NORTHERN MINING LIMITED

Titleholder	Northern Mining Limited
Operator (if different from above)	as above
Titles/tenements	EL 24961
Tenement Manager	Austwide Mining Title Management Pty Ltd
Mine/Project Name	Napplebar Yard
Report title including type of report and reporting period including date	Annual and final report for Napplebar Yard EL 24961 for the period 05/10/2006 to 04/10/2013
Personal author(s)	Michael Green
Corporate author(s)	Northern Mining Limited
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100 000 K mapsheet (s)	Seymour (5448) Henbury (5548)
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Northern Mining Limited

Report compiled by Rae Townsend-Hick from previous reports written by Dr Michael Green. These reports consist of previous Annual Reports and report titled “Manganese Project, Napplebar Yard, Northern Territory” for Northern Mining Limited dated 12 February 2013.

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Contents

1.0 Summary

EL 24961 is part of Northern Mining Limited's Central Australia project and is considered prospective for numerous styles of mineralisation:

- stratabound copper-cobalt (Zambian-style),
- stratiform lead-zinc, manganese, phosphate and potash,
- unconformity uranium, and
- sandstone-hosted uranium (Angela-style).

Reconnaissance rock-chip sampling during the fourth year of tenure identified two areas of exposed manganese enrichment. At Area 1, there are manganese grades up to 15.7 %, whereas at Area 2 there are grades up to 45.6 %.

During the 5th year of tenure (7th March 2011), an application was made with the Aboriginal Areas Protection Authority (AAPA) to complete a heritage clearance in the areas where manganese had been found. The heritage clearance was granted in November 2012.

The AAPA issued an *Authority Certific*ate (25 July 2012) to Northern Mining Limited to permit ground disturbing work within the two areas requested with only minor encumbrances. Northern Mining lodged Mining Management and Risk Management Plans with the relevant authorities on 2nd October 2012. These were approved and drilling commenced in December 2012.

At the end of the 6th year of tenure, a successful waiver to reduce the size of the tenement was lodged with the Department of Mines & Energy. The area of EL 24961 will remain at 159 sub-blocks.

2.0 Introduction

EL 24961 'Napplebar Yard" (formerly 'Camel') is located 120 km southwest of Alice Springs along the Stuart Highway. Access is excellent with many station tracks and fence-lines crossing the tenement. The tenement is cut by the Palmer River. This report covers the work completed on EL 24961 in the seventh year of tenure.

3.0 Tenure

EL 24961 was granted to Imperial Granite & Minerals Pty Ltd (100 %) on 5 October 2006, and was immediately transferred to Northern Mining Limited as part of an existing agreement. Originally, the tenement comprised 488 sub-blocks overlying NT Portions 1991, 2958 and 657, which are part of the Palmer Valley, Idracowra and Henbury perpetual pastoral leases, respectively.

A waiver to reduce the tenement was approved at the end of the second year of tenure. At the end of the third year of tenure, the easternmost 244 sub-blocks were relinquished leaving the westernmost 244 sub-blocks. At the end of the fourth and fifth years of tenure, 46 and 39 sub-blocks were recommended to be dropped, respectively. At the end of the 7th year of tenure an application for a complete waiver to reduce was lodged and approved and EL 24961 will remain at 159 sub-blocks. These remaining sub-blocks are within the Palmer Valley and Henbury perpetual pastoral leases.

Tenement	Ten no.	Blocks Granted	Blocks Relinq.	Blocks Retain	Grant Date	Expiry Date
Napplebar Yard	24961	488	290	159	5 Oct 2006	4 Oct 2013

Table 1: Tenement Details

4.0 Geology/Prospectivity

EL 24961 is located in the middle of the Amadeus Basin where many stratigraphic units are juxtaposed in a fold-fault setting. As such, the tenement is prospective for many of the styles of sediment-hosted mineralisation known in the Amadeus Basin, including:

- stratabound copper-cobalt (Zambian-style),
- stratiform lead-zinc, manganese, phosphate and potash,
- unconformity uranium, and
- sandstone-hosted uranium (Angela-style).

