 metallurgical holes as twins of previous drill holes.

At Louie Hill, Union Carbide reportedly drilled a series of 60 holes in 1956. Noranda completed five RC holes (610 ft) in 1973.

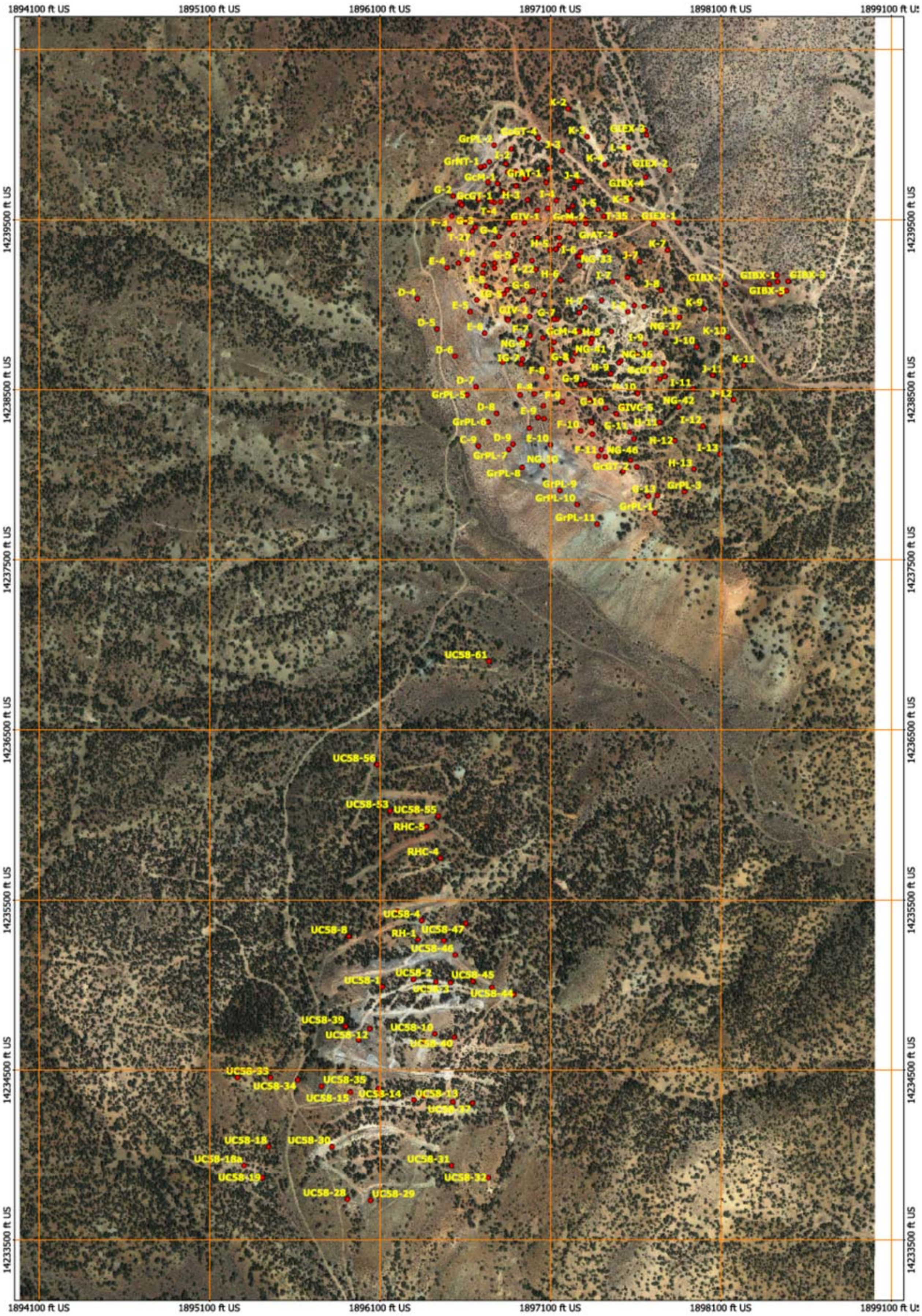
A total of 895.5 ft of drilling in four core drill holes was completed at the Gibellini manganese–nickel mine by the NBMG in 1946.

No cuttings, assay rejects, or pulps remain from these drilling campaigns.

Table 10-1: Drill Summary Table

Deposit	Campaign	Timeframe	Rotary Drill Holes	Rotary Drill Footage (ft)	RC Drill Holes	RC Drill Footage (ft)	Core Drill Holes	Core Drill Footage (ft)
Gibellini	Union Carbide	1956	49	unknown	—	—	—	—
	Terteling	1964–1965	33	5,695	—	—	—	—
	Atlas	1969	77	17,000	—	—	—	—
	Noranda	1972–1973	10	2,382	42	8,174	—	—
	Inter-Globe	1989	—	—	11	2,538	—	—
	American Vanadium	2007	—	—	4	1,500	5	1,650
	American Vanadium	2008	—	—	—	—	1	300
	American Vanadium	2010	—	—	19	4930	—	—
Louie Hill	Union Carbide	60	unknown	—	—	—	—	—
	Noranda	1973	—	—	5	610		
	American Vanadium	2007	—	—	3	1,430	—	—
	American Vanadium	2008	—	—	—	—	6	1,200
Gibellini Mn–Ni mine	Nevada Bureau of Geology and Mines	1946	—	—	—	—	4	895.5
	American Vanadium	2007–2008	—	—	7	1,660	—	—
Exploration	American Vanadium	2007–2008	—	—	4	1,300	—	—
Totals			*169*	*25,077*	*95*	*22,142*	*16*	*4,045.5*

Figure 10-1: Drill Hole Location Plan, Gibellini and Louie Hill



Gibellini and Louie Hills Drill Holes

Universal Transverse Mercator - Zone 11 (N) NAD 27
Scale: 1:6,000

Note: Figure from Hanson et al., 2011. Drill hole collar identifiers are labelled by company as follows: UC = Union Carbide, C, D, E, F, G, J, K, L = Atlas drill holes; IG = Inter-Globe drill holes; NG = Noranda drill holes; T = Terteling drill holes; Gc, Gr, GIB, GIV = RMP or American Vanadium drill holes.

10.3 American Vanadium/RMP Drill Campaigns

During 2007 and 2008, RMP completed a total of 9,040 ft of drilling in 30 drill holes on the Gibellini Project. Ten of these holes were drilled in the Gibellini area, seven were drilled in the historic Gibellini manganese–nickel mine area, nine were drilled in the Louie Hill prospect area, and four exploration holes were drilled elsewhere on the property.

American Vanadium completed a total of 19 RC drill holes in 2010. Four drill holes were designed to twin Atlas legacy drill holes at Gibellini, four drill holes were designed to twin Noranda legacy drill holes at Gibellini, and eleven drill holes were designed to test the limits of the ultimate pit limit from the 2008 PA study.

10.4 Drill Methods

10.4.1 Legacy Programs

Gibellini

Documentation of drilling methods employed by the various operators at Gibellini is sparse. Terteling and Atlas are reported to have used conventional rotary tools (Condon, 1975). NBMG graphic logs note the assay of core samples, but no documentation as to core tool diameter is mentioned.

Noranda (Condon, 1975) reports that the first 10 Noranda holes were drilled in 1972, using rotary methods with a vacuum type drill, a probable pre-cursor to the RC drill rig. In 1973, Noranda drilled 42 holes with a reverse circulation Con-Cor rotary rig. The holes were drilled dry with a 4 7/8” diameter long-tooth tricone bit. The Inter-Globe drilling is well documented and employed RC methods with a 5 1/4” diameter tri-cone bit injecting water to control dust. The drill contractor for the Inter-Globe program was Davis Bros. Drilling from Polson, Montana.

RC samples were collected on 5 ft intervals from all drill campaigns. Many of the Noranda drill holes had no cuttings recovery for the first 5 ft to 10 ft. The water table was noted in some drill logs as occurring at a depth of approximately 200 ft below surface. Cuttings and core recovery was not documented on drill logs other than noting when no sample was returned for a given interval. Several drill logs note the loss of a hole due to poor ground conditions.

Select drill core from the NBMG drill holes were sampled, typically on 1–5 ft intervals. No indication of core recovery was noted on the graphic logs.

Most RC holes were drilled to from 50 ft to 350 ft in total length. The average drill hole depth for legacy drill holes on the Project is 207 ft. The deepest legacy drill hole on the property was drilled to 395 ft.

Louie Hill

Union Carbide logs indicate that drilling was completed using rotary drilling methods. All holes are assumed to be vertical, though the inclination and azimuth are not expressly stated.

No information exists for the drill hole sampling conducted by Union Carbide. Drill logs state that drilling was conducted by rotary methods, and this would be consistent with tools available at the time the drilling was completed in the late 1950s. No information on tool size, sample splitting, or sample recovery is available for this drilling campaign.

10.4.2 RMP/American Vanadium Programs

RC drilling was conducted by Drift Exploration of Elko, Nevada and supervised by Lonny Hafen of RMP. Drilling was performed dry, with water added to suppress dust. Ground water was encountered in several drill holes, but this was reportedly a rare occurrence.

Diamond drilling during 2007–2008 was conducted by Morning Star of Three Forks, Montana, using HQ diameter (2.5 in/6.36 cm) tools. For the 2010 drill programs, O'Keefe Drilling completed all of the RC drill holes using a 5.75" diameter bit. Morning Star Drilling completed the core drilling at HQ diameter.

10.5 Geological Logging

10.5.1 Legacy Programs

Gibellini

Drill holes from the Terteling, Atlas, Noranda, and Inter-Globe drill campaigns were consistently logged for lithology and rock color. Inter-Globe holes were also logged for alteration mineralogy, stain color, and oxide zone (oxidized, transition, un-oxidized). Logs appear consistent within drill campaigns; however, differences do occur between campaigns. For instance, Atlas logged 90% of the cuttings from their drilling as shale where Noranda, drilling in essentially the same area, logged 54% of the cuttings as siltstone and 36% as shale. For this reason, correlation of log units is difficult on cross sections displaying both Atlas and Noranda drill holes.

Lithological units for the NBMG drill holes were transcribed from graphic logs.

AMEC transcribed lithological logs into codes for entry in the digital resource database using the convention detailed in Table 10-2. Rock color, alteration mineralogy, stain color, and oxide zone were also transcribed into codes and loaded into the resource database.

The quality of the geological logging of drill holes at Gibellini is variable by campaign. The logs for the Terteling and Atlas campaigns consist of lithology and rock color codes only. Noranda and Inter-Globe logs also contain detailed descriptions of alteration, mineralogy, and redox (oxide–transition–reduced) contacts.

Louie Hill

Drill logs, including assays, and a drill hole location map showing the Union Carbide drill holes completed in the late 1950s were recovered by American Vanadium from the son of the former president of Atlas, who had explored the area in the 1960s.

10.5.2 RMP/American Vanadium Programs

Formation, lithology, alteration, color, structure, and oxidation were logged in Excel spreadsheets for each drill hole of the RMP programs. Lithological logging codes used during the RMP program were included in Table 10-2.

Logging forms also contain the drill hole name, the collar coordinates, the total depth, drill type, hole diameter, and the date drilled. Core recovery and rock mechanics information (fracture density, presence of breccia or shattered zones) were recorded for all core drill holes.

Domaining of the Gibellini deposit is based upon the redox boundaries. Lithology and rock color do not appear to control grade and/or they do not form consistent, mappable, units.

RMP geologists interpreted the position of redox boundaries based upon the lithology, rock color, alteration, mineralogy, and redox contact codes recorded in logs. Amec Foster Wheeler considers the domains derived from this interpretation to be adequate and reasonable for the purposes of Mineral Resource estimation.

Table 10-2: Lithology Code Convention for Gibellini Drill Holes.

Code	Explanation
1	claystone, mudstone
2	shale
3	silty shale
4	siltstone
5	sandy siltstone
6	silty sandstone
7	sandstone
8	alluvial fill

10.6 Collar Surveys

10.6.1 Legacy Programs

Gibellini

Collar locations (easting and northing) for the NBGM, Terteling, and Atlas drill campaigns were digitized from a 1:1,200 scale (1” = 100’) Noranda base map showing the previous operators drill hole locations in relation to the Noranda drill holes. Drill hole collar locations are recorded in local units established by Noranda where the grid point 50,000E, 50,000N is located at the section corner of Sections 34 and 35, T16N, R52E MDBM and Sections 2 and 3, T15N, R52E MDBM. Noranda collar locations (easting, northing and elevation) were taken directly from the drill logs. These locations were compared with the digitized locations from the Noranda base map to confirm the accuracy of the map locations.

Because drill hole locations were either digitized from a Noranda drill hole location map or taken directly from the drill logs, there is some uncertainty as to the exact location of the drill holes. No records of the original surveys or survey method remain.

AMEC considered the locations to be accurate to ±10 ft. AMEC was able to locate the mine grid in the field and verify the location of several Inter-Globe drill holes using a Global Positioning System (GPS) instrument, but was unable to locate the exact location of Terteling, Atlas, and Noranda drill holes. Drill sites exist in locations as indicated on maps, but monuments or drill casing at these sites were not evident, likely because they were drilled over 30 years ago.

Louie Hill

Collar locations for Union Carbide drill holes were collected by American Vanadium drill holes using a hand-held GPS. Collar coordinates on the drill logs are recorded in local grid coordinates; however, American Vanadium geologists surveyed the drill holes in UTM metres using the NAD83 datum.

10.6.2 RMP/American Vanadium Programs

Collar coordinates for the 2007 and 2010 drill holes were obtained in UTM coordinates by RMP personnel using a hand-held GPS unit.

Local grid coordinates for historic drill holes were converted to UTM by RMP by overlaying UTM topography over a local grid topographic map containing the historic drill holes, and digitizing the drill hole coordinates in UTM units using GIS software.

10.7 Down Hole Surveys

10.7.1 Legacy Programs

Gibellini

All Gibellini rotary and RC drill holes were drilled in a vertical orientation. The orientation of Noranda and Inter-Globe drill holes were documented. The orientation of the Terteling and Atlas drill holes were not documented but are assumed to be vertical due to the low dip angle of mineralization. This assumption is supported by the continuity of lithologies and mineralization types between Atlas and other holes, and by results of twin-hole drilling by Inter-Globe. The NBMG core holes were inclined to best intersect known zones of mineralization intersected in the underground workings.

All drill holes making up the Gibellini Project resource database are relatively short (98% of holes are less than 350 ft in length) and vertical, and so Amec Foster Wheeler does not consider the lack of down-hole surveys to be a significant concern. In Amec Foster Wheeler's experience, vertical drill holes of 300 ft or less in length are not likely to deviate significantly, in this case, more than 25 ft or the block size being used in the resource model.

Louie Hill

Union Carbide logs from Louie Hill indicate that drilling was completed using rotary drilling methods. All holes are assumed to be vertical, though the inclination and azimuth are not expressly stated. Because most Union Carbide drilling is relatively shallow (total depths are generally between 100–200 ft), the risk of mineralized intercepts being significantly misplaced because of the lack of down-hole surveys is considered by Amec Foster Wheeler to be small.

10.7.2 RMP/American Vanadium Programs

All drill holes were drilled in a vertical orientation. None of the holes were surveyed down-hole.

