

**SUMMARY REPORT**

**ANTELOPE URANIUM PROJECT**  
**FREMONT AND SWEETWATER COUNTIES, WYOMING, USA**

**FOR**

**ENERGY METALS CORPORATION**

**(Formerly CLAN RESOURCES LTD)**

**INTRODUCTION AND TERMS OF REFERENCE**

**Background, Authorization and Purpose**

Energy Metals Corporation (EMC), formerly Clan Resources Ltd. (Clan) has entered in to an agreement to purchase an undivided 100% interest in the AB, the RF, the SM and the WY (formerly JAB) claims together with other mineral claims in the coterminous United States. This report refers to the above listed claims only, with a particular focus on the WY claims. A substantial amount of mineral exploration has been completed on all of the claims. The terms of the agreement, subject to regulatory approval, call for Clan to pay the vendor 1,250,000 shares of its common shares to acquire an undivided 100% legal and beneficial interest in all of the claims.

The claims are located in central Wyoming, approximately 12 kilometres by road south of the village of Jeffrey, in Fremont and Sweetwater Counties. The project is called the Antelope Project by EMC, having been worked on earlier under various names by Silver Bell, Union Carbide and others. As a result of past exploration efforts, uranium mineralization has been identified in significant and potentially economic amounts on the property.

By letter dated November 16<sup>th</sup> 2004, Mr. James Watt, Director of EMC, requested writer to visit the site and complete the preparation of a geological report for the Antelope Project that meets the requirements of NI 43 101. The report is to be used by EMC for qualifying the acquisition of the property and may be used to satisfy other regulatory requirements or financings.

A copy of the letter of Authorization issued under the name of Clan is included in Appendix I.

## **Scope and Limitations**

This report describes the geology and mineral potential of the Antelope project optioned by EMC. The author worked briefly in the area in 1989 as a consultant geologist and became broadly familiar with the geological setting and style of the uranium mineralization in Wyoming through work carried out during the late '70s while employed by Placer Development Limited. Research for this report has included a review of available documentation previous exploration and development work that related to the immediate area of the property. Regional exploration information has been sought to obtain an indication of the level of industry activity in the area. An estimate of costs has been made for recommended work based on current rates for drilling, geophysical surveys and professional fees.

## **Sources of Information**

Sources of information are detailed below and include both the public domain information available and personally acquired data.

- Research of the USGS data available for the area.
- Review of some internal reports and references from information used in an internal feasibility study of Union Carbide, a major specialty metals producer, provided by EMC.
- Review of geological maps and reports completed by the US Geological Survey.
- Copies of a signed agreement between Clan and the owner of the subject claims provided by EMC.
- Copies of the sketches of claim maps, submitted for the production of the courthouse plats, showing the claim locations supplied by the vendor of the claims.
- A site visit to the property by the author on November 17<sup>th</sup> - 18<sup>th</sup>, 2004.

No members of EMC or insiders or employees participated in this site examination. New claim posts were seen on all four of the subject properties. No samples were collected as no area of outcropping mineralization was not identified.

## **Plan of Presentation**

The report describes the property in accordance with the guidelines specified in National Instrument 43-101. A recommendation for two non-contingent phases of work is made in order to confirm the economic potential of the property. Maps that accurately represent the property's location and geological setting are included in the report. A copy of the property descriptions from the underlying legal agreement between the vendor and Clan is included in **Appendix III** together with the claim sketch map submitted for recording, which locates the property according to Township and Range.

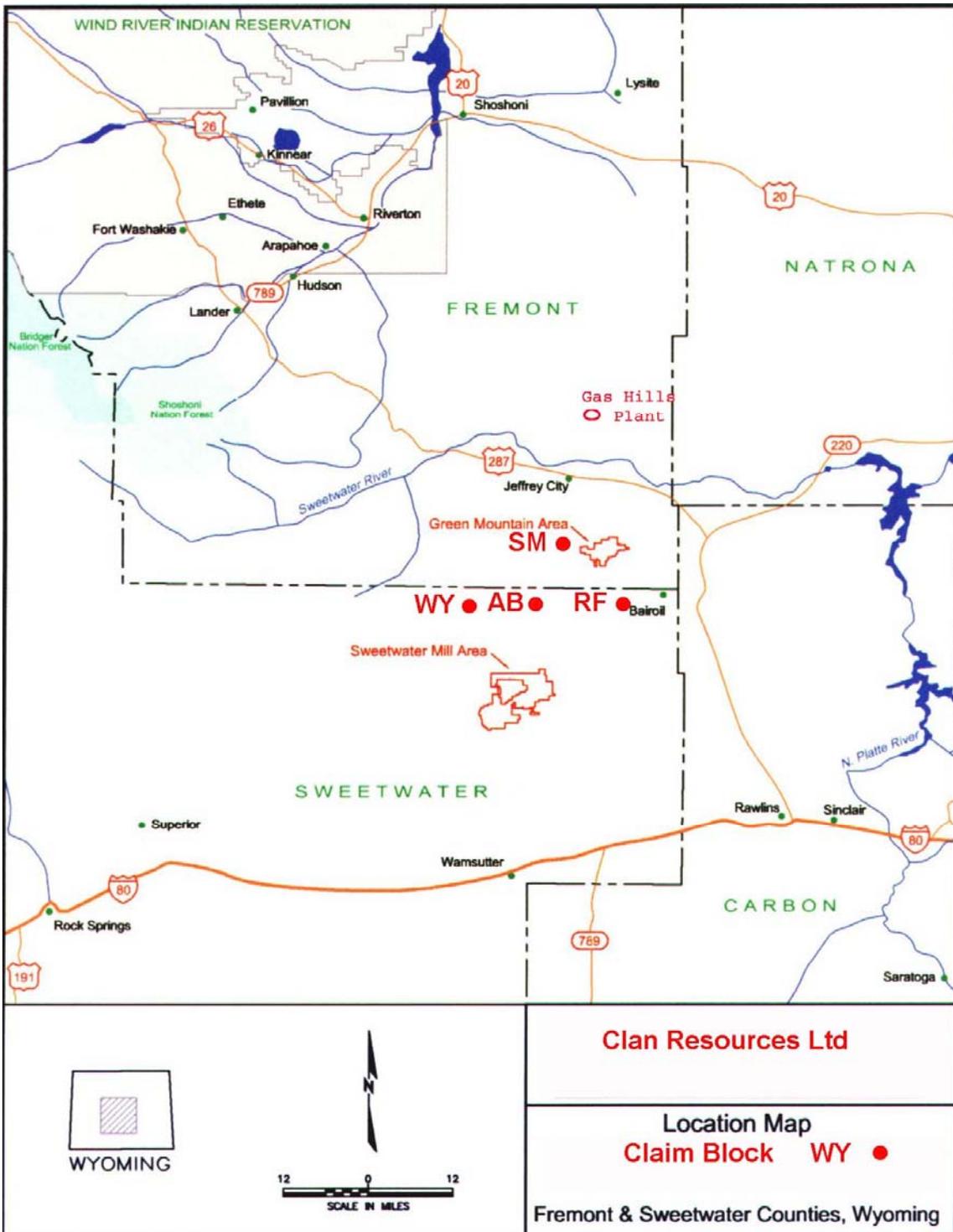


Fig 1

## **PROPERTY LOCATION AND DESCRIPTION**

EMC is acquiring, subject to regulatory approval, several claim blocks in Wyoming that are included in the Antelope Project from Mr. William M. Sheriff. These and other claim blocks in the coterminous United States of America are to be purchased for 1,250,000 shares at a deemed price of CDN \$1.10 per share with an initial tranche of 400,000 shares to be issued, followed on or before March 31<sup>st</sup> 2005 by a further tranche of 600,000 shares and a final tranche of 250,000 shares on or before January 31<sup>st</sup> 2006. The agreement for purchase and sale is an amended and restated agreement and is the agreement in effect according to the parties to the agreement.

The acquisition agreement includes claims that were visited by the writer in Wyoming and other claims in Wyoming and Arizona that are included in the list of claims from the Appendix to the agreement that were not visited by the writer.

The claims visited comprise 4 separate blocks, the WY 1-40 (formerly JAB), the AB 1-40 (formerly Antelope), the RF 1-34 (Twin Buttes), all located in Sweetwater County, and the SM 1-5, 7-17, 19-21, 24-28 (Sheep Mountain mine area, Fremont County). The area covered is approximately 1,100 hectares (2,760 acres).

A further claim Block, WY 41- 81, also in Sweetwater County, was not visited and the location is also shown on the claim sketches in Appendix II as it is part of the subject property. None of the AZ claims in Arizona were visited nor were the MD 1-12, AR 1-8, SP 1-9, PL 1-22 and TD 9-26, 31-40 visited. These unvisited claims are not the subject of this report.

The writer has carried out a title search on the BLM LR 2000 Mineral Claim Information System and the registered listing of all of the claims included in the acquisition agreement is shown in Appendix II, together with following the standard sketch maps for the above visited claims, supplied by the Vendor. These sketch maps have the usual presentation as seen in county courthouse plats. The Claims SM 6, 18, 22, 23 are not listed in the BLM Information system. These were not recorded as shown on the sketch map of the SM claim block for reasons of conflict with other title.

The writer is not able to warrant the validity of the title because the BLM data is presented together with disclaimers as to validity and correctness, in a manner similar to other jurisdictions such as British Columbia. Further title verification may be required by regulatory agencies. From the information available there is no indication that the title is not in good standing at this time.