Historic exploration on EL 24961 has been limited to stream sediment and rock-chip sampling in the Seymour Ranges by *Le Nickel* in 1971 (CR1971-0132). This exploration tested for stratigraphic Cu-Pb-Zn; stream sediments only tested for these elements whereas rock-chips also tested for Fe-Mn-Co. The results are not encouraging, though the lack of elements tested still leaves scope for other commodities. A review of sampling procedures also highlights that many samples had large amounts of contamination, especially aeolian sand. Importantly, seams and nodules of phosphorite were noted in the Stairway Sandstone.

A further style of untested mineralisation is within the Tertiary lacustrine sediments overlying the Amadeus Basin sediments. Pre-existing radiometric data show that many outcrops of these units are anomalous in uranium. Given their widespread distribution they are worthy of further investigation.

5.0 Northern Mining Limited Work

5.1 Year 1

In the first year of tenure, work on EL 24961 was limited to desk-top reviews and reconnaissance field trips. These field trips included discussions with local pastoralists

and assessment of vehicle access. No sampling was undertaken. The Aboriginal Areas Protection Authority sacred site register has been assessed for the area and is relatively clear.

5.2 Year 2 & 3

No significant field work was completed in the second or third year of tenure. The proposed field programmes were not undertaken due to the difficulty of obtaining geological staff and contractors during the boom and then the uncertainty of corporate financing during the global recession.

5.3 Year 4

In the fourth year of tenure, reconnaissance field work identified two areas with exposed manganese mineralisation (Figures 2 & 3). The results are shown in Table 2 and complete assays were reported at the time.

At Area 1, the surface grab samples show consistently elevated Mn contents up to 15.7 %. The high Mn corresponds with elevated silica, which is mostly due to the large fragments (?breccia) of white silica/chert within the unit. The high Mn is also associated with low P and Al, which is necessary for commercial Mn ore. The Mn occurs in at least two separate units sub-parallel to sedimentary layering (20-40° dips) and also in units that cut the sedimentary layering. The Mn-rich units are up to 5 m thick and can be discontinuously traced for over 1,200 m, are shallowly covered for approximately 70 % of this strike and then disappear under shallow cover at either end.

SAMPLE	East	North	Mn	Fe	P	Al	Si	Ba	Co	Cu
			%	%	%	%	%	%	ppm	ppm
AREA 1										
HEN100001	297665	7278353	15.57	0.81	0.019	1.38	31	1.73	1440	1840
HEN100002	297647	7278352	14.83	0.66	0.034	1.78	30.95	2.03	1160	1650
HEN100003	297473	7278460	4.45	0.83	0.014	0.77	41.24	0.6	370	420
HEN100004	297551	7278377	7.59	1.01	0.019	0.65	38.76	0.84	330	600
HEN100012	296998	7278290	6.98	0.73	0.024	1.22	38.29	0.59	1780	1170
HEN100013	296862	7278182	9.88	1.05	0.024	1.52	35.44	1.01	2250	1880
HEN100016	296484	7277919	4.89	0.69	0.012	0.44	39.37	0.59	180	320
HEN10046	297726	7278372	8.6	0.76	0.024	1.62	36.75	0.67	710	770
HEN10047	297704	7278369	10.5	0.98	0.031	1.34	35.53	0.6	440	630
HEN10048	297649	7278354	15.73	0.58	0.024	1.64	30.77	1.81	1170	1760
HEN10049	297616	7278343	14.56	1.22	0.026	1.52	31.51	1.47	1120	1790
HEN10051	297533	7278312	13.87	0.9	0.016	0.95	33.29	1.49	510	1120
HEN10052	297507	7278273	13.79	0.33	0.015	1.15	33.29	1.65	650	1440
HEN10061	297624	7278460	9.45	1.33	0.018	2.33	34.65	1.06	590	1140
HEN10062	297647	7278449	15.57	0.94	0.022	2.18	29.83	2.21	870	1580
HEN10063	297554	7278454	11.04	0.29	0.016	1.45	35.11	1.57	670	980
HEN10068	297532	7278366	17.89	0.95	0.055	1.19	29.46	1.84	730	1430
HEN10069	297281	7278166	9.22	0.76	0.019	1.1	36.8	0.92	530	980
HEN10071	296991	7278219	9.72	0.74	0.014	2.55	34.69	0.32	2200	2210
HEN10073	296758	7278128	6	0.66	0.016	0.94	39.79	0.63	1140	840