10.8 Recovery

There is no information available on the legacy drilling recoveries.

While ALS Chemex typically reports the weight of samples received at their sample preparation facilities, the sample weights of the Gibellini Project RC samples were not included in the assay certificates provided to RMP.

Core recovery was logged for the five diamond drill holes completed in the Gibellini area. The average recovery from 92 ft to 102 ft was logged as 71%.

Generally, core recovery in the oxidized and unoxidized oxidation types was good to fair, where core recovery in the transition oxidation type was generally very good. In Amec Foster Wheeler's opinion, core recovery is generally adequate, averaging 91.6%. The fine-grained and diffuse nature of mineralization would favor there being no grade bias caused by poor recovery.

10.9 Sample Length/True Thickness

The RC drill holes completed by RMP in the Gibellini area were designed to confirm the geology, and thickness and grade of vanadium mineralization encountered in historical drilling along the length of the Gibellini deposit.

The geology and thickness of vanadium mineralization in all three drill holes closely matches that expected from previous drilling. Vanadium grades are lower in some cases, and higher in other cases.

During the drilling at Louie Hill in 2007, significant thicknesses of vanadium mineralization were encountered in all three drill holes, comparable in thickness and grade to the oxide zone at Gibellini. Higher grade vanadium mineralization, like that of the transition zone at Gibellini, was not encountered at Louie Hill, except for at the surface in the northernmost drill hole.

Mineralized zones at Gibellini and Louie Hill are irregular in shape but generally conform to the stratigraphy of the host shales, modified somewhat by post-mineral oxidation and supergene enrichment. The stratigraphy dips at low angles to the west and so vertical intersections of mineralization are roughly approximate to the true mineralized thickness.

Mineralization at Gibellini is roughly stratabound, strikes northwest–southeast and dips at low angles to the west. The mineralization is parallel to the orientation of the main ridge in the vanadium Mineral Resource area.

Mineralization at Louie Hill is also stratabound, strikes north-south, and dips at very low angles to the west.

Table 10-3 presents an example of the types of drill intercepts that have been returned for the Project deposit areas in the legacy drill programs. Table 10-4 shows example intercepts from the American Vanadium and RMP drill programs.

Drill hole orientations are indicated on the cross-sections included in Section 7 of this Report.

10.10 Geotechnical and Hydrological Drilling

10.10.1 Project Site Investigations

Site-wide geotechnical drilling was performed with a number of objectives, including:

- Characterize and evaluate the subsurface soil and groundwater conditions
- Evaluate potential borrow source materials and locations
- Provide preliminary foundation recommendations
- Identify seismic hazards.

To characterize and evaluate the existing soil and groundwater conditions at the site, multiple test pits were excavated and seven exploratory borings were completed to depths of 45.5 to 101 ft below existing grade. In general, soils encountered typically consist of poorly graded silty and clayey gravels with sand, clayey sands and silty sands with gravels and some cobbles and boulders to the depth explored. Surface soils containing abundant root and rootlets were encountered in all borings and test pits with an average thickness of approximately 1 ft. Groundwater was not encountered to the maximum depth penetrated of 101 ft during the site investigation.

Table 10-3: Example Drill Intercepts, Legacy Programs

Deposit	Hole ID	From (ft)	To (ft)	Intercept (true width ft)	Average Grade (% V_2O_5)
Gibellini	C-9	5	25	20	0.24
	D-7	5	25	20	0.29
	D-8	130	160	30	0.20
	D-8	185	195	10	0.24
	D-8	5	105	100	0.41
	E-10	200	205	5	0.11
	E-10	245	260	15	0.25
	E-10	0	190	190	0.29
	F-3	10	40	30	0.39
	G-9	215	280	65	0.23
	G-9	5	160	155	0.33
	H-10	165	170	5	0.18
	H-10	200	285	85	0.26
	H-10	0	110	110	0.28
	I-6	95	155	60	0.28
	I-6	0	75	75	0.31
	IG-1	0	120	120	0.60
	IG-10	0	225	225	0.32
	IG-11	0	90	90	0.25
	J-10	65	85	20	0.16
	J-10	0	50	50	0.22
	K-5	0	40	40	0.23
	NG-10	215	245	30	0.17
	NG-10	100	120	20	0.18
	NG-10	125	200	75	0.26
	NG-10	0	80	80	0.30
	NG-13	180	184	4	0.15
	NG-13	165	175	10	0.17
	NG-13	10	155	145	0.38
	NG-14	320	350	30	0.23
	NG-14	10	300	290	0.25
	NG-45	5	45	40	0.29
	NG-45	105	165	60	0.31
	T-12	95	100	5	0.14
	T-12	105	130	25	0.17
	T-12	8	60	52	0.26
	T-12	65	90	25	0.29

Deposit	Hole ID	From (ft)	To (ft)	Intercept (true width ft)	Average Grade (% V_2O_5)
	T-2	5	180	175	0.43
	T-20	5	155	150	0.49
	T-21	0	10	10	0.32
	T-21	25	155	130	0.42
	T-22	65	110	45	0.26
	T-22	5	50	45	0.44
	T-26	5	140	135	0.34
	T-40	5	150	145	0.33
	T-41	0	150	150	0.47
Louie Hill					

Legacy Drill Hole Prefix Key: C, D, E, F, G, J, K, L = Atlas drill holes; IG = Inter-Globe drill holes; NG = Noranda drill holes; T = Terteling drill holes

Table 10-4: Example Drill Intercepts, RMP and American Vanadium Programs

Deposit	Hole ID	Intercept (ft from–to)	True Width (ft)	Average Grade (% V_2O_5)
Gibellini	GIVC-5	7–83	76	0.32
		98–143	45	0.22
		148–173	25	0.24
		188–212	24	0.25
Louie Hill	RHC-1	7–43	36	0.24
		53–200	147	0.26
	RHC-2	7–106	99	0.19
	RHC-3	10–37	27	0.54
	RHC-4	13–53	40	0.15
	RHC-5	7–56	49	0.16
	RHC-6	7–78	71	0.25
		78–144	66	0.78

AMEC completed a borrow source investigation to identify material that could be suitable for use in construction and operation. The borrow source investigation focused on identifying three primary material types:

1. A durable non-acid buffering overliner material
2. A durable material source for use in manufacturing rip-rap, roadway bedding and surfacing, and drain rock
3. A low permeability underliner material.

Results of the permeability testing indicate that the materials from a rhyolite borrow source could be suitable for use as overliner material provided the material is crushed and or screened to provide the required gradation. The rhyolite borrow source could also be used for manufacturing rip-rap, roadway bedding and surfacing, and drain rock.

10.10.2 Seismic Hazard Analysis

A seismic hazard analysis for the Gibellini Project site was completed y. This included the development of design ground motions associated with the maximum credible earthquake (MCE) and the operating basis earthquake (OBE). The ground motions for the MCE were estimated using a deterministic approach and the ground motions for the OBE were estimated using a probabilistic approach.

10.10.3 Gibellini Deposit Investigations

Five vertical and four oriented drill holes (1,011 ft) were completed using using wireline triple tube diamond drill core (HQ core size). Rock mass ratings indicate that the majority of rock units encountered (siltstone, mudstone, chert) were of poor rock quality and can be classified as either extremely weak rock or stiff soil. Dolomite and limestone were encountered and are estimated to be of fair rock quality, although limited information is available for these units from the geotechnical drilling.

Exploration drilling did not indicate any instances of shallow or perched groundwater.

10.11 Metallurgical Drilling

A program of metallurgical drilling was performed in 2010. Details of the metallurgical testwork performed are provided in Section 13.

10.12 Potential Infrastructure Site Drilling

RMP drilled six RC drill holes with a total footage of 1,400 ft in an area that had potential to host a heap leach pad, which was located about 1.5 miles east of the Gibellini deposit. Three, 200 ft, holes were drilled along the north edge of the area, a 600 ft drill hole was sited in the center of the area and two, 200 ft long drill holes were sited at each of the respective south corners of the general area.

Geology consisted of Quaternary alluvium of interbedded coarse conglomerate, medium to coarse sandstone and claystone. The water table was not encountered in the drilling. No anomalous vanadium assays were encountered.

10.13 Comments on Section 10

In the opinion of the QP, the quantity and quality of the lithological, geotechnical, collar and downhole survey data collected in the exploration and infill drill programs completed by RMP and American Vanadium, and the verification performed by American Vanadium on legacy drill data are sufficient to support Mineral Resource estimation as follows:

- RC chip and core logging meets industry standards for exploration of an oxide vanadium deposit
- Collar surveys and re-surveys of legacy drill hole collar locations have been performed using industry-standard instrumentation
- No down hole surveys were performed. Amec Foster Wheeler does not consider the lack of down-hole surveys to be a significant concern. In Amec Foster Wheeler's experience, vertical drill holes of 300 ft or less in length are not likely to deviate significantly, in this case, more than 25 ft or the block size being used in the resource model.
- Recovery data from RMP and American Vanadium RC and core drill programs are acceptable
- Geotechnical logging of drill core meets industry standards for planned open pit operations
- Drill hole orientations are generally appropriate for the mineralization style, and have been drilled at orientations that are optimal for the orientation of mineralization for the bulk of the deposit area
- Drill hole orientations are shown in the example cross-sections included in Section 7, and can be seen to appropriately test the mineralization
- Drill hole intercepts as summarized in Table 10-3 appropriately reflect the nature of the vanadium mineralization encountered in both the legacy and the RMP/American Vanadium drill programs. The table demonstrates that sampling is representative of the vanadium oxide grades in the deposits, reflecting areas of higher and lower grades
- No material factors were identified with the data collection from the drill programs that could affect Mineral Resource estimation.

11.0 SAMPLE PREPARATION, ANALYSES, AND SECURITY

11.1 Legacy Reverse Circulation Sampling

Noranda collected samples continuously over 5 ft intervals in a cyclone collector (Condon, 1975). Dust loss was reported to be minimal. Samples were split with a Gilson splitter and the rejects were stored for possible metallurgical testing. Color, texture, and other diagnostic features were logged. The average weight of 1,138 samples reported by the assay laboratory for Noranda samples was 59 pounds.

Inter-Globe collected one to five pounds of material for assay on 5 ft intervals. Dust lost was minimized by the use of water in drilling. All cuttings were directed from the cyclone into one to three, five-gallon buckets, from which samples for assay and samples for metallurgical tests were collected. Samples were split using a Jones riffle splitter. Metallurgical samples were also collected for each interval. The cyclone and splitter were cleaned manually and with compressed air between intervals.

AMEC evaluated rotary and RC drill holes for evidence of down-hole contamination in the form of asymmetric grade decay down-hole or spikes in grade at cyclical intervals. Analyses revealed evidence of possible down-hole contamination in one Atlas drill hole and one Noranda drill hole below intercepts of greater than 1.0% V_2O_5, but AMEC concluded that the width and grade of the possible contamination was not significant enough to warrant adjusting grades assigned to the intervals.

Comparison of RC drill holes with nearby rotary drill holes (less than 20 ft collar separation) found that there was no evidence of significant down-hole contamination in the rotary holes.

11.2 RMP Reverse Circulation Sampling

Cuttings for each interval were collected in five-gallon buckets and split manually, using a riffle splitter. A split (½ of the material from the interval) of the material was bagged for assaying and the remaining material was bagged for archive purposes. Where ground water was encountered, a wet splitter was placed below the cyclone.

A small portion of the cuttings for each interval was retained in a plastic container (RC chip tray) for logging purposes. RC samples were collected in 5 ft intervals.

Sample bags were labeled with sequential sample numbers. Sample bags were transported each day by RMP or drill personnel to the RMP office in Eureka and stored in a secure layout area until ready for dispatch to the assay laboratory. Trucks from ALS Chemex, either from the Winnemucca or Elko sample preparation facilities, picked up samples at the RMP Eureka office.

11.3 RMP Core Sampling

Drill core was transported by RMP personnel to the RMP office in Eureka and stacked in a secure layout area. There, core was photographed, logged, and prepared for shipment to Dawson Laboratories for metallurgical test work. Selective six-inch intervals were removed and sent to ALS Chemex for determination of specific gravity. These intervals were selected to be representative of the oxidation types encountered during drilling. There is some risk that the intervals selected may be more competent than the remaining drill core, and may overestimate the density of the deposit.

Core was sampled on nominal 5 ft intervals, with a minimum of 1 ft and a maximum of 9 ft. The average is 4.5 ft.

11.4 Metallurgical Sampling

Trench samples were collected as bulk samples from the field. Drill core for the 2010 metallurgical test work programs was supplied as whole core intervals from selected drill holes. Drill core prior to 2010 used in metallurgical test work was half-core, from selected drill holes.

11.5 Density Determinations

A total of 63 core intervals from the 2007 drilling campaign at Gibellini were submitted by RMP for determination of specific gravity. Intervals were selected from four core drill holes so as to be representative of the major oxidation zones. Six-inch intervals of whole core were sent to ALS Chemex in Reno, Nevada for determination of dry bulk density by the wax coated water immersion method (ALS Chemex procedure OA-GRA08a).

Specific gravity values were partitioned by oxidation type and average values were computed (Table 11-1). These average values were used to calculate tonnage in the mineral resource model.

AMEC used the oxide density data from Gibellini deposit to define density within the Louie Hill model. Amec Foster Wheeler recommends that for density at Louie Hill a minimum of 30 density determination be collected per rock type and alteration type, and that the samples are spatially representative of the deposit from surface to the base and spread over the lateral extent of the deposit. These data should then be used to define density in the Louie Hill block model.

Table 11-1: Summary of Gibellini Density Data

	N	Mean	Standard Deviation	Coefficient of Variation
Oxidized	35	1.90	0.24	0.13
Transition	51	1.96	0.27	0.14
Reduced	36	2.26	0.20	0.09

11.6 Analytical and Test Laboratories

The RMP and American Vanadium core and RC samples were analysed by ALS Chemex, a well-established and recognized assay and geochemical analytical services company. The Sparks (Reno) laboratory of ALS Chemex is ISO 9002-registered; the Vancouver laboratory holds ISO17025 accreditation.

11.7 Sample Preparation and Analysis, Legacy Drill Programs

11.7.1 NBMG

Manganese, nickel, and zinc assays for NBMG drill holes were transcribed by AMEC from graphic drill logs. The original assay certificates are not available from this drill campaign. Neither the assay laboratory name nor the sample preparation or assay methodology is noted on the logs. No evidence of a QA/QC program is noted on the logs either.

11.7.2 Terteling

The V_2O_5 assays for the Terteling drill holes were transcribed by AMEC from typewritten drill logs. The original assay certificates are not available from this drill campaign. Neither the assay laboratory name nor the sample preparation or assay methodology is noted on the logs. No evidence of a QA/QC program is noted on the logs either.

AMEC compared Terteling assays to assays from Inter-Globe drill holes that were within 20 ft of the Terteling drill holes and found the Terteling assays to be consistently biased high. Inter-Globe V_2O_5 assays contained adequate QA/QC controls and are considered to be acceptably accurate and precise (see Section 13.5) and so AMEC considers comparison against Inter-Globe assays to be an acceptable indicator of assay accuracy. For five drill holes compared (15% of campaign), the average grade of Terteling assays from the mineralized intervals were between 29% and 73% higher than the comparable Inter-Globe assays, with an average difference of 43% higher. The mineralized intervals were, on average, 4% shorter for Terteling drill holes.

