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Confederation Minerals Ltd.

Technical Report for PEA

Newman Todd Project

Red Lake, ON, Canada

Effective Date January 12, 2015

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Technical Report on the Newman Todd Project, Ontario January 2015

Confederation Minerals Ltd.
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Effective Date January 12, 2015

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CERTIFICATE OF QUALIFIED PERSON – RALPH BULLIS

I, H. Ralph Bullis, of 112 Eagle Ridge Place, Edmonton, Alberta, T6R 2M8 do hereby certify that:

1) I am a consulting geologist with an office at 112 Eagle Ridge Place, Edmonton, Alberta.
2) I am a graduate of the University of British Columbia, Vancouver, British Columbia in 1970 with a B.Sc. degree in Geology.
3) I am a member in good standing of the Northwest Territories Association of Professional Engineers and Geoscientists (NAPEG) and of the Association of Professional Geoscientists of Ontario (APGO).
4) I have practiced my profession continuously since 1972.
5) I have acted as Consultant on behalf of Confederation Minerals on the Newman Todd Project since August, 2012, where I have supervised and planned exploration programs, overseen geological mapping, core logging, sampling and have completed geological studies and data analysis since then. My most recent visit to the Property was September 3-8, 2013.
6) I have read the definition of "qualified person" set out in National Instrument 43-101 and certify that by reason of education, experience, independence and affiliation with a professional association, I meet the requirements of an Independent Qualified Person as defined in National Instrument 43-101.
7) This report is based on studies of the data from, and previous reports on, the Newman Todd Project.
8) I am responsible for reviewing, overseeing and supervising, from August, 2012, the geological work contributing to the Technical Report Sections 6, 7, 8, 9 and 10 on the Newman Todd Project, Red Lake District, Ontario. This includes participating in the preparation of and reviewing the Resource Model (Section 14) on which the mining plan is based.
9) I am independent of the issuer applying all of the tests in section 1.5 of National Instrument 43-101.
10) I have read National Instrument 43-101 and Form 43-101F1, and state the Technical Report has been prepared in compliance with that instrument and form.
11) I consent to the filing of the Technical Report with any stock exchange and other regulatory authority and any publication by them, including electronic publication in the public files on their websites accessible by the public.
12) As of the effective date of this Technical Report, to the best of my knowledge, information, and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Dated this 13th day of January, 2015

"(Original Signed and Sealed)"

____

Signature of Qualified Person

H. Ralph Bullis B.Sc., P.Geol., P.Geo., FGC

I, **Tracey D Meintjes**, of Vancouver, BC, do hereby certify:

1. I am a Metallurgical Engineer with Moose Mountain Technical Services with a business address at 1975 1st Avenue South, Cranbrook, BC, V1C 6Y3.
2. This certificate applies to the technical report entitled "Technical Report for PEA Newman Todd Project Red Lake, ON, Canada" with effective date January 12 2015, for Confederation Minerals Ltd. (the "Technical Report").
3. I am a graduate of the Technikon Witwatersrand, (NHD Extraction Metallurgy – 1996)
4. I am a member in good standing of the Association of Professional Engineers and Geoscientists of British Columbia (#37018).
5. My relevant experience includes process engineering, operation, and supervision, and mine engineering in South Africa and North America. I have been working in my profession continuously since 1996.
6. I am a "Qualified Person" for the purposes of National Instrument 43-101 (the "Instrument").
7. I have not visited the Newman Todd property.
8. I am responsible for Sections 13 and 17 of the Technical Report.
9. I am independent of Confederation Minerals Ltd. as defined by Section 1.5 of the Instrument.
10. I have had no previous involvement with the property that is the subject of the Technical Report.
11. I have read the Instrument and the Technical Report has been prepared in compliance with the Instrument.
12. As of the effective date of the Technical Report, to the best of my knowledge, information, and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Dated this 13th day of January, 2015 at Vancouver, Canada

"(Original Signed and Sealed)

Tracey D Meintjes, P.Eng.

Certificate of Qualified Person – Gary Giroux, P.Eng. M.A.Sc.

I, Gary H. Giroux, of 982 Broadview Drive, North Vancouver, British Columbia, Canada do hereby certify that:

1) I am a consulting geological engineer with an office at #1215 - 675 West Hastings Street, Vancouver, British Columbia.

2) I am a graduate of the University of British Columbia in 1970 with a B.A. Sc. and in 1984 with a M.A. Sc., both in Geological Engineering.

3) I am a member in good standing of the Association of Professional Engineers and Geoscientists of the Province of British Columbia.

4) I have practiced my profession continuously since 1970. I have had over 38 years' experience estimating mineral resources. I have previously completed resource estimations on a wide variety of precious metal deposits both in B.C. and around the world, many similar to the Newman Todd Project.

5) I have read the definition of "qualified person" set out in National Instrument 43-101 ("NI 43-101") and certify that by reason of my education, past relevant work experience and affiliation with a professional association (as defined in NI 43-101), I fulfil the requirements to be a "qualified person" for the purposes of NI 43-101.

6) I am responsible for the preparation of Section 14, and the relevant portions of Sections 24 to 27, of the technical report titled "Technical Report for PEA Newman Todd Project Red Lake, ON, Canada" with effective date January 13 2015, for Confederation Minerals Ltd. I have not visited the property.

7) Prior to being retained by Confederation Minerals Ltd. (the "issuer"), I have not had prior involvement with the property that is the subject of the Technical Report.

8) As of the effective date of the Technical Report, to the best of my knowledge, information and belief, the portions of the Technical Report for which I am responsible contain all scientific and technical information that is required to be disclosed to make the portions of the Technical Report for which I am responsible not misleading.

9) I am independent of the issuer applying all of the tests in section 1.5 of NI 43-101.

10) I have read NI 43-101, and the portions of the Technical Report for which I am responsible have been prepared in compliance with NI 43-101.

Dated this 13th day of January, 2015.

"Original Signed and Sealed"
Gary H. Giroux, P. Eng., M.A. Sc.

Certificate of Qualified Person – J. Douglas Blanchflower, P. Geo.

I, **J. Douglas Blanchflower**, P. Geo., do hereby certify that:

1. I am currently employed as a Geological Consultant by Minorex Consulting Limited, 25856 – 28th Avenue, Aldergrove, British Columbia, Canada V4W 2Z8;
2. I graduated in 1971 from the University of British Columbia with a Bachelor of Science (Honours Geology) degree;
3. I am a Registered Professional Geoscientist in good standing of the Association of Professional Engineers and Geoscientists of British Columbia (Member No. 19086);
4. I have practiced in my profession as a Professional Geologist for 43 years;
5. I have not conducted a field inspection of the Project Area. I was retained to construct three dimensional geological solid models of the mineralized zones within the Project Area;
6. I contributed to Sections 14 of the report titled "Technical Report for PEA Newman Todd Project Red Lake, ON, Canada" with effective date January 12 2015, for Confederation Minerals Ltd.;
7. I have no prior involvement with the property that is the subject of this Technical Report. I have no controlling or monetary interest involving Confederation Minerals Ltd. or the property;
8. I am independent of Confederation Minerals Ltd, applying all of the tests in Section 1.5 of NI 43-101;
9. I have read NI 43-101 and Form 43-101F1, and the Technical Report has been prepared in compliance with that instrument and form;
10. As of the effective date of the Technical Report, to the best of my knowledge and information the Technical Report contains all scientific and technical information required to be disclosed to make the report not misleading;
11. I have read the definition of "qualified person" set out in National Instrument 43-101 ("NI 43-101") and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a qualified person" for the purposes of NI 43-101; and
12. I consent to the public filing of the Technical Report titled "Technical Report for PEA Newman Todd Project Red Lake, ON, Canada" for Confederation Minerals Ltd, with any stock exchange and other regulatory authority and any publication by them for regulatory purposes, including electronic publication in the public company files on their websites accessible by the public.

Dated of this January 13, 2015

'Original Signed and Sealed'

J. Douglas Blanchflower, P. Geo.
Minorex Consulting Limited

Certificate of Qualified Person – Neil Schunke, MAusIMM (CP Mining)

I, **Neil Schunke**, MAusIMM (CP Mining), do hereby certify that:

1. I am currently employed as Principal Mining Consultant by Mining Plus Canada Consulting Ltd., Suite 440 - 580 Hornby Street, Vancouver BC V6C 3B6
2. I graduated in 2000 from the University of South Australia with a Bachelor of Engineering (Mining) degree and a Bachelor of Science (Applied Geology) degree
3. I am a member in good standing of the AusIMM (Member No. 113025) and hold accreditation as a Chartered Professional (Mining)
4. I have practiced in my profession for 14 years in the areas of open cut and underground production mining and consulting
5. A field inspection of the Project Area was conducted from September 3 to 5, 2013
6. I am responsible for all of sections 1-4, 15-16, 18, 19 and 21-23 and share responsibility with the other QP's who contributed to this study for sections 24-27 of the report titled "Technical Report for PEA Newman Todd Project Red Lake, ON, Canada" with effective date January 12, 2015, for Confederation Minerals Ltd.
7. I have no prior involvement with the property that is the subject of this Technical Report. I have no controlling or monetary interest involving Confederation Minerals Ltd. or the property
8. I am independent of Confederation Minerals Ltd, applying all of the tests in section 1.5 of NI 43-101
9. I have read NI 43-101 and Form 43-101F1, and the Technical Report has been prepared in compliance with that instrument and form
10. As of the effective date of the Technical Report, to the best of my knowledge and information the Technical Report contains all scientific and technical information required to be disclosed to make the report not misleading
11. I have read the definition of "qualified person" set out in National Instrument 43-101 ("NI 43-101") and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfil the requirements to be a qualified person" for the purposes of NI 43-101.

Dated of this 13th day of January, 2015

'(Original Signed)'

Neil Schunke, MAusIMM (CP Mining)

Certificate of Qualified Person – Andrea Diakow, B.Sc., P.Geo

I, **Andrea Diakow, B.Sc., P.Geo**, do hereby certify that:

1. I am currently employed as an Exploration Geologist with Pamicon Developments Ltd. with an office at 615-800 West Pender Street, Vancouver, British Columbia, Canada V6C 2V6.
2. I am a graduate of the University of Calgary (2006) with a B.Sc. degree in Geology.
3. I am a member in good standing of the Association of Professional Engineers and Geoscientists of the Province of British Columbia.
4. I have worked in the Mining Industry for 8.5 years as an Exploration Geologist.
5. I have acted as the Project Geologist on the Newman Todd Project, on behalf of Redstar Gold Corp since November, 2009 and on behalf of Confederation Minerals Ltd, since January, 2011. I became the "Qualified Person" responsible for monitoring QA/QC and compiling assay results for New Releases in August, 2012. My most recent visit to the property was July 23-30, 3013.
6. I am responsible for the content and preparation of Sections 9, 11 and 12 in the technical report titled **"Technical Report for PEA Newman Todd Project Red Lake, ON, Canada"** with effective date January 13th, 2015, for Confederation Minerals Ltd.
7. As of the date of this certificate, to the best of my knowledge, information and belief, the technical report contains all scientific and technical information that is required to be disclosed to make the technical report not misleading.
8. I do not hold securities of the reporting issuer and I am independent of the issuer applying all of the tests in section 1.5 of National Instrument 43-101.
9. I have read the definition of "qualified person" set out in National Instrument 43-101 ("NI 43-101") and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a qualified person" for the purposes of NI 43-101.
10. I consent to the public filing of the Technical Report "**Technical Report for PEA Newman Todd Project Red Lake, ON, Canada**" for Confederation Minerals Ltd, with any stock exchange and other regulatory authority and any publication by them for regulatory purposes, including electronic publication in the public company files on their websites accessible by the public.

Dated this 13th of January, 2015

(Original Signed and Sealed)

Signature of Qualified Person

"Andrea Diakow"

Print name of Qualified Person

CERTIFICATE OF QUALIFIED PERSON

To accompany the report entitled: *Technical Report for PEA - Newman Todd Project, Red Lake, ON, Canada"* with effective date January 12 2015, for Confederation Minerals Ltd.

I, Jeffrey Barrett, do hereby certify that:

1) I am an Associate (Geotechnical Engineer) with the firm of Stantec Consulting Ltd. (Stantec) with an office at 845 Prospect St., Fredericton, NB, E3B 2T7;

2) I graduated from the University of New Brunswick with a B.Sc. in Civil Engineering in 2006, and the University of New Brunswick with a M.Sc. in Geotechnical Engineering in 2009. I have practiced my profession continuously since my graduation in 2006. My relevant experience includes environmental permitting, tailings and waste rock management, and mine closure, in iron ore, base metals, and gold projects.

3) I am a professional Engineer registered with the Professional Engineers of Ontario (#100183437), Association of Professional Engineers and Geoscientists of New Brunswick (#M6890), and Professional Engineers and Geoscientists of Newfoundland and Labrador (#07090);

4) I have not personally inspected the subject site;

5) I have read the definition of Qualified Person set out in National Instrument 43-101 and certify that by virtue of my education, affiliation to a professional association, and past relevant work experience, I fulfil the requirements to be a Qualified Person for the purposes of National Instrument 43-101 and this technical report has been prepared in compliance with National Instrument 43-101 and Form 43-101F1;

6) I, as a Qualified Person, am independent of the issuer as defined in Section 1.5 of National Instrument 43-101;

7) I am the co-author of this report and responsible for Sections 5.0 and 20.0 and accept professional responsibility for those sections of this technical report;

8) I have had no previous involvement in the property;

9) I have read National Instrument 43-101 and confirm that this technical report has been prepared in compliance therewith;

11) I have not received, nor do I expect to receive, any interest, directly or indirectly, in the Newman Todd Project or securities of Confederation Minerals Ltd.; and

12) I consent to the public filing of the Technical Report "Technical Report for PEA Newman Todd Project Red Lake, ON, Canada" for Confederation Minerals Ltd, with any stock exchange and other regulatory authority and any publication by them for regulatory purposes, including electronic publication in the public company files on their websites accessible by the public.

Fredericton, New Brunswick — *(Signed and Sealed, January 13, 2015)*

January 13, 2015 — Jeffrey Barrett, M.Sc.E., P.Eng. (PEO #100183437)

Associate (Geotechnical Engineering)

1 SUMMARY

1.1 Introduction

This technical report is intended to summarise the Preliminary Economic Assessment (PEA) for the Newman Todd Project and has been completed in accordance with NI43-101. The PEA has been completed for Confederation Minerals Ltd., and is based on the Newman Todd Mineral Resource estimate with effective date December 17, 2013.

The PEA is considered preliminary in nature. It includes Inferred Mineral Resources for which there has been insufficient drilling and sampling to classify these as Indicated or Measured Mineral Resources. Therefore economic considerations cannot be applied that would enable classification of this material as mineral reserves. There is no certainty that the conclusions within the PEA will be realised. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.

1.2 Property Description and Location

The Newman Todd property is located in the Red Lake Mining Division, Ontario. The claims are centred 25 km west of the Town of Red Lake. Red Lake is located 140 km north-northeast of Kenora and 435 km northeast of Winnipeg, Manitoba, the nearest major city. Abate Lake is located near the area of most of the historic exploration. The location 51°3' north latitude and 94°8' west longitude is just south of this lake area and within the claims area.

1.3 Accessibility, Climate, Local Resources, Infrastructure and Physiography

The property is best accessed by logging roads directly from Red Lake which provide access to within 2 km of the property. The property is accessible year round however upgrades to the access trail will be required. Red Lake is serviced by an all-weather paved highway (Highway 105) from Kenora. Temperatures vary from a low of -40° C in the winter to a high of +40° C in the summer. The normal climate precipitation data from 1981 to 2010 shows average yearly precipitation amounts of 686.4 mm including 214 cm of snowfall.

The area has a rich mining history, with two active producing mines (Campbell and Red Lake Mines) and has all the facilities and infrastructure required to develop a new mining operation. There is adequate water for both exploration and potential future mining and milling operations. All power will have to be generated on site or supplied by a new power line. Adequate trained personnel and service infrastructure for exploration and mining are available in Red Lake. The physiography is typical of the Canadian Shield, with elevations varying from approximately 340 m to 430 m above sea level.

1.4 History

Portions of the property were first prospected during the Red Lake gold rush in the late 1920s and early 1930s whereby a number of high grade gold occurrences were discovered at the west end of Red Lake. Many of these occurrences saw underground development, although, in general, production was limited. Since that time, the property has been sporadically explored by numerous companies.

Redstar Gold began exploring the property in the summer of 2003 with limited geological mapping, prospecting and geophysics. Redstar Gold continued property exploration primarily using diamond drilling in 2005-2010. Following the agreement with Redstar Gold announced November 22, 2010, Confederation Minerals continued to fund exploration with programs managed by Pamicon Developments between 2011-2014 with diamond drilling, exposure of outcrop and related sampling, geological mapping and a ground magnetic survey.

1.5 Geological Setting and Mineralisation

The Newman Todd property, is situated in the Red Lake Greenstone Belt (RLGB), an accumulation of Archean-age metavolcanic, metasedimentary and intrusive rocks comprising a portion of the Uchi Province of the Canadian Shield. Gold mineralisation is extremely widespread within the NTS, with nearly every hole completed over a strike length of approximately 1.8 km, and from surface to a depth of almost 1,000 m intersecting gold mineralisation.

1.6 Deposit Types

Several styles of gold mineralisation are observed on the property both inside and outside of the breccia (Singh, 2011): These mineralisations occur as free gold in quartz veins, within the massive sulphide units (pyrite and pyrrhotite), high sulphide and magnetite zones within the breccia, and within Sphalerite bearing veins in quartz porphyry. Several forms of alteration exist with dominant types noted as iron-carbonate (veins and vein fragments), sericite (felsic tuff units) and silicification and silica (veining and flooding). Textures within the NTS are suggestive of open-spaced filling of quartz, carbonate and sulphides. The deposit shows relatively high silver to gold ratio of about 2:1.

1.7 Exploration

Exploration work has been completed on the property which includes diamond drilling, local scale geological and structural mapping, mechanical stripping/trenching, channel and outcrop sampling and ground magnetic survey. In 2011, samples were taken and sent for whole rock analysis, in order to confirm that that they were being correctly identified in the field and to develop rock type signatures for future geochemical analyses.

The majority of the zone is buried under several metres of overburden. To date, only three localities of this altered zone have been stripped, mapped and sampled. All three outcrops are proximal to the footwall contact, which is generally less mineralised than the hanging wall contact. In total, 269 samples were collected from the three areas and include primarily 1 metre long lengths over up to four inch widths.

Shorter channels were done over discrete zones such as quartz veins or sulphide zones. The highest grade sample was a 0.5 m channel sample from the Southwest outcrop that assayed 40.30 g/t gold.

1.8 Drilling

Infill and step-out drilling by Confederation Minerals during 2011, 2012 and 2013 has shown that the NE-SW trending zone of structural deformation, brecciation, and intense quartz-carbonate alteration extends continuously, within the confines of the property, from one end to another. The NTS has so far been identified over a strike length of approximately 2.2 km (1.8 km of which has been drill-tested), a width of up to approximately 200 m and from surface to depths of up to 1 km. Drilling confirms the existence of a large scale, open ended, gold-bearing hydrothermal system. Drilling by Confederation Minerals at Newman Todd during their 2011, 2012 and 2013 field programs totalled 42,566 m in 109 holes.

1.9 Sample Preparation, Analyses and Security

All samples collected on the property by Redstar Gold and Confederation Minerals were subjected to a quality control procedure that ensured best practice in the handling, sampling, analysis and storage of sample material. On a large majority of the property, diamond drill core recovery was generally found to be excellent (> 97%). It is the opinion of the authors that the data is suitable for the estimation of Mineral Resources.

1.10 Data Verification

Redstar Gold (A.Diakow) is of the opinion that the QA/QC protocols have established that the assay values used herewith in this study (Preliminary Economic Assessment) are an accurate representation of actual gold values and can be used for grade estimates in this technical report.

1.11 Mineral Processing and Metallurgical Testing

Metallurgical testwork was undertaken during 2013 on 11 diamond drill hole intersections (totalling 221.9kg of material) that characterised the various types of mineralisation/alteration and waste rock found within the Newman Todd Structure (NTS). Gold mineralisation within the NTS is predominantly associated with the presence of sulphides and magnetite as well as pervasive silica alteration, and occasionally associated with the presence of few sulphides and/or magnetite. Observations also suggest that the presence of arsenopyrite and galena, while not particularly abundant, is also a very good indicator for the presence of gold. Combining the results of flotation and cyanidation tests, the overall Au recovery, with regrinding, was approximately 91% for the sulphide/magnetite-rich composite approximately 92% for the sulphide/magnetite-poor composite, and approximately 82% for the arsenopyrite-rich composite.

Processing would involve crushing, gravity separation, flotation and carbon-in-leaching to produce gold dore bars. Tailings would be disposed of in a tailings storage facility that is constructed as an initial starter dam and progressively expanded as production from the operation progresses to minimise early capital expenditure. The processing plant would be operated by the owner.

1.12 Mineral Resource Statement

The Mineral Resource estimate for the Newman Todd Project was prepared by Gary Giroux, MASc., P.Eng., of Giroux Consultants Ltd, using higher grade quartz carbonate breccia mineralised shells outlined and provided by Ralph Bullis, B.Sc., P.Geo, of Bullis Consulting and a geologic solid model provided by Doug Blanchflower, B.Sc., P.Geo of Minorex Consulting Ltd. Andrea Diakow, B.Sc., P Geo, of Pamicon Developments Ltd provided data verification through quality assurance and quality control protocols in the drilling assays and field sampling on the project. Other geological data was supplied by Confederation Minerals Ltd. The higher grade shells were used to create 3D wireframes for ten mineralised zones that were subsequently used to constrain the mineralised breccia zones. A 3D wireframe representing the Newman Todd Structure was also created.

The 10 mineralised zones are labelled A to D, F to H, Contact Zone, HB and HB6. A rotated block model with blocks 5m x 5m x 5m block size was prepared. Metal grades were interpolated using ordinary kriging within the mineralised Newman Todd Structure and also within the mineralised wireframes. Mineral Resources are classified according to NI43-101 and CIM Definition Standards (May 2014) based on the geologic continuity established through surface mapping and drill hole interpretation.

Open pit mineral resources are reported at a 0.85g/t Au cut-off which is considered reasonable for a PEA level of study on the basis of application of open pit mining methods, an assumed gold price of US$1,400 /oz (considering a long term view of up to 15 years for the potential ultimate extraction of the resource), mining recovery of 98%, mining dilution of 5%, metallurgical recovery of 90% and total costs (mining, processing, G&A) of $38.70/t. The assumptions for calculating this cut-off grade are typical for open pit mining of similar gold deposits in the region.

The Mineral Resources for Newman Todd that would be within a conceptual open pit are as summarised in Table 1-1.

Table 1-1 Newman Todd Mineral Resource Estimate Within a Conceptual Open Pit

Resource Class	Tonnage	Au Grade (g/t)	Au Ounces
Total Indicated Resources	350,000	2.76	31,000
Total Inferred Resources	574,000	2.78	51,000

Notes:

- Totals in Table 1-1 may differ due to rounding
- Resources in Table 1-1 are reported at a 0.85g/t Au cut-off
- Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability
- Inferred Mineral Resources have been estimated on the basis of limited geological evidence and sampling, there has been insufficient drilling and sampling to classify these Inferred Resources as Indicated or Measured Resources. It is reasonably expected that the majority of Inferred Mineral Resources could be upgraded to Indicated Mineral Resources with continued exploration.

Underground mineral resources are reported outside of the pit shell used for reporting open pit resources, and at a 2.2g/t Au cut-off as shown in Table 1-2. This cut-off was calculated based on an assumed gold price of USD1,400 /oz (considering a long term view of up to 15 years for the potential ultimate extraction of the resource), mining recovery of 95%, mining dilution of 10%, metallurgical recovery of 90% and total costs (mining, processing, G&A) of $100 /t. This cut-off was deemed to be a reasonable base case for economic extraction considering the geometry, potential extraction methods and typical cut-off grade input assumptions for underground operations in the region.

Table 1-2 Newman Todd Potential Underground Resource Estimate

Resource Class	Tonnage	Au Grade (g/t)	Au Ounces
Total Indicated Resources	630,000	3.36	68,000
Total Inferred Resources	490,000	4.54	72,000

Notes:

- *Totals in* Table 1-2 *may differ due to rounding*
- *Resources in* Table 1-2 *are reported exclusive of the resources in* Table 1-1, *and at a 2.2 g/t Au cut-off*
- *Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability*
- Inferred Mineral Resources have been estimated on the basis of limited geological evidence and sampling, there has been insufficient drilling and sampling to classify these Inferred Resources as Indicated or Measured Resources. It is reasonably expected that the majority of Inferred Mineral Resources could be upgraded to Indicated Mineral Resources with continued exploration

1.13 Mining Methods

Open pit mining of the Newman Todd deposit would be undertaken by a contractor owing to the relatively small size of the Mineral Resource. Mining would commence with a 21 month pre-production period involving the following activities:

- Construction of a dike at the inflow end of Abate Lake and a water diversion channel, prior to dewatering of the lake (3 months)
- Lake bed sediments and overburden removal (18 months)

Mining of potentially mineralised material intended for direct feed to the processing plant would occur over 38 months following this pre-production period.

Mining would occur using conventional truck and shovel operations. The ramp is constrained to the southwestern side of the proposed open pit to maximise pit slope angles for the majority of the open pit and to access pockets of potentially mineralised material at deeper elevations on the northeastern side of the open pit. The slope angles used in the mine design were adjusted according to this ramp position.

It is expected that a 98% mining recovery and a dilution factor of 5% would be achieved for the open pit operation. This is based on open pit mines and mining projects having a similar shovel fleet (Dominion Diamond Corporation's Misery and Pigeon open pits assume 98% mining recovery, Rio Alto Mining's La Arena Project assumes 98% mining recovery and Capstone Mining Corp's Minto and Santo Domingo Projects assume 100% mining recovery). This also considers the 5x5x5 m block size used in the mineral resource model for Newman Todd. Mining recovery accounts for the potentially economic material loss events during mucking due to unclear potentially economic material /waste contacts or areas where selectivity cannot be reached. The dilution factor is applied to potentially economic material blocks due to the undesired waste tonnes added to the potentially economic material in the mining process. QP Neil Schunke deems that the level of assessment of mining recovery and dilution factors is appropriate for a PEA.

Waste rock removed from the operation would be stored on the waste storage facility which is to be sited to the southeast of the open pit as shown in Figure 1-1. It is expected that waste rock would be categorised as either potentially acid-generating or non-acid-generating, although no specific testwork and classification has been undertaken for this level of study. Owing to the known presence of significant carbonate zones constrained to the waste portions within the Newman Todd Structure, these are expected to provide a substantial neutralisation effect. On this basis, there is expected to be sufficient non-acid-generating waste rock available for construction of the walls for the tailings storage facility and for capping of potential acid-generating waste rock within the waste storage facility.

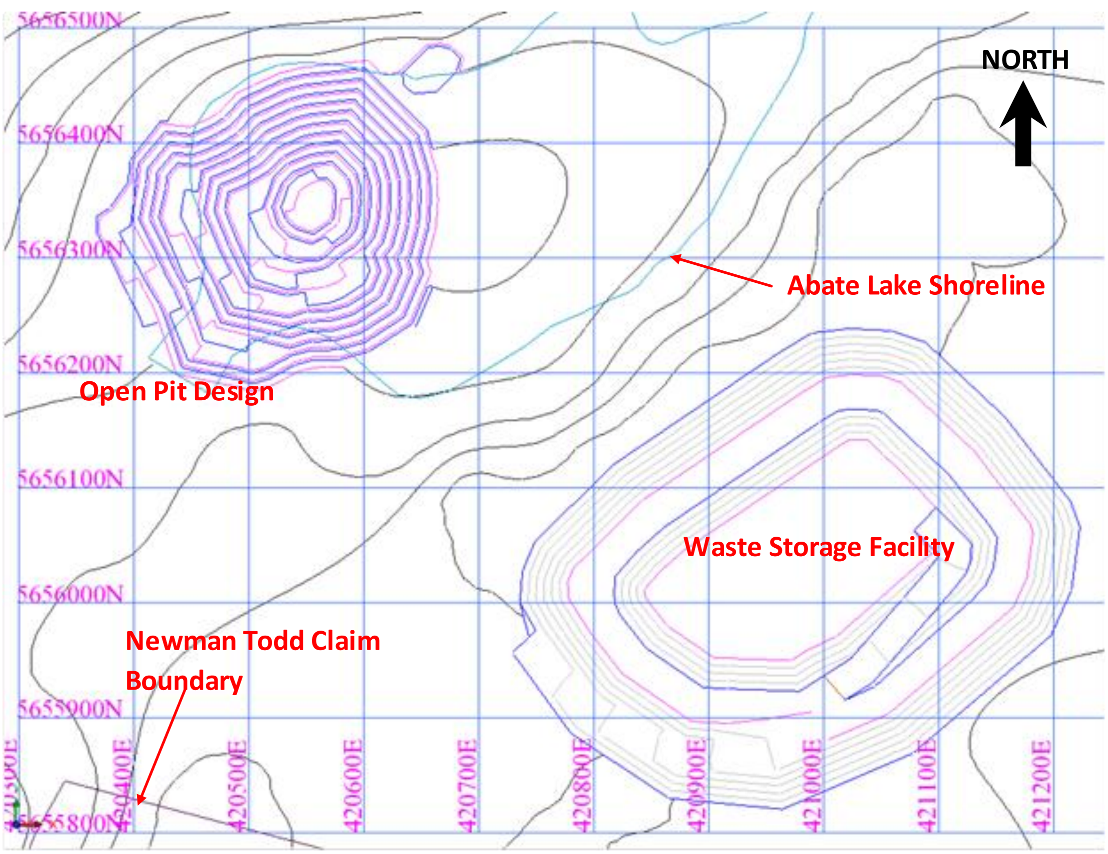

Figure 1-1 Open Pit and Waste Storage Facility Designs

1.14 Mine Infrastructure

Infrastructure to be constructed on the Newman Todd property includes demountable offices, crib and ablution facilities, temporary ROM pad and water settling pond as shown in Figure 1-2.

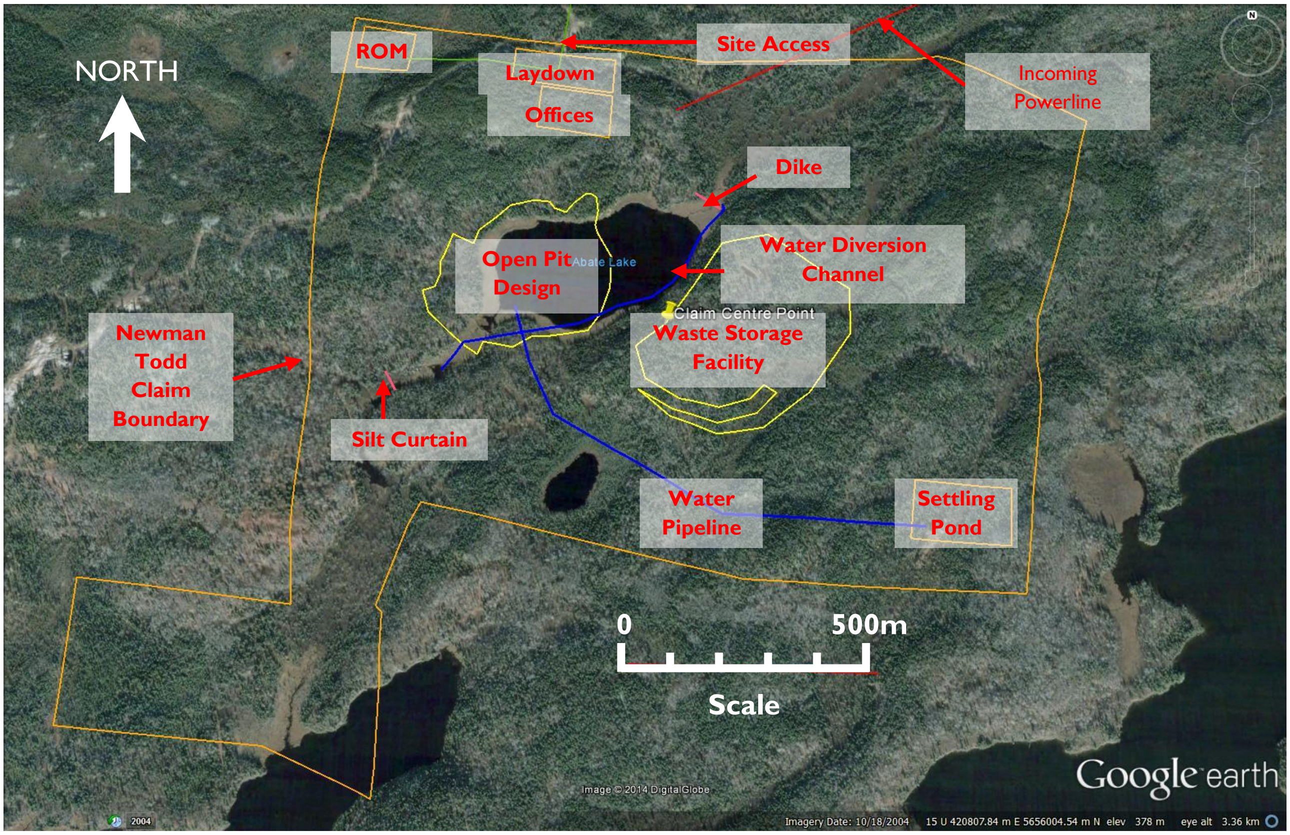

Figure 1-2 Infrastructure on Newman Todd Property

Potential mill feed material would be hauled a distance of 18 km to the processing plant, which is planned to be constructed adjacent to the existing Mt Jamie Rd that is used to access the property (Figure 1-3).

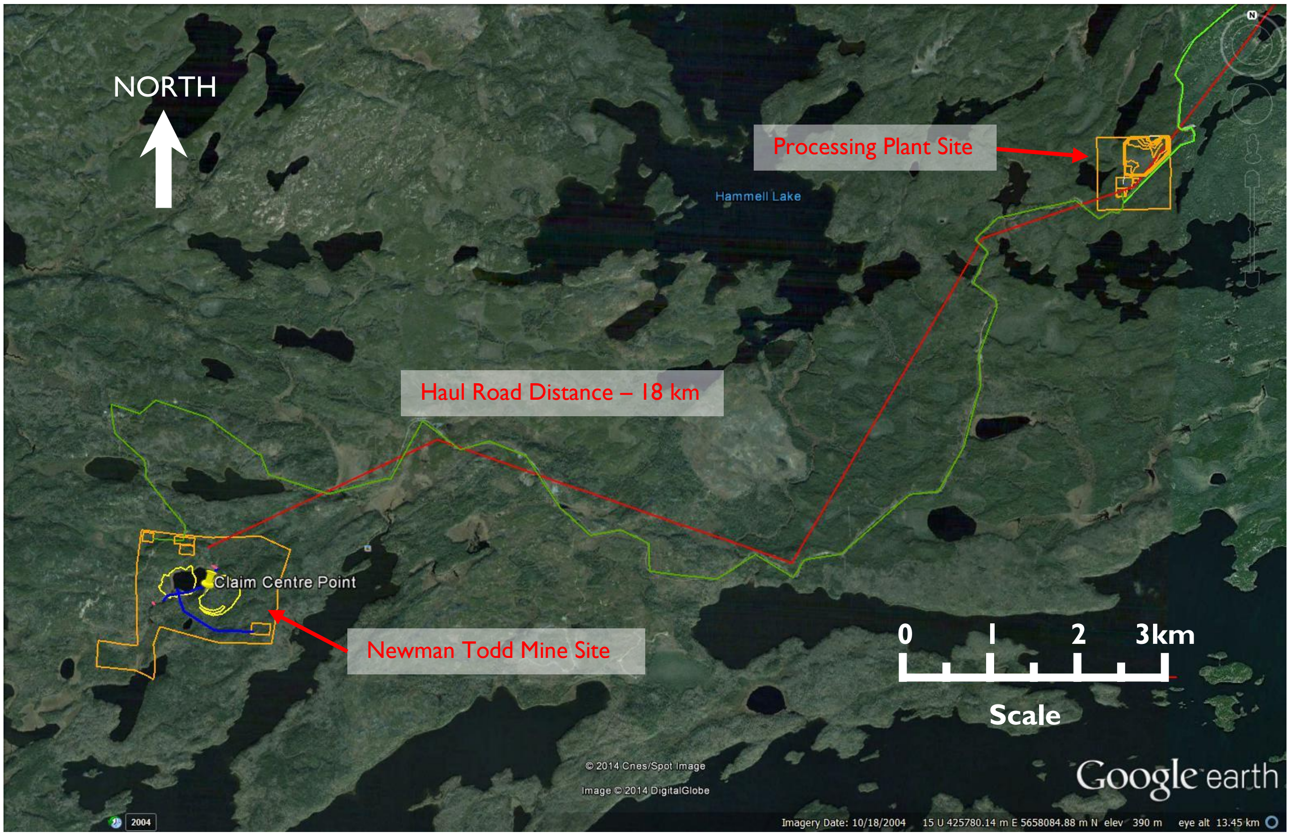

Figure 1-3 Newman Todd Property and Process Plant/Tailings Storage Facility Site

The gravel roads used to access the Newman Todd property and processing plant site would need to be upgraded to suit the heavier and more frequent traffic flows associated with the proposed mining and processing operations (transportation of personnel, supplies and dore product), including during the construction phase.

Water is readily available from nearby lakes for use in mining and processing operations. Process water used on site would be collected in settling ponds prior to recycling through the mining and processing operations. Non-contact water from storm flows and surface runoff is expected to meet downstream water quality requirements from all developed areas, including from the plant site, mine rock disposal areas, tailings area and open pit.

Power would need to be provided to the project through extension to powerline infrastructure from the present limit of infrastructure on Nungusser Road, Cochenour. It is expected that approximately 40 km of new overhead powerline would need to be constructed to service the project.

The processing plant, tailings storage facility, water settling pond, ROM pad and offices would be constructed on an unpatented claim area located to the northeast of the Newman Todd property as shown in Figure 1-4.

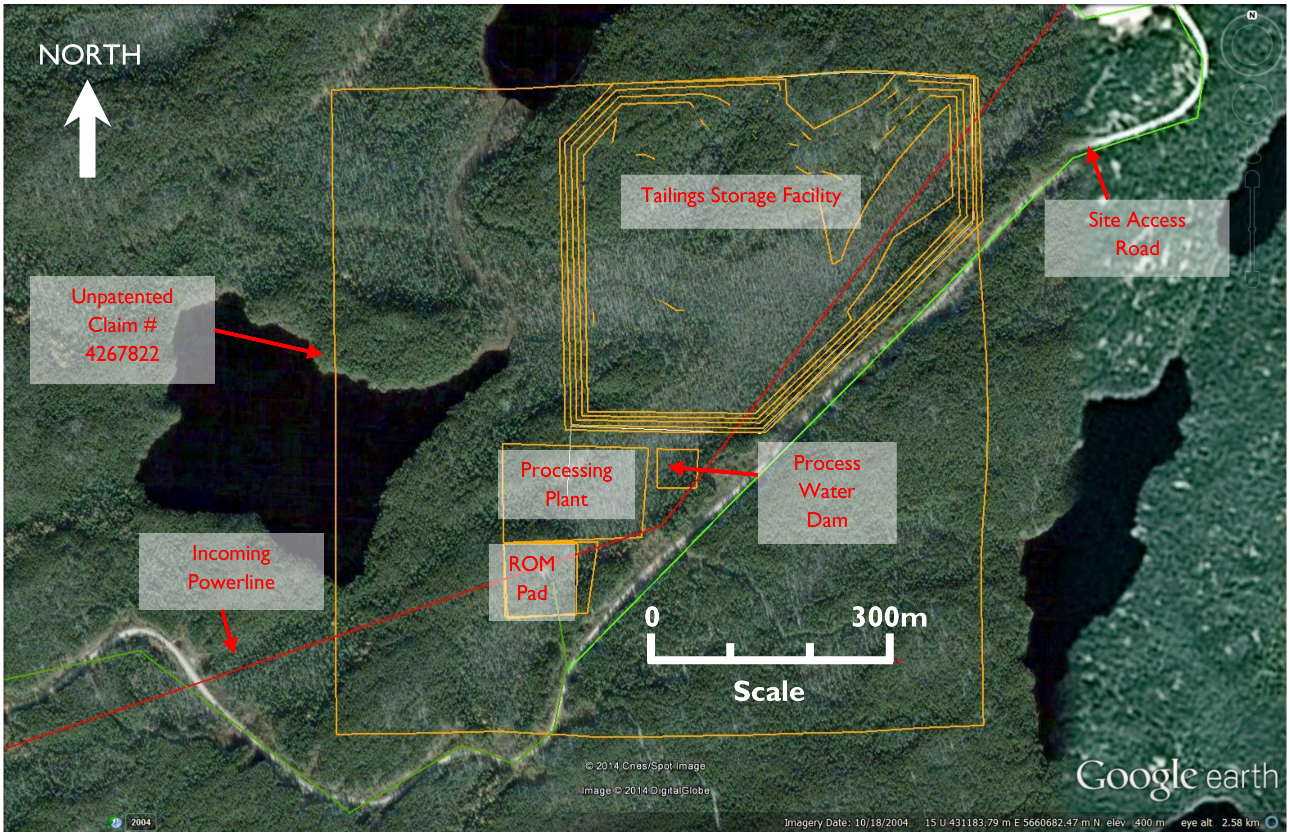

Figure 1-4 Infrastructure on Processing Plant Site

1.15 Market Studies and Contracts

For the purposes of the PEA, no marketing studies have been completed for the supply and demand of gold dore. Confederation Minerals has not entered into any contracts for the sale of gold dore from Newman Todd, although it is expected that this would be sold to a metals trader.

Four scenarios using historic trends and consensus forecast gold prices have been used to determine an appropriate metal price assumption to be applied to the project. The four scenarios considered were:

- 3-year trailing average gold price
- 3-year trailing average gold price and 1-year forecast
- Spot gold price as of 14th February 2014
- Gold price based on consideration of current market sentiment and other mining studies recently completed

A gold price of US$1,400/ounce has been used for the base case project economics as this relies more on the historical gold prices rather than recent spot prices. On the basis of the likely time until the Newman

Todd project could potentially move into production, current spot prices are not expected to be as indicative of metal prices in the future as historic averages.

A similar methodology was applied to the USD/CAD exchange rate assumption for this project. Two scenarios using historic trends have been used to determine an appropriate exchange rate assumption to be applied to the project. The two scenarios considered were:

- 3-year trailing average USD/CAD exchange rate
- Spot USD/CAD exchange rate as of 14th February 2014

A USD/CAD exchange rate of 1.01 has been used for the project economics as this relies on the historical exchange rates rather than recent spot exchange rates. On the basis of the likely time until the Newman Todd project could potentially move into production, current spot rates are not expected to be as indicative of exchange rates in the future as historic averages.

1.16 Environmental Studies

The main elements of the reclamation plan at the end of mine life would comprise:

- Permanent deactivation of mine access roads not needed for post-mining land access with contouring to restore natural drainages and revegetation of roadways
- Re-contouring disturbed areas to blend in with the surrounding topography and to re-establish natural drainage patterns
- Deactivation of water management features that are no longer required such as water treatment systems, polishing ponds and ditches. This would include re-contouring/spreading of pond berms, backfilling of ponds, backfilling of ditches and re-establishing natural drainage patterns
- The beaches of the tailings storage facility would be revegetated and a closure spillway constructed sufficient to handle large rainfall events, with drainages established to provide long term erosion control
- Mine waste storage facility would be formed to the mine closure profile, with rock surface areas amended with a soil cover as needed for vegetation and to enable stable drainage conditions to be established.
- The dike constructed at the inlet to Abate Lake would be removed and the pit allowed to fill with water and the overflow directed to establish drainages
- Measures would be taken for public safety around the pit include re-sloping, fencing or rock berms.

1.17 Capital and Operating Costs

Capital and operating costs for this study have been sourced from quotations and general discussions with suppliers and the Mining Plus cost database. Capital and Operating costs are considered to have been estimated to an accuracy of +/- 50%. The estimated cost includes a contingency allowance of approximately 20%. With subsequent more detailed studies, further delineation and infill of the Mineral Resource and further metallurgical testwork, the cost estimation accuracy would improve.

Capital and operating costs are summarised in Table 1-3 Capital Cost Summary and Table 1-4.

Table 1-3 Capital Cost Summary

Cost Area	Initial Capital (CA$M)	Expansion and Sustaining Capital (CA$M)	Total Capital (CA$M)
Roads	1.5		
Buildings and Electrical	1.3		
Powerline extension and Administration	8.4		
Processing Plant and Tailings Management Facility	37.0		
Infill and Sterilisation Drilling	0.6		
Contingency (Initial Capital)	9.8		
Sustaining Capital (Tailings Storage Facility and Process Plant Water Management)		23.2	
Mine Closure		5.1	
Contingency (Sustaining Capital)		2.1	
TOTAL	**58.6**	**30.5**	**89.1**

Table 1-4 Operating Cost Summary

Cost Area	Operating Cost (CA$/t milled)
Mine	39.0
Processing Plant	28.7
G&A	5.9
Royalties	4.7
TOTAL	**78.3**

1.18 Economic and Sensitivity Analysis

The Newman Todd Project is subject to several royalties based either on Net Smelter Return (NSR) or Net Carried Interest (NCI). Those royalties for the project that are based on NSR have been applied to the revenue from payable gold, less the selling costs. However, the royalty based on NCI was not applied in the optimisation phase of the project because, under its terms, it will only result in a payable amount after the recovery of all operating costs, capital expenditures, a carrying charge calculated at prime plus 1% and a reserve for working capital. The NCI-based royalty has been applied later in the cash flow model. Collectively, the royalties that apply to the Newman Todd property are onerous.

Economic analysis on Newman Todd Project shows a cash flow after capital depreciation of -CA$66.9M and a NPV (5% discount rate) of –CA$62.4M. The economic analysis is shown in Table 1-5.

Table 1-5 Economic Analysis (CA$M)

Project Period	Total	-2	-1	1	2	3	4
Recovered Gold in Ounces	83,115	-	-	19,877	29,015	30,361	3,862
Revenue	$ 114.2	$ -	$ -	$ 27.3	$ 39.9	$ 41.7	$ 5.3
Royalties of NSR	$ 5.4	$ -	$ -	$ 1.3	$ 1.9	$ 2.0	$ 0.3
Capital							
Processing Plant	$ 37.0	$ 4.0	$ 7.9	$ 7.9	$ 7.9	$ 7.9	$ 1.3
Power line extension to site	$ 3.6	$ 0.4	$ 0.8	$ 0.8	$ 0.8	$ 0.8	$ 0.1
Other	$ 15.0	$ 1.6	$ 3.2	$ 3.2	$ 3.2	$ 3.2	$ 0.5
Mine Closure	$ 6.2	$ -	$ -	$ -	$ -	$ -	$ 6.2
Contingency	$ 9.8	$ 1.0	$ 2.1	$ 2.1	$ 2.1	$ 2.1	$ 0.3
Sustaining CAPEX	$ 17.6	$ 1.9	$ 3.8	$ 3.8	$ 3.8	$ 3.8	$ 0.6
Operating							
Mining Cost	$ 45.2	$ 8.6	$ 16.8	$ 11.2	$ 4.9	$ 3.5	$ 0.3
Processing Cost	$ 33.2	$ -	$ -	$ 10.3	$ 10.8	$ 10.8	$ 1.4
potentially economic material							
Haulage	$ 4.3	$ -	$ -	$ 1.3	$ 1.4	$ 1.4	$ 0.2
Flotation	$ 15.1	$ -	$ -	$ 4.6	$ 4.9	$ 4.9	$ 0.6
Leaching	$ 13.9	$ -	$ -	$ 4.3	$ 4.5	$ 4.5	$ 0.6
G&A	$ 6.8	$ 0.7	$ 1.4	$ 1.4	$ 1.5	$ 1.5	$ 0.2
Cash Flow after Capex Depreciation	**$ (65.5)**	**$ (18.2)**	**$ (36.0)**	**$ (14.6)**	**$ 3.1**	**$ 6.2**	**$ (6.0)**
Royalty H.A. Newman Estate (15% after OPEX and CAPEX)	**$ 1.4**	**$ -**	**$ -**	**$ -**	**$ 0.5**	**$ 0.9**	**$ -**
Cash Flow after Capex Depreciation	**$ (66.9)**	**$ (18.2)**	**$ (36.0)**	**$ (14.6)**	**$ 2.6**	**$ 5.3**	**$ (6.0)**
NPV (5% Discount Rate)	**$ (62.4)**	$ -	$ -	$ -	$ -	$ -	$ -

A sensitivity analysis was conducted on key economic inputs: gold price / feed grade / processing recovery, processing cost, mining cost, capital expenditure and mining recovery. The sensitivity parameter ranges were as summarised in Table 1-6. The results are shown in Figure 1-5. These indicate that the Newman Todd Project is most sensitive to gold price, processing recovery, feed grade and capital expenditure, followed by mining cost, mining recovery and processing cost.

Table 1-6 Sensitivity Parameter Ranges

Sensitivity Parameters	Worst Case	Base Case	Best Case
Gold Price / Feed Grade / Processing Recovery	-30%	0%	30%
Processing Cost	30%	0%	-30%
Mining Cost	30%	0%	-30%
Capital Expenditure	30%	0%	-30%
Mining Recovery	-30%	0%	10%

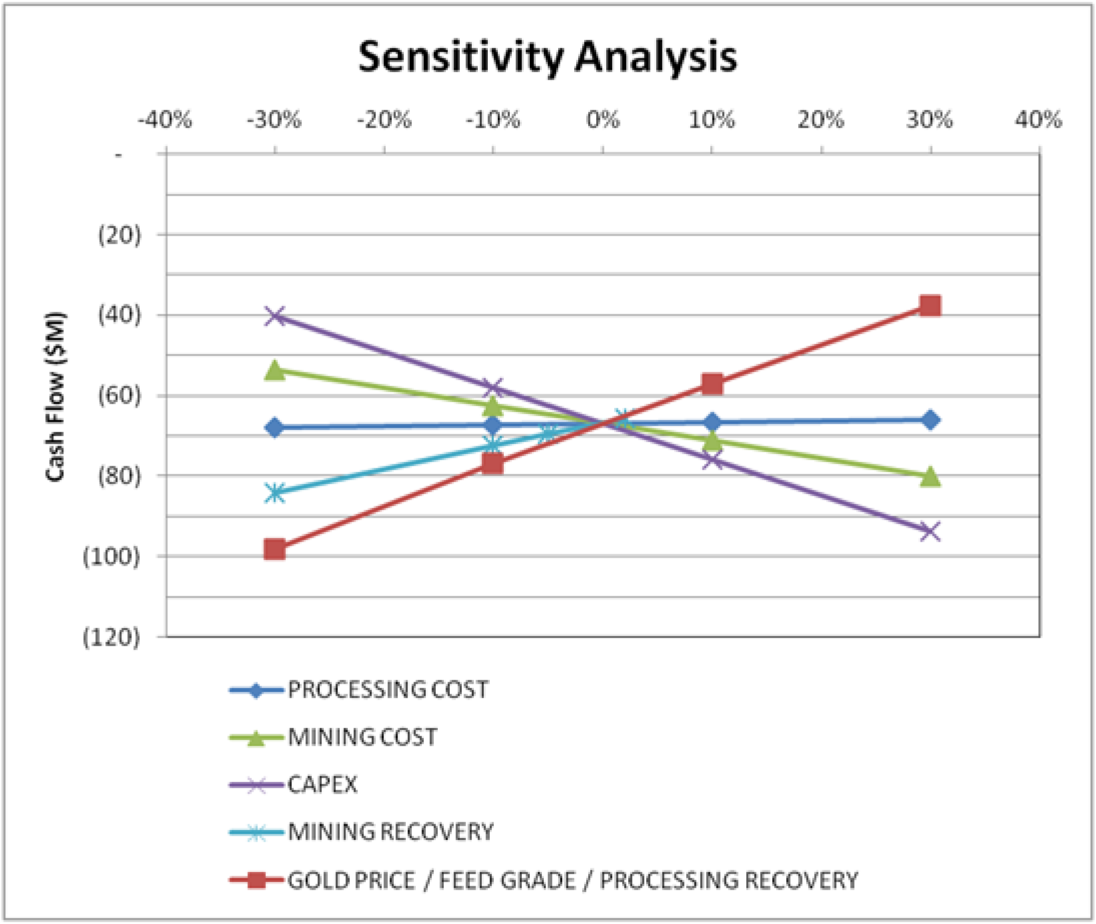

Figure 1-5 Sensitivity Analysis Results

1.19 Conclusions

The Mineral Resource estimate and all aspects detailed within this PEA have been completed in accordance with National Instrument 43-101, CIM Definition Standards (May 2014) and CIM Guidelines on Estimation of Mineral Resources and Mineral Reserves. The intent of the PEA was to provide Confederation Minerals, investors and other interested parties with a preliminary view of the potential economics of the Newman Todd Project, and provide management with guidance for the future exploration and development of this project.

The QP's conclude that:

- The Newman Todd Deposit demonstrates several characteristics that are similar to nearby operating mines within the Red Lake District
- Gold mineralisation is extremely widespread within the NTS, with nearly every hole completed over a strike length of approximately 1.8 km, and from surface to a depth of almost 1,000 m intersecting gold mineralisation. Considering a total of 109 holes drilled into the NTS by Confederation Minerals over the 1.8 km strike length, 94% intersected variable widths of 3 g/t gold or higher, 87% intersected variable widths of 5 g/t gold or higher, and 41% intersected

variable widths of 20 g/t gold or higher. Thus, the hydrothermal processes which contributed and deposited gold in the NTS were active over a very significant strike length and depth

- Trade off studies between mining methods for the Newman Todd deposit indicate that open pit mining is most viable. The base case considers open pit mining only
- The project has a mine life of 4.7 years, with waste mining initially occurring over the first 1.5 years at a production rate of 2,800,000 tonnes per annum, followed by 3.1 years of potentially economic material production at a production rate 375,000 tonnes per annum
- Life of Mine (LOM) potentially mineable inventory comprising 482,000t at 2.38g/t Au for 36,906oz of Au in the Indicated Resource category and 675,000t at 2.55g/t Au for 55,439oz of Au in the Inferred Resource category
- Pre-tax Net Present Value (NPV) at a 5% discount rate of -$62.4M

The PEA is considered preliminary in nature. It includes Inferred Mineral Resources for which there has been insufficient drilling and sampling to classify these as Indicated or Measured Mineral Resources. Therefore economic considerations cannot be applied that would enable classification of this material as mineral reserves. There is no certainty that the conclusions within the PEA will be realised. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.

There is significant upside to the Newman Todd Project including:

- Reduction of capital expenditure (processing plant, tailings storage facility and associated infrastructure) through toll treatment options
- Expansion of land holding sufficient to construct processing plant, tailings storage facility and associated infrastructure adjacent to the Newman Todd operation instead of on claims 18 km NE of the deposit
- The Newman Todd Structure is open to extension to the northeast and southwest with several discrete known and untested targets and is also open at depth
- Additional drilling may discover further high grade portions of the deposit along strike or down-dip within the Newman Todd structure
- Potential increase in Mineral Resource quantity, particularly through further drilling of the near-surface mineralised zones within the Newman Todd structure
- Further constraining the high grade mineralisation model within the deposit
- Renegotiation and decrease of royalties.

1.20 Future Works and Recommendations

Following this PEA, the following work is recommended to advance the Newman Todd Project

- **Mineral Resource**
  - Conduct further delineation and exploration drilling for potential increase in Mineral Resource quantity, particularly through further drilling of the near-surface mineralised zones within the Newman Todd structure but also along strike and down-dip within the structure

  - Through further drilling and field investigations, test the theory that the NTS may be an epithermal system developed prior to D2 which was subsequently tilted during D2
  - Conduct further review of the high grade mineralised zones with the results of further drilling and improved sampling of broken/fractured zones
  - Given the ICP (inductively-coupled plasma) values for Calcium, Sulphur and Arsenic build a ABA (Acid Base Accounting) block model to predict the amounts of acid generating, acid neutral and acid consuming rock within the areas to be mined.
- **Mining**
  - Establish a geotechnical data collection and testing program to gather more accurate geotechnical parameters for the mine, processing facility and TMF project areas and build a geotechnical model
  - Geotechnical assessment for slope stability and ground control requirements
  - Conduct hydrological and hydrogeological assessments to determine groundwater inflow quantity and quality, including seasonal groundwater
  - Conduct further detailed analysis on mine dewatering requirements based on future hydrogeological assessment
  - Determine explosives requirements based on geotechnical properties of the rock
  - Determine dewatering well requirements for the open pit to limit the amount of groundwater flowing into the walls and floor of the pit.
- **Processing**
  - Further definition on the effect of primary grind size and regrind size on flotation recovery. A primary grind size of ~75 μm and a regrind of ~25μm were selected, but were not optimised
  - Locked cycle flotation testing to assess if the flowsheet design and flotation reagent suite is stable, and allows to further reduce the concentrate mass pull at higher metal grade and therefore support further savings in capital and operating expenditure
  - Effect of depressant type and dosage. Only CMC was tested. Alternative depressants or other secondary depressants should be tested, especially for the waste (WST) Comp, to improve the concentrate grade
  - With fast kinetics, it may be a good idea to test flash flotation ahead of grinding
  - Different flowsheet configurations such as gravity+flotation+leach and whole ore leach should also be evaluated
  - Environmental testing on final tailings
  - Metallurgical testing to evaluate the effect of feed grade on recovery
  - Investigate the potential presence of deleterious elements and their impact on the final product quality and economics
  - Further carbon absorption test work.
- **Infrastructure**
  - Detailed assessment of site power requirements and extension of power infrastructure from existing infrastructure close to the Rubicon Minerals mining project
  - Investigate further the potential for toll treatment options

    - Conduct detailed engineering on all infrastructure requirements
    - Detailed geotechnical characterisation and engineering design for the tailings storage facility
    - Further environmental, hydrogeological and civil investigations will be required prior to confirming locations for the required infrastructure.
- **Environmental**
    - Conduct acid rock drainage tests sufficient to establish domains for non-acid generating and potentially acid generating rock and suitable storage requirements for each type. This should also include acid-base accounting and kinetic testwork
    - Geochemical classification of waste rock and tailings and development of mitigation measures if required
    - Completion of Environmental baseline studies, environmental assessment and permitting process
    - Conduct hydrological investigations to confirm the rates and method of transferring water from Abate Lake to the receiving environment and to mine water pond.
- **Economics**
    - Expand the current land holding surrounding the Newman Todd claim sufficient to construct processing plant, tailings storage facility and associated infrastructure adjacent to the Newman Todd operation instead of on claims 18 km NE of the deposit
    - Re-negotiate royalties payable on the property
    - Smelter terms to be defined in greater detail which would require a sample of concentrate expected to be produced to be sent to a smelter for more detailed analysis.
- **General and Other**
    - Investigate workforce requirements and suitability for a camp facility or commute arrangements for the workforce
    - Contingent on positive results of future field investigations, this PEA should be updated with newly acquired data.

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2 INTRODUCTION

This technical report that is prepared in accordance with NI43-101 is a Preliminary Economic Assessment (PEA). It has been completed for Confederation Minerals Ltd. on the Newman Todd Project. The PEA is based on the Newman Todd Mineral Resource estimate with effective date December 17, 2013. The PEA is considered preliminary in nature. It includes Inferred Mineral Resources for which there has been insufficient drilling and sampling to classify these as Indicated or Measured Mineral Resources. Therefore economic considerations cannot be applied that would enable classification of this material as mineral reserves. There is no certainty that the conclusions within the PEA will be realised. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.

The Newman Todd property is located 25 km west of the town of Red Lake, Ontario, Canada. The property is accessed via 49 km of sealed roads and a further 29 km by good gravel roads from Red Lake.

The source data for the Mineral Resource estimate has been provided by Confederation Minerals Ltd. Various sections have been collected by the consultant signing off on the section. Data for other parts of the report is detailed in the relevant section of the report.

The PEA was authored by Neil Schunke, MAusIMM (CP Mining) of Mining Plus Canada Consulting with contributions by Ralph Bullis, B.Sc., P.Geo, of Bullis Consulting, Tracey Meintjes, P Eng. of Moose Mountain Technical Services, Jeffrey Barrett, M.Sc.E., P.Eng of Stantec Consulting Ltd., Gary Giroux, MASc., P.Eng of Giroux Consultants Ltd, Andrea Diakow, B.Sc., P Geo, of Pamicon Developments Ltd. and Doug Blanchflower, B.Sc., P.Geo of Minorex Consulting Ltd.

The qualified persons who visited the site include, but are not limited to the following, including visit dates:

- Ralph Bullis - September 10-14, 2012, February 13-14, 2013 and the most recent site visit September 3-8, 2013
- Andrea Diakow - Project Geologist on a regular fly-in/fly-out roster from January to November, 2011. Site visits June 4-6, 2012, July 26-August 9, 2012, Sept 4-14, 2012 with the most recent being July 23-30, 2013.
- Neil Schunke - September 3-5, 2013.

3 RELIANCE ON OTHER EXPERTS

Mineral claim ownership information was supplied by Confederation Minerals. An audit style review of the unpatented claims using the Ontario government online claim website confirmed the information provided by Confederation Minerals. Mining Plus is not a mineral title expert, but has no reason to question the title information Confederation Minerals has provided.

Historic reports in peer reviewed journals or authored by mining professionals are referenced throughout this report. The authors have depended on these documents for historic activity and regional geological context.

4 PROPERTY, DESCRIPTION AND LOCATION

4.1 Introduction

The Newman Todd property consists of 13 patented claims and 19 unpatented claims located in northwestern Ontario, Canada. They are listed in Table 4-1 below and the location is displayed on Figure 4-1.

The group is located in the Red Lake Mining Division, Ontario, and are centred 25 km west of the Town of Red Lake. Red Lake, Ontario is located 140 km north-northeast of Kenora and 435 km northeast of Winnipeg, Manitoba, the nearest major city. Abate Lake is located near the area of the most historic exploration. The location 51°3' north latitude and 94°8' west longitude is just south of this lake area and within the claims area. The claims are located on 1:50,000 NTS map sheet 052M/01.

The total area of the claims is 1,908 hectares. The claims have not been legally surveyed (with the exception of the patented mining claims at the time they were patented), and to the best of the authors' knowledge are not subject to any environmental liabilities, and do not require special permitting prior to conducting exploration and development work.

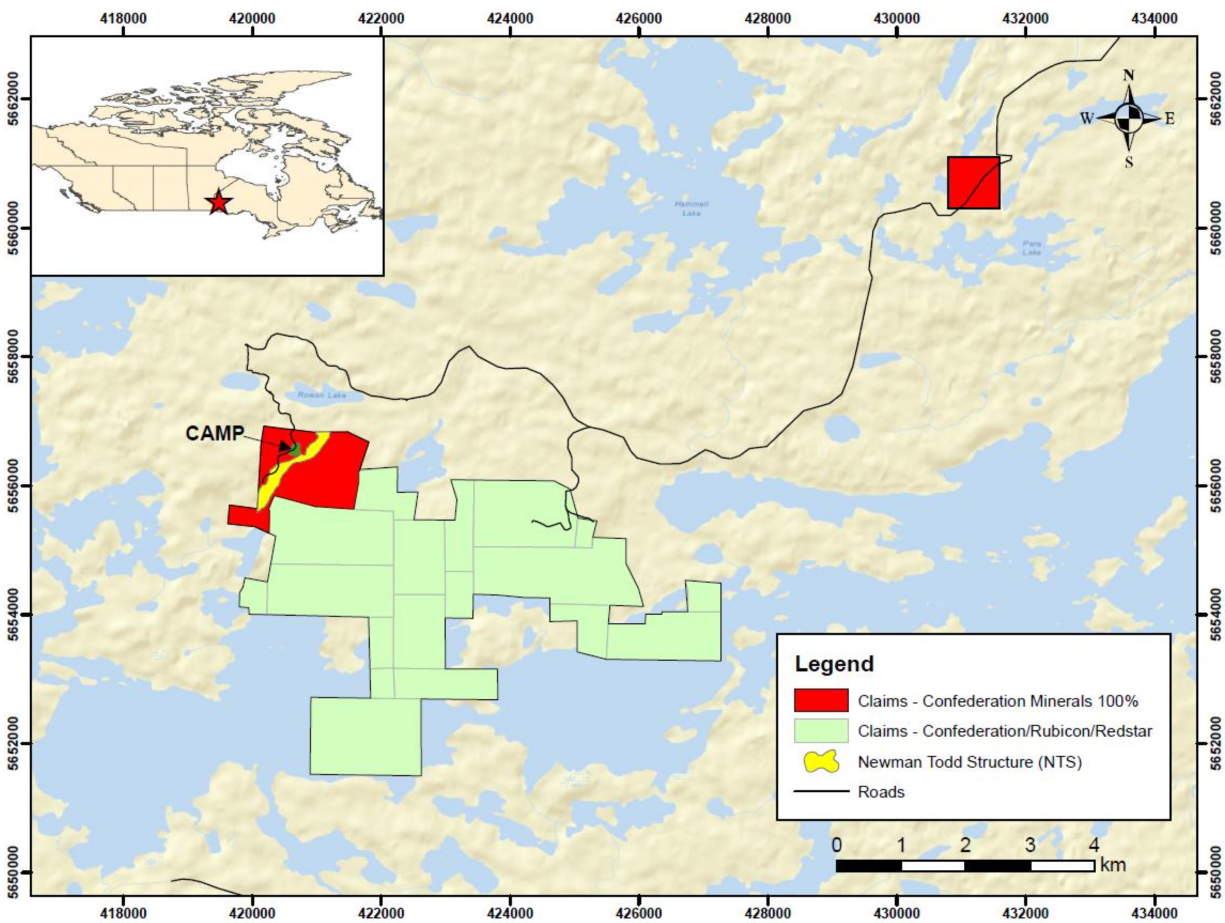


Figure 4-1 Regional claims map with details in Table 4-1 (Source Confederation Minerals, 2014)

Table 4-1 List of Claims

Claim No.	Patent	Claim Type	Township	Recorded Holder	Hectares	Expiry Date
KRL1449	1449	Patented	TODD	Confederation Minerals Ltd.	26	
KRL1451	1451	Patented	TODD	Confederation Minerals Ltd.	25	
KRL1607	1607	Patented	TODD	Confederation Minerals Ltd.	12	
KRL1610	1610	Patented	TODD	Confederation Minerals Ltd.	14	
KRL1611	1611	Patented	TODD	Confederation Minerals Ltd.	26	
KRL1612	1612	Patented	TODD	Confederation Minerals Ltd.	7	
KRL8526	8526	Patented	TODD	Confederation Minerals Ltd.	15	
KRL10410	10410	Patented	TODD	Confederation Minerals Ltd.	13	
KRL10411 (KRL19859)	10411	Patented	TODD	Confederation Minerals Ltd.	13	
KRL19853	19853	Patented	TODD	Confederation Minerals Ltd.	9	
KRL19856	19856	Patented	TODD	Confederation Minerals Ltd.	7	
KRL19857	19857	Patented	TODD	Confederation Minerals Ltd.	10	
KRL8525	8525	Patented	TODD	Confederation Minerals Ltd.	21	
1107689		Unpatented	TODD	Rubicon Minerals Corp.	64	12-Mar-18
1107691		Unpatented	TODD	Rubicon Minerals Corp.	208	12-Mar-18
1185127		Unpatented	TODD	Rubicon Minerals Corp.	32	26-Jun-18
1185128		Unpatented	TODD	Rubicon Minerals Corp.	128	26-Jun-18
1234224		Unpatented	TODD	Rubicon Minerals Corp.	64	15-Jun-18
1234225		Unpatented	TODD	Rubicon Minerals Corp.	32	15-Jun-18
1234226		Unpatented	TODD	Rubicon Minerals Corp.	128	15-Jun-18
1234227		Unpatented	TODD	Rubicon Minerals Corp.	48	15-Jun-18
1234517		Unpatented	TODD	Rubicon Minerals Corp.	16	1-Aug-18
1234525		Unpatented	TODD	Rubicon Minerals Corp.	192	1-Aug-18
1239848		Unpatented	TODD	Rubicon Minerals Corp.	16	12-Nov-18
1239849		Unpatented	TODD	Rubicon Minerals Corp.	160	12-Nov-18
1239850		Unpatented	TODD	Rubicon Minerals Corp.	160	12-Nov-18
1239851		Unpatented	TODD	Rubicon Minerals Corp.	80	12-Nov-18
1239852		Unpatented	TODD	Rubicon Minerals Corp.	96	12-Nov-18
1239853		Unpatented	TODD	Rubicon Minerals Corp.	48	12-Nov-18
1239854		Unpatented	TODD	Rubicon Minerals Corp.	160	12-Nov-18
1239855		Unpatented	TODD	Rubicon Minerals Corp.	16	12-Nov-18
4267822		Unpatented	FAIRLIE	Confederation Minerals Ltd.	64	25-Sep-15

Claim 4267822 is located to the northeast of the main group of claims and displayed as a lone claim on Figure 4-1. The other claims are displayed individually in greater detail on Figure 4-2.

The patented claims have both mining and surface rights.

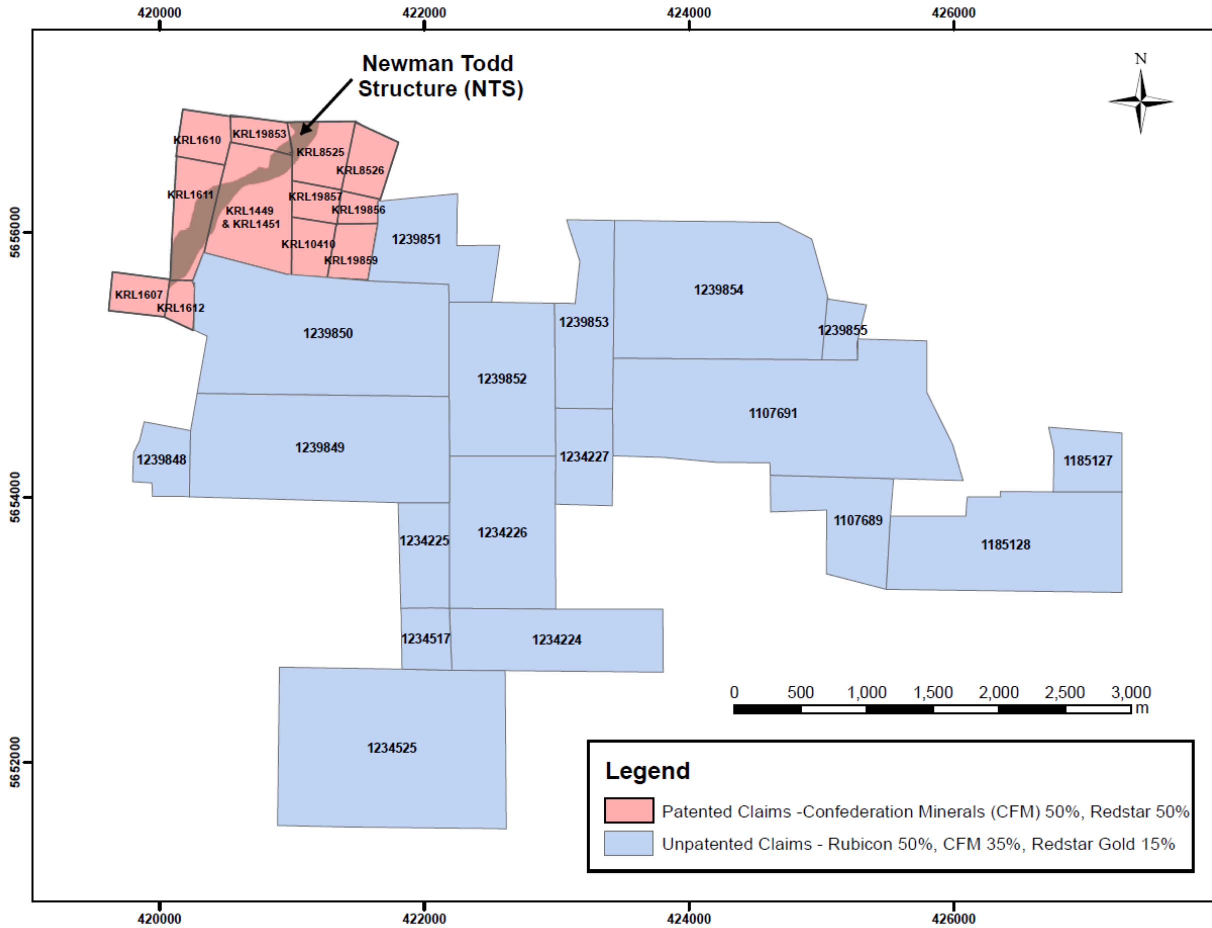


Figure 4-2 The Newman Todd core area claim map (source Confederation Minerals, 2014)

4.2 Redstar Gold Agreement

Redstar Gold Corp. originally acquired 100% of the Newman Todd property ("the property") from AngloGold Ashanti by issuing 700,000 common shares to AngloGold Ashanti in accordance with an agreement dated January 11, 2005.

Under this Agreement, Redstar Gold will grant to AngloGold Ashanti up to a 1% net smelter return (NSR) royalty on claims within the property, such that the total royalty payable on any claim does not exceed 2.75%. Redstar Gold will issue $1,000,000 worth of shares to AngloGold Ashanti if a mine is put into production within the property. Redstar Gold will issue an additional $1,500,000 worth of shares to AngloGold Ashanti once production exceeds 250,000 ounces of gold.

The Newman Todd claim group is also subject to a separate Royalty Agreement with Franco-Nevada Corporation ("Franco-Nevada") (formerly held by Newmont) granting Franco-Nevada an NSR of 1.5%, becoming 2.0% at a spot gold price of greater than $400 per ounce.

The H.A. Newman Estate holds a 15% net profits interest in the claims.

4.3 Confederation Minerals Agreement

On 19th November, 2010, Confederation Minerals entered into an Option Agreement whereby Confederation Minerals could earn up to 70% of the property through Redstar Gold according to the schedule detailed below. The property consisted of 13 mining claims on patented land, which were listed in Schedule A of this Agreement.

4.3.1 Exercise of First Option (50% interest)

To exercise the option to earn an initial 50% interest, Confederation Minerals was required to incur a cumulative $5,000,000 of work expenditures on the property, issue to Redstar Gold a total of 500,000 shares of Confederation Minerals and make payments to Redstar Gold totalling $250,000 in the following manner:

a. 100,000 shares and a $50,000 payment within 10 business days of approval of the Agreement by the TSX Venture Exchange;
b. Work expenditures of $2,000,000, issuance of 100,000 shares and a further $50,000 payment on or before the first anniversary of the Agreement;
c. Further work expenditures of $1,500,000, a further 150,000 shares and a further $75,000 payment on or before the second anniversary of the Agreement; and
d. Further expenditures of $1,500,00f0, a further 150,000 shares and a further $75,000 payment on or before the third anniversary of this Agreement.

All of the above terms were met by Confederation Minerals and on October 28th, 2013 the Company duly exercised the First Option and were granted a 50% undivided legal and beneficial interest in the property.

4.3.2 Exercise of Second Option (70%)

To exercise the Second Option to earn a further 20% interest, thereby increasing its overall interest to 70%, Confederation Minerals are required to produce, at its own cost, a preliminary assessment of the property and issue a further 500,000 shares to Redstar Gold on or before the sixth anniversary of the Agreement, subject to minimum annual expenditures of $250,000 during the last three years of the Option period.

The parties also have agreed to form a Joint Venture following the exercise of the Option by Confederation Minerals. The property is subject to a two percent net smelter return and a fifteen percent net carried interest. The latter interest does not receive payment until capital expenditures have been recovered with interest. A finder's fee is payable by Confederation Minerals with respect to the deal. Exercise of the Option is subject to regulatory approval.

4.4 Gangloff Agreement

On the 14th of April, 2011, a Memorandum of Agreement was signed between Ron Gangloff, Confederation Minerals Ltd and Redstar Gold Corp, in which Gangloff assigns his undivided 50% interest in the 'Todd property' to Confederation Minerals and Redstar Gold, of which 35% is assigned to Confederation Minerals, and 15% to Redstar Gold. The Todd property consists of 18 unpatented mineral claims which adjoin the main Newman Todd patented claims to the south and southeast (see Figure 4-2).

Under the terms of the Agreement:

- The Vendor (Ron Gangloff) transferred an undivided 35% interest in the Todd property (being 70% of the Vendor's interest in the property) to Confederation Minerals for the sum of $50,000 and the issue of 125,000 shares in Confederation Minerals, which was paid and issued by Confederation Minerals to the Vendor within five days of receipt by Confederation Minerals of regulatory approval of the terms of the Agreement.

- The Vendor transferred an undivided 15% interest in the Todd property (being 30% of the Vendor's interest in the property) to Redstar Gold for the sum of $70,000, which was paid by Redstar Gold to the Vendor within five days of receipt by Confederation Minerals of regulatory approval of the terms of the Agreement.

Also by way of this Agreement, Confederation Minerals and Redstar Gold agreed that their respective interests in the Todd property would hereafter form part of "the property", as that term is defined in the Redstar Gold/Confederation Minerals Agreement dated November 19th, 2010, and shall thereby be subject to the terms of that Agreement.

Since the 18 claims which comprise the Todd property are on unpatented land, they are also subject to the annual work expenditure requirements of the Ontario government. The claims are registered with the Ministry of Northern Development and Mines, Ontario under the name of Rubicon Minerals Corp., who hold the remaining 50% interest.

5 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

5.1 Access

Red Lake is serviced by an all-weather paved highway (Highway 105) from Kenora, and by scheduled airline, freight and bus service from Kenora, Dryden, Thunder Bay or Winnipeg. The area has a rich mining history, with two active producing mines (Campbell and Red Lake Mines) and has all the facilities and infrastructure required to develop a new mining operation.

The property is best accessed by logging roads directly from Red Lake. The Pine Ridge and Mt. Jamie logging roads provide access to within 2 km of the property. An access trail from this point provides access directly to the property. The access trail accommodates pickup trucks and is suitable for mobilising heavy equipment, diamond drills and supplies. The property is accessible year round but will require upgrades to the access trail to accommodate heavy rainfall or spring break-up conditions. Once on the property, a temporary bridge is required to cross a creek leading to the main drill areas. Road access from this point is very good.

5.2 Climate

Temperatures vary from a low of -40° C in the winter to a high of +40° C in the summer. During typical winters, sub-zero temperatures produce ice on the lakes that can be drilled on from January through March. Lake access to portions of the property is typically restricted during freeze-up from late November through January, and during spring break-up from late March to early May.

The normal climate precipitation data from 1981 to 2010 shows average yearly precipitation amounts of 686.4 mm including 214 cm of snowfall.

5.3 Local Resources and Infrastructure

The Newman Todd property is located in the Red Lake Gold District, an active mining district with access to skilling mining personnel. The Red Lake municipal area is comprised of three small towns (Red Lake, Balmertown and Cochenour) plus surrounding communities (Madsen and Mackenzie Island) making up a population of approximately 6,500. The next nearest large town is Dryden (250 km away) located on the TransCanada Highway accessible via Highway 105.

There is adequate water for both exploration and potential future mining and milling operations. All power will have to be generated on site or supplied by a new power line. The nearest grid power is located in Red Lake. Adequate trained personnel and service infrastructure for exploration and mining are available in Red Lake. Although the travel time from Red Lake is long, it is considered within reasonable limits for a daily commute.

The surface area of the patented claims is small and challenges exist as to where it is ideal to locating the required infrastructure for tailings and milling on site. There is adequate surface area if the milling and tailings are located outside the existing patented claims next to the exploration area.

5.4 Physiography

The physiography is typical of the Canadian Shield, consisting of small hilly glaciated outcrops separated by overburden and lakes in the depressions. Elevations vary across the property from approximately 340 m to 430 m above sea level. Vegetation typically consists of pine, spruce and birch forest.