No legal survey has been submitted for the claims at this time although the claims are shown located according to section corner posts on the claim sketches. The open nature of the ground made it possible to see the lines of claim posts on the claims visited and their position generally conformed with the location as shown on the sketch maps. The expiry date of the claims recorded is 1<sup>st</sup> September, 2005 and this expiry date can be extended by paying the requisite fees and assessments annually, prior to the due date.

The claims visited lie on public lands administered by the BLM with an annual fee of US\$100 per claim and a Wyoming State assessment of up to US\$8.00 per claim which expenditure is to be assumed by EMC under the terms of the agreement until the transfers are executed.

The vendor warrants in the purchase agreement that there are no liabilities attached to former mining and exploration activity on the subject claims covered by the agreement. During a visit to the BLM office in Casper a BLM employee confirmed that reclamation was being carried out in some areas and that it was the responsibility of former operators. Further work on the claims will require permitting by the BLM and since the area is one already dedicated to industrial activity in the form of uranium mining, it is not anticipated that exploration permits will be especially difficult to obtain.

No land alienation for parks or special management zones is indicated on current USGS or BLM maps. The area of the Antelope Project had considerable mineral production activity in the past. No information regarding indigenous land claims has been identified, nor has there been any reported to this writer.



**IMAGE I**

View of Sheep Mountain Uranium Mine looking north towards SM claim block. Location of this photograph is on the south edge of the red dot marking the SM claim location on the Location Map (Fig 1) on page three.

## **ACCESS, CLIMATE, PHYSIOGRAPHY, LOCAL RESOURCES AND INFRASTRUCTURE**

The claim blocks are located near the Continental Divide in Central Wyoming and can be reached by good clays road from Jeffrey City to the north and Bairoil to the east, both approximately 10-12 kilometers from the claim blocks.

The area has a dry climate, typical of the basin and range country that extends from eastern Oregon to northern Arizona. Winters are relatively cold having temperatures as low as 35° C with nominal snowfalls of 10 to 20 cms in the months of December and January. Summer may have temperatures reaching 35-40° C and are fairly dry, with precipitation ranging from 10 to 20 mm per month. The actual operating season for basic exploration purposes is from March to November. Road closures due to extreme winds may cause delays in access and occasional rainstorms can make the clay roads impassable unless the surface has been capped with sufficient gravel.

The claims cover the area of the Great Divide Basin that is expressed in topography characterized by internal drainage and low relief. With the exception of a few low hills most of the local relief is less than 30 meters (100 feet) in a general elevation of about 2,300 meters (6,900 feet). Very few trees stand on the windswept prairie surfaces where the dominant vegetation is a type of sagebrush. The access for drilling represents very little challenge except during break-up or after occasional rainy periods because of the clay soils and unsealed roads.

The nearest power lines come into the area from Bairoil and Jeffrey City and cross the area to service the Sweetwater uranium mill and the area of the former Sheep Mountain mine. Both of these communities are small but might offer some labour for future operations. The Sweetwater mill is on care and maintenance at this time and might be suitable for the treatment of uranium ores from the Antelope project if grades are high enough to pay for freight and operating costs.

## **HISTORY**

The Antelope project is located within the Great Divide Basin are which was subject to a major exploration effort during the early development of the nuclear industry in the 50's and subsequently in the uranium exploration of the late 70's. During the latter period several properties in the area were taken to feasibility studies and some to production.

The original interest in the area was prompted by the discovery at Hadsell Crossing, some time before 1936, of an unidentified yellow mineral by Mrs Minnie McCormick of Wamsutter. This mineral was eventually identified as Schroeckingerite, a hydrated fluoro-carbonate-sulphate containing uranium.

Throughout the 1940's and into the 1950 uranium exploration boom the area was investigated by a number of USGS and AEC personnel. In 1948 Uranium Inc of Denver Colorado explored the deposits making 1200 meters (3600 feet) of trenching, 13 pits and many shallow auger holes in the area of the Jab Claims, now staked as the WY 1-40 claims. A mapping and drilling programme was also carried out in the area in 1949 and 1950 by the USGS.

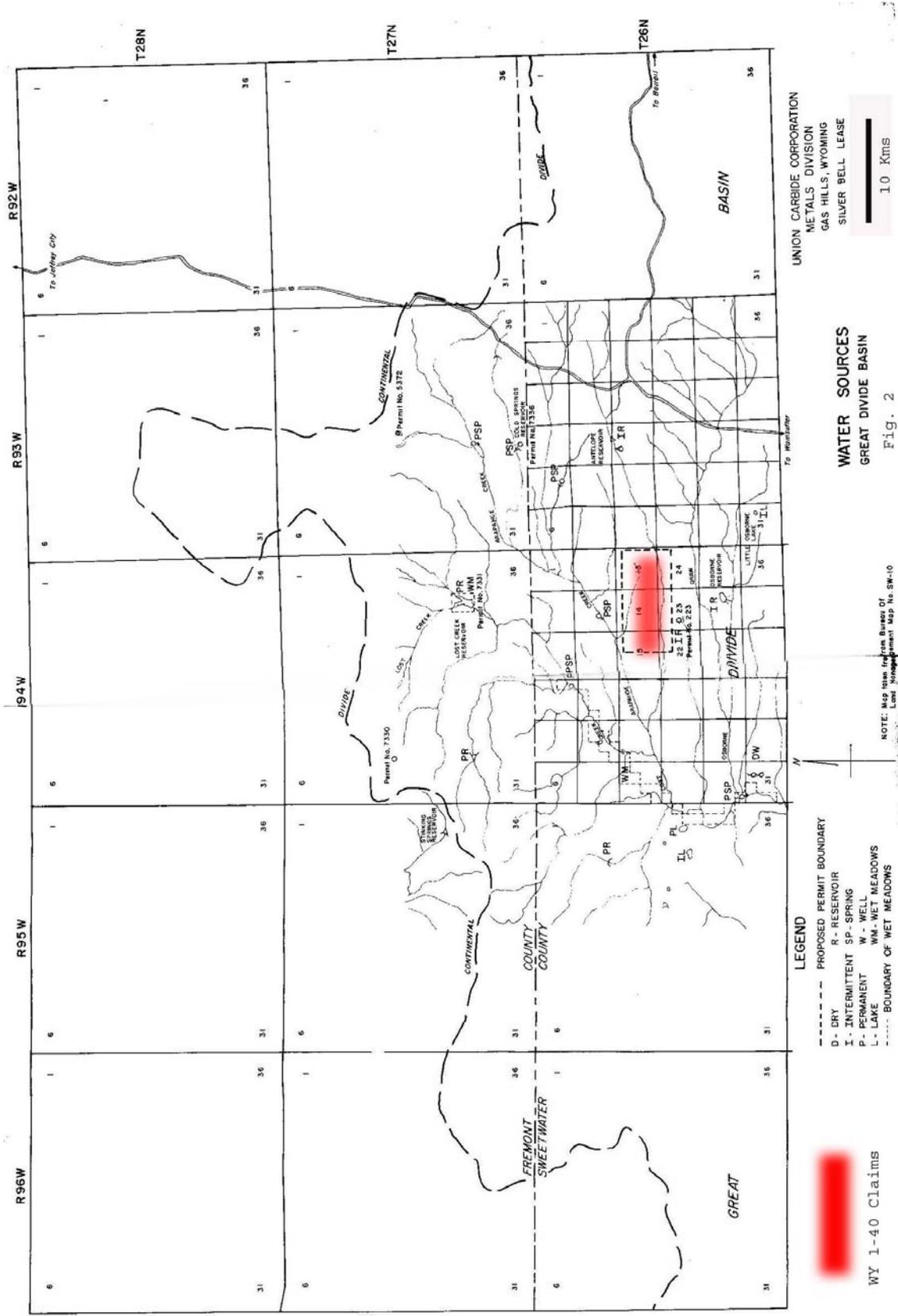
In the period 1970 to 1976 work was carried out by Union Carbide, Silver Bell Industries and Minerals Exploration Company. This led to a feasibility study executed in 1976 by the Ralph M. Parsons Company when the uranium price had risen to \$12/lb U3O8. The mining operation planned included 4 pits with a total mining reserve calculated at 11.042 million s.tons (10.02 million t.) with a grade of 0.045% U3O8 using a cutoff grade of 0.03% U3O8, equivalent to 9,940,000 lbs (45.2 million kgs) of U3O8. At a 0.02% cutoff grade, reserves were calculated at 16 million s.tons (14.5 million t.) at a grade of 0.037% U3O8, equivalent to 11.84 million lbs (5.38 million kgs) U3O8.

*(Although the terms “reserve” and “resource” used above and elsewhere in this report, when historical information is discussed, were estimates produced by Union Carbide Corporation they are not to be relied upon in this report under the definitions required by NI 43 101. This is because a Qualified Person, the writer in this case, has not made any independent recalculation of the tonnages claimed and also because it is recommended in this report to explore an extraction process that is proven technology in operations elsewhere but not tested on the JAB deposit. The statement of tonnage and grade above is therefore classified here as exploration information and only reflecting an order of magnitude size and grade for the deposit. The reliability of the tonnage and grade defined is based on extensive sampling by rotary and core drilling carried out by a senior mining company.)*

During the period 1976 to 1983, Union Carbide continued exploration, reporting in 1981 a reserve total of 1.29 million s.tons (1.17 million t) with an average grade of 0.071% U3O8. This reserve was based on a drill programme of 1,372 drill holes of which at least 42 were core holes, which were surveyed with a direct neutron logger to determine disequilibrium values. Actual drill logs and maps with drill hole locations are not available to the writer at this time.