HEN10074	296655	7278080	8.68	0.82	0.026	1.26	37.17	0.63	1700	1190
AREA 2										
HEN10044	319207	7274082	28.58	0.52	0.088	0.48	15.52	3.35	1990	2720
HEN10045	319194	7274076	45.63	0.29	0.167	0.41	3.3	4.61	2390	2920

Table 2: Areas 1 and 2 – Summary of Rockchip Samples

Only two samples were collected from a 40m long exposure at Area 2, but they returned 45.6 % and 28.6 % Mn with much lower silica and slightly higher P than at Area 1. This Mn-rich unit is sub-parallel to sedimentary layering (65-80° dips), 2-3 m wide with a few small white silica/chert fragments. The outcrop is surrounded by shallow cover.

Work in the Seymour Range failed to provide any further encouragement to the previous *Le Nickel* results. The valleys are filled with unconsolidated ?Tertiary alluvial exotic gravels and pebbles, such that any stream sediment samples are unlikely to reflect the immediate bedrock composition. The reported phosphorites were poor, whereas the basal conglomerate at the base of the Stairway Sandstone does not appear to be enriched in uranium.

Reconnaissance work in the Palmer River valley failed to identify any suitable sandstone host for Angela-style uranium mineralisation.

5.4 Year 5

In the fifth year of tenure, a sampling program was undertaken at Area 1 where six bulk samples totalling 62.23 kilograms were obtained from the manganiferous outcrops. The samples were submitted to Amdel Laboratories in Perth to conduct a preliminary investigation on beneficiation using Standard Heavy Mineral Separation.

The results from this work suggest that after beneficiation there appears to be no significant upgrade of the manganese grade. However, these results are considered as preliminary, as the samples were taken from the surface which represents only a small portion of the overall resource potential in the area. Drill evaluation of the manganese-rich zones is required before further test-work is conducted.

During the 5th year of tenure, Northern Mining requested an Aboriginal Heritage Clearance around the manganese-rich outcrops in order to conduct a drill programme. The request was initially lodged with the CLC (25 January 2011), but discussions over costs and timeframes forced Northern Mining to withdraw the application with the CLC and lodge the application with the Aboriginal Areas Protection Authority (AAPA; 7 March 2011).

No further field work was conducted during the 5th year of tenure except a field reconnaissance of the two manganese prospects by Michael Green (consultant geologist) and the new CEO of Northern Mining, Greg Wilson. The outcome of this

reconnaissance trip was an exploration strategy to evaluate the manganese potential within tenement EL 24961 and Northern Mining's adjacent tenure.

5.5 Year 6

In the sixth year of tenure the AAPA issued an *Authority Certific*ate (25 July 2012) to Northern Mining Limited to permit ground disturbing work within the two areas requested with only minor encumbrances. Northern Mining lodged Mining Management and Risk Management Plans with the relevant government authorities on 2nd October 2012. These were approved and drilling commenced in December 2012.

The only other work completed during the year on EL 24961 was analysis of the multispectral ASTER imagery, which was released by CSIRO and NTGS in May 2012. The data for these images were collected by the ERSDAC satellite which records the spectral reflectance of sunlight from the ground and hence the surface mineral composition. These data have yet to be field tested in all geological settings, but their potential to find mineral deposits is significant. There are some artifacts in the data with the most obvious being dynamic-range differences between adjacent swathes because they were collected at different times of day or seasons. Two examples of the imagery were shown in the year 6 report.

A covenant of $90,600 was proposed for the sixth year, but only $17,558 was spent.

Item	Expenditure
Aboriginal Heritage Survye – site clearance	10,603
Preliminary review of ASTER imagery	1,200
Report compilation, MMP/RMP applications	3,465
Administration (15 %)	2,290
Total	**$18,087**

Table 3: Expenditure on EL 24961 for Sixth Year of Tenure

5.6 Year 7

Given that the manganese in EL24961 was only known from discontinuous outcrops in the two areas (Area 1 and Area 2) shallow percussion drilling was carried out on EL 24961 in December 2012 to determine whether the manganese extended to depth. Prior to the drilling programme, heritage and environmental surveys were completed.