6 HISTORY

Portions of the property were first prospected during the Red Lake gold rush in the late 1920s and early 1930s. A number of high grade gold occurrences were discovered at the west end of Red Lake during this initial pulse of exploration. Many of these occurrences saw underground development, although, in general, production was limited. Since that time, the property has been sporadically explored by numerous companies. Virtually all exploration was for gold mineralisation, except for brief periods when ultramafic rocks in the Red Lake Gold Belt were examined for their base metal potential. Portions of the property may also have been looked at for volcanogenic massive sulphide style mineralisation. More recently, ultramafic rocks have been examined for their platinum group element potential. Redstar Gold began exploring the property in the summer of 2003 with limited geological mapping, prospecting and geophysics. Redstar Gold continued property exploration primarily using diamond drilling in 2005, 2006, 2008, 2009 and 2010.

Following the agreement with Redstar Gold announced November 22, 2010, Confederation Minerals continued to fund exploration with programs managed by Pamicon Developments in 2011, 2012, 2013 and 2014 with diamond drilling, exposure of outcrop and related sampling, geological mapping and a ground magnetic survey. In addition, Confederation Minerals initiated a Preliminary Economic Assessment (PEA) of the project with the engineering led by Mining Plus. The following aspects have been included in the PEA:

- An initial metallurgical study
- An initial Mineral Resource estimate (updated several times to include new diamond drill data and geological interpretations as they became available)
- Engineering for a small open pit operation

A summary of the historic exploration work on the property is provided in Table 6-1.

Table 6-1 Exploration History Summary

Year	Company	Work Done
2014	Confederation Minerals/Redstar Gold	Close-spaced ground magnetics test; Preliminary Economic Assessment
2013	Confederation Minerals/Redstar Gold	Diamond drilling (35 holes totalling 8,871.7 m) Limited geological mapping and interpretation
2012	Confederation Minerals/Redstar Gold	Diamond drilling (20 holes totalling 8,975.4 m)
2011	Confederation Minerals/Redstar Gold	Diamond Drilling (56 holes in 25000.6 m), limited geological mapping, mechanical stripping, sampling
2010	Redstar Gold	Diamond Drilling (6 holes in 2467.5 m)
2009	Redstar Gold	Diamond Drilling (4 holes in 1319.3 m)

Year	Company	Work Done
2008	Redstar Gold	Diamond Drilling (7 holes in 2346.1 m)
2006	Redstar Gold	Diamond Drilling (6 holes in 1614.00 m)
2005	Redstar Gold	Diamond Drilling (4 holes in 733.32 m)
2003	Redstar Gold	Limited geological mapping, sampling and prospecting
2003	Redstar Gold	Detailed structural interpretation by SRK consultants
2003	AngloGold Ashanti/Redstar Gold	Geochemical sampling of Tree Bark (164) samples
2003	AngloGold/Redstar Gold	Titan MT and DCIP surveys (6.5 km line-km grid)
2002	Redstar Gold /Rubicon	Airborne Magnetometer and EM survey (continuous sampling along 50 m spaced lines)
1995	Hemlo Gold Mines	Mag and IP surveys
1987	Noranda Exploration Company	Diamond drilling , 14 holes totalling 2595.8m
1986	Noranda Exploration Company	Diamond drilling, 10 holes totalling 781.52m
1983	Noranda Exploration Company	Diamond drilling in 4 holes totalling 431.4m. Humus sampling, geological mapping
1980-1982	Noranda Exploration Company	Geological Mapping, sampling, geophysics (Mag, HLEM)
1947	Bull Red Lake Mines	Trenching and sampling
1945	Bull Red Lake Mines / Heath Gold Mines	Diamond drilling of four holes totalling 420.6 m
1936	Dupont-Hodgson Gold Mines Ltd.	Stripping and sampling
1920s	Abate Gold Mines	Trenching and sampling

6.1 Early Exploration

The first reported work on the Newman Todd claim group was trenching by Abate Gold Mines in the 1920s, which exposed mineralised quartz porphyry (no significant results were reported). In 1936, Dupont-Hodgson Gold Mines prospected, stripped and trenched areas of several quartz stringers on the western portion of the property.

The property was next explored in 1945, when Bull Red Lake Mines, in conjunction with Heath Gold Mines, completed four diamond drill holes on the western property boundary (totalling 421 m), and no results were reported. In 1947, the company carried out trenching and sampling on the property and possibly diamond drilling; however, no records of the diamond drilling exist. No work was reported on the property between 1947 and 1980, with the exception of mapping and an airborne magnetic survey by the Ontario Geological Survey.

In 1980, Noranda Exploration Company ("Noranda") acquired the property from the H.A. Newman Estate. Noranda established a cut-grid and carried out magnetometer, HLEM and geological surveys over the property. The HLEM and magnetometer surveys outlined a long linear conductive body in the centre of the claims, and follow up drilling was recommended. In 1982, Noranda continued with geological mapping and in 1983 drilled four diamond drill holes totalling 431.4 m. The best results were obtained from hole NT83-02, which returned 0.11 oz/ton (3.77 g/t) gold over 1.5 m, and hole NT83-03 which intersected 35.0 g/t gold over 1.4 m in an iron formation (Wallis, 1984). Also in 1983, Noranda extended and in-filled the existing grid and conducted a detailed mapping and humus sampling program. The humus sampling program outlined known gold mineralisation as well as other anomalous areas. The highest value obtained from humus sampling was 110 ppb (0.11 g/t) gold (Wallis, 1984).

In 1986, Noranda drilled an additional 10 holes totalling 782 m to further test mineralisation indicated in previous surveys. The best results were obtained from hole NT86-14, which returned 9.30 g/t gold over 1.5 m. A follow-up drill program in 1987 included 14 holes totalling 2596 m designed to test known mineralisation and to drill below existing intercepts. The best results were obtained from hole NT87-16, which returned 12.7 g/t gold over 2.4 m, and hole NT87-25, which returned 10.28 g/t gold over 0.90 m.

Although further work was done by Noranda, reports and maps are not available. Much of the data was moved or lost during corporate mergers.

6.2 Redstar Gold Exploration

In the fall of 2002, Redstar Gold/Rubicon conducted an airborne magnetometer and EM survey over portions of the property as part of a larger survey.

During the months of January and February 2003, a 6.9 line-kilometre grid was surveyed using Tensor Magnetotelluric (MT), DC Resistivity and Induced Polarisation (DCIP) surveys. This survey was conducted by AngloGold/Redstar Gold.

The interpretation of the MT data from this survey has provided Redstar Gold with additional drill targets for the Newman Todd property and has increased understanding of the structural and geological relationships at the margins of the Balmer and Ball assemblages of the Red Lake Greenstone Belt (Singh, 2003).

Chris Lee of SRK Consultants was contracted in 2002/2003 to provide a detailed structural interpretation of the Newman Todd claim group as part of a property-wide study. Mr. Lee identified several regional scale thrust faults and proposed a basin development model for the area (Lee, 2003).

Under Redstar Gold's direction, 17 holes (4,644 m) were completed in three drill programs between September 2005 and March 2008. Drill holes were designed to test a new structural interpretation of the area based on structural mapping, detailed geophysics and published data from the producing mines in the camp and diamond drilling.

Almost all holes intersected multiple broad zones of silicified breccia with up to 20% sulphides and widespread iron carbonate alteration. Anomalous gold values, typically ranging from 0.1 g/t to 4.0 g/t, are associated with the silicified breccia zones and include broad zones of lower grade intersections. Higher grade mineralisation appears to be associated with steep structures internal or marginal to the breccia zones.

Of the 138 diamond drill holes totalling 51,328 m and 45,300 assays for gold, spaced along 1.6 km of the gold-bearing unit, the Newman Todd Structure (NTS), approximately 77% (106 of 138) of the holes intersected zones grading in excess of 5.0 g/t gold and approximately 35% (48 of 138) of the holes returned intersections of greater than 20 g/t gold.

6.3 Confederation Minerals Exploration

Commencing in 2011, under Confederation Minerals management, several diamond drill programs, totalling 108 holes commencing with DDH NT-056, have been completed with results broadly comparable to those of the Redstar Gold programs. Table 6-2 details the complete list of significant assay results to date. For the purposes of this table a "significant assay result" is defined as an intersection of more than 5 m at +1g/t Au and/or an intersection of >5 g/t Au.

Table 6-2 Newman Todd Claim Group Significant Drill Results

Hole Number		From	To	Width	Au (g/t)
NT-029		67	76.6	9.60	1.00
NT-029		156	165.32	9.32	1.18
NT-030		140	144	4.00	1.10
NT-031		124.5	143	18.50	1.28
NT-031		209.5	228	18.50	4.62
NT-031	including	225	228	3.00	24.89
NT-031	and including	226	228	2.00	36.02
NT-031	and including	226	227	1.00	69.02
NT-032	None				
NT-033	None				
NT-034	None				
NT-035		6	7	1.00	9.28

Hole Number		From	To	Width	Au (g/t)
NT-036		13	14	1.00	6.67
NT-036		90.5	98.6	8.10	1.07
NT-036	and including	94.85	96.8	1.95	4.07
NT-036		231	267.5	36.50	1.05
NT-037		175	175.7	0.70	5.27
NT-037		213	218	5.00	1.06
NT-038		244	249	5.00	2.44
NT-039		158	160	2.00	7.60
NT-039	including	158	159	1.00	14.00
NT-039		217	218	1.00	7.34
NT-040		68	75.5	7.50	1.17
NT-040		131	144	13.00	2.15
NT-040		195	236	41.00	1.10
NT-040		258	264	6.00	12.02
NT-040	including	258	259	1.00	61.20
NT-041	None				
NT-042		249	294	45.00	1.50
NT-042	including	249	257	8.00	4.52
NT-042	including	249	251.5	2.50	11.56
NT-042	including	250	251	1.00	25.70
NT-042		263	294	31.00	1.00
NT-043		88	97	9.00	2.96
NT-043	including	88	93	5.00	4.38
NT-043	including	91	93	2.00	6.24
NT-044		260	277	17.00	1.01
NT-045		308.5	317	8.50	1.05
NT-045	including	309	310.5	1.50	3.64
NT-045	including	310	310.5	0.50	7.38
NT-046		160.5	191	30.5	1.85
NT-046	including	169	174	5	7.78
NT-046	including	171	174	3	10.87
NT-046	including	173	174	1	23.5
NT-046		234.6	234.9	0.3	15.7
NT-047		360.7	362	1.3	12.84
NT-047	including	360.7	361.35	0.65	24.86
NT-047	including	361	361.35	0.35	45.3
NT-048		167	190.5	23.5	2.01
NT-048	including	167	180	13	3.41

Hole Number		From	To	Width	Au (g/t)
NT-048	and	167	168.5	1.5	26.8
NT-048		240	242	2	6.75
NT-048	including	240	241	1	12.05
NT-049		289	289.7	0.7	3.52
NT-050	None				
NT-051	None				
NT-052	None				
NT-053		264	276	12	1.04
NT-053	including	268	270	2	3.36
NT-053		298	311	13	1.00
NT-053	including	301	306	5	2.01
NT-053		335	336.6	1.6	6.56
NT-053	including	335.5	336	0.5	11.6
NT-053		343	345	2	5.13
NT-053	including	343	344	1	6.96
NT-054		234.9	235.9	1	5.32
NT-054		275	282.1	7.1	1.36
NT-054	including	276	276.5	0.5	6.61
NT-054	and including	277.5	278	0.5	6.52
NT-055		56	57	1	5.68
NT-055		292	293	1	24
NT-056		116	117	1	7.47
NT-056		129	130	1	5.08
NT-056		197	213	16	8.63
NT-056	including	199.5	211	11.5	11.78
NT-056	and including	204	211	7	18.87
NT-056	and including	208	211	3	42.84
NT-056	and including	208	209	1	122
NT-056		249	260	11	1.54
NT-056	including	249	254	5	2.28
NT-056	and including	252	253.5	1.5	2.92
NT-056	and including	253	253.5	0.5	4.41
NT-056		275	278	3	22.49
NT-056	including	275	276	1	63.6
NT-056		366.55	387.5	20.95	2.45
NT-056	including	366.55	379.5	12.95	3.69
NT-056	and including	366.55	377.5	10.95	4.16
NT-056	and including	370.9	379.5	8.6	5.03

Hole Number		From	To	Width	Au (g/t)
NT-056	and including	370.9	372	1.1	32.6
NT-056	and including	370.9	371.4	0.5	62.9
NT-057		115	116	1	6.86
NT-058		283	286.5	3.5	15.48
NT-058	or	283.5	286.5	3	17.94
NT-058	including	284	286	2	25.55
NT-058	and including	284	284.5	0.5	75.8
NT-058	and including	285.5	286	0.5	23.3
NT-059	including	68	69	1	5.84
NT-060		102	103	1	5.21
NT-060		250	251	1	11.65
NT-061		67	68	1	7.12
NT-061		237	238	1	3.56
NT-061		309	309.5	0.5	5.29
NT-061		406	407	1	3.48
NT-061	including	406.5	407	0.5	5.83
NT-062	incl.	170	175	5	18.25
NT-062	and incl.	171	173.7	2.7	32.43
NT-062	and incl.	173	173.7	0.7	103
NT-062	and	330	331	1	8.86
NT-063		213	213.5	0.5	27.3
NT-063	and	243.5	244	0.5	8.11
NT-063	and	288	289	1	7.66
NT-064		84.5	85.5	1	8.25
NT-064	incl.	85	85.5	0.5	15.1
NT-065		296.5	297	0.5	6.93
NT-065		362	363	1	6.91
NT-066	Incl.	361.5	365	3.5	2.55
NT-066	incl.	361.5	362	0.5	6.85
NT-066		364.5	365	0.5	7.33
NT-067		164	165	1	58.88
NT-067	incl.	164	164.5	0.5	117
NT-067	and	175	176	1	5.56
NT-067	incl.	175.5	176	0.5	9.7
NT-067		292	321	29	2.08
NT-067		294	295.5	1.5	6.66
NT-067	incl.	294	294.5	0.5	8
NT-067	and incl.	295	295.5	0.5	9.39

Hole Number		From	To	Width	Au (g/t)
NT-067		300.5	301	0.5	5.32
NT-067		316	321	5	5.98
NT-067	incl.	317	321	4	7.34
NT-067	and incl.	317	318	1	19.3
NT-067	and incl.	320	321	1	8.63
NT-067	and incl.	320.5	321	0.5	11.3
NT-067		406	406.5	0.5	5.91
NT-068		202	203	1	7.88
NT-068	incl.	202	202.5	0.5	14.3
NT-069	None				
NT-070		393.5	394	0.5	10.4
NT-070		412	413	1	4.29
NT-070		438.5	439	0.5	69.7
NT-070		450	451	1	4.95
NT-070		470	471	1	5.04
NT-071		62	72.5	10.5	1.25
NT-071	including	70	70.5	0.5	7.16
NT-071		138	139	1	10.7
NT-071		151	151.5	0.5	8.88
NT-071		177	178	1	12.86
NT-071	including	177.5	178	0.5	24.5
NT-072		8	9	1	24.1
NT-072		137	142	5	2.95
NT-072		137	138.5	1.5	8.19
NT-072		145.5	146	0.5	11
NT-072		163	191	28	1.13
NT-072	including	182	183.5	1.5	5.2
NT-072		230	239	9	1.42
NT-072		241	242	1	31.1
NT-072		251	258	7	2.42
NT-072	including	253	254	1	13.7
NT-072		295	296	1	7.36
NT-073		161.5	162	0.5	242
NT-073		166	167	1	5.61
NT-073		242.5	243.5	1	5.77
NT-073		255	256	1	10.2
NT-074		256	268	12	1
NT-075		169	191	22	1.29

Hole Number		From	To	Width	Au (g/t)
NT-075	including	174	184	10	2.27
NT-075	and including	175.5	176	0.5	8.86
NT-075		266	267	1	6.07
NT-075		341	349	8	1.6
NT-075	including	344.5	345	0.5	5.21
NT-075		412	414	2	7.16
NT-075	including	413	414	1	10.8
NT-076		215	216	1	5.38
NT-076		240	262	22	5.23
NT-076	including	240	246	6	8.28
NT-076	and including	244	246	2	20.15
NT-076	and including	244	245	1	24.2
NT-076	and including	255	262	7	8.34
NT-076	and including	259	262	3	18.17
NT-076	and including	261	262	1	41.2
NT-076		268	275	7	1.69
NT-076	including	273	274	1	7.81
NT-077		87	88	1	6.08
NT-077		339	340	1	5.05
NT-078		240	261	21	1.18
NT-078	including	246	251	5	3.51
NT-078	and including	246	247	1	8.01
NT-079		387	394	7	1
NT-080		132	157	25	1.35
NT-080	including	132	133	1	5.69
NT-080	and including	154	156	2	5.91
NT-080	and including	155	156	1	8.94
NT-080		175	207	32	1.18
NT-080	including	181	182	1	10.91
NT-080	and including	186	187	1	7.24
NT-080	and including	191	192	1	5.42
NT-081		103	104	1	7.44
NT-081	and including	255	260	5	2.51
NT-082		161	170	9	1.95
NT-082	including	165	166	1	5.11
NT-082	and including	169	170	1	5.98
NT-082		182	183	1	6.37
NT-082		289.5	304.5	15	1.01

Hole Number		From	To	Width	Au (g/t)
NT-083		251.7	254	2.3	89.86
NT-083	including	251.7	252.3	0.6	343
NT-083		264	267	3	7.6
NT-083	including	264	265	1	5.22
NT-083	and including	265.5	266	0.5	33.8
NT-083		276	281	5	1.94
NT-084		242	257	15	2.49
NT-084	including	244.5	254	9.5	3.62
NT-084	and including	246.5	254	7.5	4.06
NT-084	and including	246.5	247	0.5	6.82
NT-084	and including	247.5	248	0.5	6.18
NT-084	and including	251	254	3	6.76
NT-084	and including	251	252	1	13.9
NT-084		372	373	1	6.99
NT-085		315	335	20	1.66
NT-085	including	323.5	324	0.5	7.52
NT-085	and including	325.5	326	0.5	9.17
NT-085	and including	334	335	1	7.16
NT-085		357	358	1	9.08
NT-086		367	372	5	1.07
NT-087		238.5	240	1.5	6.97
NT-087	and including	239	239.5	0.5	10.6
NT-087	and	249	250	1	15.9
NT-087	and	279.75	291	11.25	5.75
NT-087	including	280.35	280.85	0.5	97.8
NT-087	and including	290	291	1	12.8
NT-087		354	412	58	1.11
NT-087	including	358	359	1	7.24
NT-087	and including	379	380	1	6.72
NT-087	and including	384	392	8	2.23
NT-087	and including	396	403	7	2
NT-088		337	346	9	1.10
NT-089		187	188	1	10.4
NT-089		240	241	1	7.65
NT-090		37	46	9	1.06
NT-090		76	77	1	7.08
NT-090		86	97	11	1
NT-090		187	197	10	1.02

Hole Number		From	To	Width	Au (g/t)
NT-090		255	262	7	1.08
NT-090		276	282	6	1.84
NT-090		314	315	1	28.8
NT-090		321	326	5	1.64
NT-091		60	66.5	6.5	3.01
NT-091	including	60	61	1	16.4
NT-091		341	390	49	0.97
NT-091	including	377	380	3	3.07
NT-091	and including	389	390	1	11.6
NT-092	None				
NT-093		102	104.5	2.5	7.07
NT-093	including	104	104.5	0.5	25.8
NT-093		203	204	1	11.1
NT-094	None				
NT-095		308	313	5	1.07
NT-096		79	87	8	1.21
NT-096		239	244	5	1.01
NT-096		282	282.5	0.5	7.89
NT-096		443	445	2	15.58
NT-096	including	443	444	1	29.8
NT-097		274	303	29	1.11
NT-097	including	275	287	12	2.09
NT-097	and including	275	277	2	3.87
NT-097	and including	281	282	1	6.49
NT-097	and including	285	287	2	4.19
NT-097		376	377	1	4.93
NT-097		418.5	419	0.5	12.1
NT-097		485	544	59	1.04
NT-097	including	488	490	2	7.73
NT-097	and including	489	490	1	13.2
NT-097	and including	501	506	5	4.74
NT-097	and including	502	502.5	0.5	39.5
NT-097	and including	531	531.5	0.5	10.6
NT-098		403	421	18	1.75
NT-098	including	404	405	1	21
NT-099		439.5	440	0.5	7.57
NT-099		440.5	441	0.5	8.04
NT-100		192	203	11	1.03

Hole Number		From	To	Width	Au (g/t)
NT-101		507	514.5	7.5	1.35
NT-101	including	513	513.5	0.5	11.7
NT-101		535	536	1	7.42
NT-102		191	196	5	2.97
NT-102	including	191	192	1	11.7
NT-102		255	270	15	3.27
NT-102	including	255	256	1	36.15
NT-102	and including	255	255.5	0.5	42.8
NT-102	and including	268	270	2	5.23
NT-102		296	343	47	2.17
NT-102	including	300	303	3	19.42
NT-102	and including	301	302	1	56.8
NT-102	and including	311	311.5	0.5	37.8
NT-102	and including	336	338	2	3.02
NT-102		380	422	42	1.52
NT-102	including	408	414	6	0.04
NT-102	and including	387	401	14	3.02
NT-102	and including	393	394	1	6.24
NT-102	and including	400	401	1	17.1
NT-102	and including	420	421	1	9.57
NT-103		241	250	9	1.88
NT-103	including	245	246	1	9.11
NT-103		582	583	1	60.6
NT-103		623	624	1	13.4
NT-104		123.5	131	7.5	4.75
NT-104	including	123.5	125	1.5	21.6
NT-104		264	277	13	0.97
NT-104	including	269	270	1	3.77
NT-104		304	318	14	1.73
NT-104	including	317	318	1	7.13
NT-105		276	322	46	1.34
NT-105	including	306	316	10	3
NT-105	including	306	307	1	6.07
NT-105	and including	314	316	2	5.52
NT-105w1		296	334	38	1.56
NT-105w1	including	302	313	11	3.83
NT-105w1	and including	302	304	2	5.54
NT-105w1	and including	310	313	3	6.92

Hole Number		From	To	Width	Au (g/t)
NT-105w1	and including	310	311	1	7.47
NT-105w1	and including	312	313	1	9.27
NT-106		100	101	1	5.46
NT-106		251	263	12	1.58
NT-106	including	257	260	3	4.25
NT-106	and including	257	258	1	5.99
NT-106	and including	259	260	1	5.48
NT-107		347	359	12	1.14
NT-107		443	446	3	1.83
NT-108		229.5	257	27.5	3.41
NT-108	including	229.5	231	1.5	49.64
NT-108	and including	229.5	230	0.5	145
NT-108	and including	253	256	3	4.26
NT-108	and including	255	256	1	7.31
NT-108		269.5	270	0.5	5.44
NT-108		300	327	27	5.94
NT-108	including	304	305	1	139
NT-108	and including	318	322	4	2.58
NT-108	and including	321	322	1	4.82
NT-108		373	380	7	2.07
NT-108	including	373	374	1	11.6
NT-108		432	433	1	9.63
NT-108		471	491	20	1.34
NT-108	including	472.5	473	0.5	7.15
NT-108	and including	490.5	491	0.5	17.3
NT-108		638	657	19	1.22
NT-108	including	641	647	6	3.2
NT-108	and including	645	646	1	10.2
NT-109		213	220	7	2.54
NT-109	including	216	217	1	15.2
NT-109		238	251	13	7.11
NT-109	including	243	248	5	17.53
NT-109	and including	243	244	1	15.2
NT-109	and including	246.5	247.5	1	61.76
NT-109	and including	246.5	247	0.5	114
NT-109		266	278	12	1.03
NT-109	including	271	272	1	6.84
NT-109		303	303.5	0.5	5.87

Hole Number		From	To	Width	Au (g/t)
NT-109		501	517	16	1.37
NT-109	including	514	515	1	10.29
NT-109	and including	514.5	515	0.5	19.2
NT-109		538	551	13	1.91
NT-109	including	542	551	9	2.53
NT-109	and including	542	543	1	5.02
NT-109	and including	549	550	1	7.79
NT-110		56.0	58.0	2	2.33
NT-110		61.0	66.0	5	1.23
NT-110		84.0	89.0	5	2.23
NT-111		56.0	62.0	6	2.01
NT-111		79.0	94.0	15	1.97
NT-111	including	83.0	84.0	1	13.1
NT-111		140.0	141.0	1	16.5
NT-111		186	195	9	8.01
NT-111	including	186.0	187.0	1	17.1
NT-111		192.0	193.0	1	49.6
NT-112		36.5	37.0	0.5	10.8
NT-112		119.0	219.0	20	2.9
NT-112	including	202.0	203.0	1	3.33
NT-112		212.0	218.0	6	2.49
NT-112		287.0	288.0	1	78.0
NT-113		221.0	222.0	1	6.42
NT-113		310.0	312.0	2	5.51
NT-113		332.0	337.0	5	1.61
NT-114		153.0	158.0	5	1.26
NT-114		163.0	173.0	10	1.39
NT-114		206.0	215.0	9	4.22
NT-114	including	210.0	214.0	4	8.43
NT-114	and including	211.0	212.0	1	19.00
NT-114		303.0	316.0	13	3.63
NT-114	including	306.0	313.0	7	3.85
NT-114	and including	313.0	316.0	3	4.16
NT-114		332.5	333.0	0.5	681.00
NT-114		394.0	399.0	5	1.29
NT-114		480.0	481.0	1	5.19
NT-114		511.0	512.0	1	8.89
NT-114		524.0	530.0	6	1.77

Hole Number		From	To	Width	Au (g/t)
NT-114	including	527.0	529.0	2	3.07
NT-115		114.0	115.0	1	9.35
NT-115		228.0	254.0	26	2.15
NT-115	including	242.0	243.0	1	6.14
NT-115	and including	250.0	252.0	2	11.96
NT-116		188.0	203.0	15	1.93
NT-116		260.0	278.0	18	1.97
NT-117		222.0	234.0	12	2.67
NT-117	including	230.0	233.0	3	8.42
NT-117	and including	231.0	232.0	1	15
NT-117		293.0	305.0	12	3.91
NT-117	Including	296.0	299.0	3	36.87
NT-117	and including	296.5	297.0	0.5	63.3
NT-117		326.0	333.0	7	1.09
NT-117		434.0	434.5	0.5	10.3
NT-118		135.0	136.0	1	43.5
NT-118		150.5	158.0	7.5	2.02
NT-118		202.0	203.0	1	6.52
NT-118		273.1	286.0	12.9	1.48
NT-118		295.0	295.5	0.5	8.56
NT-118		307.0	313.0	6	1.97
NT-119		187.5	188.0	0.5	7.57
NT-120		10.0	11.0	1.0	5.47
NT-120		101.0	102.0	1.0	12.10
NT-120		194.0	196.0	2.0	7.09
NT-120	including	195.0	196.0	1.0	12.90
NT-120		208.5	220.0	11.5	2.62
NT-120	including	208.5	209.0	0.5	9.78
NT-120		211.0	212.0	1.0	16.30
NT-120	including	211.0	211.5	0.5	21.30
NT-120		266.0	273.0	7.0	2.62
NT-120	including	268.0	269.0	1.0	10.90
NT-121		12.0	18.0	6.0	3.99
NT-121	including	15.0	16.0	1.0	18.8
NT-121		62.0	81.0	19.0	1.32
NT-121		306.0	320.0	14.0	2.24
NT-121	including	306.0	308.0	2.0	10.13
NT-121		330.0	331.0	1.0	10.40
NT-122		89.0	94.0	5.0	1.84
NT-122		214.0	219.0	5.0	1.20

Hole Number		From	To	Width	Au (g/t)
NT-123		104.0	133.0	29.0	1.44
NT-123		121.0	128.0	7.0	2.30
NT-123		183.0	188.0	5.0	1.93
NT-123		217.5	218.0	0.5	7.29
NT-123		279.0	289.0	10.0	2.50
NT-123		294.5	302.0	7.5	11.02
NT-123		295.0	295.5	0.5	158.0
NT-124		159.0	160.0	1.0	9.0
NT-124		286.0	287.0	1.0	10.80
NT-124		305.0	311.0	6.0	1.01
NT-124		381.0	389.0	8.0	3.80
NT-124	including	382.0	385.0	3.0	8.95
NT-124	and including	382.0	383.0	1.0	18.0
NT-124		442.0	447.0	5.0	1.25
NT-125		320.0	326.0	6.0	1.03
NT-125		366.0	375.0	9.0	1.48
NT-125		403.0	413.0	10.0	9.00
NT-125	including	407.0	412.0	5.0	16.92
NT-125	and including	410.0	411.0	1.0	60.7
NT-126		252.0	270.0	18.0	1.85
NT-126	including	252.0	257.0	5.0	5.32
NT-126	and including	256.0	257.0	1.0	21.10
NT-126	and including	263.0	264.0	1.0	3.60
NT-126	and	340.0	341.0	1.0	3.16
NT-126	and	459.0	464.0	5.0	2.26
NT-126	and including	463.0	464.0	1.0	5.93
NT-127	None				
NT-128		293.0	305.0	12.0	2.07
NT-128	including	296.5	304.0	7.5	2.79
NT-128	and including	301.0	304.0	3.0	4.50
NT-129		675.0	680.0	5.0	1.98
NT-129	including	675.0	676.0	1.0	8.01
NT-129	and	862.0	864.0	2.0	7.89
NT-129	including	862.0	862.5	0.5	10.20
NT-129	and including	863.0	864.0	1.0	10.60
NT-129	and	916.0	917.0	1.0	4.06
NT-129	and	975.0	976.5	1.5	6.51
NT-130		162.0	165.0	3.0	3.85

Hole Number		From	To	Width	Au (g/t)
NT-130	including	164.0	165.0	1.0	6.79
NT-130	and	206.0	221.0	15.0	3.01
NT-130	including	213.0	220.0	7.0	4.55
NT-130	and including	213.0	214.0	1.0	8.80
NT-130	and including	215.0	216.0	1.0	8.16
NT-130	and including	219.0	220.0	1.0	10.90
NT-130	and	237.0	238.0	1.0	5.20
NT-130	and	282.0	283.0	1.0	3.55
NT-130	and	297.0	298.0	1.0	8.66
NT-130	and	315.0	315.5	0.5	6.14
NT-130	and	463.0	465.0	2.0	3.95
NT-130	including	463.0	464.0	1.0	7.02
NT-131		54.0	56.0	2.0	3.25
NT-131	including	54.0	55.0	1.0	5.10
NT-131	and	59.0	63.0	4.0	3.32
NT-131	including	60.0	61.0	1.0	7.12
NT-131	and	77.0	78.0	1.0	4.81
NT-131	and	88.0	91.0	3.0	2.98
NT-131	including	88.0	89.0	1.0	6.62
NT-131	and	100.0	102.0	2.0	4.38
NT-131	and	106.0	109.0	3.0	3.65
NT-131	including	107.0	108.0	1.0	9.10
NT-131	and	154.0	157.0	3.0	3.07
NT-131	including	154.0	155.0	1.0	6.44
NT-131	and	194.0	195.0	1.0	4.51
NT-132		215.0	217.0	2.0	4.49
NT-132	including	215.0	216.0	1.0	7.74
NT-132	and	284.5	285.0	0.5	15.50
NT-132	and	297.0	297.5	0.5	63.10
NT-132	and	399.0	401.0	2.0	4.22
NT-132	including	399.0	399.5	0.5	11.90
NT-133		154.0	156.0	2.0	6.49
NT-133	including	154.0	155.0	1.0	11.60
NT-134		109.0	112.0	3.0	4.17
NT-134	including	110.0	111.0	1.0	7.44
NT-134	and	136.0	137.0	1.0	3.42
NT-134	and	164.0	165.0	1.0	11.60
NT-135		53.0	56.0	3.0	3.47

Hole Number		From	To	Width	Au (g/t)
NT-135	including	55.0	56.0	1.0	5.39
NT-135	and	71.0	74.0	3.0	4.75
NT-135	including	72.0	73.0	1.0	12.20
NT-135	and	103.0	112.0	9.0	3.09
NT-135	including	105.0	106.0	1.0	6.38
NT-135	and	125.0	132.0	7.0	3.14
NT-135	including	126.0	127.0	1.0	7.45
NT-135	including	130.0	131.0	1.0	7.56
NT-135	and	137.0	139.0	2.0	3.21
NT-136		53.0	54.0	1.0	4.34
NT-136	and	60.0	61.0	1.0	6.33
NT-137	None				
NT-138	None				
NT-139	None				
NT-140	None				
NT-141	None				
NT-142		52.0	58.0	6.0	13.19
NT-142	including	55.0	56.0	1.0	17.30
NT-142	and including	57.0	58.0	1.0	36.40
NT-142	and	79.0	97.0	18.0	3.11
NT-142	including	83.0	93.0	10.0	4.45
NT-142	and including	83.0	87.0	4.0	4.69
NT-142	and including	83.0	84.0	1.0	10.40
NT-142	and including	91.0	93.0	2.0	11.50
NT-143	None				
NT-144	None				
NT-145		74.0	75.0	1.0	3.18
NT-145	and	124.0	134.0	10.0	3.82
NT-145	including	126.0	129.0	3.0	9.50
NT-145	and including	126.0	126.5	0.5	26.50
NT-145	and including	128.0	129.0	1.0	7.69
NT-145	and	176.0	177.0	1.0	4.21
NT-146		96	159	See Table 6-3	
NT-147		91.0	95.0	4.0	3.49
NT-147		91.0	93.0	2.0	5.40
NT-147		91.0	92.0	1.0	6.31
NT-147		220.0	221.0	1.0	4.32
NT-148		10.0	18.0	8.0	3.27
NT-148	including	13.0	16.0	3.0	7.45

Hole Number		From	To	Width	Au (g/t)
NT-148	and including	13.0	14.0	1.0	16.40
NT-148	and	193.0	200.0	7.0	32.57
NT-148	including	193.0	194.0	1.0	34.90
NT-148	and including	195.0	196.0	1.0	25.20
NT-148	and including	198.0	199.5	1.5	89.07
NT-148	and including	199.0	199.5	0.5	104.00
NT-148	and	229.0	230.0	1.0	174.11
NT-148	including	229.0	229.5	0.5	342.00
NT-148	and including	229.5	230.0	0.5	6.22
NT-148	and	275.0	280.0	5.0	3.02
NT-148	including	278.0	279.0	1.0	11.60
NT-149		76.0	86.0	10.0	1.45
NT-149		108.0	114.0	6.0	3.49
NT-149	including	112.5	113.5	1.0	17.85
NT-149	and including	112.5	113.0	0.5	26.40
NT-150		131.0	145.0	14.0	1.79
NT-150	including	136.0	136.5	0.5	7.89
NT-150	and including	143.5	145.0	1.5	8.14
NT-150		187.0	197.0	10.0	1.21
NT-151		239.0	234.0	5.0	5.30
NT-151	including	242.5	244.0	1.5	13.46
NT-151	and including	242.5	243.0	0.5	12.10
NT-151	and including	243.0	243.5	0.5	24.00
NT-151		304.0	305.0	1.0	5.23
NT-152		264.0	269.0	5.0	
NT-152	including	264.0	264.5	0.5	26.50
NT-152		287.0	288.0	1.0	98.60
NT-153		67.0	70.0	3.0	12.42
NT-153	including	67.0	68.5	1.5	17.16
NT-153	and including	68.0	68.5	0.5	28.80
NT-153		231.0	240.5	9.5	10.39
NT-153	including	232.5	233.0	0.5	35.00
NT-153	and including	236.5	240.5	4.0	15.70
NT-153	and including	238.0	239.0	1.0	57.05
NT-153	and including	238.0	238.5	0.5	103.00
NT-153	and including	240.0	240.5	0.5	6.91
NT-154		130.0	143.0	13.0	3.11
NT-154	including	133.0	134.0	1.0	4.25
NT-154	and including	137.0	138.0	1.0	7.70
NT-154	and including	142.0	143.0	1.0	16.70
NT-155		27.0	45.5	18.5	1.10

Hole Number		From	To	Width	Au (g/t)
NT-155	including	45.0	45.5	0.5	6.58
NT-155		110.0	116.0	6.0	7.04
NT-155	including	110.0	111.0	1.0	11.3
NT-155	and including	115.0	116.0	1.0	26.80
NT-155		142.0	151.0	9.0	1.45
NT-155	including	142.0	143.0	1.0	6.88
NT-155		188.0	199.0	11.0	1.61
NT-155	including	194.0	195.0	1.0	7.70
NT-155		207.0	217.0	10.0	1.67
NT-155		230.0	242.0	12.0	1.03
NT-155		295.0	319.0	24.0	2.19
NT-155	including	308.0	309.0	1.0	22.45
NT-155	and including	308.0	308.5	0.5	43.90
NT-156		59.0	62.0	3.0	3.06
NT-156		71.0	73.0	2.0	7.40
NT-156	including	71.0	72.0	1.0	11.60
NT-157		85.0	90.0	5.0	2.14
NT-157		107.0	115.0	8.0	1.79
NT-157		160.0	168.0	8.0	1.07
NT-157		200.0	206.0	6.0	1.04
NT-157		241.0	246.0	5.0	1.21
NT-158		22.5	31.0	8.5	2.46
NT-158	including	22.5	23.0	0.5	19.30
NT-158		114.0	115.0	1.0	5.48
NT-159	None				
NT-160	None				
NT-161		82.0	83.0	1.0	5.30
NT-161		121.5	123.0	1.5	5.13
NT-161		172.0	172.5	0.5	20.00
NT-162		63.0	73.0	10.0	7.43
NT-162	including	63.0	64.0	1.0	3.86
NT-162	and including	71.0	71.5	0.5	128.00
NT-162		91.0	97.0	6.0	4.57
NT-162	including	91.0	91.5	0.5	49.10
NT-162		122.5	123.0	0.5	5.47
NT-163		83.0	88.0	5.0	3.41
NT-163	including	85.5	87.0	1.5	9.97
NT-163	and including	85.5	86.0	0.5	18.90
NT-163	and including	86.0	87.0	1.0	5.51
NT-164	None				

Interval widths are calculated as core length and do not imply true width of the zone

Table 6-3 Summary of NT-146 Drill Hole

Hole NT-146	From (m)	To (m)	Au (g/t)	Core Recovered (%)
NT-146	96.0	99.0	6.02	40%
NT-146	99.0	105.0	16.50	13%
NT-146	105.0	111.0	6.19	13%
NT-146	111.0	117.0	2.05	16%
NT-146	117.0	123.0	0.20	19%
NT-146	123.0	126.0	2.45	55%
NT-146	126.0	129.0	0.23	33%
NT-146	129.0	130.0	0.04	100%
NT-146	130.0	132.0	0.71	70%
NT-146	132.0	135.0	4.00	53%
NT-146	135.0	136.0	4.36	100%
NT-146	136.0	138.0	11.80	60%
NT-146	138.0	139.0	1.34	100%
NT-146	139.0	141.0	0.36	70%
NT-146	141.0	142.0	8.72	100%
NT-146	142.0	143.0	9.91	100%
NT-146	143.0	144.0	0.06	100%
NT-146	144.0	145.0	3.59	100%
NT-146	145.0	147.0	0.03	50%
NT-146	147.0	150.0	1.27	40%
NT-146	150.0	153.0	0.96	27%
NT-146	153.0	156.0	1.01	47%
NT-146	156.0	157.0	1.87	100%
NT-146	157.0	159.0	1.55	50%

Interval widths are calculated as core length and do not imply true width of the zone

7 GEOLOGICAL SETTING AND MINERALISATION

7.1 Introduction

The geological, mineralisation, and exploration sections which follow are derived primarily from two main sources: the unfiled NI 43-101 document on the Newman Todd property prepared by Bob Singh, P.Geo, of Redstar Gold Corp. (Singh, 2011) and titled "Technical Report on the Newman Todd property, Red Lake Mining Division, NW Ontario"; and "Structural Geology Investigations, Newman Todd Gold Project, Red Lake Ontario" prepared by Jean-Francois Couture, P.Geo, for SRK Consulting (Couture, 2013).

7.2 Regional Geology

The Red Lake Gold Camp, including the Newman Todd property, is situated in the Red Lake Greenstone Belt (RLGB), an accumulation of Archean-age metavolcanic, metasedimentary and intrusive rocks comprising a portion of the Uchi Province of the Canadian Shield (Figure 7-1).

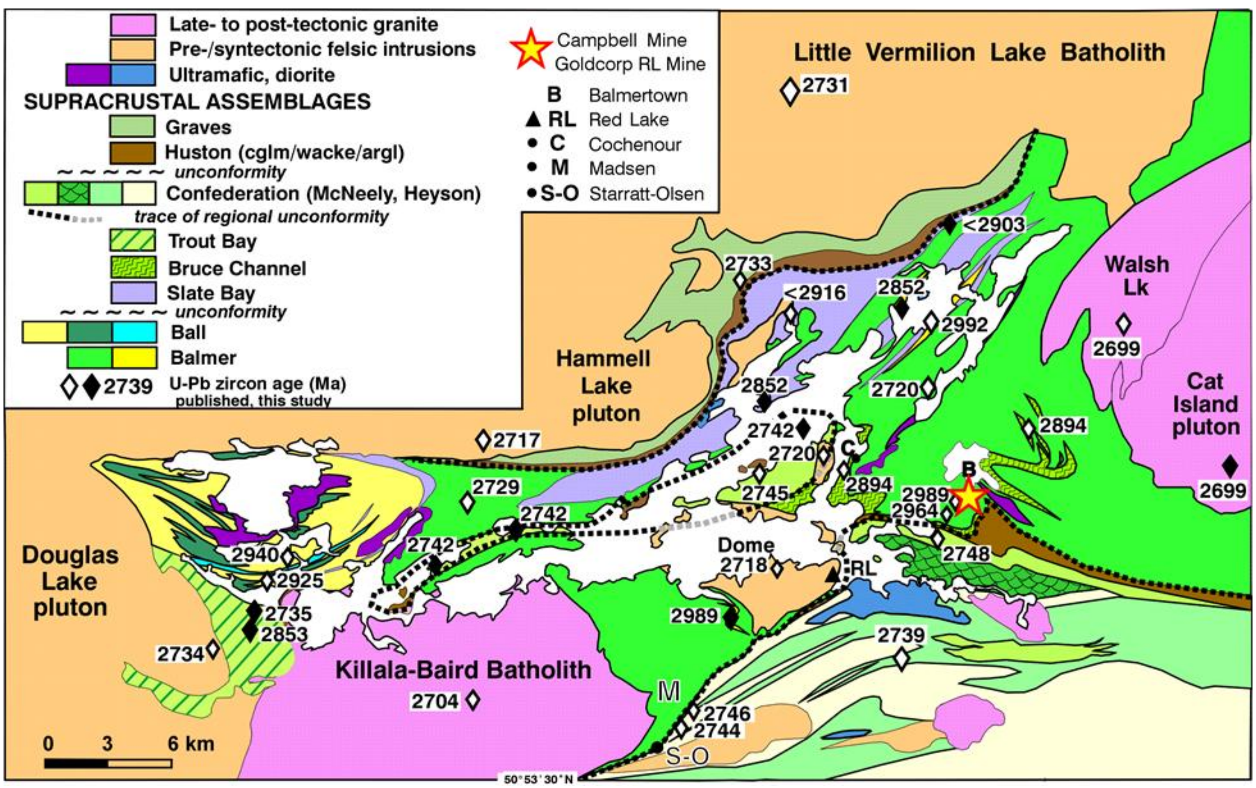


Figure 7-1 Geology of the Red Lake Greenstone Belt, showing critical age determinations of volcanic and plutonic rocks (M. Sanborn-Barrie and T. Skulski, GSC, Western Superior NATMAP Program 1997-2002)

These rocks are similar to the assemblages which constitute other greenstone belt terrains in the Archean across northern Canada and in other parts of the world. Significantly, greenstone belts are host to many large, high grade gold deposits which can have great vertical extent. As a group, these vertically-continuous deposits are known as "mesothermal" gold deposits, reflecting the fact that they formed under conditions of low pressure and temperature gradients which change little with great changes in depth. In part, this is due to their place of formation, deep in the crust, many kilometres below surface.

As a class of gold deposits, greenstone-hosted gold deposits are the highest-grade of any gold deposit class. As such, they provide an excellent exploration target, since their high grade, and potentially very large size, make them less vulnerable to changes in the price of gold.

The RLGB is host to numerous significant and world-class, gold deposits. The belt is recognised for its high grade and highly-profitable gold mines, including significant recent discoveries (see Figure 7-2).

These deposits include the Campbell and Red Lake Mines which were integrated into a single operation in 2006, to become the 'Red Lake Gold Mine Complex' which is the largest gold mine in Canada and one of the highest grade gold mines in the world. Like many other similar deposits in the Canadian Archean (i.e. Timmins-Kirkland Lake District, Larder Lake District, Val d'Or, Hemlo, etc.) the Red Lake Gold Mine Complex has been in relatively continuous operation for many decades; it has produced over 20 million ounces of gold since 1949 (source: http://www.goldcorp.com). In 2001, a new, high grade gold zone (the "High Grade Zone" or "HGZ") was discovered deep within the Red Lake Mine. This single, multi-million ounce zone has produced continuously since then, with an average grade of 2.05 ounces of gold per ton (70.27 g/t) (source: http://www.diamineexplorations.com).

Table 7-1 highlights operating statistics for the Red Lake Gold Mine for the past 3 years.

Table 7-1 Operating Results of the Red Lake Gold Mine for 2011 to 2013 (Goldcorp, 2014)

Red Lake Gold Mine	2013 (actual)	2012 (actual)	2011 (actual)
Ore Milled (tonnes)	768,900	858,100	839,600
Gold Grade (g/t)	20.33	19.52	23.92
Gold Recovery (%)	95%	96%	97%
Gold Produced (ounces)	493,000	507,700	622,000

The RLGB records a volcanic history that spans 300 Ma and is represented by seven volcano-sedimentary assemblages (Figure 7-1). The Balmer assemblage, which is the host to the current and past-producing gold mines, consists of tholeiitic and komatiitic flows and ultramafic intrusive rocks intercalated with approximately 3 Ga calc-alkaline felsic volcanic rocks and stromatolitic carbonates. The Ball assemblage consists of crustally contaminated komatiite, tholeiitic basalt, 2.94 – 2.92 Ga calc-alkaline felsic volcanic rocks and stromatolitic carbonates. The Slate Bay assemblage, composed of quartz-rich wacke and conglomerate, with an age of less than 2.91 Ga, records accumulated Balmer-age material prior to the 2.89 Ga intermediate pyroclastic volcanism and sedimentation of the Bruce Channel assemblage. The newly recognised, approximately 2.85 Ga Trout Bay assemblage (Sanborn-Barrie et al, 2001) consists of basalt overlain by clastic rocks, intermediate tuff and chert-magnetite iron-formation. The Huston assemblage (<2.89 Ga and >2.74 Ga) consists of a regionally extensive unit of polymictic conglomerate, locally associated with wacke and argillite, that marks an angular unconformity between Mesoarchean and Neoarchean strata. The uppermost stratigraphic package, the Confederation assemblage, consists of 2.75 – 2.73 Ga calk-alkaline and tholeiitic felsic, intermediate, and mafic volcanic rocks, which locally exhibit volcanogenic-massive-sulphide-style alteration and mineralisation.

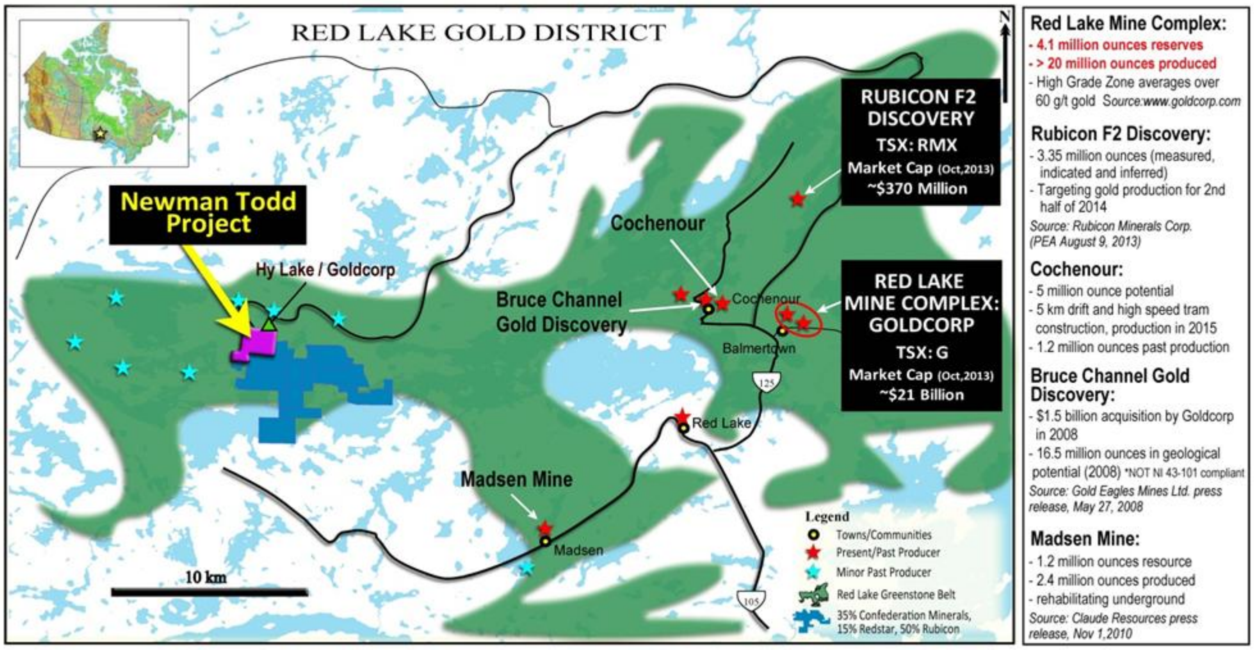


Figure 7-2 Location of Red Lake Greenstone Belt gold deposits and recent discoveries

Felsic plutons that are synvolcanic with Confederation volcanic rocks intrude all the major assemblages.

The weakly to moderately foliated Dome stock (2.72 Ga), which occupies the core of the RLGB, provides a minimum age for timing of the last penetrative deformation event (Corfu and Andrews, 1987; Sanborn-Barrie et al, 2000). Post tectonic batholiths were intruded along the margins of the RLGB ca 2.70 Ga.

Regionally, the rocks which comprise the RLGB have undergone poly-phase deformation. This involved an early non-penetrative deformation (D0), which uplifted pre-Confederation and Huston age rocks, and at least two episodes of post-Confederation deformation (D1 and D2) reflected in folds and fabrics of low to moderate finite strain (Sanborn-Barrie et al., 2000). Regional metamorphism varies from greenschist grade in the core of the RLGB to amphibolite grade near batholith margins.

Overall strain in the RLGB is low, but local high strain zones do occur, typically in areas of strong alteration with locally associated gold mineralisation. In fact, the most significant gold mineralisation is generally associated with intense quartz-carbonate alteration within and proximal to areas of high strain (shear zones). Previous workers identified five major shear or deformation zones within which major gold deposits of the camp occur (Andrews et al., 1986). Recent work (Sanborn-Barrie et al, 2000) has questioned the validity and usefulness of the deformation zone concept in the camp.

Regional mapping is based largely on geophysics, and indicates the presence of major fold hinges. The property appears to be located on the south limb of a regional E-W F2 Fold (Sanborne-Barrie et al., 2000). A more detailed interpretation of the geology of the RLGB is presented in Figure 7-3.

Historically, most of the significant gold mines and recent discoveries have been identified in the eastern part of the RLGB. The Newman Todd property, however, is located in the western part of the greenstone belt, and represents the most significant discovery made to date in the western end of the belt.

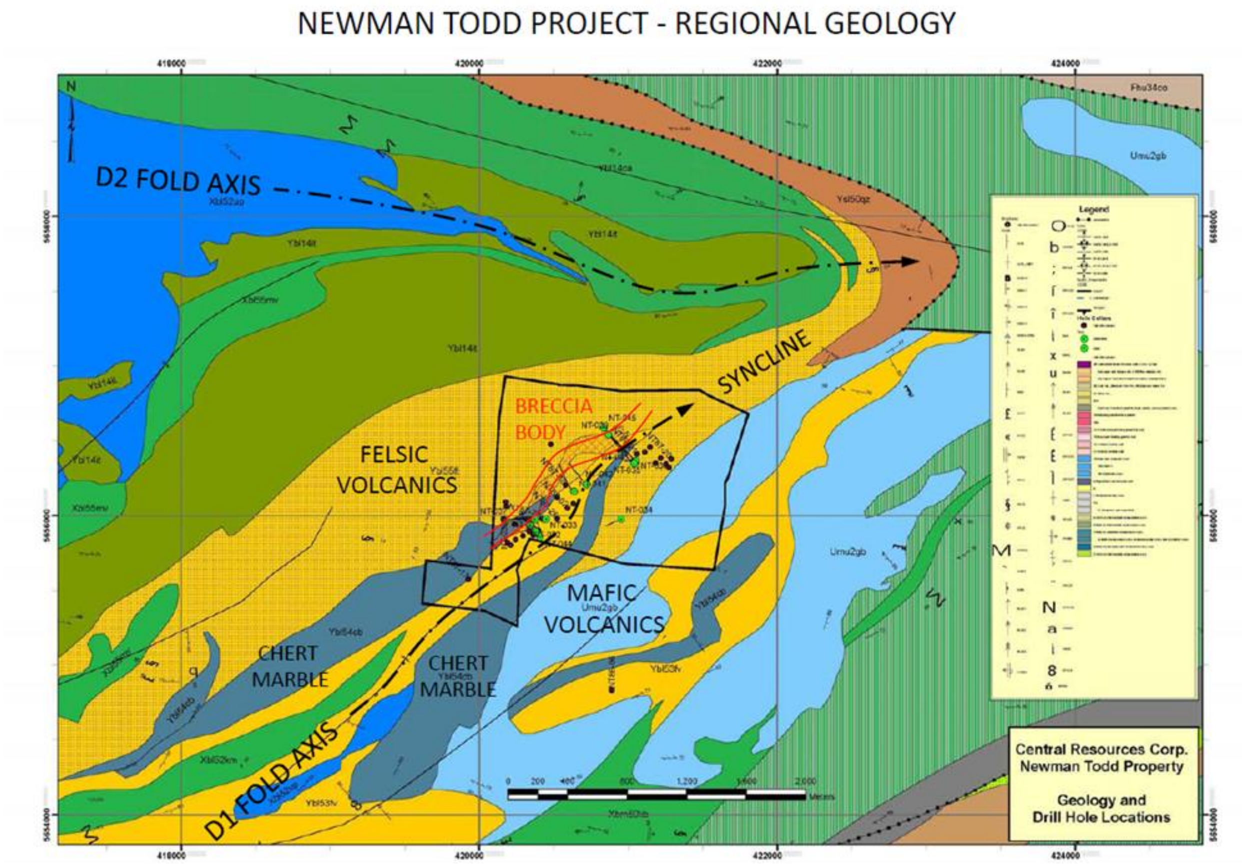


Figure 7-3 Interpreted regional geological map of the Newman Todd area

The Newman Todd property is located in the western part of the Red Lake District. It is underlain by volcano-sedimentary rocks of the Ball and Balmer Assemblages. Rock units trend northeast and dip steeply to the southeast, younging to the southeast.

Geological understanding of the Newman Todd property has increased as the number of drill holes increased, and has developed as the thoughts and ideas regarding the geological setting of the gold, and in particular, the origin of the gold-bearing host rocks and the evolution of the structural setting have changed. Originally, an early concept of the local geology was obtained from limited surface mapping and geophysics (mainly ground and aeromagnetics). However, with the current 163 drill holes completed since the inception of the project (109 of which were completed by Confederation Minerals as operator, representing 42,566 m of core) a more precise picture of the local geology, and ultimately, controls on gold mineralisation, is emerging.

The most abundant rock units on the property are felsic crystal tuffs and ultramafics. The crystal tuffs cover most of the north portion of the claims, and the ultramafics dominate the southern and southeastern portion of the claim. The “Newman Todd Structure” or “NTS” as it was originally labelled, is the main host of gold on the property, and was thought to be primarily a body of breccia composed of fragments of silica, iron carbonate, with minor crystal tuff, iron formation, and chert. This is in contrast to earlier ideas that the NTS represented a structural discontinuity between two volcanic units, and was structurally and chemically altered to its present, highly-altered, and brecciated state (Figure 7-4).

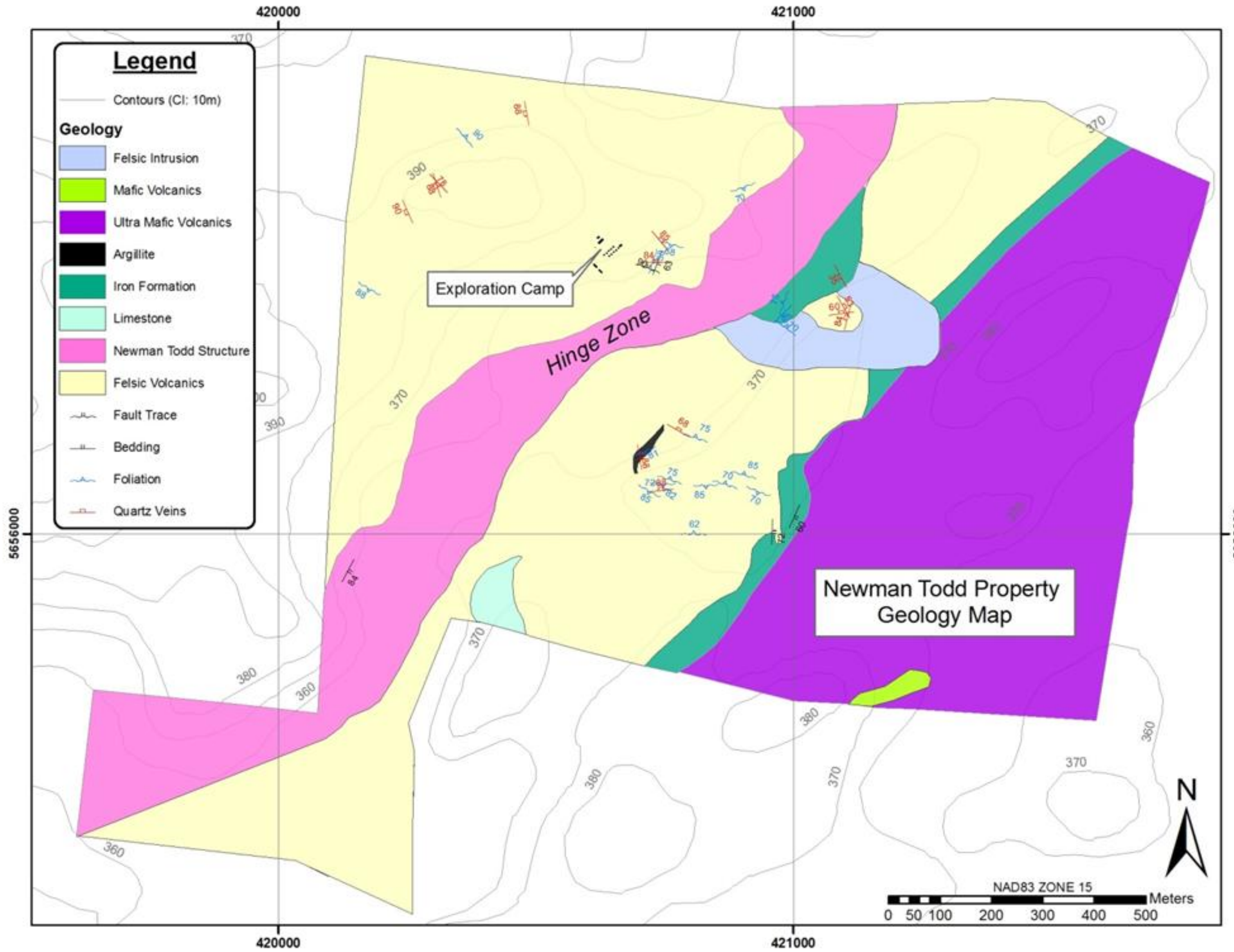


Figure 7-4 Plan map of property geology showing Hinge Zone and other significant features

As discussed in more detail below, the NTS is now recognised as a distinct lithological unit, ranging between 70 and 200 m wide, trending northeast and steeply-dipping to the east, with intermediate to mafic volcanic units forming the footwall and hangingwall. As can be seen on cross section the units have, together, been tilted to a steep, easterly-dipping angle.

Recognition of well-preserved stromatolites in surface exposures of the NTS led to the recognition of similar stromatolitic textures in drill core. It is now believed that the NTS is a marine carbonate unit, variably brecciated, and highly-altered primarily to quartz-carbonate alteration facies.

As shown on plans and cross sections through the NTS (see Figure 7-5, Figure 7-6 and Figure 7-7), drilling has clearly identified the location and morphology of the footwall and hangingwall, and has provided a clear picture of the true width and dip of the NTS. As information from drilling evolved, it became clear that the gold mineralisation is contained almost exclusively within the carbonate breccia unit (the NTS) and that little to no shearing was evident along the hangingwall and footwall contacts. Therefore, the brecciated texture which typifies much of the NTS unit is likely not tectonic, but possibly a primary brecciation which took place during the sedimentary process.

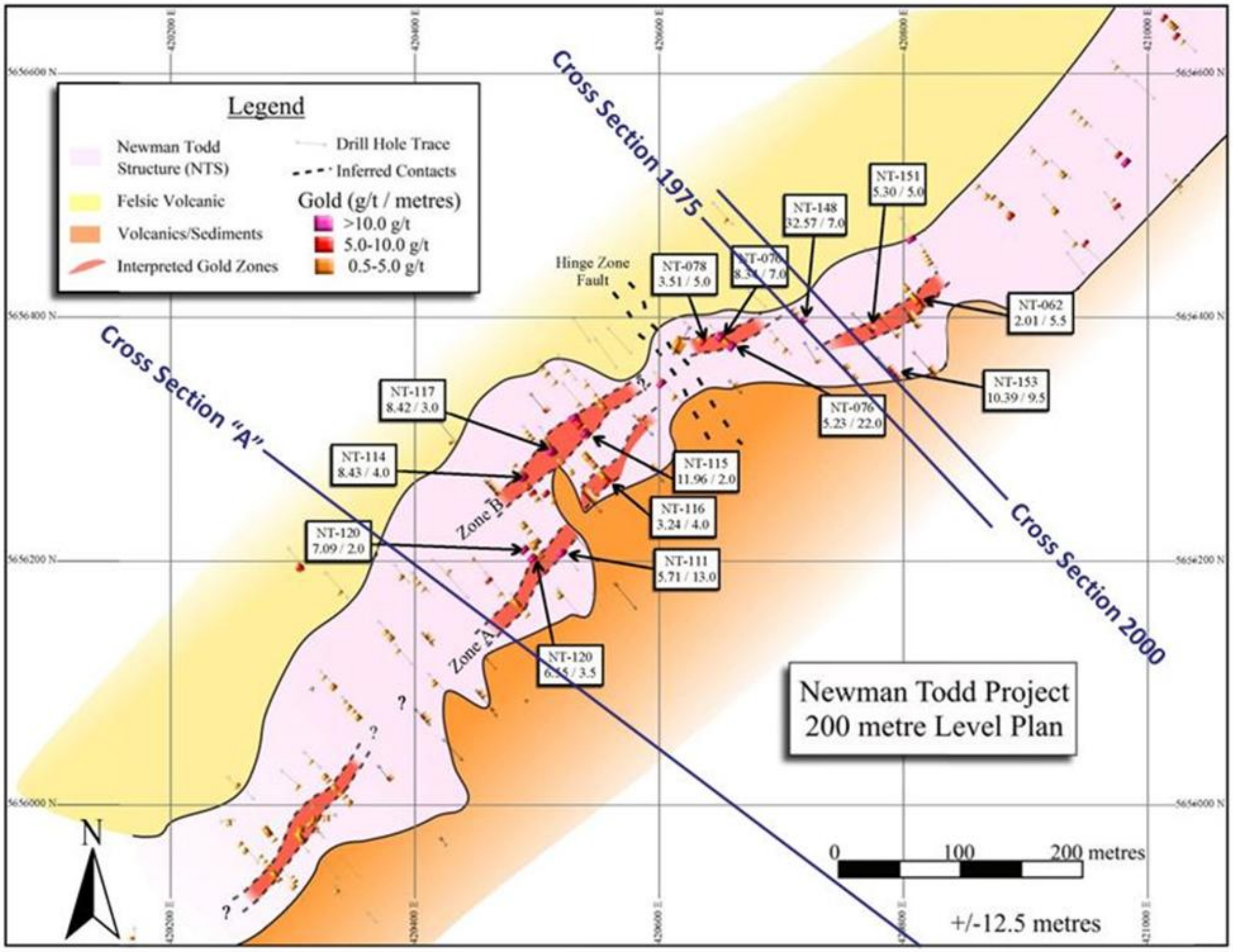


Figure 7-5 200m level plan showing interpreted gold zones

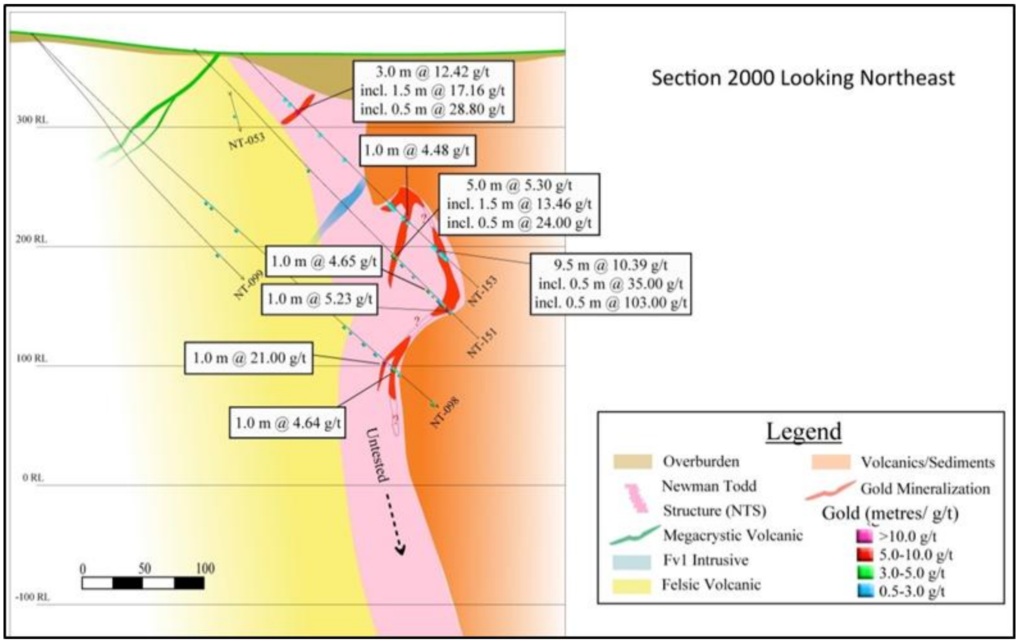


Figure 7-6 Cross section 2000 through NTS showing gold zones and drill assay intersections (see Figure 7-5 for location)

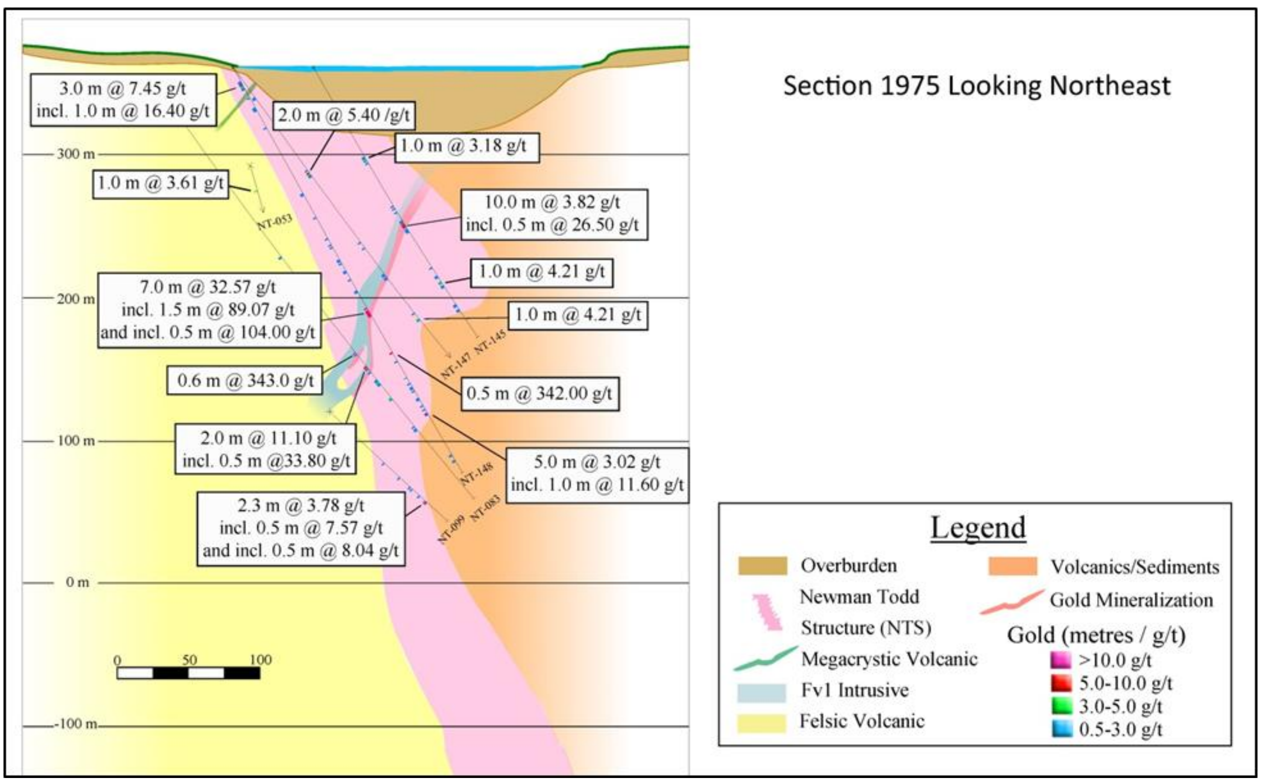


Figure 7-7 Cross section 1975 through NTS showing gold zones and drill assay intersections (see Figure 7-5 for location)

Virtually no shearing is evident in drill core where it crosses the footwall and hangingwall contact on either side of the NTS. Internal felsic dykes, however, which cross the NTS at a high angle, can exhibit significant shearing (possibly foliation). It is surprising, however, that virtually no shearing was developed on the hanging and footwall contacts, since most gold in the Archean deposits, as mentioned above, is associated with intense shearing. Extensive gold mineralisation, however, occurs in close proximity to the hangingwall contact, giving the impression that the contact acted as a lithological "cap" on the system, leading to the ponding of gold-bearing hydrothermal fluids in that region. This concept has to be more fully tested, but initial indications from the extensive database indicate that this is a potential control on the place of deposition of higher-grade gold mineralisation.

To summarise, the NTS is a heterolithic, tabular zone, characterised by what appear to be sharp hangingwall and footwall contacts, brecciation and pervasive quartz-carbonate alteration, along with stromatolitic banding. It is not foliated, and shows no evidence of shearing. Rather than representing a structural discontinuity between two litho-structural domains, as was originally hypothesised, the NTS appears to be concordant with both hangingwall and footwall strata. The unit is cut by numerous, narrow, foliated felsic and mafic dykes, many at a high angle to the stromatolitic banding (and can contain quartz veins with gold), and by sheeted quartz veins, quartz-pyrite veins, and quartz-pyrite dilational breccias.

The sharp nature of the footwall contact, plus lack of strain evidence is highlighted in the images shown in Figure 7-8 (courtesy of Couture, 2013).

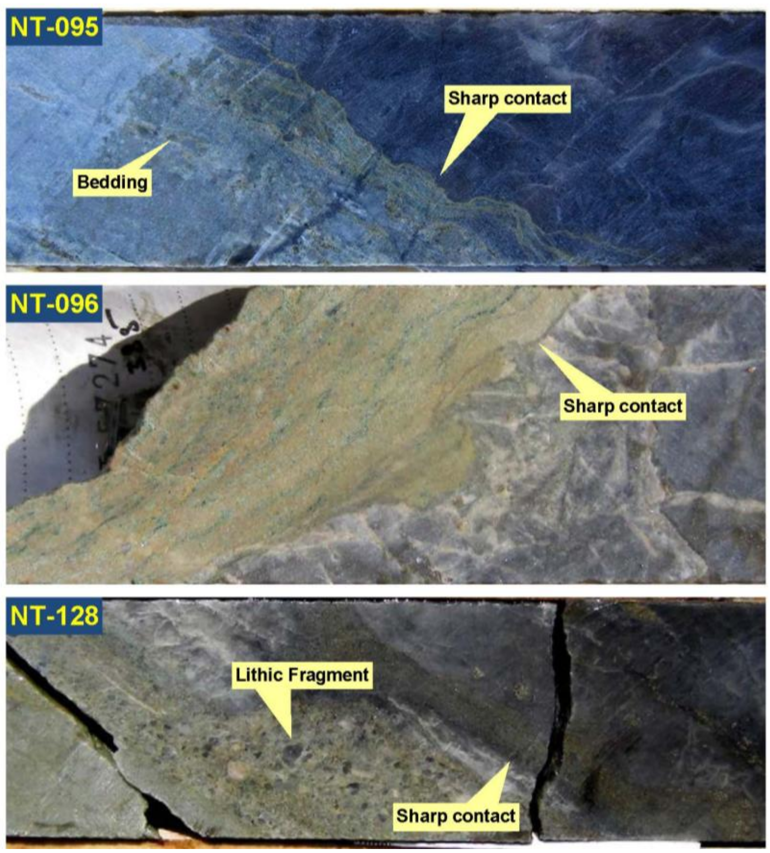


Figure 7-8 Examples of textures at the NTS footwall contact as intersected in drill core (Couture, 2013)

The main foliation (S2) is heterogeneously developed in rock units across the property. It trends uniformly 075-085° across the entire area and there is no apparent discontinuity across the NTS (Couture, 2013). Weak to moderate S2 foliation occurs in the footwall rocks (Rivard property) at a high angle to the bedding, but the quartz-carbonate rock inside the NTS is not visibly foliated. Within the NTS, penetrative S2 foliation is only present in felsic dikes.

In the central part of the Newman Todd Structure, a thick brittle fault (or a series of brittle faults) crosscuts the NTS at a high angle (the "Hinge Fault" Zone). This fault zone marks the northern limit of the magnetic high anomaly within the NTS and its surface expression is the small lake over the NTS. It has been intersected by several boreholes and is logged as a late fault. The Hinge Fault is auriferous and its internal texture suggests it was active at the time of gold mineralisation (Couture, 2013). See Figure 7-4 for the location of the Hinge Zone within the NTS.

7.3 Gold Mineralisation within the NTS

Gold mineralisation is extremely widespread within the NTS, with nearly every hole completed over a strike length of approximately 1.8 km, and from surface to a depth of almost 1,000 m intersecting gold mineralisation. Considering a total of 109 holes drilled into the NTS by Confederation Minerals over the 1.8 km strike length, 94% intersected variable widths of 3 g/t gold or higher, 87% intersected variable widths of 5 g/t gold or higher, and 41% intersected variable widths of 20 g/t gold or higher. Thus, the hydrothermal processes which contributed and deposited gold in the NTS were active over a very significant strike length and depth. The mineralisation remains open ended to depth and towards the south.

The total volume of rock which has been affected by gold-bearing hydrothermal fluids in the NTS, along the 1.8 km drilled to date, and one deep hole (Figure 7-9) which showed the processes and gold deposition still active at approximately 1 km depth, is extremely large. While sources of fluid input have yet to be defined, it is hypothesised that numerous input conduits must exist in order for gold to be deposited over such a significant strike length. Hypotheses for the conditions of formation of gold mineralisation with the NTS will be presented below in Section 8.

Several styles of gold mineralisation are observed on the property both inside and outside of the breccia (Singh, 2011):

1. Gold occurs as free gold in quartz veins in both the hangingwall sequence and in the breccia. These veins tend to be blue-grey in colour and occasionally white. Coarse gold can be seen to occur in quartz-pyrite veins crosscutting both quartz-carbonate rock and felsic dikes.
2. Elevated gold values (up to 5 g/t) have been returned from a massive sulphide (pyrite and pyrrhotite) unit in the hangingwall in the NE breccia.
3. High grade gold values have been returned from high sulphide and magnetite zones within the breccia (typically greater than 20% sulphide and magnetite combined).
4. Lower-grade gold values are often associated with slight increases in galena and arsenopyrite.
5. Sphalerite bearing veins in quartz porphyry (hangingwall) often contain gold.