11.7.3 Atlas

V_2O_5 assays for Atlas drill holes were transcribed by AMEC from typewritten drill logs. The original assay certificates are not available from this drill campaign. Neither the assay laboratory name nor the sample preparation or assay methodology is noted on the logs. No evidence of a QA/QC program is noted on the logs either.

Comparison of Atlas assays to assays from Inter-Globe drill holes that were within 20 ft of the Atlas drill holes indicated that the Atlas assays were comparable. For four drill holes compared (5% of campaign), Atlas assays were between 14% lower to 18% higher than the comparable Inter-Globe assays, with an average difference of 2% lower. The mineralized intervals were also equivalent, with the total length of the Atlas mineralized intervals equal to 1,105 ft and the total length of the Inter-Globe intervals equal to 1,110 ft.

11.8 Noranda

V_2O_5 assays for Noranda drill holes NG-1 to NG-10 were performed by Union Assay Office Inc. (Union) using a direct titration procedure on a 2 g sub-sample. The sample was oxidized with nitric acid and potassium perchlorate, digested with hydrochloric and hydrofluoric acids, then fumed strongly with sulphuric acid. The filtered solution was then oxidized with potassium permanganate solution and reduced by repeated boiling with hydrochloric acid.

Check assays for all samples for these holes were performed by the Colorado School of Mines Research Institute (CSMRI) in Golden, Colorado and by Noranda's in-house laboratory using similar, but slightly different, procedures. AMEC plotted the check assays against the original assays and found that the Union assays are biased marginally (9% to 14%) high compared to CSMRI and Noranda check assays.

Noranda recognized this bias and conducted a study after the initial drill program to determine the source of the bias and to determine the optimum analytical method for V_2O_5. In this study, analytical results for the laboratories were compared on three head-grade samples and three tail-grade samples from the Gibellini deposit (Noranda, 1973). Noranda concluded that the laboratories were reporting essentially equivalent results, but recommended that all samples be fused in sodium peroxide to ensure complete dissolution and oxidation of vanadium prior to analysis. This recommendation was carried out for the remainder of the assaying of Noranda samples.

V_2O_5 assays for Noranda drill holes NG-11 to NG-52 were performed at CSMRI using sodium peroxide fusion and colorimetry as recommended by Dr. Kerbyson of the Noranda Research Centre (Condon, 1975). Sample preparation procedures are not documented. AMEC attempted to contact CSMRI for more information, but found that

CSMRI has been defunct for 20 years and that no information remains from the Noranda assays (Dr. L.G. Closs, personal communication).

Comparison of Inter-Globe drill holes within 20 ft of Noranda drill holes found the average length and grade of mineralized intervals to be equivalent. The total length of the mineralized intercepts from three Noranda drill holes (6% of campaign) was 370 ft and the average grade was 0.30% V_2O_5, where the total length of the nearby Inter-Globe holes was 385 ft and the average grade was 0.30%.

11.9 Inter-Globe

Inter-Globe assayed samples for V_2O_5 at Skyline Laboratories (Skyline) in Denver, Colorado. The original assay certificates are not available from this drill campaign; however, JAA (1989a) describes the sample preparation and assay methodology. Approximately five pounds of drill cuttings were dried as necessary, split in a riffle splitter to generate a 150 g sub-sample, and pulverized in a ring mill (size and percent passing not noted). A 0.1 g aliquot of the pulverized sample was dissolved in hydrofluoric, nitric, and perchloric acids, taken to dryness, diluted in hydrochloric acid, diluted to 5% hydrochloric acid and measured on an inductively coupled argon plasma spectrometer (ICP-ES).

About 15% of the samples were assayed in duplicate by Skyline and sent for check assay at Bondar Clegg (Bondar) in Denver, Colorado. Bondar assayed V_2O_5 by four-acid digestion (hydrofluoric, nitric, perchloric, hydrochloric) on a 0.5 g sample followed by atomic absorption spectrometry.

AMEC contacted Skyline for more information on the assay method used, but was told that no information remains from the Inter-Globe assays. The Bondar Clegg company no longer exists.

AMEC plotted Bondar Clegg check assays against the Skyline original assays to determine the accuracy of the Skyline V_2O_5 assays and found them to be acceptable. AMEC also plotted Skyline duplicates to determine the precision of the Skyline V_2O_5 assays and found them to be acceptable.

11.9.1 Union Carbide

No information is available to American Vanadium concerning the sample preparation and assaying methods employed for the Union Carbide drill campaign. Assays in V_2O_5 (assumed to be in units of percent) are hand entered into the drill logs opposite the drill interval. Where sample numbers are also noted, no information regarding assay laboratory or assay methodology is present.

11.9.2 RMP and American Vanadium

All 2007–2008 drill samples were submitted to ALS Chemex in Winnemucca or Elko Nevada for sample preparation. Assays were performed at the ALS Chemex laboratories in Reno, Nevada and Vancouver, Canada.

Samples were weighed, dried, and crushed to 70% passing 2 mm. A nominal 250 g split was then taken, and pulverized to 85% passing 75 µm.

Vanadium was determined by four-acid digestion on a 2.0 g subsample and ICP-AES finish (ALS Chemex procedure code ME-ICP61a). The lower detection limit for vanadium by this method is 10 ppm. An additional 32 elements are reported from this procedure, including zinc. Gold, platinum, and palladium were determined by standard fire assay on a 30 g subsample (ALS Chemex code PGM-ICP23). Select samples were assayed for uranium and selenium concentrations by XRF (ALS Chemex procedure code ME-XRF05).

Specific gravity was determined by ALS Chemex on whole core samples using the wax-coated water immersion method (ALS Chemex procedure code OA-GRA08A).

Sample preparation and assaying procedures for the 2010 drill campaigns were unchanged from those used during 2007–2008.

11.10 Quality Assurance and Quality Control

11.10.1 Legacy Data in Database

AMEC digitized existing legacy drill hole locations, surveys, logs and assays from paper maps, logs, and assay certificates to generate the Gibellini database. AMEC assembled all the data into a series of database tables (collar, survey, lithology, assay, and redox) in Access®. Prior to the creation of the Access® database, all drill information was in paper format.

AMEC digitized drill hole collar locations in local grid coordinates for the Terteling, Atlas, and Noranda drill campaigns from a 1:1200 scale base map generated by Noranda. The accuracy of these collar locations is estimated to be ±10 ft. Noranda and Inter-Globe drill hole coordinates were taken from the drill logs. Noranda collar locations were compared with the digitized coordinates and where the drill log and digitized coordinates did not agree within 10 ft in easting or northing, the base map was consulted and the digitized coordinates were used (NG-8, NG-9, NG-28, and NG-45). NBMG drill hole coordinates were taken from 1:1,200 scale drill hole location maps. Underground workings at the Gibellini manganese–nickel mine (channel sampled by NBMG) were digitized and entered into the database as ‘pseudo-drill holes’.

Assays for the Terteling and Atlas drill campaigns were entered from typed drill logs; the original assay certificates are no longer available from these campaigns. The assays for the Noranda drill holes were entered from both original assay certificates and drill logs. Assays for Inter-Globe drill holes were entered from compiled assay tabulations found in Appendix D of JAA (1989a). Assays for NBMG drill holes were entered from original assay certificates.

AMEC entered V_2O_5 assays using a double-data-entry system. Assays were entered into two separate spreadsheets by separate operators. The two data sets were then compared by a third operator and all matching values were entered into the assay table. Assay values not matching were checked against the original certificates or logs, corrected, and loaded into the assay database.

Drill logs for the Noranda and Inter-Globe drill holes were evaluated by an AMEC geologist, transcribed into appropriate codes, and loaded into the Lithology table. Redox boundaries for all drill holes were interpreted from logs by RMP geologists and loaded into the redox table.

All Noranda and Inter-Globe drill holes were drilled in a vertical orientation and so AMEC entered vertical orientations (azimuth = 0 and inclination = -90) for the collar (0 ft) and total depth positions in the Survey table. Terteling and Atlas drill holes were assumed to be vertical and were also given vertical orientations in the Survey table. NBMG drill hole orientations were noted on the maps and were digitized by AMEC accordingly. Underground working traces were digitized by AMEC and are approximations at best. Surveying of these workings to give them accurate three-dimensional coordinates relative to other assay information in the area will be required should the information be required to support additional work programs.

AMEC conducted data integrity checks of the Gibellini Project digital database (checking for overlapping intervals, data beyond total depth of hole, unit conversion, etc.) and concludes that the resource database is reasonably error-free and acceptable for use in resource estimation.

AMEC exported separate collar, survey, lithology and assay files for import into MineSight® for subsequent geological modeling and resource estimation.

Inter-Globe V_2O_5 assays were found to be accurate and precise based upon check assays and duplicates included in the QA/QC program for the drill campaign. AMEC considered these assays to be acceptable for use in resource estimation, but because no original assay certificates remain from this campaign, AMEC recommended that blocks affected by Inter-Globe assays be assigned a maximum classification of Indicated Mineral Resources.

Inter-Globe V_2O_5 assays from nearby drill holes provide a check of assay accuracy for the Terteling, Atlas, and Noranda assays. No evidence of a QA/QC program was encountered for the Terteling or Atlas campaigns. No evidence of a QA/QC program was encountered for Noranda drill holes NG-11 to NG-52. Inter-Globe assays are considered accurate and comparing grades in nearby drill holes provides a check of the assay accuracy for these holes.

Terteling V_2O_5 assays were found to be biased high an average of 43% relative to Inter-Globe based upon a comparison of mineralized intervals from nearby holes. AMEC recommended that the Terteling drill holes not be used for resource estimation. Because the Terteling drill pattern is adequately covered by both Atlas and Noranda drilling, the impact of not using these holes is minimal regarding adequate drill spacing throughout the deposit.

Atlas V_2O_5 assays were found to be comparable to Inter-Globe assays based upon a comparison of mineralized intervals from nearby holes. However, because the original certificates are not available, the assay laboratory and analytical method are not known, and drill collars cannot be confirmed, the lower confidence in these data require that resources estimated with the Noranda data be classified as no better than Inferred Mineral Resources. Because the Atlas drill pattern is covered by the Noranda drill pattern through the main resource area, the impact of assessing a lower classification to blocks affected by Atlas holes is mainly on the fringes of the deposit.

Noranda V_2O_5 assays were also found to be comparable to Inter-Globe assays based upon a comparison of mineralized intervals from nearby holes. Noranda drill holes NG-1 to NG-10 were part of several QA/QC programs which showed that, although the original assays were biased marginally high compared to the check assay laboratories, the procedure used likely produced low-biased data compared to the best assay procedure for V_2O_5, which was used for Noranda drill holes NG-11 to NG-52. AMEC considered the Noranda assays acceptable for use in resource estimation, but because of the uncertainty in the assays, AMEC recommended that blocks affected by Noranda assays have a maximum classification of Indicated Mineral Resources.

AMEC collected five samples on the Gibellini vanadium deposit from trenches that were previously sampled by Inter-Globe (JAA, 1989b). One sample was collected from trench #4, two samples were collected from trench #8, and two samples were collected from trench #9. Trench samples were collected as horizontal or vertical channels according to the original sampling method. AMEC was unable to duplicate exactly the Inter-Globe sample locations because the sample markers from the sampling carried out 19 years previously were mostly missing or illegible. Samples were assayed for vanadium by ALS Chemex in Reno, Nevada by a four-acid digestion, ICP determination.

AMEC sampling generally returned V_2O_5 assays of economic grade and in the range expected from Inter-Globe sampling, but the grades are generally lower than Inter-Globe, especially from trench #9. AMEC submitted one standard reference material (SRM) sample with the sample submittal that returned an acceptable result and so considers the ALS Chemex V_2O_5 assay values to be accurate.

The trench assays are not part of the mineral resource model and so the uncertainty in the accuracy of these assays poses no risk to the current Mineral Resource estimate. No QA/QC program was reported to have been included in the Inter-Globe trench program. AMEC recommended that confirmation sampling of the trenches be completed prior to any consideration of inclusion of the trench data for mineral resource estimation. No material from drill samples making up the resource database remains, therefore AMEC was unable to independently verify these assays with check assays.

11.10.2 RMP and American Vanadium

Standard reference materials (SRMs), blanks, and duplicates were inserted by RMP with routine drill samples during the 2007–2008 and 2010 drill programs to control assay accuracy and precision.

Evaluation of this work is presented in Section 12 of this Report.

11.11 Databases

Drill data collected from geological logging were stored in an Access® database. This database was stored on an American Vanadium server in Reno, Nevada. Legacy drill data, in paper format, were stored in the American Vanadium offices at Reno, Nevada (Hanson et al., 2011).

Geological data from the RMP and American Vanadium programs were collected in Excel® format, and subsequently uploaded to the Access® database. Collar survey data were recorded as part of the geological data. Analytical data were supplied in digital (CSV) format by ALS Chemex and loaded into the Access® database. Assay certificates were supplied in PDF® format and were stored in American Vanadium's Reno office (Hanson et al., 2011).

11.12 Sample Security

Sample security procedures for legacy drilling at the Gibellini Project are unknown.

RMP drill samples were transported each day by RMP or drill personnel to the RMP office in Eureka and stored in a secure layout area until ready for dispatch to the assay laboratory. Trucks from ALS Chemex, either from the Winnemucca or Elko sample preparation facilities, picked up samples at the RMP Eureka office. A similar procedure was followed for the 2010 American Vanadium program.

RMP and American Vanadium remaining core, RC reject material, and returned assay pulps were stored in a secure layout area in Eureka at the time the 2011 technical report was compiled (Hanson et al., 2011).

11.13 Comments on Section 11

The QP is of the opinion that the quality of the analytical data is sufficiently reliable (also see discussion in Section 12) to support Mineral Resource estimation as follows:

- Documentation of drilling methods employed by the various legacy operators is sparse. No cuttings, assay rejects, or pulps remain from these drilling campaigns
- All legacy data in the Gibellini Project resource database were entered by AMEC and accurately represent the source documents
- No records remain for the drill sampling methods employed by NBMG (core), Terteling (rotary), or Atlas (rotary). Noranda and Inter-Globe collected drill samples on 5 ft intervals
- RC and core methods sampling employed by RMP and American Vanadium are in line with industry norms. RMP collected RC samples as 5 ft intervals. Core was sampled by RMP and American Vanadium on nominal 5 ft intervals, with a minimum of 1 ft and a maximum of 9 ft
- Drill sampling has been adequately spaced to first define, then infill, vanadium anomalies to produce prospect-scale and deposit-scale drill data. Drill hole spacing varies with depth. Drill hole spacing increases with depth as the number of holes decrease and holes deviate apart, and is more widely-spaced on the edges of the Gibellini and Louie Hill deposits
- Sample preparation for samples that support Mineral Resource estimation has followed a similar procedure for the RMP and American Vanadium drill programs
- For portions of the legacy data, the names of the laboratories that performed the assays are known; however, no information is available as to the credentials of the analytical laboratories used for the drill campaigns prior to the RMP drilling
- The RMP and American Vanadium core and RC samples were analysed by reputable independent, accredited laboratories using analytical methods appropriate to the vanadium concentration.