This 1981 study indicated a cost of direct exploration expenditures for 744 drill holes completed in 1980 (54% of the total number of drill holes completed) amounted to US \$327,000. Additional reserves of 1,770,000 pounds were estimated to have a finding cost of US\$0.185/lb. By extrapolation, the total direct cost for drilling would have been in the order of US\$605,000. Additional costs were incurred for metallurgical work, environmental studies and engineering studies.

Also during this period Union Carbide started the process for a full Environmental Assessment Study (EAS), seeking to comply with all State and Federal requirements that would enable putting the project into production. The permit area is located as the dashed line rectangle on the map (Fig 2) with the WY 1-40 claims superimposed in red.



In absence of maps with drill hole locations or detailed mine plans, this location map illustrates that these claims are within the key central sector of the permit area for which the uranium mining permit was sought. This location map has been taken from a part of the untitled Union Carbide documentation showing water sources around the permit area from a set of reports describing results of environmental baseline studies including maps which show that the outline of the proposed pit lies well within the WY 1-40 claims. An extensive baseline data collection was initiated to provide background information for the EAS. This work was not completed to a point where permits given.

The price of uranium reached US \$40/lb during the late '70s owing to demand due to a need to cover a shortfall produced by earlier unsupported (naked) forward selling of uranium fuel by Westinghouse and other companies. In February 1983, as the price of uranium was declining, Union Carbide distributed an update of a September 27<sup>th</sup> 1982 study on the Great Divide Basin project with respect the JAB claims that described a smaller but higher grade reserve than developed in the Ralph Parsons feasibility study. This included an average grade of 0.075% U<sub>3</sub>O<sub>8</sub> in a reserve of 1.604 millions s.tons (1.456 million t.), equivalent to 2.41 million lbs (1.09 million kgs) U<sub>3</sub>O<sub>8</sub>. A sensitivity analysis using a Monte Carlo simulation for operating cost variables indicated that, excluding corporate overheads and interest charges on capital costs, the pre-tax production cost would have an 80% chance of being between US\$26.50 and US\$30 per pound U<sub>3</sub>O<sub>8</sub> using conventional open pit mining.

With the continuing decline of uranium prices to less than US\$9.00 per pound making the financial returns for the project progressively weaker, Union Carbide abandoned its interest. Total expenditures including metallurgical studies, engineering, environmental and feasibility studies on the JAB claims are estimated at over \$5 million in unadjusted dollars.

During the period 1997 to 2000 the claims were reportedly held by Yellowstone Fuels (a subsidiary of US Energy Corp.) property and then let allowed to expire until staked by the vendor in 2004. No records have been obtained that describe any work carried out.

With the current increase in the price of uranium to above US \$20 per pound and with the possibility of using a now conventional in situ leach process for the extraction of uranium, the Antelope Project is once again a property of considerable interest.

## **GEOLOGY**

### **The Regional Setting**

The area of interest is located in the Great Divide Basin, which is underlain by the Tertiary Battle Spring Formation. This formation has a thickness, regionally, of up to

1,575 m (5,200 feet), with its principal lithologies being massive sandstone units that are generally buff to brown if oxidized and grey to green if unoxidized. The sandstone is a poorly sorted unit with medium to coarse grained, arkosic, subangular to angular sand clasts. Some claystone, siltstone and carbonaceous shales are interbedded in the sandstones.

Outside the project area, the Battle Spring is overlain by the Bridger Formation, which is comprised of claystones and siltstones of Upper Eocene age. The Battle Spring Formation is shown in oil wells of the area to be intercalated with carbonaceous shales and claystones of the Green River Formation. This unit is a black shale which is noted for its high metal concentrations, particularly zinc, vanadium and molybdenum.

Beneath the Battle Spring, the Fort Union Formation forms an impermeable barrier to downward solution migration, being comprised of fine-grained sandstones and siltstones with some carbonaceous shales and coal beds.

In regional terms the Tertiary sediments overly a thick (2000 m) sequence of Mesozoic and Paleozoic sediments that cover Precambrian crystalline rocks in the basement.



**Image II     Granitic Massif flanking Battle Spring Formation**

The Antelope project lies in a major synclinal valley formed during the Laramide Orogeny. The Battle Spring sandstones are the product of the erosion of a uraniferous granitic massif that flanks this valley.

## STRATIGRAPHIC SECTION

( Within 3 Miles Of Mine Site )  
( WY Claims Area )

SYMBOL	AGE	MINE SITE THICKNESS (ft)	DESCRIPTION
Tbr	Tertiary Upper Eocene	0	Bridger formation - predominantly siltstone and claystone - not present at site but shown on regional map
Tg ├─ Tgul ├─ Tgl l ├─ Tgwt └─ Tglu	Tertiary Lower Eocene	0	Green River formation - locally forms lenses and tongues within Battle Spring formation - not present at site but shown on regional map
Tb	Tertiary Lower Eocene	± 500	Battle Spring formation - predominantly coarse grained arkosic sandstone with some interbedded claystone and carbonaceous shale
Tfu	Tertiary Paleocene	± 400	Fort Union formation - siltstone and fine grained sandstone with some carbonaceous shale and coal - shown in section only
Mz Pzr	Mesozoic and Paleozoic	± 6000	Pre - Tertiary sedimentary sequence - undivided
PEr	Pre - Cambrian		Pre - Cambrian basement - undivided

Table 1

From Union Carbide Documentation

## The Property Geology

The uranium mineralization, on the subject properties, lie within a stratigraphic sequence comprised of permeable sandstones of the Battle Spring Formation of Tertiary age. At the JAB site this unit has a thickness of about 150 m (500 feet). These sandstones, described in the preceding table, were broken down into the following units by Union Carbide workers, based on drill intercepts in the area of the JAB deposits. Some of the classification of the units was made on the basis of distinct radiometric characteristics. The unit numbering is retained from the original documentation to allow for continuity.

### Unit 13209

This unit represents the “A” and “B” horizons of the San Aracio series with average thickness sampled in site area of 1.5 ft. The contact with the “C” horizon is generally marked by an increase in calcium carbonate.

### Unit 13210

A highly weathered substratum, 1.5 to 5.0 feet thick, it has a paralythic contact that is gradational and difficult to distinguish.

### Unit 13211

A massive sandstone unit with minor siltstone and silty claystone lenses. In the JAB area the entire unit is reportedly oxidized and has a thickness of 20 to 56 feet with background radioactivity in reference to other units in the sequence.

### Unit 13212, 13213 and Ore Zones

The lithologies of these units are similar, as medium to coarse grained sandstones, buff to yellow brown in colour and with less than 10% clay. Unit 13212 had 2-4.5 times the radioactivity of 13211 and Unit 13213 had greater than 4.5 times the level of 13211 which is the radiometric equivalent of 0.05% U<sub>3</sub>O<sub>8</sub>. The boundary of Unit 13213 and the ore zone was found to be highly variable and generally not projectable. As a result of this the volume of unit 13213 and the ore zone was calculated as a single unit.

The project area was broken up by recent high angle faulting, possibly during rebound following the Laramide compressional events. Most of these faults have minor displacements of less than 100 feet (30 m), which at a mine scale could become very significant from a point of view of continuity of mineralization.