5.6.1 Heritage Clearance

An application for an Authority Certificate was lodged with the Aboriginal Areas Protection Authority (AAPA) on 7 March 2011. The application requested that an area exceeding the known extent of outcropping manganese mineralization at both Areas 1

and 2 be checked for Sacred Sites to allow for minor ground disturbing work ie RAB drilling (Figures 1 and 2). Due to problems contacting one of the main traditional owners, an Authority Certificate (AC) was not issued until 25 July 2012. The AC identified only one Sacred Site in the larger area, but this would not encumber the planned drilling.

5.6.2 Environmental Clearance

Subsequent to the AAPA issuing an AC, a Mining Management Plan (MMP) and Risk Management Plan (RMP) were lodged with the relevant Northern Territory Government departments. During departmental processing of the MMP it was noted that there is a rare wattle species (Acacia latzii) in the greater area. A management plan was designed and implemented by Northern Mining to reduce the risk of interfering with an individual A. latzii plants. All other issues identified during processing of the MMP were also clarified and approved. On 7 December 2012, an Authorisation was granted to complete the drilling programme.and a security of $13,853 was paid.

5.6.3 Area 1 Drilling

Five (5) holes comprising 324m with a maximum drilling depth of 97m were completed at Area 1 on 13 December 2012. All drill holes were angled back to the south as the manganese mineralization and sedimentary bedding dip to the north (Figure 2A). The one exception was NYP12004, which was targeted at some cross-cutting manganese-rich veins.

NYP12001 was collard at the eastern end of the main outcrop ~25m from the exposed manganese. The sub-surface geology comprised dolomitic siltstone with a chert unit (12-14m) overlying fine grained quartz sandstone (from 41m). Trace amounts (<1%) of manganese chips were only seen from surface to 12m (above a chert unit). No manganese was seen at the predicted depth for a manganese body dipping sub parallel to bedding.

NYP12002 was collared ~12m from the main manganese outcrop where a sample with 15.6% Mn was collected previously. The sub surface geology comprised siltstone with a chert unit (8-9m). Trace amounts of black manganese chips were seen from surface to 8m. There were slightly more manganese chips in the chert unit (8-9m) but only about 3%. A sample of this metre was collected and submitted for assay and the section for this hole is presented in Figure 3A.

NYP12003 was collard ~60m from NYP12002 to test even deeper along this section. The sub-surface geology comprised dolomitic siltstone with three chert units (2*3m, 20-22m and below 78m). Trace amounts of manganese chips were seen from 3 to 22m, which included within the middle chert unit. From 78m there was substantial water and although trace amounts of manganese chips were encountered, they may be contaminated from hole collapse (Figure 3A).

NPY12004 was collard ~15m from the cross cutting manganese veins. The sub-surface geology comprised dolomitic siltstone with a chert unit (1-4m) above a fine grained, quartz rich sandstone (from 21m). Trace amount of manganese were found in the chert unit. The hole extended far enough to cross the vertical projection of the manganese-rich unit.

NYP12005 was collared ~300m west from the other drill holes (Figure 2A) to test for extensions of the manganese. The sub surface geology comprised dolomitic siltstone with chert units at 7-9m, 12-15m and below 71m. There was a minor amount of manganese associated with the chert units and substantial water below 71m.

5.6.4 Area 1 – Interpretation

Only trace to minor amounts of sub-surface manganese were encountered in Area 1. There is a strong correlation between chert units and this manganese. The manganese does not appear to sit in a simple stratigraphic position relative to the outcrop where there is significant manganese and is probably a very minor component of chert veins which cut the existing geology at various geometries. The manganese at the outcrop has probably been mobilized by weathering to produce a larger footprint and also enriched. There does not appear to be a manganese resource at Area 1.

5.6.5 Area 2 Drilling

Five (5) holes were completed at area 2 on the 14 December 2012. A total of 368m was completed. Holes were targeted to test for stratigraphic continuity of the exposed manganese mineralization and its sub-surface extent where it outcrops.

NYP12006 and NYP12007 were collared on the western side of the Stuart Highway, greater than 350m west of the manganese outcrop, to test for stratigraphic extensions (Figure 2B). The gross geology can be seen in the satellite imagery, but no manganese outcrops have been identified near these drill collars. Both holes intersected a package of interbedded dolomitic siltstone and fine grained quartz sandstone. Trace amounts of manganese were seen from 4-6m in NPY12006 and 9-10m in NPY12007.