12.0 DATA VERIFICATION

12.1 Introduction

AMEC performed two data verification exercises, one in 2008, and a second during 2011, in support of technical reports on the Project. The QP author was personally involved with both data verification exercises.

No additional work has been undertaken on the property since the data verification program undertaken by AMEC QPs in 2011. The QP author of this Report has reviewed the data verification undertaken by the AMEC QPs, and has performed his own checks on the data, including site visits. He has concluded that the information provided in this Report is suitable for the purposes used.

12.2 2008 Verification Program

12.2.1 Legacy Data Review

All legacy data in the Gibellini Project resource database were entered by AMEC and accurately represent the source documents. Data quality of the surveys, assays, and geology were reviewed as follows (Hanson et al., 2008):

- AMEC was able to locate the mine grid in the field and verify the location of several Inter-Globe drill holes using a Global Positioning System (GPS) instrument, but was unable to locate the exact location of Terteling, Atlas, and Noranda drill holes
- All drill holes making up the Gibellini Project resource database are relatively short (98% of holes are less than 350 ft in length) and vertical, and so AMEC does not consider the lack of down-hole surveys to be a significant concern
- AMEC conducted data integrity checks of the Gibellini Project digital database (checking for overlapping intervals, data beyond total depth of hole, unit conversion, etc.) and concluded that the resource database is reasonably error-free and acceptable for use in Mineral Resource estimation
- Inter-Globe V_2O_5 assays were found to be accurate and precise based upon check assays and duplicates included in the QA/QC program for the drill campaign (Section 13.5). AMEC considers these assays to be acceptable for use in resource estimation, but because no original assay certificates remain from this campaign, AMEC recommends that blocks affected by Inter-Globe assays be assigned a maximum classification of Indicated Mineral Resources
- Inter-Globe V_2O_5 assays from nearby drill holes provide a check of assay accuracy for the Terteling, Atlas, and Noranda assays. No evidence of a QA/QC program was encountered for the Terteling or Atlas campaigns. No evidence of a QA/QC

program was encountered for Noranda drill holes NG-11 to NG-52. Inter-Globe assays are considered accurate and comparing grades in nearby drill holes provides a check of the assay accuracy for these holes

- Terteling V_2O_5 assays were found to be biased high an average of 43% relative to Inter-Globe based upon a comparison of mineralized intervals from nearby holes. AMEC recommends that the Terteling drill holes not be used for resource estimation. Because the Terteling drill pattern is adequately covered by both Atlas and Noranda drilling, the impact of not using these holes is minimal regarding adequate drill spacing throughout the deposit
- Atlas V_2O_5 assays were found to be comparable to Inter-Globe assays based upon a comparison of mineralized intervals from nearby holes. However, because the original certificates are not available, the assay laboratory and analytical method are not known, and drill collars cannot be confirmed, the lower confidence in these data require that resources estimated with the Noranda data be classified as no better than Inferred Mineral Resources. Because the Atlas drill pattern is covered by the Noranda drill pattern through the main Gibellini resource area, the impact of assessing a lower classification to blocks affected by Atlas holes is mainly on the fringes of the deposit
- Noranda V_2O_5 assays were also found to be comparable to Inter-Globe assays based upon a comparison of mineralized intervals from nearby holes. Noranda drill holes NG-1 to NG-10 were part of several QA/QC programs which showed that, although the original assays were biased marginally high compared to the check assay laboratories, the procedure used likely produced low-biased data compared to the best assay procedure for V_2O_5, which was used for Noranda drill holes NG-11 to NG-52. AMEC considers the Noranda assays acceptable for use in resource estimation, but because of the uncertainty in the assays, AMEC recommends that blocks affected by Noranda assays have a maximum classification of Indicated Mineral Resources
- The trench assays are not part of the mineral resource model and so the uncertainty in the accuracy of these assays poses no risk to the Mineral Resource estimate
- The quality of the geological logging of drill holes at Gibellini is variable by campaign
- Redox domain boundaries as interpreted by American Vanadium are acceptable for use in the Mineral Resource model.

12.2.2 RMP Data Review

The fine-grained and diffuse nature of mineralization would favor there being no grade bias caused by poor recovery.

AMEC reviewed the round robin programs performed to generate the recommended values for the SRMs used in the 2007–2008 drill campaigns, and found them to be acceptable. All SRM results fell within acceptable limits and no significant bias was observable in the control charts. In AMEC's opinion, the accuracy of the 2007 ALS Chemex vanadium assays was acceptable to support Mineral Resource estimates.

A total of four blanks were submitted with 1,125 routine samples for an insertion rate of 0.4%. In AMEC's opinion, this insertion rate should be increased to the same rate as the SRMs and duplicate samples. Blanks assayed between 80 ppm and 110 ppm V, which is significantly above the lower detection limit for vanadium of 10 ppm, but significantly below the anticipated cut-off grade. AMEC recommended that RMP generate a new blank sample consisting of material lower grade in vanadium, with an average grade of less than 10 ppm vanadium.

A total of 23 field duplicates were submitted with 1,125 routine samples for an insertion rate of 2.0%. AMEC calculated the precision for vanadium to be ±24% at the 90th percentile. In AMEC's opinion, the precision for 2007 ALS Chemex vanadium assays was acceptable to support mineral resource estimates

AMEC compared drill hole collar elevations to the electronic topography. Five of the 148 drill hole collars showed elevation differences of greater than 10 ft as they relate to topography, which suggested an incorrect location or an error in the topographic base.

12.3 2011 Verification Program

12.3.1 QA/QC Review

A total of 55 SRMs, 30 duplicates, and 25 blanks were submitted with a total of 1,003 project samples during the 2010 drilling at Gibellini and Louie Hill.

AMEC found the insertion rates of the control samples to be low compared to best practice and recommends increasing the rate of SRMs, duplicates, and blanks to 5% each.

RMP used three SRMs from Minerals, Exploration, and Environment Geochemistry (MEG) located in Washoe Valley, Nevada. The SRMs have a range of grades consistent with what is expected from project samples at Louie Hill. All SRM results for vanadium except four were within 6% of the recommended value of the SRM. AMEC considered the ALS Chemex vanadium data to be acceptably accurate.

Blank samples submitted with the Project samples reported values consistent with the grades expected from the material. AMEC considered the blank material to contain too much vanadium to be useful as a blank, and RMP subsequently produced another blank for use with the Gibellini and Louie Hill projects.

Duplicate data show acceptable precision for field duplicates at the 90th percentile. AMEC considered field duplicate data to be acceptably precise if 90% of the duplicate pairs report absolute relative differences (ARD) less than 30%. The Louie Hill data reported 13% ARD at the 90th percentile.

RMP submitted a total of 61 pulps from 2010 project samples and submitted them to ACME in Vancouver, Canada. AMEC compared the ACME check assays to the original ALS Chemex assays and found them to be comparable. No significant bias was observed in the check assay data and thus AMEC concluded that the ALS Chemex data are acceptably accurate. No quality control samples were submitted with the batch of pulps submitted to ACME.

AMEC considered the ALS Chemex vanadium assay data for Gibellini and Louie Hill to be acceptably accurate, precise, and free of contamination in the sample preparation process for use in Mineral Resource estimation.

12.3.2 Gibellini Twin Drill Program Review

RMP twinned eight legacy drill holes at Gibellini in order to verify legacy assay results. AMEC tabulated the cumulative relative grade differences between RMP and legacy Noranda and Atlas drill holes by oxidation state. For example Atlas drill holes within the oxide domain show a total cumulative footage of 305 ft and weighted average V_2O_5% grade of 0.221. This compares well to RMP twin drill holes totaling 305 ft and a weighted average V_2O_5% grade of 0.223, a relative difference of +1%. AMEC is of the opinion that relative differences that are generally within $\pm$5% confirm the legacy drill results. Relative differences in the 10% range or greater require further investigation, and adjustments to assay grade may be required before use in resource estimation.

AMEC noted two domains with elevated relative differences, Atlas transition at -9% and Noranda reduced at -22% as compared to RMP drill results. All other domains have less than 5% relative differences or just slightly above and no adjustments to the vanadium grades are recommended.

AMEC plotted the Atlas transition domain assay results against RMP drill results on a quintile–quintile plot. AMEC noted that the Atlas transition domain shows different linear trends from 0% V_2O_5 to 0.410% V_2O_5, from 0.410% V_2O_5 to 0.510% V_2O_5, and greater than 0.510% V_2O_5. AMEC recommended that Atlas assays be adjusted as follows:

- From 0% V_2O_5 to 0.409% V_2O_5 - adjusted down by 25%
- From 0.410% V_2O_5 to 0.510% V_2O_5 - adjusted down by 5%

- Greater than 0.510% V_2O_5 - adjusted up by 15%.

AMEC recommended that additional twin holes to the Atlas drilling be completed to duplicate approximately 10% of legacy drill holes.

AMEC also plotted the Noranda primary domain assays against American Vanadium drill results using a quintile–quintile plot. AMEC recommended that Noranda reduced assays be adjusted downward by 20%.

12.3.3 Louie Hill Twin Drill Program Review

AMEC's comparison of the legacy Union Carbide data to the American Vanadium assay data at Louie Hill found that the Union Carbide assays are biased about 10% high on average. AMEC reduced the V_2O_5 grades for the Union Carbide drilling by 7% prior to resource estimation. Because of the uncertainty in the drilling methods, sample preparation and assay methodology, and the grade bias when compared to the American Vanadium assays, AMEC limited the classification of resource blocks that depend upon the Union Carbide drill holes at Louie Hill to the Inferred Resources category.

12.4 Comments on Section 12

The AMEC QPs, including the current Report author, considered that a reasonable level of verification had been completed, and that no material issues would have been left unidentified from the programs undertaken. As no additional scientific and technical work has been undertaken on the property since the AMEC audits, the AMEC conclusions are considered by Amec Foster Wheeler, and the current Report author, to remain valid.

The QP, who participated in, and relies upon this work, has reviewed the appropriate reports, and is of the opinion that the data verification programs undertaken on the data collected from the Project adequately support the geological interpretations, the analytical and database quality, and therefore support the use of the data in Mineral Resource estimation:

- Sample data collected adequately reflect deposit dimensions, true widths of mineralization, and the style of the deposits
- AMEC completed a database audit in 2008 (Hanson et al., 2008). Conclusions from that audit were that the data were generally acceptable for Mineral Resource estimation
- Data made available after the 2008 review were audited by AMEC in 2011 (Hanson et al., 2011). Conclusions from that audit were that corrections were required to Noranda and Atlas assay data at Gibellini, and to the Union Carbide

assays at Louie Hill. AMEC also recommended as a result of the audit that additional twin holes should be drilled at Gibellini to verify Atlas data

- Drill data were verified by AMEC and Amec Foster Wheeler prior to Mineral Resource estimation by running a software program check.

13.0 MINERAL PROCESSING AND METALLURGICAL TESTING

13.1 Introduction

Extensive metallurgical research was carried out by CSMRI, Noranda Research Centre, and Hazen Research from 1972 to 1975 on various aspects of metallurgical test work on Gibellini mineralization (Condon, 1975). Only the work completed by Noranda was available for review.

13.2 Noranda Metallurgical Test Work

Three material samples, GI-9583, GI-9585 and GI-9633, were taken by Noranda and sent to SGS Lakefield Research Laboratories (SGS Lakefield) in Canada. The samples were stage-crushed to minus half-inch. The crushed sample was split into four samples. Two splits were reserved, one split was used for testing at minus half-inch and the last split was stage crushed to minus 10 mesh. The minus 10 mesh was split into four parts: one for testing, one for head analysis, one pulverized, and one reserved.

The samples were analyzed for vanadium and a multi-element analysis was completed. The samples were screened, and the individual fractions were analyzed for vanadium. The minus fractions (pan) were also analyzed using X-ray diffraction (XRD).

The test samples were prepared for testing by mixing an amount of concentrated sulphuric acid with the material and allowing the material to rest (cure) for 24 hours. A second set of samples were prepared in the same manner but also had manganese dioxide added to them prior to acid addition.

The cured samples were then added to bottles and sufficient water was added to make a 40% solid slurry. The bottles were placed on a set of rolls and rolled for 96 hours. Samples were removed at timed periods and analyzed. After 96 hours, the slurry was removed from the bottle, filtered and washed. The initial filtrate and the washed residue were analyzed for vanadium. The residue was also analyzed using the multi-element method. Oxidation reduction potential (ORP or Eh) and pH measurements were taken at each sample point.

A portion of the dried residue was screened and the individual fractions were analyzed for vanadium.

13.2.1 Head Analysis

The vanadium head grade analyses for the three samples are shown in Table 13-1.

The multi-element analysis indicates that there is a slight difference in the samples with GI-9583 having more zinc, aluminum, magnesium and iron than the other two samples. Sample GI-9633 contained more calcium than the other two samples.

The XRD analysis identified a vanadium mineral (fernandinite) in sample GI-9633. XRD analysis identified mineral species that are in excess of 1%. Since the grade of the samples is low, the lack of identification in the other samples is not unexpected. Other minerals identified were quartz, feldspar, mica, and kaolinite.

13.2.2 Bottle Roll Test Results

Bottle roll test results are presented in Table 13-2 for the tests that used 300 pounds per ton of sulphuric acid, and in Table 13-3 for the bottle roll tests that used the same concentration of sulphuric acid, but also had manganese dioxide added.

The leaching data indicate that GI-9583 behaves differently to GI-9585 and GI-9633. The recovery of this sample was significantly lower than the other samples. The screen analysis showed that all size fractions were leached to a similar extent. The addition of manganese dioxide was probably not required, since the recovery was not substantially improved.

13.2.3 Interpretation of the Test Results

The data accumulated shows several important factors about the material:

- The vanadium mineral identified is an oxide mineral,
- The recovery from the coarse material is essentially the same as the fine ground material,
- The material samples do not appear to be the same, and
- The amount of acid utilize may be able to be decreased.

The XRD analysis of the samples identified fernandinite ($CaV_8O_{20}.\ xH_2O$). This mineral is a mixture of 4^+ and 5^+ vanadium ions. This mixed oxidation state indicates that the mineral would require oxidation to form the soluble vanadate ion.

Table 13-1: Vanadium Grades, Material Samples

Sample	%V	$\%V_2O_5$
GI-9583	0.19%	0.39
GI-9585	0.30%	0.54
GI-9633	0.37%	0.66

Table 13-2: Recovery for Tests using 300 lbs/t Sulphuric Acid

Sample	-1/2 inch	-10 mesh	-200 mesh
GI-9583	40.3%	38.5%	41.7%
GI-9585	70.1%	66.5%	69.9%
GI-9633	83.6%	85.3%	86.5%

Table 13-3: Recovery for Tests using 300 lbs/t Sulphuric Acid and Manganese Dioxide

Sample	-1/2 inch	-10 mesh	-200 mesh
GI-9583	36.5%	40.3%	38.7%
GI-9585	69.9%	70.5%	68.4%
GI-9633	86.7%	87.4%	85.8%

Since the vanadium minerals are at a concentration below the detection limit, the leaching data would have to be used to determine if the mineral species are similar. From this leaching data, it appears that the samples contain the same, or similar, oxide forms of vanadium.