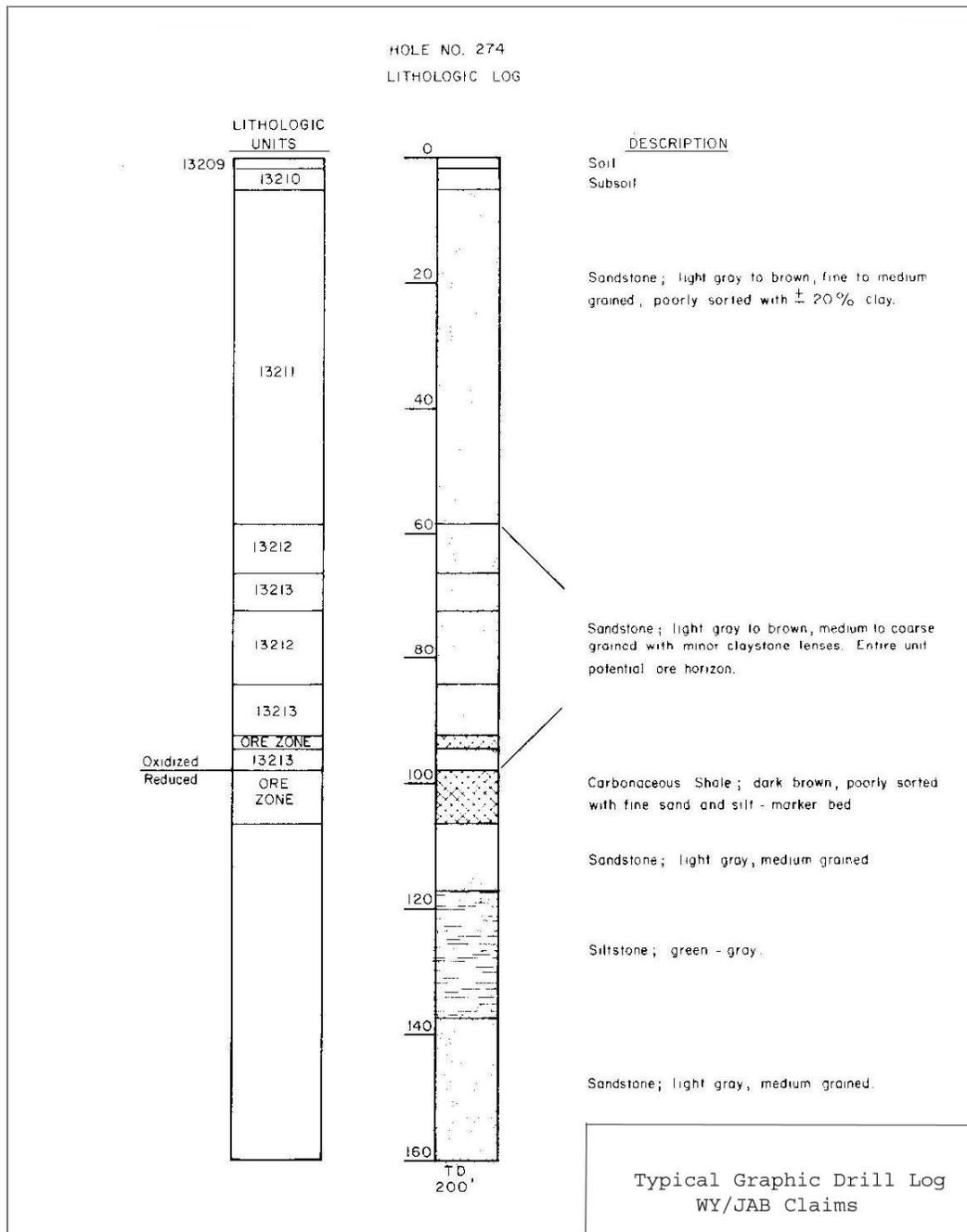


Fig 3.  
Typical Drill Section from JAB Area – Source: UCC Summary Report

## DEPOSIT TYPE

The deposit is classified as a solution front or roll front style of mineralization produced as a result of uranium dissolution and transport by oxidizing ground waters and subsequent deposition at an irregular, active boundary where a reducing environment balances the oxidative capacity of the ground waters. Controls for the formation of this type of deposit include a moving aquifer confined between horizontal aquitards, oxygen rich water in the aquifer, some soluble species of uranium minerals and disseminated sulphides or other reductants such as carbon rich material in the unoxidized aquifer.

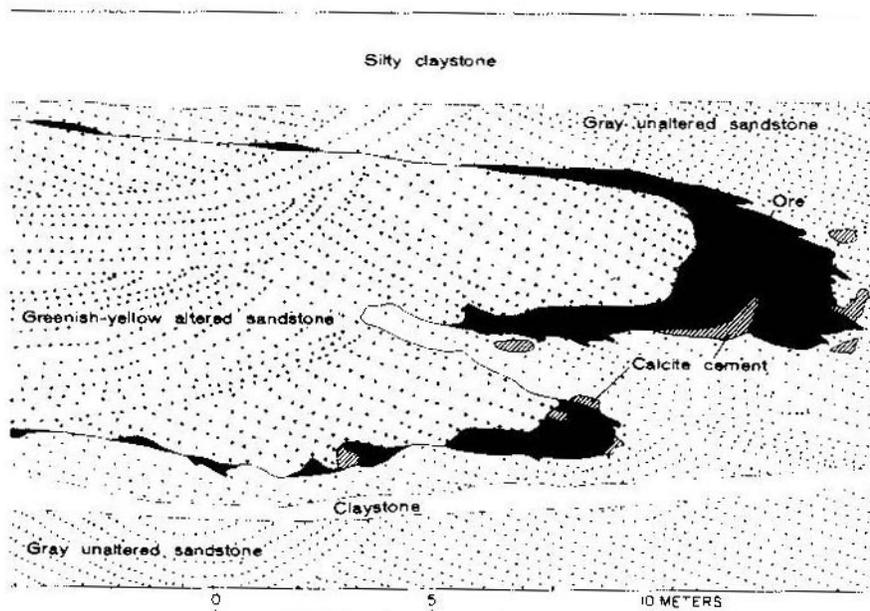


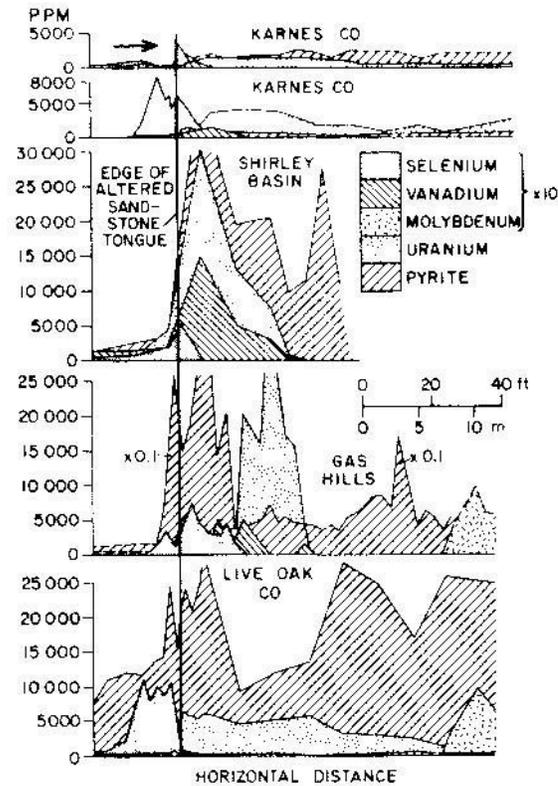
Fig. 4 Section normal to roll front

(from Harshman, 1974)

The typical geometry of this kind of uranium deposit is indicated in the section above in which water flow in the aquifer, when/if active, would be moving to the right through the more permeable horizons. Uranium is progressively dissolved by the oxidizing water being recharged from the surface and transported to the chemical front at which the oxygen has been exhausted by the reductants in the sandstone. The loss of pyrite due to oxidation has potential to be a characteristic that could be mapped by induced polarization surveys.

In addition to uranium dissolution and deposition, there is potential that vanadium, molybdenum and selenium, for which no data are reported here, can also be enriched by a similar process in the vicinity of the uranium roll front deposition. The distributions indicated in Fig 4. below suggest that vanadium and molybdenum can reach economic grades in some cases. The Gas Hills area, included with these examples, is

approximately 30 kms north of the Antelope project area and has grades of up to 0.5% Mo. Since the granitic uranium source rocks for the Gas Hills deposits are similar to the those in the project area, near Jeffrey, a prudent explorer should also consider the potential for economic concentrations of vanadium and molybdenum close to uranium roll fronts.



Sequence of deposition of some elements in roll-type uranium deposits.

**Fig 5.** (from Harshman, 1974)

## ECONOMIC MINERALIZATION

The writer did not locate any identifiable mineralization during the site visit and has relied on the internal reports of Union Carbide Corporation and reports of the US Geological Survey for information regarding the economic mineralization.

The dominant uranium minerals reported within the planned mining area include uraninite and coffinite, with some autunite and phosphuranylite. The associated alteration minerals include iron oxides and some smectite clays.

Other elements of economic interest associated with the roll front type mineralization include vanadium and molybdenum. These would have been concentrated by a similar solution-precipitation mechanism to that responsible for the concentration of uranium. It is therefore probable that the minerals containing these elements would be solubilized by common oxidizing reagents. As indicated in the section “Deposit Type” above, this potential should be tested as there is no indication in the material reviewed that such testing was carried out in earlier work.

## **URANIUM MARKETS**

The markets for uranium are primarily related to the production of electricity by nuclear power facilities. After a full blown boom in uranium prices in the late 1970's in which the peak was \$43 per pound, the price of uranium collapsed to below the \$10/lb range. Conversion of military nuclear warheads to fuel grade material had the effect of continuing the oversupply into the market and kept the prices low through the 1990's. In the last four years prices have been climbing again, encouraged by energy demands of the Chinese and Indian economies. Current spot prices are close to \$20/lb and the industry is taking the position that this is likely to endure. The conversion military material appears to be fully accounted for in the current price rise and this adds strength to the industry position.

The critical isotope for nuclear fission reactions is  $U^{235}$  which normally occurs as about 0.71% of the natural uranium. Under some circumstances this amount can be depleted or increased. Depletion occurred in the Oklo deposit in Gabon where the uranium started fission as the deposit was being formed. This was due to the higher content of the  $U^{235}$  isotope in natural uranium at that geologic time allowing a spontaneous fissioning to start as the concentration of the uranium in the deposit increased during deposition from solution. Younger deposits cannot move to spontaneous fissioning since the isotope is generally much too small a percentage of the total natural uranium content. Diffusion and fractionation could cause some small increases in the  $U^{235}$  isotopic concentration which may have significance in terms of value to the purchaser. The Antelope project is unlikely to have significant atypical isotopic ratios in the various deposits.

## **EXPLORATION**

EMC has carried out no exploration on the subject property to date. Descriptions of previous work are outlined in the **History** section.

## **DRILLING**

Most of the historical drilling was carried out with rotary drilling. A total of 1,372 holes were completed in the JAB property by 1980. In 1980 these included 702 rotary holes and 42 diamond drill holes that were used for core sampling and direct neutron logging of mineralization. Drill logs have not been available for assessment of the sample recoveries or rock quality.