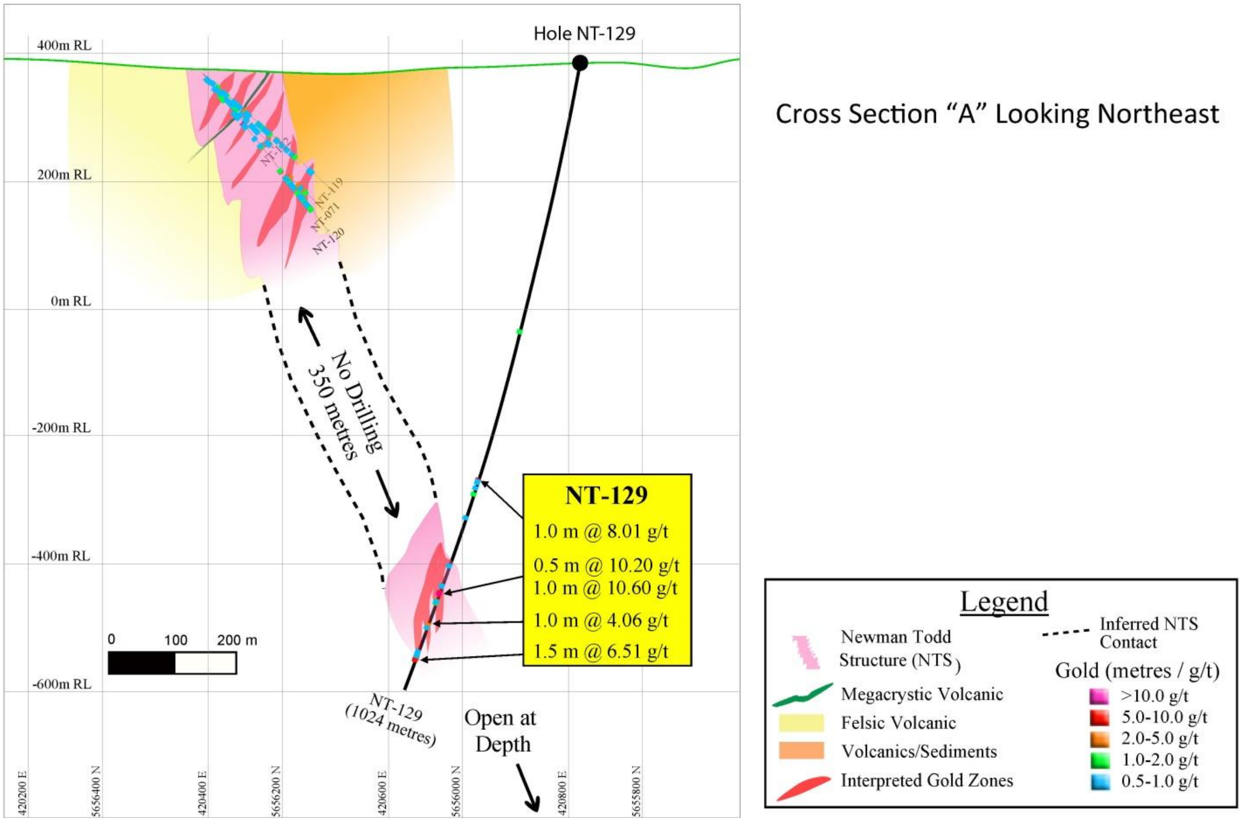


Figure 7-9 Cross section through NTS showing deepest drill hole intersections and potential depth extent to mineralised bodies (see Figure 7-5 for location)

Mineralised zones can exhibit a highly variable pyrite-magnetite content (low-sulphide to massive py-mt) and a highly variable specific gravity. Couture (2013) gives examples of the presence of gold mineralisation in the following scenarios (also illustrated in Figure 7-10):

- Within Qz-Py breccia at the contact of felsic dikes crosscutting Qz-Cb rock
- Within Qz-Cb-Py-Mt breccia in the Qz-Cb rock cut by Qz-Py veins
- Within massive Mt-Py rock in the Qz-Cb rock cut by Qz-Cb veins
- Within the brittle fault crosscutting the NTS at a high angle (Hinge Zone)

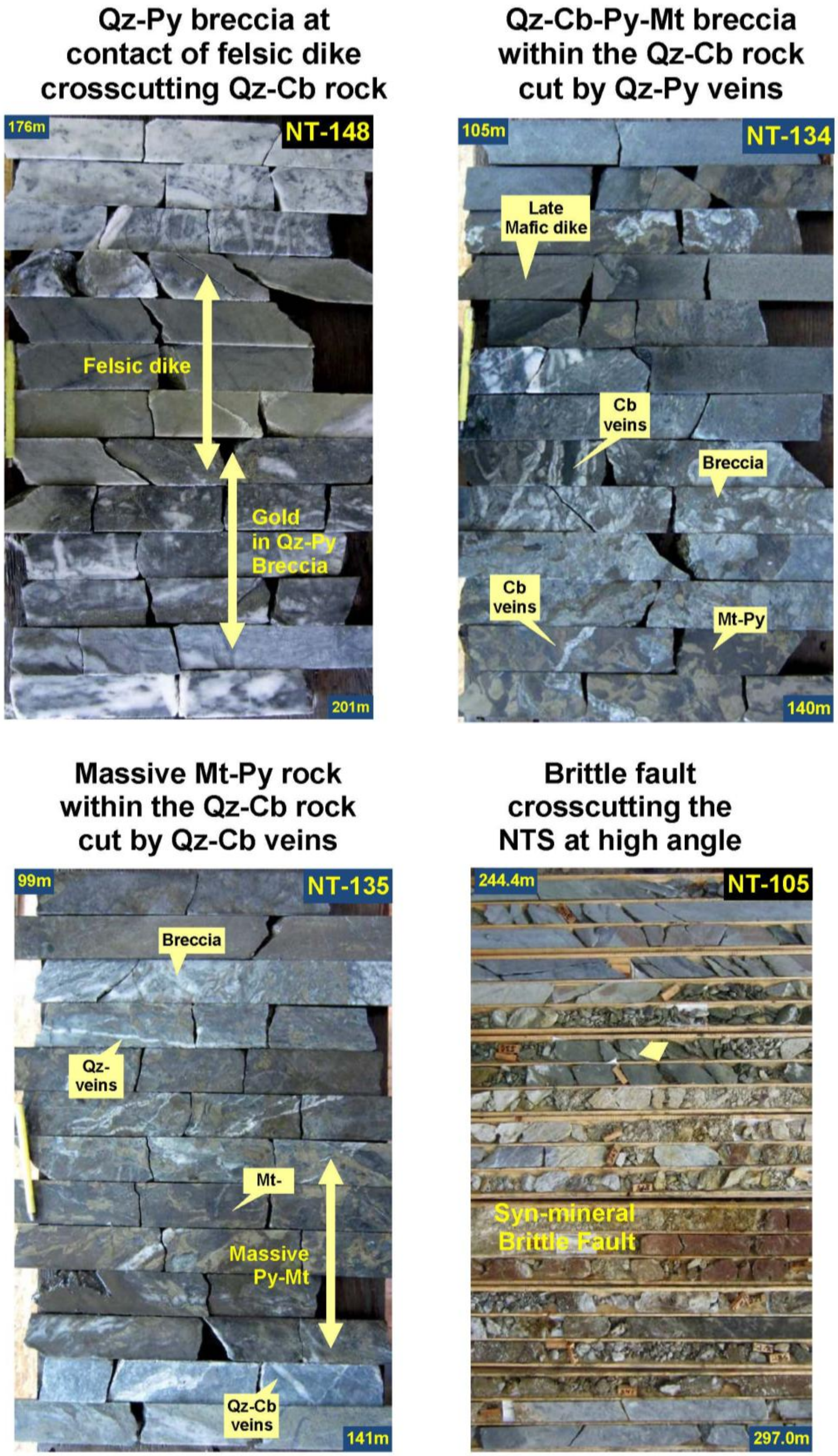


Figure 7-10 Examples of styles of mineralisation within drill core (Couture, 2013)

7.4 Alteration Associated with Mineralisation

According to Singh, (2011), the dominant alteration types and alteration mineralogy in decreasing order, within the NTS, are as follows:

1. Iron-Carbonate (veins and vein fragments);
2. Sericite (particularly well developed in felsic tuff units);
3. Silicification and silica (veining and flooding);
4. Calcite;
5. Pyrite;
6. Pyrrhotite and magnetite;
7. Sphalerite and galena, arsenopyrite and stibnite;
8. Chalcopyrite;
9. Tourmaline (in veins);
10. Chlorite and/or actinolite.

Several examples of alteration types are described below (from Singh, 2011).

- Alteration crosses lithological boundaries and often forms fronts, particularly near the hangingwall side of the breccia (Figure 7-11). Although poorly understood, a change in carbonate chemistry from calcite to ankerite is observed in some sections of the breccia.

Figure 7-11 Fe-carbonate breccia in crystal tuff unit in hangingwall

- Sulphide (primarily pyrite) and magnetite replacement zones occur throughout the breccia system. Often the high sulphide and magnetite zones are associated with gold mineralisation. Several stages of replacement are documented in the core.

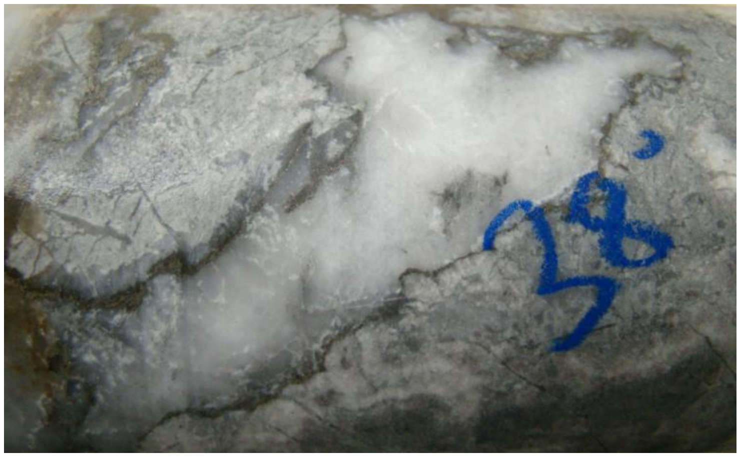


Figure 7-12 Pyrite rims on silica. Partial replacement rims on fragments. This texture is very common throughout the breccia and in areas of "laminated cherts/tuff"

Figure 7-13 Partial replacement of fragments with Magnetite

Figure 7-14 Silica cement with pyrite and galena. Fragments are partially replaced by pyrite

Figure 7-15 Galena forms the cement to fragments

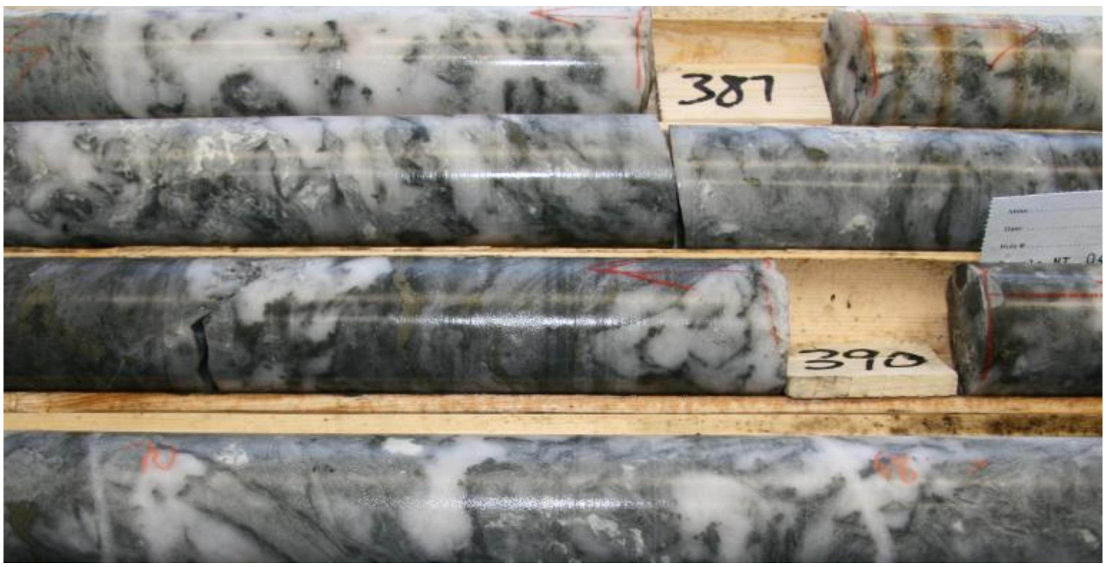


Figure 7-16 Silica flooding and veining. Note: some veins cross-cut silica flooding

Figure 7-17 Iron-carbonate vein fragments (and possible coxcomb textures)

Couture (2013) noted that quartz-carbonate is the most pervasive alteration facies, locally with stromatolite banding, while very strong silica alteration is also pervasive. Silica veins are oriented at a high angle to, and parallel to stromatolitic banding, while locally "vuggy" silica textures are indicative of pervasive silica replacement. The vuggy silica crosscuts foliated felsic dykes and are cut by an even later system of quartz veins. These features are illustrated in Figure 7-18 and Figure 7-19 below (courtesy of Couture, 2013).

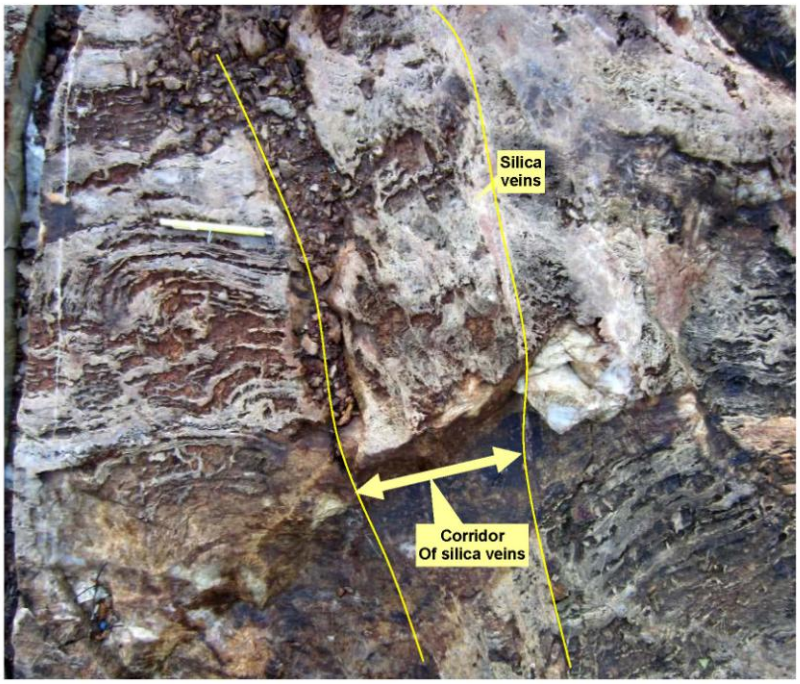


Figure 7-18 Photos of outcrop NW of NTS showing stromatolite banding parallel to contact of NTS (Couture, 2013)

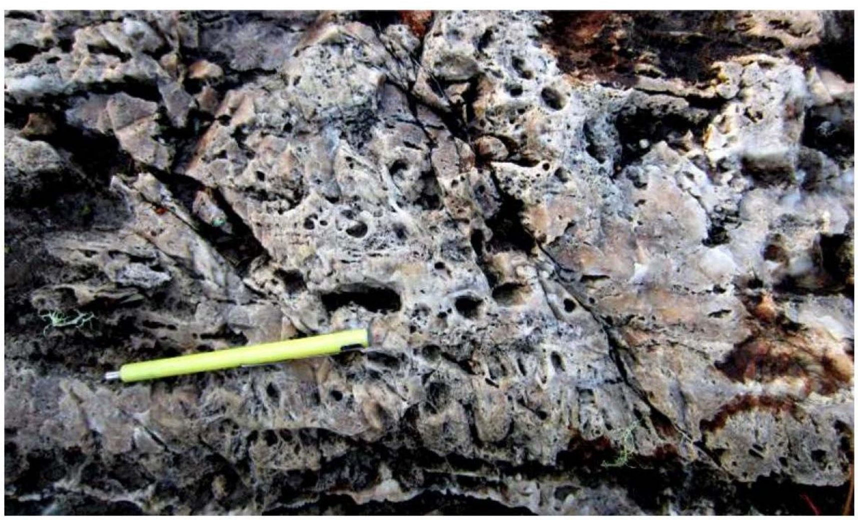


Figure 7-19 Vuggy silica texture indicative of pervasive silica replacement (Couture, 2013)

Gold is commonly associated with magnetite and pyrrhotite, with sections of near massive magnetite in core containing fine, visible gold. Some of the highest grades of gold have been obtained from magnetite-rich zones. The ratio, and absolute contents, of pyrite and magnetite are extremely variable spatially and do not everywhere contain significant amounts of gold. Pyrite-magnetite zones appear to replace, or overprint, earlier quartz-carbonate alteration. Gold commonly occurs in quartz-pyrite breccias and quartz-carbonate-pyrite-magnetite breccias within quartz-carbonate “host rock” and within massive magnetite-pyrite rock cut by quartz-carbonate veins. The paragenesis appears complex, with multi-phase gold deposition active throughout the life of the hydrothermal process.

7.5 Breccia Texture

As noted in Singh, (2011), a wide range of breccia textures are observed throughout the sequence. At least two breccia events have been identified in core. Very minor faults (mm scale) have been observed truncating breccia fragments with movement of at least 1 m. These faults may be equivalent to "black line" faults observed at the Red Lake Mine where offset can be up to 30 m.

Breccia types and textures are described below (from Singh, 2011).

Breccia cement types:

- Silica - fine grained white to grey silica
- Sulphide - pyrite, pyrrhotite
- Magnetite rare, usually occurs in fragments
- Galena, chalcopyrite - rare
- Chlorite - primarily in iron formations in the hangingwall

Breccia fragment types:

- Fe-carbonate veins
- Fine silica fragments
- Crystal tuff
- Laminated cherty or tuffaceous fragments
- Argillite, mafic tuff (in the hangingwall)

Breccia textures:

- In situ - also termed “crackle breccia” where fragments have been displaced by veining and form a "jigsaw" texture
- Clast rotated - a degree higher than in situ where clasts show some rotation
- Chaotic - completed broken and rotated fragments where the primary rock texture cannot be recognised - often with mixed lithologies
- Clast supported (similar to in situ, however, can have a range of clast types)

Figure 7-20 Chaotic breccia with multiple clast types. Sericitic fragment in centre of photo is crystal tuff

Figure 7-21 Clast rotated breccia. Note: crystal tuff unit (near top of photo) cuts breccia fragments. This is part of a larger interval of crystal tuff which may be a large fragment

Figure 7-22 Breccia dykes (left and right end of photos) with chaotic breccia inside dykes, cross-cuts colloform banded iron-carbonate vein

7.6 Exploration Criteria

The distribution of gold is complex and poorly understood given the small amount of drilling relative to the size of the mineralised system and poor exposure of the NTS on surface. Gold grades of individual sample intervals can range from non-detected to over 600 g/t. Selected intervals of gold mineralisation from various drill holes are listed in Table 6-2 and also Table 10-2 within Section 10 - Drilling. Intervals containing low grade mineralisation (in the range of 1 g/t gold) have been intersected over core lengths of tens of metres, while the much higher grade intersections, which can exceed hundreds of grams per tonne, are much narrower, commonly in the range of 0.5 to 1.0 m. As is typical with other large mesothermal systems (e.g. the Red Lake Mine Complex), the morphology of mineralised zones, and variations in the gold grade, are highly variable and change abruptly over short distances. Therefore, exploration is drill-intensive, and underground exploration is ultimately required to provide platforms for detailed drilling to depth.

As the majority of the drilling was oriented to cross the NTS approximately orthogonal to strike, a bias is built into any attempt to interpret the morphology of discrete mineralised zones. Figure 7-23 shows one interpretation which was carried out to identify the shapes of higher grade mineralisation. Figure 7-6 and Figure 7-7 show two cross sections in the vicinity of the Hinge Zone, showing an interpretation of multiple zones of mineralisation in individual holes, and the vertical extent of mineralisation from surface to approximately 850 m below surface (and open to depth).

Drilling has been carried out on fans spaced 50 m apart along the length of the NTS, while the edges of the zone have been drilled on spacings exceeding 100 m. Only in the vicinity of the Hinge Zone, has the spacing between drill fans been tightened to 25 m. Due to the complex morphology of the gold mineralisation, and the important control by structural features, even at 25 m spacings, interpretations which demonstrate the morphology of gold mineralised zones at various cut-off grades are extremely difficult, if not impossible, to construct. Much more drilling, focused on a small part of the entire NTS mineralised system, is required. Given the very large size of the NTS hydrothermal system, it will be necessary to focus exploration on one selected area, (for example the Hinge Zone) and use the model derived as the basis for modelling the entire system. It is unreasonable to consider the vast amount of detailed, closely-spaced drilling that would be required to test the entire system to provide a detailed model prior to shifting exploration underground. The Preliminary Economic Analysis which is included in this report is based on preliminary interpretations of mineralised zones using available drill data and the developing hypothesis regarding mineral genesis.

Similarly, drilling at a high angle to the existing drill pattern will provide much-needed structural information. The largely uni-directional drilling completed to date assumed that the NTS was a structural-alteration zone and drilling was established to cross the zone at right angles. Now that it has been established that the NTS is in fact a stratigraphic unit which has been intensely altered, the role of cross structures, which potentially cross the NTS tangentially, must be established. Given the size of the NTS hydrothermal system, it is not unreasonable to assume that many cross-structures, which may have acted as sources of fluid input, exist.

There is evidence that the gold mineralisation is more extensively deposited as the hanging wall of the NTS is approached. This may be the result of hydrothermal fluids ponding near the less permeable, overlying volcanic unit. These potentially significant criteria should be given a high degree of importance in future drilling.

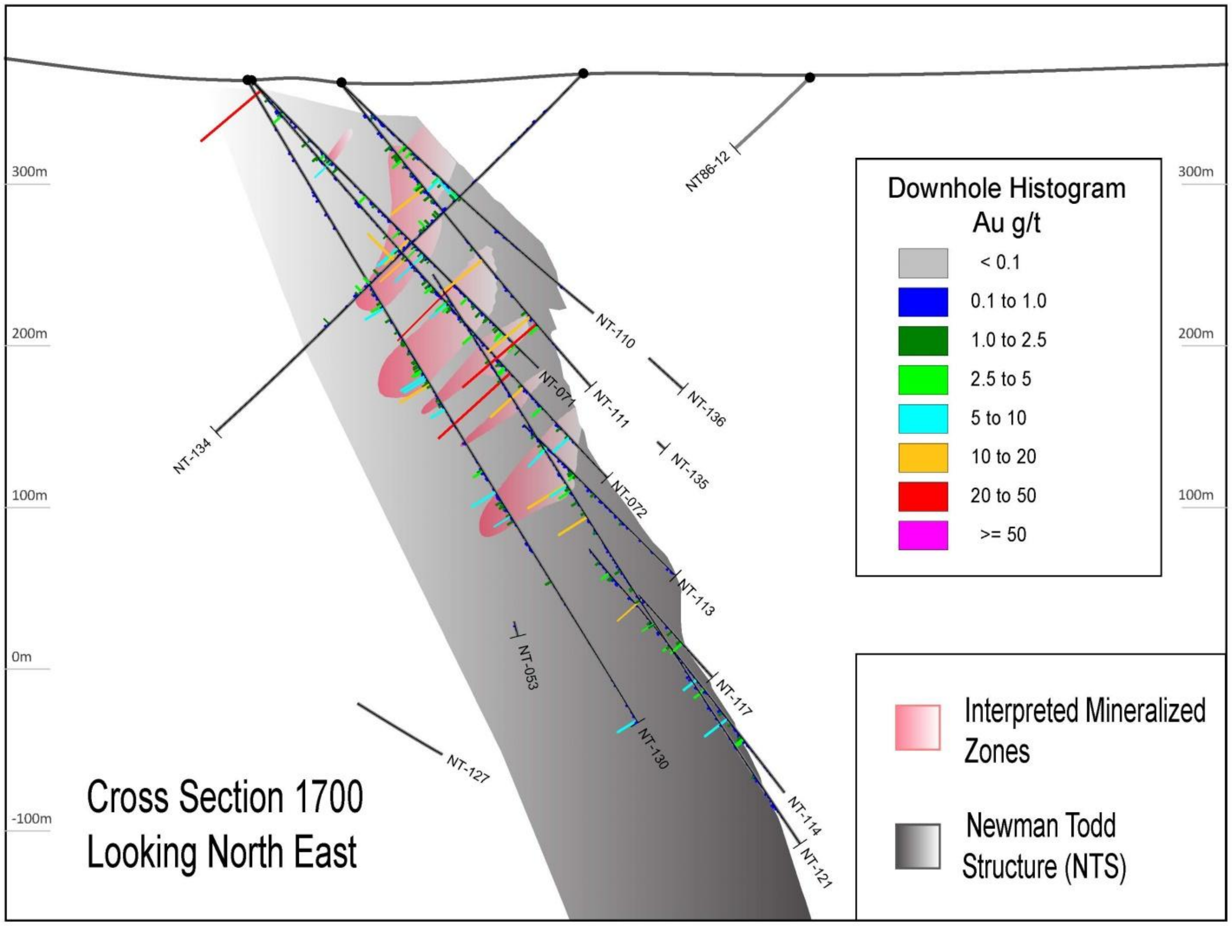


Figure 7-23 2014 Interpretation of high grade mineralised zones in the NTS (section 1700

7.7 Mineralisation Model

In September 2013, the Company contracted structural geologist Jean-Francois Couture, PhD, PGeo, from SRK Consulting to undertake a site visit to examine stripped outcrops and core intervals to study the controls on the distribution of the gold mineralisation. This 3 day site visit followed on from an earlier 2-day site visit completed by SRK in June 2010 and also included Michael Collins from Mining Plus and Confederation Minerals' geologist Ralph Bullis. Associated with the visit was the production of a report (Couture, 2013), detailing results, photographs of lithologies, mineralisation and structural features, and a new hypothesis as to the deposit genesis (detailed below) which as already discussed, may have significant implications for the project's next phases of exploration.

Observations from the field included the following previously-recognised and mapped relationships:

- Stratigraphy commonly strikes northeast-southwest with steep dips to the southeast on the Rivard ground (footwall felsic volcanics with mixed agglomerates and sediments);
- Stratigraphic tops indicators show that younging is towards the southeast on the Rivard ground;
- Stratigraphy commonly strikes northeast-southwest with steep dips to the southeast on the eastern portion of the Newman Todd ground (hangingwall mixed volcanics, carbonates and iron formation);

- Stratigraphic tops indicators show that younging is towards the southeast on the Newman Todd ground;
- There is a pervasive penetrative fabric (foliation) striking easterly in the footwall stratigraphy, in the hangingwall stratigraphy and in felsic dykes mapped and logged within the NTS . The penetrative fabric is possibly related to broad-scale regional folding.

Nothing in the observations above is new; however, they are interesting in the context of earlier geologic interpretations of the hangingwall rocks that have them tightly folded along north-trending axes. In fact, there is little in the outcrop fabric to suggest that this folding is actually present and earlier reports acknowledge that there is little data to support tight folding except for interpretations of geophysical data.

Couture (2013) makes several observations about the nature of the NTS as follows, which are based on field and core observations:

- It is an heterolithic tabular zone characterised by a sharp footwall contact, brecciation and pervasive Qz-Cb alteration and stromatolitic banding, parallel to its strike;
- Its hangingwall contact is irregular;
- It is not foliated although dikes crosscutting it are foliated;
- It is not a high strain zone (i.e. not a shear zone);
- It is sub-parallel (concordant) to bedding in footwall rocks;
- It is at a high angle to the regional S2 foliation;
- The S2 foliation in the footwall and hangingwall has the same orientation;
- It is cut by numerous narrow foliated felsic and mafic dikes, many at a high angle to stromatolitic banding, containing Qz veins with gold;
- It is cut by "sheeted" Qz veins, Qz-Py veins and Qz-Py dilatational breccias at a high angle to stromatolitic banding;
- Felsic dikes observed cross-cutting the NTS in exposed outcrops present S2 foliation in the same orientation as in hangingwall and footwall rocks.

Further examination of drill core reinforced earlier interpretations of the sequence of events within the NTS. Moderate to intense silicification and mineralisation (pyrite, pyrrhotite, gold and possibly magnetite) was followed by emplacement of felsic and mafic dykes in turn followed by quartz veining carrying both sulphides and gold.

Of significant interest on this site visit was the presence of a newly-exposed outcrop of the NTS on the footwall side on sections 1650 and 1675. Drill holes NT-119, NT-120, NT-121 (along section 1675), NT-122, NT-123 and NT-124 (along section 1650) were collared here. This location was selected on the basis of shallow depth of glacial cover and the presence of some elevated gold values fairly close to surface (e.g. 6m @ ~4 g/t Au from 13 to 19 m including 1 m of 18.8 g/t Au in hole NT-121). Drill logs all recorded the initial rock type as either silicate-carbonate breccia or a silicate-iron carbonate breccia or a silicate-carbonate sulphide breccia. However, examination of the outcrop shows that it is in fact made up of a silicified and mineralised stromatolitic horizon with little obvious breccia. Examples seen in outcrop are shown below in Figure 7-24 (courtesy of R. Bullis).

A stromatolite horizon at the top of the felsic volcanic sequence in the footwall of the NTS has been recognised and mapped in outcrop near section 2125. This outcrop of stromatolites has been intensely silicified and weathering has resulted in textures that are clearly stromatolitic and give good tops directions. However, the stromatolites mapped close to section 2125 near the footwall of the NTS are silicified only and are not replaced by sulphides. Channel sampling of this outcrop has not indicated the presence of gold.

The discovery that silicified and mineralised stromatolites have been logged as silicate–carbonate sulphide breccia is not surprising when the pertinent core is examined. The silicification has, to a large degree, obliterated in most cases any obvious layering when viewed at the scale of NQ core. The intensely silicified carbonate bed, in core, can be readily identified as a breccia texture. To complicate matters further, there are drill core sections that do contain what are undoubtedly breccias. It may be that those sections of actual breccia are much more restricted than previously believed.

Because the textures logged within the NTS have been predominantly called "breccia", assumptions for development of the structure have focused on some sort of mechanical breakage between the hangingwall and footwall formations. It has been previously recognised that an unconformable surface (characterised by the stromatolitic carbonate horizon) existed between the hangingwall and footwall rocks and that surface was considered to be a plane of weakness that became a focus for regional stresses and resulted in a plane of fracturing and brecciation. However, in the Archean regional breaks are commonly characterised by shearing rather than by regional-scale brecciation. The lack of any obvious strain indicators within the NTS (other than the penetrative fabric referred to above) has been problematic. If the NTS is in fact some sort of regional break resulting in brecciation at the scale thought to be defined by the NTS, there should be some strain indicators within the NTS or within the footwall and hangingwall rocks.

One possible explanation that reconciles the observations made above is that the NTS and related silicification, sulphide mineralisation and gold is not a structural break predominantly featuring brecciated, silicified and mineralised carbonates. A possible theory may be of a more or less continuous sequence of felsic volcanic deposition with a hiatus in volcanism resulting in an unconformable surface characterised by development of stromatolites and carbonate sequences. These formations may grade upwards into iron formations (chemical sediments). Following this, a resurgence of volcanism resulted in deposition of mixed volcanics and sediments of the hangingwall sequence. The silicification of the carbonates and subsequent emplacement of sulphides and gold may be the result of an epithermal event, possibly related to the resurgence of volcanic activity, characterised by quartz veining, dyke emplacement and feeder structures that are now logged as faults.

Initial exposure near section 1675

Silicified stromatolite (pen along bedding)

Silicified stromatolite (pen along bedding)

Quartz vein with sulphides cutting stromatolites

Sulphide replacement (pyr, sph, gal)

Sulphide replacement in stromatolites

Figure 7-24 Field observations from stripped outcrop (R. Bullis, 2013)

A "cartoon" sketch illustrating the scenario depicted above is shown in Figure 7-25 along with a sketch showing a cross section at approximately section 1675 through the Hinge Zone.

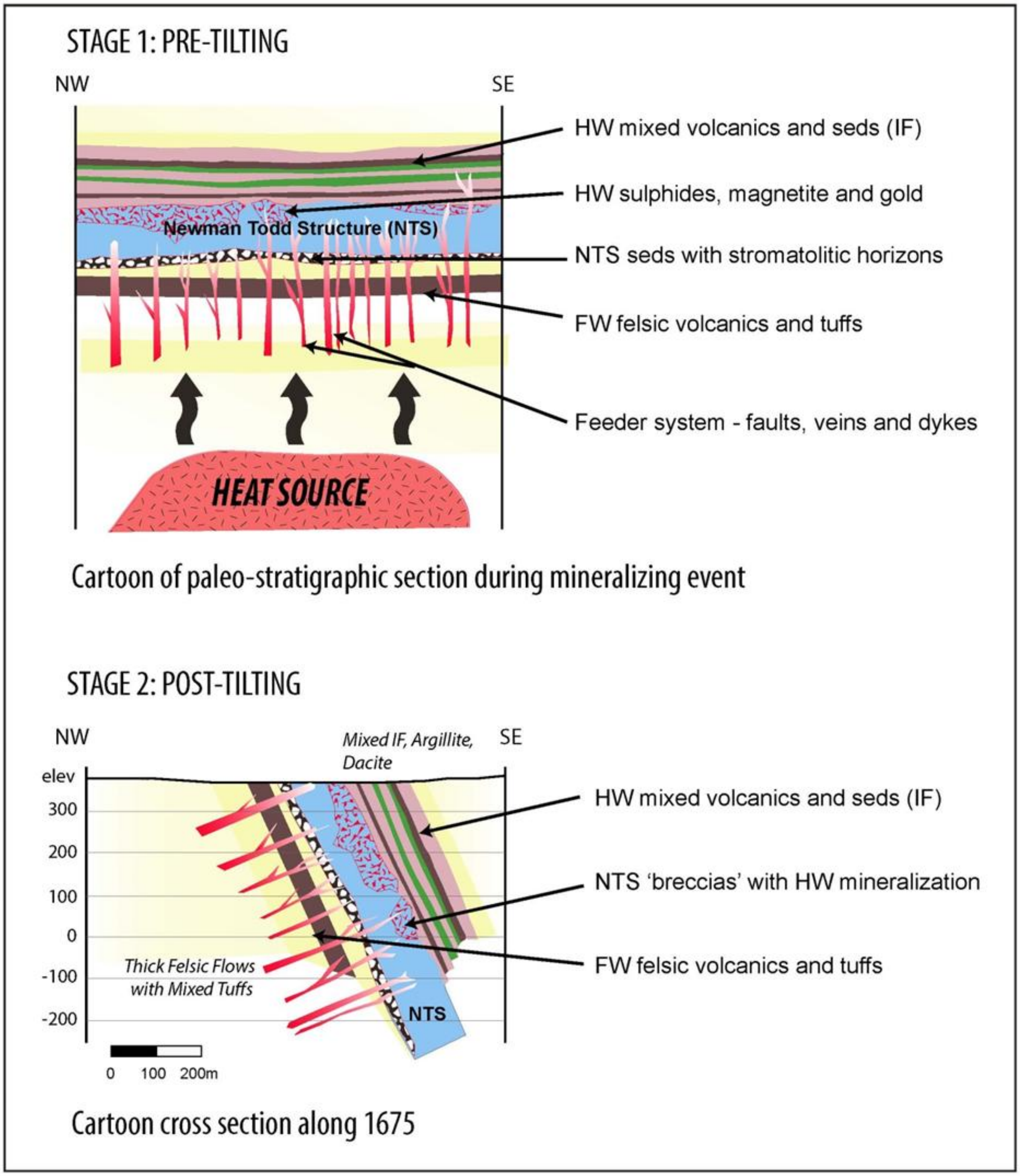


Figure 7-25 Current mineralisation model, Newman Todd

The significance of this hypothesis is that the "feeder system" drawn above would now be oriented (after tilting of the volcanics and sediments) in an east-westerly direction. This orientation is parallel to or sub-parallel with the primary drilling orientation (mainly towards 135°). Therefore, if the high grade "feeders" exist, they will be missed with the current orientation of drilling.

Some features of the deposit better explained by the hypothesis described above are:

- Textures within the NTS that are suggestive of open-spaced filling of quartz, carbonate and sulphides such as can be seen in Figure 7-26 (courtesy of R. Bullis);
- Lack of shearing textures within the NTS such as might be expected in zones of regional stress;
- Relatively high silver to gold ratio of about 2:1. The gold deposits at Red Lake reportedly have little silver;
- The irregular nature of the NTS hangingwall which may more readily be explained in terms of an erosional surface (or perhaps an alteration front) than a regional break. The footwall of the NTS appears in plan view to be fairly irregular as well, although there are fewer data to define that surface;
- Presence of gold in some fault/weathered zones with possible reinterpretation as "feeders";
- Visible gold in quartz veins and veinlets running sub-parallel to core axes;
- Silica-and sulphide-replaced stromatolite mounds along the unconformity;
- Chert horizons within the NTS.

Conclusions made by Confederation Minerals and Couture are that the NTS may be an epithermal system developed prior to D2 which was subsequently tilted during D2. Thus the present day surface geology would present a section through the hydrothermal system and the roots of the system would be located to the northwest outside the Newman Todd property. This theory will need testing by further drilling and field investigations as outlined in Section 26 Recommendations.

Hole NT-114 at 174.2 metres

Hole NT-052 at 272 - 273 metres

Figure 7-26 Open-spaced filling of quartz, carbonate and sulphides within the NTS (R. Bullis, 2013)

8 DEPOSIT TYPES

The Red Lake Greenstone Belt (RLGB) is one of the most prolific and highest-grade gold camps in Canada, with historical production of more than 18 million ounces of gold. The majority of production has come from four mines, Campbell (>10 million ounces), Red Lake (>3 million ounces), Cochenour-Willans (1.2 million ounces), and Madsen (2.4 million ounces), with combined production of 1.5 million ounces coming from ten smaller mines (Andrews et al, 1986; Dube et al, 2001).

The Red Lake gold camp has been the recipient of renewed interest from exploration, investment and scientific research communities due to the recent discovery by Goldcorp Inc. of the HGZ at the Red Lake Mine.

All of the four major gold deposits are located in the central and eastern half of the RLGB and are hosted by Balmer assemblage rocks at or near to the angular unconformity with overlying Huston and Confederation assemblage rocks. A significant number of important gold occurrences appear in the Ball assemblage, including the past producing Mount Jamie mine. Intra-belt felsic plutons and quartz porphyry dykes are also important hosts for gold mineralisation and account for production at the McKenzie, Gold Eagle, Gold Shore, Howey and Hasaga mines.

The gold deposits of the RLGB are, for the most part, atypical of Archean, greenstone, shear-zone-hosted vein-type deposits (Sanborn-Barrie et al, 2000), and are classified by Pirie (1982) according to their stratigraphic or lithologic associations into:

1. Mafic volcanic hosted deposits;
2. Felsic intrusive hosted deposits; and
3. Stratabound deposits.

Group 1 deposits occur within zones of alteration several square kilometres in extent, typified by CO_2 addition (forming Fe-carbonates) and Na_2O, CaO, and MgO depletion (Pirie, 1982; Andrews et al, 1986). On a more local scale, SiO_2 and K_2O addition forms alteration assemblages consisting of quartz, biotite, fuchsite (Chrome-rich muscovite), and sericite, and is commonly associated with elevated As and Sb. Gold mineralisation in Group 1 deposits occurs in quartz-carbonate veins, quartz veins, sulphide lenses, stringers and disseminations, and in impregnations in vein wall rock. Much of the higher-grade material comes from silica +/- arsenopyrite replacement of early, barren, banded carbonate veins (Horwood, 1945; Dube et al 2002). Tholeiitic basalt, basaltic-komatiite, and iron-formation are the dominant host rocks.

An empirical relationship exists between ultramafic rocks and gold mineralisation, with the majority of gold mineralisation at Cochenour-Willans, Campbell, and Red Lake Mines occurring within a few hundred metres of ultramafic bodies. Dube and others (2001) suggest competency contrast between basalt and ultramafic units during folding is important in the formation of extensional carbonate veins in hinge zones, which are later replaced by gold-rich siliceous fluids.

The majority of Group 2 deposits occur as shallow to steeply dipping, sulphide-poor quartz veins and lenses hosted in sheared diorite and granodiorite of the Dome and McKenzie stocks, and as quartz vein stockwork in quartz porphyry dykes and small felsic plugs. The largest of this type of deposit, the McKenzie Mine, produced over 650,000 ounces of gold (Andrews et al., 1986).

Group 3 deposits are only known to occur in the southern part of the RLGB and include the ore zones at the Madsen and Starratt-Olsen Mines. Metal mineralisation is of disseminated replacement style, located at the deformed unconformity between Balmer and Confederation assemblages. Gold mineralisation is hosted by mafic volcaniclastic rocks and basalt flows, and consists of heavy disseminated sulphide within a potassic alteration zone which grades outward into an aluminous, sodium-depleted zone (Dube et al., 2000).

The geology of the Newman Todd property is permissive for all three deposit types. Group I type deposits are of particular interest because of the documented occurrence of broad zones of alteration in areas of high strain and known ultramafic rocks.

9 EXPLORATION

Exploration work has been completed on the property by Confederation Minerals from 2011 to 2014 which includes diamond drilling, local scale geological and structural mapping, mechanical stripping/trenching, channel and outcrop sampling and ground magnetic survey.

9.1 Surface Sampling

The majority of the mapping and sampling that has been completed on the Newman Todd property was done between 2011 and 2014. In 2011, the priority was to establish a property wide geology map based on rock types and structural measurements. Over the course of several weeks, 47 samples were taken and sent for whole rock analysis, in order to confirm that that they were being correctly identified in the field and to develop rock type signatures for future geochemical analyses.

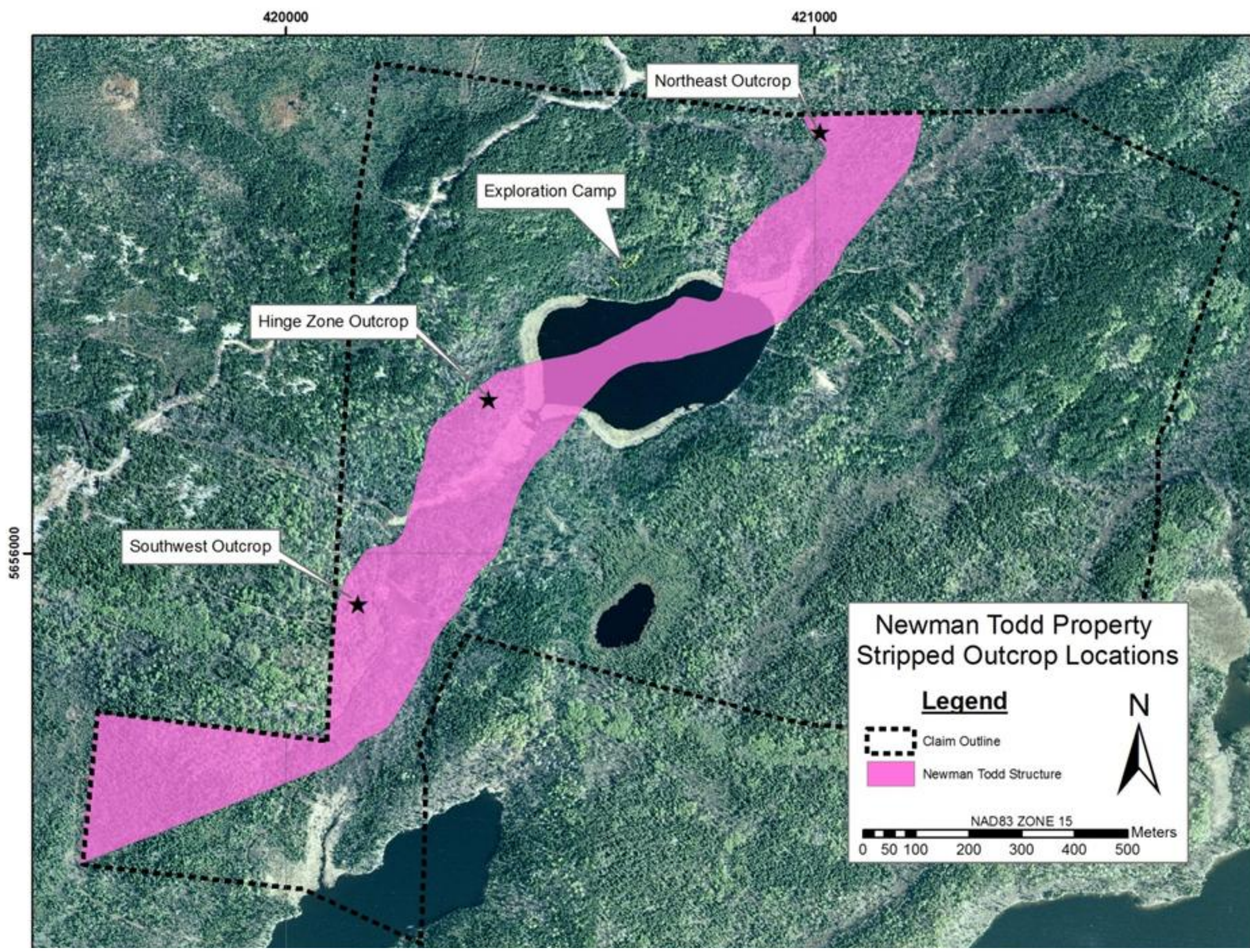


Figure 9-1 Property Map with Stripped Outcrop Locations

Due to recessive weathering of the carbonate component of the Newman Todd Structure, the majority of the zone is buried under several metres of overburden. To date, only three localities of this altered zone have been stripped, mapped and sampled. The locations of these areas are shown in Figure 9-1 and are referred to as the 'Southwest outcrop', the 'Northeast outcrop' and the 'Hinge Zone outcrop'. The work was performed on the Southwest outcrop in the fall of 2011, the Northeast outcrop was done during the summer of 2012 and the latest sampling, completed on the Hinge Zone outcrop, was completed in the summer of 2013. All three outcrops are proximal to the footwall contact, which is generally less mineralised than the hanging wall contact.

Initial stripping of the outcrops was done using a combination of excavator and bulldozer and was completed by various local companies from the Red Lake area. Once the outcrops were washed using a pump and fire hoses, they were geologically mapped in detail in preparation for laying out sample locations. Channels were cut using gasoline powered portable saws and chipped out using hammers and chisels. In total, 269 samples were collected from the three areas and include primarily 1 m long lengths over up to four inch widths. Shorter channels were done over discrete zones such as quartz veins or sulphide zones. Figure 9-2 to Figure 9-4 show the channel locations and the final results from the outcrop sampling. The highest grade sample was a 0.5 m channel sample from the Southwest outcrop that assayed 40.30 g/t gold. In addition to the stripped outcrop in the Hinge Zone locations, two trenches were also dug and sampled as shown in Figure 9-4.

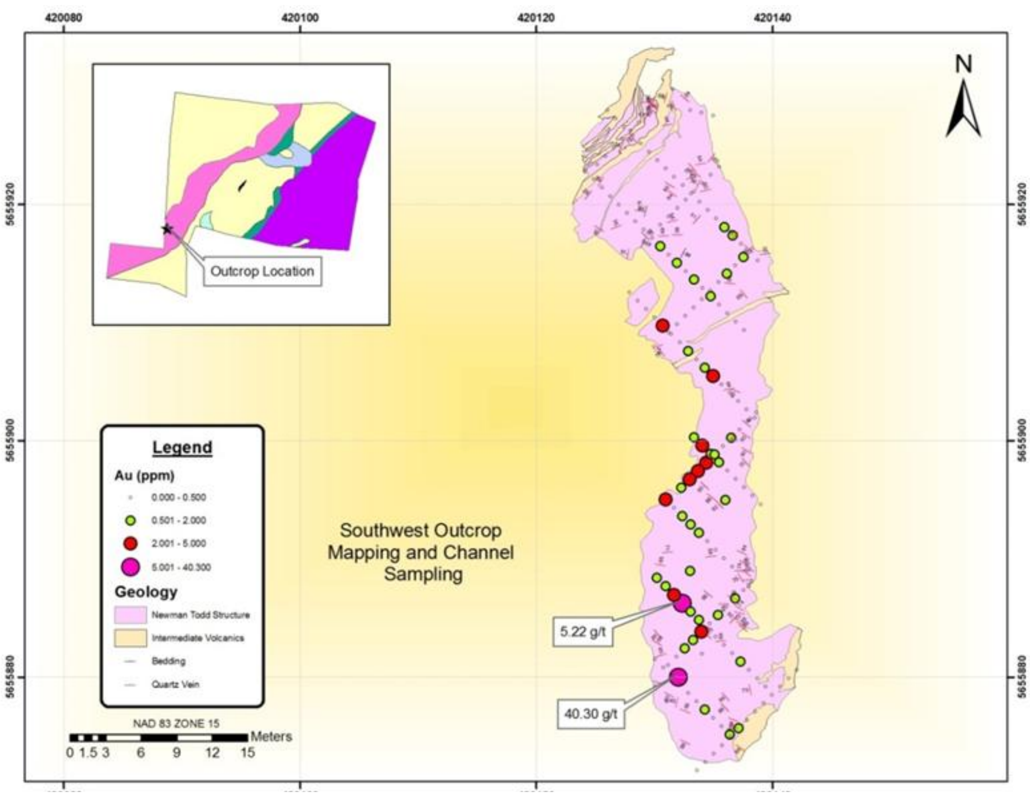


Figure 9-2 Southwest Zone Trench Sample Locations and Results

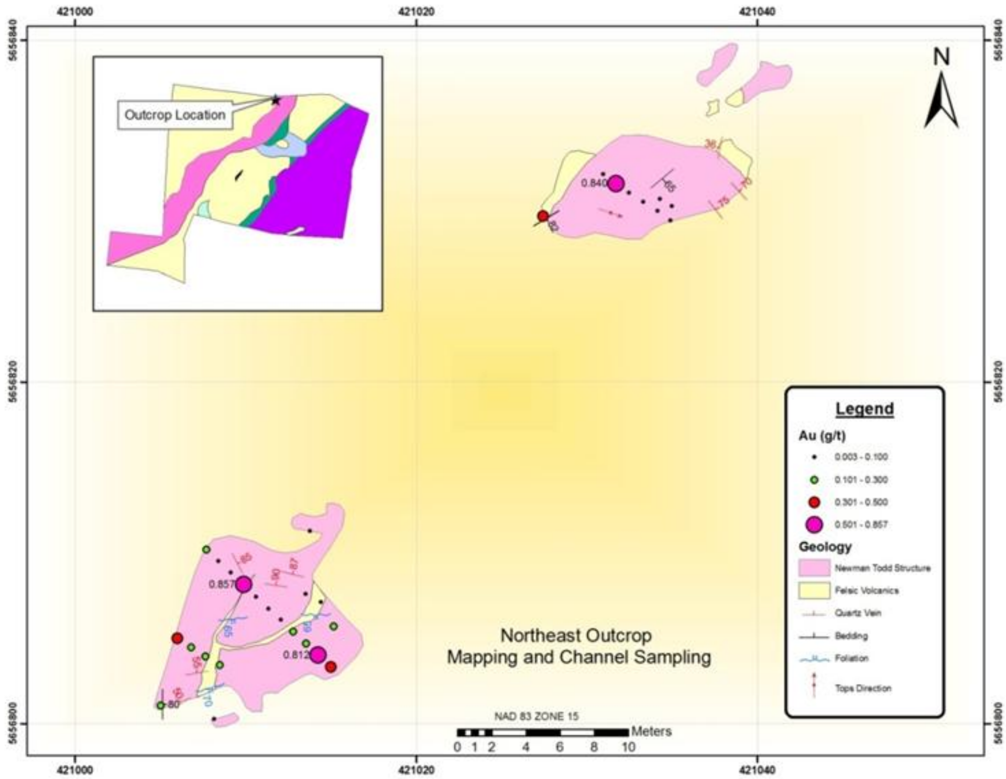


Figure 9-3 Northeast Zone Trench Sample Locations and Results

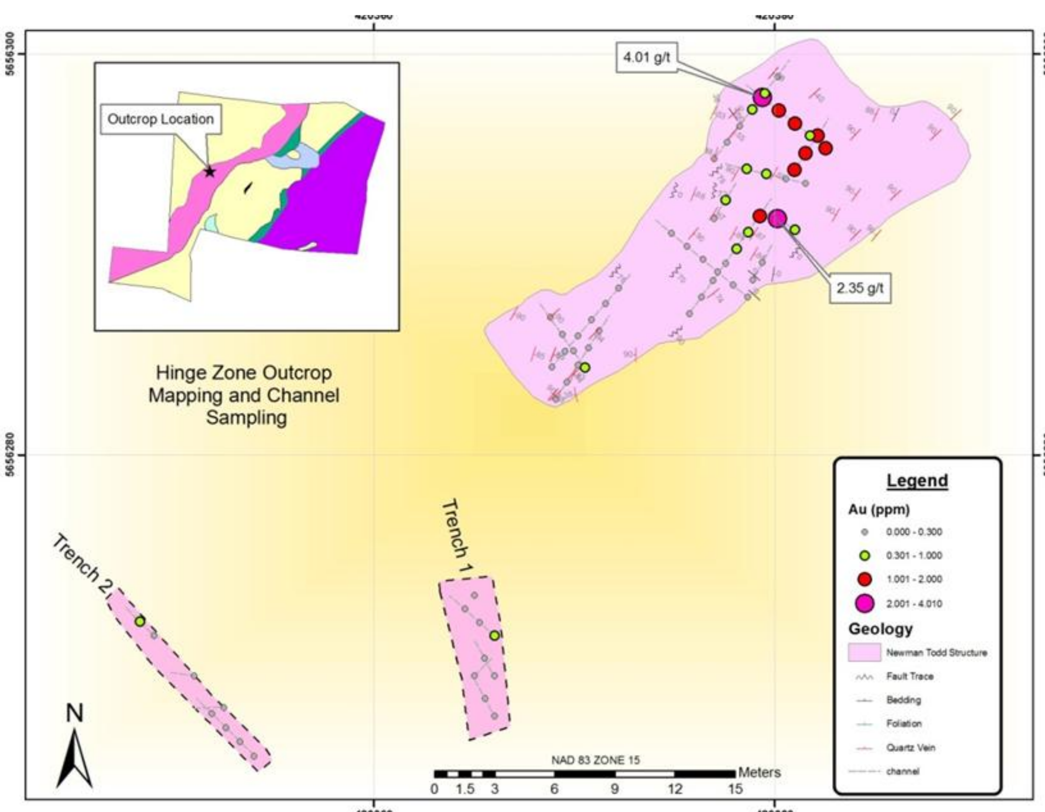


Figure 9-4 Hinge Zone Outcrop Mapping & Channel Sampling

10 DRILLING

10.1 Summary

Previous work on the Newman Todd property prior to Confederation Minerals' involvement was fairly shallow diamond drilling which tested only a very small proportion of the NTS and led to the identification of three separate zones of gold mineralisation, termed "Heath Bull", "Hinge Zone", and "North-East Breccia". This earlier concept of "zones", however, was largely a matter of where earlier drills could logistically be collared. Further step-out and infill drilling by Confederation Minerals during 2011, 2012 and 2013 has shown that the NE-SW trending zone of structural deformation, brecciation, and intense quartz-carbonate alteration extends continuously, within the confines of the property, from one end to another. The NTS has so far been identified over a strike length of approximately 2.2 km (1.8 km of which has been drill-tested), a width of up to approximately 200 m and from surface to depths of up to 1 km. Drilling confirms the existence of a large scale, open ended, gold-bearing hydrothermal system.

Drilling by Confederation Minerals at Newman Todd during their 2011, 2012 and 2013 field programs totalled 42,566 m in 109 holes. Drilling on the property, including drilling by Redstar Gold plus historical drill holes, totals 54,718 m in 163 holes. Figure 10-1 shows the collar locations of all holes drilled by Confederation Minerals on the property, categorised by drilling year. Drilling has yielded numerous very high grade intersections, many greater than 20 g/t gold, with individual assay values up to 681 g/t. It has also demonstrated excellent continuity of the mineralisation along strike; with nearly every drill hole intersecting the gold-bearing structure along the 1.8 km drill-tested to date. A further 400 m strike length of the NTS in the southern part of the property is yet to be tested. Recent drilling by West Red Lake Gold Mines Inc. near the boundary of the Newman Todd property also confirms the continuation of the gold-bearing structure 600 m north of the most northerly drilling on the property.

Drilling to date has also shown that gold mineralisation is present from near surface (high grade gold mineralisation has also been returned from surface trenches) to the deepest hole which bottomed at approximately 1 km in depth and still within the Newman Todd alteration-structural zone. This deep hole returned gold intercepts similar to those from much shallower mineralisation intercepts, indicating that the gold mineralisation is open to depth, just as it is along strike. Other gold deposits in the Red Lake camp, for example the Campbell Red Lake deposit, maintain high gold grades many hundreds of metres below surface.

Results also demonstrate that high grade gold zones are often associated with much wider zones of lower-grade mineralisation. The data indicates that often multiple shoots of high grade gold occur within 30 to 40 m wide zones of 1-2 g/t gold material. Wide zones of lower-grade gold can be observed in the drill core and in many cases there are multiple, vertically stacked, high grade intercepts within them.

In summary, the NTS and its associated mineralisation remains open along strike, to depth, and to surface. It shares similarities in both geology and vertical orientation with Goldcorp's (TSX: G) famous Red Lake deposits.

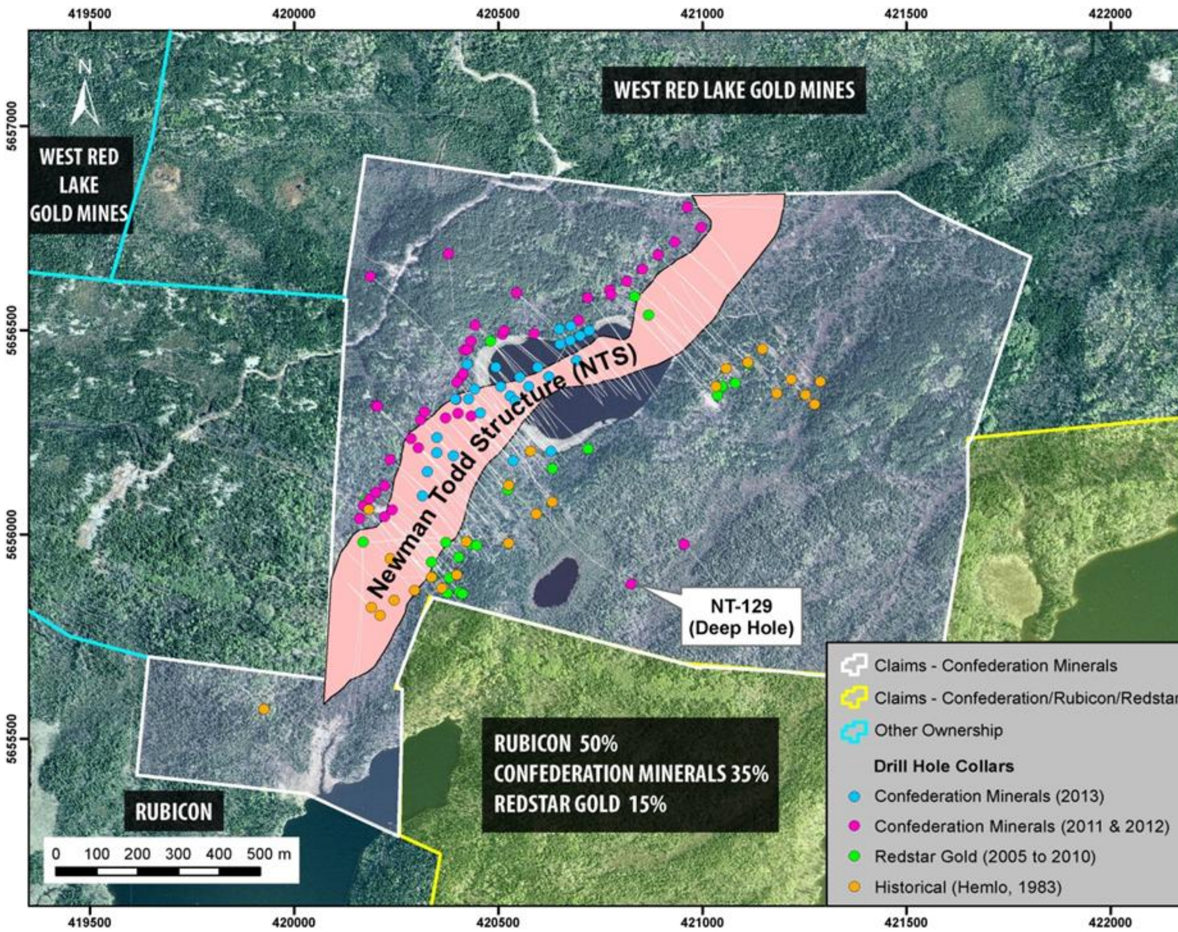


Figure 10-1 Drill Hole Location Map, Newman Todd

Drill hole collar locations were surveyed in UTM Zone 15N, NAD83 Datum using hand-held GPS. In the holes themselves, Reflex EZ-Shot tests were taken at various depth intervals to provide downhole survey control. Chibougamau Diamond Drilling Ltd, Quebec and Matrix Diamond Drilling Ltd. were contracted to conduct diamond drilling using skid-mounted drill rigs. NQ size core was extracted from each hole and placed in core boxes at the drill site. Core was then delivered to the core facility for logging by geology staff. Upon arrival at the core facility, drill core was metre marked, magnetic susceptibility measured, and then logged with information entered into Lagger software using a company-developed lithological coding. After that core was sampled, photographed, and the database archived on hard and compact discs. See Table 10-1 for a list of the drill holes, with UTM coordinate locations, depths, dips and azimuths.

In 2013 the company began the process of collecting basic geotechnical data from drill core to obtain the critical rock quality characteristics of the rock which are likely to affect the design of any potential open pit or underground workings. This data collection included Rock Quality Designation (RQD), Total Core Recovery (TCR), fractures per geotechnical interval, depth of faults, and broken and lost core.

Table 10-1 Summary of Drill Hole Location and Direction

Hole ID	North (UTM)	East (UTM)	Elev (m)	Length (m)	Dip	Azimuth	Year
NT-056	5656044	420222	360.56	429	-60	135	2011
NT-057	5656044	420222	360.56	228	-45	127	2011
NT-058	5656061	420240	361.51	324	-55	135	2011
NT-059	5656061	420240	361.51	240	-45	135	2011
NT-060	5656752	420997	362.81	345	-55	135	2011
NT-061	5656752	420997	362.81	600	-63	135	2011
NT-062	5656524	420697	365	360	-50	129	2011
NT-063	5656524	420697	365	411	-60	128	2011
NT-064	5656119	420222	362.61	387	-45	130	2011
NT-065	5656234	420287	371.57	462	-50	135	2011
NT-066	5656119	420222	362.61	444	-53	130	2011
NT-067	5656234	420287	371.57	618	-55	130	2011
NT-068	5656070	420169	364.1	366	-45	135	2011
NT-069	5656070	420169	364.1	372	-50	135	2011
NT-070	5656087	420183	363	660	-60	135	2011
NT-071	5656330	420397	364.2	306	-45	135	2011
NT-072	5656330	420397	364.2	330	-50	135	2011
NT-073	5656650	420854	371.15	378	-50	129.5	2011
NT-074	5656103	420200	358	431	-50	128	2011
NT-075	5656650	420854	371.15	438	-55	129.5	2011
NT-076	5656498	420514	370	303	-45	132	2011
NT-077	5656685	420891	362	363	-50	132	2011
NT-078	5656490	420510	370	336	-50	127	2011
NT-079	5656685	420891	362	444	-55	132	2011
NT-080	5656716	420932	356	360	-50	129.5	2011
NT-081	5656492	420587	363.73	339	-50	132.5	2011
NT-082	5656716	420932	356	441	-55	129.5	2011
NT-083	5656492	420587	363.73	384	-55	127	2011
NT-084	5656598	420773	374.24	450	-50	131	2011
NT-085	5656579	420719	378.52	432	-50	136	2011
NT-086	5656587	420776	370	630	-55	131	2011
NT-087	5656579	420719	378.52	477	-55	136	2011
NT-088	5656039	420161	364.49	687	-45	175	2011
NT-089	5656802	420962	365.9	246	-45	88	2011
NT-090	5656802	420962	365.9	486	-50	88	2011
NT-091	5656039	420161	364.49	690	-50	175	2011
NT-092	5656687	420378	395	204	-45	173	2011
NT-093	5656620	420814	372.86	579	-50	130	2011
NT-094	5655976	420955	371.68	516	-45	140	2011

Hole ID	North (UTM)	East (UTM)	Elev (m)	Length (m)	Dip	Azimuth	Year
NT-095	5656620	420814	372.86	546	-55	130	2011
NT-096	5656183	420235	368.28	480	-50	128	2011
NT-097	5656183	420235	368.28	618	-55	128	2011
NT-098	5656592	420545	377.98	480	-45	129.4	2011
NT-099	5656592	420545	377.98	461	-50	135	2011
NT-100	5656212	420304	369.38	366	-45	135	2011
NT-101	5656315	420201	388.49	606	-47	135	2011
NT-102	5656452	420421	364.52	527.65	-50	135	2011
NT-103	5656314	420204	388.22	702	-50	135	2011
NT-104	5656452	420416	364	531	-55	135	2011
NT-105	5656512	420443	375.44	322	-45	135	2011
NT-105w1	5656512	420443	375.44	435	-45	135	2011
NT-106	5656281	420309	370.86	498	-50	135	2011
NT-107	5656512	420443	375.44	504	-50	135	2011
NT-108	5656281	420309	370.86	663	-55	135	2011
NT-109	5656386	420409	363.17	561	-55	135	2011
NT-110	5656290	420434	362.81	244	-45	135	2012
NT-111	5656290	420434	362.81	244	-52	135	2012
NT-112	5656374	420398	363.26	300.8	-45	135	2012
NT-113	5656374	420398	363.26	425	-51	135	2012
NT-114	5656374	420398	363.26	601.3	-55	135	2012
NT-115	5656453	420424	364.81	379.2	-45	135	2012
NT-116	5656417	420423	363.09	343.5	-45	135	2012
NT-117	5656417	420423	363.09	502	-51	135	2012
NT-118	5656393	420414	363.04	480	-45	135	2012
NT-119	5656297	420401	370.56	273.1	-45	135	2012
NT-120	5656297	420401	370.56	315.7	-50	135	2012
NT-121	5656297	420401	370.56	571.8	-55	135	2012
NT-122	5656285	420371	372.58	291.4	-45	135	2012
NT-123	5656285	420371	372.58	352.3	-50	135	2012
NT-124	5656285	420371	372.58	556.5	-55	135	2012
NT-125	5656473	420433	365.7	448.3	-45	135	2012
NT-126	5656473	420433	365.7	534.93	-50	135	2012
NT-128	5656300	420320	369.69	357	-45	135	2012
NT-129	5655879	420826	374.83	1024	-80	300	2012
NT-127	5656632	420186	379.96	730.6	-50	125	2012
NT-130	5656332	420394	364.39	465	-60	135	2013
NT-131	5656355	420442	361.99	303	-45	135	2013
NT-132	5656417	420423	363.09	438	-55	135	2013
NT-133	5656204	420629	361.75	222	-50	315	2013

Hole ID	North (UTM)	East (UTM)	Elev (m)	Length (m)	Dip	Azimuth	Year
NT-134	5656180	420536	368.51	318	-45	315	2013
NT-135	5656332	420427	362.88	327	-45	135	2013
NT-136	5656298	420456	361.58	276	-45	135	2013
NT-137	5656362	420574	361.65	102	-47	135	2013
NT-138	5656385	420552	361.6	143.4	-50	135	2013
NT-140	5656409	420596	361.64	204	-60	135	2013
NT-141	5656387	420623	361.63	156	-60	135	2013
NT-142	5656362	420506	361.65	148.3	-60	135	2013
NT-143	5656339	420529	361.63	204	-60	135	2013
NT-144	5656327	420541	361.52	108	-50	135	2013
NT-145	5656426	420691	361.52	222	-60	135	2013
NT-146	5656410	420494	361.62	294	-50	135	2013
NT-147	5656466	420651	361.7	303	-53	135	2013
NT-148	5656466	420651	361.52	327	-60	135	2013
NT-149	5656193	420390	360	210	-45	135	2013
NT-150	5656237	420349	370	240	-45	135	2013
NT-151	5656503	420649	365	339	-50	135	2013
NT-152	5656510	420677	368	312	-50	135	2013
NT-153	5656475	420676	362	279	-45	135	2013
NT-154	5656486	420700	368	297	-45	135	2013
NT-155	5656499	420723	371	351	-50	135	2013
NT-156	5656094	420314	363	231	-45	135	2013
NT-157	5656094	420314	363	357	-60	135	2013
NT-159	5656094	420314	363	108	-45	315	2013
NT-160	5656094	420314	363	117	-60	315	2013
NT-158	5656094	420314	363	273	-90	0	2013
NT-162	5656154	420326	364	294	-55	135	2013
NT-163	5656200	420349	366	267	-45	135	2013
NT-164	5656200	420349	366	300	-60	135	2013
NT-161	5656154	420326	364	258	-45	135	2013

10.2 2011 and 2012 Drill Programs

Exploration by Confederation Minerals in 2011 and 2012 consisted of wide step-outs from earlier drilling phases which tested the areas along strike and down-dip of the previously identified ‘zones’. Several very high grade, narrow intersections were obtained during these programs, including 0.6 m at 343 g/t gold (hole NT-083) and 0.5 m at 681 g/t gold (hole NT-114). These represent some of the highest grade intersections in the Red Lake District outside of the main study areas. The high grade interval in hole NT-083 is one of two intervals within a 14.3 m wide zone which, including 10 m of waste, averages 16.06 g/t gold. The high grade interval in hole NT-114 forms part of a wider, lower-grade interval which averages 12.61 g/t gold over 31 m.

The 2012 program concluded with the Company's first deep hole on the property to test the depth extension of the gold-hosting NTS. Drill hole NT-129 was drilled in the opposite direction to the majority of previous holes, that is from the hanging wall towards the footwall of the NTS, and was completed to a drilled depth of 1,024 m, or 982 m true depth below surface (see Figure 7-9). The hole entered the host rock, a carbonate breccia which is up to 250 m wide at surface, at a depth of 787 m below surface and exited the unit at 932 m below surface. This shows that the Newman Todd Structure maintains its substantial width, along with its strongly altered character, and therefore its potential to continue hosting gold mineralisation, for nearly 1 km below surface. The structure remains open to depth. At 832 m true depth the hole intersected 7.89 grams per tonne (g/t) gold over 2.0 m, including 1.0 m grading 10.60 g/t gold, and including three other 1 m intersections grading between 4.06 and 8.01 g/t gold. Therefore, hole NT-129 has also shown that the gold mineralising processes were operative to a depth of at least 832 m below the surface, and approximately 500 m below the majority of the drill intersections obtained previously. Great depth continuity is a key characteristic of mesothermal gold deposits such as Campbell Red Lake and others in northern Canada, where bodies containing high grade gold may continue to depths exceeding two kilometres below surface.

10.3 2013 Drill Program

Exploration in 2013 was focused on a restricted strike length along the NTS referred to as the "Hinge Zone". This approximately 375 m-long segment is where geological and geophysical evidence suggest there is a bend/flexure in the NTS and where there are a number of significant gold-bearing mineralised zones. The objective of restricting the drilling to a short strike length of the entire structure was to understand, on a smaller scale, the controls on mineralisation that likely mimic those which acted along the entire structure within the confines of the property (over two kilometres). Closer-spaced drilling (approximately 25 m between drill hole collars) was completed in order to gain detailed information regarding the shape, and strike and depth extent of individual gold-bearing zones. An extrapolation of results from a detailed drill investigation of one small part of the system such as the Hinge Zone (extrapolated to depth and along the entire strike of the NTS) could serve to provide an initial estimate of the quantity of gold which might be expected to be present in the entire system.

This phase of drilling also resulted in the observation that a lithological control may be acting as a fluid trap (see Figure 7-6). This less permeable trap is in the overlying volcanic sequences which may have caused ponding of fluids and deposition of higher-grade mineralisation below it. This hypothesis was tested and proved to have significant merit, guiding the placement of subsequent, geologically placed holes.

Significantly, the 2013 drilling program showed that gold mineralisation is present at very shallow levels within the NTS. During the early the part of the year, drilling was focused on the shallow, near-surface, upward extension of the mineralisation from swampy areas which could only be drilled when frozen. Results showed that the gold-bearing system begins at shallow depths below the surface. For example, hole NT-142 returned a 6 m interval grading 13.19 g/t gold between 52.0 and 58.0 m core length (approximately 41.5 to 51.5 m below surface). High grade gold mineralisation has been also been returned from surface trenches on the property.

Some drill intersections closer to the surface, although lower grade overall when compared to other deeper intersections, can be seen to attain very wide core length intervals. For example, drill hole NT-131 intersected 38 m grading 1.30 g/t gold beginning at 75.0 m core length below the surface, and NT-135 returned 36.0 m core length grading 1.92 g/t gold beginning at 103.0 m core length below surface.

One of the most significant assay intervals returned from the 2013 drilling was from hole NT-148, which is located on the northern-most section of holes, and which graded 32.57 g/t gold over a core interval of 7.0 m, approximately 168 to 175 m below surface. Deeper in the same hole, a 1.0 m interval, between 229.0 and 230.0 m core length assayed 174.11 g/t gold, including a 0.5 m section grading 342.0 g/t gold. This is one of numerous holes in the Hinge Zone and elsewhere on the property that demonstrate the presence of multiple zones of gold mineralisation.

Holes NT-151 to NT-155 were drilled along three 25 m spaced drill lines in the northeast of the Hinge Zone, close to its boundary with the "NE Zone". Drill highlights include a 9.5 m intersection grading 10.39 g/t gold, including 0.50 m at 103.0 g/t gold (hole NT-153). The high grade gold mineralisation intersected in these holes is closely related to the hanging wall contact of the NTS, with zones occurring approximately 5 to 25 m away from the contact.

The remaining nine holes of the 2013 program (holes NT-156 to NT-164) were drilled along three 100 m spaced drill lines in the southwest of the Hinge Zone, close to the boundary with the Heath Bull Zone, and within the northeast part of the Heath Bull Zone itself. They are located approximately 250 - 350 m southwest of the centre of the Hinge Zone. High grade mineralisation was again intersected in these holes, with highlights of 10.0 m grading 7.43 g/t gold, including 0.5 m of 128.0 g/t gold, and 6.0 m of 4.57 g/t gold including 0.5 m of 49.10 g/t gold (hole NT-162).

Some of the significant intersections from the 2011 – 2013 drilling are listed in Table 10-2 (yellow highlighted intervals indicate a grade x thickness value >100).

Table 10-2 Significant Drill Hole Intersections (Confederation Minerals, 2011 – 2013)

Hole		From (m)	To (m)	Core Length (m)	Gold (g/t)
NT-056		197.00	213.00	16.00	8.63
NT-056	including	208.00	209.00	1.00	**122.00**
NT-062		170.00	175.00	5.00	18.25
NT-083		251.70	254.00	2.30	**89.86**
NT-083	including	251.70	252.30	0.60	**343.00**
NT-102		296.00	343.00	47.00	2.17
NT-108		229.50	257.00	27.50	3.41
NT-108	and	300.00	327.00	27.00	5.94
NT-108	including	304.00	305.00	1.00	**139.00**
NT-109		238.00	251.00	13.00	7.11
NT-109	including	243.00	248.00	5.00	17.53
NT-112		266.00	288.00	22.00	4.31
NT-112	including	287.00	288.00	1.00	78.00
NT-114		303.00	334.00	31.00	12.61
NT-114	including	332.50	333.00	0.50	**681.00**
NT-123		293.00	295.50	2.50	32.65
NT-123	including	295.00	295.50	0.50	**158.00**
NT-125		403.00	413.00	10.00	9.00
NT-125	including	408.00	411.00	3.00	25.95
NT-142		52.00	58.00	6.00	13.19
NT-148		193.00	200.00	7.00	32.57
NT-148	including	198.00	199.50	1.50	**89.07**
NT-148	and	229.00	229.50	0.50	**342.00**
NT-153		231.00	240.50	9.50	10.39
NT-162		63.00	73.00	10.00	7.43
NT-162	including	71.00	71.50	0.50	**128.00**

Interval widths are calculated as core length and do not imply true width of the zone

11 SAMPLE PREPARATION, ANALYSES AND SECURITY

11.1 Sampling Method and Approach

All samples collected on the property by Redstar Gold and Confederation Minerals were subjected to a quality control procedure that ensured best practice in the handling, sampling, analysis and storage of sample material.

On a large majority of the property, diamond drill core recovery was generally found to be excellent (> 97%). Once the core was measured, analysed and described to the geologist's satisfaction, sample locations were marked out on the core using sample tags and red grease pencils. Individual samples collected from drill core were typically 1.0 m in length with the exception of intervals that were determined to be unmineralised, where 1.5 m samples were taken. In an attempt to characterise the gold occurrences, intervals that were expected to highly mineralised were sampled at 0.5 m lengths and occasionally as small as 0.3 m lengths.

In areas where core recovery was problematic, such as the Hinge Zone, estimates of the amount of core that was 'lost' were entered into the Geological Core Log and sample intervals were adjusted to ensure that a minimum of 0.50 m of core or (1.1 kg) of sample material was collected.

Samples of drill core were cut by a diamond blade rock saw, with half of the cut core placed in individually labelled and sealed polyurethane bags and half placed back in the original core box for permanent storage. In order to prevent cross-contamination between samples, blades on the core saw were regularly washed with water and an abrasive material such as a brick was cut, effectively dislodging any leftover material on the blade from previous samples. Samples were prepared on-site by outside contractors, who were trained and supervised by company personnel.

Samples collected from cleared outcrops for channel sampling were essentially aligned in two directions, one mimicking drill directions at approximately 135 degrees and the other perpendicular to drilling at approximately 225 degrees. Channels spanned the extent of the outcrop varying between a few metres and up to 15 m in total length, with individual sampling intervals between 0.5 m to 1.0 m in length. A few samples were also collected at random orientations to target mineralised veins or alteration.

Channel samples were cut and collected by outside contractors and company personnel with the use of portable rock saws. Samples were chipped out of the channel using rock hammers and chisels and immediately sealed in labelled polyurethane bags. Chip and grab samples gathered throughout the property were collected in a related manner. Effort was made to collect chip and channel samples perpendicular to the orientation of mineralised structures and veins where such information was known. Channel samples are considered more representative than chip samples, owing to the fact that better sample continuity is achieved and potential sample bias is minimised.

11.2 Sample Preparation, Analysis and Security

Once samples had been extracted and sealed into individual bags, they were carefully collected and organised for transport to the laboratory for analysis. For QA/QC protocols, control samples were regularly inserted into the sample stream. Every 50 samples a gold standard, blank material and cut duplicate were inserted. Cut duplicates were generated by further cutting the half core into equal sized quarter divisions and placing them into separate sample bags with different numbers. The first sample number becomes the representative sample, and the second sample number becomes its “quarter cut” duplicate. Gold standards were prepared by CDN Resource Laboratories Ltd., of Langley, BC, and certified by Licensed Assayer Duncan Sanderson. Sample batches were re-analysed if any aberrations in the data were observed. Both a low and high grade standard was used alternating between the two for each 50 sample batch. In general, the blanks, standards and duplicates indicate that the assay data is of acceptable quality (see Section 9). Prior to shipment, samples were stored in a secure facility directly supervised by company personnel.

Over the history of the project, rock and core samples have been sent to three different accredited mineral analysis laboratories; Accurassay Labs, ALS Global and Activation Labs. Table 8.1 below details the elements analysed at each assay lab. Samples were brought to Red Lake, Ontario by staff and either dropped off directly at the lab or shipped to the lab using bonded couriers.

Table 11-1 Summaries of Element Analyses at Individual Labs

Accurassay Labs (2005-2008)	ALS Global (2008-2011)	Activation Labs (2011-Present)
Au, Ag, Al, As, B, Ba, Be, Bi, Ca, Cd, Co, Cr, Cu, Fe, K, Li, Mg, Mn, Mo, Na, Ni, P, Pb, Se, Si, Sn, Sr, Ti, Tl, V, W, Y and Zn	Au, Ag, Al, As, Ba, Be, Bi, Ca, Cd, Co, Cr, Cu, Fe, Ga, K, La, Mg, Mn, Mo, Na, Ni, P, Pb, S, Sb, Sc, Sr, Th, Ti, Tl, U, V, W, and Zn	Au, Ag, Al, As, Ba, Be, Bi, Ca, Cd, Co, Cr, Cu, Fe, Ga, Hg, K, Li, Mg, Mn, Mo, Na, Ni, P, Pb, S, Sb, Sc, Sr, Te, Ti, Tl, U, V, W, Y, Zn and Zr

Individual samples mass typically range from 0.5 to 2 kg. The entire sample was crushed in an oscillating steel jaw crusher, followed by pulverisation of a 250 g to 1,000 g portion (entire sample pulverised for most samples analysed by ‘metallics’ fire assay) in a chrome steel ring mill.

Gold was determined by fire-assay fusion of a 30 g or 50 g sub-sample with atomic absorption spectroscopy (AAS). On select samples that returned elevated Au values by standard fire-assay (>3.0 g/t for Act Labs, >10.0 g/t for ALS), contained visible gold or, on visual inspection, were considered likely to be well mineralised, gold was determined by ‘metallics’ fire-assay. In this procedure, the final prepared pulp (typically 1,000 g) is passed through a 150 mesh (100 micron) screen to test its homogeneity. Any +150 mesh material remaining on the screen is retained and analysed in its entirety by fire-assay fusion followed by cupellation and a gravimetric finish. The –150 mesh fraction is homogenised and two 30 g sub-samples are analysed by standard fire assay procedures. The gold values for both +150 and –150 mesh fractions are reported together with the weight of each fraction as well as the calculated total gold content of the sample. In this way one can evaluate the magnitude of the coarse gold effect as demonstrated by the levels of the +150 mesh material.

Ag, Al, As, B, Ba, Be, Bi, Ca, Cd, Co, Cr, Cu, Fe, Ga, Hg, K, La, Li, Mg, Mn, Mo, Na, Ni, P, Pb, S, Se, Si, Sn, Sb, Sc, Sr, Te, Th, Ti, Tl, U, V, W, and Zn were analysed by inductively-coupled plasma (ICP) atomic emission spectroscopy, following multi-acid near-total digestion in nitric aqua regia. The elements Cu, Pb, and Zn were determined by high grade assay for samples that returned values >10,000 ppm by ICP analysis. Major elements (reported as oxides) and Ba, Rb, Sr, Nb, Zr, and Y were determined by X-ray fluorescence spectrometry (XRF).