The recovery for each sample was essentially the same for all three size ranges tested. The fractional analysis shows vanadium recovery from all size fractions, indicating that the mineral is liberated even at a coarse size. This information is important since it indicates that heap leaching could be a viable recovery method.

The data also indicated that leaching at a coarser material sizing may be possible. Data also indicate that it would be valid to use a leaching procedure on pulverized samples to predict the amount of soluble vanadium present. This type of method could be used as an exploration tool and as an ore-control method during mining operations.

The difference in recovery for the samples indicates that there were either different vanadium minerals present or that liberation was an issue. Because the pulverized sample should have shown higher recoveries if liberation was an issue, liberation issues were eliminated as a possibility for explaining the lower recoveries. Another possible interpretation for these data are that some of the vanadium minerals are encapsulated as an ultra-fine mineral in a mineral matrix or some of the vanadium minerals are in a reduced form that was not solubilized.

The amount of acid consumed during the leaching was quite low, and it is possible that the amount of acid utilized was more than would be necessary to achieve dissolution of the material. The reduction of acid required to dissolve the vanadium could enhance future Project economics since acid usage is about half of the production cost for the vanadium.

13.3 2008 Metallurgical Test Work

13.3.1 2008 Mill Feed Material Description

The initial phase of the test program was for Dawson Mineral Laboratories (Dawson) in Salt Lake City, Utah to take the core samples supplied by American Vanadium (then RMP) and prepare the samples. Data generated by Dawson for this showed the sample head grades for the core samples are indicated in Table 13-4.

13.3.2 2008 Test Results

The initial test work at Dawson was set up to benchmark their procedures with the SGS Lakefield work. The initial work on the same samples as used by SGS Lakefield were to test the effect of acid concentration. These tests showed that the acid concentration could be lowered to 100 kilograms per tonne (200 pounds per short ton) sulphuric acid.

The samples tested at SGS Lakefield were surface samples and the Dawson test samples for the columns were core samples. When the initial bottle roll tests were done at 200 pounds per ton, the recovery was lower than expected. An additional series of tests were done using 300 pounds per ton and the recovery increased to the levels expected. Based on these data the columns were set up to use 300 pounds per ton sulphuric acid on the oxide and transition samples and 350 pounds per ton on the reduced sample. Additionally, because the reduced sample's grade was lower than expected, a fourth sample was acquired from sampling another RMP core drill hole.

This test work indicated that the recoveries for oxide, transitional and reduced material would be as indicated in Table 13-5.

It was thought that the vanadium material might exhibit a constant tail character since the recovery was essentially the same for the samples regardless of how coarse the sample. The recovery was essentially the same for the minus half-inch samples and the -100 mesh samples.

Table 13-4: Head Grades, 2008 Samples

Sample	Head Grade %V	Head Grade % V_2O_5
Oxide	0.139	0.248
Transition	0.185	0.330
Low Grade Reduced	0.104	0.186
High Grade Reduced	0.185	0.330

Table 13-5: Bottle Ross Test Recovery Data

Sample	Recovery (%)
Oxide	34.6
Transition	55.4
Reduced	25.4

A bottle roll program was set up to test RC cuttings from around the deposit area. This program showed that recovery varied with grade and sample and in at least for bottle roll tests there was no constant tail relationship. Two additional tests were performed to determine if increased retention time would affect recovery. The column test data shows higher recovery than the bottle roll test data. Part of the difference is associated with the difference in the assay head and the calculated head of the columns but there also appears to be more overall recovery despite the head differences. These data show the recoveries indicated in Table 13-6.

The initial minus half-inch columns (oxide and transition) did not utilize 25 grams per liter acid solution as the column wash solution and this appears to have slightly affected the recovery to the low side as compared to the minus two-inch columns that utilized 25 grams per liter throughout the test work. The columns also showed low acid consumption (see Table 13-7).

Since the columns contain the largest samples utilized and represent the more rigorous comparison to what would be expected from a heap leach operation, the recoveries derived from the columns are the most reliable indicator of heap leach recovery. Table 13-8 outlines AMEC's recommended study recovery values and acid consumption.

The difference between the column results and the bottle roll tests (which is usually considered to perform the more complete leaching) may be due to the longer time of contact of the solution and material (bottle roll 96 hours versus column 46 days) or possibly that the bottle roll test may allow a saturation of the vanadium in solution and therefore inhibit further dissolution.

Table 13-6: Column Test Recovery Data

Sample	-1/2 "	-2"
Oxide	57.2%	59.6%
Transition	65.4%	72.1%
Reduced	52.3%	No Column

Table 13-7: Comparison of Acid Consumption, - ½" and 2" Columns

Sample	-1/2 "	-2"
Oxide	119 lbs/t	101 lbs/t
Transition	115 lbs/t	90 lbs/t
Reduced	115 lbs/t	No Column

Table 13-8: AMEC Recommended Study Recovery Values and Acid Consumption

Material	Recovery (% V_2O_5)	Acid Consumption (lbs/ton)
Oxide	65	300
Transition	70	300
Reduced	52.3	300

During the bottle roll testing, it was noted that the filtration of the samples was very slow. It was postulated that there were clay or silt particles present and that these particles might adversely affect the percolation of the columns.

It was recommended that when the samples were contacted with acid that a polymer be utilized to agglomerate the fines. Samples of polymers were obtained from Hychem and a screening test was done to determine which polymer would work best.

AE 852 appeared to work the best and the addition rate of 0.5 pounds per ton wash was chosen. No fines migration or plugging was observed during the column tests when the polymer was added to the material prior to being loaded into the columns.

13.3.3 2008 Recommended Additional Work

The 2008 metallurgical testing was done to determine the viability of heap leaching for the Gibellini vanadium material. The previous work indicated the amenability of the Gibellini material to heap leaching; however, the results were not conclusive.

Bottle roll testing does not give a direct relationship to the ability to heap leach. The bottle roll data had as much as 20–30% lower recovery than the column leach data.

One item that might be tested is the longer retention time or lower bottle roll slurry density. The longer time might allow additional leaching to occur. If a lower slurry density was used (30% rather than 40%), this would make sure that all available vanadium minerals would be dissolved (assuming that a finite dissolution of the vanadium was reached). Saturation of vanadium may have been reached in the bottle roll test because crystals formed in the column solutions that had to be diluted to be dissolve. Consequently, if vanadium dissolution is a factor, doing additional test work using a lower slurry density in the bottle roll test may help to get the bottle roll and column results more closely correlated.

AMEC recommended that additional column tests be done to determine if the leaching can be done with different polymers at a lower concentration, if lower amounts of acid can be used to obtain the same recovery, if samples from different parts of the deposit will have the same recovery profile as the samples tested in this program, if the material can be leached without polymer addition, and if the material could be run without crushing (run of mine leaching). The run of mine leach would require that the material be delivered to a process area where it could be contacted with the concentrated acid so it could be cured. The material would have to be minus six inch for proper material handling.

This test work was suggested so a lower-cost method of testing (bottle roll tests) could be used to gather additional information for the deposit. The test work was also set up to determine if the polymer usage could be decreased and the cost lowered or eliminated. Another purpose of the test work was to determine if lowering the acid added during curing can still provide sufficient leach recovery. And finally, the program would be used to determine if one or all the stages of crushing could be eliminated and still maintain recovery.

13.4 2011 Test Work

American Vanadium instituted a metallurgical drilling program where six core holes were drilled to obtain samples for metallurgical testing. All test work was performed by McClelland Laboratories (McClelland), of Sparks, NV. The holes were sited and drilled north and south of the holes used for the 2008 test work to obtain a spatial representation of the mineralization across the Project.

13.4.1 Test Samples

Three of the core holes were drilled north (North Zone samples) of the 2008 PA metallurgical hole and three were located south (South Zone Samples) of the 2008 metallurgical drilling. The samples were prepared at McClelland and the head grades for the samples are shown in Table 13-9.

Table 13-9: Head Grades, 2011 Test Work Samples

Sample	Initial Assay Grade (% V)	Duplicate Assay Grade (%V)	Triplicate Assay Grade (%V)	Average Assay Grade %V (V_2O_5)
North Zone Oxide	0.103	0.103	0.103	0.103 (0.184%)
North Zone Transition	0.151	0.145	0.147	0.148 (0.264%)
South Zone Oxide	0.163	0.162	0.162	0.162 (0.288%)
South Zone Transition	0.196	0.190	0.197	0.194 (0.345%)

Surface samples were taken at the site for testing of potential run-of-mine (ROM) leaching material. Eight samples were taken from around the site and shipped to McClelland. When the samples arrived at the laboratory and were laid out to air-dry, it was seen that there was very little coarse mill feed material present. The site personnel were questioned as to the material taken and they reported that the material was typical of the surface material.

A site visit was made and the excavations were checked and it was determined that very little of the material at surface would be coarse. Three more sites were selected and that material was combined with the one coarse sample sent initially.

After the samples were taken and sent to the laboratory, a testing program for the fine material was set up to leach the material as is and to determine the recovery of the surface material. The Gibellini metallurgical trench sample head grades are shown in Table 13-10.

13.4.2 Trench Column Results

The column tests were operated for 145 days and the extraction from the material is indicated in Table 13-11.

The average extraction for the trench samples was 58.2% with a head grade of 0.178% V and since this material was not crushed and a fair portion is above minus half-inch in size, this extraction is considered to be equivalent or better than the PA recovery seen in the oxide mineralization (57.2% at minus half-inch with a grade of 0.139% V).

The average acid consumption was 41.7 pounds per ton for the trench samples.

The ROM material was significantly coarser than the samples previously tested and with a low head grade (0.10% V). The extraction on this column was only 15.7% and it proves that with coarse mill feed material, it is not feasible to operate a ROM leach facility. This ROM sample consumed significantly less acid (average 26 kg/t), which may indicate that there was less acid-soluble matrix material so less of the matrix could be opened to additional leaching.

Table 13-10: Gibellini Metallurgical Trench Head Grade Assays

Sample	Initial Assay Grade (% V)	Duplicate Assay Grade (% V)	Triplicate Assay Grade (% V)	Average Assay Grade (% V)	Calc Head Grade (% V)
GMT-1	0.137	0.133	0.147	0.139	0.154
GMT-2	0.142	0.151	0.141	0.144	0.153
GMT-3	0.253	0.244	0.252	0.250	0.289
GMT-4	0.146	0.148	0.136	0.143	0.150
GMT-6	0.143	0.133	0.145	0.140	0.151
GMT-7	0.156	0.149	0.179	0.161	0.172
GMT-Comp	0.108	0.110	0.108	0.105	0.117

Table 13-11: Gibellini Metallurgical Trench Column Test Results

Sample	% Extraction	% + ½ ”	Acid Consumption lb/t	% Ca
GMT-1	61.0%	17.7%	43.7	1.20
GMT-2	49.7%	8.3%	45.6	0.78
GMT-3	74.7%	6.0%	32.2	0.32
GMT-4	51.3%	8.4%	39.3	0.64
GMT-6	40.4%	16.7%	38.0	0.76
GMT-7	69.8%	11.0%	51.7	2.15
GMT-Comp ROM	15.7%	54.6%	26.0 (in kg/t)	<0.10

Metallurgical Core Test Results

The core column test work showed a similar trend for lower extraction from bottle roll test than is seen in the column tests (Table 13-12).

There is a consistent difference between the bottle roll test extraction and column test data with the column recovery always being higher than bottle roll test recovery. The columns were run for 87 days while the bottle roll tests were run for only 96 hours, it is anticipated that the additional recovery is due to the longer exposure of the column material to the acidic environment and potentially the breakdown of the rock matrix allowing additional extraction. In this round of testing, only the South Transition Zone showed higher extraction at minus two inches compared to the minus half-inch sample as was seen in the 2008 testing.

Table 13-12: Column Test Work, 2011 Core Samples

Sample	Bottle Roll 74 µm	Bottle Roll 1.7 mm	Bottle Roll 12.5 mm	-1/2"	-2"
NZO	22.1%	24.0%	23.4%	43.0%	444.3%
NZT	46.7%	43.2%	41.0%	58.8%	55.2%
SZO	18.0%	19.9%	16.0%	49.7%	46.5%
SZT	57.1%	46.2%	44.7%	62.5%	64.1%

13.4.3 Crusher Abrasion and Hardness Testing

Crushing testing was done by Phillips Enterprise LLC. The test work shows a sample that is not extremely hard and quite friable. The crushing data show a sample that is quite soft (crusher abrasion 0.025 pounds per kilowatt-hour) and not requiring high energy input (5.23 kilowatt-hours per ton). Table 13-13 shows a comparison of the Gibellini mill feed material and other materials in terms of abrasiveness and work indices.

As seen in the comparison data, the hardest Gibellini material found on site is non-abrasive and soft when compared to other material seen in the mining industry. These data and the size fractions shown in the data collected from the column data indicate that the material is naturally broken up and quite friable.

Table 13-14 shows that the trench material is quite fine and there is little or no degradation of the agglomerated material loaded in the columns and the final tailing sample.

13.4.4 Mineralogy and ICP Analysis

Mineralogy Examination

Samples were taken from each of the core samples and X-ray diffraction (XRD) analysis was done. Since the vanadium mineralization is in the trace range for the XRD instrument, separate samples of high grade mineralization were taken to look at the vanadium mineralogy. Additionally, the University of Nevada (Las Vegas) has been performing a petrographic analysis of some of the material from the Gibellini area, but there is no completion schedule available at this time.

XRD analysis of the material showed that +80% of the material was silica minerals, about 11% was mica/illite, about 4% was apatite and 5% was "unidentified other". In the North Zone Oxide (NZO) and South Zone Transition (SZT) areas, <4% dolomite was identified as being present.

Table 13-13: Crusher Test Results in Comparison to Other Materials

Material	Abrasion	Work Index
Gibellini ROM Material	0.0552 lbs/kW-hr	5.23 kW-hr/ton
Copper Ore	0.1472 lbs/kW-hr	—
Gravel	0.2879 lbs/kW-hr	—
Limestone	—	12.7 kW-hr/ton
Shale	—	9.9 kW-hr/ton
Quartzite	0.7751 lbs/kW-hr	17.4 kW-hr/ton

Table 13-14: Trench Sample Size Analysis

Sample	Size	Head % Passing 600 µm	Tail % Passing 600 µm
GMT-1	As Is	26.7	28.9
GMT-2	As Is	23.0	24.8
GMT-3	As Is	34.4	37.7
GMT-4	As Is	22.7	25.2
GMT-6	As Is	19.9	27.2
GMT-7	As Is	37.4	38.1
ROM	-1/2”	16.8	18.1
ROM	-2”	10.1	16.3
ROM	As Is	12.2	
NZO	2”	33.3	
NZO	½”	32.2	
NZT	2”	25.7	
NZT	½”	30.6	
SZO	2”	23.6	
SZO	½”	26.0	
SZT	2”	27.1	
SZT	½”	30.9	

ICP Analysis

Inductively-coupled plasma (ICP) analysis was performed on all of the material tested. The overall elemental analysis is similar between the various materials with relative amounts of vanadium, calcium, and phosphorous having the widest variation from each other. No correlation has been developed between this variation and recovery. Even the amount of calcium present does not always indicate a higher acid consumption.

13.4.5 Solvent Extraction Testing

Initial solvent extraction screening tests were done to determine conditions and reagent requirements for a solvent extraction (SX) circuit for the Gibellini Project.