## **SAMPLE METHOD AND APPROACH**

EMC has not carried out any sampling on the project to date. The uranium assay work of Union Carbide was based in large part on radiometric analysis of drill holes with down hole gamma ray logging tools. Check assays in diamond drill holes were carried out, using chemical (fluorimetric) analysis of drill core and direct neutron logging to compare with gamma logging of the rotary drill holes. Some disequilibrium was noted but a simple systematic was not developed from the comparison of the data. It appears that the errors of the various analytical methods for the low grade of mineralization in the deposit could account for much of the variation. In the writer's experience the critical analytical value or assay for uranium is the recoverable value, which is obtained by using an analytical method similar to the process that is proposed for production. In the case of the Antelope mineralization being assessed as a potential in situ leach operation, bottle roll tests using the alkali and/or acid leach reagents would give the best direct measure of recoverable uranium. Refractory uranium that may give good radiometric or fluorimetric assays may not be recovered in significant amounts by some typical production processes. In the case of uranium mineralization that is not in equilibrium with its radio-daughters, radiometric assays will also not reflect the real recoverable uranium values.

## **SAMPLING PREPARATION AND SECURITY**

No sampling has been carried out by EMC and during his visit, the writer did not collect any samples or assay samples from the property. It is recommended that normal procedures be required for establishing sample identification with sample location/source either as drill core or rotary cuttings and that assaying is carried out by an arm's length laboratory that is a registered assay office.

## **DATA VERIFICATION**

EMC has not started any systematic sampling activity and has not established any protocols for checking assays or security of sample material. Since the main value of the

deposit lies in the uranium content thereof, the problems related to contamination and/or salting with high value metals such as gold and platinum group metals are less likely to occur.

The writer has not verified the data as drill assays and logs have not yet been made available. Since the United States has no system of recording assessment work, unlike many other jurisdictions, information regarding all previous work is either in the possession of the earlier workers or passed on to other parties or destroyed. The parties to the agreement are reportedly attempting to obtain more documentation, but since there is no requirement for the current holders of such information to give or sell it to them there is no certainty that it will be recovered. Since Union Carbide was a major mining company with considerable operating experience both in the exploration for and production of uranium, it would be expected that the data generated by that company would be of high quality, with considerable internal checking of data sets.

The principal sources of information for the discussion of historical reserves were internal documents of Union Carbide including most importantly “Review of Minerals Exploration Red Desert Project Purchase” by Messrs. C.T. Wentzel, D.C. Harris, G.F. Yoder, R.H. Holt and J.F. Coulthard with a probable date of 1978. This document made reference to the feasibility report by Ralph M. Parsons Company and included an abstract of that feasibility study. The writer also reviewed “Economic Evaluation of Silver Bell Uranium Ores as Gas Hills Plant Feed” by G.B. Irvine with date of April 3<sup>rd</sup>, 1974.

Since the writer is recommending in this report the investigation of in situ leaching as a means of exploiting the deposits, this data from Union Carbide is of use principally to indicate that there is a significantly large volume of mineralization potentially available.

## **INTERPRETATION AND CONCLUSIONS**

The work by Union Carbide indicated in the last study available that the JAB project had a reserve of 1.604 millions s.tons (1.456 million t.) at an average grade of 0.075% U<sub>3</sub>O<sub>8</sub>, equivalent to total 2.41 million lbs (1.09 million kgs) U<sub>3</sub>O<sub>8</sub>. A sensitivity analysis using a Monte Carlo simulation for operating cost variables indicated that, excluding corporate overheads and interest charges on capital costs, the pre-tax production cost would have an 80% chance of being between US\$26.50 and US\$30 per pound U<sub>3</sub>O<sub>8</sub> using conventional open pit mining. The subsequent collapse of uranium prices resulted in Union Carbide dropping the property.

The work carried out by Union Carbide was directed at a conventional (for that time) open pit mine and was based on a bulk mining plan. The possibility of developing an in situ leach extraction of the uranium does not appear to have been investigated.

The near surface deposits of soluble uranium minerals have the potential to be extracted by a now conventional in situ leach (ISL) process if hydrology and permeability permit. Potential exists for several other deposits in the area at greater depths that could be reasonably explored by conventional methods.

## **RECOMMENDATIONS AND BUDGET**

There is sufficient potential to develop zones of mineralization on the Antelope project that may be amenable to in situ leaching that further exploration work is well justified.

The first part of this work should include acquisition and digitization of the existing database to build three-dimensional models of the deposits and to help model the hydrological regime of the mineralized areas. A field assessment of the availability of drill holes for hydrological testing should be carried out at this time. In the event the data base is not available in sufficient completeness to undertake this work, the budgeted costs assigned to this phase should be applied to drill testing in the JAB mineralization on the WY1-40 claims. This would allow some early comparison of reported grades for the deposit and identify the location of aquifers relative to mineralization.

This work would be followed by definition rotary drilling of higher grade sections identified in the three dimensional model with plastic casing being placed in the holes on completion to permit further use for hydrological tests. In the event the data base information was not available, drilling would have to be carried out to define the mineralization and its hydrology. The development of a 5 spot well pattern to carry out hydrology tests for permeability and flow rates (natural and pumped) should be started as soon as the definition drilling has completed sufficient holes into mineralization.

The total estimate of costs for Phase I and Phase II is                   US\$348,600.

### **Phase I Budget**

Data acquisition (private purchase)	\$ 100,000
Digitization, area/volume calculation of mineralization in each permeable horizon, verification of continuity, identification of grade trends and higher grade sectors within mineralization, production of 3-D model       6 weeks	\$ 45,000
5 days @US\$750/diem	\$ 3,750
Airfare Casper-Vancouver return	\$ 700
Local Travel and accommodation 5 days @\$130/diem	\$ 650

**Phase I Total** **\$ 150,100**

**Phase II Budget**

Permitting	\$ 10,000
Rotary Drilling 20 holes - 65m feet each @\$25/m	
Including perforated casing	\$ 32,500
Diamond drilling 10 drill holes – 100 m each @ \$30/m	\$ 30,000
Radiometric surveying lease equipment \$200/diem	\$ 7,000
Assays , bottle roll tests	\$ 15,000
Technical support 30 days @ \$2000/per diem	\$ 60,000
Mobilization Drills, personel	\$ 12,000
Transportation: airfares, u-drives	\$ 4,500
Report and map preparation	\$ 7,500
Metallurgical test work for leach process	<u>\$ 20,000</u>

**Phase II Total** **\$ 198,500**

**Total costs for Phase I and Phase II** **\$ 348,600**

Respectfully submitted,

B.Ainsworth, PEng BC.

## REFERENCES

Adler, H.H. (1974): Concepts of Uranium-Ore Formation in Reducing Environments In Sandstones and Other Sediments, in: Formation of Uranium Ore Deposits, Proceedings of a Symposium - Athens 6-10 May 1974, International Atomic Energy Agency, Vienna. pp 21-32.

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Granger, H.C., Warren, C.G. (1964): Unstable Sulphur Compounds and the Origin of Roll-Type Uranium Deposits, Econ Geol. Vol 64.

Harshman, E.N. (1974) Distribution of Elements in Some Roll-Type Uranium Deposits. In: Formation of Uranium Deposits, Proceedings of a Symposium – Athens 6-10 May 1974, International Atomic Energy Agency, Vienna. pp 169-183

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Morse, J.G. (1977): Nuclear Methods in Mineral Exploration and Production, Developments in Economic Geology, Elsevier Scientific Publishing Company

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Wentzel, C.T., Harris, D.C. et Alia (1978?): Review of Minerals Exploration Red Desert Project Purchase. Union Carbide Internal Document

## CERTIFICATE

- 1) I, Benjamin Ainsworth am the author of this report having offices at 915-409 Granville Street, Vancouver, BC. I am self-employed as a consultant geologist.
- 2) I graduated from Oxford University with an Honours Degree in Geology in 1962 and have been practicing my profession continuously since that time. I am a registered member of the Association of Professional Engineers and Geoscientists of British Columbia, Registration Number 8648.
- 3) I have practiced as a consultant geologist since October 1986.
- 4) I have worked on projects similar to the subject mining property of this report and am a “Qualified Person” in the context of National Instrument 43-101.
- 5) As of the date of this report I am not aware of material facts that are not reflected in this report by written inclusion or reference.
- 6) I act as the corporate “Qualified Person” for Consolidated Venturix Holdings Limited (TSX.V), Columbia Yukon Exploration (TSX.V), and I have authored qualifying reports for the following publicly traded mining companies:  
1996 Triton Mining Corporation (TSE)  
1998 C2C Mining Corporation (CDNX)  
1999 Stralak Resources Inc (CDNX)  
2001 Hathor Exploration Ltd. (CDNX)  
2002 Luzon minerals Ltd (TSX.V)  
2004 Clan Resources Ltd (TSX.V)
- 7) I do not have any agreement, arrangement or understanding with Energy Metals Corporation (EMC) or any affiliated company to be or become an insider, associate or employee.
- 8) I do not own any securities directly or indirectly in EMC. Other than my normal fee for the preparation of this report, I do not expect to receive any benefits from Clan including any interest in the property or any securities of the company.
- 9) My professional relationship with EMC is at arm’s length as represented in 7) and 8) above, and I have no expectation that the relationship will change.
- 10) This report is based upon my personal review of available historical data including a economic studies by Union Carbide Corporation, a site visit on November 17th, 2004, and a review of some relevant uranium market information.
- 11) This report was prepared by me without any direct assistance from other parties.

- 12) The title status is only commented on as far as the public record of such title and no opinion has been sought beyond that.
- 13) In my professional opinion the property is of potential merit and further exploration work is justified.
- 14) I have read National Instrument 43-101, Form 43-101F and understand the regulations described therein. All effort has been made to complete this report in compliance with those regulations.
- 15) I consent to the use of this report by Energy Metals Corporation. for such regulatory and financing purposes the company deems necessary, but if any part shall be taken as an excerpt, it shall be done only with my approval.