It is the QP's opinion that sample preparation, security and related procedures as instituted originally by Redstar Gold, continued by Confederation Minerals and managed by Pamicon Developments are sufficient to ensure that there is a low risk of contamination and/or tampering of material submitted for analysis and assay. Individual diamond drill hole split core were treated with care not to intermingle material between samples and, in situations where broken ground was encountered in the hole, efforts were made to avoid down-hole intermingling of material.

12 DATA VERIFICATION

During diamond drilling operations, quality control samples were regularly inserted into the sample stream. Every 35 to 50 samples a gold standard, blank material standard and a quarter cut field duplicate were inserted. During each phase, two gold standards were used in order to alternate between low grade (~1.5-3 g/t Au) and high grade (~5.5-8 g/t Au) values. The gold standards and blank material standards used were prepared by CDN Resource Laboratories Ltd, of Langley, British Columbia and certified by Licensed Assayer Duncan Sanderson. Field duplicates were prepared on site as quarter cut core inserted under separate sample numbers.

Andrea Diakow, PGeo, of Redstar Gold was responsible for monitoring the QA/QC data since January 2012. Assay results from the QA/QC samples were continually analysed for irregularities, trends and biases to ensure that assay labs were reporting accurate and reliable gold values. Highly erratic values were sent back to the lab with one shoulder sample on either side for re-assay. Batches of assays were only sent in for re-assay if a long term trend or a series of failures occurs. The graphs presented in Figure 12-1, Figure 12-2 and Figure 12-3 summarise the quality control samples used as well as the plotted gold values for each standard. The red bars are the upper and lower tolerances for each standard as designated by CDN Resource Laboratories Ltd., of two standard deviations (2SD). The failure rate at this range is 16.3 % however, if the range is increased to three standard deviations, the failure rate is only 4.3 %.

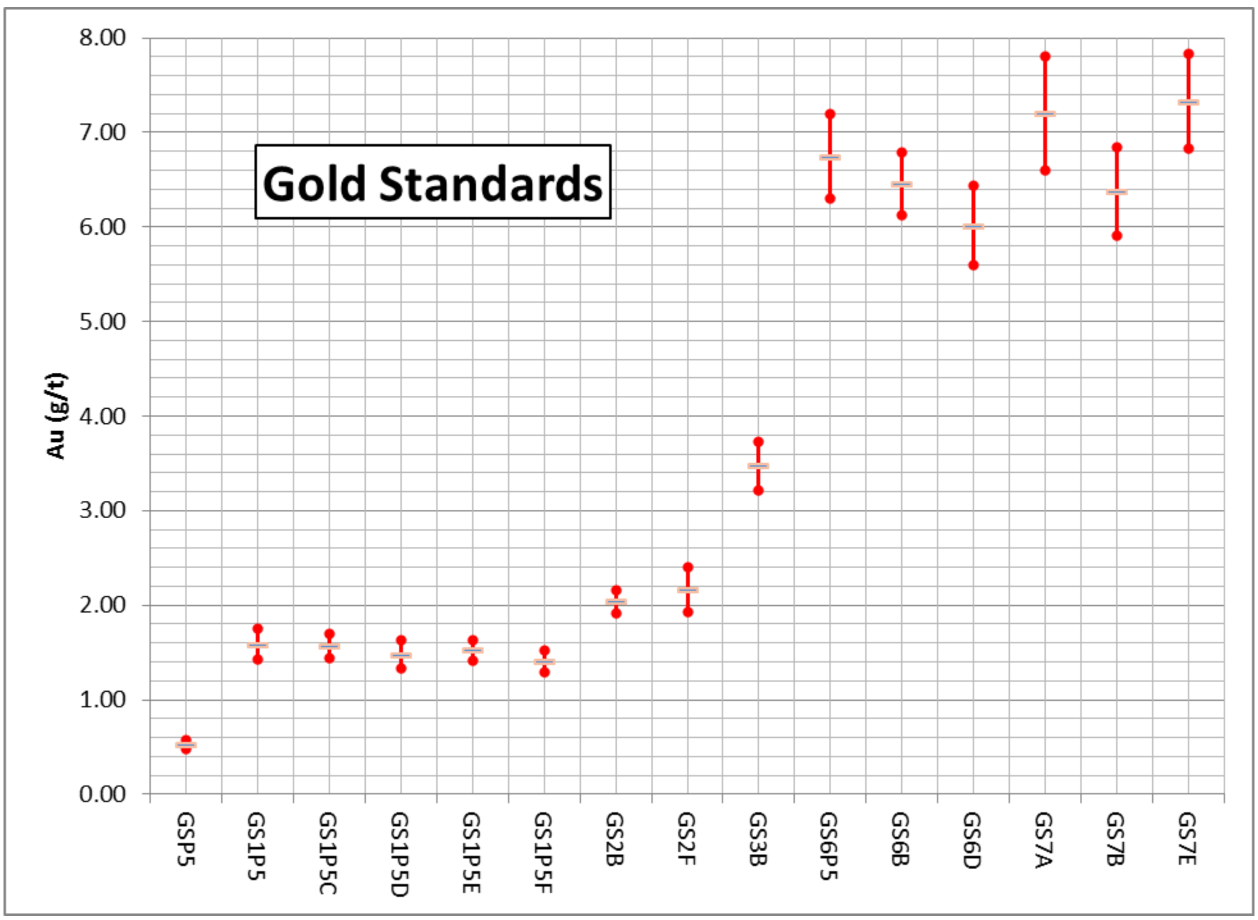
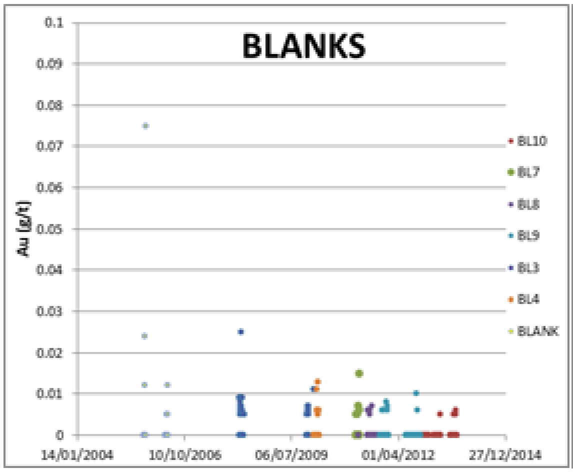
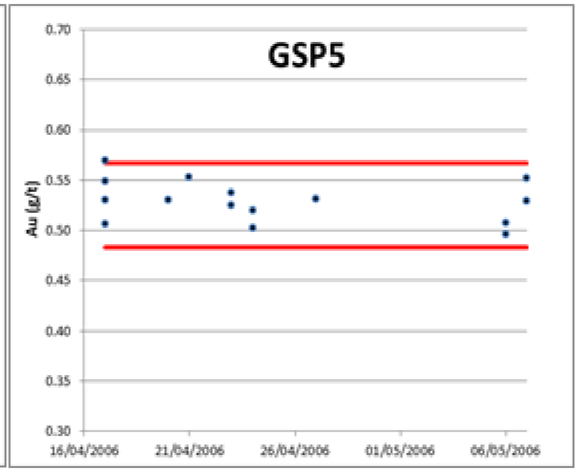
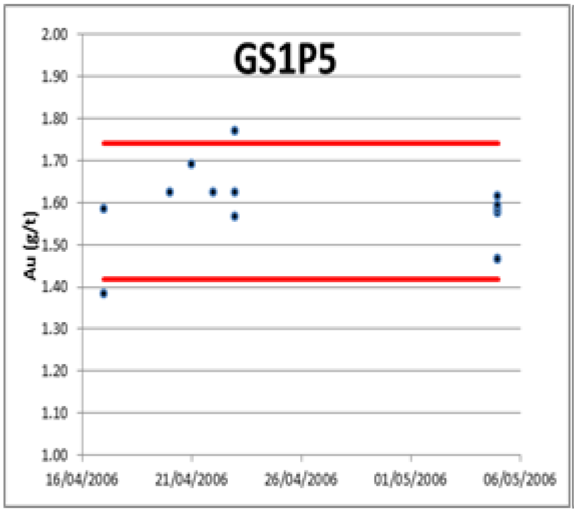
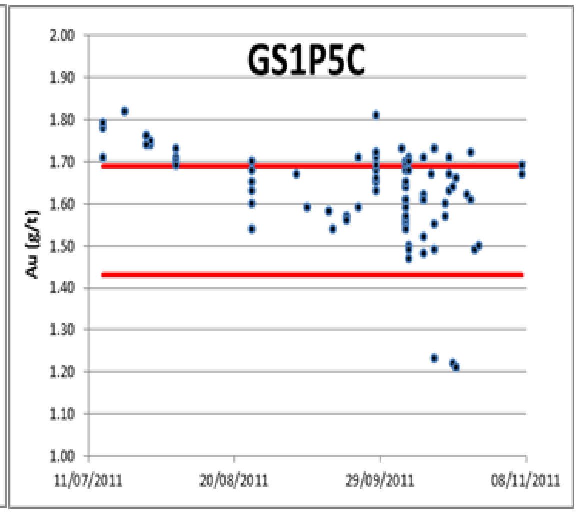


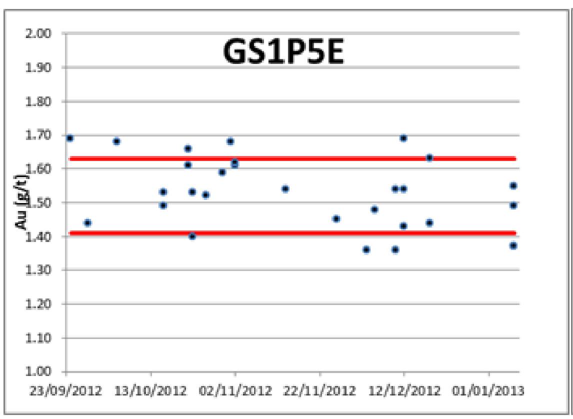
Figure 12-1 Gold Standards Used with Average Grade and 2SD range

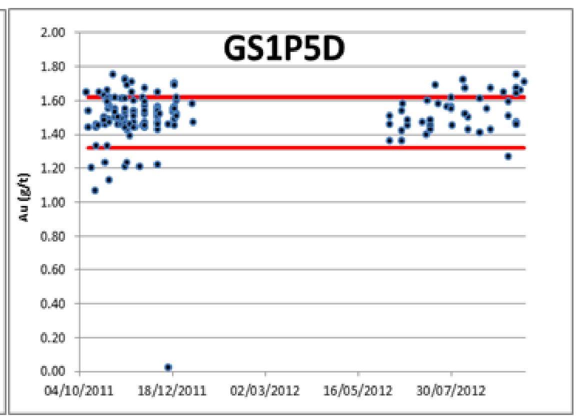

BLANKS
Au (g/t)
0.1
0.09
0.08
0.07
0.06
0.05
0.04
0.03
0.02
0.01
0
14/01/2004
10/10/2006
06/07/2009
01/04/2012
27/12/2014
BL10
BL7
BL8
BL9
BL3
BL4
BLANK

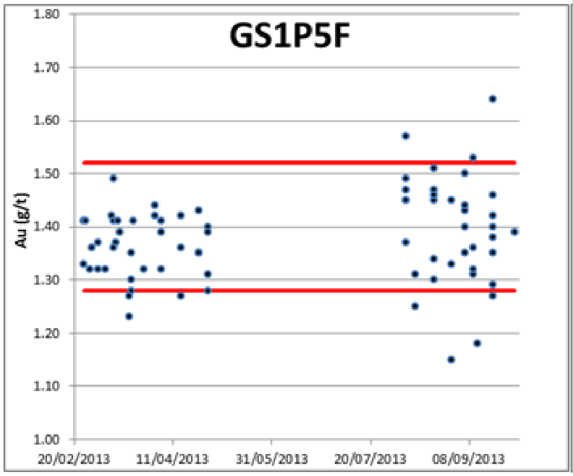

GSP5
Au (g/t)
0.70
0.65
0.60
0.55
0.50
0.45
0.40
0.35
0.30
16/04/2006
21/04/2006
26/04/2006
01/05/2006
06/05/2006


GS1P5
Au (g/t)
2.00
1.90
1.80
1.70
1.60
1.50
1.40
1.30
1.20
1.10
1.00
16/04/2006
21/04/2006
26/04/2006
01/05/2006
06/05/2006


GS1P5C
Au (g/t)
2.00
1.90
1.80
1.70
1.60
1.50
1.40
1.30
1.20
1.10
1.00
11/07/2011
20/08/2011
29/09/2011
08/11/2011


GS1P5E
Au (g/t)
2.00
1.90
1.80
1.70
1.60
1.50
1.40
1.30
1.20
1.10
1.00
23/09/2012
13/10/2012
02/11/2012
22/11/2012
12/12/2012
01/01/2013


GS1P5D
Au (g/t)
2.00
1.80
1.60
1.40
1.20
1.00
0.80
0.60
0.40
0.20
0.00
04/10/2011
18/12/2011
02/03/2012
16/05/2012
30/07/2012


GS1P5F
Au (g/t)
1.80
1.70
1.60
1.50
1.40
1.30
1.20
1.10
1.00
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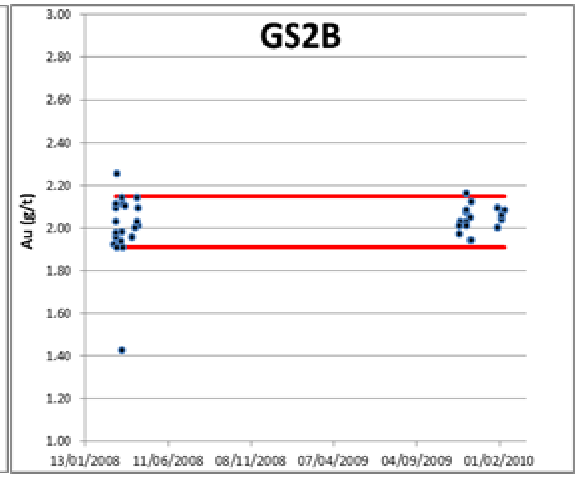
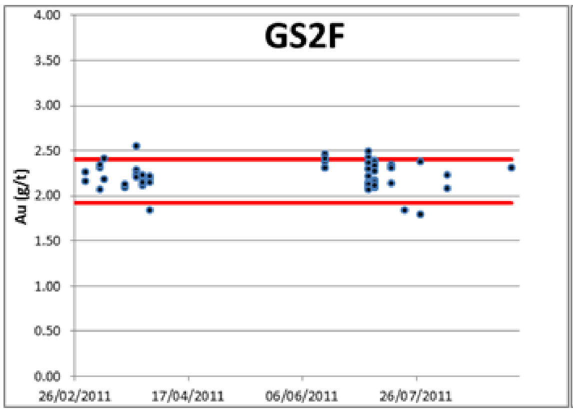
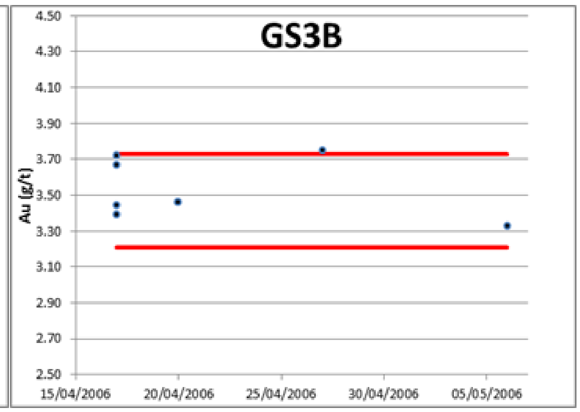
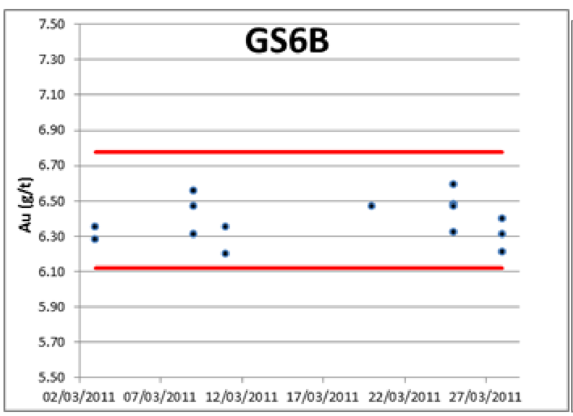
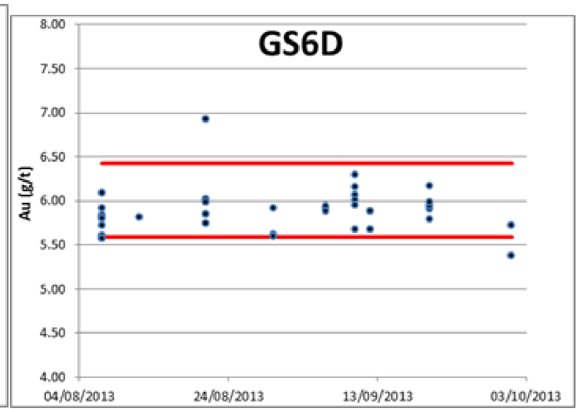
11/04/2013
31/05/2013
20/07/2013
08/09/2013


GS2B
Au (g/t)
3.00
2.80
2.60
2.40
2.20
2.00
1.80
1.60
1.40
1.20
1.00
13/01/2008
11/06/2008
08/11/2008
07/04/2009
04/09/2009
01/02/2010


GS2F
Au (g/t)
4.00
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
26/02/2011
17/04/2011
06/06/2011
26/07/2011


GS3B
Au (g/t)
4.50
4.30
4.10
3.90
3.70
3.50
3.30
3.10
2.90
2.70
2.50
15/04/2006
20/04/2006
25/04/2006
30/04/2006
05/05/2006


GS6B
Au (g/t)
7.50
7.30
7.10
6.90
6.70
6.50
6.30
6.10
5.90
5.70
5.50
02/03/2011
07/03/2011
12/03/2011
17/03/2011
22/03/2011
27/03/2011


GS6D
Au (g/t)
8.00
7.50
7.00
6.50
6.00
5.50
5.00
4.50
4.00
04/08/2013
24/08/2013
13/09/2013
03/10/2013

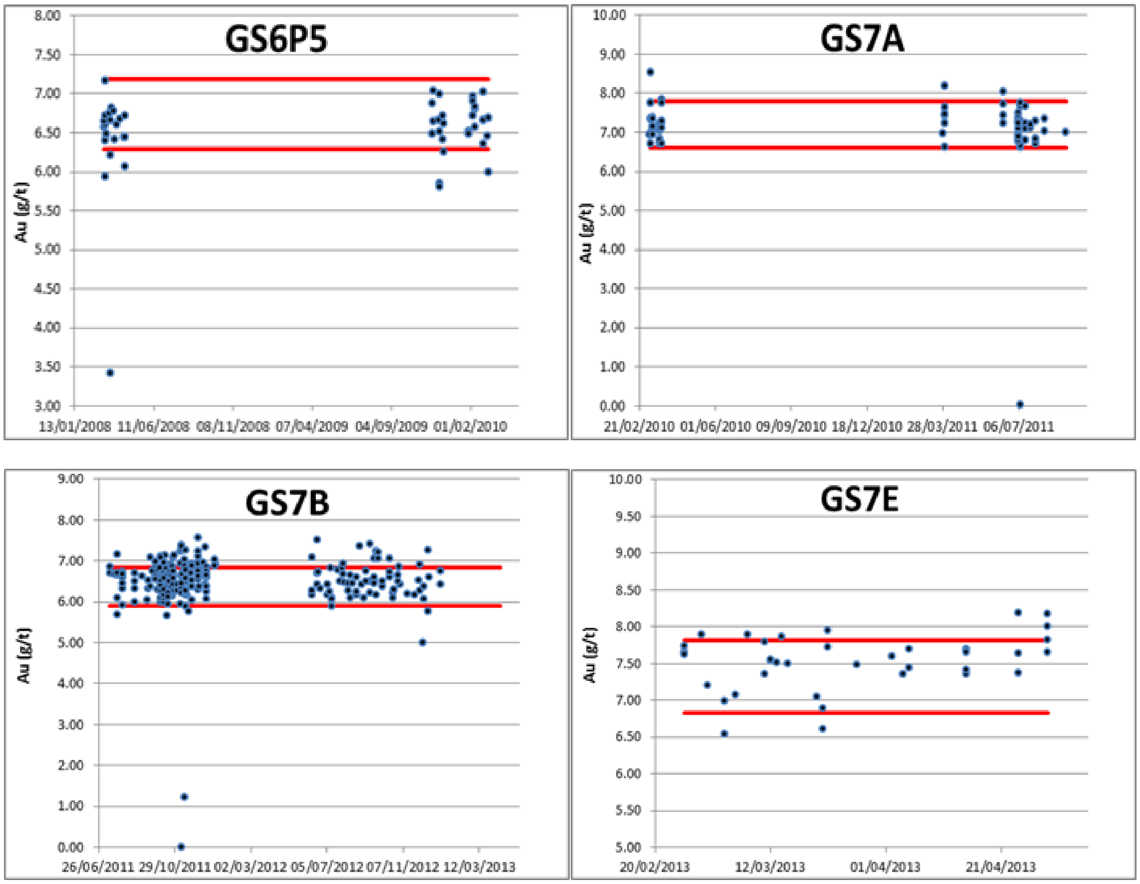


Figure 12-2 Results of the Individual Standards Used and Relation to Anticipated Value Range (between red lines of 2SD)

All of the gold standards used performed well for the entirety of the program with the exception of GS1P5C. As shown in the chart above, gold assay values for GS1P5C were all above the expected range when it was first introduced into the sample stream at Activation Labs. To address this issue, 10 standards were sent to ALS Global Labs for analysis, and 714 assays were sent to the same lab for check assays. The standards' assays that were sent to ALS Global reported within range while the gold values for the check assays were biased high. Once these issues were addressed with Activation Labs, the GS1P5C standard and all additional standards, have reported reasonably within range and with no long term biasing trends. Since the check assays from ALS Global were higher than those reported for Activation Labs, the original assays from Activation Labs are used in the assay database.

The final analysis performed for QA/QC purposes is the quarter cut duplicate samples. A plot of duplicate samples is shown below. As with most high grade, vein-type gold deposits, reproducibility is difficult and highly variable. Analysis of this data for this type of system is again focused on biasing and large magnitudes of variability. As shown by the best fit line, the data is slightly biased (<10%) towards the duplicate sample returning a higher assay. The two red lines on the graph show zones where the original assay is an entire magnitude higher than the duplicate sample or vice versa. Of the 963 quarter cut samples that have been taken to date, eight samples fall within either side of this margin for over 1 g/t material. Essentially, what the data is saying is that although exact assay values are difficult to reproduce, we are able to reproduce whether gold is or is not present in a sample.

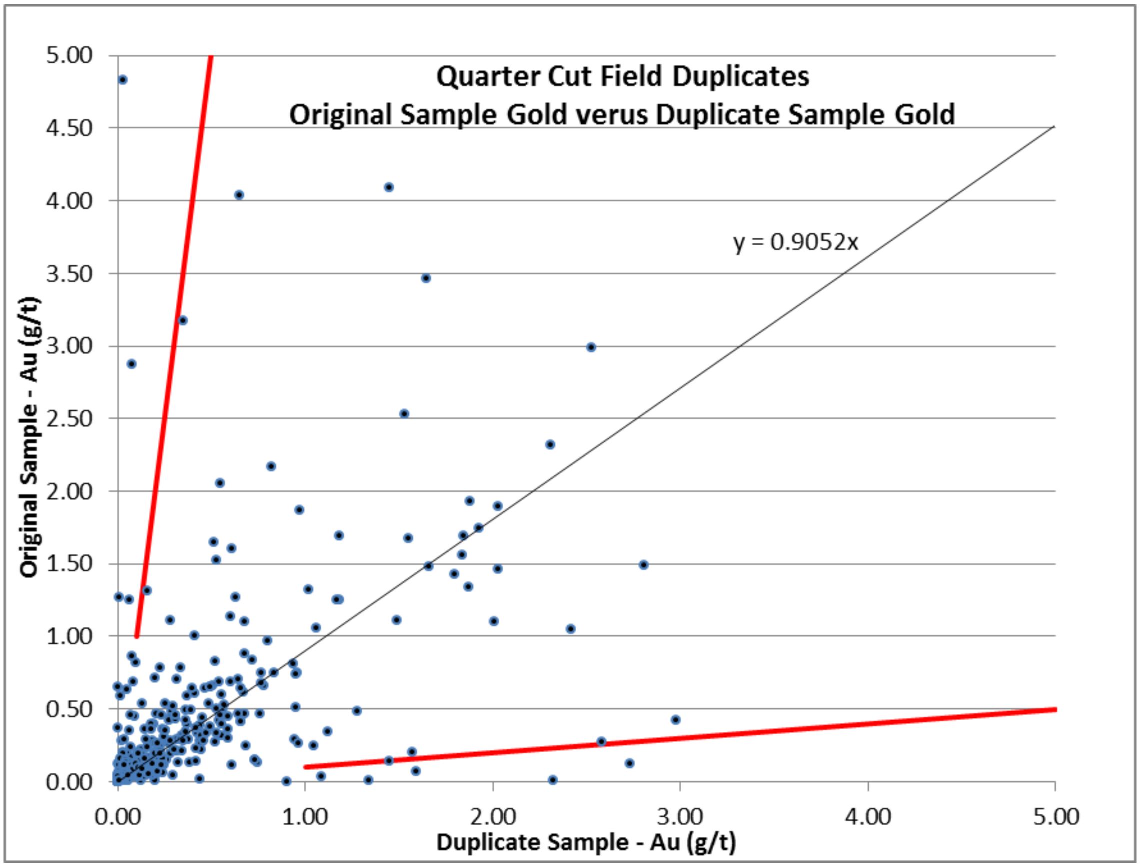


Figure 12-3 Scatter Plot of the Duplicate Sample Gold Results

Diakow is of the opinion that these QA/QC protocols have established that the assay values used herewith in this study (Preliminary Economic Assessment) are an accurate representation of actual gold values and can be used for grade estimates in this technical report.

13 MINERAL PROCESSING AND METALLURGICAL TESTING

During 2013 Confederation Minerals initiated and completed the first metallurgical testing of material from the NTS and the Newman Todd property. Early in the year a series of diamond drill hole intersections were selected that characterised the various types of mineralisation/alteration found within the NTS. As noted in Section 7, gold mineralisation within the NTS is predominantly associated with the presence of sulphides and magnetite as well as pervasive silica alteration. Observations also suggest that the presence of arsenopyrite and galena, while not particularly abundant, is also a very good indicator for the presence of gold. While gold values are also found in places with little sulphides and/or magnetite, these occurrences are relatively uncommon within the NTS. Therefore, rock types selected for metallurgical testing were "sulphide/magnetite-rich", "sulphide/magnetite-poor", "arsenopyrite-rich" and "waste". For the metallurgical test 11 drill intersections were selected totalling 221.9 kg of material.

Samples were selected by Confederation Minerals representatives and were collected, bagged and shipped by Pamicon Developments personnel to SGS Laboratories in Lakefield, Ontario. Initial test results were reported in April, 2013 and final testing was completed in August 2013. Results from the test work are summarised below as extracted from the SGS Final Report No 14001-001 dated September 9, 2013 (SGS Mineral Services, 2013).

Figure 13-1 shows a plan view of the lease and pit boundaries, including the diamond drill collar locations where samples for metallurgical testing have been collected from. Because samples were obtained early in the exploration campaign, and before any mining analysis was done a number of the samples are from outside the final pit boundary. It is also relevant to note that (as presented later in this report) all samples tested achieved a consistent metallurgical performance, including samples that were originally classified as waste rock.

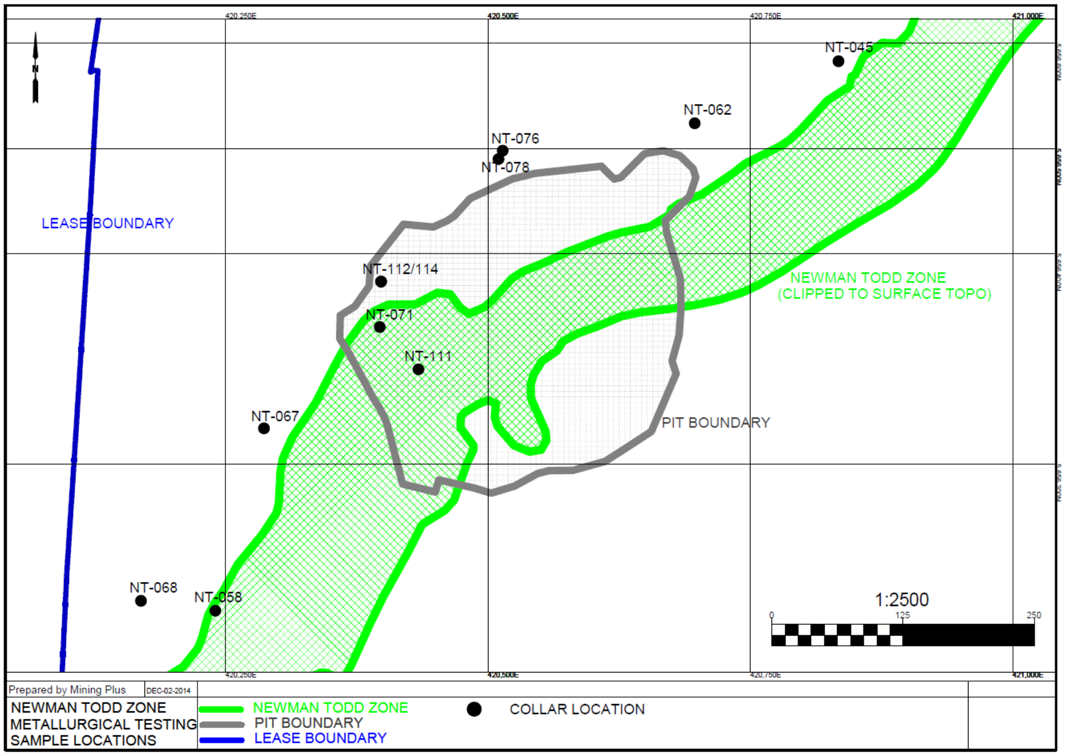


Figure 13-1 Location of samples selected for metallurgical testing

13.1 Initial Gravity and Flotation Testwork

Testwork was completed on four composites prepared from half core intervals from Sul-Mt Rich (SMR), Sul-Mt Poor (SMP), AsPy Rich (APR), and Waste (WST) from the Newman Todd deposit. The four composites graded 2.44 g/t Au for SMR, 3.68 g/t Au for SMP, 1.43 g/t Au for APR, and 0.32 g/t Au for WST. Testwork included Bond ball mill grindability, Knelson/Mozley gravity separation, flotation testwork, and cyanidation testing on flotation rougher concentrates.

The Bond ball mill grindability tests performed on the four composites at 150 mesh of grind (106 µm) identified the SMR, APR and WST composites as soft with BWI (Ball mill Work Index) in the range of 11.2 to 12.7 kWh/t, while the SMP composite was identified as medium with BWI at 14.3 kWh/t.

The metallurgical testwork program has conducted a total of 48 tests, including 7 gravity concentration tests, 16 rougher flotation tests, and 25 cleaner tests. At this preliminary stage, no tests were performed on carbon loading or carbon elution. All samples (SMR, SMP, APR, and WST) performed along a common metallurgical performance trend as shown in Figure 13-2.

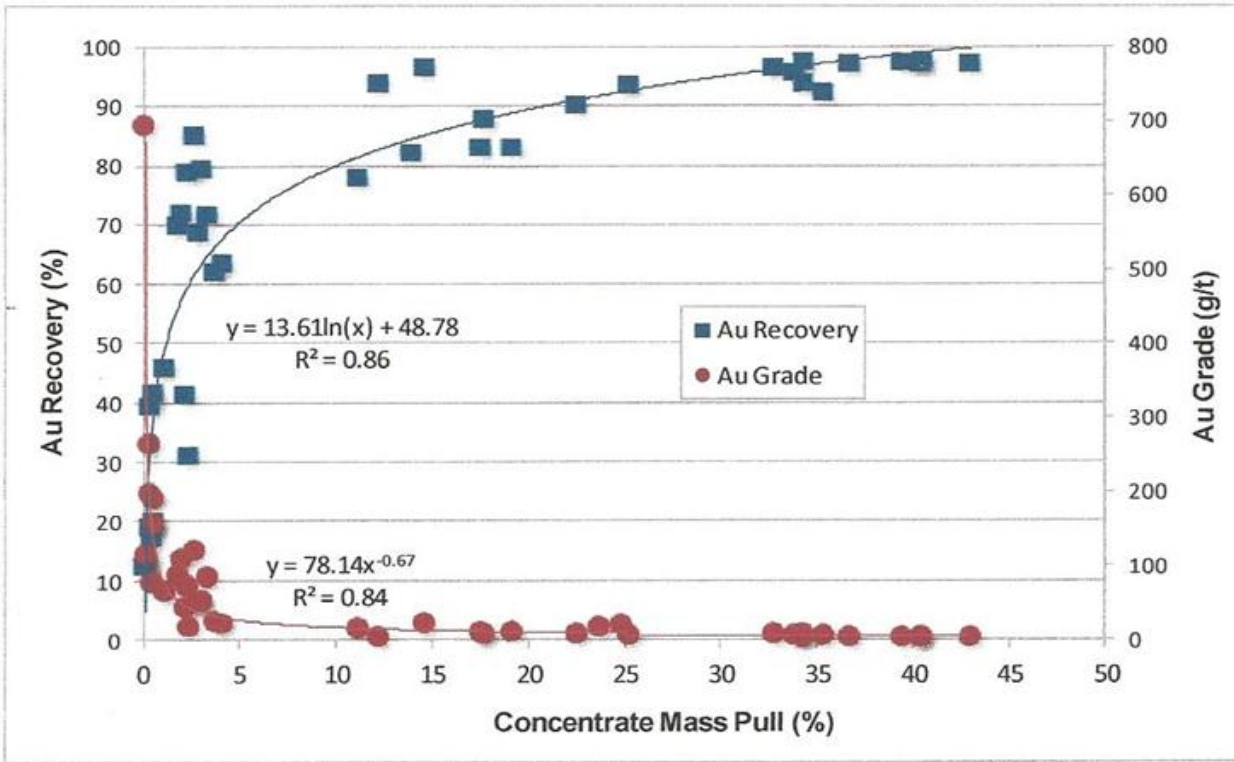


Figure 13-2 Gold Recovery and Grade vs. Mass Pull Relationships

It is interesting to note that the sample classified as waste (WST) reached >90% gold recovery, similar to all other composites. A significant drop in Au recovery is observed when attempting to subject the rougher concentrate to further cleaning flotation.

Seven gravity separation tests were completed on the four composites to address the grind size and the mass pull of the concentrate. The results were as per Table 13-1:

Table 13-1 Gravity Separation Test Results

Test ID	Composite	P_{80} (µm)	Product	Wt. (%)	Au Grade (g/t)	Au Recovery (%)
G1	SMR Comp	170	Mozley Conc	0.04	697	12.5
G2	SMR Comp	77	Mozley Conc	0.44	191	41.6
G3	SMR Comp	114	Mozley Conc	0.45	158	20.0
G4	SMR Comp	70	Mozley Conc	0.34	265	39.6
G5	SMR Comp	78	Mozley Conc	0.34	199	19.1
G6	APR Comp	78	Mozley Conc	0.35	78.4	17.4
G7	WST Comp	84	Mozley Conc	0.06	118	12.8

Flotation testwork was completed on both fresh samples and gravity tails. There were 21 tests carried out on the SMR composite to investigate grind fineness, reagents, and flowsheet configurations. Seventeen tests were conducted on the SMP, APR, and WST composites using optimised conditions developed from the SMR composite testwork. The applied conditions are summarised in the following Table 13-2:

Table 13-2 Flotation Testwork Conditions

Flowsheet Configuration	Target P80		Reagent Addition, g/t		Froth Time, min	pH
	Primary Grind	Regrind	PAX	A208		
3 Bulk Roughers + 3 Cleaners	75 to 80µm	25 to 30µm	110	55	13	Natural

The collector dosages listed above was adjusted accordingly for each composite. For example, the PAX and A208 additions for the WST composite were finally reduced to 32.5 g/t and 12.5 g/t respectively due to the significantly low head grade comparing to the other 3 composites.

The best flotation test on the SMR composite, F19, produced a concentrate grading 110 g/t Au at a recovery of approximately 72%. The concentrate of the flotation test on SMR gravity tails, F20, was combined with the gravity concentrate of test G2. The overall recovery (G2+F20) was approximately 79% grading about 73 g/t Au. The two flowsheet configurations achieved similar metallurgical performance. The results of the best flotation test on the other three composites were compared with the combined results of gravity separation and flotation as follows in Table 13-3:

Table 13-3 Flotation Testwork Results

Test ID	Composite	Product	Wt (%)	Au Grade (g/t)	Au Recovery (%)
F27	SMP	3rd Cleaner Conc	2.0	137	82.2
F30	APR	3rd Cleaner Conc	1.6	58.6	62.1
F37	WST	3rd Cleaner Conc	2.2	9.39	56.6
G5 + F25	SMP	Mozley Conc + 1st Clnr Conc	2.6	122	89.3
G6 + F31	APR	Mozley Conc + 2nd Clnr Conc	1.0	67.9	45.9
G7 + F38	WST	Mozley Conc + 3rd Clnr Conc	2.1	11.1	59.5

Three rougher flotation tests were carried out on the SMR, SMP and APR composites in order to generate rougher concentrates for cyanidation testing. The rougher tests achieved approximately 96% Au recovery for both SMR and SMP and approximately 91% for APR at mass pulls of approximately 30%, 14% and 24%, respectively.

13.2 Cyanidation testwork

Cyanidation testwork was conducted on the rougher concentrates of the SMR, SMP and APR composites. There were two tests, with and without regrind, completed on each of the three composites. The particle size (P80) of each cyanidation test was as follows in Table 13-4:

Table 13-4 Particle Sizing of Composites Used in Cyanidation Testwork

Composite	P80 (µm)	
	No regrind	With Regrind
SMR	86	26
SMR	82	28
APR	78	29

The results indicated that the cyanidation kinetics was faster with regrind for all of the composites, with Au extraction ranging from 4 to 7% higher than the tests without regrind. Combining the results of flotation and cyanidation tests, the overall Au recovery for the tests with regrind was approximately 91% for the SMR Comp, 92% for the SMP Comp, and 82% for the APR Comp.

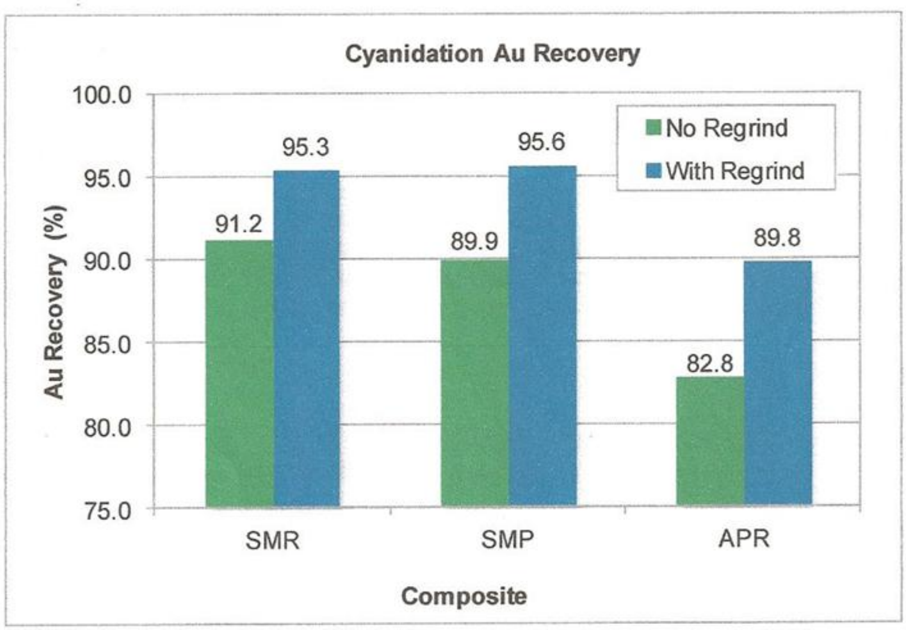


Figure 13-3 Cyanidation Au Recovery on Flotation Rougher Concentrate

13.3 Conclusions

Four samples, SMR, SMP, APR, and WST composites, from Newman Todd deposit were received for gravity, flotation and cyanidation testwork. The following conclusions can be made from the testwork completed on the composites:

- The samples collected for metallurgical test work generally represent potential mill feed for the Newman Todd deposit and are adequate for a PEA level of study

- The SMR Comp contained 2.44 g/t Au, 14.6% S, and 4.9% Fe_3O_4. The SMP Comp contained 3.68 g/t Au, 4.4% S, and no Fe_3O_4 was detected in the sample. The APR Comp contained 1.43 g/t Au, 12.1% S and 1.5% Fe_3O_4. The WST Comp contained 0.32 g/t Au, 4.9% S, and 1.8% Fe_3O_4.
- Bond ball mill hardness tests indicated that the BWI (Ball mill Work Index) was 11.2 kWh/t for SMR, 14.3kWh/t for SMP, 11.9 kWh/t for APR, and 12.7 kWh/t for WST. SMR, APR and WST were identified as soft, while SMP was categorised as medium
- Based on the above test work, the PEA has used overall gold recoveries of 91% for SMR, 92% for SMP, and 82% for APR, assuming regrind of gravity and rougher flotation concentrates followed by a cyanide leach
- A typical Carbon-In-Leach (CIL) is recommended for extracting gold from leach circuit. As carbon absorption and elution have not been tested, this should be carried out on the next phase of metallurgical test work
- No deleterious elements have been identified that could have a significant effect on potential economic extraction. Potential deleterious elements will be examined in future test work.

14 MINERAL RESOURCE ESTIMATES

At the request of Confederation Minerals Ltd., Giroux Consultants Ltd. was retained to produce a resource estimate on the Newman Todd Gold Project located in the Red Lake Mining District of Northern Ontario. There have been 138 diamond drill holes completed on the Newman Todd deposit since 1987 and the effective date for this resource estimate is December 17, 2013, the date the data was received. The 27 historic holes completed from 1983 to 1987 were not used in this estimate.

G.H. Giroux is the qualified person responsible for the resource estimate. Mr. Giroux is a qualified person by virtue of education, experience and membership in a professional association. He is independent of the company applying all of the tests in section 1.5 of National Instrument 43-101. Mr. Giroux has not visited the property.

14.1 Geologic Model

The supplied data base consisted of 138 diamond drill holes totalling 51,328 m with 1,719 down hole surveys and 45,300 assays for gold. At the effective date for this resource, December 17, 2013, assays were available for holes up to NT-164. There were 4 gaps found in the from-to record and in these gaps values of 0.001 g/t Au were inserted. Gold samples reported as 0.0 g/t were assigned a nominal value of 0.001 g/t Au.

For this resource estimate, higher grade quartz carbonate breccia mineralised shells were outlined and provided by QP Ralph Bullis and a geologic solid model was provided by QP Doug Blanchflower. QP Andrea Diakow provided data verification through quality assurance and quality control protocols in the drilling assays and field sampling on the project. Other geological data was supplied by Confederation Minerals.

The model defines a broad gold-bearing tabular zone of quartz-carbonate rock, called the Newman Todd Structure (NTS), trending northeast and dipping steeply to the southeast, that extends approximately 1.8 km. Within this broad alteration zone, 10 higher grade quartz carbonate breccia mineralised shells, have been outlined by QP Ralph Bullis (Bullis, 2014), in an area identified as the Hinge Zone.

Of the supplied drill holes, 131 passed through the 3 dimensional geologic solids (see Appendix 1 - Listing of drill holes)

The higher grade mineralised solids are shown in Figure 14-1 with the surrounding lower grade NTS Zone shown in Figure 14-2.

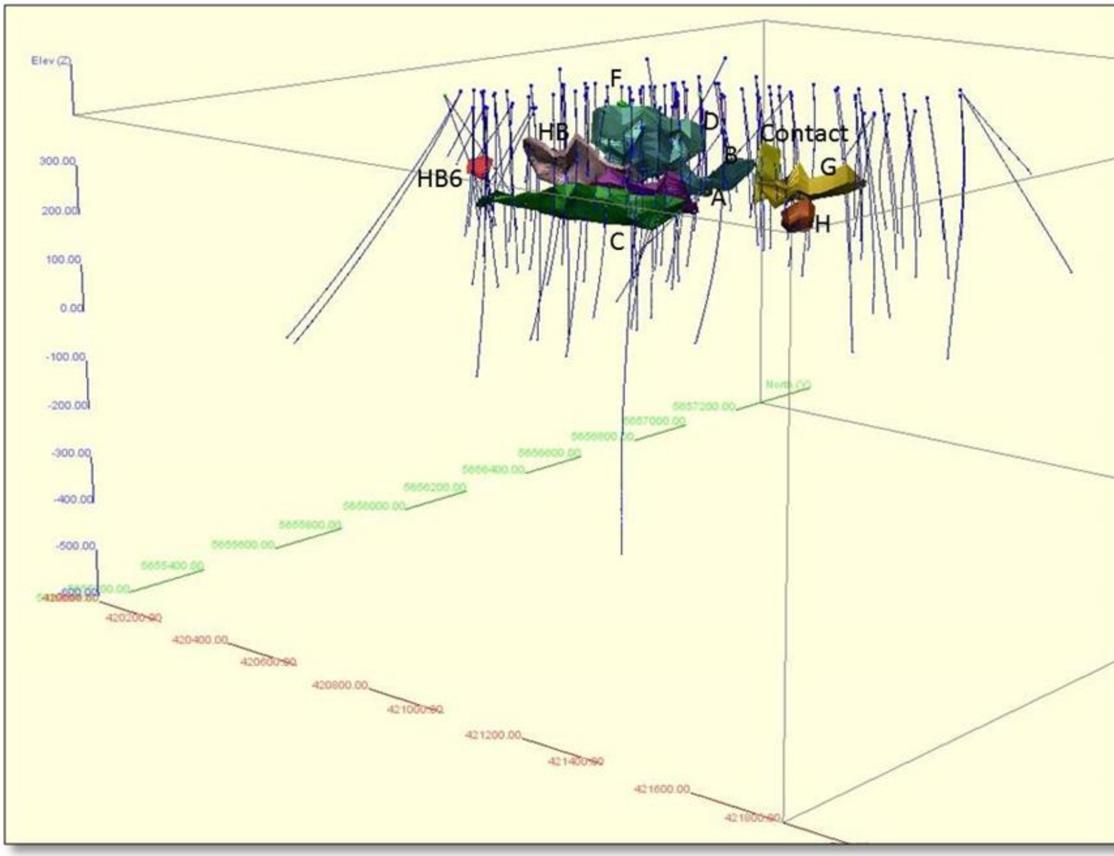


Figure 14-1 Isometric view looking NW showing 10 High Grade Solids

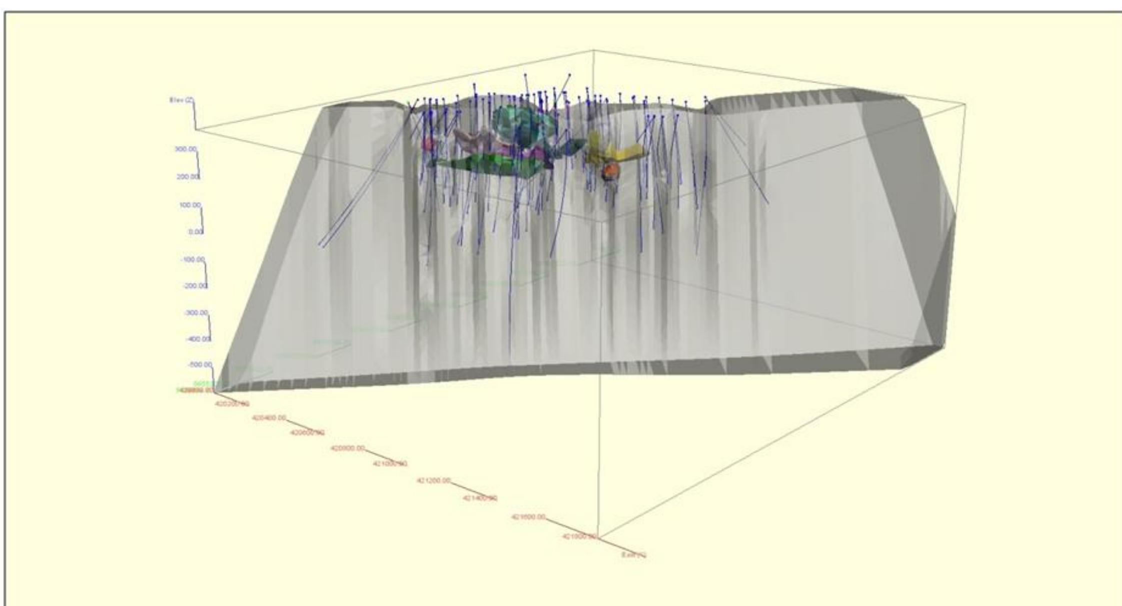


Figure 14-2 Isometric view looking NW showing HG solids contained within NTS Structure (shown in grey)

14.2 Data Analysis

Ten mineralised solids labelled A to D, F to H, a Contact Zone, HB and HB6 were developed to constrain mineralised breccia zones within the lower grade NTS gold bearing structure. Drill holes were "passed through" these mineralised solids and assays were back tagged with a code. The statistics for gold are shown in Table 14-1.

Table 14-1 Assay Statistics for Gold in Domains

Domain	Number	Mean Au (g/t)	Standard Deviation	Minimum Value	Maximum Value	Coefficient of Variation
A	341	1.97	7.52	0.003	78	3.81
B	746	1.27	3.47	0.01	42.8	2.73
C	798	2	24.72	0.003	681	12.38
D	843	1.04	2.49	0.01	43.5	2.38
F	47	1.51	1.66	0.06	7.16	1.1
G	408	1.76	8.95	0.003	103	5.09
H	210	1.2	3.48	0.01	43.9	2.91
CNT	46	8.29	20.31	0.01	104	2.45
HB	503	0.95	3.15	0.01	49.6	3.31
HB6	44	1.09	1.01	0.007	5.27	0.93
All HG zones	3,986	1.52	12.08	0.003	681	7.97
NTS	26,887	0.36	4.19	0.001	343	11.78
Waste	14,431	0.06	0.42	0.001	25.7	6.54

The individual gold assays were evaluated first for the combined mineralised high grade Domains. This combined domain showed a skewed distribution and was converted to a lognormal cumulative frequency plot. The procedure used is explained in a paper by Dr. A.J. Sinclair (Sinclair, 1976). In short the cumulative distribution of a single normal distribution will plot as a straight line on probability paper while a single lognormal distribution will plot as a straight line on lognormal probability paper. Overlapping populations will plot as curves separated by inflection points. Sinclair proposed a method of separating out these overlapping populations using a technique called partitioning. In 1993 a computer program called P-RES was made available to partition probability plots interactively on a computer (Bentzen A., et. Al., 1993). A screen dump from this program is shown for gold in the mineralised Breccia Domains in Figure 14-3. In this figure the actual data distribution is shown as black dots. The inflection points that separate the populations are shown as vertical lines and each population is shown by the straight lines of open circles. The interpretation is tested by recombining the data in the proportions selected and the test is shown as triangles compared to the original distribution. Gold in each domain is examined in the following section with the populations broken out and thresholds selected for capping if required.

Within the high grade solids a total of 7 overlapping lognormal populations were identified (see Table 14-2). Populations 1 and 2 represent a combined 0.16% of the data and can be considered erratic outlier values that should be capped.

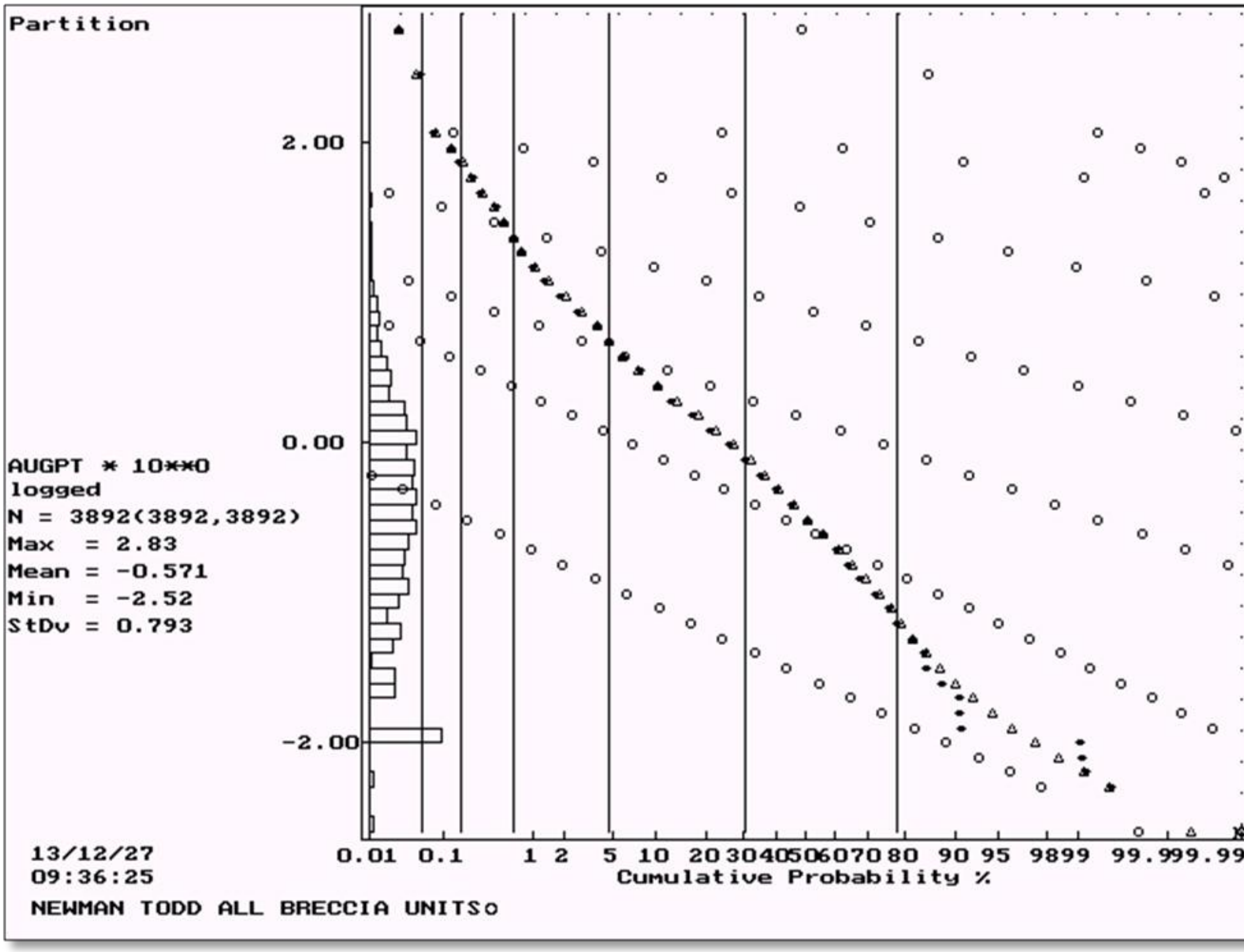


Figure 14-3 Lognormal Cumulative Frequency Plot for Au in All HG Domains

A reasonable cap level would be two standard deviations above the mean of population 3, a value of 75 g/t Au. A total of 8 assays were capped at 75 g/t Au.

Table 14-2 Gold Distribution within the Brecciated Mineralised Domains

Population	Mean Au (g/t)	Percentage of Total Data	Number of Assays
1	553.6	0.05%	2
2	97.45	0.11%	5
3	35.76	0.47%	18
4	7.59	4.04%	158
5	1.42	25.66%	999
6	0.26	47.90%	1,863
7	0.03	21.76%	847

The effect of capping this relatively small number of samples has been to reduce the coefficient of variation in most of the domains. A similar exercise was completed for the Newman Todd Structure (NTS) where 10 gold assays were capped at 76 g/t and for waste where 6 gold assays were capped at 8 g/t.

Table 14-3 Capped Assay Statistics for Gold in Domains

Domain	Number	Mean Au (g/t)	Standard Deviation	Minimum Value	Maximum Value	Coefficient of Variation
A	341	1.96	7.43	0.003	75	3.78
B	746	1.27	3.47	0.01	42.8	2.73
C	798	1.16	4.64	0.003	75	4.01
D	843	1.04	2.49	0.01	43.5	2.38
F	47	1.51	1.66	0.06	7.16	1.10
G	408	1.58	6.98	0.003	75	4.42
H	210	1.20	3.48	0.01	43.9	2.91
CNT	46	7.51	16.93	0.01	75	2.25
HB	503	0.95	3.15	0.01	49.6	3.31
HB6	44	1.09	1.01	0.007	5.27	0.93
All Breccia	3,986	1.32	4.82	0.003	75	3.65
NTS	26,887	0.32	2.14	0.001	76	6.76
Waste	14,431	0.06	0.31	0.001	8	5.07

14.3 Composites

A total of 45,185 assays or 99.7 % of the data was 2.5 m or less in length. A composite length of 2.5 m was chosen for this estimate.

Composites 2.5 m in length were formed honouring the domain boundaries. Small intervals at the edges of the domains were combined with adjoining samples if less than 1.25 m in length. This provided composites for each domain at a uniform support of 2.5 ± 1.25 m. The statistics for 2.5 m composites within each domain are shown in Table 14-4.

Table 14-4 2.5 m Composite Statistics for Gold in Domains

Domain	Number	Mean Au (g/t)	Standard Deviation	Minimum Value	Maximum Value	Coefficient of Variation
A	134	1.64	3.42	0.01	25.22	2.08
B	308	1.23	2.36	0.01	23.05	1.91
C	294	1.07	2.61	0.005	30.09	2.44
D	348	1.19	2.08	0.01	17.45	1.76
F	18	1.46	0.98	0.39	3.28	0.67
G	146	1.27	3.36	0.003	30.11	2.64
H	74	1.03	1.63	0.01	10.12	1.58
CNT	19	7.64	16.79	0.016	75	2.20
HB	193	0.87	1.78	0.012	17.9	2.04
HB6	13	1.03	0.53	0.024	1.72	0.52
All Breccia	1,547	1.26	3.16	0.003	75	2.52
NTS	10,778	0.28	1.03	0.001	30.68	3.69
Waste	6,499	0.06	0.21	0.001	4.87	3.60

14.4 Variography

The outer NTS mineralised zone was modelled for gold grade continuity using pairwise relative semivariograms. The horizontal direction of longest continuity was along azimuth 45° dip 0°. The vertical plane perpendicular to this direction was modelled next with the longest continuity along azimuth 135° dip -55°. Nested spherical models were fit to all directions with the parameters shown below in Table 14-5. The models are shown in Appendix 2 - Variography for Newman Todd Zone.

Of the mineralised solids, Domains A, B, C, D, G and HB had sufficient composites to produce semivariogram models. The remaining Domains F, H, CNT and HB6 were assigned the model of the closest Domain. The parameters for each model are tabulated below with the models shown in Appendix 2 - Variography for Newman Todd Zone. In all cases nested spherical models were fit to the along strike, down dip and across dip directions.

The nugget to sill ratio ranged from a low of 44.7% to a high of 58.1% reflecting the variability of gold grades.

Table 14-5 Semivariogram Parameters for Gold in Newman Todd Structure

Domain	Variable	Az / Dip	C_0	C_1	C_2	Short Range (m)	Long Range (m)
NTS	Au	045 / 0	0.5	0.2	0.16	12	100
		315 / -35				12	50
		135 / -55				12	140
A	Au	040 / -30	0.4	0.2	0.4	30	58
		310 / -45				20	60
		130 / -45				15	25
B	Au	040 / -30	0.38	0.25	0.13	10	40
		310 / -45				20	70
		130 / -45				10	25
C	Au	040 / -30	0.38	0.25	0.22	40	80
		310 / -45				5	10
		130 / -45				15	40
D	Au	040 / -30	0.4	0.35	0.11	12	100
		310 / -45				12	32
		130 / -45				15	80
G	Au	040 / -30	0.6	0.15	0.37	30	60
		310 / -45				5	30
		130 / -45				10	45
HB	Au	040 / -30	0.4	0.05	0.3	20	80
		310 / -45				10	20
		130 / -45				10	60
Waste	Au	Omni Directional	0.3	0.1	0.22	15	55

14.5 Block Model

A rotated block model with blocks 5 x 5 x 5 m was built to cover the mineralised zones. The model was rotated 45° counter clockwise as shown in Figure 14-4. Within each block, the percentage below topography, the percentage within overburden and the percentage within the mineralised solids were recorded. The block model origin is shown below.

Lower Left Corner of Model

419986.647 E	Column size = 5 m	568 columns
5655168.525 N	Row size = 5 m	128 rows
Top of Model		
420 Elevation	Level size = 5 m	182 levels

Rotation = 45° counter clockwise.

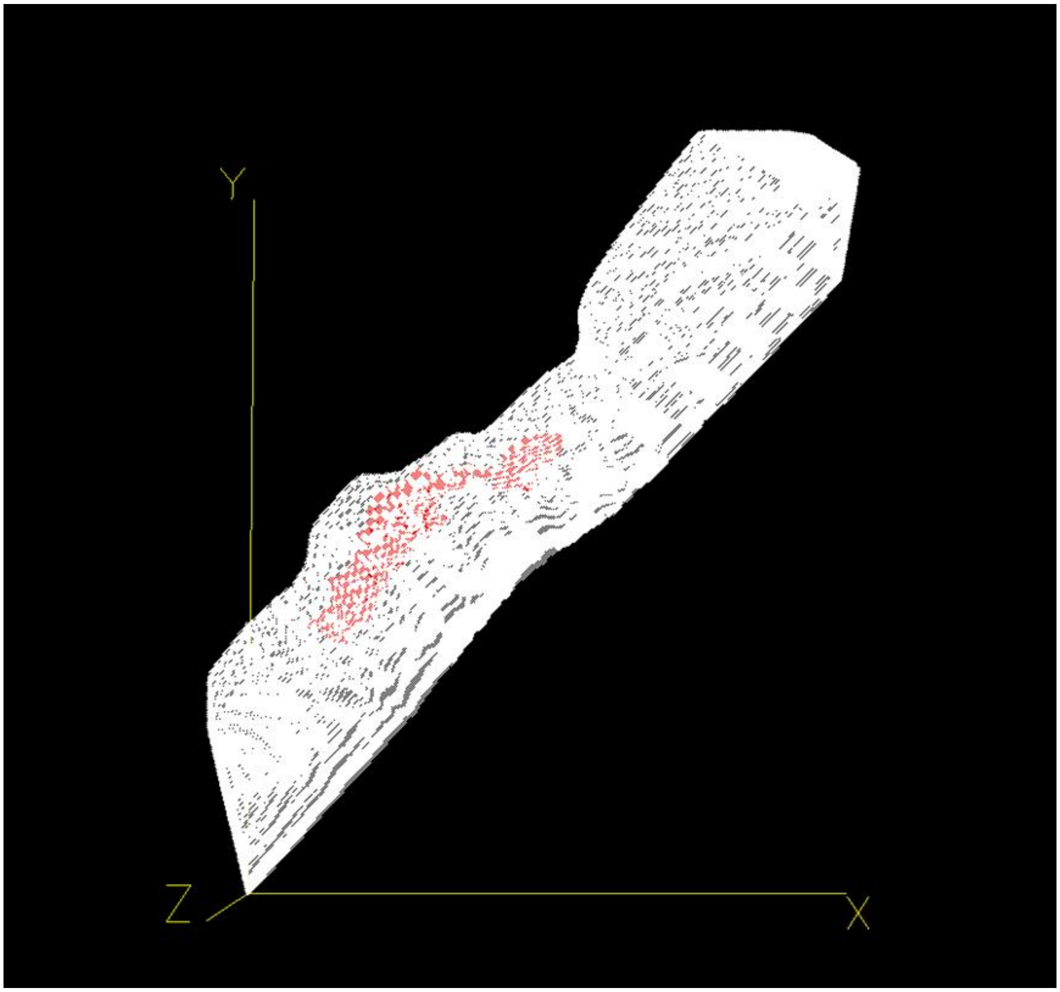


Figure 14-4 Plan view showing Mineralised NTS in white and Mineralised High Grade Domains in Red

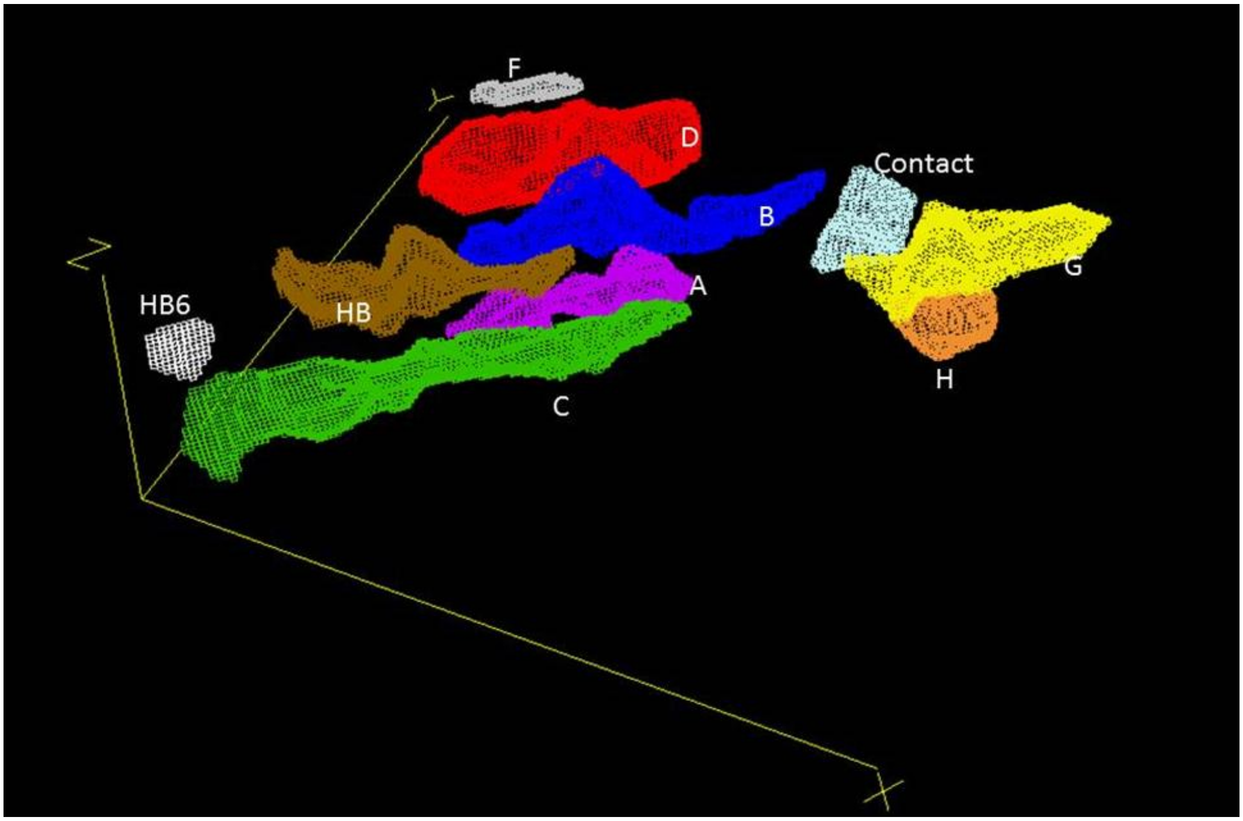


Figure 14-5 Isometric view looking NW of just the HG Domains

14.6 Bulk Density

In 2011-12 Confederation Minerals took a total of 448 specific gravity measurements from pieces of drill core using the weight in air / weight in water procedure. A complete list of the results is attached as Appendix 3 - Specific Gravity Determinations.

During the core logging a visual percentage of pyrite, pyrrhotite and magnetite was recorded for each sample assayed. A specific gravity was calculated for each sample assuming the base case was the average of 69 samples with a percentage of pyrite, pyrrhotite and magnetite equal to zero. This base case specific gravity was 2.70. A second assumption was that porosity in the samples was zero. An iterative program was used starting at 2.70 and adding 0.01 to the specific gravity of the sample until the calculated SG accounted for all of the pyrite, pyrrhotite and magnetite reported. The results are compared for the samples with measured specific gravity in Figure 14-6. The results are reasonable considering these are visual estimates of sulphide percentages. The plot shows the best fit regression line through the data is conservative with the calculated SG's on average lower than the measured ones.

Using the calculated specific gravities a value can be interpolated into each estimated block which should be much closer to reality than using an average of all the measured results. Using specific gravities from each of the high grade structures a HG_SG was interpolated into each block containing a high grade structure. Using only specific gravities from the NTS zone, a NTS_SG was interpolated into all blocks containing some percentage of NTS. A weighted average for the mineralised portion of blocks was then determined as follows:

$$\mathbf{SG\_MIN} = \frac{(\%\ NTS * NTS\_SG) + (\%\ HG * HG\_SG)}{\%\ MIN}$$

Material outside the NTS zone was considered waste and assigned a specific gravity of 2.70 while overburden was assigned a specific gravity of 1.60. The specific gravity of a total block was then:

$$\mathbf{SG\_TOT} = \frac{(\%\ MIN * SG\_MIN) + (\%\ WASTE * 2.70) + (\%\ OVB * 1.60)}{\%\ BELOW\ TOPOGRAPHY}$$

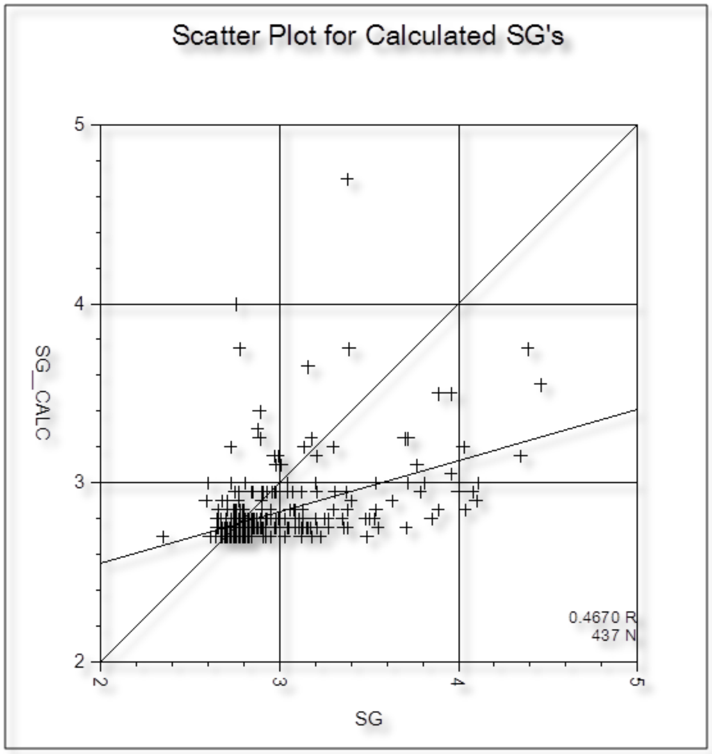


Figure 14-6 Measured versus calculated Specific Gravities

14.7 Grade Interpolation

Gold grades were first interpolated into blocks, with some percentage within the mineralised NTS solid, using Ordinary Kriging. Gold grades were then interpolated into all blocks containing some percentage of the various high grade structures also using Ordinary Kriging. The grade for the mineralised part of each block was a weighted average of the NTS and the various High Grade structures.

$$\mathbf{Au\ Min} = \frac{(Au\ NTS * \%\ NTS) + (Au\ HG * \%\ HG)}{\%\ HG + \%\ NTS}$$

The grade for the total block was a weighted average of the mineralised part, overburden and external waste.

$$\mathbf{Au\ Total} = \frac{(Au\ Min * \%\ Min) + (Au\ Waste * \%\ Waste) + (0.001 * \%\ OVB)}{\%\ Below\ Topography}$$

Each interpolation was completed in a series of passes with the search ellipse for each pass tied to the relevant semivariogram.

There were only 10 high grade zones modelled at this time within the Newman Todd (NTS) structure. There are undoubtedly more of these zones yet to be modelled. A lognormal cumulative frequency plot of 2.5 m composites within the overall NTS structure showed 0.51% of composites (56) over 5.0 g/t Au, up to a high of 48.85 g/t Au. These high grade composites should be constrained and if left untouched will smear these high grades over too much of the NTS zone. As a result Ordinary Kriging of these high values was confined to the first pass with a short search ellipse. These high grade composites were not used to estimate grades in Passes 2 and 3. Within the NTS Zone Pass 1, the search ellipse dimensions were set to ¼ of the semivariogram range and the ellipse was oriented along the directions indicated by the semivariogram. A minimum of 4 composites were required to be within the search ellipse with a maximum of 3 from any given drill hole allowed. For blocks not estimated in Pass 1, a second pass was made using search dimensions equal to ½ the semivariogram range. For this and future passes only composites less than 5 g/t Au from the NTS zone were used. Pass 3 using the full range completed the exercise. In all passes a maximum of 12 composites were allowed and if more than that were found, within the search ellipse, the closest 12 were used. The search parameters and the number of blocks estimated in each pass are tabulated below.

For the various High Grade structures, gold grades were also interpolated by Ordinary Kriging. The search directions were aligned along the strike and dip of the structures, azimuth 40° dip -30° and azimuth 310° dip -45° respectively. Each structure was estimated in the same manner described above, using only composites from that structure. The parameters and number of blocks estimated in each pass are shown in Table 14-6.

Table 14-6 Interpolation Parameters for Ordinary Kriging of Gold

Domain	Pass	Number	Az / Dip	Dist. (m)	Az / Dip	Dist. (m)	Az / Dip	Dist. (m)
NTS zone	1	68,413	045°/ 0°	25	315° / -	12.5	135° / -	35
	2	219,889	045°/ 0°	50	315° / -	25	135° / -	70
	3	256,464	045°/ 0°	100	315° / -	50	135° / -	140
A zone	1	237	040°/ -30°	14.5	310° / -	15	130° / -	6.25
	2	2,089	040°/ -30°	29	310° / -	30	130° / -	12.5
	3	694	040°/ -30°	58	310° / -	60	130° / -	25
B zone	1	360	040°/ -30°	10	310° / -	17.5	130° / -	6.25
	2	3,643	040°/ -30°	20	310° / -	35	130° / -	12.5
	3	3,115	040°/ -30°	40	310° / -	70	130° / -	25
	4	159	040°/ -30°	80	310° / -	140	130° / -	50
C zone	1	13	040°/ -30°	20	310° / -	2.5	130° / -	10
	2	761	040°/ -30°	40	310° / -	5	130° / -	20
	3	4,622	040°/ -30°	80	310° / -	10	130° / -	40
	4	3,217	040°/ -30°	160	310° / -	20	130° / -	80
D zone	1	1,192	040°/ -30°	25	310° / -	8	130° / -	20
	2	4,029	040°/ -30°	50	310° / -	16	130° / -	40
	3	2,749	040°/ -30°	100	310° / -	32	130° / -	80
	4	420	040°/ -30°	200	310° / -	64	130° / -	160
F zone	1	54	040°/ -30°	25	310° / -	8	130° / -	20
	2	195	040°/ -30°	50	310° / -	16	130° / -	40
	3	23	040°/ -30°	100	310° / -	32	130° / -	80
G zone	1	96	040°/ -30°	15	310° / -	7.5	130° / -	11.25
	2	966	040°/ -30°	30	310° / -	15	130° / -	22.5
	3	3,294	040°/ -30°	60	310° / -	30	130° / -	45
	4	1,181	040°/ -30°	120	310° / -	60	130° / -	90
H zone	1	11	040°/ -30°	15	310° / -	7.5	130° / -	11.25
	2	405	040°/ -30°	30	310° / -	15	130° / -	22.5
	3	1,161	040°/ -30°	60	310° / -	30	130° / -	45
	4	442	040°/ -30°	120	310° / -	60	130° / -	90
HB zone	1	73	040°/ -30°	20	310° / -	5	130° / -	15
	2	1,212	040°/ -30°	40	310° / -	10	130° / -	30
	3	3,962	040°/ -30°	80	310° / -	20	130° / -	60
	4	516	040°/ -30°	160	310° / -	40	130° / -	120
HB6 zone	1	3	040°/ -30°	20	310° / -	5	130° / -	15
	2	59	040°/ -30°	40	310° / -	10	130° / -	30
	3	62	040°/ -30°	80	310° / -	20	130° / -	60
	4	14	040°/ -30°	160	310° / -	40	130° / -	120
CNT zone	1	0	040°/ -30°	15	310° / -	7.5	130° / -	11.25
	2	27	040°/ -30°	30	310° / -	15	130° / -	22.5
	3	320	040°/ -30°	60	310° / -	30	130° / -	45
	4	367	040°/ -30°	120	310° / -	60	130° / -	90
Waste	1	1,010	Omni Directional			13.75		
	2	7,954	Omni Directional			27.5		
	3	24,930	Omni Directional			55		
	4	27,472	Omni Directional			110		

14.8 Classification

Based on the study herein reported, delineated mineralisation of the Newman Todd zone is classified as a resource according to the following definitions from National Instrument 43-101 and from CIM (2014):

> "In this Instrument, the terms "Mineral Resource", "Inferred Mineral Resource", "Indicated Mineral Resource" and "Measured Mineral Resource" have the meanings ascribed to those terms by the Canadian Institute of Mining, Metallurgy and Petroleum, as the CIM Definition Standards (May 2014) on Mineral Resources and Mineral Reserves adopted by CIM Council, as those definitions may be amended."

The terms Measured, Indicated and Inferred are defined by CIM (2014) as follows:

> "A Mineral Resource is a concentration or occurrence of solid material of economic interest in or on the Earth's crust in such form, grade or quality and quantity that there are reasonable prospects for eventual economic extraction. The location, quantity, grade or quality, continuity and other geological characteristics of a Mineral Resource are known, estimated or interpreted from specific geological evidence and knowledge, including sampling."

> "The term Mineral Resource covers mineralisation and natural material of intrinsic economic interest which has been identified and estimated through exploration and sampling and within which Mineral Reserves may subsequently be defined by the consideration and application of Modifying Factors. The phrase 'reasonable prospects for economic extraction' implies a judgement by the Qualified Person in respect of the technical and economic factors likely to influence the prospect of economic extraction. The Qualified Person should consider and clearly state the basis for determining that the material has reasonable prospects for eventual economic extraction. Assumptions should include estimates of cutoff grade and geological continuity at the selected cut-off, metallurgical recovery, smelter payments, commodity price or product value, mining and processing method and mining, processing and general and administrative costs. The Qualified Person should state if the assessment is based on any direct evidence and testing. Interpretation of the word 'eventual' in this context may vary depending on the commodity or mineral involved. For example, for some coal, iron, potash deposits and other bulk minerals or commodities, it may be reasonable to envisage 'eventual economic extraction' as covering time periods in excess of 50 years. However, for many gold deposits, application of the concept would normally be restricted to perhaps 10 to 15 years, and frequently to much shorter periods of time."

> **Inferred Mineral Resource**

> "An 'Inferred Mineral Resource' is that part of a Mineral Resource for which quantity and grade or quality are estimated on the basis of limited geological evidence and sampling. Geological evidence is sufficient to imply but not verify geological and grade or quality continuity. An Inferred Mineral Resource has a lower level of confidence than that applying to an Indicated Mineral Resource and must not be converted to a Mineral Reserve. It is reasonably expected that the majority of Inferred Mineral Resources could be upgraded to Indicated Mineral Resources with continued exploration."