Initially three different reductants were tested to determine which would work best with the pregnant leach solution (PLS). Zinc, iron, and ascorbic acid were tested and iron proved to be the most effective reductant.

13.4.6 Locked Cycle Testing

The locked cycle test utilized material from the North Oxide, South Transition and the North Transition zone in the proportions shown in Table 13-15.

The objectives of the locked cycle test were:

- Determine if recycling raffinate that contains minor amounts of organic from SX negatively impacts recovery,
- Determine if composites behave in the same manner as the individual samples, and
- Obtain SX strip solution for laboratory testing and analysis.

The column was started with synthetic raffinate solution and once the SX system was started, the actual SX raffinate solution was cycled to the column adding acid to meet the 25 gallons per liter requirement.

From Figure 13-1 it can be seen that the leach curve continued on without any appreciable impact, indicating that there would be no issues with utilizing process raffinate solution (main objective of the locked cycle test).

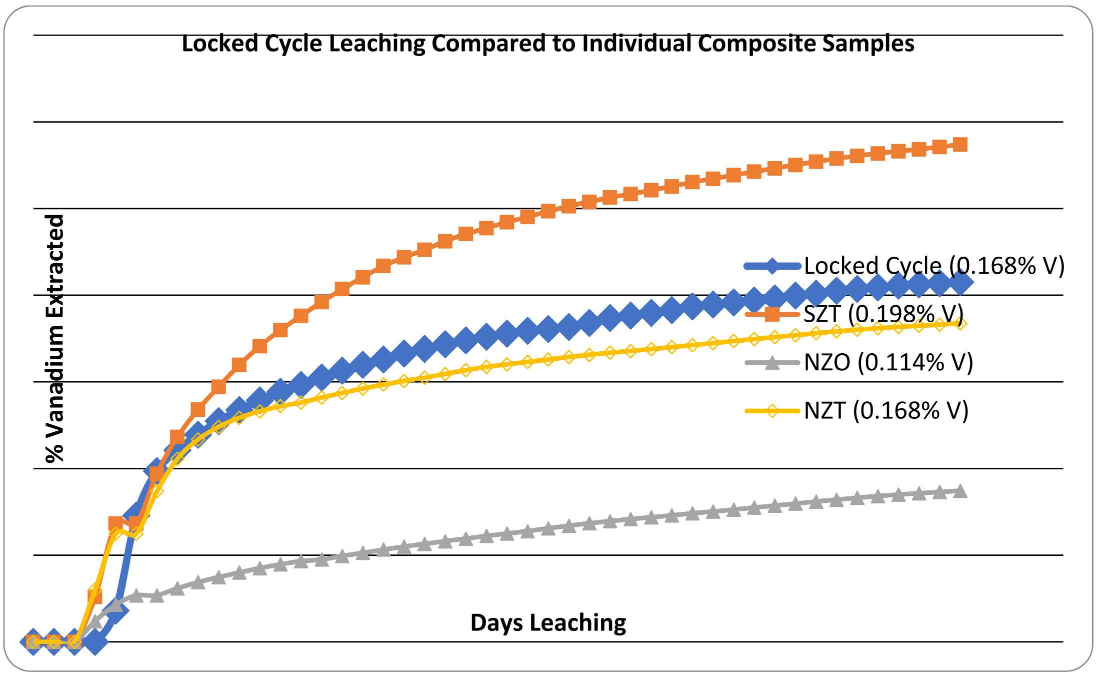
13.5 Final Product Production

Rich electrolyte was taken and an oxidant (sodium chlorate $NaClO_3$) was used to oxidize the vanadyl sulphate (blue solution) to vanadate (wheat colored). The rich electrolyte solution had a 5.5% grade and a solution density of 1.325 g/cm^3. Ammonium hydroxide (concentrate NH_4OH, 28%) was added to a pH of 2.0. A brick red precipitate (ammonium metavanadate sulphate (AMV)) was produced. The AMV settled rapidly after agitation was stopped. The AMV was then filtered and the material was loaded into a crucible. The crucible was placed in a 730ºC furnace and fusion was completed within one hour. A “purple flake” was removed from the crucible and crushed.

Table 13-15: Composite Make-Up Information, Gibellini Drill Core, Master Composite

Drill Core Composite	Weight to Comp. kg	%
NZO	12.37	9.45
NZT	54.5	41.65
SZO	0	0
SZT	63.97	48.89
Composite Total	130.8	100.0

Figure 13-1: Leach Curve for Comparing Locked Cycle Composite with Components of Composite



Note: Figure from Hanson et al., 2011

At the time the 2011 technical report was filed, the final product was pending analysis. The rich electrolyte solution was still being recycled and it appeared that within the next SX recovery campaign that battery-grade electrolyte would be attained. No impurity analysis was available at the time, so it could be determined if electrolyte quality had been attained, but it was conceivable that if impurities were present that the solution could be cleaned up using ion exchange.

No additional information on any additional program results was available to Amec Foster Wheeler.

13.6 Recovery Estimates

The process recovery for the column test work shows a slow ascending trend (between 0.1% and 0.4% per day), this rise was consistent for a period of at least 30 days and it is anticipated that this trend would continue. Additionally, the recovery grade is based on the average grade of the material.

Using this approach, the recovery for this material is equal or higher than the recovery used in 2008, so it was anticipated that the recovery used in 2008 was still applicable to the deposit.

These recovery data are indicated in Table 13-16.

A program to identify the amenability of the reduced mineralization to heap leaching was included after the initial program was started. This material is included in the Mineral Resource estimate. The test work used the material from the 2010 drilling program to expand the spatial area of the project.

13.7 Metallurgical Variability

The Noranda testing composites were from a limited area of the Gibellini deposit. The 2008 test work drilling covered a similar area to the Noranda drilling.

The 2011 drilling stepped out on both sides of the 2008 drilling. Based on comparisons between the mineralogy and lithologies encountered in the twin drill holes, it was concluded that the metallurgical samples from this drilling provided sufficiently representative data for metallurgical evaluation purposes.

13.8 Deleterious Elements

The acid leaching did not mobilize any elements during leach that would be deleterious to the solvent extraction recovery.

The major elements mobilized were aluminium, phosphorus and iron. Of these, iron loads at the pH and Eh conditions associated with solvent extraction and iron is used as a reductant to reduce vanadate (leached species) to vanadyl (extracted species). A HCl wash will need to be included in any future process to eliminate iron build-up.

Table 13-16: Process Recoveries

Mill Feed Material Type	Percent Recovery
Oxide	60%
Transition	70%
Reduced	52%

13.9 Comments on Section 13

In the opinion of the QP, the following conclusions are appropriate:

- Metallurgical test work and associated analytical procedures were performed by recognized testing facilities, and the tests performed were appropriate to the mineralization type
- Samples selected for testing were representative of the various types and styles of mineralization at Gibellini. Samples were selected from a range of depths within the deposit. Sufficient samples were taken to ensure that tests were performed on sufficient sample mass
- The process recovery for the 2011 column test worked showed a slow ascending trend of between 0.1% and 0.4% per day, which was consistent with the trend seen in the 2008 column test work
- Life-of-mine average recoveries are likely to be 60% for oxide material, 70% for transition and 52% for reduced
- The acid leaching did not mobilize any elements during leach that would be deleterious to the solvent extraction recovery predictions
- No processing factors were identified from the metallurgical test work that would have a significant effect on extraction.

Amec Foster Wheeler notes that commercial heap leaching and SX recovery of vanadium ores has not been done before; nonetheless, heap leaching and SX recovery are common technologies in the mining industry. The most notable examples are the multiple copper, nickel, and cobalt heap leach projects that use an acid-leach solution to mobilize the metal followed by recovery in a SX plant, which is then followed by electro-winning. The Gibellini process would apply the same acid heap leaching and SX technology to recover vanadium. However, instead of electro-winning to produce a final product, the future Gibellini process would use an acid strip followed by precipitation to produce a final product.

During the course of the 2011 test work, American Vanadium identified a calcium boundary at 2.5% calcium. American Vanadium contoured this shape and identified that none of the metallurgical holes penetrated it; consequently, the met columns are in relatively benign material. American Vanadium also noted that the 2.5% calcium contour extends into the base of the transition mill feed material, in particular in the south–central portion of the deposit. This is a potential Project risk to be considered in any future development plan, due to the elevated calcium levels and likely elevated acid consumption for this material.

14.0 MINERAL RESOURCE ESTIMATES

14.1 Introduction

The QP personally performed the Gibellini Mineral Resource estimate, and reviewed the estimate for Louie Hill that was performed by Mr Mark Hertel, RM SME (a Principal Geologist at AMEC at the time the Louie Hill estimate was performed), and is responsible for that estimate.

14.2 Gibellini

14.2.1 Basis of Estimate

A total of 43,785 ft of drilling in 195 drill holes by four operators, Atlas, Noranda, Inter-Globe and RMP were available for geological domain modeling. A sub-set of this database totaling 39,384 ft of drilling, in 174 drill holes, was available for resource estimation.

Twenty-one drill holes totaling 5,201 ft were drilled for metallurgical, geotechnical and condemnation studies and were not used in grade estimation. The twenty-one drill holes consist of 11 core holes for metallurgical testing totaling 2,801 ft, four oriented core holes for geotechnical studies totaling 1,000 ft, and six RC condemnation drill holes totaling 1,400 ft.

Thirty-three rotary drill holes total 5,695 ft from a fifth operator, Terteling, were excluded from this study due to a high-grade bias (Wakefield and Orbock, 2007). There is sufficient drill hole coverage from the other operators to compensate for not using the Terteling drill hole assays.

Twin drilling analysis performed by AMEC indicates that Atlas assays within the transition domain and Noranda assays within the reduced domain should be down-graded (Wakefield and Orbock, 2007).

A three-dimensional MineSight® block model was created to estimate the V_20_5% resource. The model is rotated 326º. Topography was loaded into the model and blocks were coded. Block size was 25 ft x 25 ft x 20 ft.

14.2.2 Geological Models

RMP geologists coded drill hole samples based on the three oxidation states oxidized, transition, and reduced. Oxidation domains were interpreted from drill logs based on color, assay grades, and lithology. The oxide domain was classified based on low V_2O_5 grades and lithology logged as broken, tan to white, sandy siltstone. Drill hole intervals were classified as transition if assay grades were high and drill hole logs showed a lithological change from sandy siltstone to dark gray shale. The reduced domain was interpreted based on a drop in grade and lithology logged as hard black shale.

RMP developed oxidation envelopes around drill holes projected onto cross and long sections spaced 100 ft apart. AMEC imported RMP oxidation envelopes into MineSight. From these envelopes, AMEC created polylines between the oxide-transition boundary and transition-reduced boundary. Oxidation polylines were then linked to the adjacent section to create a 3-D surface to code the block model. Blocks and composites were set to a default code of reduced, then all blocks and composites above the reduced-transition surface were set to transition, and finally all blocks and composites above the transition-oxide surface was set to oxide. Proper assignment of the oxidation state was visually confirmed by AMEC by inspecting drill hole composites and blocks in cross sections, long sections, and in bench plans on the computer screen.

RMP developed mineralized envelopes or “grade polygons” to control the limits of grade interpolation in combination with oxidation state domains. Grade polygons were drawn around drill holes projected onto cross sections spaced 100 ft apart with assay grades equal to or greater than 0.050% V_2O_5. AMEC imported RMP assay grade polygons into MS and adjusted the polygons to match composite lengths. Grade polygons were wireframed to create 3-D grade domain solid in order to code composites and blocks. Composites and blocks were coded based on 50% or greater length or volume, respectively, within the grade domain. Within the 0.050% V_2O_5 grade domain, the total number of composites coded is 3,106 and total number of blocks coded is 55,168. Proper assignment of the grade domain code was confirmed by AMEC by inspecting composites and blocks in cross sections, long sections, and bench plans on the computer screen. Volume comparison of the grade domain solid versus the volume of the tagged blocks shows approximately four-tenths of a percent difference.

14.2.3 Composites

Assays from Gibellini were composited along the trace of the drill hole to 10 ft fixed length. Oxidation boundaries were treated has a hard during composite construction. Composites with a length of less than 5 ft were not used in grade interpolation. AMEC confirmed that the composites were properly calculated by manually compositing a few selected assays and comparing composite values to MineSight® results.

14.2.4 Exploratory Data Analysis

Noranda drilling shows the highest average grade at 0.296% V_2O_5, whereas RMP has the lowest average grade at 0.122% V_2O_5. Noranda concentrated their drilling to the central portion of the vanadium occurrence and tested only the higher-grade oxide and transition zone. Approximately 99.7% of the sample intervals are 5 ft in length. Eighteen assay intervals are shorter and eight assay intervals are greater than 5 ft, but none exceeds 15 ft

AMEC investigated and developed assay statistics based upon oxidation domains. The transition domain shows a mean grade 50% higher than that of the oxide domain and more than three times that of the reduced domain. The transition domain shows much higher mean grade at 0.344% V_2O_5 as compared to oxide and reduced at 0.229% V_2O_5 and 0.106% V_2O_5 respectively. The transition and oxide box which represents the 25th to the 75th percentile is thinner than the reduced domain, indicating a narrow grade distribution between the 25th to 75th percentiles.

AMEC found that the grade discontinuity between major lithologies was minor and that grade interpolation should not be restricted across lithological boundaries. AMEC ran contact plots for vanadium grades by oxidation domain with the additional assay data collected since the 2008 PA. Contact analysis between the oxidation domains continue to show a large grade disparity between domain. AMEC has treated the domain contacts between the oxidation states as hard for grade estimation.

14.2.5 Density Assignment

Tonnage factors were calculated from specific gravity measurements and assigned to the blocks based on oxidation domain (Table 14-1).

14.2.6 Grade Capping/Outlier Restrictions

Capping limits for Gibellini were investigated using a Monte-Carlo risk simulation methodology in the 2008 PA which showed the suggested capping levels were not much higher than the mean grades. The assay distribution, at a cut-off grade above 0.1% V_2O_5, displays a normal distribution, is not heavily skewed, and lacks a long grade tail. Monte-Carlo risk simulation would be more appropriate for skewed distributions.

Using all assays above 0.05% V_2O_5, the 90–100 decile shows a total metal content of 6.6%. The 99–100th percentile show a total metal content of 1.3%. This suggests that capping is not warranted. AMEC did not cap assays, but capped three high-grade composites greater than 1.5% V_2O_5 to 1.5% V_2O_5. AMEC allowed all composites to interpolate grade out to 110 ft and capped composites greater than 1% V_2O_5 to 1% V_2O_5 beyond 110 ft

Comparing an uncapped and unrestricted kriged model to the capped and outlier restricted kriged model, indicate that approximately 0.2% of the metal has been removed.

Table 14-1: Block Model Tonnage Factor

Oxidation Domain	Average S.G. (gm/cm^3)	Tonnage Factor (ft^3/ton)
Oxide	1.90	16.86
Transition	1.96	16.35
Reduced	2.26	14.18

14.2.7 Variography

AMEC used Sage2001® to construct and model experimental variograms using the correlogram method and henceforth referred to as variograms. AMEC developed and reviewed variograms for each of the oxidation domains within the grade shell and a set of variograms that included all data within the grade shell. The variograms from each of the oxidation domains were considered to be of poorer quality then that produced by using all composites within the grade shell. AMEC expects that the cause is due to using a smaller number of composites for each of the oxidation domains. AMEC is of the opinion that the quality of the variograms for all composites within the grade shell, are very good and supports their use in resource classification.