January 10th 2005 at Vancouver, BC

-----  
Benjamin Ainsworth, PEng BC

# APPENDIX I

## Letter of Authorization

06 Dec 2004 2:58PM

Clan Resources Ltd

604-408-4799

p. 1

### CLAN RESOURCES LTD.

November 16, 2004

Ainsworth-Jenkins Holdings Inc.  
915 - 409 Granville Street  
VANCOUVER, BC V6C 1T2

Attention: Mr. B. Ainsworth, P.Eng. BC

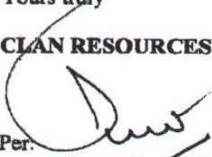
Dear Mr. Ainsworth:

**Re: Clan Resources Ltd. (the "Company") - Letter of Authorization**

I hereby authorize you to complete a Technical Report, suitable for regulatory purposes for the TSX Venture Exchange and the Canadian Securities Commissions, to describe the geology, infrastructure and mineral potential of the Antelope Project, Fremont and Sweetwater Counties, Wyoming. The report should follow the format prescribed in National Instrument 43 101 and a site visit must be completed.

Yours truly

**CLAN RESOURCES LTD.**

Per: 

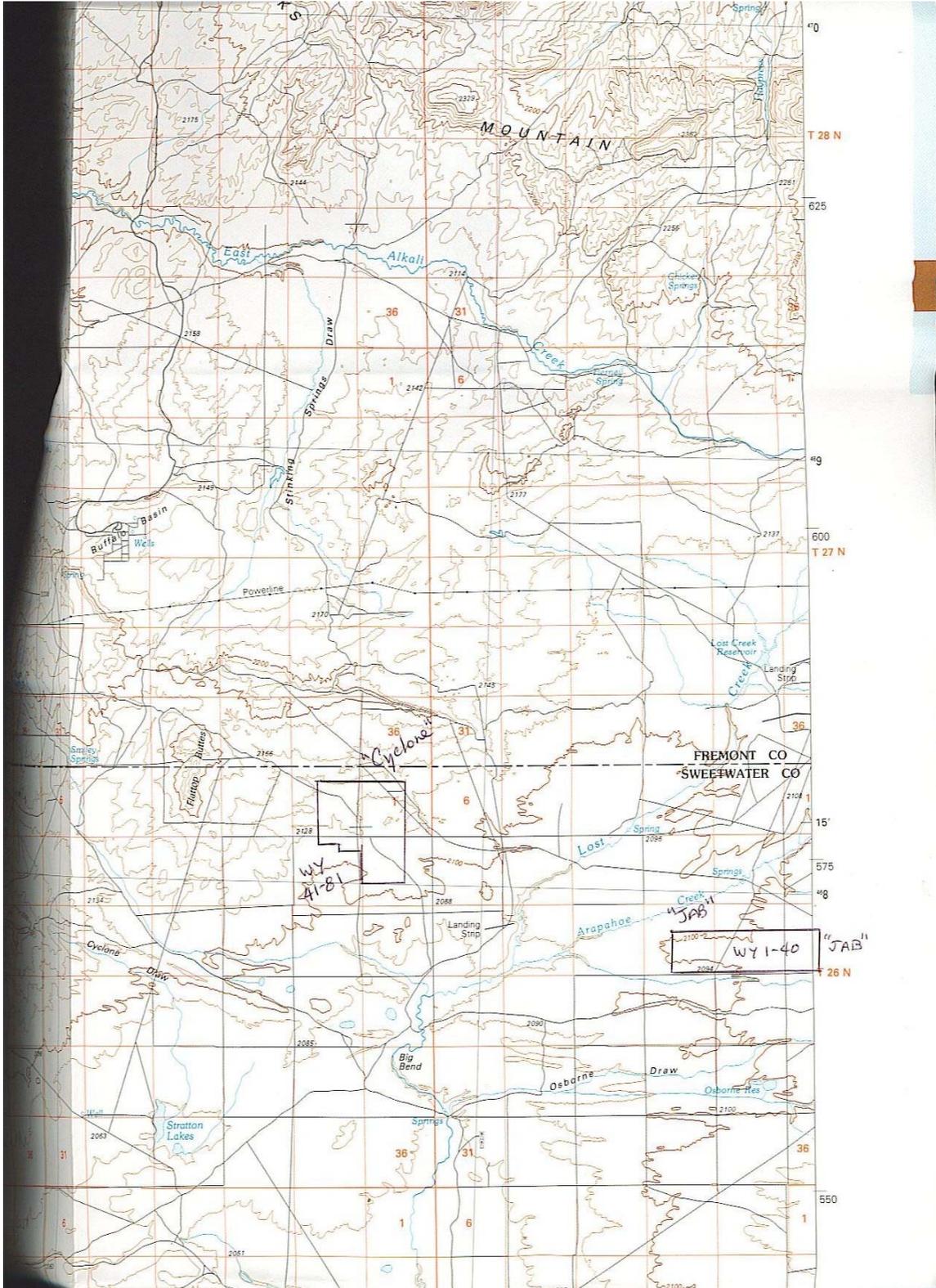
James G.G. Watt  
President & Director

1500, 885 West Georgia Street  
Vancouver, B.C. V6C 1B8  
Tel: (604) 684-9007  
Fax: (604) 408-4799

## APPENDIX II Documentation of Claims

SCHEDULE "A"					
Arizona Mineral Claims and Permits and Wyoming Mineral Leases					
North Rim Claims	# of CLAIMS	T-R-Sec	COUNTY	County filing	BLM filing
AZ 61-75	15	38N4W 26,27	*	pending	pending
AZ 77, 79, 81, 83, 90	5	38N4W 11 & 14	*	pending	pending
AZ 84-89	6	38N4W 17, 18, 19, 20	*	pending	pending
AZ 103-108/248-250	9	36N5W 21	MoHAVE	pending	pending
AZ 109-118	8	36N5W 29, 30	*	pending	pending
AZ 206-214	9	35N6W 3/36N6W 34	*	pending	pending
AZ 203-205	3	36N5W 19	*	pending	pending
AZ 215-219/220A-224A	10	35N6W 6,7	*	pending	pending
AZ 225-234	10	38N3W 19, 20	*	pending	pending
AZ 248-255	8	35N5W 1,2	*	pending	pending
AZ 256-263	8	36N6W 8,9, 16, 17	*	pending	pending
116					
CLAIM Name & #	# of CLAIMS	T-R-Sec	COUNTY	County filing	BLM filing
WY 1-40 JAB	40	29N 94W 13-15	Sweetwater	bk 1004 pgs 107-147	260589-628
WY 41-81 CYCLONE	41	28N 95W 1,2,11,12	Sweetwater	bk 1004 pgs 148-189	260629-689
MD 1-12 MIDWAY	12	27N 78W 9, 10, 15	Carbon	bk 1062 pgs 163-175	260679-880
AR 1-8 MOSS AGATE	8	28N 78W 31	Carbon	bk 1062 pgs 156-163	260671-678
RF 1-34 TWIN BUTTES	34	28N 91W 9-11,14,15	Sweetwater	bk 1005 pgs 1445-1479	260699-732
AB 1-40 ANTELOPE	40	26-92:7, 18/26-93:12-14	Sweetwater	bk 1005 pgs 1480-1520	260733-772
SM 1-5,7,17,19-21,24-28	24	28N 92W 20,21,28,29	Fremont	doc 1256623-1256690	260773-796
WESTERN SHEEP PROPERTY					
SP 1-9 BATTLE SPRING	9	25N 94W 35	Sweetwater	bk 1006 pgs 52-61	260797-805
PL 1-22 ROCKY DRAW	22	25-90:6 & 25-91:1	Sweetwater	bk 1006 pgs 62-84	260806-827
TD 9-26, 31-40 LARAMIE	25	24-74:6 & 24-75:12	Albany	2004-6250 through 2004-6277	260873-900
255					
permit #	acres	T-R		Section	Permit Date
AZ 06-108835 WATE	640 acres	31n 05w		32	4/16/2004
AZ 06-108971 ROSE	320 acres	26n 06w		24 S/2	9/17/2004
AZ 06-108970 ANDERSON	320 acres	11n 10w		18 E/2	9/17/2004