> "An 'Inferred Mineral Resource' is based on limited information and sampling gathered through appropriate sampling techniques from locations such as outcrops, trenches, pits, workings and drill holes. Inferred Mineral Resources must not be included in the economic analysis, production

schedules, or estimated mine life in publicly disclosed Pre-Feasibility or Feasibility Studies, or in the Life of Mine plans and cash flow models of developed mines. Inferred Mineral Resources can only be used in economic studies as provided under NI 43-101."

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

Indicated Mineral Resource

"An 'Indicated Mineral Resource' is that part of a Mineral Resource for which quantity, grade or quality, densities, shape and physical characteristics are estimated with sufficient confidence to allow the application of Modifying Factors in sufficient detail to support mine planning and evaluation of the economic viability of the deposit. Geological evidence is derived from adequately detailed and reliable exploration, sampling and testing and is sufficient to assume geological and grade or quality continuity between points of observation. An Indicated Mineral Resource has a lower level of confidence than that applying to a Measured Mineral Resource and may only be converted to a Probable Mineral Reserve."

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

Measured Mineral Resource

"A Measured Mineral Resource is that part of a Mineral Resource for which quantity, grade or quality, densities, shape, and physical characteristics are estimated with confidence sufficient to allow the application of Modifying Factors to support detailed mine planning and final evaluation of the economic viability of the deposit. Geological evidence is derived from detailed and reliable exploration, sampling and testing and is sufficient to confirm geological and grade or quality continuity between points of observation. A Measured Mineral Resource has a higher level of confidence than that applying to either an Indicated Mineral Resource or an Inferred Mineral Resource. It may be converted to a Proven Mineral Reserve or to a Probable Mineral Reserve."

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

Modifying Factors

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

At Newman Todd the geologic continuity has been established through surface mapping and drill hole interpretation. This has resulted in a multi domain interpretation that has been used to constrain the resource estimate. The grade continuity within the NTS zone and 6 of the high grade zones has been quantified by semivariogram analysis. The semivariograms were used to determine the search directions and distances for each pass in the kriging procedure. Using the semivariogram range to estimate blocks would normally allow classification as follows:

- Blocks estimated in Pass 1 using ¼ of the semivariogram range might be considered Measured.
- Blocks estimated in Pass 2 using ½ of the semivariogram range might be considered Indicated
- All other blocks would be classified as Inferred.

The drill density over most of the deposit is still too coarse to establish any measured resource. Blocks estimated during Pass 1 or Pass 2 were classified as Indicated while all others were classified as Inferred.

Open pit mineral resources are reported at a 0.85g/t Au cut-off which is considered reasonable for a PEA level of study on the basis of application of open pit mining methods, an assumed gold price of US$1,400 /oz (considering a long term view of up to 15 years for the potential ultimate extraction of the resource), mining recovery of 98%, mining dilution of 5%, metallurgical recovery of 90% and total costs (mining, processing, G&A) of $38.70/t. The assumptions for calculating this cut-off grade are typical for open pit mining of similar gold deposits in the region.

The Mineral Resources for Newman Todd that would be within a conceptual open pit are as summarised in Table 14-7.

Table 14-7 Newman Todd Mineral Resource Estimate Within a Conceptual Open Pit

Resource Class	Tonnage	Au Grade (g/t)	Au Ounces
Total Indicated Resources	350,000	2.76	31,000
Total Inferred Resources	574,000	2.78	51,000

Notes:

- *Totals in Table 14-7 may differ due to rounding*
- *Resources in Table 14-7 are reported at a 0.85g/t Au cut-off*
- *Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability*

- *Inferred Mineral Resources have been estimated on the basis of limited geological evidence and sampling, there has been insufficient drilling and sampling to classify these Inferred Resources as Indicated or Measured Resources. It is reasonably expected that the majority of Inferred Mineral Resources could be upgraded to Indicated Mineral Resources with continued exploration*

Underground mineral resources are reported outside of the pit shell used for reporting open pit resources, and at a 2.2g/t Au cut-off as shown in Table 14-8. This cut-off was calculated based on an assumed gold price of USD1,400 /oz (considering a long term view of up to 15 years for the potential ultimate extraction of the resource), mining recovery of 95%, mining dilution of 10%, metallurgical recovery of 90% and total costs (mining, processing, G&A) of $100 /t. This cut-off was deemed to be a reasonable base case for economic extraction considering the geometry, potential extraction methods and typical cut-off grade input assumptions for underground operations in the region.

Table 14-8 Newman Todd Potential Underground Resource Estimate

Resource Class	Tonnage	Au Grade (g/t)	Au Ounces
Total Indicated Resources	630,000	3.36	68,000
Total Inferred Resources	490,000	4.54	72,000

Notes:

- *Totals in* Table 14-8 *may differ due to rounding*
- *Resources in* Table 14-8 *are reported exclusive of the resources in* Table 14-7*, and at a 2.2 g/t Au cut-off*
- *Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability*
- *Inferred Mineral Resources have been estimated on the basis of limited geological evidence and sampling, there has been insufficient drilling and sampling to classify these Inferred Resources as Indicated or Measured Resources. It is reasonably expected that the majority of Inferred Mineral Resources could be upgraded to Indicated Mineral Resources with continued exploration*

14.9 Grade Tonnage Information

The resources are presented at a range of cut-off grades in two sets of tables as shown below. The first set of tables (Table 14-9 and

Table 14-10) assumes one could mine the entirety of the 5 x 5 x 5 m blocks present within a conceptual open pit.

Table 14-9 Indicated Resource Within a Conceptual Open Pit

Au Cut-	Tonnes> Cut-	Grade > Cut-off

off (g/t)	off (tonnes)	Au	Contained	
		g/t	kg Au	Oz Au
0.85	**350,000**	**2.76**	**960**	**31,000**
0.90	340,000	2.81	960	31,000
1.00	320,000	2.92	940	30,000
1.50	230,000	3.66	840	27,000
2.00	180,000	4.11	740	24,000
2.20	170,000	4.32	730	24,000
0.90	340,000	2.81	960	31,000

Table 14-10 Inferred Resource Within a Conceptual Open Pit

Au Cut-off (g/t)	Tonnes> Cut-off (tonnes)	Grade > Cut-off		
		Au	Contained	
		g/t	kg Au	Oz Au
0.85	**574,000**	**2.78**	**1,593**	**51,200**
0.90	567,000	2.80	1,587	51,000
1.00	558,000	2.83	1,579	50,800
1.50	486,000	3.06	1,488	47,800
2.00	381,000	3.43	1,306	42,000
2.20	346,000	3.56	1,232	39,600

The second set of tables reports the total resource outside the conceptual open pit that might be extractable with underground mining methods. These tables (Table 14-11 and Table 14-12) assume one could mine to the limits of the high grade solids with no edge dilutions applied. The blocks above a 2.2 g/t Au cut-off and outside the conceptual open pit are shown in Figure 14-7.

Table 14-11 Indicated Resource Outside the Conceptual Open Pit

Au Cut-off (g/t)	Tonnes> Cut-off (tonnes)	Grade > Cut-off	
		Au	Contained

		g/t	kg Au	Oz Au
2.20	**630,000**	**3.36**	**2,120**	**68,000**
2.50	500,000	3.62	1,810	58,000
3.00	330,000	4.09	1,350	43,000
3.50	220,000	4.52	990	32,000
4.00	140,000	4.96	690	22,000
4.50	80,000	5.48	440	14,000

Table 14-12 Inferred Resource Outside the Conceptual Open Pit

Au Cut-off (g/t)	Tonnes> Cut-off (tonnes)	Grade > Cut-off		
		Au	Contained	
		g/t	kg Au	Oz Au
2.20	**490,000**	**4.54**	**2,220**	**72,000**
2.50	390,000	5.06	1,970	63,000
3.00	270,000	6.12	1,650	53,000
3.50	190,000	7.40	1,410	45,000
4.00	140,000	8.74	1,220	39,000
4.50	119,000	9.42	1,120	36,000

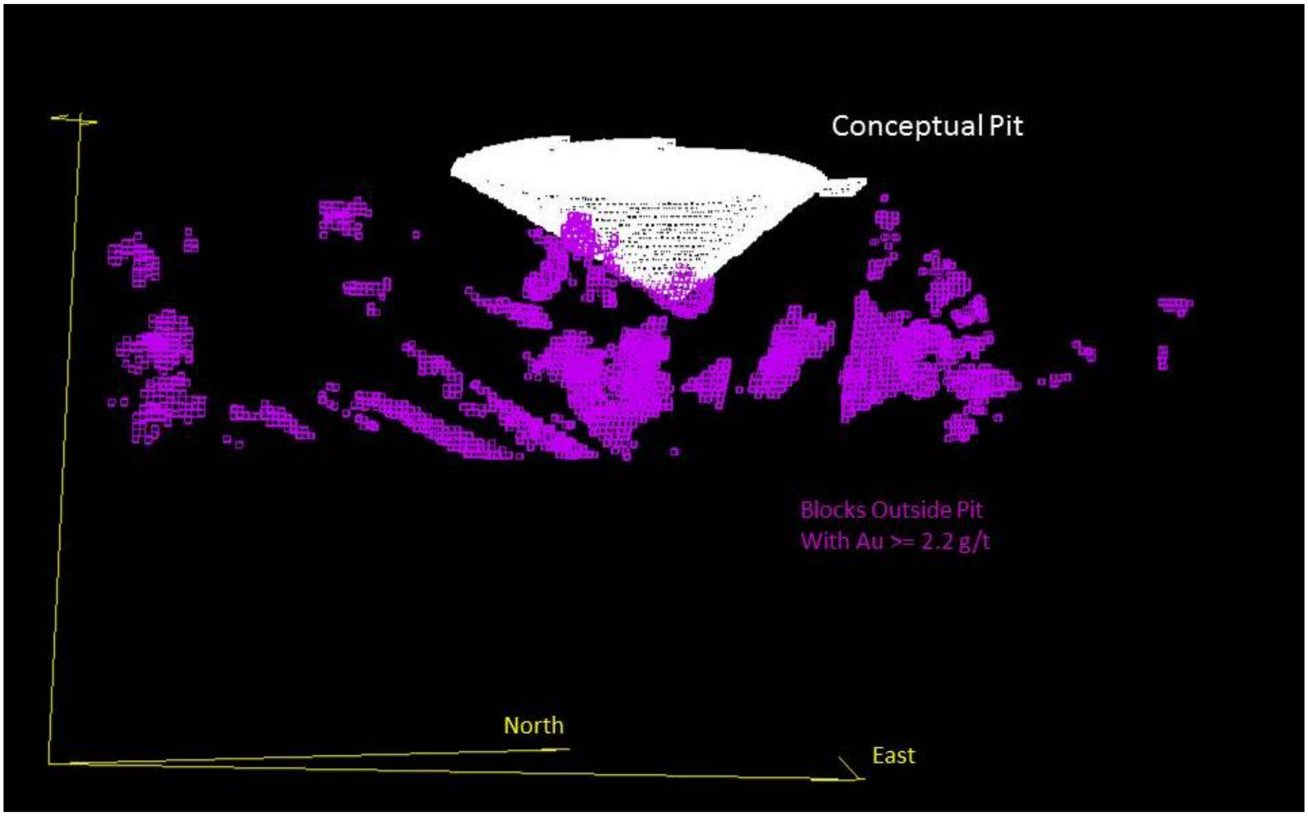


Figure 14-7 Orthogonal View Looking NW Showing a Conceptual Open Pit and Blocks Outside This Pit with Gold Grades ≥ 2.2 g/t

14.10 Model Verification

Level plans on 50 m intervals were produced to compare composite grades with estimated block grades. In general the comparison was good with no bias indicated. Level plans from 350 elevation down to 100 elevation are shown in Figure 14-8 to Figure 14-13.

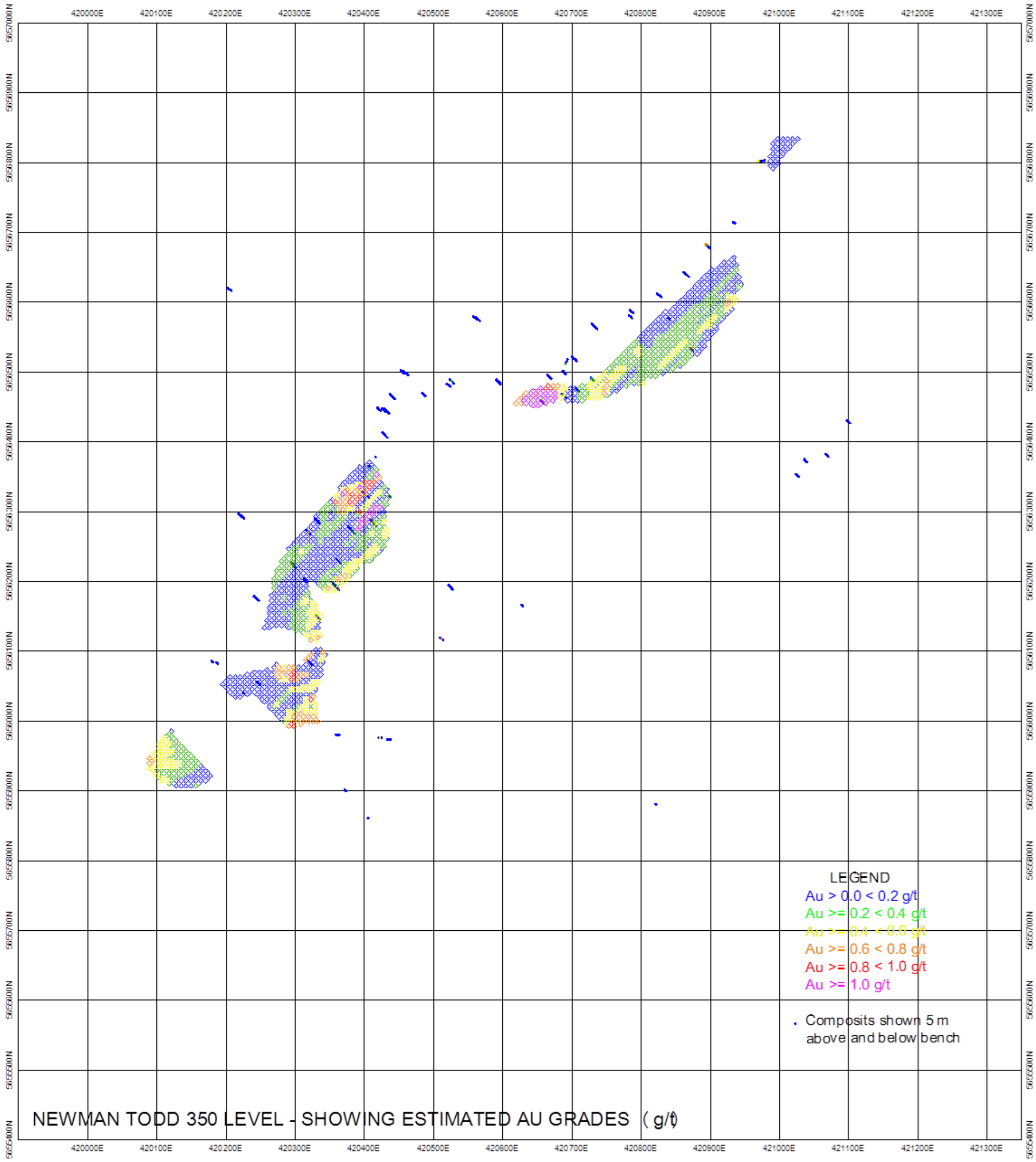


Figure 14-8 350 Level plan showing estimated gold grades

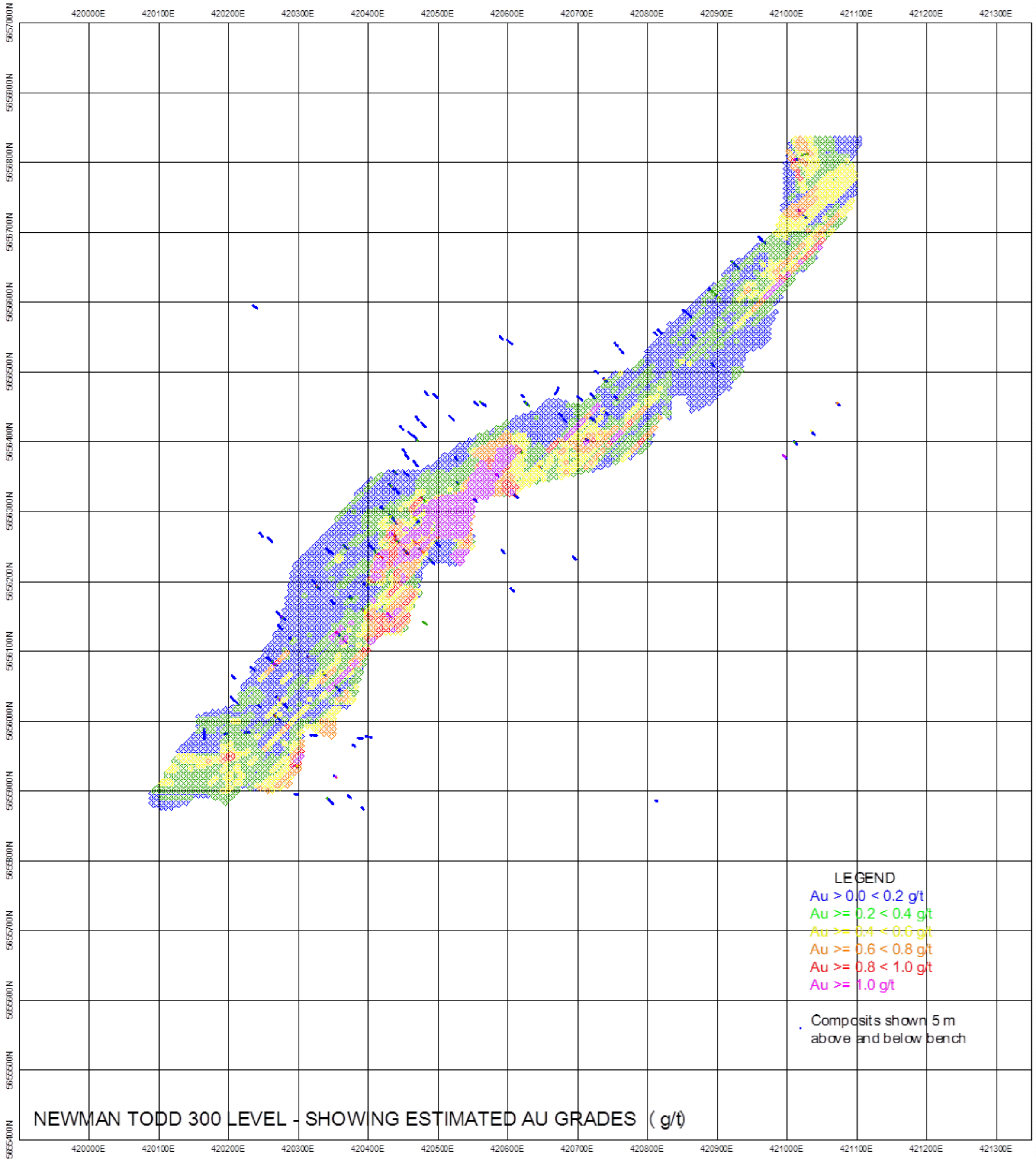


Figure 14-9 Level plan showing estimated gold grades

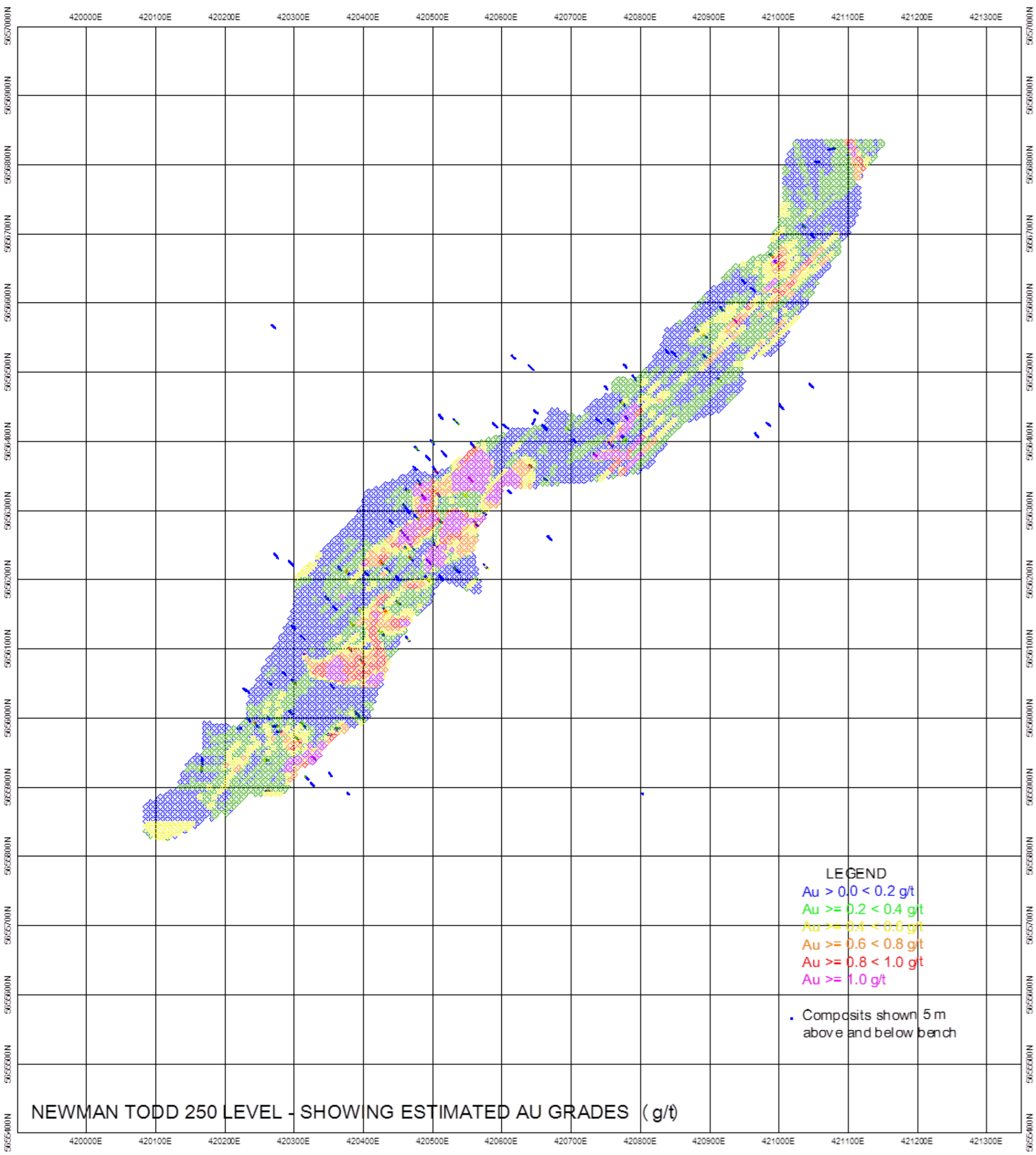


Figure 14-10 250 Level plan showing estimated gold grades

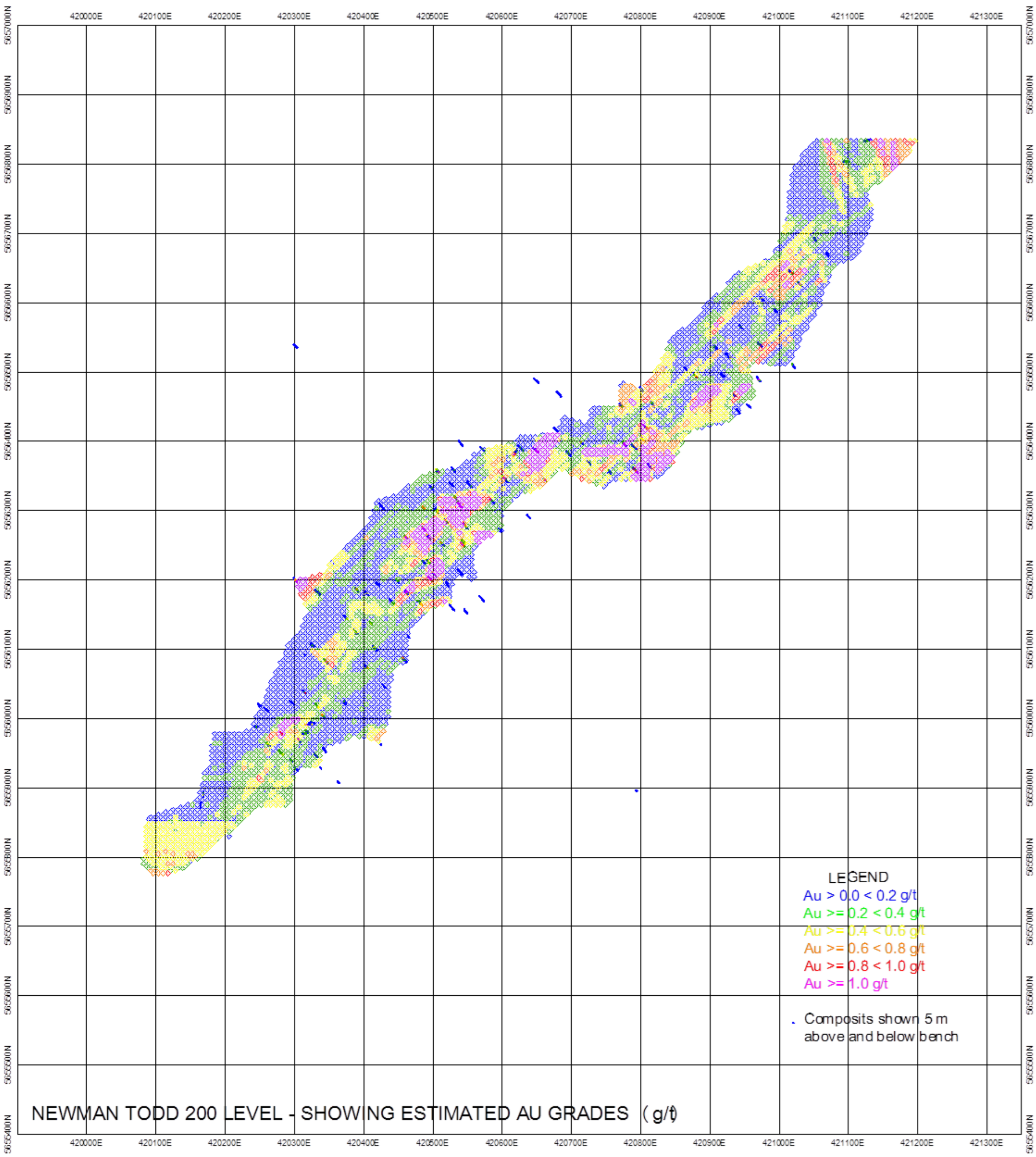


Figure 14-11 200 Level plan showing estimated gold grades

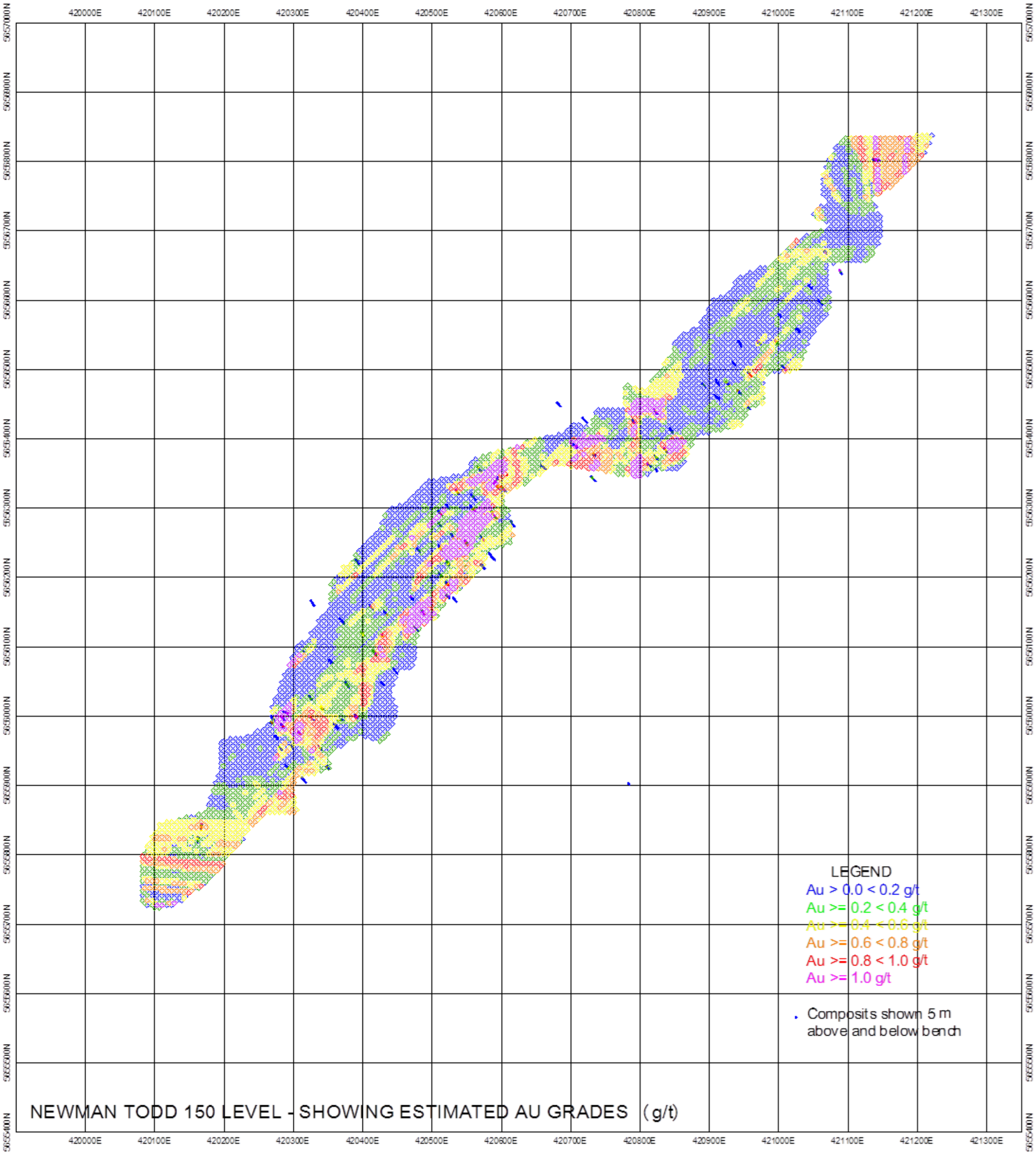


Figure 14-12 150 Level plan showing estimated gold grades

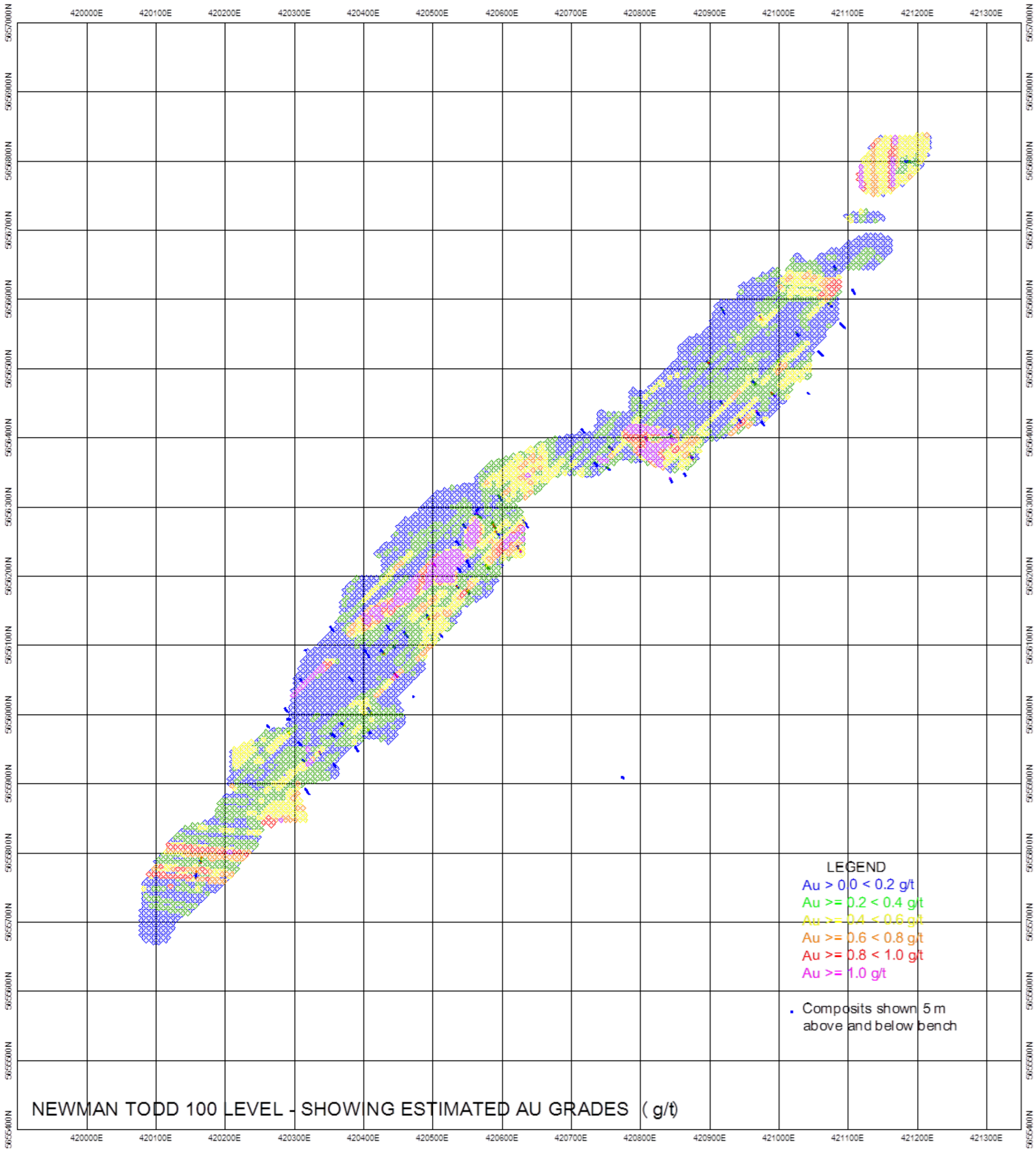


Figure 14-13 100 Level plan showing estimated gold grades

Sections on 50 m intervals were produced to assess the continuity of the mineralisation at a cut-off 0.7 g/t Au (open pit economic cut-off grade). 10 sections were assessed with the constraining pit shell overlaid (shell 18, as per Section 16.5). The comparison showed reasonable continuity within the constraining pit shell. The 6 sections covering the pit are shown as Figure 14-15 to Figure 14-20.

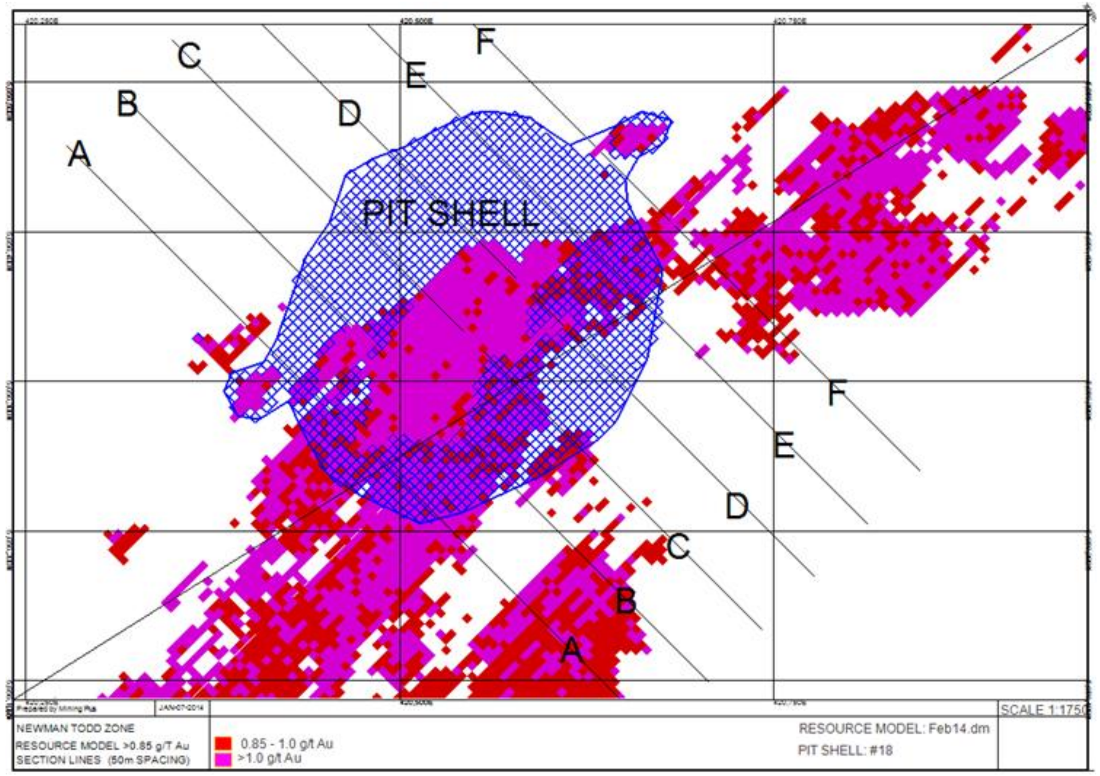


Figure 14-14 Plan View of Resource Model Section Layout, Showing Blocks at Cut-off 0.85g/t Au

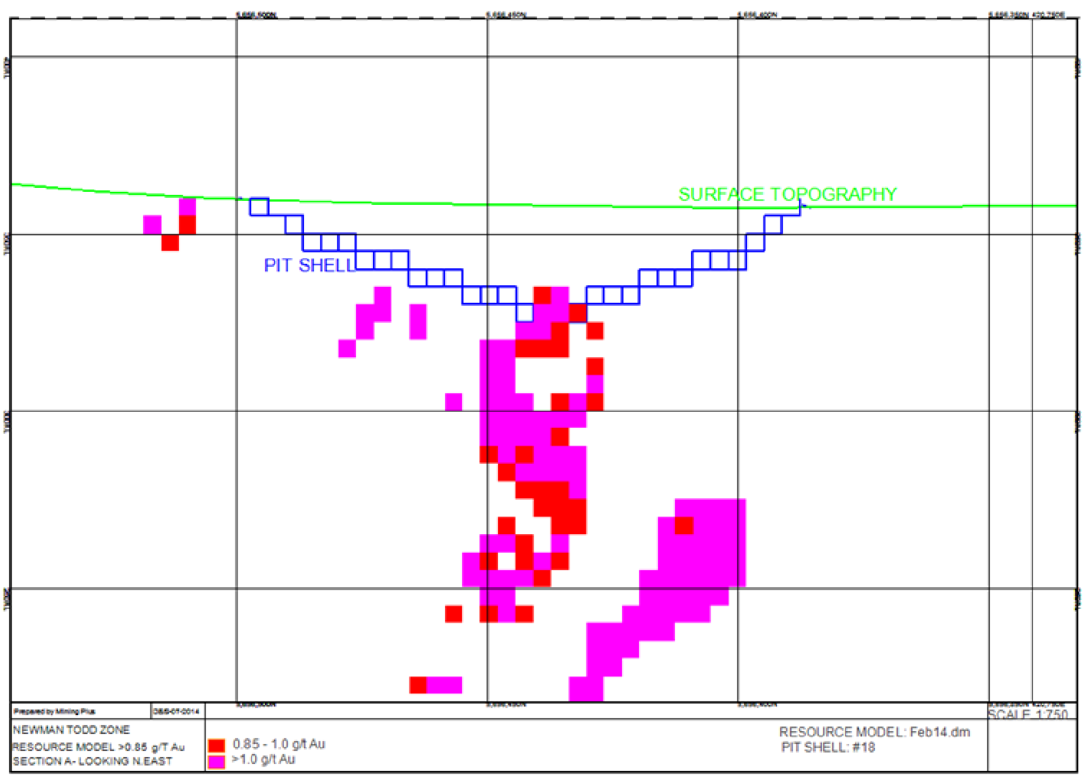


Figure 14-15 Resource Model and Constraining Pit Shell- Section A, Showing Blocks at Cut-off 0.85g/t Au

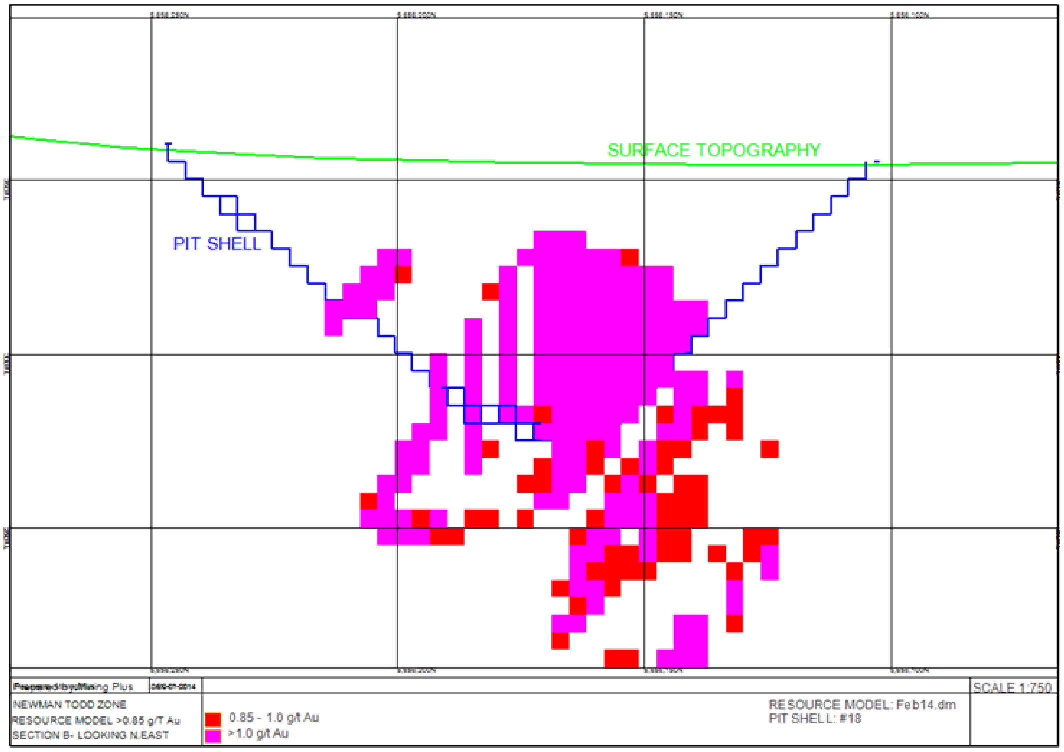


Figure 14-16 Resource Model and Constraining Pit Shell- Section B, Showing Blocks at Cut-off 0.85g/t Au

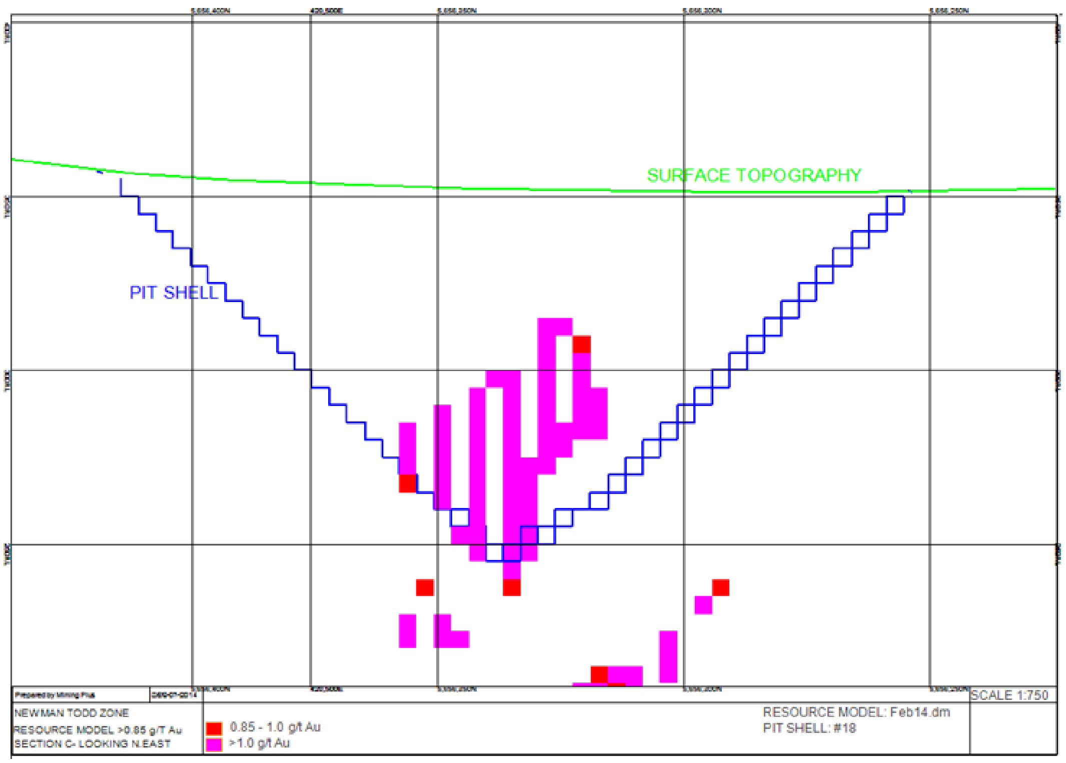


Figure 14-17 Resource Model and Constraining Pit Shell- Section C, Showing Blocks at Cut-off 0.85g/t Au

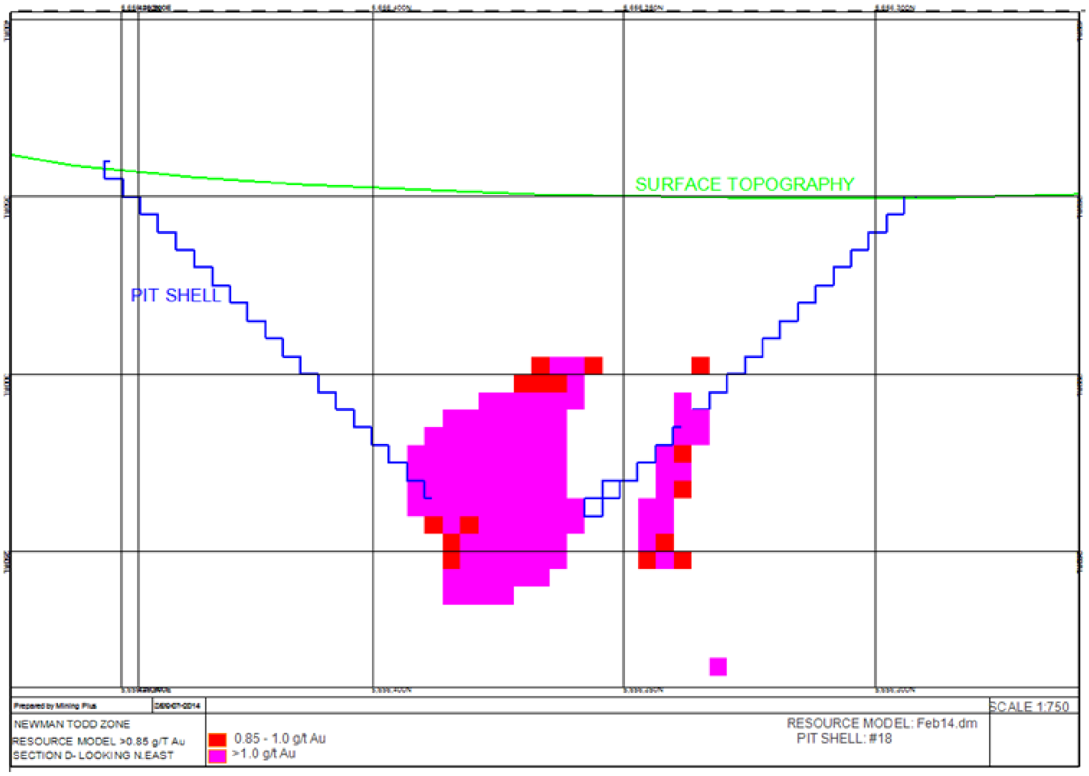


Figure 14-18 Resource Model and Constraining Pit Shell- Section D, Showing Blocks at Cut-off 0.85g/t Au

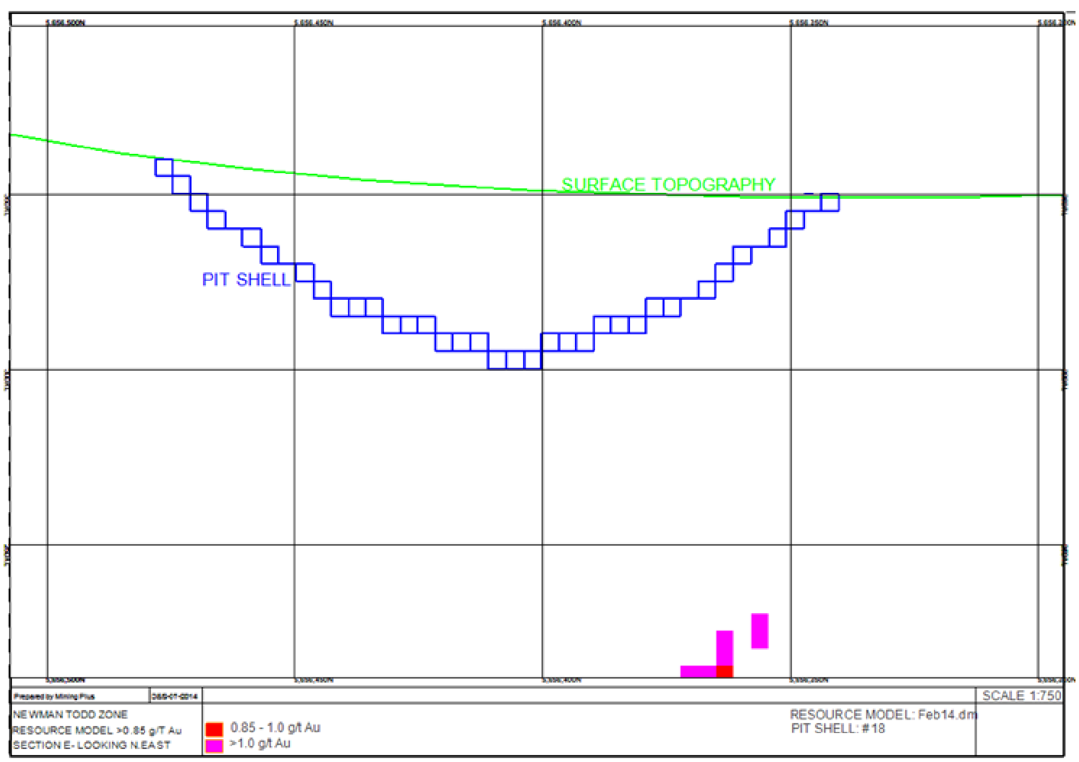


Figure 14-19 Resource Model and Constraining Pit Shell- Section E, Showing Blocks at Cut-off 0.85g/t Au

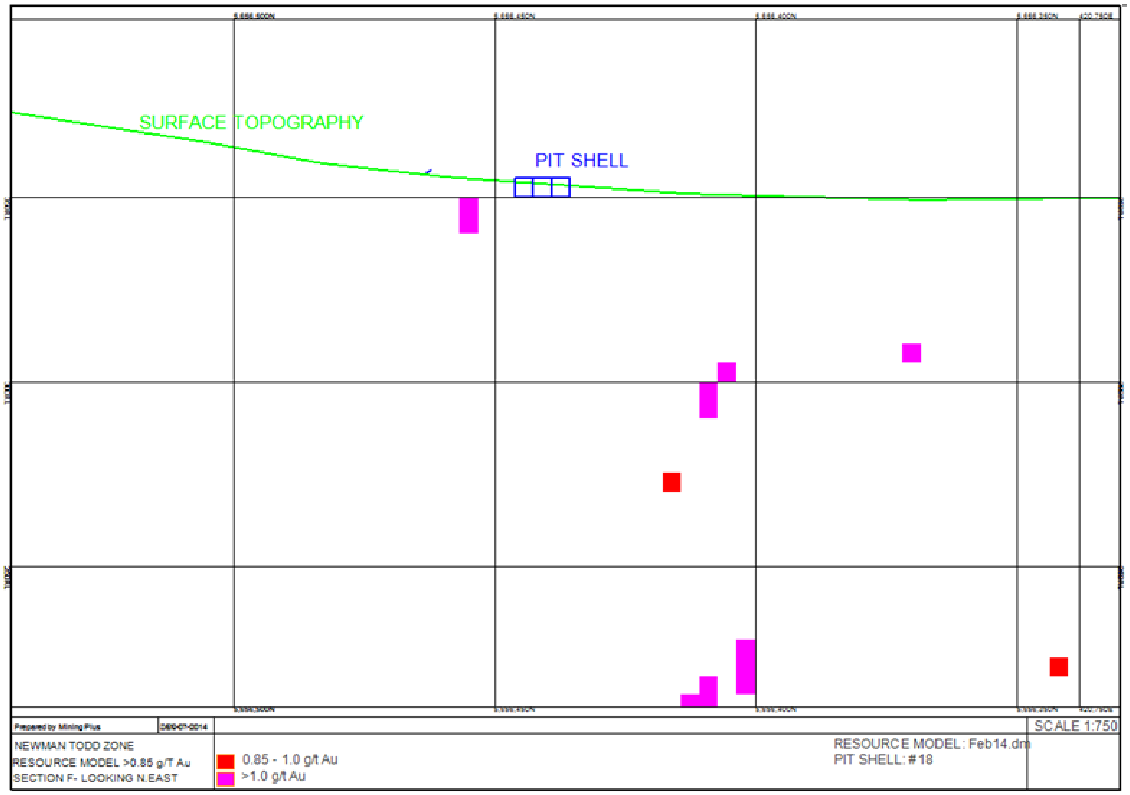


Figure 14-20 Resource Model and Constraining Pit Shell- Section F, Showing Blocks at Cut-off 0.85g/t Au

15 MINERAL RESERVE ESTIMATES

Economic evaluation based on a preliminary feasibility study or feasibility study can only be used to estimate Mineral Reserves. Therefore at the present level of development for the Newman Todd Project, Mineral Reserves cannot be determined.

16 MINING METHODS

16.1 Introduction

The Newman Todd deposit is relatively shallow. However, this study has included a high level assessment for underground mining potential, as an option to reduce the impact of mining in the vicinity of Abate Lake.

16.2 Geotechnical

No geotechnical data was made available for the project. Individual drill logs have been recorded for core drilling on the property, and they include lithological and alteration descriptions of major lithologies. No unconfined compressive strength or point load tests have been acquired to date for the purposes of determining rock mass classification.

There is therefore insufficient data available for a geotechnical model to be built at this stage.

The Newman Todd property is located within in a low seismic hazard zone as shown in Figure 16-1.

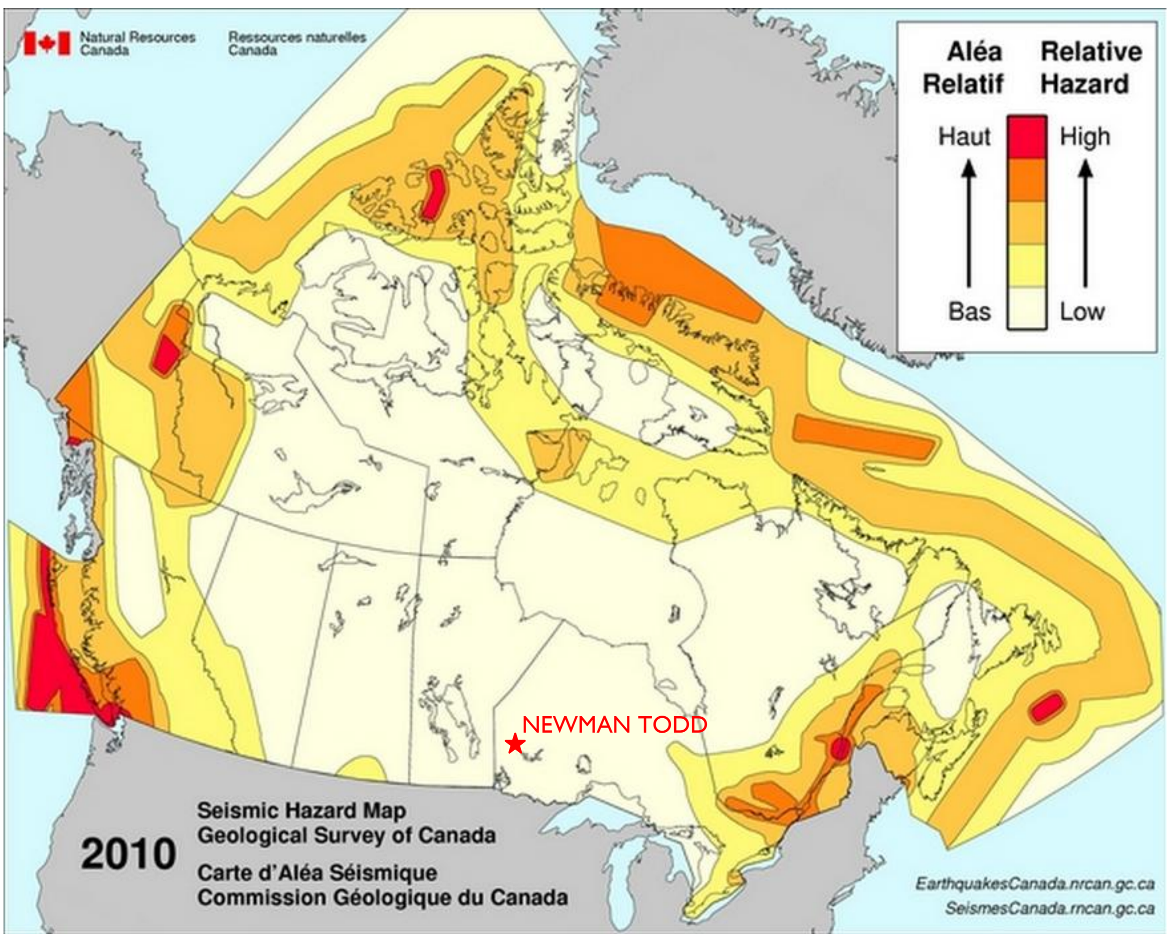


Figure 16-1 Seismic Hazard Map for Canada (Natural Resources Canada, 2010)

Given the absence of suitable geotechnical data for the project, conservative geotechnical parameters have been assumed for mine design purposes.

For open pit mining, an overall slope angle of 45° has been assumed and where the main haulage ramp is installed in the pit wall, an overall slope angle of 35° has been assumed.

For underground mining, longhole open stoping with cemented backfill was considered on the basis that it would provide maximum Mineral Resource recovery and that the higher grade zones of the deposit are relatively wide in places. A level spacing of 25 m was assumed.

16.3 Hydrological/Hydrogeological

No hydrological or hydrogeological data was available for the project.

16.4 High Level Assessment for Underground Mining

16.4.1 Block Model Import for High Level Underground Assessment

The Mineral Resource block model was imported into Mine2-4D software resulting in a Datamine format block model for Mineable Shape Optimizer (MSO) and subsequent conceptual underground mining assessment. Validating the import through comparison of tonnes and grade at specific cut-off grade increments proved that a tonnage variance of <1% and a metal variance of <0.1% exists. This is deemed well within tolerance for high level analysis and design.

For the purpose of initial potentially minable inventory assessment, a 2.0g/t Au cut-off was used. This cut-off was estimated based on an assumed gold price of USD1,400 /oz (base case metal price used for the PEA), mining recovery of 95%, mining dilution of 10%, metallurgical recovery of 90% and total costs (mining, processing, G&A) of $100 /t. This cut-off grade is deemed to be a reasonable base case for economic extraction considering the geometry, potential extraction methods and typical cut-off grades at similar underground operations in the region. Only estimated mineral resources at a cut-off grade of 2.0g/t Au have been used within this high level underground mining assessment. An optimal cut-off grade was selected through comparison of the resulting net cash-flow in subsequent analyses as detailed below.

16.4.2 Underground Mining Optimal Cut-Off Grade Determination

As a result of the limited size of the Newman Todd Mineral Resource, calculation of an underground mining cut-off grade (incorporating both operating and capital cost estimates) needed to be conducted. This calculation was performed through a comparative process (hill-of-value approach) which identified the cut-off grade yielding the highest net cash-flow before tax. This calculation considered a longhole open stoping with cemented rock fill mining method to achieve maximum recovery of the Mineral Resource which in places demonstrates wide zones with higher grades. An optimal cut-off grade of 2.5 g/t Au was selected based on this assessment, as shown in Figure 16-2.

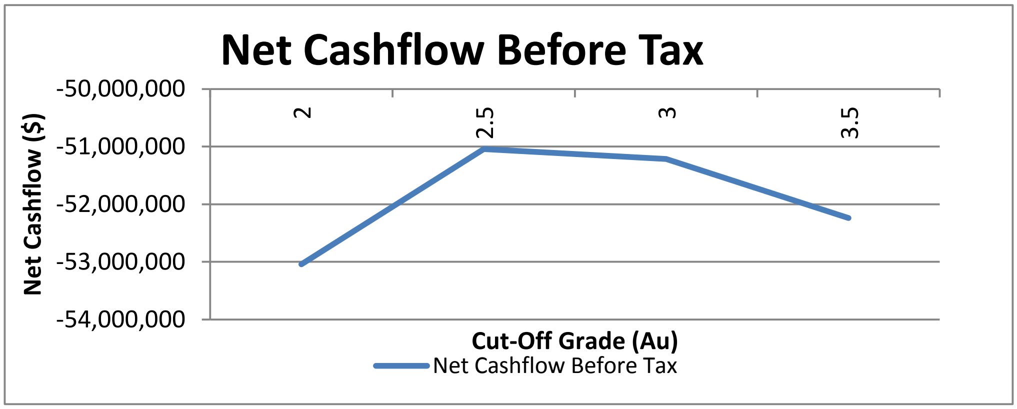


Figure 16-2 Net cash-Flow Before Tax for Cut-Off Grade Selection (BECO)

The following points present a simplified summary of the process used to determine the optimal cut-off grade:

1. Run Mineable Shape Optimiser (MSO) for a series of cut-off grades ranging from 2.0-3.5 g/t Au, to determine an approximate underground potentially mineable inventory at these cut-off grades
2. Through analysis of the output data, an average Mineral Resource recovery (insitu) factor was determined
3. The average Mineral Resource recovery factor was then applied to the corresponding tonnage value at the respective cut-off grades. This process essentially identifies a potentially mineable inventory (insitu) from the Mineral Resource tonnes and grade chart for each assessed cut-off grade
4. Resulting potentially mineable inventories at each cut-off grade were input to a high-level financial model. The financial model is fundamentally driven by key benchmarked costs from similar mining projects and operations, as well as development physicals extracted from a high level design. Section 16.4.4 provides a summary of the high level design and resulting development physicals
5. Financial results in the form of net cash-flow before tax were summarised for each respective cut-off grade under assessment. The financial results were plotted as a line chart format to identify the optimal cut-off grade yielding the most favourable financial outcome.

16.4.3 MSO Optimization

Datamine Studio3 software was utilised in order to generate an approximate potentially mineable inventory at the selected 2.5 g/t Au cut-off grade via use of the MSO (Mineable Shape Optimizer) functionality. Table 16-1 provides a summary of key parameters and inputs for this optimisation process.

Table 16-1 Main MSO Geometric Parameters and Inputs

MSO Parameter	Value
Cut-Off Grade (Au g/t)	2.5
Min Width (m)	2
Level Spacing(m)	25
Section Spacing (m)	2
Default Density	2.68
Waste Pillar (m)	0
Min Dip Angle (deg)	45

MSO Parameter	Value
Max Dip Angle (deg)	135
Max Strike Angle (deg)	45
Max Strike Angle Change (deg)	20
Default Dip (deg)	90
Default Strike (deg)	45
Min X	420000
Max X	421805
Min Y	5655115
Max Y	5657305
Min Z	-500
Max Z	500

The resulting MSO potentially mineable inventory is depicted in Figure 16-3. MSO yielded a potentially mineable inventory (insitu) of 376,600 tonnes at 3.31 g/t Au of Indicated mineral resources and 454,200 tonnes at 4.66 g/t Au of Inferred mineral resources. This potentially mineable inventory can be seen as the green stope shapes in Figure 16-4. It should be noted that although all shapes are above the economic cut-off grade specified, they do not consider the necessity for spatial consistency in order to maximise utilisation of underground development. The resulting shapes are sparse, which is highly evident in the lowest western portion of the resulting stope shapes.

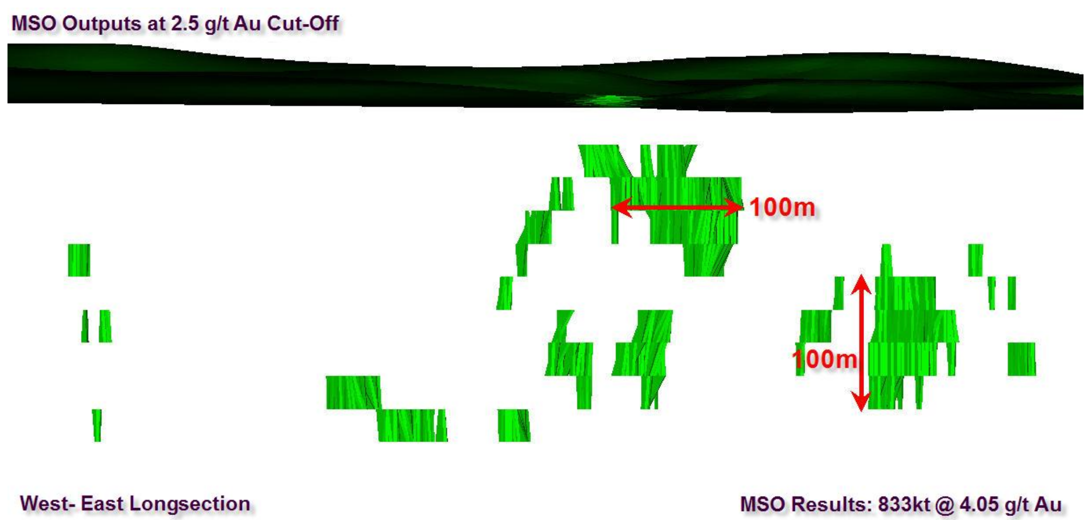


Figure 16-3 Longsection (Viewing North) of MSO Mineable Shapes at 2.5 g/t Au Cut-off

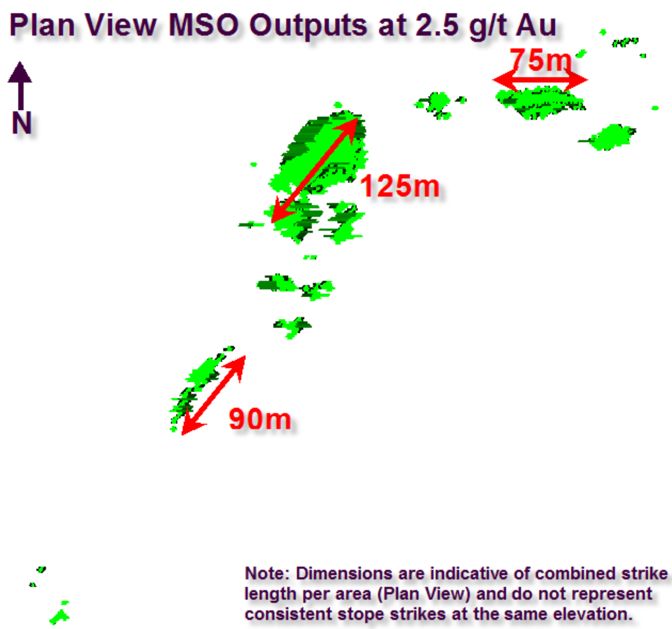


Figure 16-4 Plan View of MSO Outputs at 2.5 g/t Au

Satellite stopes (outliers) were manually removed from the output file on the basis of poor continuity and substantial development requirements per tonne of potentially mineable inventory. A depletion of the satellite non-practical stopes resulted in a potentially mineable inventory (insitu) of 242,100 tonnes at 3.42 g/t Au of Indicated mineral resources and 389,700 tonnes at 4.88 g/t Au of Inferred mineral resources.

Figure 16-5 shows the depleted shapes resulting in the final mineable envelope considered for design and financial analysis.

Stope shapes identified in red (by colour) were not considered in the development design due to their distance from the two main continuous mining zones. The depleted shapes were deemed to have a high likelihood of being non-economic when the additional lateral development for access is considered.

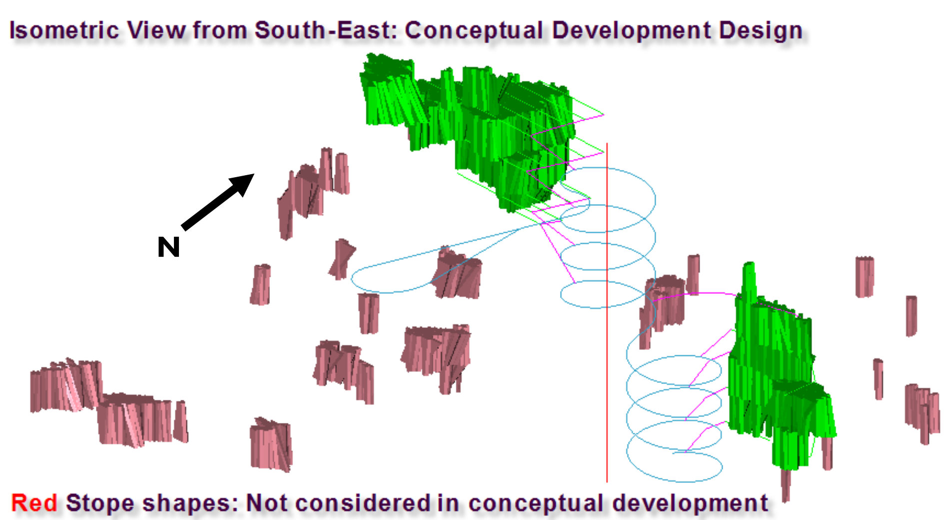


Figure 16-5 Conceptual Design Stope Considerations: Isometric View (Looking Northwest)

16.4.4 Underground Conceptual Design Overview

In order to gain a greater understanding of the practical extraction for the stopes identified in the MSO optimization, a high-level design was completed for key development. Development centrelines were only considered to stoping areas deemed practical for extraction by their nature of consistency and conglomeration to allow for acceptable shared capital infrastructure. This process was taken to represent a potentially mineable inventory in an effort to first assess the economic viability at best case scenario.

Two main extraction areas were identified through the depletion of the satellite non-viable stopes. The upper extraction zone is to be mined via a transverse approach due to large (and highly variable) stope widths. The lower extraction zone to the south-west is to be extracted longitudinally via end-on access. A surface portal provides access to a single spiral decline which is offset and shifted to the south- west at the 225mRL transition point, where access is then provided to the lower mining area as shown in Figure 16-6.

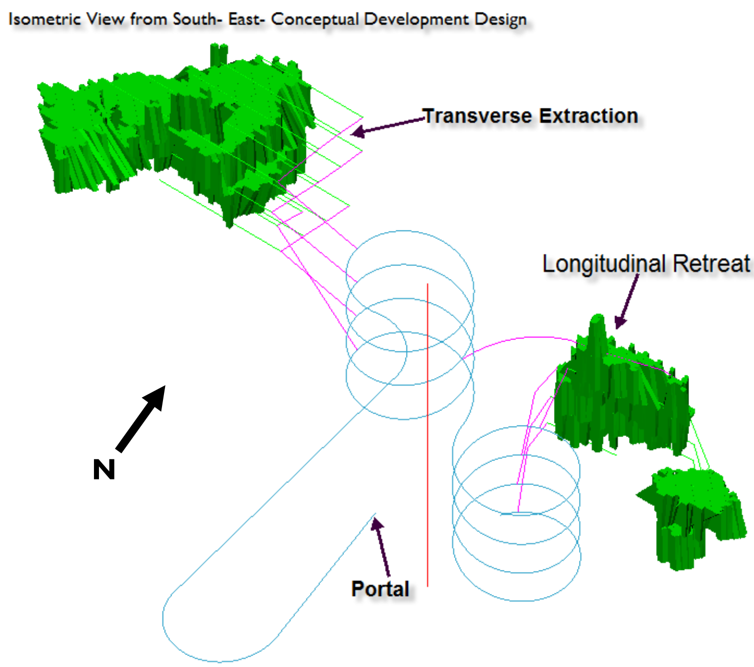


Figure 16-6 Conceptual Development Design (Depleted): Isometric View (Looking Northwest)

Development physicals (metres) for main excavation types were measured from the conceptual design, with ancillary development calculated as a function of main development. Table 16-2 provides a summary of development metres for the conceptual design. A total of 3,300 m and 2,000 m of development was estimated for capital and operating requirements respectively. The development physicals were then used within the economic assessment.

Table 16-2 Summary of Conceptual Development Physicals

Development Type	Measurement	Unit	CAP/OP	Source
Decline	1,722	m	CAP	Measured
Access / Crosscut (Waste)	343	m	CAP	Measured
Access / Crosscut (Potentially Economic Material)	343	m	OP	Measured
Oredrives	1,670	m	OP	Measured

Development Type	Measurement	Unit	CAP/OP	Source
Return Air Rise	225	m	CAP	Measured
Escapeway Rise	225	m	CAP	Calculated
Return Air Drive	203	m	CAP	Calculated
Stockpile	252	m	CAP	Calculated
Sump	180	m	CAP	Calculated
Escapeway Drive	162	m	CAP	Calculated
Total Capital Development	3,311	m	CAP	
Total Operating Development	2,013	m	OP	

16.4.5 Underground Mining High Level Economic Assessment

The intent behind the high-level financial assessment is to indicate the status of feasible extraction for the identified potentially mineable inventory. If economic feasibility was proven, it was recommended that a subsequent evaluation be conducted to further investigate the viability of satellite stopes and to account for potential cost refinements.

A high-level financial model was constructed based on benchmarked data from similar mining projects and operations. Costs for each cost area were generated through the application of unit costs or regression relationships that corresponded to specific mining physicals.

A summary of economic outputs is as follows:

- Cut-off grade 2.5 g/t Au
- Recovered Potentially Mineable Inventory based on 10% mining dilution and 95% mining recovery
  - Indicated mineral resources: 196,650 tonnes at 3.15 g/t Au
  - Inferred mineral resources: 316,500 tonnes at 4.49 g/t Au
- Recovered Au Ounces based on 90% metallurgical recovery
  - Indicated mineral resources: 17,920 oz
  - Inferred mineral resources: 41,150 oz
- Production rate of 870 tpd (310,000 tpa)
- Production mine life of 1.7 years (21 months) excluding pre-production time and ramp-up
- All-In mining unit OPEX of $41 /tonne
- Total operating unit cost of $109 /tonne
- Cash Operating Cost per ounce of $883 /oz
- Total capital cost of $91.2 M
- Net cash flow before tax of -$65.0 M

Note: All designs and costs in this Preliminary Economic Assessment are preliminary in nature and include both Indicated and Inferred Mineral Resources. Inferred Mineral Resources have insufficient drilling and sampling to classify these as Indicated or Measured Mineral Resources. Therefore economic considerations cannot be applied that would enable classification of this material as mineral reserves. There is no certainty that the Preliminary Economic Assessment will be realised.

Underground mining is therefore not considered feasible on the basis of the following reasons:

- Significantly negative net cash flow
- Relatively shallow nature of the Newman Todd Mineral Resource
- Lack of continuity in stopes to enable access with a reasonable amount of development
- Short mine life

Instead, open pit mining only is considered for the base case.

16.5 Pit Optimisation

An open pit optimisation was conducted on the Mineral Resources using Whittle software. The optimised economic pit shells selected as the basis of open pit designs were created using this software. Whittle is a well known commercial product that uses various geologic, mining, and economic inputs to determine the pit shell of greatest net value.

16.5.1 Input parameters

Table 16-3 describes the input parameters used for the pit optimisation.

Table 16-3 Optimisation Parameters for Whittle

Pit Optimisation Parameters for Newman Todd Project		
Mining Parameters	**Units**	**Value**
Mining Dilution Factor	factor	1.05
Mining Recovery Factor	factor	0.98
Mining Cost (Contractor)	$/t moved	6.03
Slope Angles	**Units**	**Value**
Overall Angle: Bearing 145 -235 degrees (ramp location)	degrees	35°
Overall Angle: Remainder of slopes	degrees	45°
Processing Parameters	**Units**	**Value**
Processing Rate	tpd	1,000
Processing Cost	$/t processed	25.00
Material Transportation Cost (pit crest to processing facility)	$/t processed	3.70
General & Administration Cost	$/t processed	4.00
Gold Recovery	%	90.0
Economics Assumptions	**Units**	**Value**
Gold price	US$/oz	1,400
Payable proportion of gold produced	%	99.5
Gold Selling Cost	$/oz	5.00
AngloGold Ashanti Royalty	% of NSR	2.75
Franco-Nevada Royalty	% of NSR	2.0
Exchange Rate (USD/CAD)	US$/Can$	1.01

It is expected based on open pit mines and mining projects having a similar shovel fleet and the 5x5x5 m block size used in the mineral resource model, that a 98% mining recovery and a dilution factor of 5% will be achieved for Newman Todd. Open pit mining projects that are considered comparable examples in support of the assumed mining recovery include Dominion Diamond Corporation's Misery and Pigeon open pits (assume 98% mining recovery), Rio Alto Mining's La Arena Project (assumes 98% mining recovery) and Capstone Mining Corp's Minto and Santo Domingo Projects (assume 100% mining recovery). Mining Recovery accounts for the potentially economic material loss events during mucking due to unclear potentially economic material / waste contacts or areas where selectivity cannot be reached. Measures would be taken to manage material changes between truck loads and mis-dumps, including the use of Geologists working alongside the shovel to 'spot' potentially economic material. The dilution factor is applied to the potentially economic material blocks due to the undesired waste tonnes added to the potentially economic material in the mining process. Dilution accounts for the geometric shape of the higher grade mineralised zones, erroneous geologic interpretation and mine planning, drill and blast practices, localised waste sloughing from walls into the potentially economic material muckpile. The QP deems that the level of assessment of mining recovery and dilution factors is appropriate for a PEA.

The slope angles were adjusted according to the optimum ramp position on the southwestern side of the proposed pit shell.

Contractor mining costs have been assumed to conduct the pit optimisation, owing to the relatively small size of the Mineral Resource. The base mining cost is $5.25 /t of material moved, based on costs from similar mining projects and operations in the region. Contractor markup has been estimated at 15% on top of the base mining cost. The overall processing cost is $25 /t based on a crusher/mill, gravity separation, flotation circuit and carbon in leaching facilities. A constant processing facility recovery of 90% has been used based on the metallurgical testwork conducted on Newman Todd composite samples during 2013. A material haulage cost of $3.70 /t has been applied on top of the processing cost to transport the material from the mine to the processing facility located 18 km (by road) to the northeast of the mine.

A gold price of US$1,400/ounce and a USD/CAD exchange rate of 1.01 have been assumed for the project economics. The basis for these assumptions is detailed within Section19.