Spherical models with two structures were fitted to the V_2O_5 experimental variograms. The nugget effects were established using down-the-hole variograms where the short-range variability is well defined.

14.2.8 Estimation/Interpolation Methods

Within Grade Shells

Only composites from RMP, Noranda, Inter-Globe, and Atlas were used for grade interpolation. Hard contacts were maintained between oxidation domains – oxide blocks were estimated using oxide composites; transition blocks were estimated using transition composites; and reduced blocks were estimated using reduced composites. A range restriction of 110 ft was placed on grades greater than 1% V_2O_5 for each of the domains.

Ordinary kriging (OK) was used to estimate vanadium grade into mine blocks previously tagged as being within the 0.05% V_2O_5 grade domain solid. Two kriging passes were employed to interpolate blocks with vanadium grades.

A larger first pass interpolation required a minimum of eight composites, a maximum of 12 composites and no more than four composites per drill hole. A second pass using a smaller search distance was allowed to overwrite the first pass but required a minimum of eight composites, a maximum of 16 composites, and no more than four composites per drill hole. Passes one and two used a quadrant search with a maximum number of four composites per quadrant.

Outside of Grade Shells

AMEC interpolated blocks for grade that where outside of the grade shell using only composites external to the 0.05% V_2O_5 grade shell. These composites generally contain values of less than 0.05% V_2O_5. Mine block tabulation indicates that there were no oxide or transition blocks above the resource cut-off grades, and only 2,645 Inferred tons of reduced material above a cut-off grade of 0.088% V_2O_5 averaging 0.120% V_2O_5 were interpolated.

14.2.9 Block Model Validation

The block model was validated using:

- Visual inspection
- At a zero cut-off grade, comparing the means of the OK grade to a nearest-neighbour (NN) grade for blocks identified as potentially being Measured and Indicated Mineral Resources
- Evaluating degree of smoothing in the kriged block model estimates
- Swath plots

No potential biases were noted in the model from the validations.

14.2.10 Classification of Mineral Resources

AMEC calculated the confidence limits for determining appropriate drill hole spacing for Measured and Indicated Mineral Resources. The statistical criterion used by AMEC for Measured Mineral Resource is that a quarterly production (0.75 Mt) should be known to at least within ±15% with 90% confidence. A drill hole grid spacing of 110 ft gives a 90% confidence interval of ±6% on a quarterly basis.

Mineral Resources were classified as Measured when a block is located within 85 ft to the nearest composite and two additional composites from two drill holes are within 120 ft. Drill hole spacing for Measured Mineral Resources would broadly correspond to a 110 x 110 ft grid.

The statistical criterion used by AMEC for Indicated Mineral Resources is that a yearly production (3 Mt) should be known to at least within ±15% with 90% confidence. A drill hole grid spacing of 220 ft gives a 90% confidence interval of ±6% on an annual basis. Mineral Resources were classified as Indicated when a block is located within 170 ft to the nearest composite and one additional composite from another drill hole is within

240 ft. Drill hole spacing for Indicated Mineral Resources would broadly correspond to a 220 x 220 ft grid.

Visual checks on cross section and plan show good geological and grade continuity at this distance. However, tighter drill grid spacing may be required to define high grade zones, mill feed material and waste contacts, structural offsets, and to define final pit limits. AMEC recommended that a maximum drill grid spacing of less than 220 ft be maintained for Indicated Mineral Resources.

AMEC was of the opinion that continuity of geology and grade is adequately known for Measured and Indicated Mineral Resources for grade interpolation purposes.

Classification of Inferred Mineral Resources required a composite within 300 ft from the block.

14.2.11 Reasonable Prospects of Economic Extraction

Amec Foster Wheeler reviewed the 2011 resource estimate for reasonable prospects for eventual economic extraction, using the 2014 CIM Definition Standards, and updated the assumptions as required.

In their September 25, 2017 commodity study report, Merchant Research & Consulting Ltd., developed an annual forecast, out to year 2027, for 98% V_2O_5, ex-works China. The average V_2O_5 price for the period from 2017 to 2027 is \$12.02/lb. The \$12.02/lb V_2O_5 price is considered appropriate as a long-term price for cash flow or Mineral Reserves estimates. Amec Foster Wheeler typically increases the Mineral Reserve assumed metal price by 15% for the Mineral Resource price; to be used in reasonable prospects for eventual economic extraction analysis. Based on this, a long–term V_2O_5 Mineral Resource price assumption based on Mineral Reserve price would be \$13.82/lb.

Prophecy has held recent discussions with investors and due to the vanadium price volatility over the last year, is of the opinion that a V_2O_5 resource price of \$10.81/lb has more probability of being achieved over the long-term than \$13.82/lb, and would have greater acceptance by the investment community. This is approximately a 22% reduction in the V_2O_5 Mineral Resource price. A V_2O_5 price of \$10.81/lb is considered reasonable and was used by Amec Foster Wheeler as the long-term price assumption for the Mineral Resource base case.

Mineralization was confined within an LG pit outline that used the following key assumptions:

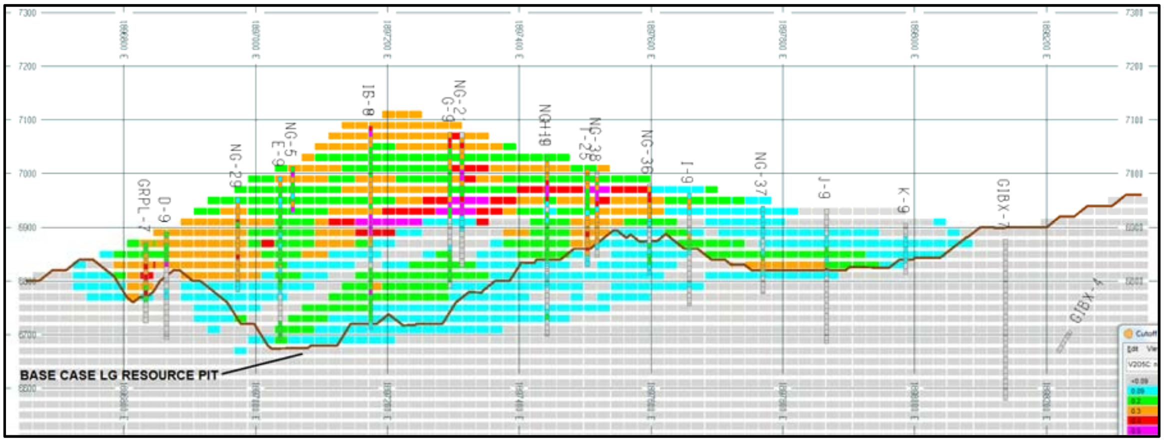
- Mineral Resource V_2O_5 price: \$10.81/lb
- Mining cost: \$2.21/ton mined
- Process cost: \$13.14/ton processed

- General and administrative (G&A) cost: \$0.99/ton processed
- Metallurgical recovery assumptions: 60% for oxide material, 70% for transition material and 52% for reduced material
- Tonnage factors: 16.86 ft^3/ton for oxide material, 16.35 ft^3/ton for transition material and 14.18 ft^3/ton for reduced material
- Royalty: 2.5% NSR
- Shipping and conversion costs: \$0.37/lb V_2O_5

For the purposes of the Gibellini resource estimate in this Report, an overall 40º pit slope angle assumption was used.

Figure 14-2 shows a cross section view of Gibellini blocks and composites color coded by V_2O_5 grades that lie within the Mineral Resource LG pit.

Figure 14-1: Gibellini Cross Section NonOrtho 10518521 Looking North West. Showing V_2O_5 Color Coded Blocks and Composites within Mineral Resource LG Pit.



Note: Figure from Amec Foster Wheeler, 2017

14.3 Louie Hill

14.3.1 Basis of Estimate

The drill hole database used in developing the Mineral Resource estimate totaled 7,665 ft in 58 drill holes, and was closed as of 1 May, 2011. Union Carbide contributed 49 drill holes to the database with a total of 706 V_20_5% assays. Nine drill holes drilled by American Vanadium with a total of 547 V_20_5% assays were also included.

A three-dimensional MineSight® block model was created to estimate the V_20_5% resource. The model is un-rotated. Topography was loaded into the model and blocks were coded. Block size was 25 ft x 25 ft x 20 ft

14.3.2 Geological Models

American Vanadium supplied AMEC with geological interpretations, 10 cross sections and three long sections. The cross sections are spaced at 300 ft and long sections are spaced at 200 ft. The sections were comprised of lithology, fault, and mineralization interpretations. AMEC recommended that oxidation states be modeled in the next iteration of modeling at Louie Hill.

AMEC reconciled the cross sections in plan and used the mid-bench poly-lines to code the block model for mineralization percent. Block codes for mineralization were then used to code composites as being mineralized or non-mineralized.

14.3.3 Composites

Assays from Louie Hill were composited down-the-hole to 20 ft fixed lengths. AMEC confirmed that the composites were properly calculated by manually compositing a few selected assays and comparing composite values to MineSight® results.

14.3.4 Exploratory Data Analysis

AMEC coded the Louie Hill composites as mineralized if they were within the mineralized envelope, and as non-mineralized if outside of the mineralized envelope. The envelope was defined by American Vanadium and supported by AMEC probability plot data.

Using all composite data, the probability plot shows two distinct domains, a mineralized domain and a non-mineralized domain, split at 0.2% V_20_5. AMEC coded the composites for the two domains and ran the probability plots by domain. Back tagging the mineralization code from the blocks to the composites appropriately separated the two domains. A hard boundary was used to separate the domains.

Box plots show two populations with low coefficients of variation (CV) calculated as standard deviation/mean of 0.57 for mineralized and 0.757 for non-mineralized. The low CV values indicate that estimating the block grades for the two domains should not be problematic.

14.3.5 Density Assignment

As no measurements have been completed to date on mineralization from Louie Hill, the Gibellini data were used in the Louie Hill estimate.

14.3.6 Grade Capping/Outlier Restrictions

AMEC did not consider that grade capping was warranted at Louie Hill. Assay grades were continuous and did not show high grade outliers.

14.3.7 Variography

AMEC ran the Louie Hill variograms using Sage2001® software. First a down hole variogram was run and modeled for obtaining the nugget value. All variograms were run using all composites as there were insufficient data to run composites by individual domain.

Grade interpolations were limited to blocks within a 0.05% V_2O_5 mineralized domain that was constructed on 100 ft-spaced cross sections and wireframed into a solid. Composites within the grade domain were assigned a unique domain code and composites external to the grade domain were given a unique domain code.

A set of variograms were run at increments of 30º vertically and horizontally to obtain an anisotropy ellipsoid for OK grade estimation. The anisotropy ellipsoid defined by the variogram analysis was used to define the three-dimensional search ellipsoid and composite weighting used in the OK grade estimation of V_20_5%.

14.3.8 Estimation/Interpolation Methods

OK was used to estimate V_20_5% grades into blocks domain tagged as mineralized and non-mineralized. Hard contacts were maintained between the domains. A range restriction of 200 ft was placed on grades greater than 0.15% V_20_5, for blocks within the non-mineralized domain. The range restriction was only used for blocks outside of the mineralized domain. Blocks within the non-mineralized domain were not considered as having resource potential; hence no metal was lost in the resource due to the 200 ft range restriction. The sparse mineralization found within the non-mineralized domain does not have the continuity required for resource classification.

Two kriging passes were employed to interpolate grades into the mineralized domain blocks. Blocks that contained both percentages of mineralized and non-mineralized material were weight averaged for a whole block V_20_5 percentage grade.

For the mineralized domain a less restrictive first pass interpolation required a minimum of three composites, a maximum of twelve composites and no more than three composites per drill hole. A second pass was allowed to overwrite the first pass but required a minimum of four composites, a maximum of twelve composites, and no more than three composites per drill hole. The first pass used search distances of 2,000 ft along the long axis, 410 ft along the short axis, and 200 ft along the vertical axis. The second pass restricted the search to 1,500 ft, 310 ft, and 150 ft, for the long, short, and vertical axis respectively.

14.3.9 Block Model Validation

AMEC constructed an NN model to compare to the OK grade block model. Nearest-neighbor grade interpolation also honored the interpolation parameters as applied to the OK grade model. For all blocks classified as Inferred, the V_20_5% OK estimation matched the NN grade estimation very well.

A relative percentage value of less than 5% difference between the means is an acceptable result and indicates good correlation between the two models; the mean grades of the two models show less than 3% difference for Inferred blocks.

14.3.10 Classification of Mineral Resources

Because of the uncertainty in the drilling methods, sample preparation, assay methodology, and the slight grade bias of the Union Carbide assays as compared to the

American Vanadium assays, AMEC limited the classification of resource blocks to the Inferred Resources category.

Additional infill, deeper, and step-out drilling is recommended at Louie Hill to test for possible higher-grade transition zone below the oxide domain, contacts between mineralization and waste, location of structural offsets, and further twin sampling of Union Carbide drill holes. When additional drill data is available, AMEC recommended that a drill hole spacing study be completed that applies confidence limits for calculation of drill spacing required for Measured and Indicated Mineral Resource confidence classifications.

14.3.11 Reasonable Prospects of Economic Extraction

Amec Foster Wheeler reviewed the 2011 resource estimate for reasonable prospects for eventual economic extraction, using the 2014 CIM Definition Standards, and updated the assumptions as required.

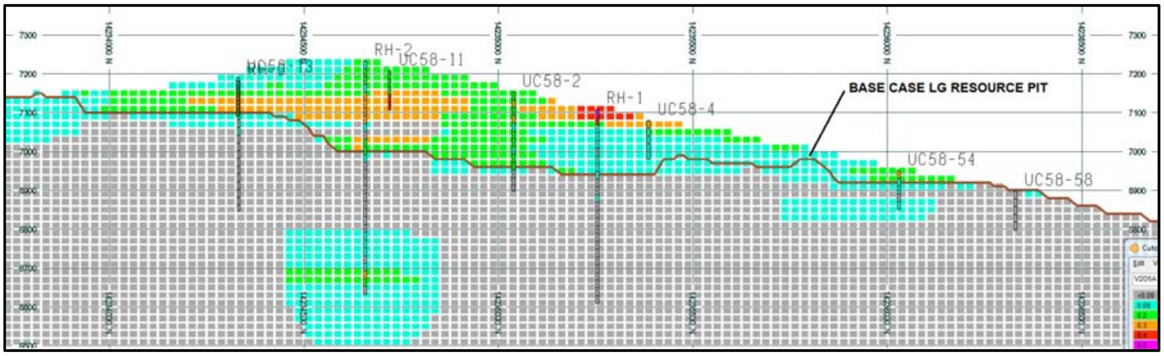
Amec Foster Wheeler's long-term Mineral Resource price assumption is discussed in Section 14.2.11.

Mineralization was confined within an LG pit outline that used the following key assumptions:

- Mineral Resource V_2O_5 price: $10.81/lb
- Mining cost: $2.21/ton mined
- Process cost: $13.14/ton processed
- General and administrative (G&A) cost: $0.99/ton processed
- Metallurgical recovery assumption: of 60% for oxide material
- Tonnage factor: 16.86 ft^3/ton for oxide material
- Royalty: 2.5% NSR
- Shipping and conversion costs: $0.37/lb V_2O_5
- For the purposes of the resource estimate in this Report, an overall 40º slope angle was used.