# Claim Sketches



LON 53  
B AB

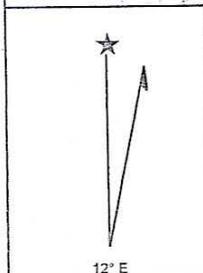
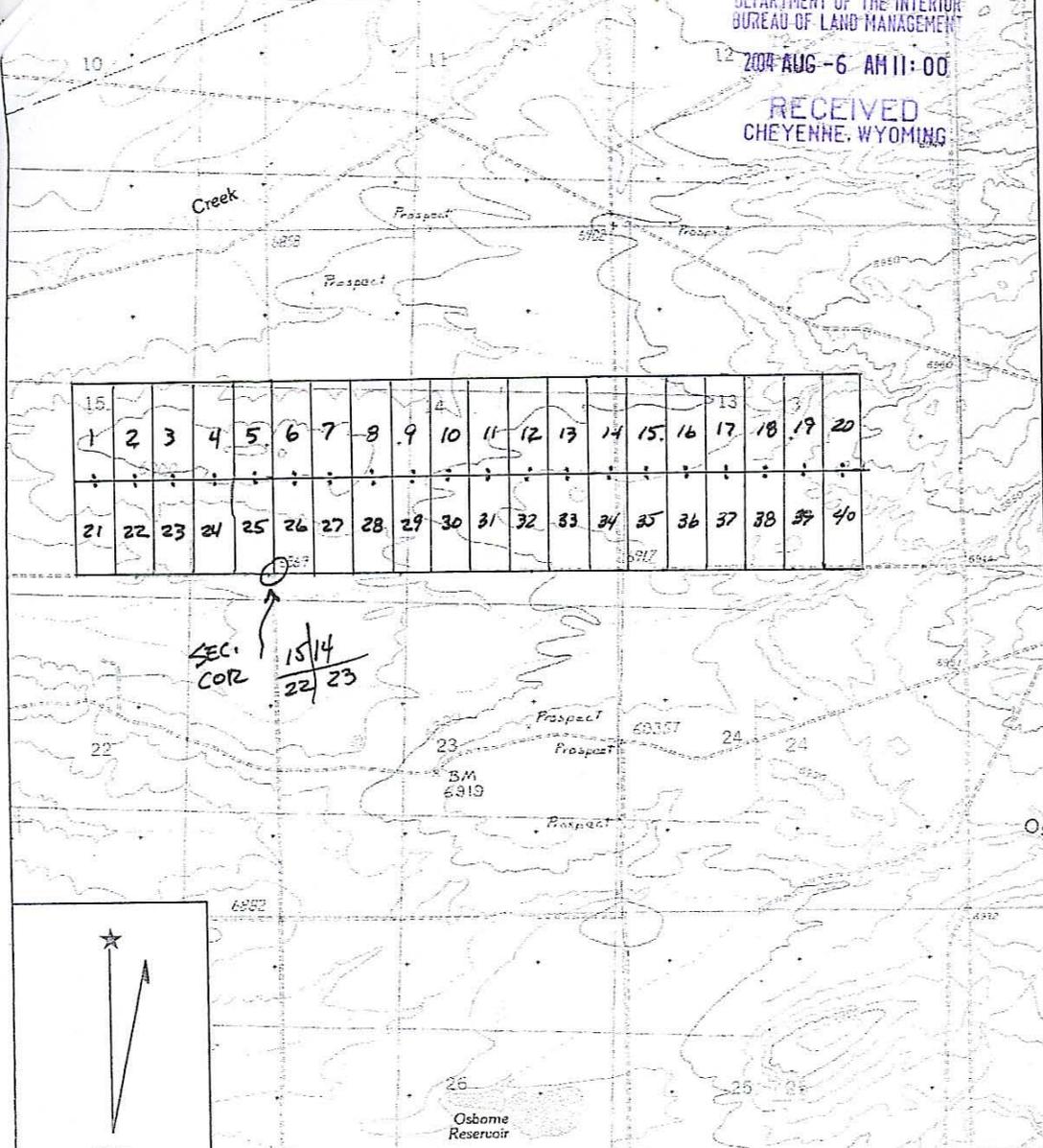


RECORDED 7/08/2004 AT 10:25 AM REC# 1416981 BK# 1004 PG# 0108  
LORETTA BAILIFF, CLERK of SHEATHATER COUNTY, WY Page 2 of 2

DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

2004 AUG - 6 AM 11:00

RECEIVED  
CHEYENNE, WYOMING



Name: OSBORNE DRAW (WY)  
Date: 7/1/2004  
Scale: 1 inch equals 2000 feet

Location: 042° 13' 12.9" N 108° 00' 46.1" W  
Caption: WY 1-40 Lode Claims  
T26N R94W Sections 13-15  
W. M. Sheriff Claimant

Copyright (C) 2000, Maptech, Inc.

... copy of the receipt and account...  
... Also attached is a print out...  
... (s), the date of location...  
... by the September 1, 2004 deadline...  
... 2004 assessment...  
... 2004 assessment...  
... 2004 assessment...

DEPARTMENT OF THE INTERIOR  
 BUREAU OF LAND MANAGEMENT

2004 AUG -6 AM 11:00

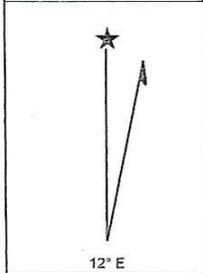
RECEIVED  
 CHEYENNE, WYOMING

FREMONT CO  
 SWEETWATER T6

FREMONT CO  
 SWEETWATER CO.

67	68	41	42
69	70	43	44
71	72	45	46
73	74	47	48
75	76	49	50
77	78	51	52
79	80	53	54
	81	55	56
		57	58
		59	60
		61	62
		63	64
		65	66

Sec  
 COR.  
 $\frac{2}{11} \frac{1}{12}$



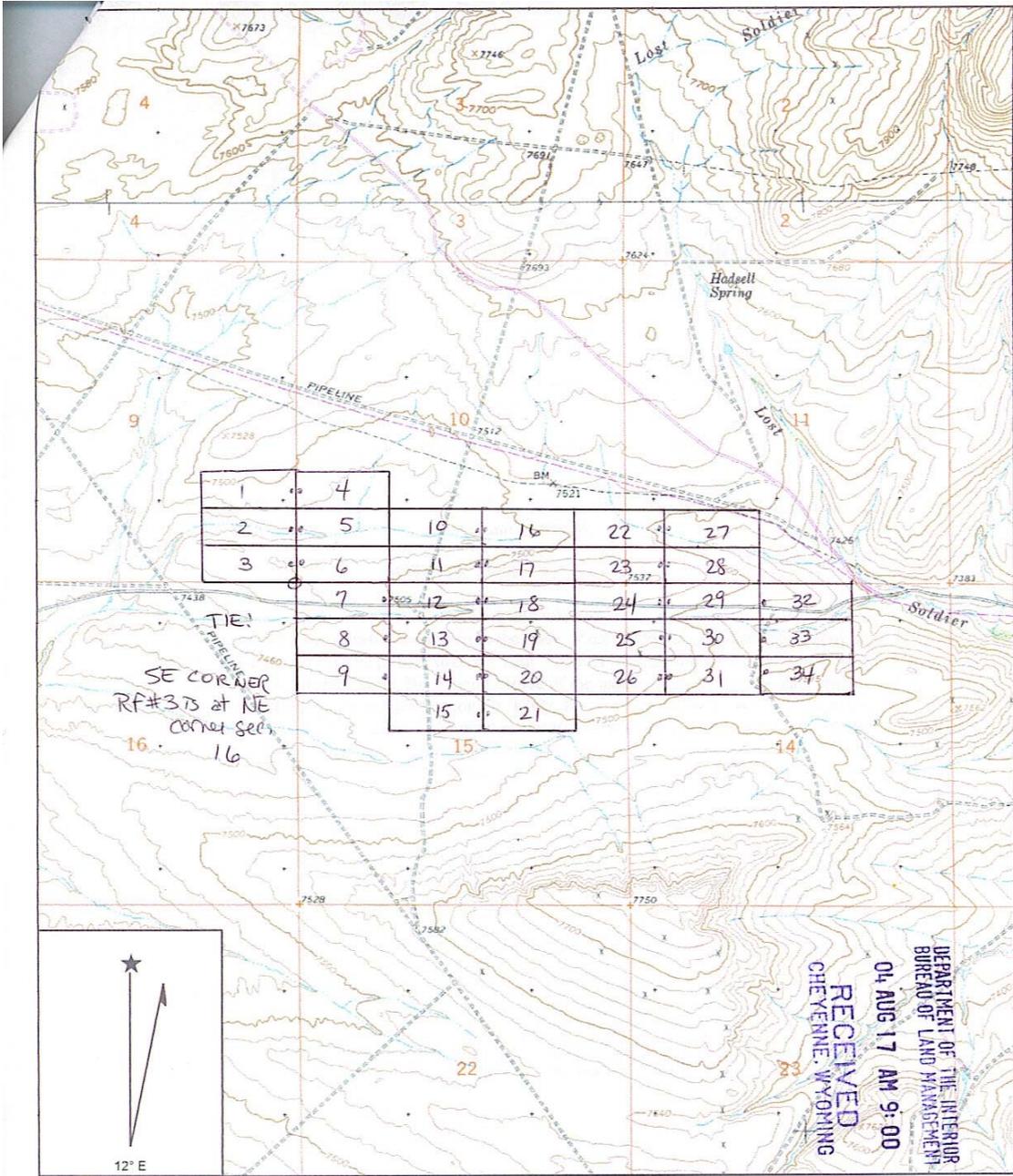
Name: OSBORNE DRAW  
 Date: 7/1/2004  
 Scale: 1 inch equals 2000 feet

Location: 042° 14' 54.6" N 108° 07' 28.73" W  
 Caption: WY 41-81 Lode Claims  
 T 26 N, R 95 W  
 Sections 1, 2, 11, 12  
 W. M. Sheriff claimant

Copyright (C) 2000, Maptech, Inc.