The Newman Todd Project is subject to several royalties based either on Net Smelter Return (NSR) or Net Carried Interest (NCI). Net Smelter Return royalties are calculated based on the relevant NSR royalty percentage of the net proceeds that a mine owner receives from the sale of metal products, less transportation and refining costs after the mine gate. Net Carried Interest royalties are calculated based on the relevant NCI royalty percentage of the net proceeds that a mine owner receives from the sale of metal products after recovery of all operating costs, capital expenditures, a carrying charge calculated at prime plus 1% and a reserve for working capital. In this calculation, capital expenditures also include all moneys expended prospecting, exploring and developing the property prior to commercial production.

Those royalties for the project that are based on NSR have been applied to the revenue from payable gold, less the selling costs. However, the royalty based on NCI was not applied in the optimisation phase of the project because it must be applied to the project economics after operating and capital costs have been considered. The NCI-based royalty has been applied later in the cash flow model as discussed in Section 22.

16.5.2 Pit Optimisation Results

A set of nested pit shell surfaces were created using the Lerch & Grossman algorithm as implemented in Whittle software. The nested pit shells were obtained by varying the Revenue Factor (RF) at fixed increments of 0.02, starting at an initial shell produced at RF of 0.64. The Pit 18 (horizontal axis) in Figure 16-7 represents the pit shell at a RF of 1.0. This corresponds to the ultimate pit limits under the current economic parameters and the geometry used to guide the final pit design.

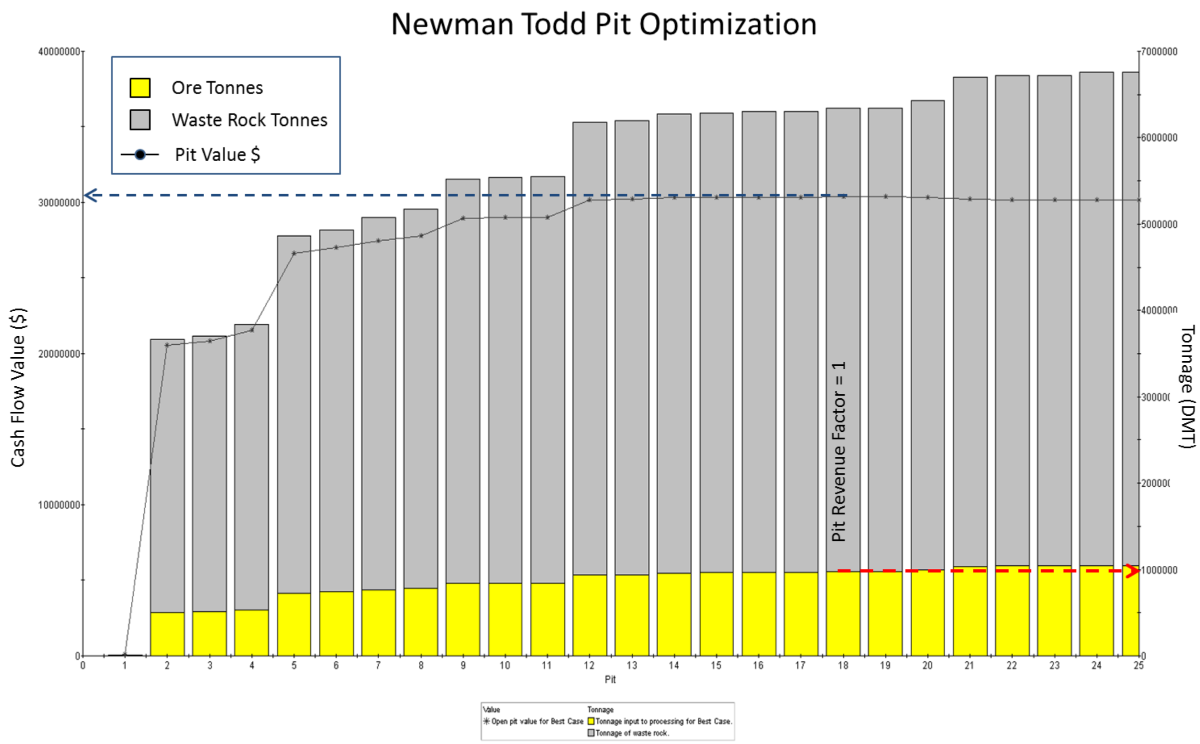


Figure 16-7 Optimisation Results – Pit by Pit Graph

As a sensitivity example, the sections in Figure 16-8 show the pit shells at higher RF values of 1.5 and 2.0. These represent the hypothetical pit shells at 50% and 100% higher revenue per potentially economic material block respectively. For both of the higher RF examples, the pit bottom does not sink lower for more potentially economic material than the Pit Shell 18, but rather the pit shells extend to the west. Table 16-4 shows the results for the Whittle runs at RF 1.0, 1.5 and 2.0.

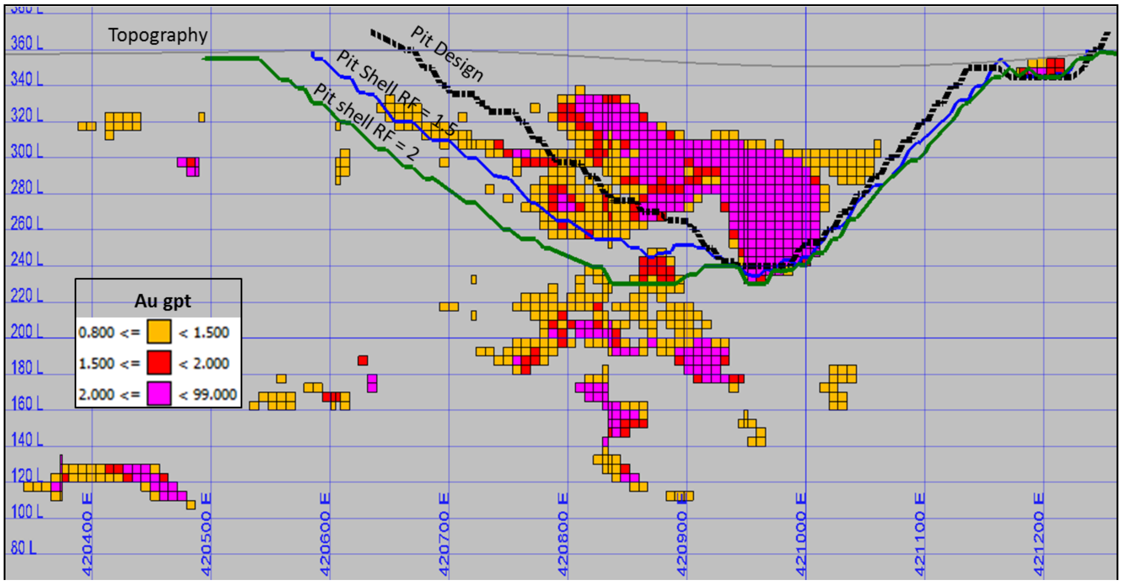


Figure 16-8 Cross Section Through Pit Shell (Looking Northwest)

Table 16-4 Summary of Whittle Sensitivity Runs at RF 1.0, 1.5 and 2.0

Revenue factor	Pit Shell	Potentially Economic Material Tonnes '000 dmt	Grade g/t Au	Waste Rock '000 dmt	Total Rock '000 dmt	Pit Value $M
1	18	977	2.7	5,369	6,346	30.4
1.5	42	1,587	2.2	9,021	10,608	17.9
2	67	1,922	2.0	12,867	14,789	0.1

16.6 Mine Design

A pit design was created for the Newman Todd Deposit using the parameters summarised in Table 16-5.

Table 16-5 Mine Design Parameters

Mining Parameters	Units	Value
Optimised Pit Shell	Pit	18
Bench Height (single bench)	m	10.0
Berm Width	m	4.0
Batter Angle	degrees	65°
Inter Ramp Angle (IRA)	degrees	49°
Overall Angle	degrees	39° - 45°
Haul Road Width	m	12.0
Haul Road Gradient	%	12%

Due to the geometrical distribution of the potentially economic material, an access ramp on the Southwest side of the pit enables less waste rock extraction and access to pockets of potentially mineralised material at deeper elevations on the northeastern side of the open pit. The overall slope angle for the pit zone between bearings 135°and 270° is 39° which is a result of the switchback and haul road on this side of the pit. A haul road on the North side of the pit would increase the strip ratio due to a requirement for increased waste rock excavation. Figure 16-9 shows the toe and crest strings for the final pit design.

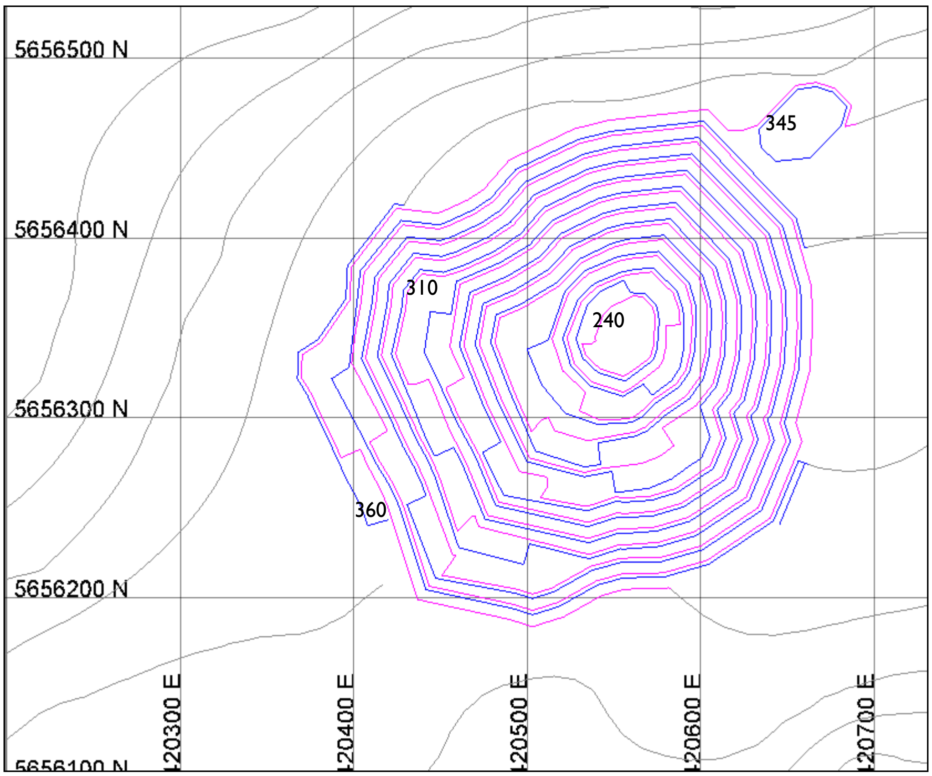


Figure 16-9 Pit design in Toe-Crest Strings

Waste rock removed from the operation would be stored on the waste storage facility which is to be sited to the southeast of the open pit as shown in Figure 16-10. It is expected that waste rock would be categorised as either potentially acid-generating or non acid-generating, although no specific testwork and classification has been undertaken for this level of study. Owing to the known presence of significant carbonate zones constrained to the waste portions within the Newman Todd Structure, these are expected to provide a substantial neutralisation effect. On this basis, there is expected to be sufficient non acid-generating waste rock available for construction of the walls for the tailings storage facility and for capping of potential acid generating waste rock within the waste storage facility.

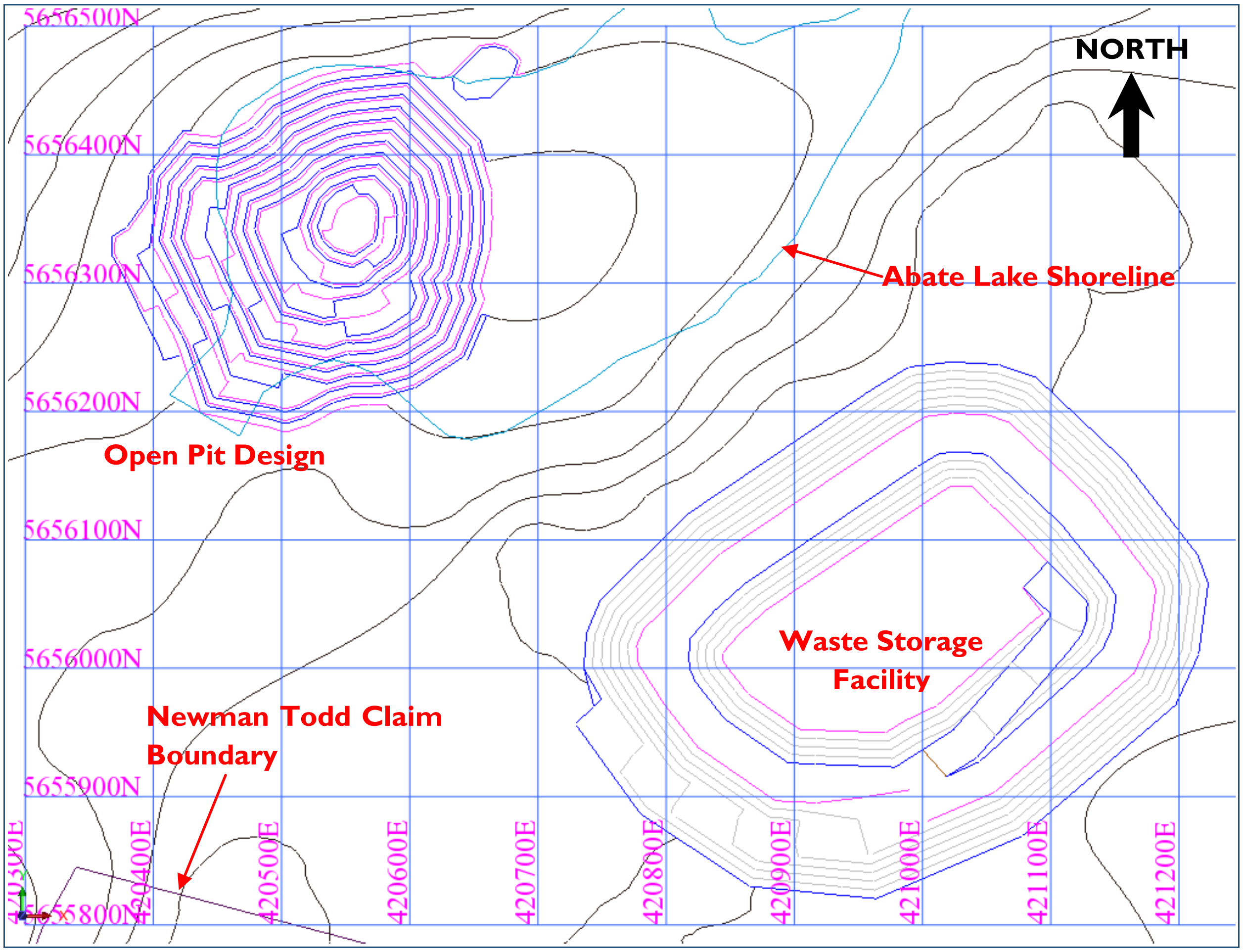


Figure 16-10 Open Pit and Waste Storage Facility Designs

16.7 Cut-Off Grade

The cut-off grade was established to maximise the pit's revenue. A cut-off grade (COG) of 0.8 g/t Au was derived from Equation 1.

Equation 1: Cut-off grade reference formula:

$$\text{COG (g/t)} = \frac{(\text{Processing Cost} + \text{Ore Haulage Cost} + \text{G\&A})}{(\text{Recovery}) \times (\text{Price} - \text{Sell Cost}) \times (1 - \text{Royalty})}$$

For determining the COG to apply to the mine design, only the costs of rehandling, treatment and general and administration (G&A) are considered because the mining costs apply to all material contained within the mine design.

16.8 Mine Sequence and Schedule

Mining would occur using conventional truck and shovel operations. Mining would be conducted on a two 10 hour shifts, 7 day per week basis.

Mining would commence with a 21 month pre-production period involving the following activities:

- Construction of a dike at the inflow end of Abate Lake and a water diversion channel, prior to dewatering of the lake
- Lake bed sediments and overburden removal

The material inside the pit limits was scheduled on an annual basis, taking into consideration a mill processing rate of 1,000 tpd. A total of 4.1 Mt of lake bed sediments and overburden material has been scheduled in the first 18 months (Project Years -2 and -1 in Table 16-6) of a pre-production stage at a mining rate of 2,800 tpd. The material above the cut-off grade which is mined during this pre-production stage will be stockpiled and fed into the mill in period 1 (approximately 120 kt). After the pre-production stage is over at the end of period -1, a total of 38 months of steady mill feed at 1,000 tpd will be possible.

Mining recovery of 98% and dilution of 5% have been applied in the tonnes and grades reported in the mine schedule. Table 16-6 summarises the material included within the mine schedule.

Table 16-6 Mine Schedule Material Summary

Resource Classification	Mill Feed Tonnes[1,2,3]	Au Grade[1,2,3]	Au Metal[1,2,3]
Units	(dmt)	(g/t Au)	(ounces)
Indicated	482,294	2.4	36,906
Inferred	675,433	2.6	55,439
Total	**1,157,727**	**2.5**	**92,345**

[1] Mining recovery 98% and dilution factor 5% applied. [2] First 6 months of overburden stripping. [3] 2 months of mill feed.

Note: All designs and costs in this Preliminary Economic Assessment are preliminary in nature and include both Indicated and Inferred Mineral Resources. Inferred Mineral Resources have insufficient drilling and sampling to classify these as Indicated or Measured Mineral Resources. Therefore economic considerations cannot be applied that would enable classification of this material as mineral reserves. There is no certainty that the Preliminary Economic Assessment will be realised.

16.9 Mine Equipment

The mine equipment listed in this section has been prepared to meet the production rate described in the schedule presented in Table 16-7. It is recommended that a contractor-based operation be implemented to conduct mining due to the short mine life of the project. The primary mining equipment is shown in Table 16-7.

Table 16-7 Fleet Size - Primary Mining Equipment

Project Period	-2	-1	1	2	3	4
Excavator (4-5 yd^3 bucket)	2	2	1	1	1	1
Articulated Trucks (payload 25t)	5	5	4	2	2	2
Drills (DDH rig, 4" diameter)	1	1	1	1	1	1
Track Dozer (35-t dozer, D8)	1	1	1	1	1	1
Rubber Tire Dozer (t dozer, D8)	1	1	1	1	1	1
Grader (14H or similar)	1	1	1	1	1	1
Water Truck (5,000 L)	1	1	1	1	1	1

17 RECOVERY METHODS

Metallurgical test work results discussed in Section 13 indicate that mill feed from the Newman Todd deposit can be processed using conventional crushing, grinding, gravity concentration, flotation, and carbon-in-leach (CIL) of the combined gravity-flotation concentrate to produce a gold dore bar. A simplified 1,000 tpd process flow sheet for Newman Todd is shown in Figure 17-1.

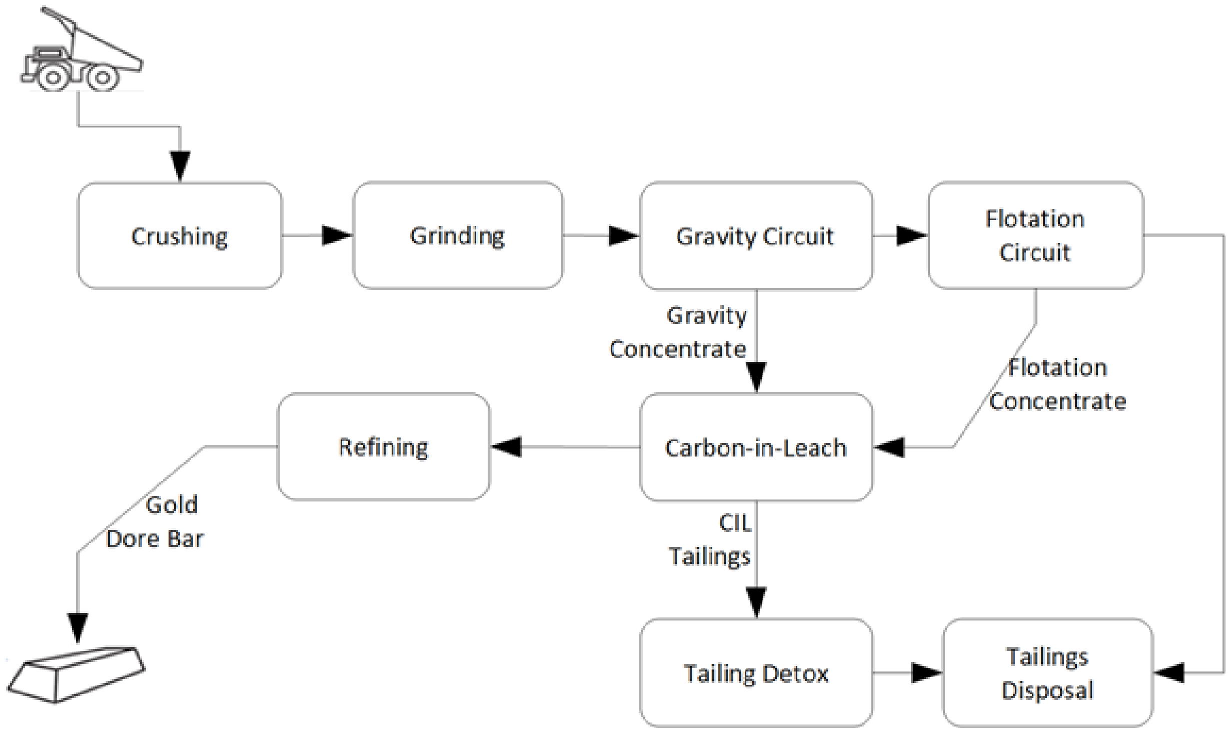


Figure 17-1 Newman Todd Simplified Flow Sheet

Overall process recovery of gold for the rock types associated with gold values are expected as follows:

- 91% for Sulfide-Magnetite Rich (SMR),
- 92% for Sulfide-Magnetite Poor (SMP)
- 82% for Arsenic-Pyrite Rich (APR)

A mill feed grind size P80 of 75 µm is required. Bond Work Index test work indicates mill feed is in the soft to medium hardness range.

The processing plant includes a multi-stage closed circuit crushing plant, followed by grinding, gravity concentration, and classification in a closed circuit to produce gravity concentrate and feed for the flotation plant. The gravity and flotation concentrates are leached with cyanide while in contact with activated carbon using agitated tanks to extract precious metals. Gold collected in the activated carbon is eluted and regenerated before returning to the CIL circuit. Gold is removed from the eluate solution with electro winning before melting into a gold dore bar.

Tailings from the CIL circuit are detoxed in a cyanide destruction-neutralisation process before being disposed of along with the flotation tailings stream. Water will be reclaimed from the tailings pond and recycled to the processing facilities.

Process equipment planned for Newman Todd use conventional technology commonly used in the mining industry.

18 PROJECT INFRASTRUCTURE

A site plan for the Newman Todd property is shown in Figure 18-1. This plan shows the location of the open pit, demountable offices, ablution facilities, water management infrastructure, temporary ROM pad and waste storage facility.

Potential mill feed material would be hauled a distance of 18 km to the processing plant to be constructed on an unpatented claim area to the northeast of the Newman Todd property, adjacent to the existing Mt. Jamie Rd that is used to access the property (Figure 18-2). The processing plant, tailings storage facility, water settling pond, ROM pad, demountable offices and ablutions facilities would be constructed on this claim area as shown in Figure 18-3.

Project infrastructure is intended to enable year-round operation of the proposed mine. Further environmental, hydrogeological and civil investigations will be required prior to confirming locations for the required infrastructure as outlined below.

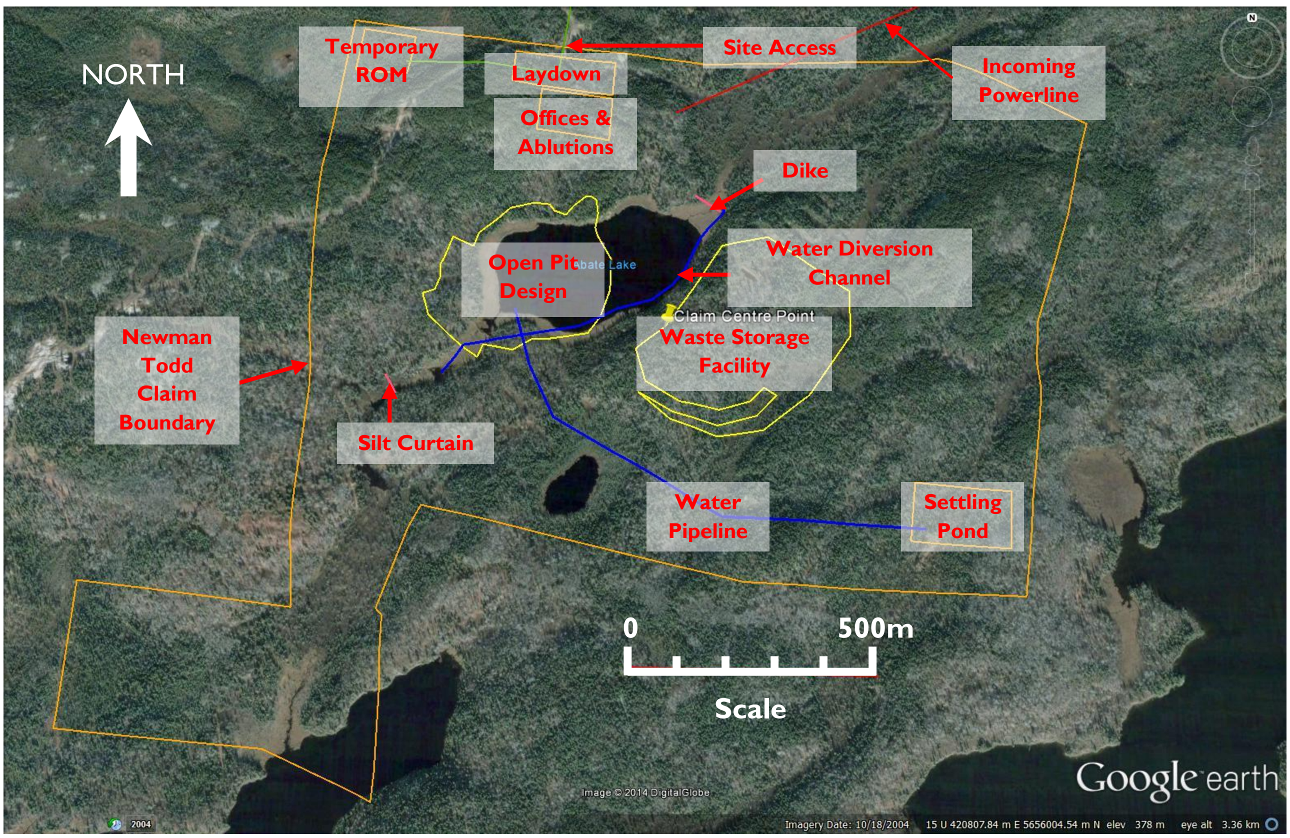


Figure 18-1 Infrastructure on Newman Todd Property

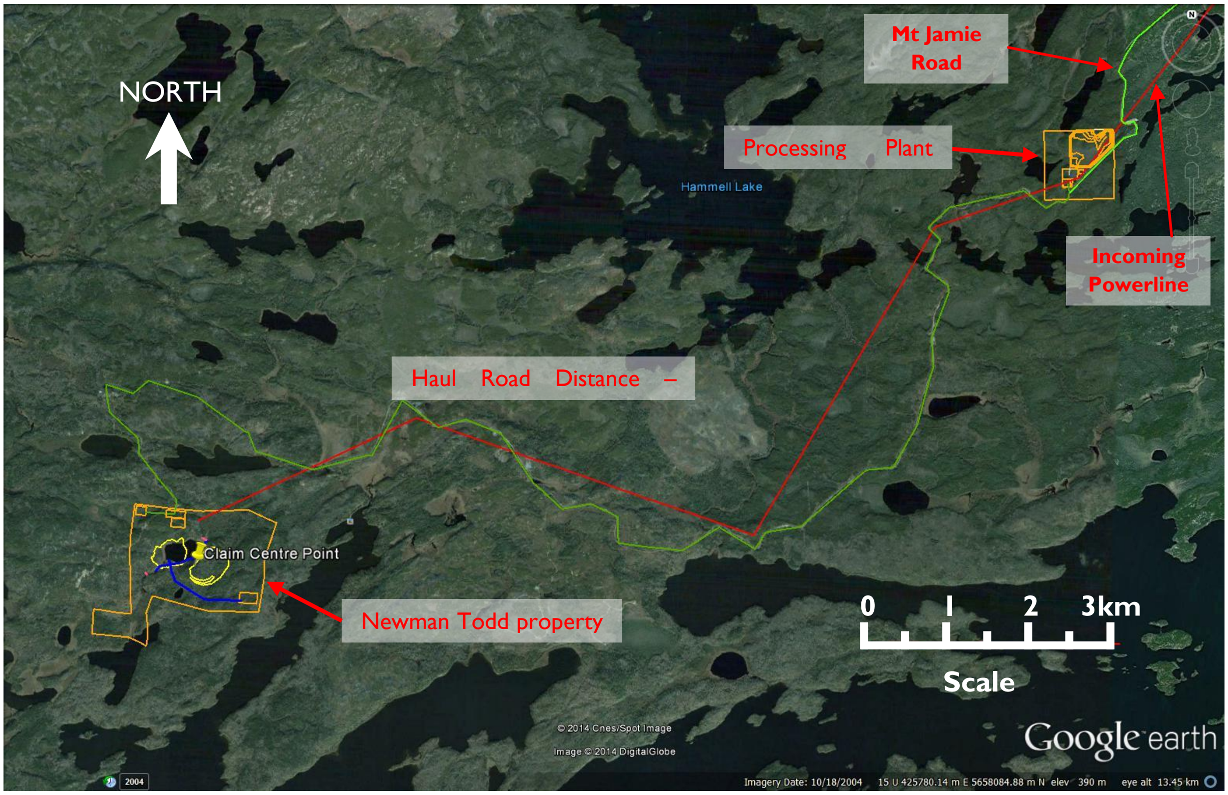


Figure 18-2 Newman Todd Property and Process Plant/Tailings Storage Facility Site

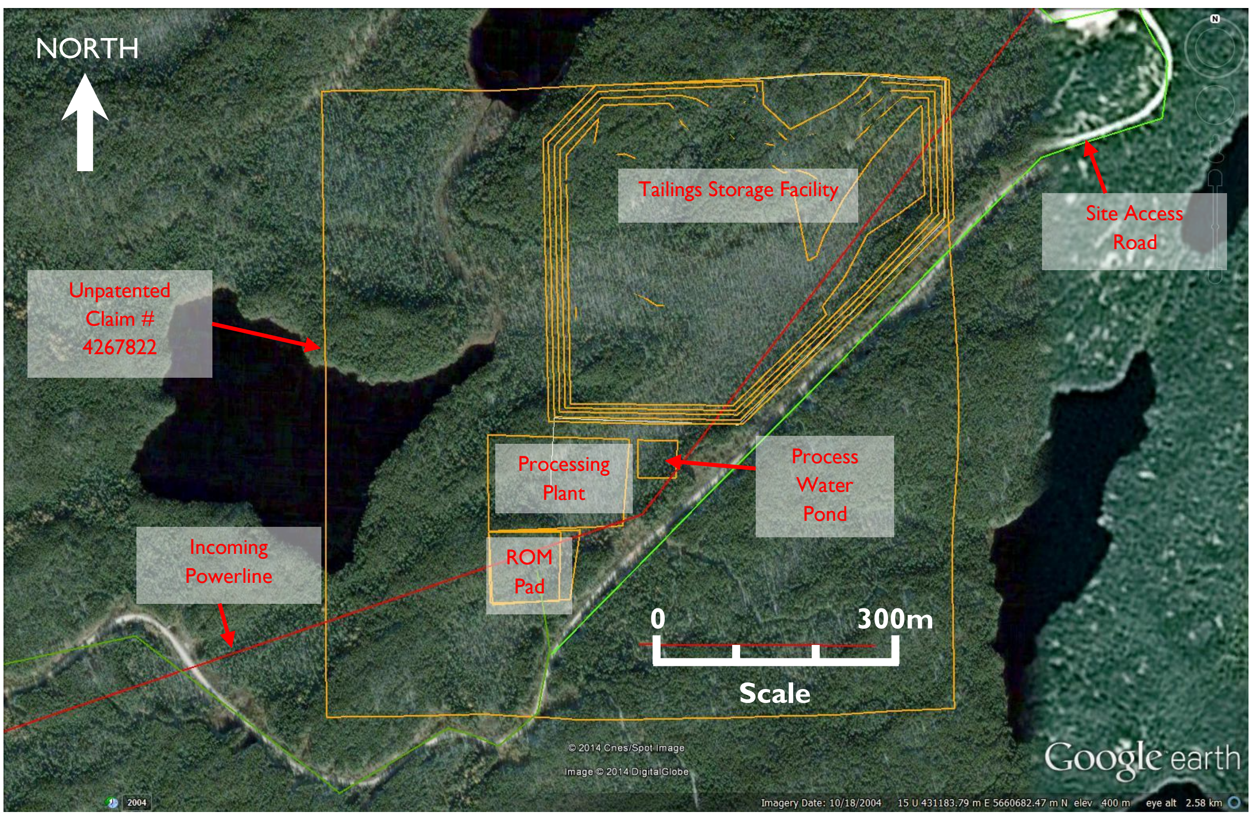


Figure 18-3 Infrastructure on Processing Plant Site

18.1 General Infrastructure

18.1.1 Site Access Roads

The gravel logging road (Mt. Jamie Road) currently used to access the Newman Todd property and processing plant site (as shown in Figure 18-4) would be upgraded to suit the heavier and more frequent traffic flows associated with the proposed mining and processing operations (transportation of personnel, supplies and gold dore product), including during the construction phase.

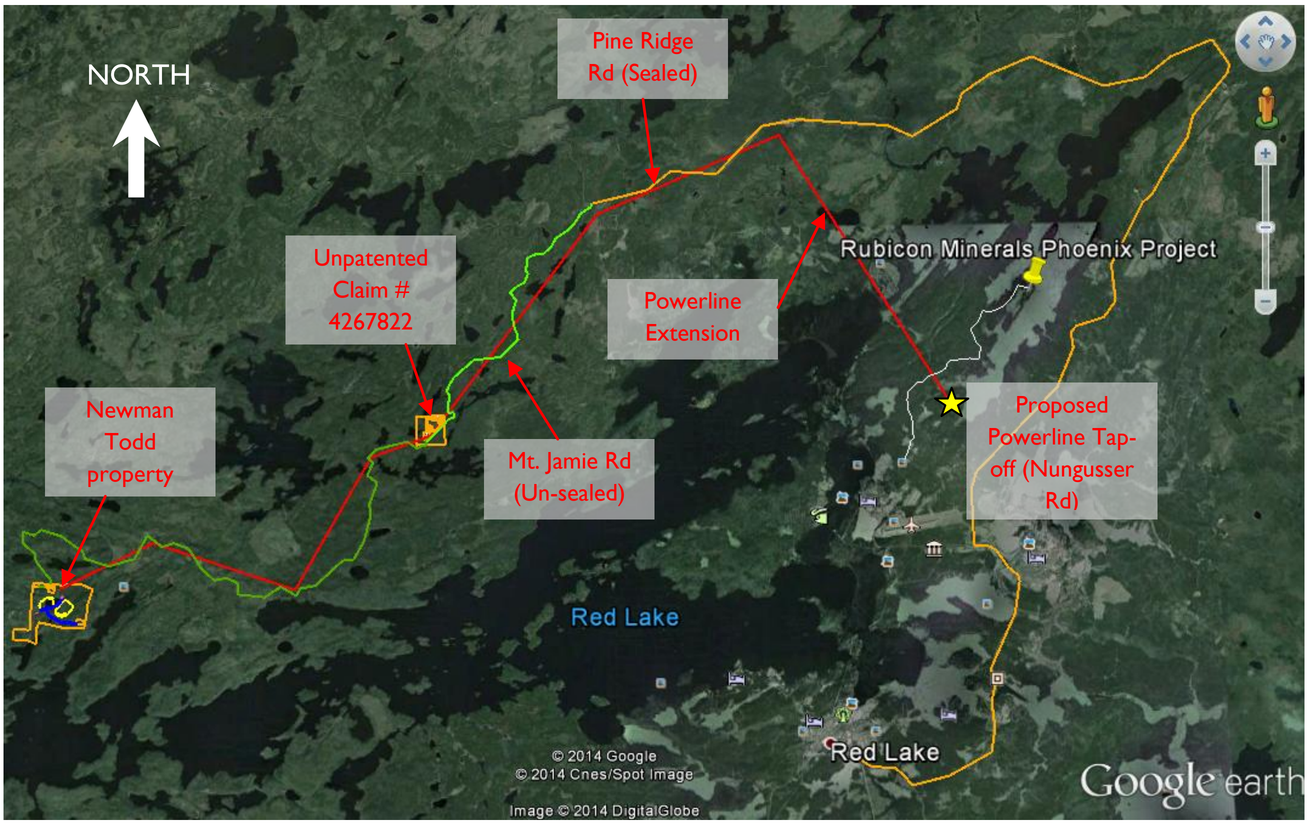


Figure 18-4 Newman Todd Site Access Plan

18.1.2 Power

Power would need to be provided to the project through extension to powerline infrastructure from the present limit of infrastructure on Nungusser Road, Cochenour. The existing power infrastructure at this location supplies power to the Rubicon Minerals mining project. It is expected that approximately 40 km of new overhead powerline would need to be constructed to service the project.

Given that the powerline extension is required to service the Newman Todd property and processing plant site alone, the full cost for powerline infrastructure would need to be paid by Confederation Minerals. If additional power users utilise the extended infrastructure within 5 years of the capital investment, then a portion of the capital cost will be reimbursed to Confederation Minerals. Accordingly, the capital cost estimates used in the economic model in Section 21-1 consider the full costs of this infrastructure.

18.1.3 Water Supply

Water is readily available from nearby lakes for use in mining and processing operations. Process water used on site would be collected in settling ponds prior to recycling through the mining and processing operations. Non-contact water from storm flows and surface runoff is expected to meet downstream water quality requirements from all developed areas, including from the plant site, mine rock disposal areas, tailings area and open pit.

18.2 Surface Water Management

Surface non-contact water is assumed to be of discharge quality. Surface non-contact water will be diverted away from waste storage facility, tailings storage facility, open pit and processing plant using diversion ditches and pumps into the closest water body within the receiving environment. Diversion ditches for non-contact water are assumed to be unlined.

Contact water will be collected in the mine water pond, and process water pond and used as process water in mine and processing plant. Diversion ditches, and ponds for contact water are assumed to be lined.

The Newman Todd open pit will be located beneath the existing Abate Lake. To enable the commencement of mining activities, Abate Lake will need to be removed and water that feeds this lake diverted and pumped around the open pit and waste storage facility, into the downstream watershed. A dike will be constructed within the inlet to Abate Lake. The water currently held within this lake will be pumped out to the downstream watershed. A silt curtain will be installed immediately downstream of the discharge point for water from Abate Lake to minimise the impact of suspended solids to the downstream environment.

18.2.1 Water Diversion, Dikes and Lake Dewatering

Stream inflow rate into Abate Lake is relatively low. It is anticipated that a dike can be constructed in a ‘wet’ condition, simultaneously with the dewatering of the lake.

A diversion channel will be constructed initially, followed by construction of the dike and dewatering of Abate Lake simultaneously.

The diversion channel will be unlined and involve minor pumping to transfer water around the open pit and waste storage facility.

The design parameters for dike construction are as follows:

- As a minimum in accordance with Canadian Dam and Dike Safety Regulations
- No geotechnical data is available for the project area, conservative assumptions will be used
- Low seismic hazard zone as per Natural Resources Canada
- Meteorological data as described in Section 5
- Stream flow rates into Abate Lake are very low and there is one dominant water inflow stream into Abate Lake from the northeastern corner. The low inflow rates are expected to allow dike construction in a ‘wet’ condition
- Peak allowable discharge rate to downstream watershed receiving environment is estimated to be $0.06m^3$/second over a 1 year period

- Crest height based on rise 3m above Abate Lake level - crest at 361 masl
- Stream/lake bed sediment depth 2m. These sediment will be excavated and the dike will be constructed on top of bedrock
- Dike will be keyed into earth, a distance of 5m each end of the dike
- Other minor existing inflow paths to Abate Lake will be managed by open pit dewatering system
- Sufficient time will be allowed prior to commencement of mining for the construction of the dike, dewatering of Abate Lake and management of water removed from Abate Lake
- Due to the expected small size of dike and that mining will commence following construction of the dike, adequate supply of rock for construction of the dike is expected to be available from beneath topsoil on the western side of Abate Lake where open pit mining will later be undertaken
- The dike will be constructed partly with rock material sourced from the project area and other materials sourced from as close as possible to the project site.

Several positions within the dominant inflow stream into Abate Lake were investigated for suitability to construct a dike based on the following criteria:

- Minimise the height and overall size of dike required to optimise its effectiveness
- As close to Abate Lake as possible to minimise disturbance to stream environment

Figure 18-5 shows the potential and preferred dike locations. The preferred dike location has the smallest sectional area and is located close to Abate Lake.

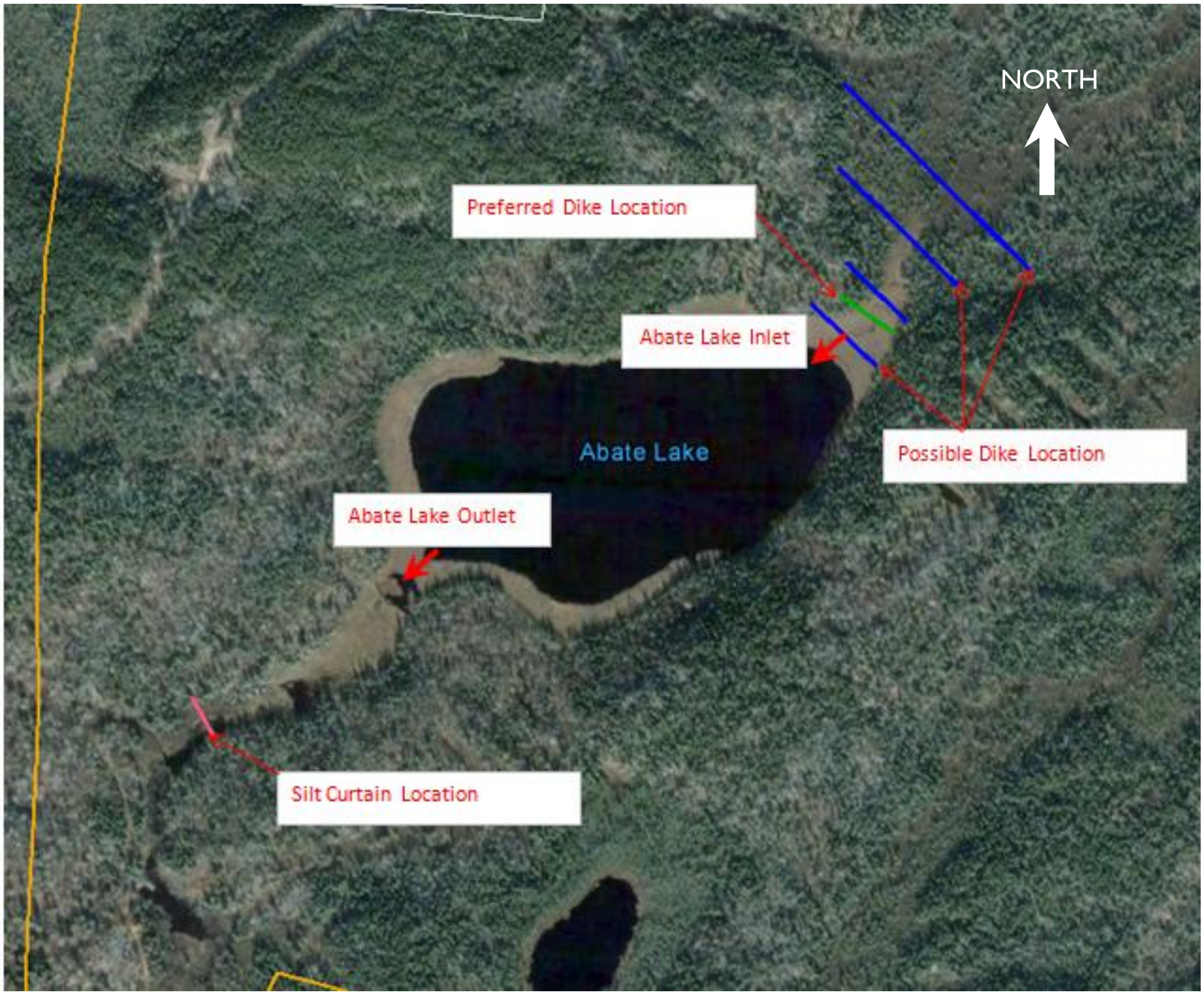


Figure 18-5 Dike Location Options

The crest will be 8 m wide and the batters on either side will grade at 1:2 (V:H). A grout curtain will be installed longitudinally to a depth of 5 m beneath the base of the dike structure, and will continue through the dike to the crest elevation as a cutoff wall. Construction rock materials will comprise:

- fine bedding rock for the dike core
- run of mine rock for capping the upstream side and crest
- coarse riprap rock for erosion protection on the downstream side.

A typical cross section through the dike is shown in Figure 18-6.

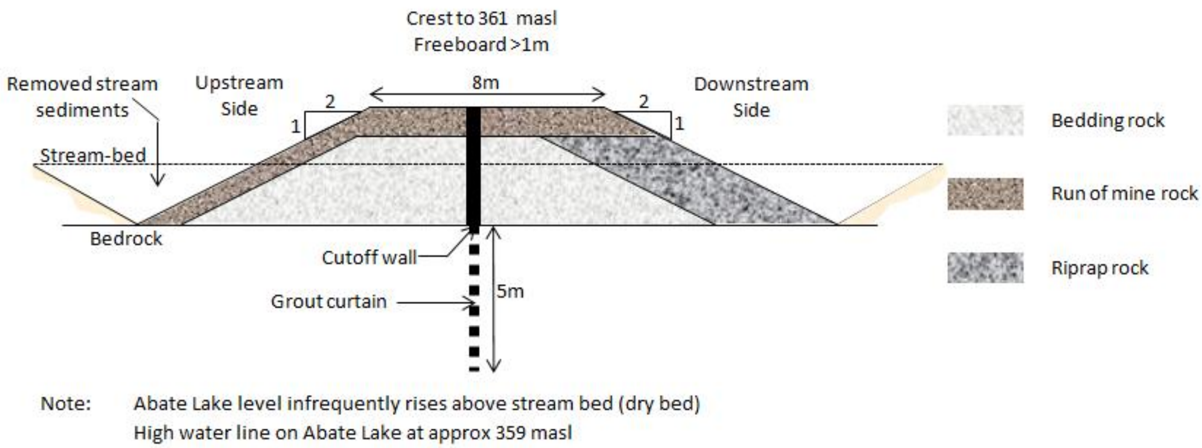


Figure 18-6 Typical Dike Cross Section

Individual material quantities and labour requirements were used to estimate the construction costs for the dike.

The design parameters for lake dewatering are as follows:

- Abate Lake volume estimated based on bathymetric surveys completed to date
- The majority of water to be pumped from Abate Lake is assumed to be pumped directly into the downstream environment beyond the silt curtain, with the remaining water from the bottom of the lake with a high sediment load being pumped into the mine water pond to allow sedimentation prior to discharging to the downstream watershed.
- Silt curtains will be used downstream to manage potential suspended solids entering the receiving environment
- The rates and method of transferring water to the receiving environment and to mine water pond will need to be confirmed based on further hydrological investigations. The assumptions made for this study are based on benchmark data from other Canadian mining projects and operations
- It is likely that suspended solids will be lower during winter based on case studies. Lake dewatering during winter is preferred
- On mine closure, the dike will be breached and the pit allowed to fill with water with overflow directed to establish drainages. The silt curtains will be maintained downstream until acceptable levels of suspended solids are consistently achieved

The design parameters for the removal of lakebed sediments are as follows:

- Lakebed sediments at the base of Abate Lake will be removed as part of overburden removal operations for the open pit
- It will be necessary to remove all of the lakebed sediments even though the proposed open pit is to be mined beneath a portion of Abate Lake to remove potential for these sediments to flow uncontrolled into the open pit
- Removal of lakebed sediments is typically slow due to handling of the saturated material. Sediments must be removed in a single pass from the lakebed to the allocated storage location for this material, using a backhoe and truck combination. A thin layer of coarse, dry material will be required on top

of the lakebed sediments to allow the backhoe and trucks safe access. Waste rock may be mixed with sediments to improve handling and also to further reduce the risk of geotechnical instability in the dump subsequent to placing sediments at the bottom

- Lake sediments will be dumped into a specially allocated part of the waste dump to manage risks associated with subsequent geotechnical instability. Cells should be constructed in the waste dump to contain the sediments and minimise mobility in the future

Figure 18-7 depicts the typical setup for removal of lakebed sediments.

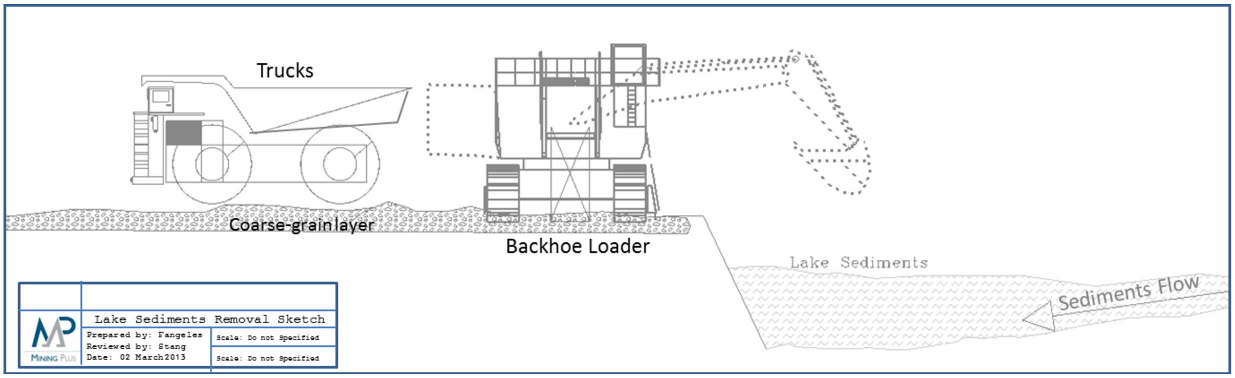


Figure 18-7 Lakebed Sediments Removal

The estimated volume of Abate Lake, lakebed sediment material quantities and labour requirements were used to estimate the costs for the dewatering Abate Lake and removal of lakebed sediments.

18.2.2 Mine Water and Process Water Ponds

The mine water and process water ponds are intended to store contact water from the respective sites and allow sedimentation, prior to recycling of this water in the open pit and processing operations.

Ponds for storage of contact water will be lined with a geomembrane.

The mine water pond (Figure 18-8) will initially be used for storage of water removed from Abate Lake with high suspended solids content.

The process water pond (Figure 18-9) will collect return water from the tailings storage facility and processing facility.

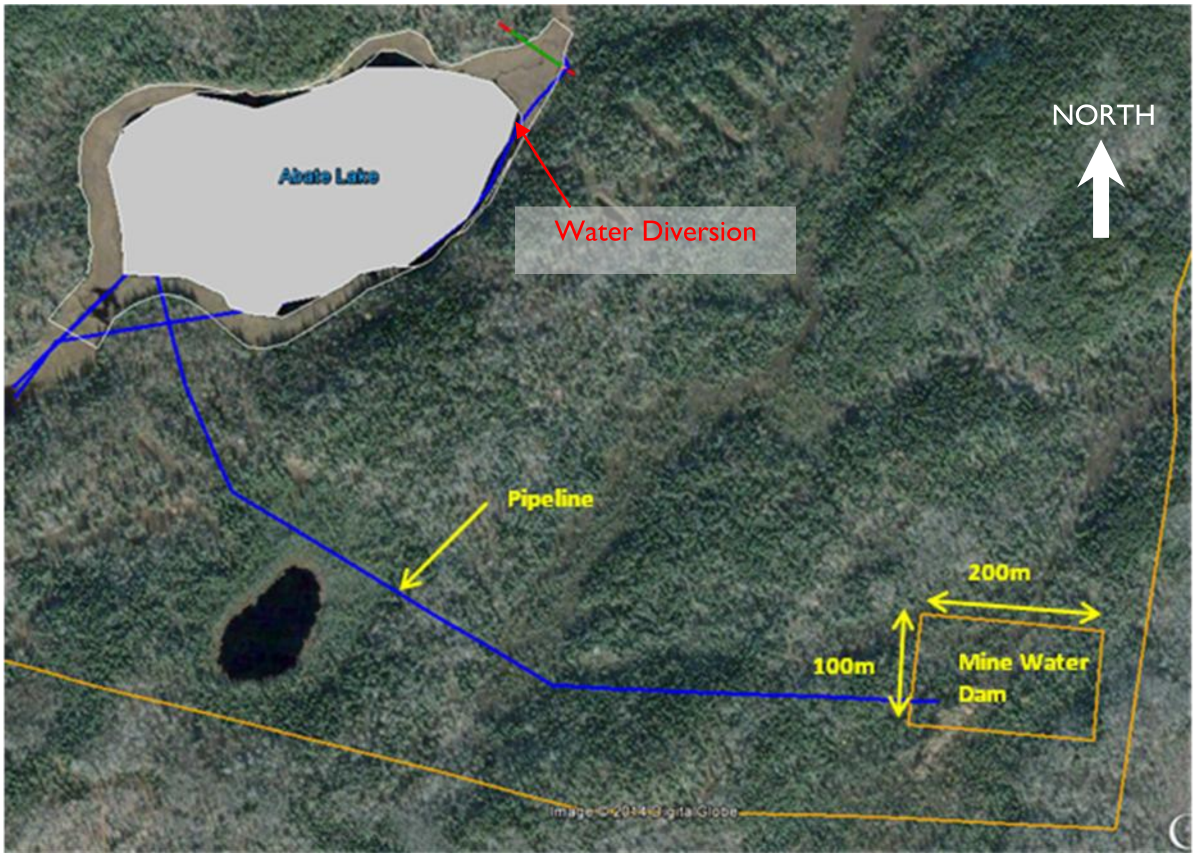


Figure 18-8 Mine Water Pond Location and Estimated Dimensions

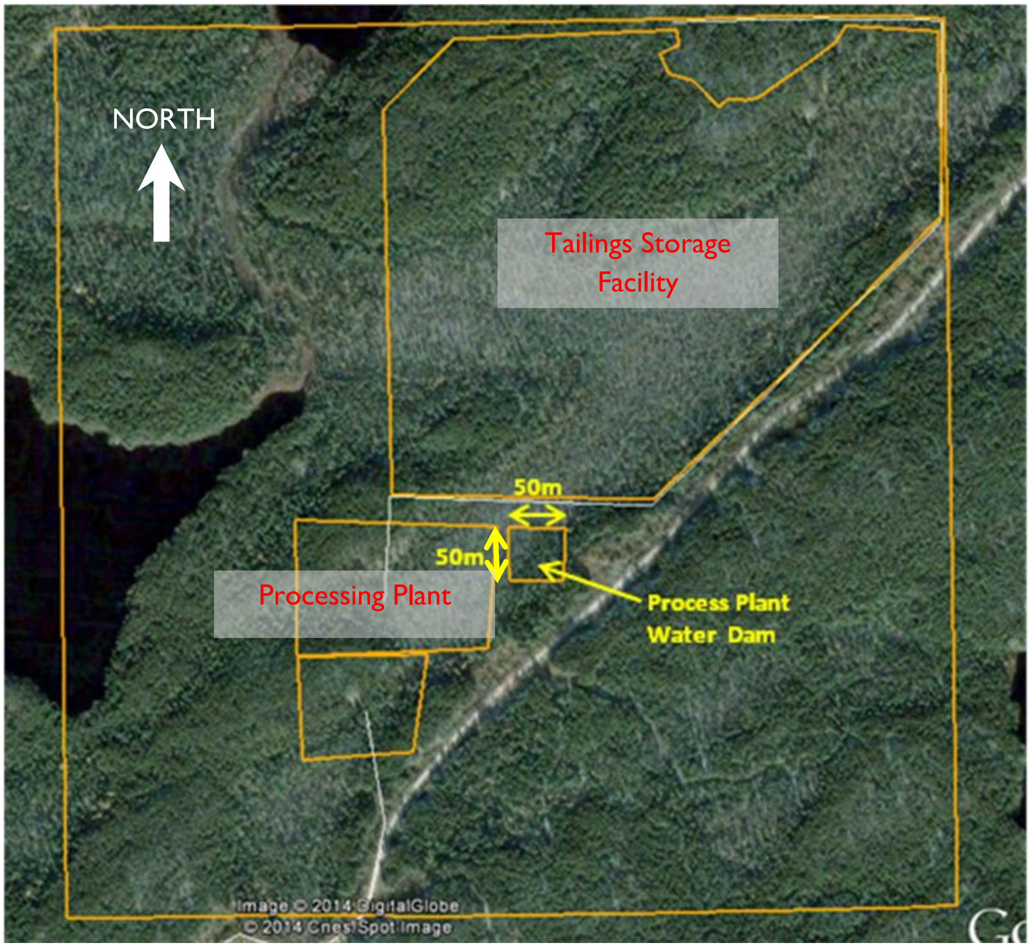


Figure 18-9 Processing Water Pond Location and Estimated Dimensions

18.3 Mine Infrastructure

18.3.1 Temporary ROM Pad

A temporary ROM pad will be constructed on the Newman Todd property for stockpiling of potentially economic material from the open pit.

18.3.2 Waste Dump

A waste dump was designed with a nominal volume of 4.2 Mm^3, enabling dumping of approximately 8.5 Mt of waste material. The dump footprint comprises a total area of 140,000 m^3. The design parameters for the waste dump are described in Table 18-1.

Table 18-1 Waste Dump Design Parameters

Mining Parameters	Units	Value
Lift Height	m	20
Material repose angle	degrees	37
Catch Berm	m	30
Overall Waste Angle	H:V	2:1
Total Height	m	40
Haul Road Width	m	20
Haul Road Gradient	%	10

18.3.3 Pit Dewatering

Dewatering is necessary for the following reasons:

- provision of clear access to all open pit working areas
- prevent accumulation of water from causing corrosion to equipment
- prevent damage to overall slope stability.

Dewatering wells will be required for the open pit to limit the amount of groundwater flowing into the walls and floor of the open pit. The water inflows are limited to groundwater and collection of total precipitation. The dewatering system for the surface mine will include a mobile skid-mounted pump station that will be moved to suit mining progress.

Specific pumping requirement cannot be estimated before a groundwater condition study is completed. However, on the basis of the pit depth and an assumed maximum pumping rate of 25 L/s, the surface mine is expected to require one high pressure pump which is capable to lift water 240 vertical metres. In most of the cases, dewatering pipelines for delivery of water from the pump to the surface mine water dam would be polyethylene pipeline.

18.3.4 Explosives

The preferred explosives contractor will mix the ANFO and/or emulsion and transport the explosives to the work site. Contractor's personnel will be responsible for loading, priming, and detonating the explosives. The emulsion, detonators, and accessories have to be stored on site in magazines that conform to all regulations applicable to the supply and storage of explosives.

The type and amount of explosive required will depend on the rock strength and geotechnical conditions of the in-situ rock to be determined in future studies. Typically a mix of 70/30 for heavy ANFO and a powder factor of 1.0 kg/m^3 are used for medium-hard rock in wet conditions.

18.3.5 Office Buildings

Offices for the owners and contractors teams will be established at the Newman Todd property.

All buildings are assumed to be demountable for minimising cost and for ease at mine closure.

18.4 Processing Plant Infrastructure

18.4.1 Tailings Management Facility

The location for siting the processing plant facilities and tailings storage facility was chosen based on proximity to the Mt. Jamie road accessing the Newman Todd property, sufficient land area and relatively low topographical relief.

The selected area (Unpatented Claim # 4267822) has a slight depression suitable for construction of the tailings storage facility.

To minimise pre-production capital costs, a dam raised over the LOM in stages is the preferred construction method.

The design parameters for the tailings storage facility are as follows:

- Tailings are assumed to be non-acid generating and pose no metal leaching risk
- Dams to be constructed with non-acid generating waste rock with an upstream impermeable membrane
- Sufficient non-acid generating material is assumed to be available from open pit operations at Newman Todd and will be transported by trucks during overburden removal operations and as waste is subsequently mined over the mine life
- Dam slopes assumed to be 3:1 (H:V) on upstream, 2:1 (H:V) downstream
- Crest width will be 5 m
- All dams will be designed in accordance with the Canadian Dam Safety Guidelines (CDA), Ontario Dam Safety Guidelines, and the Ontario Lakes and Rivers Improvement Act.

A typical cross section through the tailings storage facility wall is shown in Figure 18-10. Figure 18-11 shows the crest locations for the proposed tailings storage facility lifts in plan view.

Figure 18-10 Typical Section Through Tailings Storage Facility Wall

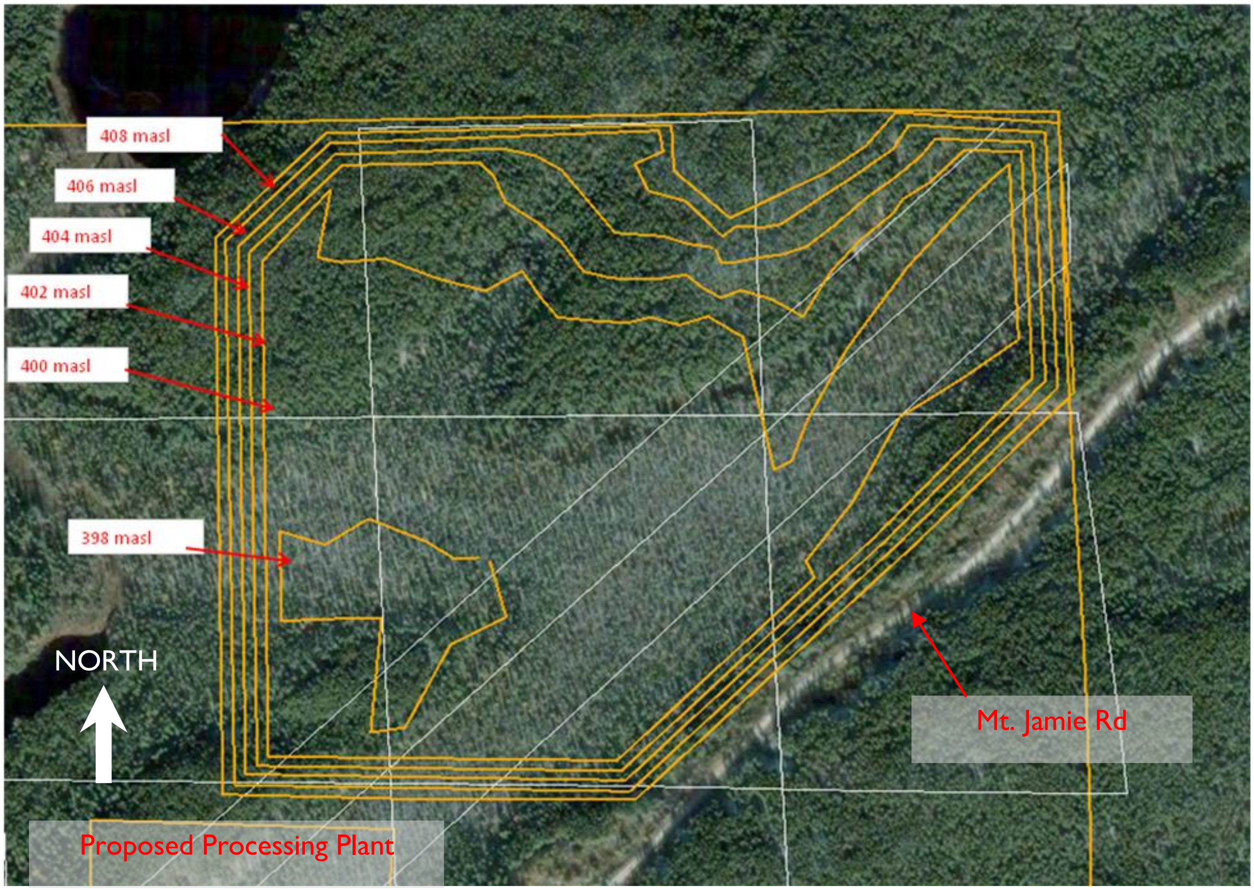


Figure 18-11 Plan View of Tailings Storage Facility Crests

Estimated individual material quantities and labour requirements were used to estimate the construction costs for the tailings storage facility.

Detailed geotechnical characterisation and engineering design is required for the tailings storage facility in future studies.

At mine closure, the dams surrounding the tailings storage facility will be flattened and contoured meeting closure requirements under CDA, and to allow for natural drainage. Assuming that the tailings composition does not pose an acid rock drainage risk or metal leaching risk, the tailings will be covered with a simple soil cover from locally available borrow source. The covered tailings surface would be re-vegetated.

18.4.2 ROM Pad

A ROM pad will be constructed on the processing plant site for stockpiling of potentially economic material from the open pit, ready for feeding to the crusher.

18.4.3 Office Buildings

Offices for the owners and contractors teams will be established at the Newman Todd property.

All buildings are assumed to be demountable for minimising cost and for ease at mine closure.

19 MARKET STUDIES AND CONTRACTS

19.1 Market Studies

For the purposes of the PEA, no marketing studies have been completed for the supply and demand of gold dore. Confederation Minerals has not entered into any contracts for the sale of gold dore from Newman Todd, although it is expected that this would be sold to a metals trader. Selling costs (including transportation) have been sourced from the Mining Plus cost database for relevant projects in the region.

19.2 Commodity Pricing and Exchange Rates

Long term gold price and exchange rate assumptions were developed by the Qualified Person.

Four scenarios using historic trends and consensus forecast gold prices have been used to determine an appropriate metal price assumption to be applied to the project. The four scenarios considered were:

- 3-year trailing average gold price
- 3-year trailing average gold price and 1-year forecast
- Spot gold price as of 14th February 2014
- Gold price based on consideration of current market sentiment and other mining studies recently completed

Figure 19-1 shows the comparison between historic, spot and forecast gold prices since May 1st 2011. Table 19-1 shows the price assumptions considered.

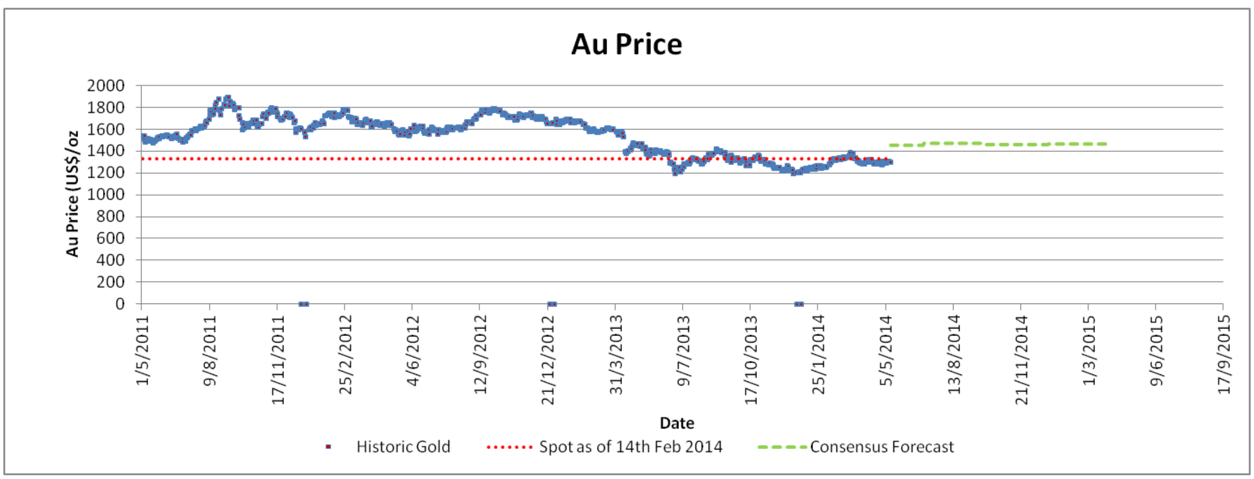


Figure 19-1 Historic and Consensus Forecast Au Prices

Table 19-1 Gold Price Scenarios

Gold Price Scenario	Gold Price Assumption (USD/oz)
3-year trailing average gold price	1,537
3-year trailing average gold price and 1-year forecast	1,519
Spot gold price as of 14th February 2014	1,332
Gold price based on consideration of current market sentiment and other mining studies recently completed	1,400

A gold price of US$1,400/ounce has been used for the project economics as this relies more on the historical gold prices rather than recent spot prices. On the basis of the likely time until the Newman Todd project could potentially move into production, current spot prices are not expected to be as indicative of metal prices in the future as historic averages.

A similar methodology was applied to the USD/CAD exchange rate assumption for this project. Two scenarios using historic trends have been used to determine an appropriate exchange rate assumption to be applied to the project. The two scenarios considered were:

- 3-year trailing average USD/CAD exchange rate
- Spot USD/CAD exchange rate as of 14th February 2014

Figure 19-2 shows the comparison between historic and spot USD/CAD exchange rates since February 1st 2011. Table 19-2 shows the exchange rate assumptions considered.

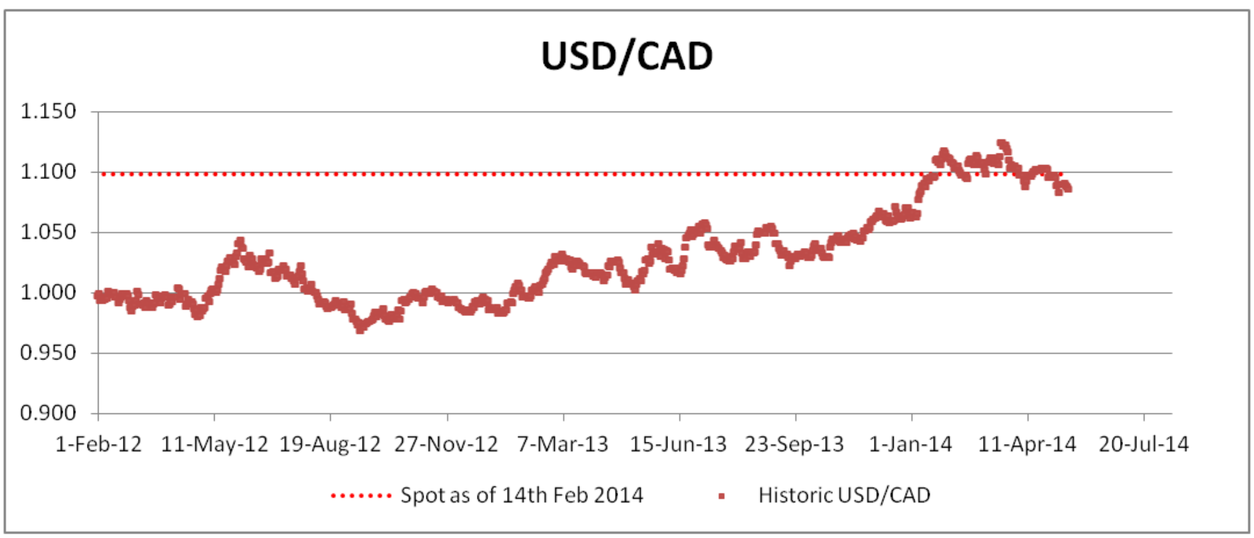


Figure 19-2 Historic USD/CAD

Table 19-2 USD/CAD Exchange Rate Scenarios

Gold Price Scenario	Gold Price Assumption (USD/oz)
3-year trailing average USD/CAD exchange rate	1.01
Spot USD/CAD exchange rate as of 14th February 2014	1.10

A USD/CAD exchange rate of 1.01 has been used for the project economics as this relies on the historical exchange rates rather than recent spot exchange rates. On the basis of the likely time until the Newman Todd project could potentially move into production, current spot rates are not expected to be as indicative of exchange rates in the future as historic averages.

19.3 Contracts

Confederation Minerals has not entered into any contracts for construction, mining, processing, transportation, handling or sale of gold dore from the Newman Todd Project.

20 ENVIRONMENTAL STUDIES, PERMITTING AND SOCIAL OR COMMUNITY IMPACT

20.1 Regional Bedrock Geology

The site is located within the Red Lake Greenstone Belt. The seven assemblages making up the Red Lake Greenstone Belt are summarised briefly below.

- Balmer Assemblage
- Ball Assemblage
- Slate Bay Assemblage
- Bruce Channel Assemblage
- Trout Bay Assemblage
- Huston Assemblage
- Confederation Assemblage

20.2 Local Bedrock Geology

As reported by Red Star Gold the property geology consists of felsic, mafic and ultramafic rocks of the Ball and Balmer assemblages and felsic to intermediate volcanic rocks of the Slate Bay, Huston and Confederation assemblages. The predominant rock types at the site are felsic volcanic breccias, and ultramafic rocks. Oriented southwest to northeast across the Site is a unit identified as a metasediment chert wacke. This unit corresponds approximately to the Newman Todd Structure (NTS) which is an alteration/breccia body composed of fragments of silica, Fe-carbonate with minor crystal tuff, iron formation and chert. The NTS can be traced for at least 2.2 km and to a depth of approximately 400 m.

Gold mineralisation within the NTS is associated with silicified iron-carbonate altered breccia zones and gold-bearing sulfide (mainly pyrite) and magnetite zones through the breccia system. This style of gold mineralisation is similar to other deposits within the Red Lake District and is considered to be associated with large, multi-stage hydrothermal sources deep in the earth's crust.

20.3 Surface Geology and Soils

The Study Area is located on the Canadian Shield which is known for its rugged features, shallow soils and numerous lakes. The geology of the shield is generally characterised by exposed crystalline igneous and metamorphic rocks. The podzolic soils of the Shield are generally thin, acidic and unproductive. The Shield's overlying cover of sedimentary rocks has been generally stripped away by the combined effects of glaciation and post-glacial erosion. Within the Canadian Shield, the Study Area is found within the Superior Geological Province. The region is characterised by granite-greenstone belts comprised of four major types of rock assemblages: platform, arc, mafic plain and wrench basin (MNDM, 1994).

20.4 Terrestrial Environment

The Study Area consists primarily of woodland habitat and is located within the Boreal Forest Region of Ontario. Woodland found within this region is typically dominated by white spruce, tamarack, jack pine, balsam fir, trembling aspen, balsam poplar and white birch. Portions of unevaluated wetlands extend into the Study Area.

No provincially significant wetlands, areas of natural and scientific interest (ANSIs) were identified in the Study Area through the record review. The background review has not identified any known significant wildlife habitat factors (e.g. known staging or wintering bird areas, colonies, raptor nest, caribou calving/nursery area) within the Study Area (LIO, 2011; Ontario Woodland Caribou Recovery Team, 2008). Moose aquatic feeding areas are known to occur within the regional landscape, with the closest known location found 5 km from the Study Area.

The Study Area is located approximately 10 km east of Woodland Caribou Provincial Park and 5 km east of the Pipestone Bay Enhanced Management Area. The park supports one of the largest herds of woodland caribou (a provincially and nationally threatened species) south of Hudson Bay. No known caribou calving or nursery areas have been identified within the Newman Todd Patent Lands (MNR, 2012).

Site specific field investigations are required to determine the presence of wildlife habitat features such as bat hibernacula, colonial bird nesting sites, moose habitat components, rare vegetation communities, specialised habitat for breeding birds or amphibian habitat are supported by the site.

Records review of NHIC and wildlife atlases, identified records of several provincially and nationally rare species (Table 20-1). Consultation with agencies or on-site field investigations may result in the identification of additional species.

Table 20-1 Rare Species Identified through Background Review

Common Name	Scientific Name	COSSARO Status	Habitat Protection under ESA	COSEWIC Status	Ontario Status (Breeding)
Birds					
Bald Eagle	*haliaeetus leucocephalus*	Special Concern	No	Not at Risk	S4
Black Tern	*Chlidonias niger*	Special Concern	No	Not at Risk	S3
Common Nighthawk	*Chordeiles minor*	Special Concern	No	Threatened	S4
Eastern Whip-poor-will	*Caprimulgus vociferus*	Threatened	Yes, general habitat protection	Threatened	S4
Olive-sided Flycatcher	*Contopus borealis*	Special Concern	No	Threatened	S4
Barn Swallow	*Hirundo rustica*	Threatened	Yes, general habitat protection	Threatened	S4
Canada Warbler	*Cardellina canadensis*	Special Concern	No	Threatened	S4
Yellow-headed Blackbird	*Xanthocephalus xanthocephalus*	-	-	-	S2
Redhead	*Aythya americana*	-	-	-	S2
Mammals					

Wolverine	*Gulo gulo*	Threatened	No	Endangered	S2S3
Caribou	*Rangifer tarandus*	Threatened	No	Threatened	S4

Provincially, species are ranked by the Committee on the Status of Species at Risk in Ontario (COSSARO). Once species are classified "at risk", they are added to the Species at Risk in Ontario (SARO) List and protected under the Endangered Species Act (2007). Endangered, threatened and extirpated species listed on the SARO list automatically receive legal protection from harm or harassment under the ESA 2007. In addition to species protection, the ESA 2007 prohibits damage or destruction of habitat for endangered or threatened species. This section of the ESA is subject to transition provisions, meaning that habitat protection does not yet apply to all species. Currently species' habitat may either: not be protected, have general habitat protection, or have regulated habitat protection. Whether or not the habitat is protected and what type of protection it is provided depends mainly on when the species was added to the SARO list and its designated status.

Federally, the *Species At Risk Act* (*SARA*) came into force On June 5, 2004. The Committee on the Status of Wildlife in Canada (COSEWIC) is the scientific body that reviews and assesses the status (i.e., degree of management concern) of wildlife species in Canada, including animals and plants. Although assessed by COSEWIC, species are not protected by this body. Rather, the *Species At Risk Act*, administered by Environment Canada, is the legislation under which species at risk in Canada are protected. Many, but not all, species that are classified as being at risk (i.e., extirpated, endangered, threatened, special concern) by COSEWIC are protected under *SARA*. SARA protects the individuals, residences and Critical Habitat of plant and animal species listed on Schedule 1. Critical Habitat is defined in Recovery Plans for plant and animal species listed as endangered, threatened or extirpated under Schedule 1 of SARA. Critical Habitat may occur in both Federal and non-Federal (provincial Crown or private) lands.

Consultation with relevant agencies will be required to determine field requirements for species at risk. Any species at risk that are identified within close proximity of the project location during the course of site investigations will be addressed under the Ontario *Endangered Species Act* (2007) or the Species at Risk Act as applicable.

20.5 Aquatic Environment

Watercourses

Abate Lake is located relatively central to the Site, covering an area of approximately 9.1 ha. Abate Lake is fed by a number of small tributaries that drain the surrounding area. Water from Abate Lake flows south to Hahn Lake, which ultimately flows to Red Lake. Surface water on the eastern portion of the Site flows east into in the Golden Arm of Red Lake.

Water Quality

Detailed analysis of surface water carried out between 2012 and 2014 in the project area demonstrated that Al, Fe and As are consistently elevated in background concentrations. Other sporadic increases in metals and nutrients (Mg, P, NI) were observed but are not consistent and not a concern. In general, sediment was composed primarily of silt and clay was high in TOC and nutrients.

Sediment Quality

Arsenic, copper, nickel and phosphorus are found naturally within the Study Area at levels typically higher than PSQG LELs. Manganese, Cadmium and Chromium are more variable in sediments and are above LEL's only sporadically. Mercury is only above the LEL at one replicate station and may reflect the confounding influence of nearby road and culvert construction. Similarly, at the Abate Lake Outlet, iron, manganese and chromium are all above guidelines and may reflect historical contamination at this site due to drilling operations and culvert and bridge construction activities. The 2012 sediment survey provides a baseline to which future sediment sampling at the Confederation Minerals study area can be compared.