Figure 14-2 shows a cross section view of Louie Hill blocks and composites color coded by V_2O_5 grades that lie within the Mineral Resource LG pit.

Figure 14-2: Louie Hill Cross Section 1896300E Looking West. Showing V_2O_5 Color Coded Blocks and Composites within Mineral Resource LG Pit.



Note: Figure from Amec Foster Wheeler, 2017

14.4 Mineral Resource Statement

Mr. Edward J.C. Orbock III, an Amec Foster Wheeler employee, and an SME Registered Member, is the Qualified Person (QP) for the Mineral Resource estimates. The estimates have an effective date of 10 November, 2017.

Mineral Resources for Gibellini are included as Table 14-2, whereas the Mineral Resources for Louie Hill are included as Table 14-3. Mineral Resources are stated using cut-off grades appropriate to the oxidation state of the mineralization.

Amec Foster Wheeler performed a sensitivity case analysis on the Gibellini estimate, to assess the impact of variation in V_2O_5 price on the estimate. The sensitivity case is shown in Table 14-4. Gibellini Measured and Indicated Mineral Resources are relatively insensitive to V_2O_5 price with regards to tons and grade. Very little tons (5.4%) are lost between base case and three-year trailing price +15% and grades are slightly higher (2.7%), but price dropped 21.3%. For Inferred, vanadium price does have a large impact on tons and grade, due to most of Inferred being reduced material. As vanadium price drops, cut-off grades increase, and previously economic material is reclassified as waste.

A similar sensitivity evaluation was performed for the Louie Hill estimate, and is indicated in Table 14-5 with the base case highlighted. Louie Hill also shows some insensitivity to metal price with regards to tons and grade.

Table 14-2: Mineral Resource Statement, Gibellini

Confidence Category	Domain	Cut-off V_2O_5 (%)	Tons (Mt)	Grade V_2O_5 (%)	Contained V_2O_5 (Mlb)
Measured	Oxide	0.116	3.90	0.253	19.74
	Transition	0.105	3.95	0.379	29.88
Indicated	Oxide	0.116	7.04	0.235	33.12
	Transition	0.105	7.12	0.327	46.55
Total Measured and Indicated			***22.01***	***0.294***	***129.28***
Inferred	Oxide	0.116	0.14	0.179	0.50
	Transition	0.105	0.01	0.179	0.03
	Reduced	0.134	9.68	0.190	36.75
Total Inferred			***9.82***	***0.190***	***37.27***

Notes to accompany Mineral Resource table for Gibellini:

1. The Qualified Person for the estimate is Mr. E.J.C. Orbock III, RM SME, an Amec Foster Wheeler employee. The Mineral Resources have an effective date of 10 November, 2017.
2. Mineral Resources are reported at various cut-off grades for oxide, transition, and reduced material.
3. Mineral Resources are reported within a conceptual pit shell that uses the following assumptions: Mineral Resource V2O5 price: \$10.81/lb; mining cost: \$2.21/ton mined; process cost: \$13.14/ton processed; general and administrative (G&A) cost: \$0.99/ton processed; metallurgical recovery assumptions of 60% for oxide material, 70% for transition material and 52% for reduced material; tonnage factors of 16.86 ft^3/ton for oxide material, 16.35 ft^3/ton for transition material and 14.18 ft^3/ton for reduced material; royalty: 2.5% net smelter return (NSR); shipping and conversion costs: \$0.37/lb. An overall 40º pit slope angle assumption was used.
4. Rounding as required by reporting guidelines may result in apparent summation differences between tons, grade and contained metal content. Tonnage and grade measurements are in US units. Grades are reported in percentages.

Table 14-3: Mineral Resource Statement, Louie Hill

Confidence Category	Cut-off V_2O_5 (%)	Tons (Mt)	Grade V_2O_5 (%)	Contained V_2O_5 (Mlb)
Inferred	0.116	7.06	0.284	40.16

Notes to accompany Mineral Resource table for Louie Hill:

1. The Qualified Person for the estimate is Mr. E.J.C. Orbock III, RM SME, an Amec Foster Wheeler employee. The Mineral Resources have an effective date of 10 November, 2017. The resource model was prepared by Mr. Mark Hertel, RM SME.
2. Oxidation state was not modeled.
3. Mineral Resources are reported within a conceptual pit shell that uses the following assumptions: Mineral Resource V_2O_5 price: $10.81/lb; mining cost: $2.21/ton mined; process cost: $13.14/ton processed; general and administrative (G&A) cost: $0.99/ton processed; metallurgical recovery assumptions of 60% for mineralized material; tonnage factors of 16.86 ft^3/ton for mineralized material; royalty: 2.5% net smelter return (NSR); shipping and conversion costs: $0.37/lb. An overall 40º pit slope angle assumption was used.
4. Rounding as required by reporting guidelines may result in apparent summation differences between tons, grade and contained metal content. Tonnage and grade measurements are in US units. Grades are reported in percentages.

Table 14-4: Sensitivity of Gibellini Mineral Resource to Variations in Metal Price Assumptions

Sensitivity	V_2O_5 Price (US$/lb)	Measured + Indicated (Mt)	Measured + Indicated V_2O_5 (%)	Inferred (Mt)	Inferred V_2O_5 (%)
3-Yr Trailing Avg. +15%	8.51	20.83	0.302	1.55	0.223
Base -15%	9.19	21.27	0.299	5.09	0.206
Base	10.81	22.01	0.294	9.82	0.190
Base +15%	12.43	22.44	0.290	12.44	0.180
Base +30%	14.05	22.82	0.287	13.59	0.175

Notes to accompany Mineral Resource sensitivity table for Gibellini:

1. The Qualified Person for the estimate is Mr. E.J.C. Orbock III, RM SME, an Amec Foster Wheeler employee. The Mineral Resources have an effective date of 10 November, 2017.
2. Mineral Resources are reported at various cut-off grades for oxide, transition, and reduced material.
3. Mineral Resources are reported within a conceptual pit shell that uses the following assumptions: Mineral Resource V_2O_5 price: $10.81/lb; mining cost: $2.21/ton mined; process cost: $13.14/ton processed; general and administrative (G&A) cost: $0.99/ton processed; metallurgical recovery assumptions of 60% for oxide material, 70% for transition material and 52% for reduced material; tonnage factors of 16.86 ft^3/ton for oxide material, 16.35 ft^3/ton for transition material and 14.18 ft^3/ton for reduced material; royalty: 2.5% net smelter return (NSR); shipping and conversion costs: $0.37/lb. An overall 40º pit slope angle assumption was used.
4. Rounding as required by reporting guidelines may result in apparent summation differences between tons, grade and contained metal content. Tonnage and grade measurements are in US units. Grades are reported in percentages.

Table 14-5: Sensitivity of Louie Hill Mineral Resource to Variations in Metal Price Assumptions

Sensitivity	V_2O_5 Price US$/lb	Inferred (Mt)	Inferred V_2O_5 (%)
3-Yr Trailing Avg. +15%	8.51	6.12	0.303
Base -15%	9.19	6.44	0.297
Base	10.81	7.06	0.284
Base + 15%	12.43	7.30	0.280
Base + 30%	14.05	7.42	0.277

Notes to accompany Mineral Resource sensitivity table for Louie Hill:

1. The Qualified Person for the estimate is Mr. E.J.C. Orbock III, RM SME, an Amec Foster Wheeler employee. The Mineral Resources have an effective date of 10 November, 2017.
2. Oxidation state was not modeled.
3. Mineral Resources are reported within a conceptual pit shell that uses the following assumptions: Mineral Resource V_2O_5 price: \$10.81/lb; mining cost: \$2.21/ton mined; process cost: \$13.14/ton processed; general and administrative (G&A) cost: \$0.99/ton processed; metallurgical recovery assumptions of 60% for oxide material; tonnage factors of 16.86 ft^3/ton for oxide material; royalty: 2.5% net smelter return (NSR); shipping and conversion costs: \$0.37/lb. An overall 40º pit slope angle assumption was used.
4. Rounding as required by reporting guidelines may result in apparent summation differences between tons, grade and contained metal content. Tonnage and grade measurements are in US units. Grades are reported in percentages.

14.5 Factors That May Affect the Mineral Resource Estimates

Factors which may affect the conceptual pit shells used to constrain the Mineral Resources, and therefore the Mineral Resource estimates include changes to the following assumptions and parameters:

- Commodity price assumptions
- Metallurgical recovery assumptions
- Pit slope angles used to constrain the estimates
- Assignment of oxidation state values for Gibellini only
- Assignment of SG values.

14.6 Comments on Section 14

Mineral Resources take into account geological, mining, processing and economic constraints, and have been confined within appropriate LG pit shells, and therefore are classified in accordance with the 2014 CIM Definition Standards.

The Gibellini resource model has a known error that has effectively reduced the overall grade for Measured and Indicated Mineral Resources by approximately 1%. An adjustment to Atlas's transition assays between zero percent and 0.410% V_2O_5 was implemented twice. AMEC reran the model with the correction, and the results indicated an approximate error of 1%. AMEC was of the opinion that this error was not material to the estimate; the review conducted by Amec Foster Wheeler of the model in support of the current Mineral Resource estimate also concluded that the error is not material. The QP concurs with this view.

15.0 MINERAL RESERVE ESTIMATES

This section is not relevant to this Report.

16.0 MINING METHODS

This section is not relevant to this Report.

17.0 RECOVERY METHODS

This section is not relevant to this Report.

18.0 PROJECT INFRASTRUCTURE

This section is not relevant to this Report.

19.0 MARKET STUDIES AND CONTRACTS

This section is not relevant to this Report.

20.0 ENVIRONMENTAL STUDIES, PERMITTING, AND SOCIAL OR COMMUNITY IMPACT

This section is not relevant to this Report.

21.0 CAPITAL AND OPERATING COSTS

This section is not relevant to this Report.

22.0 ECONOMIC ANALYSIS

This section is not relevant to this Report.

23.0 ADJACENT PROPERTIES

This section is not relevant to this Report.

24.0 OTHER RELEVANT DATA AND INFORMATION

This section is not relevant to this Report.

25.0 INTERPRETATION AND CONCLUSIONS

25.1 Introduction

The QP notes the following interpretations and conclusions, based on the review of data available for this Report.

25.2 Mineral Tenure, Surface Rights, Water Rights, Royalties and Agreements

- Information from legal experts supports that the mining tenure held is valid and is sufficient to support declaration of Mineral Resources
- Claims are held in the names of two third parties, with whom Prophecy has lease agreements. Royalties are associated with these claims
- There has been no legal survey of the Project claims. Under Nevada law, each unpatented claim is marked on the ground, and does not require survey
- No surface rights are currently held. Mineral deposits are located on land administered by the BLM
- To the extent known, Prophecy advised that there are no other significant factors and risks that may affect access, title, or the right or ability to perform work on the property that have not been discussed in this Report.

25.3 Geology and Mineralization

- Similarities with the style of mineralization for the Project exist in the USGS manganese nodule model, model 33a of Cox and Singer (1986). Vanadium mineralization is thought to be the result of syngenetic and early diagenetic metal concentration in the marine shale rocks
- Knowledge of the deposit settings, lithologies, mineralization style and setting, and structural and alteration controls on mineralization is sufficient to support Mineral Resource estimation.

25.4 Exploration, Drilling and Analytical Data Collection in Support of Mineral Resource Estimation

- In the opinion of the QP, the quantity and quality of the lithological, geotechnical, collar and downhole survey data collected in the exploration and infill drill programs completed by RMP and American Vanadium, and the verification performed by American Vanadium on legacy drill data are sufficient to support Mineral Resource estimation

- The quality of the analytical data is sufficiently reliable to support Mineral Resource estimation
- AMEC considered that a reasonable level of verification has been completed, and that no material issues would have been left unidentified from the programs undertaken. As no additional work has been undertaken on the project since the AMEC audits, the AMEC conclusions are considered by Amec Foster Wheeler to remain valid.

25.5 Metallurgical Test Work

- Metallurgical test work and associated analytical procedures were performed by recognized metallurgical testing facilities, and the tests performed were appropriate to the mineralization type
- Samples selected for testing were representative of the various types and styles of mineralization at Gibellini. Samples were selected from a range of depths within the deposit. Sufficient samples were taken to ensure that tests were performed on sufficient sample mass
- No processing factors were identified from the metallurgical test work that would have a significant effect on extraction.
- Commercial heap leaching and SX recovery of vanadium ores has not been done before; nonetheless, heap leaching and SX recovery are common technologies in the mining industry. The most notable examples are the multiple copper, nickel, and cobalt heap leach projects that utilize an acid-leach solution to mobilize the metal followed by recovery in a SX plant, which is then followed by electro-winning. The Gibellini process assumed in 2011 applied the same acid heap leaching and SX technology to recover vanadium. However, instead of electro-winning to produce a final product, the Gibellini process was assumed to use an acid strip followed by precipitation to produce a final product.

25.6 Mineral Resource Estimates

- The Mineral Resource estimates for Gibellini and Louie Hill, which have been estimated using RC and core drill data, have been performed to industry best practices, and conform to the requirements of the 2014 CIM Definition Standards.
- Factors which may affect the Mineral Resource estimates include commodity price assumptions, metallurgical recovery assumptions, pit slope angles used to constrain the estimates, assignment of oxidation state values and assignment of SG values.

25.7 Conclusions

The level of available information supports Mineral Resource estimation. A mining study at the level of a preliminary economic assessment is warranted.

26.0 RECOMMENDATIONS

The recommendations are envisaged as a two-stage program, with no area of work dependent on the results of another. The first phase consists of a claim boundary survey; the second phase comprises recommendations pertaining to geology, block modelling, and Mineral Resource estimation.

26.1 Phase 1

Although all of the leased claims have claim markers, they have not been surveyed. Prior to any future mining studies, the claim outlines should be legally surveyed so as to support open pit designs and potential sites for infrastructure. The survey should be performed by a licenced surveyor.

The total cost to carry out this program of work is projected to be approximately $7,500 to $10,000.

26.2 Phase 2

The recommendations pertain to geology, block modelling, and Mineral Resource estimation, as follows:

- Update data on the drill logs when new data are collected, or the old data are revised or reinterpreted
- Document relogging efforts and place updated copies of drill hole logs in the drill log folders
- The insertion rates of the control samples are low when compared to industry best practice; the insertion rate of SRMs, duplicates, and blanks should be increased to 5% each
- Additional condemnation drilling is recommended for infrastructure sites that could be used for buildings and waste rock storage facilities
- Oxidation domains for Louie should be developed
- The Reduced mineralization should be re-classified with respect to resource confidence categories once metallurgical test work data on projected recoveries from this material are available
- Twin drill an additional four to five Atlas drill holes through the transition zone and evaluate the results in conjunction with the previous completed twins
- Test and evaluate the potential for high-angled structures to carry elevated vanadium grades by drilling a series of angled drill holes.

The total cost to carry out this program of work is projected to be approximately $300,000 to $350,000, depending on the amount of condemnation and angled drilling that may be required.

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