On July 7<sup>th</sup>, 2004, personally appeared before me, a Notary Public, William M. Sheriff, personally known or proved to me to be the person whose name is subscribed to the above

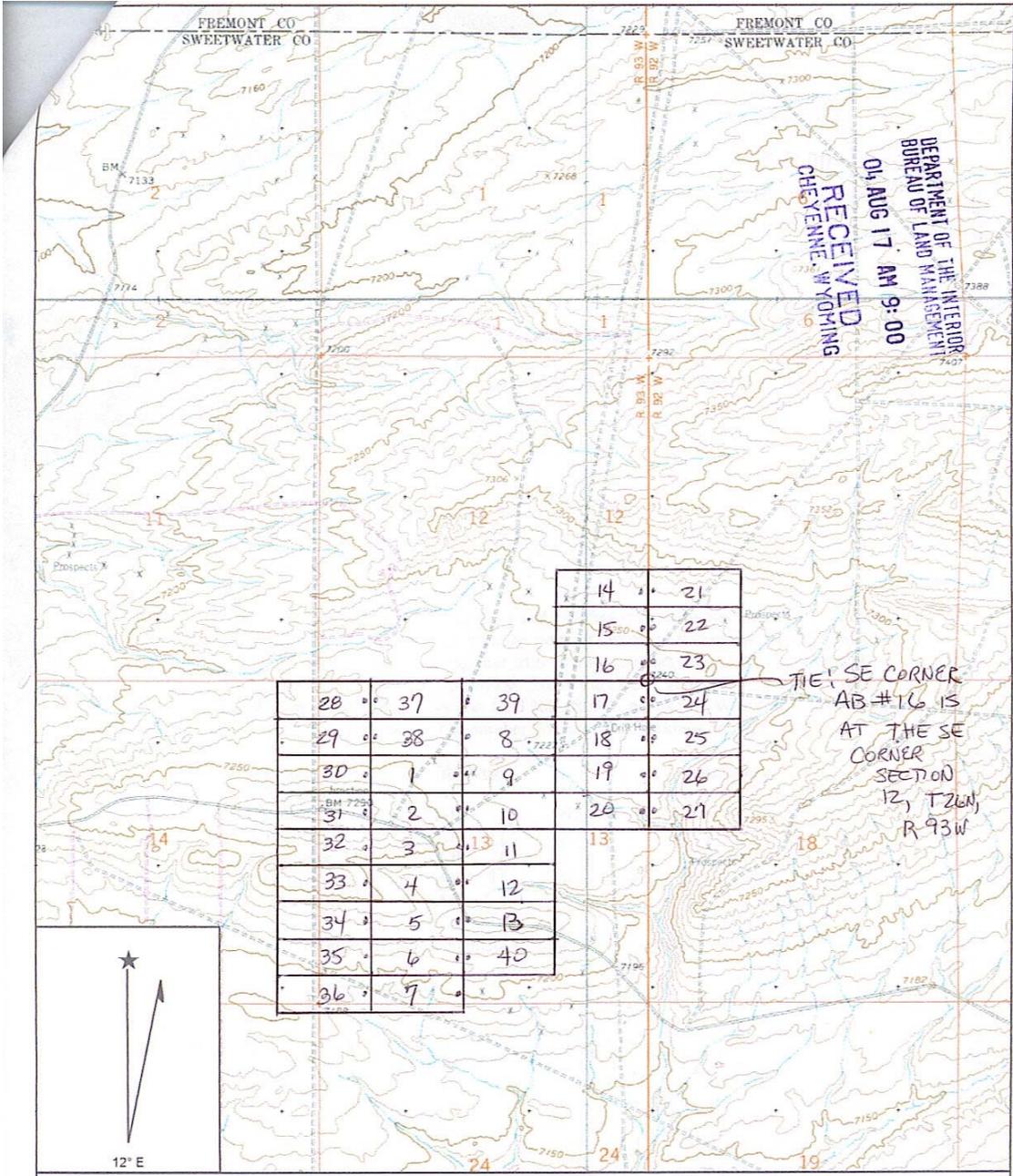




Name: HADSELL SPRING      211 Monuments ave      Location: 042° 13' 57.18" N 107° 41' 00.25" W  
 Date: 7/29/2004              2 1/2" x 4" wood.              Caption: W. M. Sheriff-claimant  
 Scale: 1 inch equals 2000 feet              located June 3, 2004  
 Sec. 9-11, 14, 15 T28N R91W  
 Subdivided County Wyoming

RECORDED 8/02/2004 AT 09:58 AM REC# 1418798 BK# 1005 PG# 1446  
 LORETTA BAILIFF, CLERK of SHEETWATER COUNTY, WY Page 2 of 2

personally known or proved to me to be the person whose name is subscribed to the above instrument who acknowledged to me that he executed the above instrument.



Name: OSBORNE WELL  
 Date: 7/29/2004  
 Scale: 1 inch equals 2000 feet

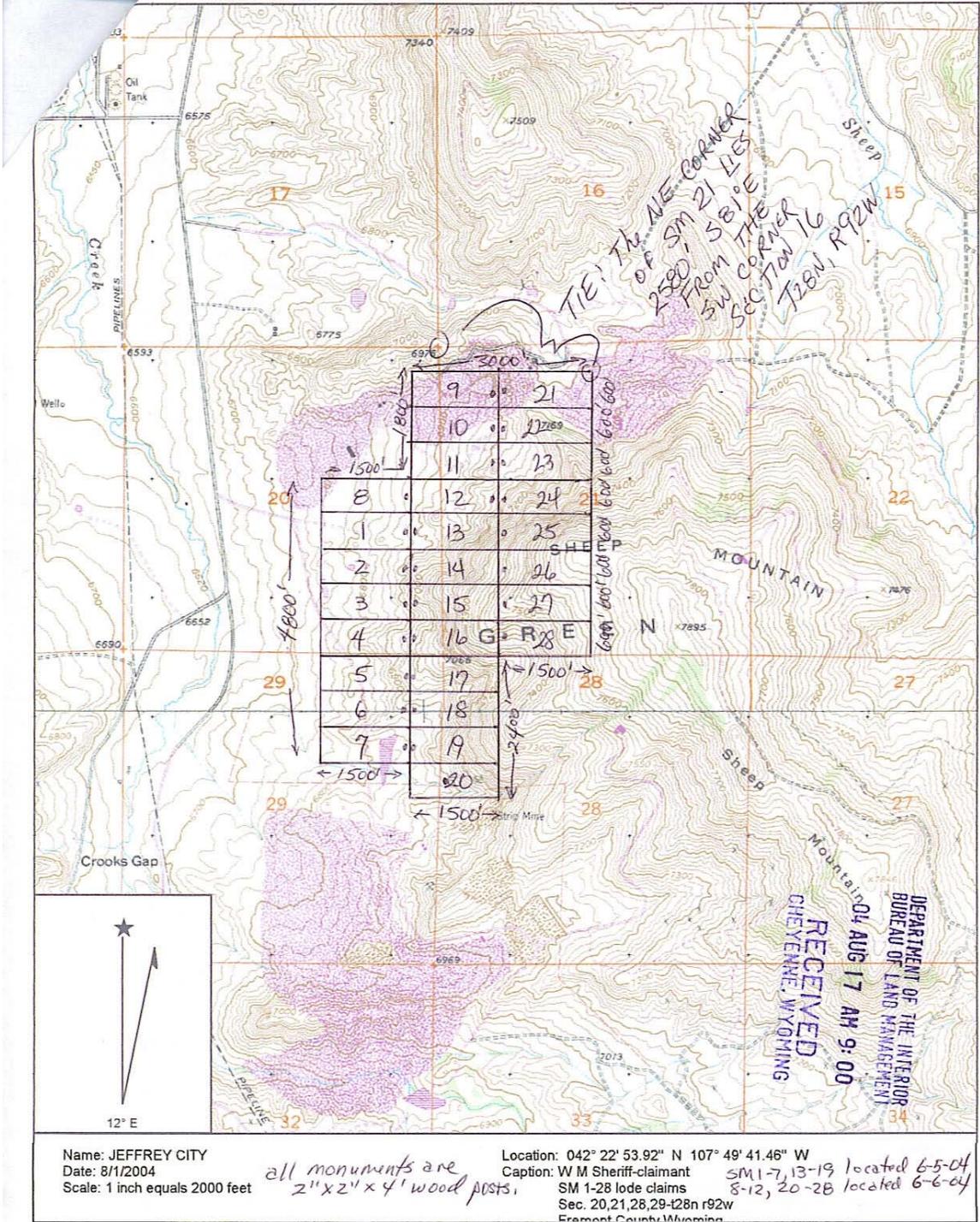
all monuments are  
 2"x2"x4' wood

Location: 042° 14' 13.37" N 107° 52' 43.11" W  
 Caption: W. M. Sheriff-claimant  
 AB 1-40 Lode claims 1-27 located June 4, 2004  
 t26n r93w 12-14 r92w 7, 18 28-30 loc. June 8, 2004  
 Sweetwater County, Wyoming 40 loc. June 9, 2004

RECORDED 8/02/2004 AT 09:58 AM REC# 1419824 BK# 1005 PG# 1481  
 LORETTA BAILIFF, CLERK of SWEETWATER COUNTY, WY Page 2 of 2

personally known or proved to me to be the person whose name is subscribed to the above instrument who acknowledged to me that he executed the above instrument.

*(Handwritten signature)*



Name: JEFFREY CITY  
 Date: 8/1/2004  
 Scale: 1 inch equals 2000 feet

all monuments are 2" x 2" x 4' wood posts.

Location: 042° 22' 53.92" N 107° 49' 41.46" W  
 Caption: W M Sheriff-claimant  
 SM 1-28 lode claims  
 Sec. 20, 21, 28, 29-28n r92w  
 Fremont County, Wyoming

SM 1-7, 13-19 located 6-5-04  
 8-12, 20-28 located 6-6-04

FREMONT COUNTY, LANDER, WY REC \$11.00 08/04/2004 #2004-1255623  
 JULIE A FREESE, FREMONT COUNTY CLERK 02:58:25PM 2 OF 2

On August 2<sup>nd</sup>, 2004, personally appeared before me, a Notary Public, William M. Sheriff, personally known or proved to me to be the person whose name is subscribed to the above instrument who acknowledged to me that he executed the above instrument.