Benthic Invertebrates

In general, benthic communities in the study area are typical of those found in slow-moving riverine and lacustrine environments in northern Ontario. Substrates in the area tend to be high in organic content with generally small particle sizes and low redox.

The majority of communities assessed were dominated by pollution-tolerant chironomid taxa, indicating relatively low water quality and habitat complexity throughout the system. The lake areas tended to have lower density and diversity when compared to the creek areas. The benthic communities at the Reference Creek, Hahn Lake Outlet, East Tributary and Hahn Lake appear to be the healthiest within the system with relatively high taxa richness, EPT taxa richness, Simpson's Diversity and Evenness.

The benthic community at the Abate Lake Outlet exhibits many indications of nutrient loading and pollution stress, including very high density, low taxa richness, low EPT taxa richness, low Simpson's Diversity, low Simpson's Evenness and high Hilsenhoff Biotic Index. It was also the only community dominated by oligochaetes, which are particularly pollution-tolerant and indicative of high nutrient levels.

The baseline benthic study can be used for comparison with future studies at the site. Rowan Lake is similar in morphology and benthic community to Abate Lake and can continue to act as a reference lake for this site. Hahn Lake, however, may be too different morphologically when compared to Rowan Lake. It is much deeper and its benthic community is more diverse and pollution sensitive than Rowan's. It may be necessary to locate a more similar lake to act as a reference to Hahn Lake in future studies. The Reference Creek appears to be an adequate reference for the majority of the other creek sites in the area. It is most similar in morphology to Abate Lake Outlet, however, its benthic community has similar diversity and sensitivity to pollution to the East Tributary and Hahn Lake Outlet.

Fish and Fish Habitat

Fisheries assessments were completed for the lakes and watercourses within the study area that may be impacted by the potential project. Additional assessments were completed for a small to moderate-sized reference lake (Lake Rowan) and an unnamed reference watercourse (hereafter referred to as Reference Creek) outside of the proposed study area to be used as reference locations for Abate Lake and Abate Lake Outlet respectively, during future studies.

Fisheries assessments were not completed on Red Lake due to permit restrictions and sufficient background data on the fish community present within the lake is well documented. Notable game-fish species in Red Lake include Lake Whitefish (Coregonus clupeaformis), Lake Trout (Salvelinus namaycush), Burbot (Lota lota), Walleye (Sander vitreus), Muskellunge (Esox masquinongy), Northern Pike (Esox lucius), Yellow Perch (Perca flavescens) and White Sucker (Catastomus commersoni).

Abate Lake Inlet (ALI) - Poor channel definition at the inlet was primarily a result of low topographic relief and the relatively small size of the Abate Lake watershed. The inlet was undefined and the abundance of vegetation throughout the diffuse channel reduces velocity and limits the potential for erosion. The habitat at the inlet was not conducive to fishing due to safety concerns associated with unstable substrate and the lack of any defined channel would hinder fishing success.

Abate Lake (AL) - Abate Lake is a small oval-shaped lake approximately 450 m long and 250 m wide. In August 2012, five Northern Pike and two Yellow Perch were caught in a gill net set, while the minnow traps yielded no catch. In October 2012, an experimental gill net also captured five Northern Pike, though again no fish were caught in the minnow trap sets. The relatively shallow lake combined with the abundance of aquatic vegetation provides optimal habitat for Northern Pike and Yellow Perch. The results of the two surveys suggest the lake supports these two species of game fish exclusively.

Abate Lake Outlet (ALO) - The outlet of Abate Lake is initially similar to the Inlet, consisting of a diffuse channel dominated by cattails and a floating mat of various sedge species. However, approximately 500 m downstream of the outlet, the watercourse briefly becomes channelised as it passes in between areas of higher topography. The average depth was approximately 0.5 m. Although water velocity was low, it was observed to be greater than that of the inlet. A single Finescale Dace (Phoxinus neogaeus) and 37 Lake Chub (Couesius plumbeus) were captured. No game-fish species were captured in the outlet.

Hahn Lake (HL) - Hahn Lake is a large irregularly-shaped lake approximately 1100 m long and 300 m wide and a shoreline length of approximately 3,200 m. Average depth in the lake was approximately 8 m with a maximum depth of 19 m. Three Walleye and one Northern Pike were caught.

Hahn Lake Outlet (HLO) - Hahn Lake drains out of the western arm of the lake and flows for approximately 800 m before emptying into Red Lake at Sadler Bay. This section is similar to the Abate Lake Inlet, a fully vegetated floating mat of sedges and grasses, with a 2.5 m wide open channel. The watercourse was more defined near the outlet and meandered through an open shallow marsh. Similar to Abate Lake Inlet, a fisheries assessment at Hahn Lake Outlet was not completed primarily due to the lack of a defined channel and an unstable channel bottom.

Sadler Bay (Red Lake) - The Hahn Lake outlet empties into Red Lake at Sadler Bay. Sadler Bay is a medium-sized bay, relatively secluded as a back bay from the rest of Red Lake. It is approximately 800 m long and 150 m wide. The shoreline length is approximately 2,100 m and the average depth is 3 m. A fish community assessment was not completed at Sadler Bay due to fish permit restrictions and background fisheries data is available.

South Tributary (ST) - The South Tributary is a small poorly-defined watercourse situated in a small subwatershed, south of the Newman Todd property. It is primarily comprised of surficial drainage from the surroundings and extends from the east to the southwest, draining into Red Lake on the north shore between Hahn Lake and Red Lake's Golden Arm. The main channel was more defined near the outlet to Red Lake and approximately 0.6 m wide and 0.6 m in depth. A fisheries assessment was not completed at the South Tributary.

East Tributary (ST) - The East Tributary subwatershed is located in the south eastern corner of the Newman Todd property and south of the property boundary. The subwatershed is larger than the south tributary drainage area and is made up of primarily two watercourses. The watercourse flowing northeast merges with the watercourse flowing east near the eastern extent of the property boundary. From here, the watercourse drains into the Golden Arm of Red Lake. Near its confluence with Red Lake, the tributary runs between an upland peninsula (on the shore of Red Lake) and a shallow flooded marsh, characteristic of the floating vegetated mat noted at the inlet of Abate Lake. A fisheries assessment was not conducted on the East Tributary due to safety concerns and an unstable stream bottom.

Red Lake - Golden Arm (RLGA) - The Golden Arm on Red Lake is a medium-sized embayment (east of the study area) that stems northwest from the middle of Red Lake and is approximately 3 km long and 400 m wide. A fisheries assessment was not conducted in the Golden Arm due to fish permit restrictions and background fisheries data already exists.

Lake Rowan (LR) - Lake Rowan is situated approximately 900 m north of Abate Lake along the Mount Jamie Mine Road. Lake Rowan is a long, relatively narrow lake, approximately 1200 m long and 300 m wide. The length of the shoreline is approximately 3,000 m. The average depth of Lake Rowan was approximately 3 m, reaching a maximum depth of 7.8 m at the west end of the lake. Two fisheries assessments were completed on Lake Rowan in 2012 and resulted in the capture of nine Northern Pike.

Reference Creek (REFC) - The Reference Creek is located approximately 3 km east of Lake Rowan, along Mount Jamie Mine Road. A fisheries assessment was conducted at the Reference Creek in October 2012. 19 Brook Stickleback and five Pearl Dace were caught.

20.6 Reclamation and Closure

Confederation Minerals is committed to using environmental management techniques that will minimise the potential environmental impact of the proposed mine, mill and processing activities, as well as comply with Provincial and Federal Legislated requirements and regulations. A closure plan for the Project will be prepared prior to the initiation of mining activities and will incorporate requirements of the Ontario Mining Act R.S.O. 1990, Chapter M.14 (amended by S.O. 2010, c. 18. 23); Part VII under the Act, O. Reg 240/00 as amended, and Schedule 1 and 2, Mine Rehabilitation Code of Ontario.

At the end of operations of the Project the main features will include the open pit, mill processing facilities, offices, storage areas, TMF, and waste rock storage areas. Reclamation measures expected for each of the main features are described below. The goal at closure is to return the land as close to its natural state as practical. Progressive reclamation activities will be carried out where possible throughout the mine life; however, the majority of decommissioning and reclamation work will take place once mining has been completed.

Once the proposed mine project is to be permanently closed, all on-site structures and facilities will be decommissioned, with all salvageable parts sold or recycled, and the remainder disposed of in an appropriate manner. Non-salvageable demolition materials and waste may be disposed of in the open pit if permitted by regulatory agencies.

The main elements of the reclamation plan will be comprised of:

- Permanent deactivation of mine access roads not needed for post-mining land access with contouring to restore natural drainages and roadways revegetated;
- Recontouring disturbed areas to blend in with surrounding topography and to re-establish natural drainage patterns;
- Deactivation of water management features that are no longer required such as water treatment systems, polishing ponds and ditches. This will include: recontouring/spreading of pond berms; backfilling of ponds; backfilling of ditches; and re-establishing natural drainage patterns;

- Mine waste rock surface areas will be amended with a soil cover as needed for vegetation and stable drainage conditions established;
- The open pit will be allowed to fill with water and the overflow directed to established drainages. Measures will be taken for public safety around the pit include resloping, fencing or rock berms;
- Natural site run-off and storm flows will be expected to meet downstream water quality requirements from all developed areas, including from the plant site, mine rock disposal areas, tailings area and pit lake; and,
- Tailings area drainage will be established to provide long term erosion control, and vegetated.

Once the disturbance sites have undergone preparation they will be re-vegetated with plant species that are suitable for reclamation and the end land uses of the area. The goals of reclamation vegetation will be to:

- Prevent erosion and sedimentation to protect aquatic resources and prevent invasive plant establishment; and,
- Re-establish a productive land use that is of value for wildlife, and mitigates the residual effects of mining on ecosystems.

At this time, the estimated costs for closure for the Newman Todd property are $6,415,516.

20.7 Corporate Commitments and Consultation

20.7.1 Corporate Commitment

Government Agencies

Building relationships with the key Federal and Provincial departments as early as possible will help improve the visibility of the Project and confirm acceptance of the proposed path forward. Ongoing engagement will foster effective working relationships and ensure timely and consistent information sharing.

The key regulatory agencies that would form the core Government Review Team would be expected to include:

- Provincial Agencies:
  - Ministry of Northern Development and Mines;
  - Ministry of the Environment and Climate Change;
  - Ministry of Natural Resources and Forestry;
  - Ministry of Tourism, Culture and Sport; and
  - Ministry of Transportation.
- Federal Agencies:
  - Canadian Environment Assessment Agency
  - Natural Resources Canada
  - Fisheries and Oceans Canada;
  - Transport Canada; and,
  - Environment Canada.
- Local Agencies:
  - Township of Todd (Mine Site)

- Township of Fairlie (Plant Site)

General Public

Confederation Minerals will follow the Code of Practice for Consultation in Ontario's Environmental Assessment Process (2007), and relevant best-practices identified by the Project team. Confederation Minerals understands that effective consultation will be a key driver to project success.

First Nations and Métis

Confederation Minerals understands the importance of building and maintaining respectful relationships with First Nations and Métis communities in the area. Confederation Minerals are committed to carry out meaningful consultation. It is anticipated that the following communities may have interest in the Project:

- Grand Council Treaty 3
- Wabauskang First Nation
- Lac Seul First Nation
- Pikangikum First Nation
- Métis Nation of Ontario
- Northwest Métis Council

Confederation Minerals have engaged in First Nations outreach via opportunities such as The Mawi'omi and the 2014 Inclusion Works presented by the Aboriginal Human Resource Council. Confederation Minerals look forward to engaging with First Nations for any work or liaison opportunities that present themselves as the project moves forward.

The following two communities, Wabauskang First Nation and Lac Seul First Nation have been identified as the premier First Nations communities in Treaty Three, the area of the Newman Todd Project.

20.8 Authorisations

20.8.1 Federal Environmental Assessment

Under the Canadian Environmental Assessment Act, 2012 (CEAA, 2012) only Designated Projects included in the Regulations Designating Physical Activities require a Federal Environmental Assessment (EA). It is anticipated that the Project will be a Designated Project pursuant to Section 16(b): "The construction, operation, decommissioning and abandonment of a new metal mill with an ore input capacity of 4,000 t/d or more" and Section 16(c): "The construction, operation, decommissioning and abandonment of a new rare earth element mine or gold mine, other than a placer mine, with an ore production capacity of 600 t/d or more".

The Standard EA process is comprised of a project description, screening, assessment, environment impact statement (EIS) guidelines, EIS statement, and ministerial decision. The regulated timelines under which the CEAA Agency has management of the project is 52 weeks. It is anticipated that approximately an additional 9 to 12 months would be required to prepare, review, and finalise the EIS.

20.8.2 Federal Permits / Approvals

Federal permits and approvals potentially required for development at the Project site are listed in Table 20-2. Federal regulators responsible for key permits/approvals will not approve the permit/ approval until after the Federal EA is complete and approved.

Table 20-2 Key Environmental Federal Permits / Approvals

Permits / Approvals	Project Activities
Authorisation for Works Affecting Fish Habitat Legislation: *Fisheries Act* Responsible Agency: Fisheries and Oceans Canada	• Work that may result in serious harm to fish that are part of a commercial, recreational or Aboriginal fishery, or to fish that support such a fishery
Schedule 2 Listing, Metal Mining Effluent Regulation (MMER) Legislation: *Fisheries Act* Responsible Agency: Fisheries and Oceans Canada	• Use of fish bearing waters to deposit mine effluent, waste rock, and tailings.
Approval of Works in Navigable Waters Legislation: *Navigation Protection Act* Responsible Agency: Transport Canada	• Construction of any works in or over navigable waters. • Deposition of material that is liable to interfere with navigation into a water body where there are not at least approximately 36.6 m of water depth at all times.
Explosives Regulations Legislation: *Explosives Act* Responsible Agency: Natural Resources Canada	• Manufacturing/use/storage of blasting explosives

20.8.3 Provincial Environmental Assessment(s)

In Ontario, mining development projects are carried out by private sector proponents and are not subject to Provincial EA requirements, although certain ancillary activities such as constructing road access, transmission lines, generation facilities etc. associated with a mining development may be subject to the Provincial EA requirements through one or more prescribed Class EA processes.

In the past few years in Ontario, a new practice is emerging that sees mining proponents volunteering to complete an Individual EA. This is the highest level of assessment in Ontario and would capture all Class EA requirements for ancillary activities and the mine development itself under one streamlined Individual EA process. Should Confederation Minerals elect to pursue an Individual EA, a Voluntary Agreement would first have to be submitted and approved by the MOE. Generally, the time for preparation and approval of the Voluntary Agreement ranges from 1 to 3 months. Following approval, completion of the four key phases of the EA process would be required, which includes the Terms of Reference, EA, Government Review, and Minister/Cabinet Decision. The prescribed government review timeline for an Individual EA is 42 weeks. It is anticipated that an additional 9 to 12 months would be required to prepare, review, and finalise the EA.

20.8.4 Provincial Permits / Approvals

The possible Provincial permits and approvals required for development at the Project site are listed in Table 20-3. Provincial regulators responsible for key permits/approvals will not approve the permit/approval until after any applicable Provincial EAs are complete and approved.

Table 20-3 Key Environmental Provincial Permits / Approvals

Permits / Approvals	Project Activities
Project Description Report Legislation: n/a Responsible Agency: Ministry of Northern Development and Mines	• Provincially, used by the Ministry of Northern Development and Mines to identify potential regulatory involvement during the Closure Plan process. • Would also be used to guide discussions with the MOE and CEAA.
Mine Closure Plan Legislation: *Mining Act* Responsible Agency: Ministry of Northern Development and Mines	• Closure Plan for the Project.
Industrial Sewage Works Environmental Compliance Approval Legislation: *Ontario Water Resources Act* Responsible Agency: Ministry of the Environment and Climate Change	• New ECA for the Mine/Mill process water.
Permit to Take Water Legislation: *Ontario Water Resources Act* Responsible Agency: Ministry of the Environment and Climate Change	• Water taking and dewatering activities
Air and Noise Emissions Environmental Compliance Approval Legislation: *Environmental Protection Act* Responsible Agency: Ministry of the Environment and Climate Change	• ECA for the Mine and Mill during construction and operation.
Work Permit Legislation: *Public Lands Act* Responsible Agency: Ministry of Natural Resources and Forestry	• Water crossings and road construction/upgrading on Crown Land.
Work Permit Legislation: *Lakes and Rivers Improvement Act* Responsible Agency: Ministry of Natural Resources and Forestry	• Permits for Polishing Pond Dam/Tailings Dam.
Endangered Species Act Permit Legislation: *Endangered Species Act* Responsible Agency: Ministry of Natural Resources and Forestry	• If proposed activities have the potential to impact a species listed on the Species at Risk in Ontario List and/or its habitat.
Forest Resource License Legislation: *Crown Forest Sustainability Act* Responsible Agency: Ministry of Natural Resources and Forestry	• Tree removal on Crown land.

21 CAPITAL AND OPERATING COSTS

Capital and operating costs for this study have been sourced from quotations and general discussions with suppliers and the Mining Plus cost database. Capital and Operating costs are considered to have been estimated to an accuracy of +/- 50%. The estimated cost includes a contingency allowance of approximately 20%. With subsequent more detailed studies, further delineation and infill of the Mineral Resource and further metallurgical testwork, the cost estimation accuracy would improve.

21.1 Capital Cost

Capital costs are summarised in Table 21-1.

Table 21-1 Capital Cost Summary

Cost Area	Initial Capital (CA$M)	Expansion and Sustaining Capital (CA$M)	Total Capital (CA$M)
Roads	1.5		
Buildings and Electrical	1.3		
Powerline extension and Administration	8.4		
Processing Plant and Tailings Management Facility	37.0		
Infill and Sterilisation Drilling	0.6		
Contingency (Initial Capital)	9.8		
Sustaining Capital (Tailings Storage Facility and Process Plant Water Management)		23.2	
Mine Closure		5.1	
Contingency (Sustaining Capital)		2.1	
TOTAL	**58.6**	**30.5**	**89.1**

21.1.1 Closure Cost Estimate

Closure cost estimate has been made on the basis of proposed size for excavations, infrastructure and buildings and using unit cost estimates from similar sized mining projects. Contingency (20%) and $250 000 for additional costs including consultation with First Nations and communities, closure plan preparation, approvals under Part VII of the Ontario Mining Act, post closure administration and dam safety review.

21.2 Operating Cost

Conventional drill, blast, shovels and dump truck has been selected as the more cost-effective mining method. The mine is proposed to operate through a local contractor under cost-plus-fee contract which provides the contractor the rights to operate and manage the mining activities, from surveying to equipment operation and maintenance.

At the end of a certain period, typically 1 month, the contractor will be reimbursed for their costs plus a pre-established mark-up fee. The average mining cost used for this study is $5.25 /t moved, plus a contractor mark-up of 15%. This cost is typical for a small mining operation of 1,000 tpd ore mining rate within Ontario.

An operating cost of $25.00 /mill feed t was estimated for the 1,000 t/day processing facility to treat an enriched gold material in a gravity/flotation/carbon-in-leach recovery circuit. The processing facilities will be operated by the Owner.

The majority of power demand will be by the processing facility, which has been included in the processing operating cost. A minor component of power will be required for supplying the mine, maintenance and office facilities.

Operating costs are summarised in Table 21-2.

Table 21-2 Operating Cost Estimates

Operating Cost	Units	Value
Mining Cost (Including Contractor mark-up)	$/t moved	6.05
Processing Cost	$/t processed	25.0
Material Transportation Cost	$/t processed	3.70
General and Administration	$/t processed	4.00

22 ECONOMIC ANALYSIS

The Newman Todd Project is subject to several royalties based either on Net Smelter Return (NSR) or Net Carried Interest (NCI). The H.A. Newman Estate royalty based on NCI, was not applied in the pit optimisation phase as discussed in Section 16. The NCI-based royalty has been applied in the cash flow model. Collectively, the royalties that apply to the Newman Todd property are onerous.

An economic analysis of the Newman Todd Open Pit Project has been conducted on the basis of the capital and operating cost assumptions discussed in Section 21 and the gold price and exchange rate assumptions discussed in Section 19. The results of this analysis are presented in Table 22-1.

Economic analysis on the Newman Todd Project shows a cash flow after capital depreciation of -CA$66.9M and a NPV (5% discount rate) of –CA$62.4M.

Table 22-1 Economic Analysis (CA$M)

Project Period	Total	-2*	-1	1	2	3	4**
Recovered Gold in Ounces	83,115	-	-	19,877	29,015	30,361	3,862
Revenue	$ 114.2	$ -	$ -	$ 27.3	$ 39.9	$ 41.7	$ 5.3
Royalties of NSR	$ 5.4	$ -	$ -	$ 1.3	$ 1.9	$ 2.0	$ 0.3
Capital							
Processing Plant	$ 37.0	$ 4.0	$ 7.9	$ 7.9	$ 7.9	$ 7.9	$ 1.3
Power line extension to site	$ 3.6	$ 0.4	$ 0.8	$ 0.8	$ 0.8	$ 0.8	$ 0.1
Other	$ 15.0	$ 1.6	$ 3.2	$ 3.2	$ 3.2	$ 3.2	$ 0.5
Mine Closure	$ 6.2	$ -	$ -	$ -	$ -	$ -	$ 6.2
Contingency	$ 9.8	$ 1.0	$ 2.1	$ 2.1	$ 2.1	$ 2.1	$ 0.3
Sustaining CAPEX	$ 17.6	$ 1.9	$ 3.8	$ 3.8	$ 3.8	$ 3.8	$ 0.6
Operating							
Mining Cost	$ 45.2	$ 8.6	$ 16.8	$ 11.2	$ 4.9	$ 3.5	$ 0.3
Processing Cost	$ 33.2	$ -	$ -	$ 10.3	$ 10.8	$ 10.8	$ 1.4
Potentially Economic Material Haulage	$ 4.3	$ -	$ -	$ 1.3	$ 1.4	$ 1.4	$ 0.2
Flotation	$ 15.1	$ -	$ -	$ 4.6	$ 4.9	$ 4.9	$ 0.6
Leaching	$ 13.9	$ -	$ -	$ 4.3	$ 4.5	$ 4.5	$ 0.6
G&A	$ 6.8	$ 0.7	$ 1.4	$ 1.4	$ 1.5	$ 1.5	$ 0.2
Cash Flow after Capex Depreciation	**$ (65.5)**	**$(18.2)**	**$(36.0)**	**$(14.6)**	**$ 3.1**	**$ 6.2**	**$(6.0)**
Royalty H.A. Newman Estate (15% after OPEX and CAPEX)	**$ 1.4**	**$ -**	**$ -**	**$ -**	**$ 0.5**	**$ 0.9**	**$ -**
Cash Flow after Capex Depreciation	**$ (66.9)**	**$(18.2)**	**$(36.0)**	**$(14.6)**	**$ 2.6**	**$ 5.3**	**$ (6.0)**
NPV (5% Discount Rate)	**$ (62.4)**	$ -	$ -	$ -	$ -	$ -	$ -

** Period -2 corresponds to the first 6 months of overburden mining.*

*** Period 4 has 2 months of mill feed.*

Note: All designs and costs in this Preliminary Economic Assessment are preliminary in nature and include both Indicated and Inferred Mineral Resources. Inferred Mineral Resources have insufficient drilling and sampling to classify these as Indicated or Measured Mineral Resources. Therefore economic considerations cannot be applied that would enable classification of this material as mineral reserves. There is no certainty that the Preliminary Economic Assessment will be realised.

If sufficient land existed adjacent to the Newman Todd property to construct the process plant, tailings storage facility and associated office buildings, cost savings would result from the following:

- Haulage costs (Operating)
- Truck ownership costs (Capital)
- Loader ownership (Capital) and operating costs (Operating)

Since a contractor was assumed in this PEA, truck and loader ownership costs are built into the operating costs. The likely cost reduction is largely based on the operating haulage cost of $3.70/t of potentially economic material. This equates to $4.3M in savings.

22.1 Sensitivity Analysis

A sensitivity analysis was conducted on key economic inputs: gold price / feed grade / processing recovery, processing cost, mining cost, capital expenditure and mining recovery. The sensitivity parameter ranges were as summarised in Table 22-2. The results are shown in Figure 22-1. These indicate that the Newman Todd Project is most sensitive to gold price, processing recovery, feed grade and capital expenditure, followed by mining cost, mining recovery and processing cost.

Table 22-2 Sensitivity Parameter Ranges

Sensitivity Parameters	Worst Case	Base Case	Best Case
Gold Price / Feed Grade / Processing Recovery	-30%	0%	30%
Processing Cost	30%	0%	-30%
Mining Cost	30%	0%	-30%
Capital Expenditure	30%	0%	-30%
Mining Recovery	-30%	0%	10%

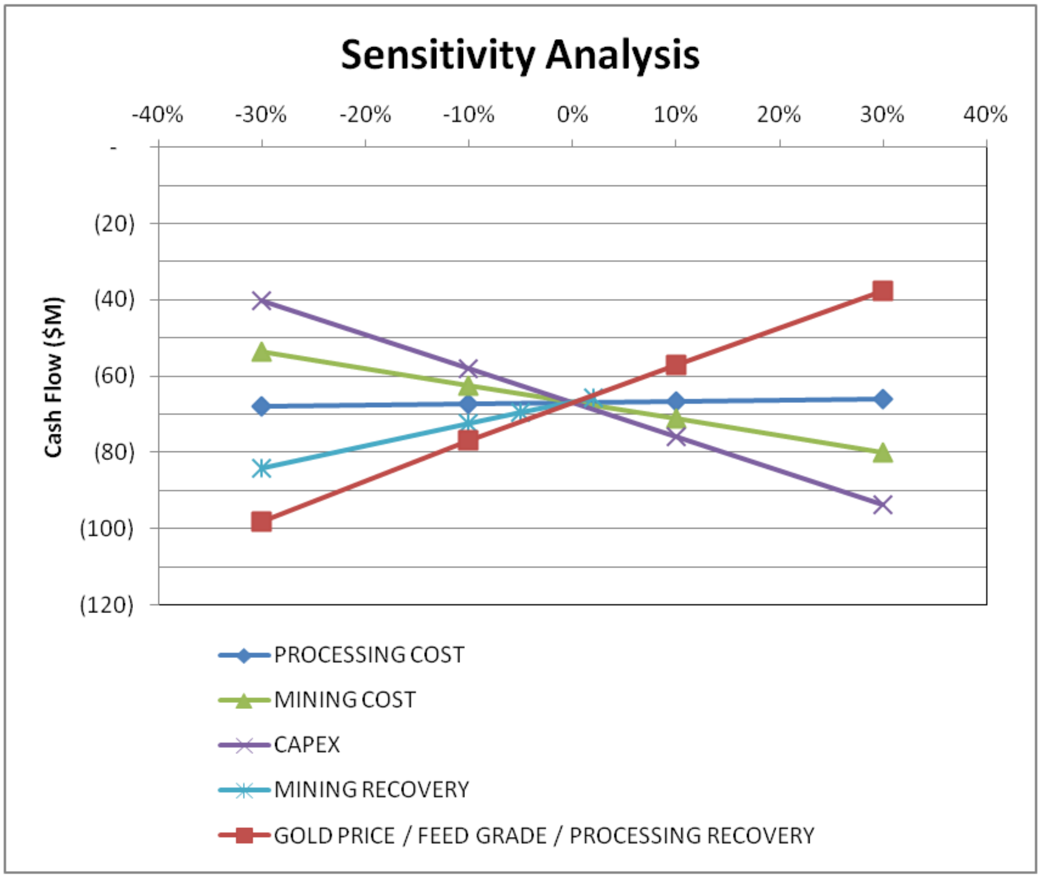


Figure 22-1 Sensitivity Analysis Results

23 ADJACENT PROPERTIES

The Newman Todd property has several adjacent properties. It is located in the Red Lake mining camp and gold is the major metal found in the area.

The Rivard property of E-Energy Ventures is immediately west of the main Newman Todd property. It was explored by Rubicon in 2002 and 2003 with stripping and channel sampling and then diamond drilling. Diamond drilling campaigns in 2006, 2007 and 2008 were lead by E-Energy Ventures with mixed results.

The properties to the north are controlled by West Red Lake Gold Mines Inc. Part of it is a joint venture with Rubicon Mineral Corp and another section is joint ventured with Goldcorp Inc. There are three previous producing mines on this property. Historic production is summarised in Table 23-1:

Table 23-1 Historic Production on adjacent properties

Mine	Operating Years	Short Tons Milled	Historical Production	
			Ounces	Grade (oz/t)
Mount Jamie	1976	552	265	0.480
Lake Rowan	1986-1988	13,023	1,298	0.100
Red Summit	1935-1936	591	277	0.469

Source: http://www.geologyontario.mndmf.gov.on.ca/mndmfiles/pub/data/imaging/OFR6079/OFR6079.pdf

The property is surrounded on all sides by mining claims but little information or history is known about these properties and the qualified person has been unable to verify this information. This information is not necessarily indicative of the mineralisation on the Newman Todd property that is the subject of this technical report.

24 OTHER RELEVANT DATA AND INFORMATION

No other relevant data or information is known at this time.

25 INTERPRETATION AND CONCLUSIONS

The Mineral Resource estimate and all aspects detailed within this PEA have been completed in accordance with National Instrument 43-101, CIM Definition Standards (May 2014) and CIM Guidelines on Estimation of Mineral Resources and Mineral Reserves. The intent of the PEA was to provide Confederation Minerals, investors and other interested parties with a preliminary view of the potential economics of the Newman Todd Project, and provide management with guidance for the future exploration and development of this project.

The QP's conclude that:

- The Newman Todd Deposit demonstrates several characteristics that are similar to nearby operating mines within the Red Lake District
- Gold mineralisation is extremely widespread within the NTS, with nearly every hole completed over a strike length of approximately 1.8 km, and from surface to a depth of almost 1,000 m intersecting gold mineralisation. Considering a total of 109 holes drilled into the NTS by Confederation Minerals over the 1.8 km strike length, 94% intersected variable widths of 3 g/t gold or higher, 87% intersected variable widths of 5 g/t gold or higher, and 41% intersected variable widths of 20 g/t gold or higher. Thus, the hydrothermal processes which contributed and deposited gold in the NTS were active over a very significant strike length and depth
- Trade off studies between mining methods for the Newman Todd deposit indicate that open pit mining is most viable
- There is significant upside to the Newman Todd Project including:
    - Reduction of capital expenditure (processing plant, tailings storage facility and associated infrastructure) through toll treatment options
    - Expansion of land holding sufficient to construct processing plant, tailings storage facility and associated infrastructure adjacent to the Newman Todd operation instead of on claims 18km NE of the deposit
    - The Newman Todd Structure is open to extension to the northeast and southwest with several discrete known and untested targets and is also open at depth
    - Additional drilling may discover further high grade portions of the deposit along strike or down-dip within the Newman Todd structure
    - Potential increase in Mineral Resource quantity, particularly through further drilling of the near-surface mineralised zones within the Newman Todd structure
    - Further constraining the high grade mineralisation model within the deposit
    - Renegotiation and decrease of royalties.

26 RECOMMENDATIONS

The PEA of the Newman Todd deposit indicates that it is not a viable mining operation based on currently known data. Despite the negative economic result of this PEA, further field work and drill testing may demonstrate that the Newman Todd deposit is significantly larger with sufficient gold grades to become an economic project.

Dependent on the results of further field investigations, the following recommendations are made with respect to the Newman Todd Project:

Mineral Resource

- Conduct further delineation and exploration drilling for potential increase in Mineral Resource quantity, particularly through further drilling of the near-surface mineralised zones within the Newman Todd structure but also along strike and down-dip within the structure
- Through further drilling and field investigations, test the theory that the NTS may be an epithermal system developed prior to D2 which was subsequently tilted during D2
- Conduct further review of the high grade mineralised zones with the results of further drilling and improved sampling of broken/fractured zones
- Given the ICP values for Calcium, Sulphur and Arsenic build an ABA block model to predict the amounts of acid generating, acid neutral and acid consuming rock within the areas to be mined

Mining

- Establish a geotechnical data collection and testing program to gather more accurate geotechnical parameters for the mine, processing facility and TMF project areas and build a geotechnical model
- Geotechnical assessment for slope stability and ground control requirements
- Conduct hydrological and hydrogeological assessments to determine groundwater inflow quantity and quality, including seasonal groundwater
- Conduct further detailed analysis on mine dewatering requirements based on future hydrogeological assessment
- Determine explosives requirements based on geotechnical properties of the rock
- Determine dewatering well requirements for the open pit to limit the amount of groundwater flowing into the walls and floor of the pit

Processing

- Further definition on the effect of primary grind size and regrind size on flotation recovery. A primary grind size of approximately 75 µm and a regrind of approximately 25µm were selected, but were not optimised
- Locked cycle flotation testing to assess if the flowsheet design and flotation reagent suite is stable, and allows to further reduce the concentrate mass pull at higher metal grade and therefore support further savings in capital and operating expenditure
- Effect of depressant type and dosage. Only CMC was tested. Alternative depressants or other secondary depressants should be tested, especially for WST Comp, to improve the concentrate grade
- With fast kinetics, it may be a good idea to test flash flotation ahead of grinding

- Different flowsheet configurations such as gravity+flotation+leach and whole ore leach should also be evaluated
- Environmental testing on final tailings
- Metallurgical testing to evaluate the effect of feed grade on recovery
- Investigate the potential presence of deleterious elements and their impact on the final product quality and economics
- Further carbon absorption test work

Infrastructure

- Detailed assessment of site power requirements and extension of power infrastructure from existing infrastructure close to the Rubicon Minerals mining project
- Investigate further the potential for toll treatment options
- Conduct detailed engineering on all infrastructure requirements
- Detailed geotechnical characterisation and engineering design for the tailings storage facility
- Further environmental, hydrogeological and civil investigations will be required prior to confirming locations for the required infrastructure.

Environmental

- Conduct acid rock drainage tests sufficient to establish domains for non-acid generating and potentially acid generating rock and suitable storage requirements for each type. This should also include acid-base accounting and kinetic testwork
- Geochemical classification of waste rock and tailings and development of mitigation measures if required
- Completion of Environmental baseline studies, environmental assessment and permitting process.
- Conduct hydrological investigations to confirm the rates and method of transferring water from Abate Lake to the receiving environment and to mine water pond

Economics

- Expand the current land holding surrounding the Newman Todd claim sufficient to construct processing plant, tailings storage facility and associated infrastructure adjacent to the Newman Todd operation instead of on claims 18 km NE of the deposit
- Re-negotiate royalties payable on the property
- Smelter terms to be defined in greater detail which would require a sample of concentrate expected to be produced to be sent to a smelter for more detailed analysis.

General and Other

- Investigate workforce requirements and suitability for a camp facility or commute arrangements for the workforce
- Contingent on positive results of future field investigations, this PEA should be updated with newly acquired data.

27 REFERENCES

Andrews, A.J., Hugon, H., Durocher, M., Corfu, F., and Lavigne, M., 1986 The Anatomy of a Gold-Bearing Greenstone Belt: Red Lake, Northwestern Ontario; in Proceedings of GOLD '86, an International Symposium on the Geology of Gold Deposits, (ed.) A.J. MacDonald; Konsult International Inc., Toronto, Ontario, p. 3-22.

Bentzen, A., and A.J. Sinclair 1993 "P-RES – a computer program to aid in the investigation of polymetallic ore reserves", Tech. Rept. MT-9 Mineral Deposit Research Unit, Dept. of Geological Sciences U.B.C. 55 pp.

Bullis, H. R. (2014). *Observations and Comments on Mineralization of the Newman-Todd Structure, Newman-Todd Project Red Lake, Ontario and Implications for Methodology for Determining Mineralized Zones Within the NTS.*CIM Standing Committee on Reserves Definitions. (2014, May 10). CIM Definition Standards - For Mineral Resources and Mineral Reserves. Canada.

Corfu, F., and Andrews, A.J., 1987. Geochronological Constraints on the Timing of Magmatism, Deformation and Gold Mineralization in the Red Lake Greenstone Belt, Northwestern Ontario; Canadian Journal of Earth Sciences, v. 24, p. 1301-1320.

Couture, J.F. 2013 'Newman-Todd Gold Project, Red Lake, Ontario: Structural Geology Investigations, Draft Site Visit Report, September 4-7, 2013'; Jean-Francois Couture, PhD, PGeo, SRK Consulting Ltd.

Dube, B., Balmer, W., Sanborn-Barrie, M., Skulski, T., and Parker, J., 2000. A Preliminary Report on Amphibolite-Facies, Disseminated-Replacement-Style Mineralization at the Madsen Gold Mine, Red Lake, Ontario; Geological Survey of Canada, Current Research 2000-C17, 12 p.

Dube, B., Williamson, K, and Malo, M., 2001 Preliminary Report on the Geology and Controlling Parameters of the Goldcorp Inc. High Grade Zone, Red Lake Mine, Ontario; Geological Survey of Canada, Current Research 2001-C18, 33 p.

Goldcorp, Operating Results of the Red Lake Gold Mine for 2011 to 2013. Retrieved May 2014, from Goldcorp: http://www.goldcorp.com

Lee, C.B., 2003 Regional Interpretation and Structural Setting of Key Localities in the Pipestone Bay Area, Red Lake, Ontario; Redstar Gold Corporation Internal Report, August 2003, 33p.

Natural Resources Canada. 2010 Simplified seismic hazard map for Canada. Retrieved May 15, 2014, from Government of Canada: http://www.earthquakescanada.nrcan.gc.ca/hazard-alea/simphaz-eng.php.

Ontario Ministry of Northern Development and Mines (MNDM) 1994 ROCK ONtario, Ontario Ministry of Northern Development and Mines, ROCK ON Series 1, 89 p.

Ontario Ministry of Natural Resources.LIO 2011 LIO digital mapping of significant natural features.

Ontario Ministry of Natural Resources (MNR) 2012 Woodland Caribou Signature Site Vegetation Management Plan.

Ontario Woodland Caribou Recovery Team 2008 Woodland Caribou (Rangifer tarandus caribou) (Forest-dwelling, Boreal Population) in Ontario. Prepared for the Ontario Ministry of Natural Resouces, Peterborough, ON. 93 pp.

Pirie, J., 1982 Regional Geological Setting of Gold Deposits, Eastern Red Lake Area, Northwestern Ontario; in Proceedings of the CIM Gold Symposium, September 1980, The Canadian Institute of Mining and Metallurgy, Special Volume 24, p. 171-183.

Sanborn-Barrie, M., Skulski, T., Parker, J., and Dube, B., 2000 Integrated Regional Analysis of the Red Lake Greenstone Belt and its Mineral Deposits, Western Superior Province, Ontario; Geological Survey of Canada, Current Research 2000-C18, 16 p.

Sanborn-Barrie, M., Skulski, T., and Parker, J., 2001 Three Hundred Million Years of Tectonic History Recorded by the Red Lake Greenstone Belt, Ontario; Geological Survey of Canada, Current Research 2001-C19, 30 p.

SGS Mineral Services. 2013 An Investigation into Preliminary Metallurgical Testing on Newman Todd Samples. Lakefield.

Sinclair, A.J. 1976 "Applications of probability graphs in mineral exploration", Special volume Association of Exploration Geochemists, 95 p.

Singh, R. 2003 Appendix III, Geophysical Assessment Report on the Newman-Todd Claims, Red Lake, Ontario; Company Report filed with the MNDM, 18p.

Singh, R. 2011 'Technical Report on the Newman-Todd Property, Red Lake Mining Division, NW Ontario, for Confederation Minerals Ltd', December 16, 2011 (DRAFT – unfiled).

Wallis, T., 1984 Report on the Newman Estate Option, Todd Township, Red Lake Area. Noranda Exploration Company Internal Report, November 1984, 23p.

http://www.geologyontario.mndmf.gov.on.ca/ Ontario Government Website.

APPENDIX 1 - LISTING OF DRILL HOLES

The drill holes used in the resource estimate are highlighted.

HOLE	EASTING	NORTHING	ELEVATION	HOLE LENGTH (m)
NT-029	420336.25	5655932.12	360	165.32
NT-030	420371.08	5655980.15	365.38	198
NT-031	420432.36	5655975.6	363	232
NT-032	420338.87	5655894.93	362	138
NT-033	420446.03	5655973.24	365.37	297
NT-034	420955.49	5655976.08	371.68	195
NT-035	421050	5656360	372	129
NT-036	421048	5656363	372	390
NT-037	420168.6	5655981.11	362.37	303
NT-038	420168.6	5655981.11	362.37	300
NT-039	420868.03	5656537.34	366.03	326
NT-040	420379.86	5655893.5	367.24	299.6
NT-041	420632.98	5656160.8	363.43	330
NT-042	420720	5656209	357	294
NT-043	421036.84	5656340.98	374.55	344
NT-044	420405	5655858	375	353
NT-045	420834	5656583	365	399.5
NT-046	420481	5656473	360	294
NT-047	420177	5656088	358	395.3
NT-048	420374.63	5655856.14	365.45	315
NT-049	420374.63	5655856.14	365.45	315
NT-050	420523.05	5656109.56	372.28	321
NT-051	420411.78	5655854.73	373.27	459
NT-052	421112.72	5656418.04	376.91	430.5
NT-053	420697	5656524	365	498
NT-054	421080.51	5656370.39	373.97	426
NT-055	420403.23	5655944.54	365.48	333
NT-056	420221.79	5656043.91	360.56	429
NT-057	420221.79	5656043.91	360.56	228
NT-058	420240.23	5656060.6	361.51	324
NT-059	420240.23	5656060.6	361.51	240
NT-060	420996.92	5656752.33	362.81	345
NT-061	420996.92	5656752.33	362.81	600
NT-062	420697	5656524	365	360
NT-063	420697	5656524	365	411
NT-064	420221.7	5656119.31	362.61	387
NT-065	420286.53	5656233.97	371.57	462

NT-066	420221.7	5656119.31	362.61	444
NT-067	420286.53	5656233.97	371.57	618
NT-068	420169.34	5656070	364.1	366
NT-069	420169.34	5656070	364.1	372
NT-070	420183.07	5656087.28	363	660
NT-071	420396.9	5656330.33	364.2	306
NT-072	420396.9	5656330.33	364.2	330
NT-073	420853.56	5656649.53	371.15	378
NT-074	420200	5656103	358	431
NT-075	420853.56	5656649.53	371.15	438
NT-076	420514	5656498	370	303
NT-077	420891	5656685	362	363
NT-078	420510	5656490	370	336
NT-078A	420514	5656498	370	204
NT-079	420891	5656685	362	444
NT-080	420932	5656716	356	360
NT-081	420587.25	5656491.96	363.73	339
NT-082	420932	5656716	356	441
NT-083	420587.25	5656491.96	363.73	384
NT-084	420772.72	5656598.27	374.24	450
NT-085	420719	5656579.45	378.52	432
NT-086	420776	5656587	370	630
NT-087	420719	5656579.45	378.52	477
NT-088	420160.66	5656039.21	364.49	687
NT-089	420962.2	5656801.55	365.9	246
NT-090	420962.2	5656801.55	365.9	486
NT-091	420160.66	5656039.21	364.49	690
NT-092	420378	5656687	395	204
NT-093	420814.09	5656620.14	372.86	579
NT-094	420955.49	5655976.08	371.68	516
NT-095	420814.09	5656620.14	372.86	546
NT-096	420234.7	5656183.28	368.28	480
NT-097	420234.7	5656183.28	368.28	618
NT-098	420544.95	5656591.7	377.98	480
NT-099	420544.95	5656591.7	377.98	461
NT-100	420303.62	5656212.24	369.38	366
NT-101	420200.52	5656315.07	388.49	606
NT-102	420421.09	5656452.28	364.52	527.65
NT-103	420200.73	5656315.22	388.49	702
NT-104	420416	5656452	364	531
NT-105	420443.16	5656512.43	375.44	322
NT-105w1	420443.16	5656512.43	375.44	435
NT-106	420308.98	5656280.66	370.86	498

NT-107	420443.16	5656512.43	375.44	504
NT-108	420308.98	5656280.66	370.86	663
NT-109	420408.99	5656385.89	363.17	561
NT-110	420433.77	5656290.11	362.81	244
NT-111	420433.77	5656290.11	362.81	244
NT-112	420398.1	5656373.53	363.26	300.8
NT-113	420398.1	5656373.53	363.26	425
NT-114	420398.1	5656373.53	363.26	601.3
NT-115	420424.35	5656452.57	364.81	379.2
NT-116	420423.09	5656416.78	363.09	343.5
NT-117	420423.09	5656416.78	363.09	502
NT-118	420413.83	5656393.26	363.04	480
NT-119	420401.21	5656296.56	370.56	273.1
NT-120	420401.21	5656296.56	370.56	315.7
NT-121	420401.21	5656296.56	370.56	571.8
NT-122	420371.54	5656283.76	370.64	291.4
NT-123	420371.12	5656284.28	370.71	352.3
NT-124	420370.85	5656284.56	370.72	556.5
NT-125	420432.74	5656472.88	365.7	448.3
NT-126	420432.74	5656472.88	365.7	534.93
NT-127	420186.45	5656631.5	379.96	730.6
NT-128	420319.6	5656299.76	369.69	357
NT-129	420825.73	5655878.7	374.83	1024
NT-130	420394.22	5656331.5	364.39	465
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NT-132	420423.09	5656416.78	363.09	438
NT-133	420628.95	5656204.08	361.75	222
NT-134	420536.23	5656180.23	368.51	318
NT-135	420426.86	5656331.87	362.88	327
NT-136	420456.2	5656297.62	361.58	276
NT-137	420574.47	5656361.98	361.65	102
NT-138	420551.82	5656385.09	361.6	143.4
NT-140	420596.11	5656409.11	361.64	204
NT-141	420623.01	5656386.64	361.63	156
NT-142	420505.63	5656362.49	361.65	148.3
NT-143	420528.76	5656339.45	361.63	204
NT-144	420540.52	5656327.18	361.52	108
NT-145	420690.63	5656425.66	361.52	222
NT-146	420493.84	5656409.52	361.62	294
NT-147	420653.51	5656461.1	361.59	303
NT-148	420653.24	5656461.49	361.7	327
NT-149	420390.14	5656191.34	361.83	210
NT-150	420350.67	5656241.42	370.67	240
NT-151	420652.22	5656508.4	374.71	339

NT-152	420676.44	5656512.01	375.18	312
NT-153	420681.49	5656473.21	362.6	279
NT-154	420700.29	5656482.1	363.39	297
NT-155	420723.72	5656495.97	363.1	351
NT-155a	420723.72	5656495.97	363.1	78
NT-156	420314.71	5656090.34	362.55	231
NT-157	420314.3	5656090.88	362.52	357
NT-158	420313.93	5656091.37	362.33	273
NT-159	420312.44	5656093.66	362.41	108
NT-160	420312.81	5656093.16	362.31	117
NT-161	420327.44	5656154.63	362.7	258
NT-162	420327.23	5656154.78	362.6	294
NT-163	420351.38	5656200.49	366.71	267
NT-164	420350.91	5656200.96	366.7	300

APPENDIX 2 - VARIOGRAPHY FOR NEWMAN TODD ZONE

NTS

Domain A

Domain B

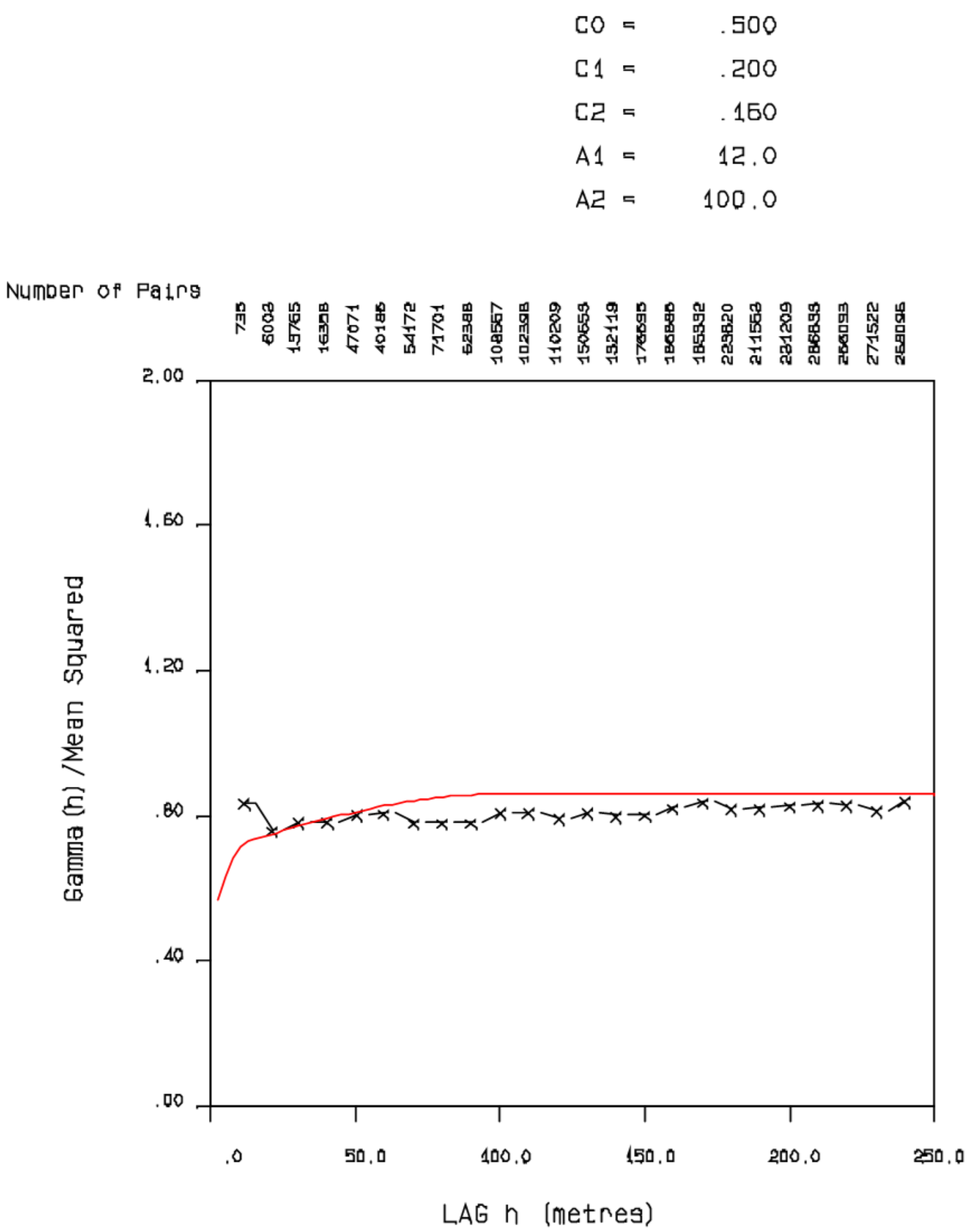
Domain C

Domain D

Domain G

Domain HB

Waste



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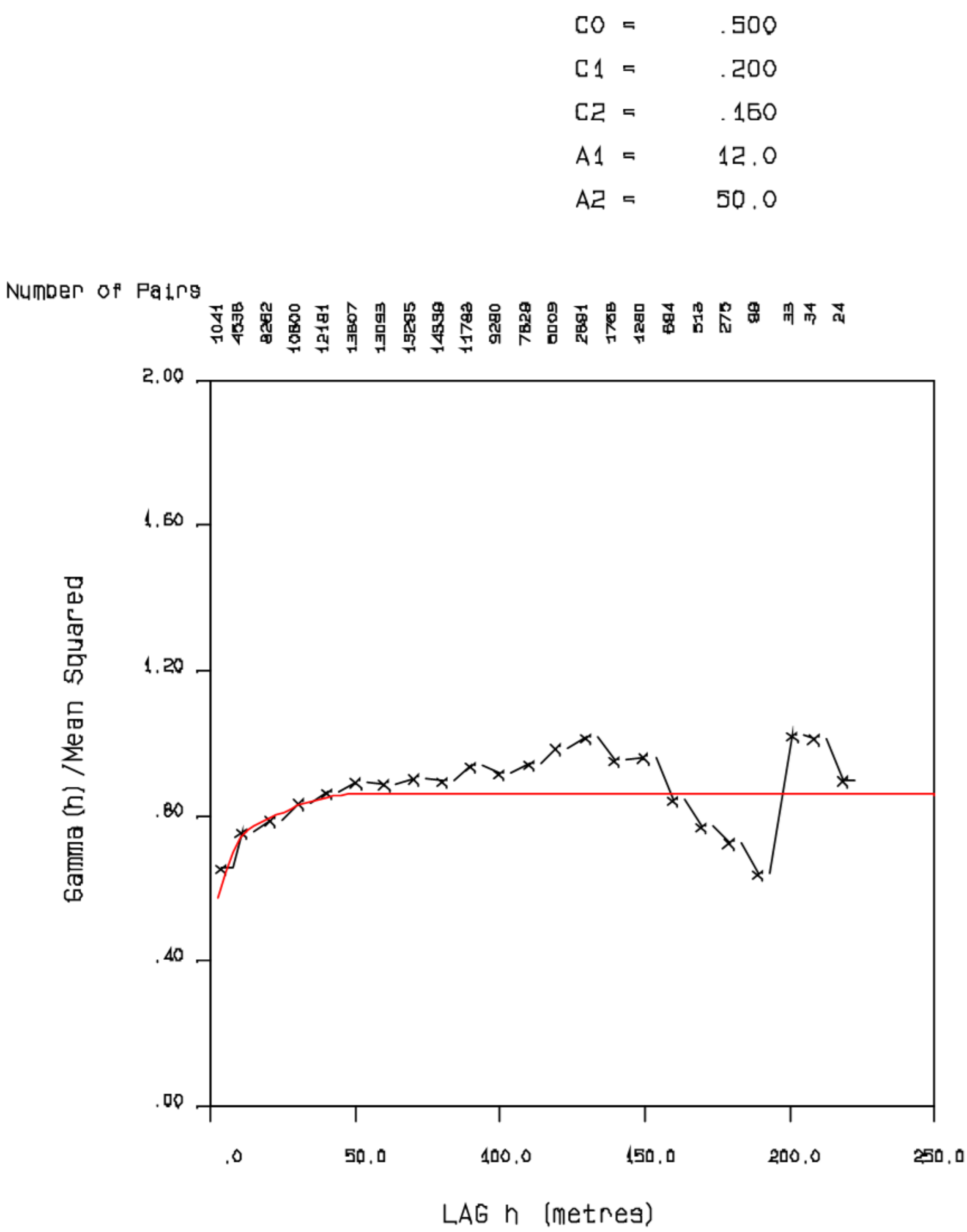

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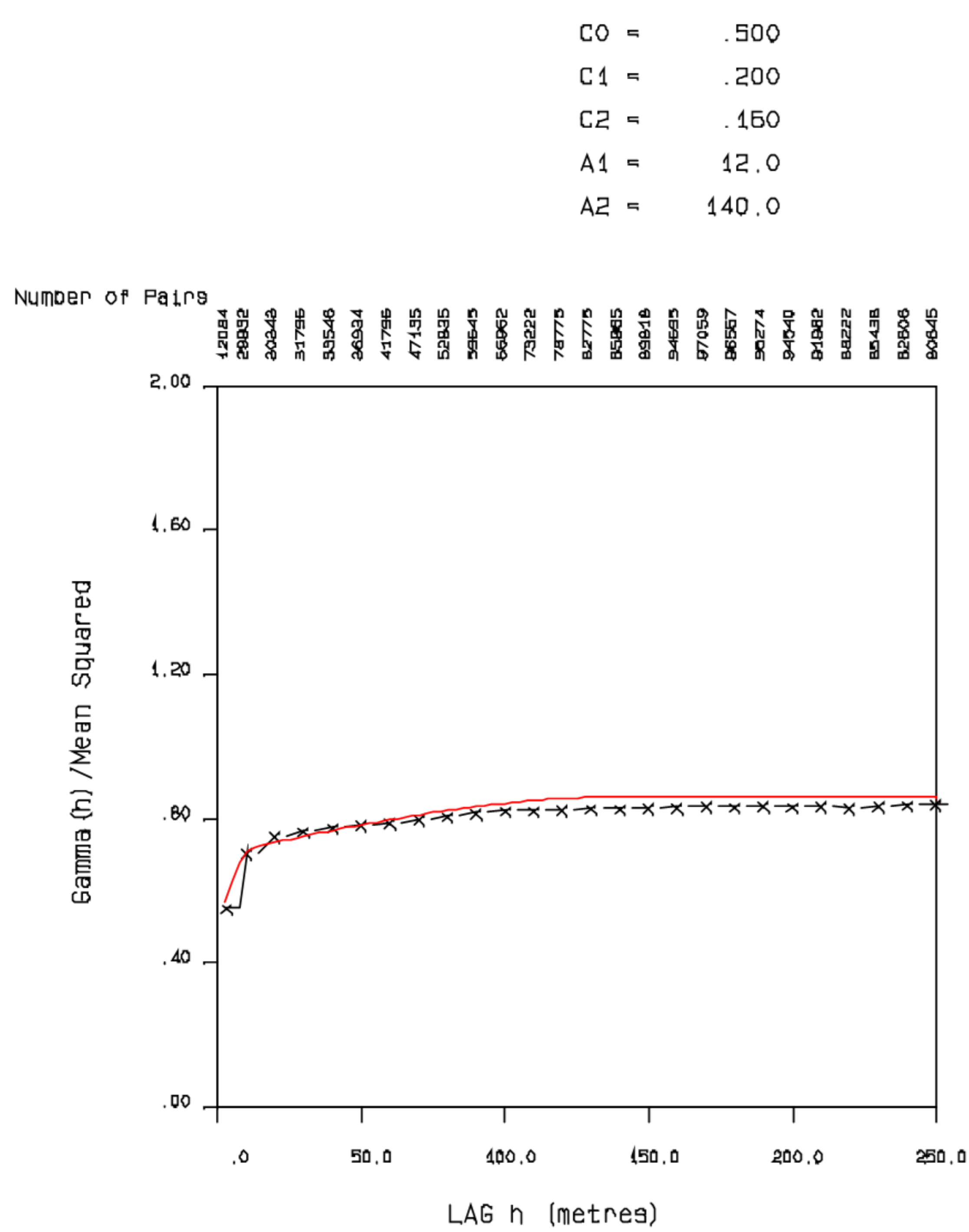

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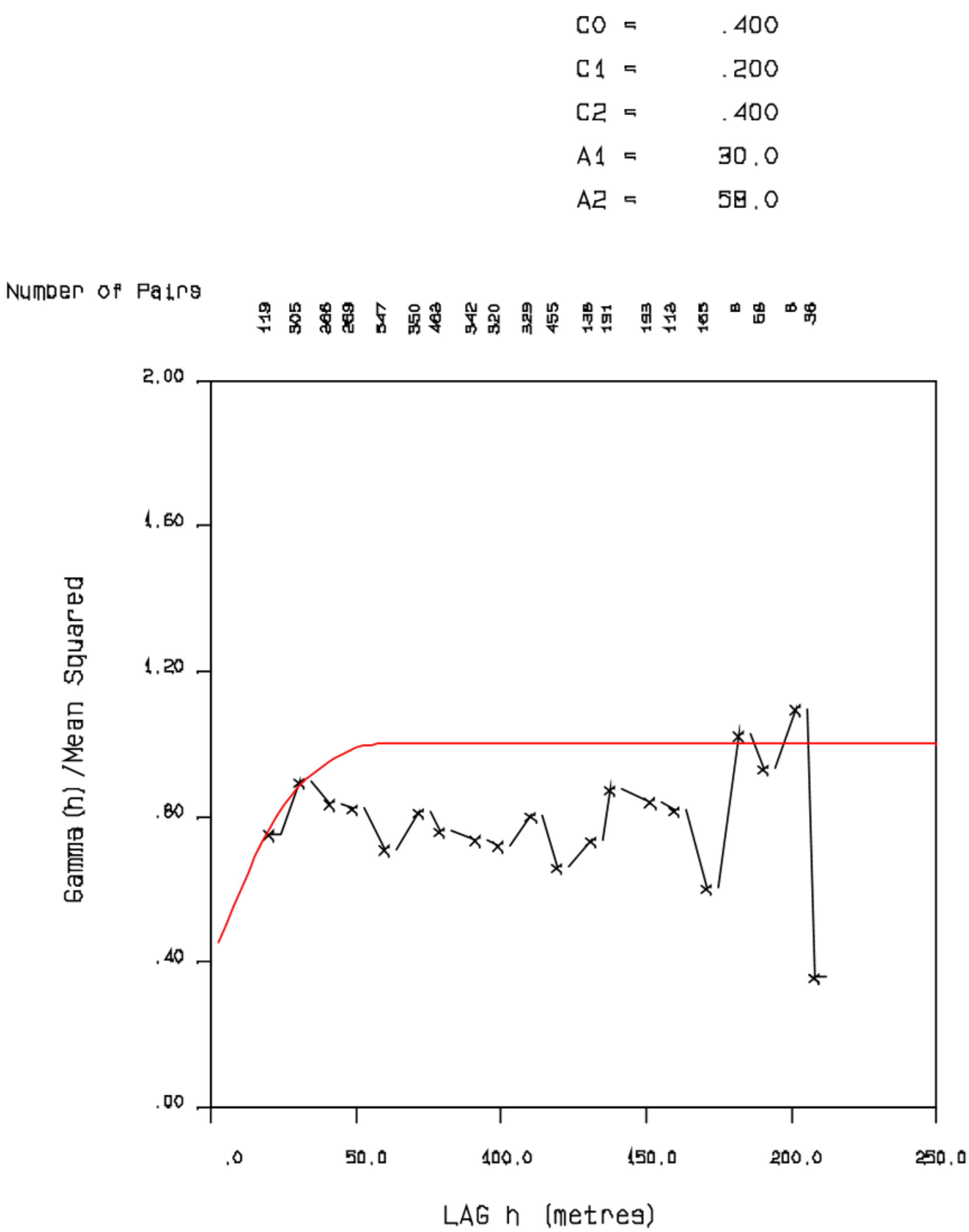

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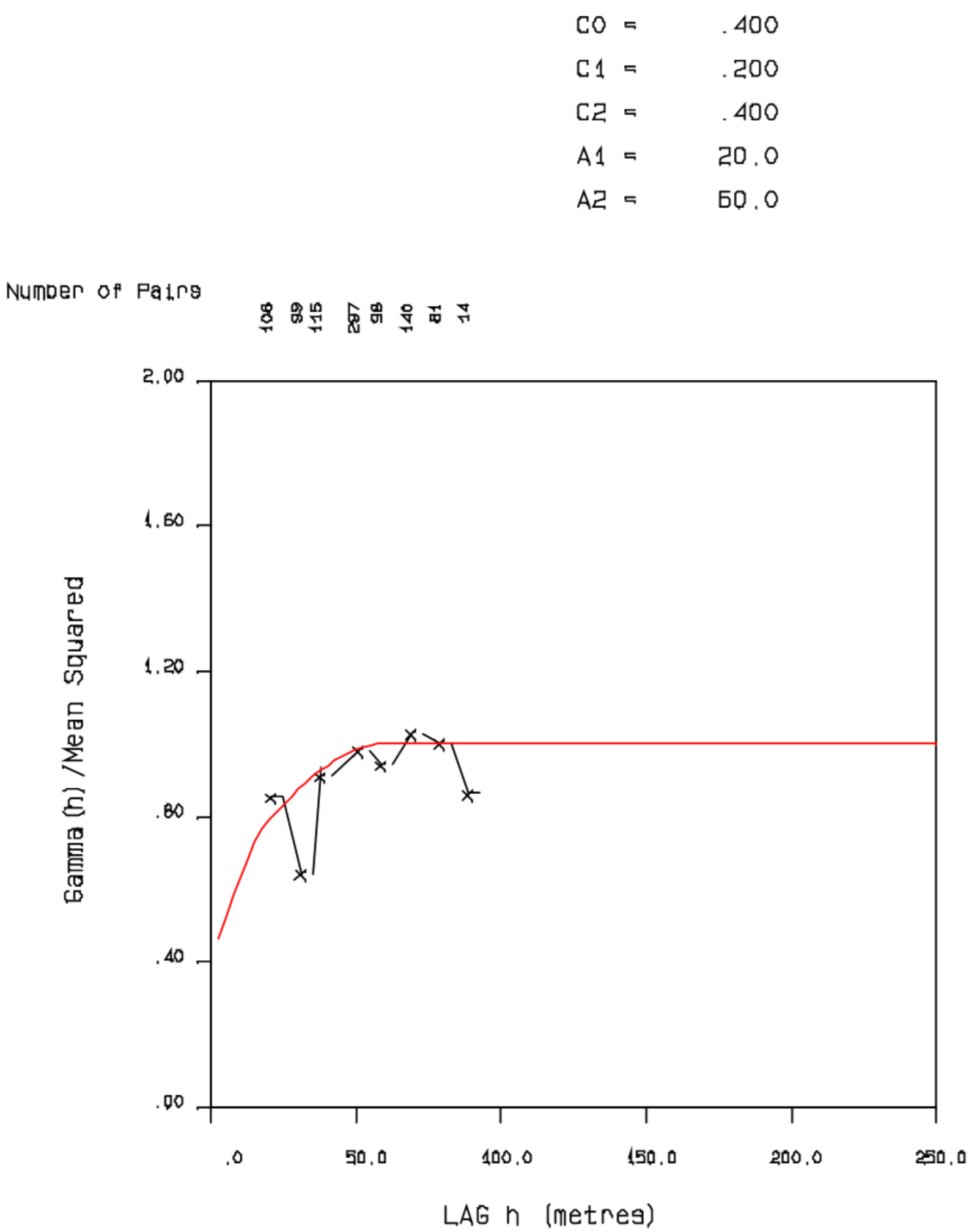

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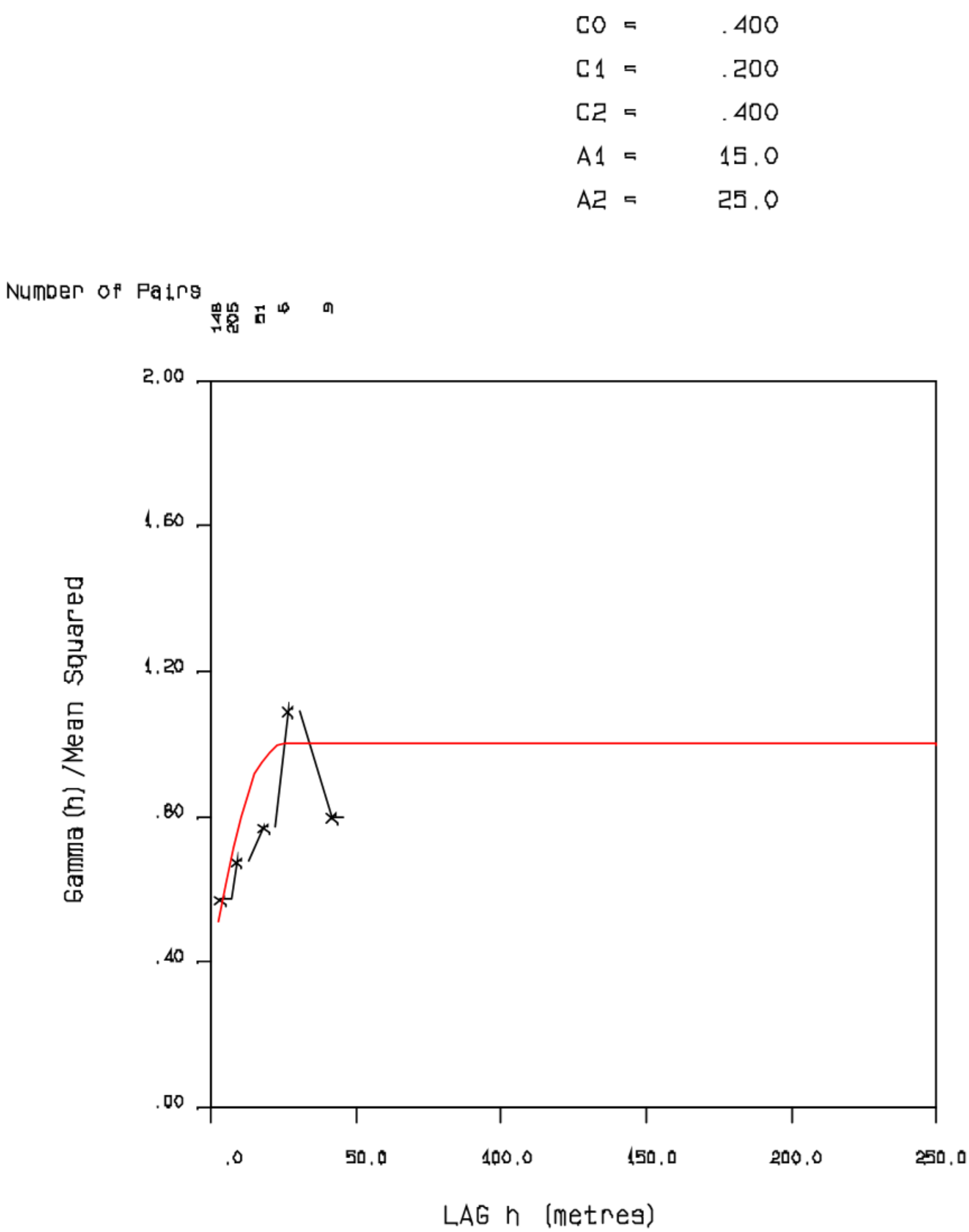

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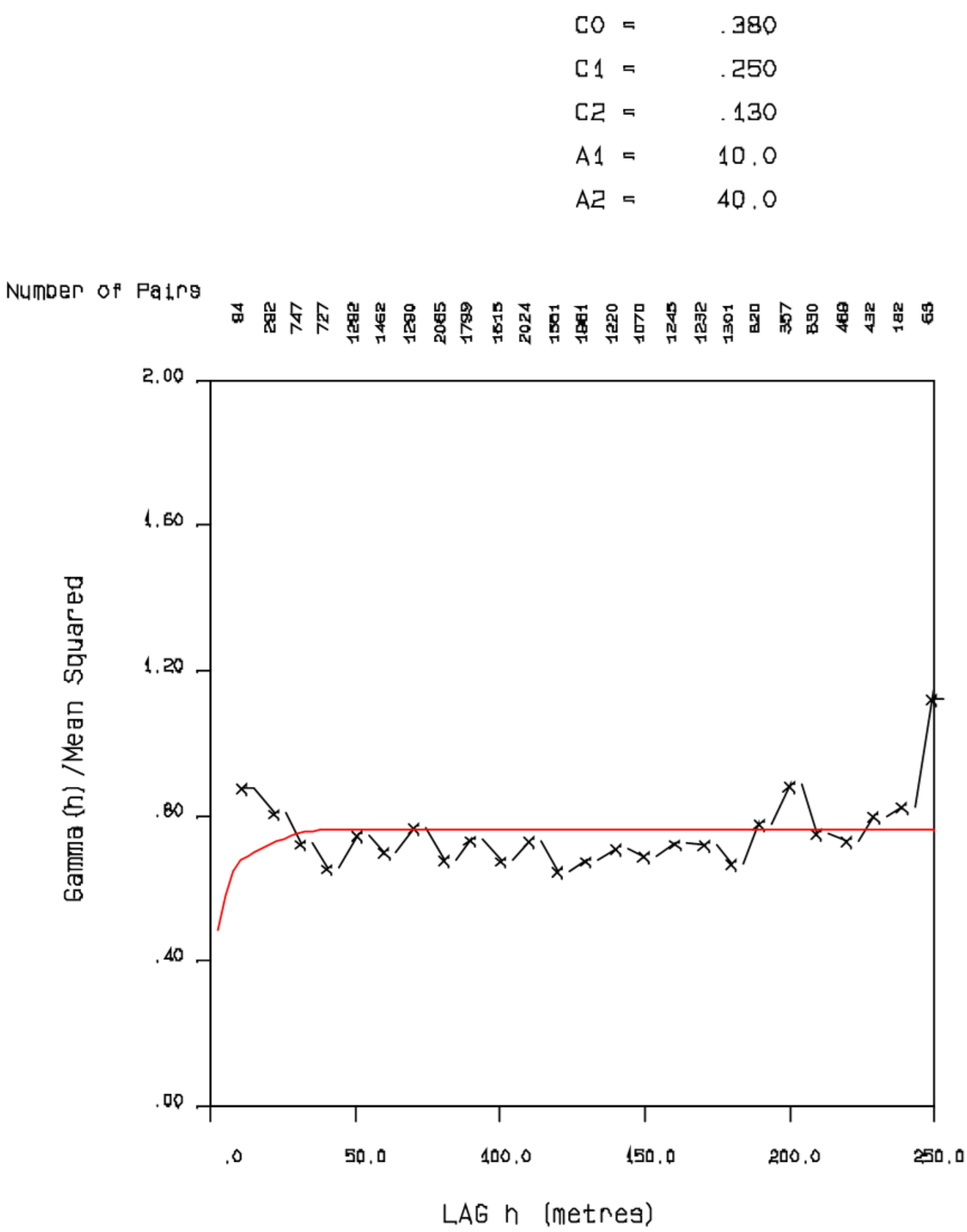

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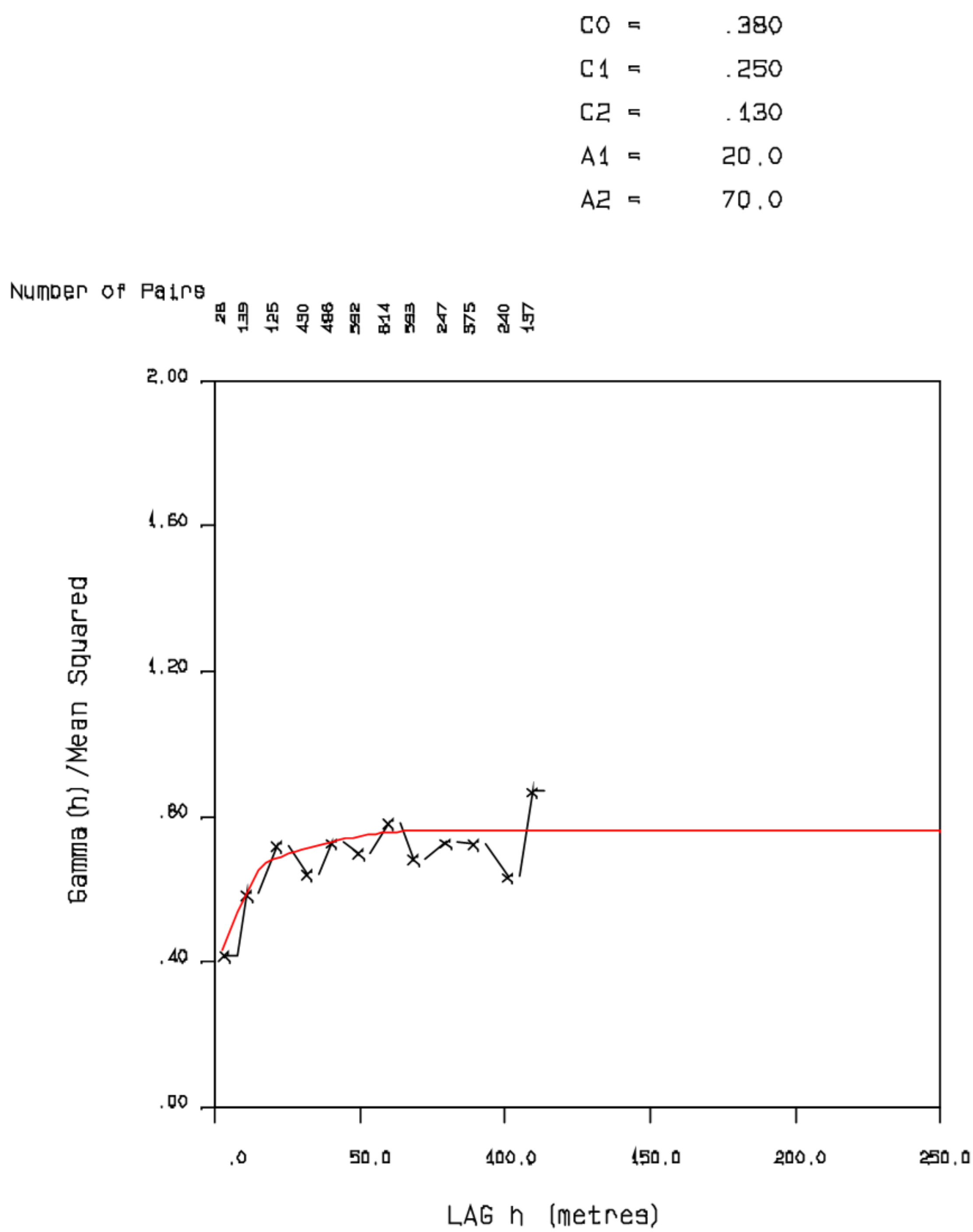

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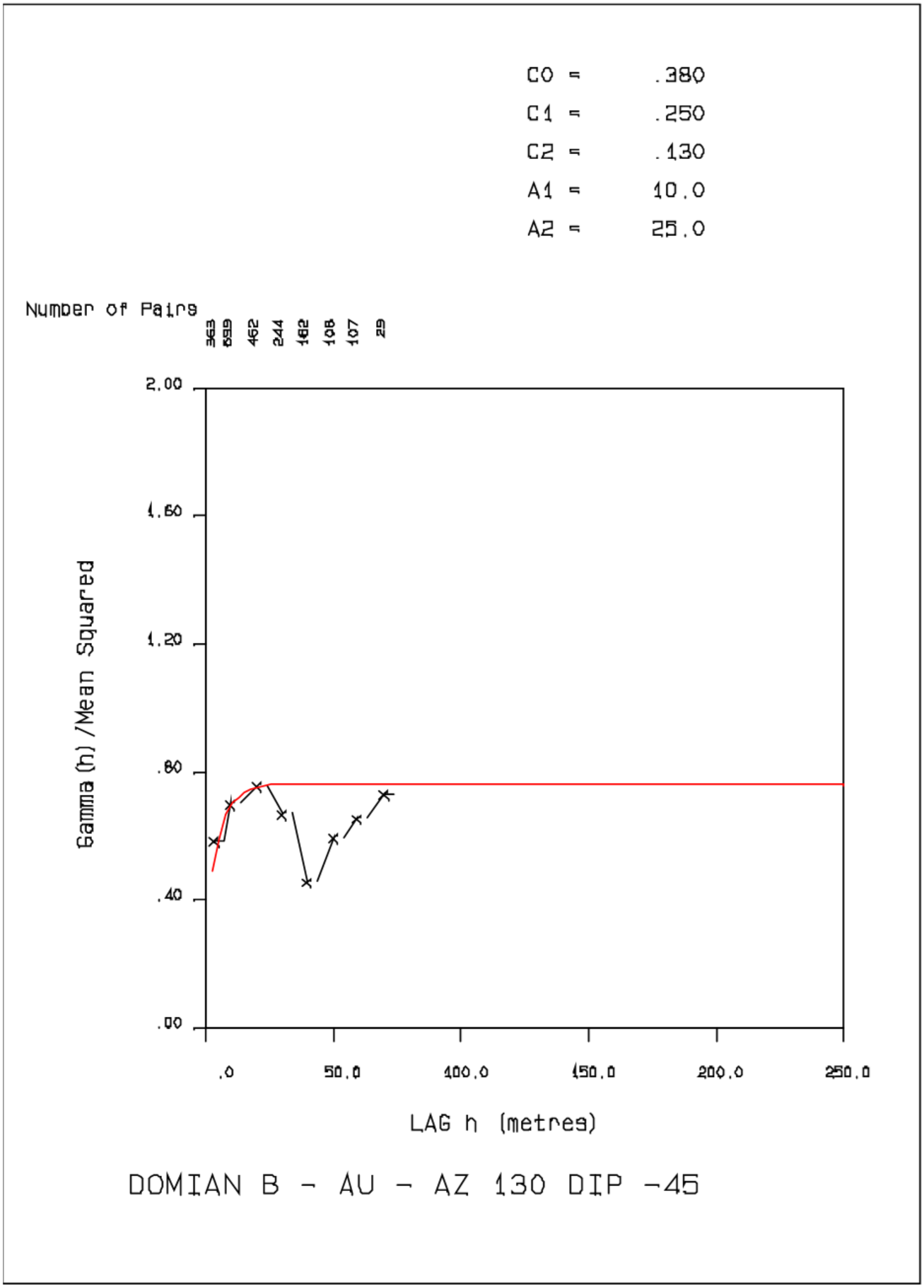
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C1 = .250
C2 = .130
A1 = 10.0
A2 = 25.0
Number of Pairs
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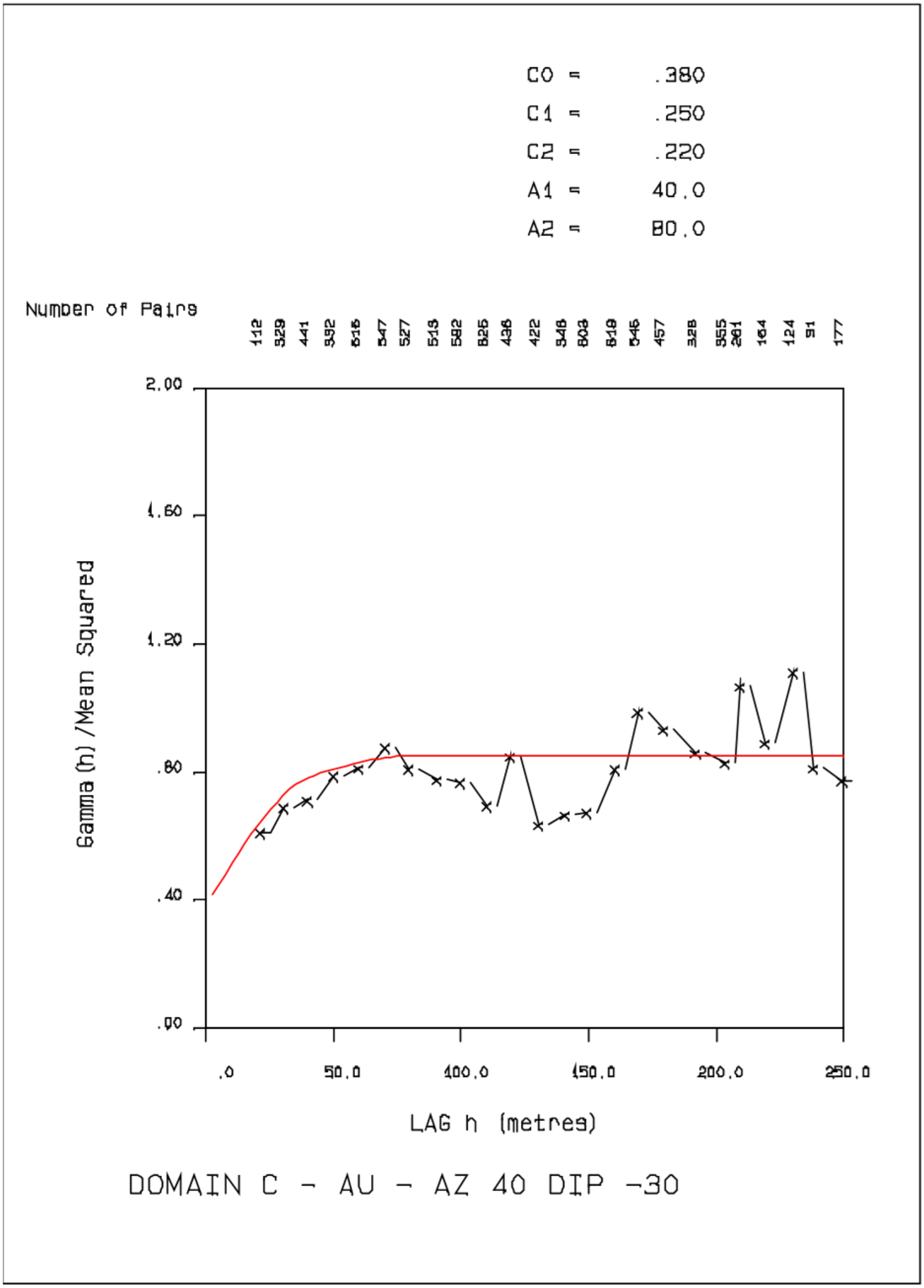
599
462
244
182
108
107
29
2.00
1.60
1.20
.80
.40
.00
Gamma (h) /Mean Squared
.0
50.0
100.0
150.0
200.0
250.0
LAG h (metres)
DOMIAN B - AU - AZ 130 DIP -45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LAG h (metres)
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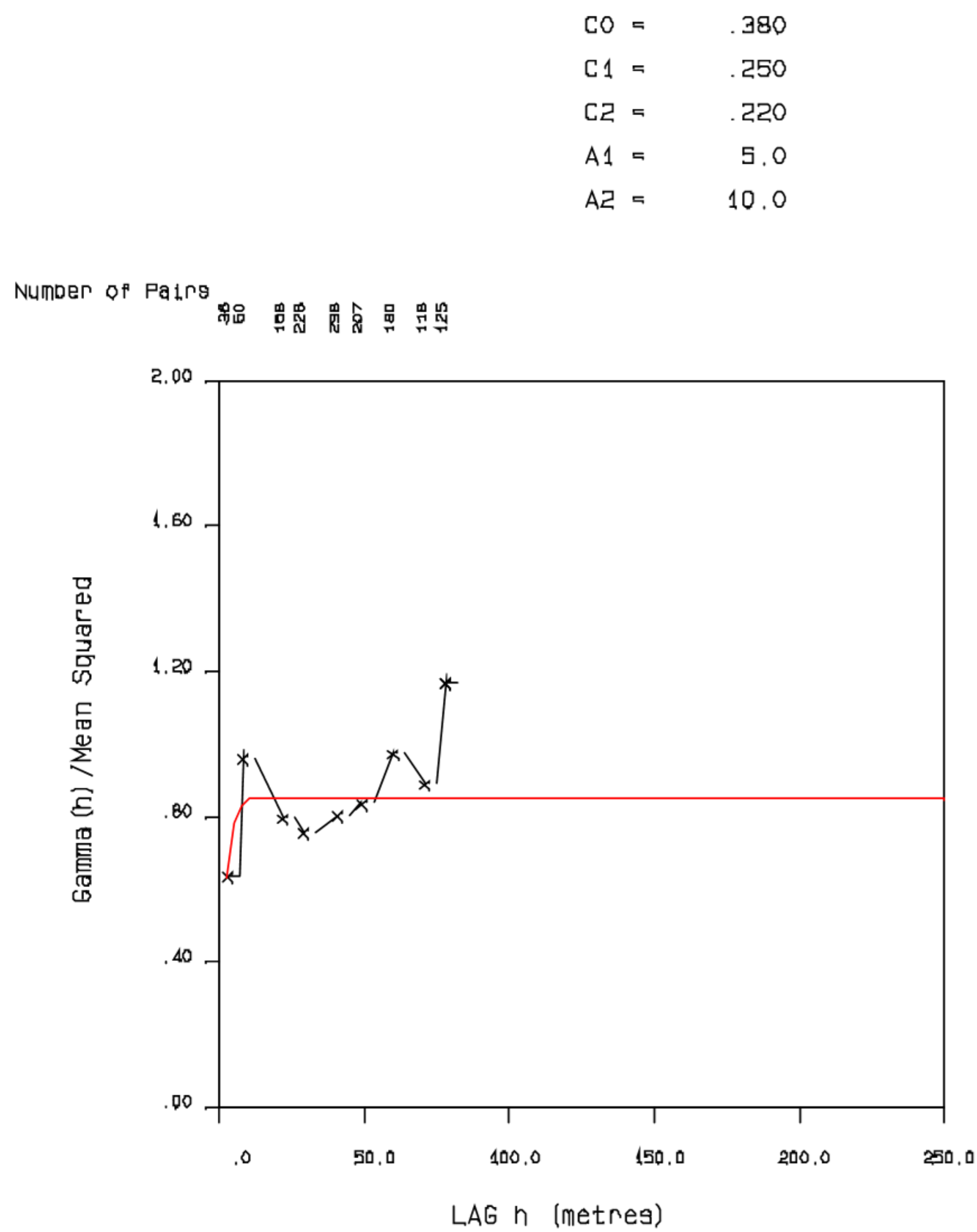

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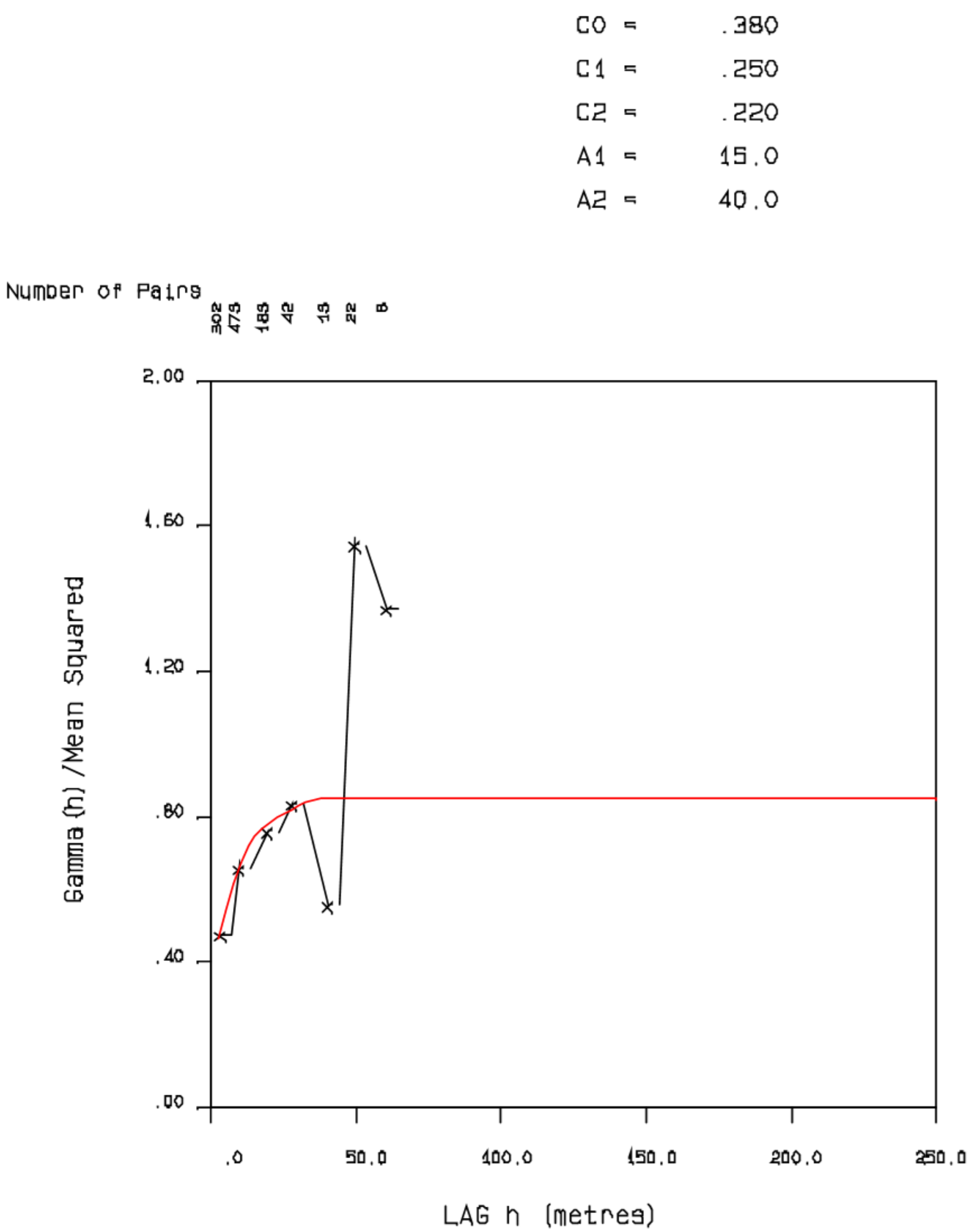

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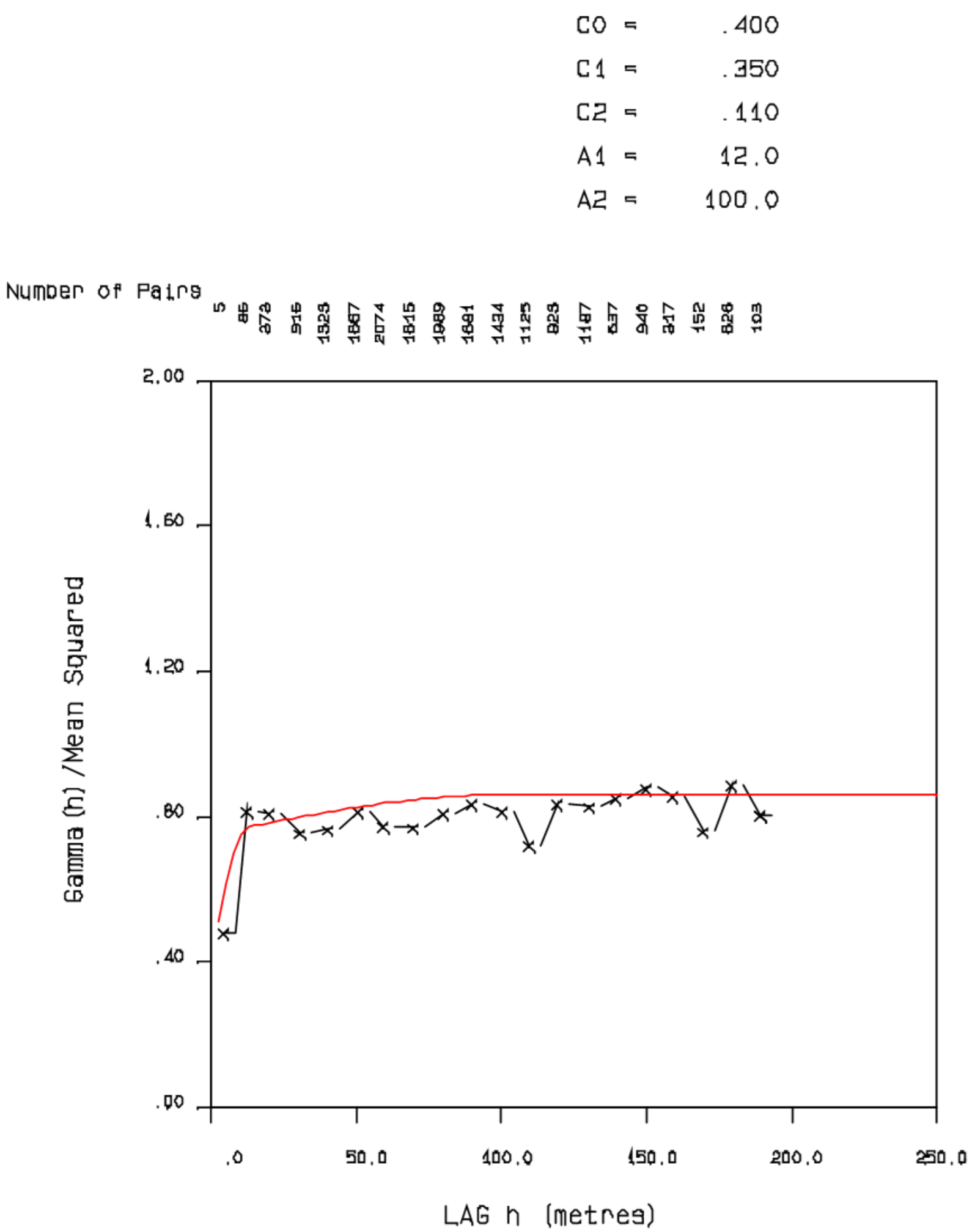

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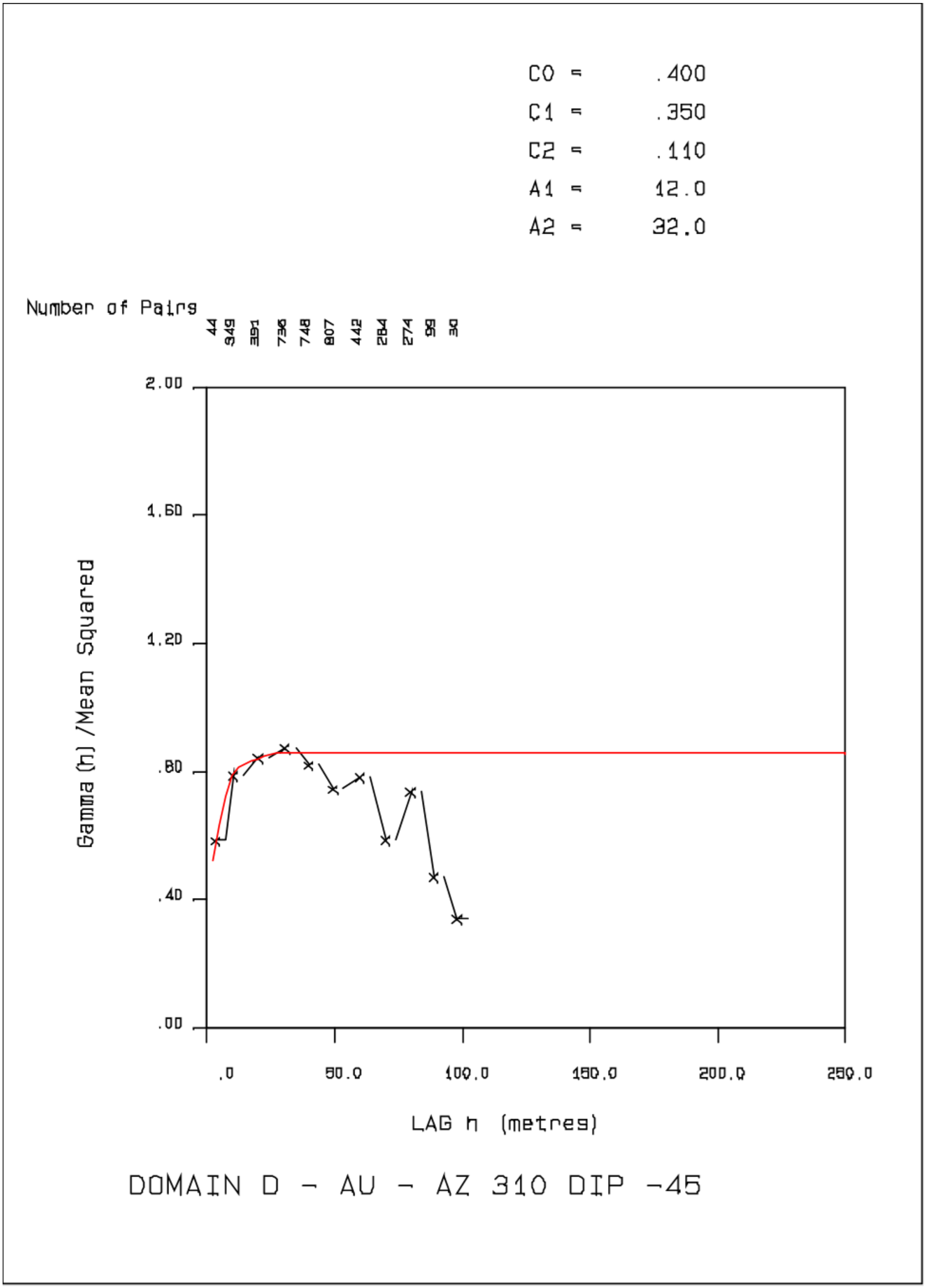
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C2 = .110
A1 = 12.0
A2 = 32.0
Number of Pairs
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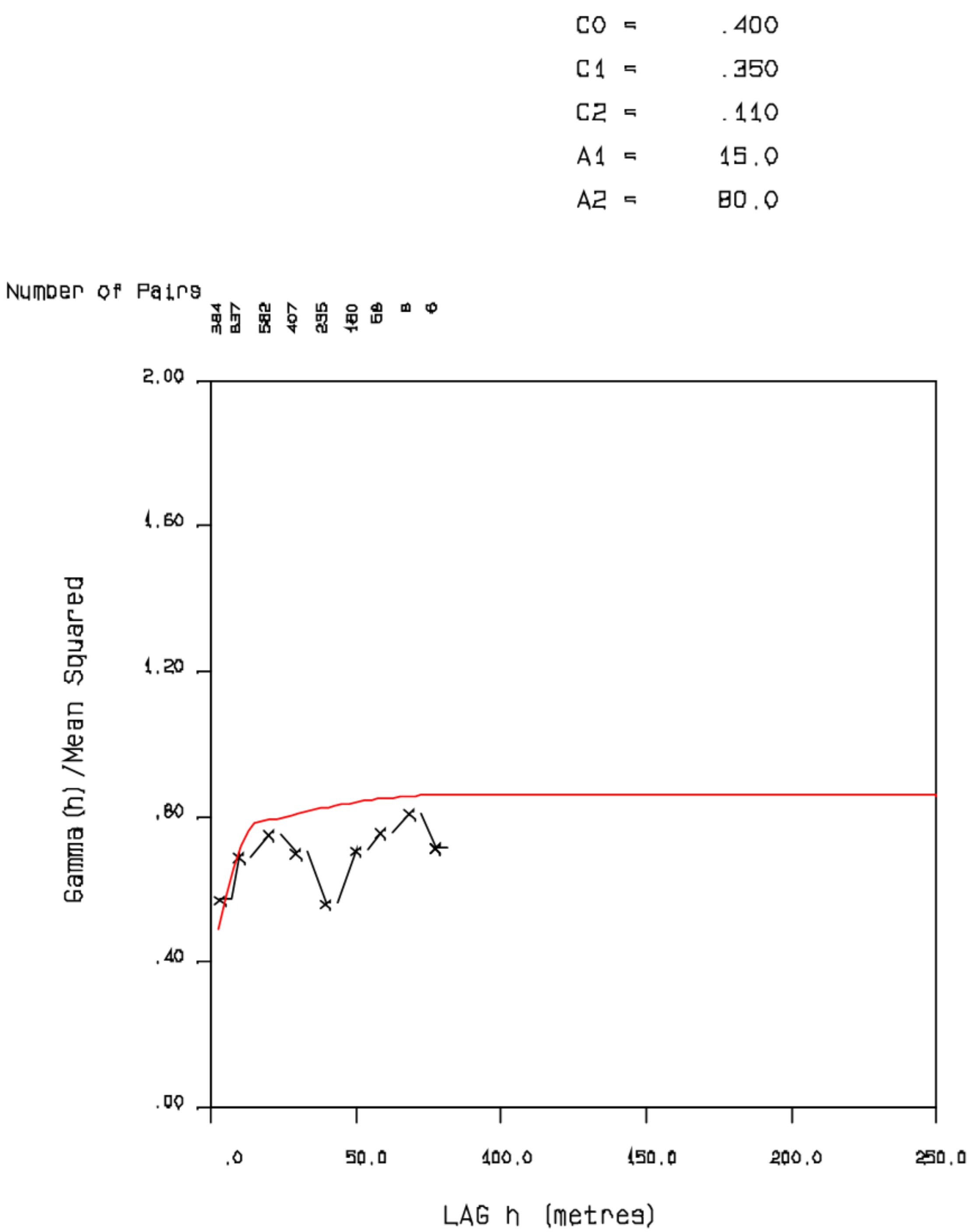
349
391
736
748
807
442
284
274
99
30
2.00
1.60
1.20
.80
.40
.00
Gamma (h) /Mean Squared
.0
50.0
100.0
150.0
200.0
250.0
LAG h (metres)
DOMAIN D - AU - AZ 310 DIP -45



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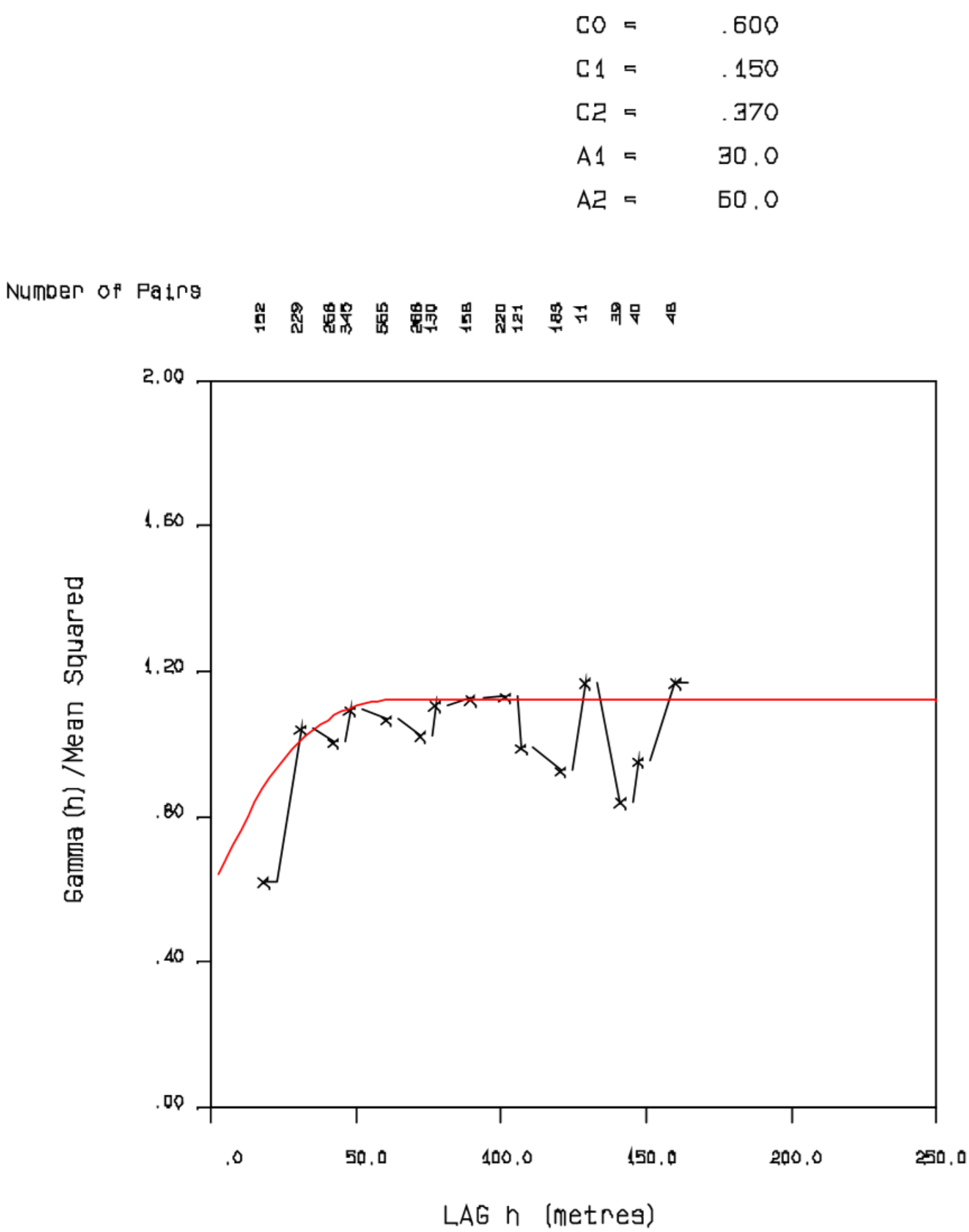
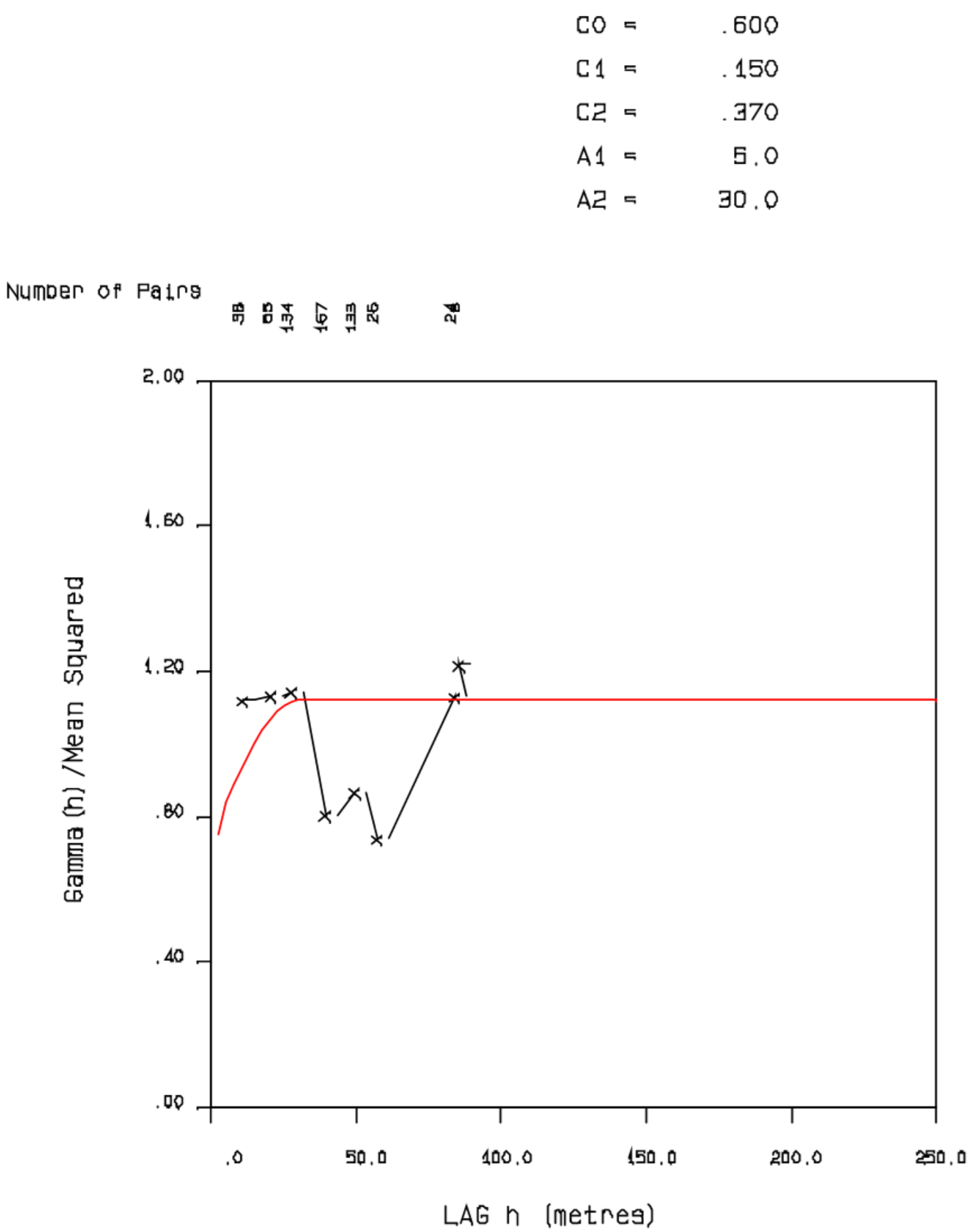
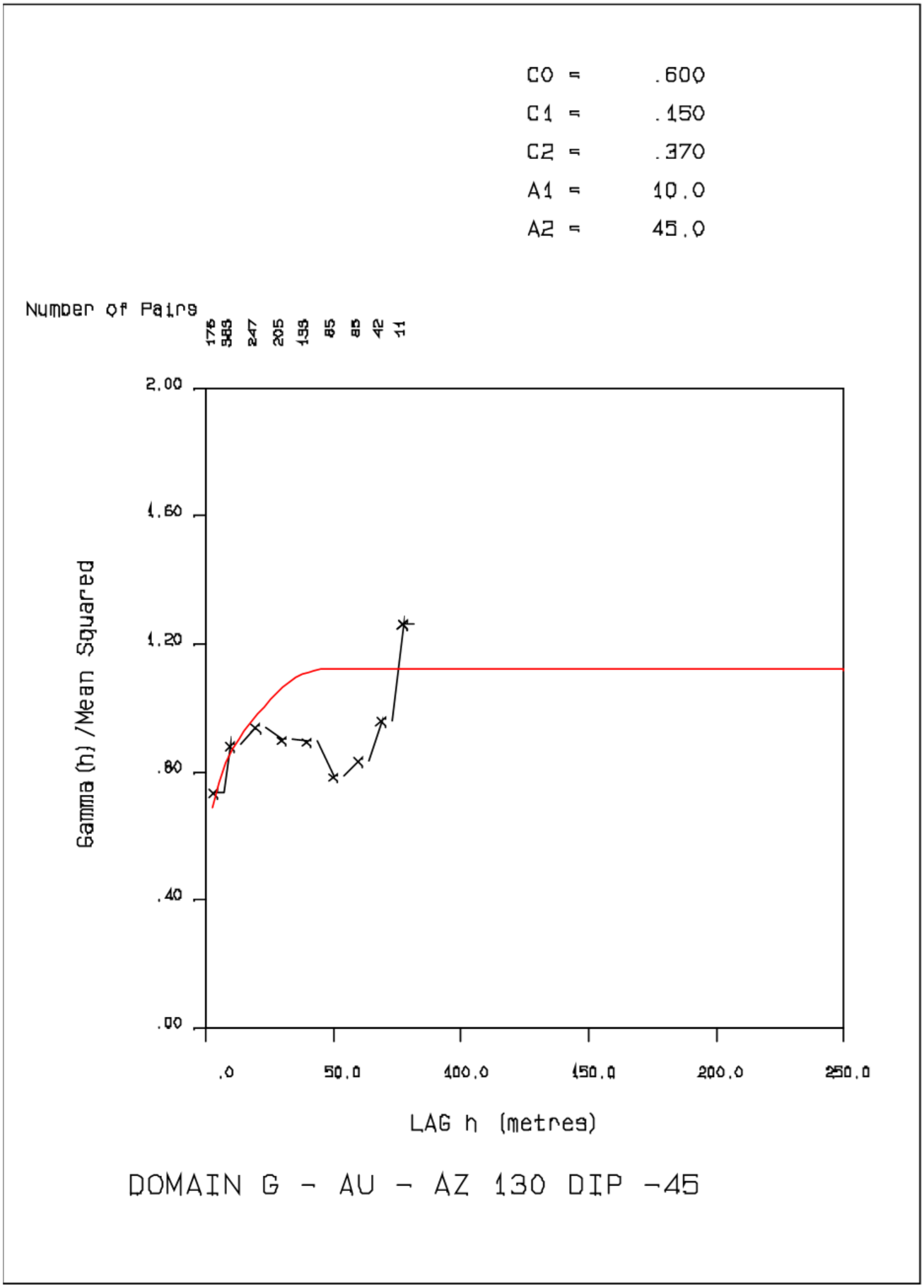
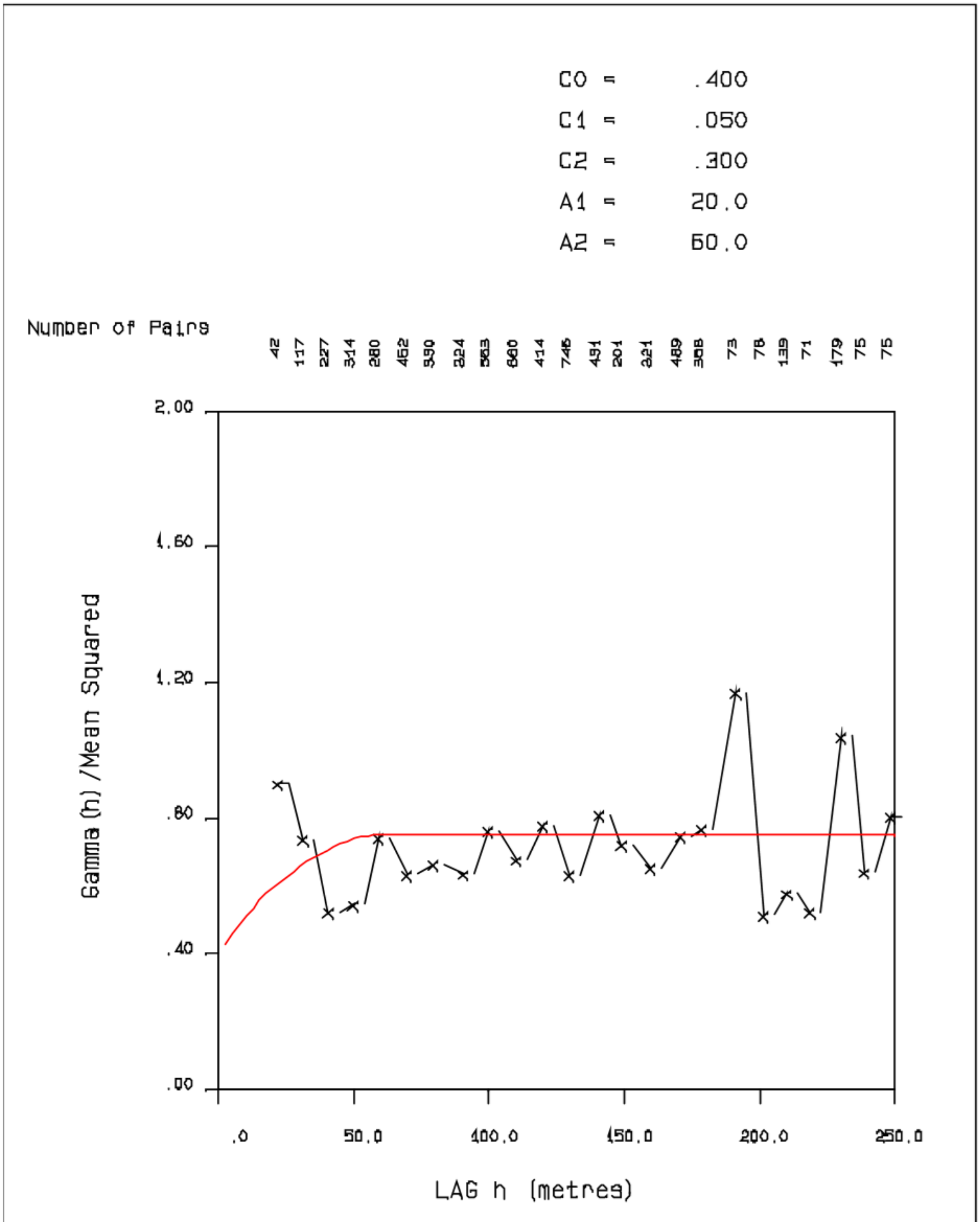


DOMAIN G - AU - AZ 40 DIP -30

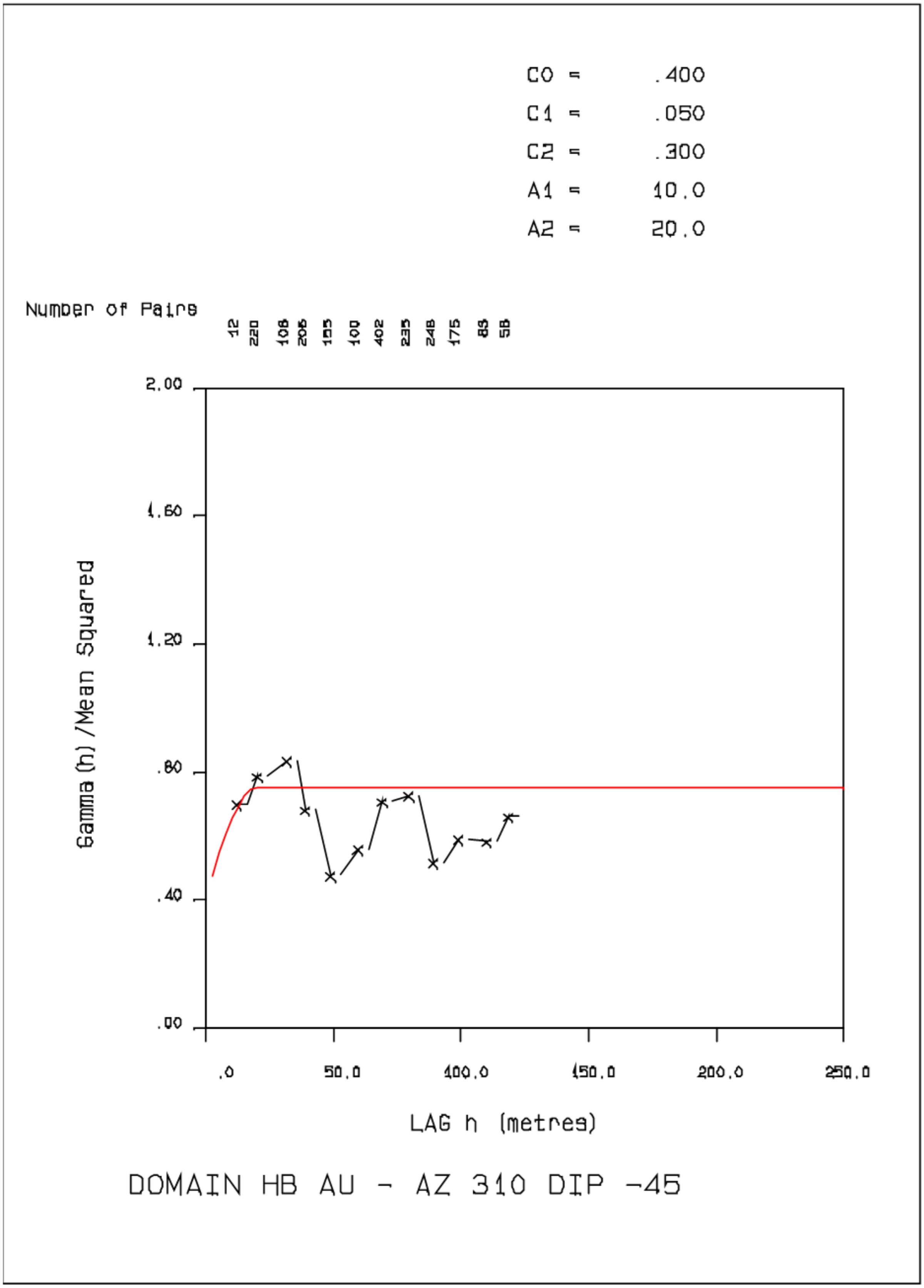


DOMAIN G - AU - AZ 310 DIP -45

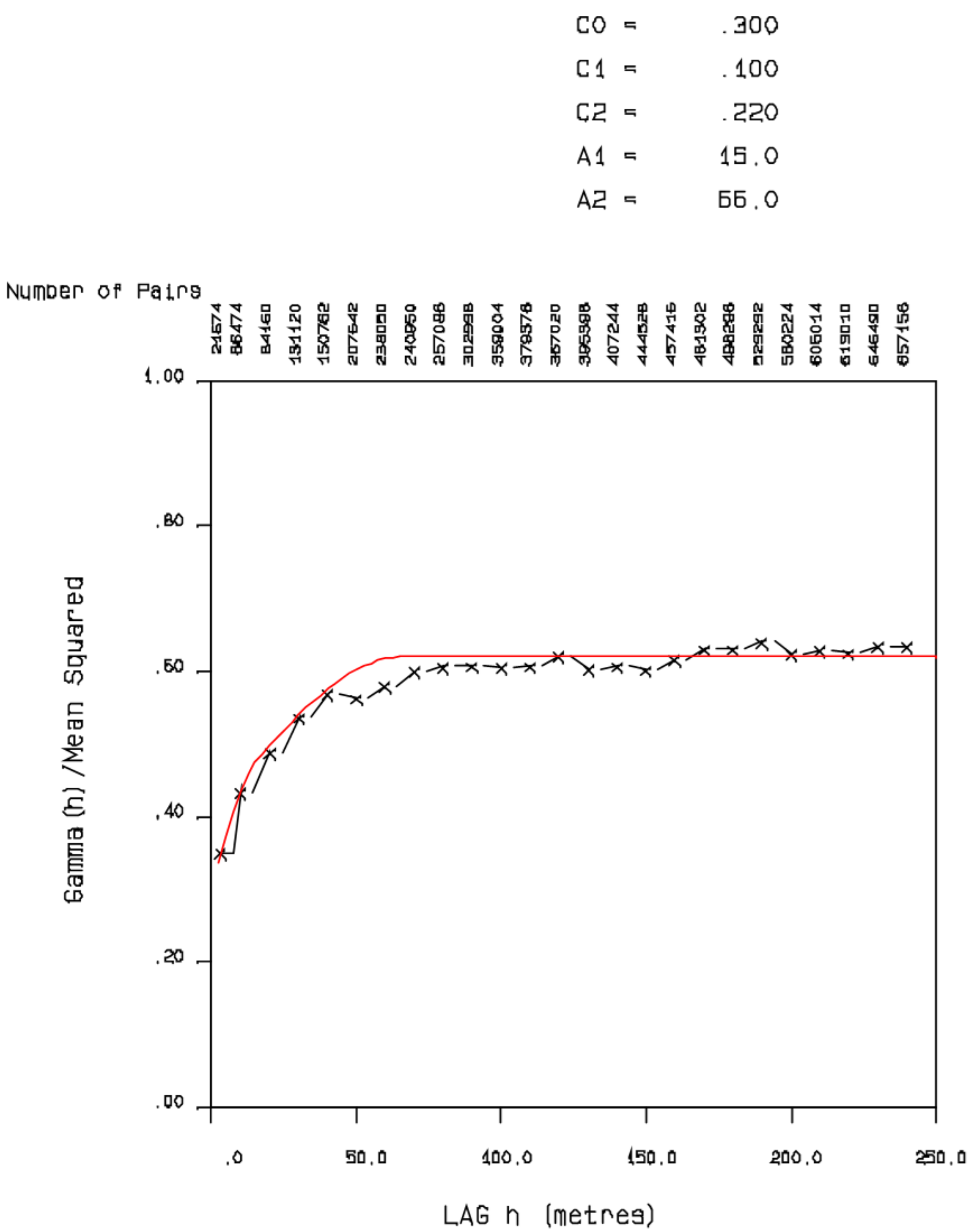

C0 = .600
C1 = .150
C2 = .370
A1 = 10.0
A2 = 45.0
Number of Pairs
176 383 247 205 133 85 85 42 11
2.00
1.60
1.20
.80
.40
.00
Gamma (h) /Mean Squared
.0
50.0
100.0
150.0
200.0
250.0
LAG h (metres)
DOMAIN G - AU - AZ 130 DIP -45



DOMAIN HB AU - AZ 40 DIP -30



C0 = .400
C1 = .050
C2 = .300
A1 = 10.0
A2 = 20.0
Number of Pairs
12 220 108 205 155 100 402 235 248 175 83 58
2.00
1.60
1.20
.80
.40
.00
Gamma (h) /Mean Squared
.0
50.0
100.0
150.0
200.0
250.0
LAG h (metres)
DOMAIN HB AU - AZ 310 DIP -45



WASTE AU - OMNI DIRECTIONAL

APPENDIX 3 - SPECIFIC GRAVITY DETERMINATIONS

Hole ID	From	To	Rock Type	Rock Code	Py%	SG
NT-030	7.8	8.0	mt-po IF	9c	20-30	3.96
NT-030	13.5	13.7	((Qxl))Fxl RT	2a	7-10	3.11
NT-030	15.0	16.0	cherty bx	10b	2-3	3.03
NT-030	19.8	20.0	QFP R(flow)	5a	2-3	2.74
NT-030	30.0	30.3	QFP R(flow)	5a	0.5	2.76
NT-030	46.8	47.0	chl-sil bx	10l	3	2.90
NT-030	49.0	49.2	Dacite Fxl T	6a	1	3.21
NT-030	51.8	52.0	py sil mt Breccia	10e	35	3.70
NT-030	57.0	57.3	Qxl Fxl R LT	2a	0.5	2.66
NT-030	67.5	67.7	Sil (Qxl) Breccia	10a	0.5	2.91
NT-030	75.0	75.2	Qxl Fxl R T	2a	0.5	2.75
NT-030	90.5	90.7	Fxl Fp? Dacite	6a	0.5	2.84
NT-030	99.2	99.7	Mafic Dyke	3b	1	2.85
NT-030	100.0	100.2	silica chert Breccia	10a	0.5	2.75
NT-030	105.6	105.8	Mafic Int? Flow?	3c	0.5	2.79
NT-030	123.0	123.2	sil-fe-carb bx	10f	1	2.89
NT-030	134.8	135.0	cherty bx	10b	3-5	2.79
NT-030	137.8	138.0	hydrothermal bx	10g	1	2.78
NT-030	142.0	142.2	cherty sul (Breccia)	10c	1-2	2.99
NT-030	146.5	146.7	banded chert	8a	1	2.79
NT-030	149.0	149.2	QP Ser rock	5a	3-5	2.73
NT-030	161.5	161.7	cherty-py bx	10c	7-10	2.93
NT-031	19.0	19.2	Interbedd seds/cht	8a	0.5	2.83
NT-031	23.8	24.0	Interbedded seds/cht	8a	0.5	2.74
NT-031	28.9	29.1	Fxl D T	6a	0.5	2.86
NT-031	40.0	40.2	Bedded Chert / T seds	8a	0.5	2.91
NT-031	45.8	46.0	Fxl D T / Sul IF	6a	0.5	4.03
NT-031	56.0	56.1	(ser) Qxl R T	2a	0.5	2.71
NT-031	73.0	73.2	Interb py/po chert IF	9b	0.5	2.79
NT-033	30.0	30.2	qfp?	5a	0.5	2.80
NT-033	37.5	37.7	silica chert	8a	2-3	3.27
NT-033	41.0	41.2	banded chert	9d	2-3	3.15
NT-033	56.0	56.0	banded chert	9d	0.5	2.69
NT-033	66.7	66.9	sil-sul-chl bx	10k	3-5	3.63

NT-033	70.0	70.2	qfp?	5a	0.5	2.71
NT-033	78.6	78.8	dacite?	6a/b	0.5	2.82
NT-033	81.2	81.3	IF bx	10h	10-15	3.55
NT-033	82.8	83.0	silic chert pseudo bx	10j	1-2	2.77
NT-033	88.7	88.9	mafic dyke	3b	0.5	2.77
NT-033	102.0	102.1	qfp?	5a	0.5	2.78
NT-033	118.0	118.1	rlt	2a	0.5	2.77
NT-033	125.0	125.2	sil-sul-chl-maf bx	10j	1-2	2.73
NT-033	127.1	127.3	qfp bx	5d	0.5	2.78
NT-033	157.5		sil-chl-sul bx	10k	2-3	2.89
NT-033	159.3		sil-chl-sul bx	10k	1-2	2.88
NT-033	169.1		ser qfp	5a	0.5	2.92
NT-037	125.6		sil-carb-sul bx	10e	0.5	2.85
NT-037	166.7		sil-sul-mt bx	10k	5-7	2.76
NT-041	20.0	21.0	Felsic Ash Tuff	2a	0.5	2.76
NT-041	32.0	33.0	IF	9d	1-2	3.16
NT-041	51.0	52.0	Felsic Tuff	2a	0.5	2.74
NT-041	94.0	95.0	Felsic Tuff	2a	0.5	2.76
NT-041	104.5	104.6	QFP	5a	0.1	2.83
NT-041	116.5	116.6	QFP	5a	0.1	2.82
NT-041	118.0	119.0	QFP	5a	0.5	2.76
NT-041	129.0	130.0	IF	9d	1-2	3.18
NT-041	135.0	136.0	Felsic tuff	2a	1	2.81
NT-041	153.0	154.0	Felsic Tuff	2a	0.5	2.81
NT-041	162.0	163.0	Arg/Mudstone	8e	5-7	2.77
NT-041	166.0	167.0	Felsic Tuff ????	2a	0.5	2.80
NT-041	171.0	172.0	Chert-Py	10c	20-25	4.11
NT-041	209.0	210.0	Felsic Tuff	2a	0.5	2.80
NT-041	213.0	214.0	sil-Fe-carb bx	10f	0.5	2.88
NT-041	220.0	220.1	Dacitic dyke	6b	3	2.98
NT-041	221.1	221.2	Dacitic dyke	6b	0.1	2.85
NT-041	223.5	223.6	Dacitic dyke	6b	0.1	2.78
NT-041	226.0	227.0	Dacitic dyke???	6b	0.5	2.75
NT-041	249.0	250.0	sil-py bx	10k	10-15	3.08
NT-041	298.0	299.0	py-sil-mt bx	10e	10-15	2.78
NT-041	314.0	315.0	sil-Fe-carb bx	10f	0.5	2.86
NT-042	18.0		IF with Tuff	10h	3-5	2.85
NT-042	42.0		IF with Tuff	10h	1-2	3.11
NT-042	72.0		IF with Tuff	10h	1-2	2.85
NT-042	129.0		Felsic Tuff	2a	1	2.75
NT-042	177.0		IF bx	10h	1-2	2.71

NT-042	197.5		Argillite	8e	70-80	3.89
NT-042	243.0		Felsic Tuff	2a	1	2.79
NT-042	265.0		Fault	7f	0	2.61
NT-046	162.8		sil-carb sul bx	10k	1-2	2.60
NT-046	163.5		sil-carb sul bx	10k	3-5	3.20
NT-050	22.0	23.0	IF	9d	1-2	3.17
NT-050	45.0	46.0	ser Qxl Fxl R L T	2a	0.5	2.35
NT-050	78.0	79.0	IF	9d	1-2	3.11
NT-050	92.0	93.0	IF	9c	50-60	4.39
NT-050	104.5		sil-Fe carb bx	10f	0.5	2.83
NT-050	109.0	110.0	sil Fe-cb Bx	10f	10-15	3.81
NT-050	116.5		sil-Fe carb bx	10f	0.5	2.82
NT-050	117.7		sil-Fe carb bx	10f	2-3	3.39
NT-050	122.0	123.0	sil Fe-cb Bx	10f	2-3	2.83
NT-050	279.0	280.0	sil Fe-cb Bx	10f	1-2	2.72
NT-050	285.0	286.0	Qxl R L T (chl-ser-sil)	2a	0.5	2.68
NT-050	317.0	318.0	Qxl R L T (chl-ser-sil)	2a	0.5	2.75
NT-053	30.0	31.0	cQxl Fxl R LT	2b	0.5	2.71
NT-053	155.0	156.0	(fQxl) R LT - ALT	2b	0.5	2.74
NT-053	193.0	194.0	(fQxl) R LT - ALT	2c	0.5	2.69
NT-053	199.0	200.0	sil Fe-cb Bx	10f	0.5	2.74
NT-053	209.0	210.0	Sil Cht Py ((sph)) Bx	10f	10-15	2.98
NT-053	213.0	214.0	QXL R LT-ALT	2c	0.5	2.72
NT-053	222.0	223.0	m-cQFP	5a	0.5	2.73
NT-053	230.0	231.0	sil py Fe-cb Bx	10f	7-10	2.59
NT-053	284.0	285.0	sil py Fe-cb Bx	10f	20-25	2.97
NT-053	311.0	312.0	sil py Fe-cb Bx	10f	1-2	2.86
NT-053	335.0	336.0	sil-sul bx	10k	2-3	2.86
NT-053	339.0	340.0	silica	10a	0.5	2.79
NT-053	340.2	341.0	mafic dike	3b	1	2.84
NT-053	356.0	357.0	silica flooding	10i	1-2	2.65
NT-053	401.0	402.0	laminated chert	10b	0.5	2.70
NT-053	419.0	419.5	Mafic Dike	3b	1	2.88
NT-053	425.0	426.0	laminated chert	10b	0.5	2.72
NT-053	429.0	430.0	fQxl R LT	2a	0.5	2.80
NT-053	477.0	478.0	Mafic Dike	3b	1	2.81
NT-056	212.2		sil-sul mt bx	10e	2-3	2.76
NT-056	219.5		sil-sul mt bx	10e	3-5	2.78
NT-058	174.6		sil-carb sul bx	10k	2-3	2.73
NT-058	176.5		sil-carb sul bx	10k	3-5	2.89
NT-058	178.2		sil-carb sul bx	10k	3-5	3.14

NT-063	15.0		R T	2a	0	2.70
NT-063	100.0		R L T	2b	0	2.72
NT-063	117.0		silica flooding	10a	0	2.68
NT-063	150.0		R T	2a	0	2.73
NT-063	170.0		Sil-Fe carb bx	10f	0	2.75
NT-063	196.0		Mafic Dike	3b	0.5	2.75
NT-063	216.0		Sil-Fe carb bx	10f	0	2.80
NT-063	250.0		Sil-Fe carb bx	10f	0.5	2.75
NT-063	277.5		Sil-Fe carb bx	10f	0.5	2.75
NT-063	308.0		sil-sul mt bx	10e	1-2	2.80
NT-063	343.0		sil-carb sul bx	10k	0.5	2.78
NT-063	368.0		Argillite	8e	2-3	2.83
NT-063	381.0		R L T	2b	1	2.68
NT-066	214.5		sil-carb sul bx	10k	1-2	2.83
NT-066	216.8		sil-carb sul bx	10k	1-2	2.70
NT-066	217.0		sil-carb sul bx	10k	1-2	2.91
NT-066	223.6		sil-carb sul bx	10k	2-3	2.66
NT-066	224.7		sil-carb sul bx	10k	1-2	2.77
NT-066	225.5		sil-carb sul bx	10k	1-2	2.74
NT-066	391.5		sil-carb sul bx	10k	3-5	2.90
NT-066	392.6		sil-carb sul bx	10k	5-7	2.77
NT-066	393.5		sil-carb sul bx	10k	1-2	2.91
NT-067	15.0		sil-carb sul bx	10k	0	2.66
NT-067	78.0		sil-carb sul bx	10k	0	2.72
NT-067	88.0		Megacrystic Mafic Vol	3e	0	2.87
NT-067	97.0		Mafic Dike	3b	0.5	2.81
NT-067	132.0		sil-carb sul bx	10k	1-2	2.78
NT-067	177.0		sil-sul mt bx	10e	20-25	3.38
NT-067	215.0		sil-carb sul bx	10k	7-10	2.97
NT-067	251.0		sil-carb sul bx	10k	10-15	3.09
NT-067	301.0		sil-sul mt bx	10e	20-25	3.72
NT-067	348.0		sil-sul mt bx	10e	1	2.83
NT-067	408.0		sil-carb sul bx	10k	0.5	2.75
NT-067	462.0		sil-carb sul bx	10k	1-2	2.76
NT-067	506.0		sil-carb sul bx	10k	0.5-1	2.79
NT-067	553.0		Mafic Dike	3b	0.5	2.86
NT-067	568.0		Int Tuff	6a	1	2.78
NT-067	575.0		Argillite	8e	1	2.66
NT-069	211.9		sil-carb-sul chl bx	10l	15-20	3.40
NT-069	247.4		sil-carb sul bx	10k	1-2	2.76
NT-069	269.6		sil-sul mt bx	10e	7-10	3.18

NT-070	34.2	35.0	Megacrystic Mafic Vol	3e	1	2.82
NT-070	89.0	90.0	mQxl fFxl R T	2a	0.5	2.74
NT-070	128.0	129.0	mQxl fFxl R T	2a	0.5	2.74
NT-070	146.0	147.0	mQxl fFxl R T	2a	0.5	2.73
NT-070	174.0	175.0	Rhyolite	5b	0.5	2.71
NT-070	196.0	197.0	mQxl fFxl R T	2a	0.5	2.75
NT-070	283.0	284.0	mQxl fFxl R T	2a	0.5	2.71
NT-070	294.0	295.0	sil-Fe carb bx	10f	1	2.70
NT-070	294.0	294.5	Mafic Dike	3b	1	2.73
NT-070	296.8	297.0	Chert	10b	1	2.64
NT-070	319.0	320.0	sil-carb sul bx	10k	3-5	2.95
NT-070	406.0	407.0	sil-sul mt bx	10e	15-20	2.89
NT-070	435.5	436.0	sil-carb sul bx	10k	3-5	3.12
NT-070	483.4	484.3	Diorite	3b	0.5	2.82
NT-071	13.0	14.0	sil-carb-sul Breccia	10k	0.5	2.86
NT-071	69.0	70.0	sil-carb-sul-mt bx	10e	5-7	3.13
NT-071	91.2	91.7	Megacrystic Mafic Vol	3e	1	2.78
NT-071	121.0	122.0	sil-carb-sul-mt bx	10e	5-7	2.98
NT-071	153.0	154.0	sil-sul mt bx	10e	1-2	2.75
NT-071	190.1	191.8	alt Mafic-dyke	3b	1	2.80
NT-071	265.0	266.0	IF-py-po bx	10h	3-5	3.54
NT-071	285.0	286.0	arg	8e	2-3	2.82
NT-078	150.0		Int Tuff	6a	0.5	2.79
NT-078	183.0		R L T	2a	0	2.69
NT-078	215.0		Sil-Fe carb bx	10f	0.5	2.76
NT-078	282.0		sil-carb sul bx/dike	10k	0.5	2.77
NT-078	303.0		Int Tuff	6a	0.5	2.73
NT-078	329.0		Argillite	8e	0.5	2.72
NT-080	17.0		R T	2a	0.5	2.66
NT-080	73.0		R L T	2a	0	2.82
NT-080	91.0		Mafic Dike/bx contact	3b	0.5	2.69
NT-080	108.0		sil-carb sul bx	10k	0	2.80
NT-080	138.0		sil-carb sul bx	10k	10-15	2.99
NT-080	185.4		sil-carb sul bx	10k	0	2.85
NT-080	230.0		sil-carb sul bx	10k	5-7	2.96
NT-080	245.0		sil-carb sul bx	10k	0	2.84
NT-080	290.0		sil-carb sul bx	10k	2-3	2.93
NT-080	314.0		IF	10h	0.5	2.90
NT-080	327.0		R T	2a	0.5	2.69
NT-083	293.5		sil-carb sul bx	10k	0.5	2.76
NT-083	295.5		sil-carb sul bx	10k	0.5	2.79

NT-083	297.5		sil-carb sul bx	10k	0.5	2.71
NT-087	16.0		Megacrystic Mafic Vol	3e	0	2.82
NT-087	81.0		Mafic Dike	3b	0.5	2.82
NT-087	214.0		R A L T	2c	0	2.65
NT-087	234.5		Sil-Fe carb bx	10f	2-3	2.93
NT-087	254.0		Sil-Fe carb bx	10f	0	2.73
NT-087	280.5		Sil-Fe carb bx	10f	5-7	2.92
NT-087	297.0		Sil-Fe carb bx	10f	10-15	3.13
NT-087	320.0		Sil-Fe carb bx	10f	7-10	3.04
NT-087	348.0		sil-sul mt bx	10e	1-2	2.73
NT-087	358.0		sil-sul mt bx	10e	1-2	3.01
NT-087	377.5		sil-sul mt bx	10e	2-3	2.86
NT-087	411.0		sil-carb sul bx	10k	1	2.85
NT-087	431.0		R L T	2b	0	2.72
NT-087	469.0		R L T	2b	0	2.69
NT-092	21.0		R T	2a	1	2.71
NT-092	130.0		QFP	5a	0	2.72
NT-092	185.0		FP	5a	1	2.80
NT-094	19.0		IF bx	10h	5-7	2.88
NT-094	104.0		Ultramafic Undifferentiated	11c	0	2.71
NT-094	192.0		Ultramafic Undifferentiated	11c	0	2.80
NT-094	327.0		IF bx	10h	3-5	3.09
NT-094	411.0		Int Tuff	6a	0.5	2.97
NT-094	515.0		Mafic Tuff	3a	0	2.74
NT-099	24.0		R L T	2a	0	2.67
NT-099	150.0		R L T	2a	0	2.74
NT-099	267.0		DT	6a	0.5	2.84
NT-099	382.0		R L T	2a	0	2.70
NT-099	397.0		sil-carb sul bx	10k	0	2.80
NT-099	408.0		sil-carb sul bx	10k	0.5	2.82
NT-099	426.0		sil-carb sul bx	10k	10-15	3.00
NT-099	441.0		Mafic Dike	3b	2-3	2.88
NT-099	455.0		Argillite	8e	2-3	2.85
NT-102	102.0	103.0	RT	2a	0.5	2.69
NT-102	102.0	103.0	RT	2a	0.5	2.69
NT-102	115.0	116.0	sil-carb bx	10f	1	2.91
NT-102	127.0	128.0	DLT	6a	1	2.80
NT-102	146.0	146.5	Megacrystic Mafic Vol	3e	1	2.84
NT-102	153.0	154.0	RT	2a	0.5	2.76

NT-102	185.0	185.8	RT	2a	0.5	2.72
NT-102	210.0	211.0	sil-carb bx	10f	0.5	2.81
NT-102	273.2	274.0	silica	10a	0.5	2.69
NT-102	387.0	387.5	py-sil-mt bx	10e	10-15	3.49
NT-102	403.0	404.0	Mafic Dyke	3b	1	2.84
NT-102	414.0	415.0	py-sil-mt bx	10e	2-3	2.81
NT-102	429.0	430.0	DLT	6a	0.5	2.77
NT-102	457.0	458.0	chert-py	10c	0.5	2.69
NT-102	476.0	477.0	DLT	6a	1	2.81
NT-102	479.0	480.0	argillite	8e	2-3	2.81
NT-103	574.6		sil-carb sul bx	10k	1-2	2.82
NT-103	575.1		sil-carb sul bx	10k	1-2	2.84
NT-103	575.5		sil-carb sul bx	10k	0.5	2.68
NT-103	593.5		sil-carb sul bx	10k	1-2	2.89
NT-103	594.4		sil-carb sul bx	10k	1	2.88
NT-103	595.5		sil-carb sul bx	10k	1	2.78
NT-107	39.0	40.0	RT	2a	0.5	2.75
NT-107	166.0	167.0	Megacrystic Mafic Vol	3e	1	2.84
NT-107	227.5	228.0	DT	6a	1	2.79
NT-107	231.2	232.0	RT	2a	0.5	2.72
NT-107	273.5	274.4	RT	2a	0.5	2.79
NT-107	278.0	279.0	sil-carb bx	10f	0.5	2.69
NT-107	296.0	297.0	DT	6a	1	2.86
NT-107	351.5	352.0	py-sil-mt bx	10e	2-3	2.98
NT-107	407.0	408.0	Mafic Dyke	3b	1	2.84
NT-107	425.0	426.0	Mafic Dyke	3b	1	2.89
NT-107	444.0	445.0	IF-po bx	10h	5-7	3.30
NT-107	471.4	472.4	py-sil-mt bx	10e	2-3	2.87
NT-107	484.0	484.5	Mafic dyke	3b	1	3.23
NT-107	495.0	495.5	Arg	8e	2-3	2.84
NT-107	502.0	503.5	DT	6a	1-2	2.80
NT-108	23.0	24.0	RT	2a	0.5	2.74
NT-108	42.0	43.0	R L T	2a	0.5	2.77
NT-108	66.5	67.0	silica	10a	1-2	2.66
NT-108	101.8	102.2	Megacrystic Mafic Vol	3e	1-2	2.79
NT-108	107.0	107.6	sil-fe-carb bx	10f	0.5	2.74
NT-108	156.0	156.5	sil-sul bx	10k	1-2	2.68
NT-108	192.6	193.0	sil-Fe carb bx	10f	0.5	2.74
NT-108	222.0	222.5	sil-sul bx	10k	3-5	2.78
NT-108	254.0	255.0	sil-sul mt bx	10e	7-10	3.30
NT-108	319.0	320.0	chert-py	10c	5-7	3.11

NT-108	636.0	637.0	DT	2-6a	1-2	2.74
NT-108	637.4	637.6	IF (mt-po) bx	10h	3-5	3.09
NT-108	650.0	651.0	sediments	8e	1-2	2.79
NT-108	662.0	662.5	MS	8d	60-70	3.38
NT-109	27.0	28.0	DT	6a	0.5	2.72
NT-109	57.0	58.0	R L T	2a	0.5	2.72
NT-109	79.0	80.0	sil-fecarb bx	10f	0.5	2.78
NT-109	85.0	86.0	sil-fecarb bx	10f	0.5	2.72
NT-109	122.0	123.0	Megacrystic Mafic Vol	3e	1	2.82
NT-109	175.0	176.0	sil-py-mt bx	10e	0.5	2.93
NT-109	194.0	194.7	mafic dyke	3b	1	2.74
NT-109	237.0	238.0	sil-fecarb bx	10f	0.5	2.67
NT-109	243.3	244.0	sil-po-py-mt bx	10e	15-20	4.04
NT-109	259.0	260.0	sil-fecarb bx	10f	0.5	2.66
NT-109	419.8	420.3	mafic dyke	3b	1	2.82
NT-109	506.4	507.0	Mafic dyke	3b	1	2.70
NT-109	510.0	511.0	mafic dyke	3b	1	2.95
NT-109	517.0	517.7	dacitic tuff	6a	1	2.80
NT-109	548.5	549.0	IF bx	10h	3-5	2.81
NT-109	556.0	557.0	dacitic tuff	6a	1	2.79
NT-109	560.5	561.0	argillite	8e	1-2	2.80
NT-110	63.0	64.0	sil-py bx	10c	15-20	3.72
NT-110	82.0	83.0	sil Fe-cb Bx	10f	1-2	2.92
NT-110	175.0	176.0	Dacitic tuff	2a/6a	1	2.80
NT-110	209.0	210.0	Dacitic tuff	2a/6a	0.5	2.79
NT-110	221.0	222.0	IF?	9c (10e?)	20-30	4.46
NT-110	234.0	235.0	Dacitic tuff	2a/6a	0.5	2.77
NT-110	238.0	239.0	IF	9d	15-20	3.85
NT-114	30.0		Sil-Fe carb bx	10f	0	2.72
NT-114	87.0		Sil-Fe carb bx	10f	0	2.76
NT-114	125.6		Megacrystic Mafic Vol	3e	0.5	2.79
NT-114	152.0		sil-sul mt bx	10e	3-5	2.81
NT-114	156.0		sil-sul mt bx	10e	60-70	3.79
NT-114	199.0		Sil-Fe carb bx	10f	0	2.79
NT-114	216.0		sil-carb sul bx	10k	1-2	2.80
NT-114	257.0		sil-carb sul bx	10k	1-2	2.66
NT-114	316.0		sil-carb sul bx	10k	0.5	2.69
NT-114	367.0		sil-carb sul bx	10k	1	2.65
NT-114	407.0		sil-carb sul bx	10k	1	2.80
NT-114	439.3		sil-carb sul bx	10k	0.5	2.81
NT-114	490.0		sil-sul mt bx	10e	3-5	2.84

NT-114	527.0		sil-sul mt bx	10e	25-30	3.38
NT-114	569.0		Sil-Fe carb bx	10f	0.5	2.87
NT-114	592.0		Int Tuff	6a	1	2.85
NT-115	237.1	237.2	py-sil-mt bx	10e	15	2.71
NT-115	257.7	257.8	py-sil-sul	10k	2-8	2.95
NT-115	268.0	268.2	sil-fecarb bx	10f	1-2	2.74
NT-115	276.5	276.7	sil-py-mt	10e	10-20	4.10
NT-115	309.0	309.1	sil-py-mt	10e	10-40	4.00
NT-115	356.6	356.7	silica flood	7d	0.5	2.83
NT-115	359.6	359.8	IF-po-py bx	10h	3-5	3.12
NT-115	361.7	361.8	IF banded chert	9d	0.5	2.66
NT-115	364.5	364.6	Argillite	8e	1	3.04
NT-116	8.5	8.6	fFxl R T	2a	0.5	2.74
NT-116	15.0	15.3	sil-fecarb bx	10f	0.5	2.84
NT-116	19.0	19.1	fFxlRT ser	2a	0.5	2.74
NT-116	107.5	107.6	Rhyolite	5eb	0.5	2.85
NT-116	109.0	109.1	RLAT	2b	0.5	2.71
NT-116	121.0	121.1	RT	2a	0.5	2.71
NT-116	131.0	131.1	py-sil-sul	10k	2-3	2.66
NT-116	132.1	132.2	Megacrystic Mafic Vol	3e	0.5-5	2.73
NT-116	188.1	188.2	sil-py-mt	10e	15	2.84
NT-116	228.0	228.1	pp-py-mt IF	9c	15-20	4.08
NT-116	229.6	229.7	b chert IF	9d	2-3	2.68
NT-116	229.9	230.0	IF-po bx	10h	5-10	3.04
NT-116	264.6	264.7	pp-py-mt IF	9c	15-50	4.35
NT-116	275.8	275.9	sil-py-mt bx	10e	5-15	3.89
NT-116	315.6	315.7	bxted arg	8e	0.5	2.85
NT-116	317.0	317.1	arg	8e	3-5	3.11
NT-116	331.3	331.4	DT	6a	3-5	2.79
NT-118	50.5	50.6	Int T (ser)	6a	0.5	2.79
NT-118	58.9	59.0	RLT ????	2a	0.5	2.72
NT-118	70.0	70.1	sil-carb bx	10f	1-3	2.78
NT-118	72.5	72.6	RLT???	2a	2-3	2.69
NT-118	97.0	97.1	sil-carb bx	10f	1-3	2.87
NT-118	101.0	101.1	MD	3b	1-3	2.86
NT-118	116.3	116.4	sil-carb-sul bx	10k	5-10	2.67
NT-118	153.6	153.7	sil-py-mt bx	10e	75	3.16
NT-118	181.8	181.9	sil-py-mt bx	10e	8-10	2.71
NT-118	187.0	187.1	sil-py-mt bx	10e	3-5	3.48
NT-118	202.6	202.7	py-sil-chl	10l	8-10	2.95
NT-118	269.9	270.0	py-sil-mt	10e	10-15	3.77

NT-118	305.8	305.9	IF banded chert	9d	10-12	2.68
NT-118	309.9	310.0	IF sul	9c	3-5	3.96
NT-118	344.9	345.0	silica flood	7d	0-1	2.68
NT-118	362.0	362.1	py-sil-chl	10l	3-5	2.86
NT-118	384.3	384.4	py-sil-chl	10l	10-15	3.13
NT-118	385.0	385.1	Int T	6a	3-5	2.86
NT-118	420.5	420.6	silica flood	7d	0.5	2.74
NT-118	425.0	425.1	sil-carb bx	10f	1	2.89
NT-118	449.8	449.9	Int DT	6a	0.5-2	2.76
NT-118	467.8	467.9	IF banded chert	9d	1-2	2.66
NT-118	477.6	477.7	arg	8e	3-5	2.83
NT121	15.0	15.2	sil-chl-sul bx	10l	1-5	2.79
NT121	77.9	78.0	sil-fecar-sul bx	10k	3-10	2.98
NT121	80.0	80.1	sil-fecar-sul bx	10k	1-2	3.74
NT121	87.0	87.1	sil-fecarb bx	10f	0.5	2.86
NT121	109.7	109.8	py-sil-mt bx	10e	1-5	2.79
NT121	232.8	232.9	sil-chl-sul bx	10l	7	2.78
NT121	240.0	240.1	IF-po-chl	10h	10	3.53
NT121	305.8	305.9	py-sil-mt bx	10e	15	3.05
NT-122	17.0		Sil-Fe carb bx	10f	1	2.70
NT-122	35.0		sil-cb-py mt bx	10e	10-15	3.06
NT-122	67.0		Megacrystic Mafic Vol	3e	0	2.77
NT-122	90.0		sil-cb-sul mt bx	10e	7-10	3.50
NT-122	112.0		sil-cb-sul mt bx	10e	7-10	3.37
NT-122	127.0		sil-cb sul bx	10k	1	2.81
NT-122	155.0		sil-cb sul bx	10k	0.5	2.77
NT-122	175.0		Mafic Dike	3b	0.5	2.79
NT-122	197.5		sil-cb sul bx	10k	0	2.75
NT-122	217.9		sil-cb sul bx	10k	7-10	2.89
NT-122	240.0		sil-cb-sul mt bx	10e	2-3	2.90
NT-122	256.0		Int Tuff	6a	0.5	2.78
NT-122	269.0		Argillite	8e	1-2	2.85
NT-122	288.0		Int Tuff	6a	2-3	2.88
NT-124	4.0		Sil-Fe carb bx	10f	20-25	3.53
NT-124	26.0		sil-cb sul bx	10k	3-5	2.70
NT-124	55.0		sil-cb sul bx	10k	5-7	2.84
NT-124	87.0		sil-cb sul bx	10k	0	2.77
NT-124	106.0		Sil-Fe carb bx	10f	1	2.70
NT-124	123.0		sil-cb-sul mt bx	10e	1-2	2.82
NT-124	140.5		sil-cb-sul mt bx	10e	15-20	3.36
NT-124	170.0		sil-cb sul bx	10k	0	2.73

NT-124	198.0		sil-cb-sul mt bx	10e	0	2.85
NT-124	216.0		Sil-Fe carb bx	10f	7-10	3.05
NT-124	232.5		sil-cb-sul mt bx	10e	15-20	3.25
NT-124	259.0		sil-cb sul bx	10k	0.5	2.74
NT-124	279.0		sil-cb sul bx	10k	15-20	3.27
NT-124	307.0		sil-cb sul bx	10k	3-5	2.80
NT-124	325.5		sil-cb-sul mt bx	10e	7-10	3.20
NT-124	347.0		sil-cb-sul mt bx	10e	25-30	3.54
NT-124	379.0		Mafic Dike	3b	0.5	2.81
NT-124	404.0		Sil-Fe carb bx	10f	2-3	2.89
NT-124	429.0		sil-cb-sul mt bx	10e	2-3	3.31
NT-124	446.0		sil-sul-chl mt bx	10e	10-15	3.21
NT-124	479.0		sil-cb sul bx	10k	2-3	2.81
NT-124	500.0		sil-cb sul bx	10k	10-15	3.35
NT-124	520.0		Int Tuff	6a	0.5	2.67
NT-124	552.0		Argillite	8e	0.5	2.75
NT-125	12.0		R T	2a	0.5	2.74
NT-125	119.0		D T	6a	1	2.88
NT-125	138.5		Megacrystic Mafic Vol	3e	1	2.81
NT-125	208.0		R T	2a	0	2.75
NT-125	215.0		Sil-Fe carb bx	10f	2-3	2.87
NT-125	235.0		sil-cb-sul mt bx	10e	1-2	2.75
NT-125	254.0		Sil-Fe carb bx	10f	5-7	3.12
NT-125	283.0		sil-cb-sul chl bx	10l	0.5	2.81
NT-125	305.0		Sil-Fe carb bx	10e	50-60	3.71
NT-125	323.0		sil-sul-chl mt bx	10e	10-15	3.21
NT-125	369.0		Mafic Dike	3b	0	2.80
NT-125	386.0		Int Tuff	6a	0.5	2.81
NT-125	410.0		sil-cb sul bx	10k	0.5	3.07
NT-125	433.0		Argillite	8e	1	2.67
NT-125	440.0		Int Tuff	6a	1	2.84
NT-126	13.0		R T	2a	0	2.74
NT-126	119.0		DT	6a	0	2.84
NT-126	150.0		Megacrystic Mafic Vol	3e	0.5	2.84
NT-126	231.0		Sil-Fe carb bx	10f	0.5	2.82
NT-126	256.0		sil-cb-sul mt bx	10e	10-15	3.03
NT-126	275.8		sil-cb sul bx	10k	1-2	2.67
NT-126	291.1		Sil-Fe carb bx	10f	0.5	2.68
NT-126	318.5		Mafic Dike	3b	0	2.80
NT-126	332.0		Sil-Fe carb bx	10f	2-3	2.73
NT-126	365.0		sil-cb-sul mt bx	10e	10-15	3.11

NT-126	385.6		sil-cb-sul mt bx	10e	0	2.81
NT-126	402.8		sil-cb-sul mt bx	10e	2-3	2.87
NT-126	425.0		sil-cb sul bx	10k	2-3	2.78
NT-126	449.6		sil-cb sul bx	10k	5-7	2.88
NT-126	476.0		Int tuff	6a	1	2.79
NT-126	525.8		Argillite	8e	1	2.74