NPY12008 was collared ~30m from the manganese outcrop to test for sub-surface extensions. The sub-surface geology comprised interbedded dolomitic siltstone and fine grained quartz sandstone. There was a chert unit from 8-12m that contained up to 5% black manganese rich chips. Immediately below this chert unit (12-13m) there is a black manganese-rich unit containing ~70% manganese rich chips. A sample was collected for assay.

NPY12009 was collared ~35m from NPY12008 to test even deeper along this section for down-dip extensions of the manganese (Figure 3B). The sub surface geology comprised interbedded dolomitic siltstone and fine grained quartz sandstone above limestone (from 57m). Minor manganese was foung at 26-28m where there is ~20% chert. Water was encountered at 63m.

NPY12010 was collared ~150m east of the manganese outcrop (Figure 2B) to test the stratigraphic continuity of the outcropping manganese. The sub surface geology comprised interbedded dolomitic siltsone and fine grained quartz sandstone. Chert units were encountered from 16-21m and these were associated with trace to minor amounts of manganese.

5.6.6 Area 2 – Interpretation

There is no evidence of stratigraphic manganese at Area 2. Manganese appears to be confined to near where it is exposed with only minor sub surface expression. A section through NPY12008-009 shows no continuity of the manganese to depth. Only trace amounts of manganese were found along strike. The manganese at Area 2 is interpreted to be related to some localized siliceous (chert) alteration, but still similar to that Area 1.

5.6.7 Assays

Identification of manganese is relatively straightforward as ores of manganese are black. Two samples were collected and submitted for assay with ALS Chemex in Alice Springs. The samples were:

NPY12002 8-9 metres
NPY12008 12-13 metres

More than half of the material returned from the 12-13 m interval in NPY12008 was logged as black manganese-rich, but only returned 1.78 % Mn. There were no other significant assays.

5.6.8 Interpretation

The drilling successfully covered the main target areas beneath known manganese outcrops, but failed to intersect any significant manganese mineralization. Small stringers (<10cm wide) on manganese rich material were widespread and are always associated with chert. Cross sections of the two sections where there was more than one drillhole (Figures 3A, B) fail to reconcile with a sensible stratigraphic scenario. At both areas there is likely a set of manganese bearing chert veins with various geometries. These veins do not penetrate too deeply and so may be related to a near surface geological event (Late Cretaceous to early Tertiary flooding of Central Australia). Modern weathering probably remobilized the manganese across the outcrops to give a more pronounced appearance and upgrade the manganese grade.

The association with chert is consistent with observations of some of the outcrops at Area 1 where there are chert clasts in the manganese. A mineralogical study would probably reveal that the manganese is intimately associated with silica, perhaps even as manganese silicates, and so does not have a high specific gravity.

5.6.9 Rehabilitation

Individuals of Acacia latzii were identified near the drill sites at Area 1 and beyond their previously know extent. This included a seedling near NPY12001. No work was undertaken within 2 metres of identified A. latzii individuals.

Rehabilitation of the drill holes was completed on 15 December 2013, according to the conditions of the MMP (Figure 4). Where possible, drill spoils were poured down the drillhole and the remaining spoils were spread across the ground. The drill-pads were groomed by hand to remove wheel ruts and other depressions which may concentrate the drainage. All sites were photographed immediately after rehabilitation and the sites have not been visited since.

5.6.10 Recommendations

It does not appear that there is a manganese resource at Area 1 or 2. No significant sub surface manganese was encountered, so there does not appear to be any volume. The association with chert also suggests that manganese may not upgrade readily even if there was significant volume. It was therefore recommended by Dr Michael Green that no further drilling be undertaken at Area 1 or 2.

Item	Expenditure
Assays (RAB drilling)	$195
Drilling (RAB, 692 m)	$12,772
Supervision of drilling, interpretation, other field work, supplies	$5,463
Rehabilitation	$900
Interpretation of new geological information and report preparation	$4,500
Administration (15 %)	$3,574
Total	**$27,404**

Table 4: Expenditure for Seventh Year of Tenure

6.0 Environmental

Refer 5.3.9 Rehabilitation. No further ground disturbing work has been undertaken since the drilling program in December 2012.

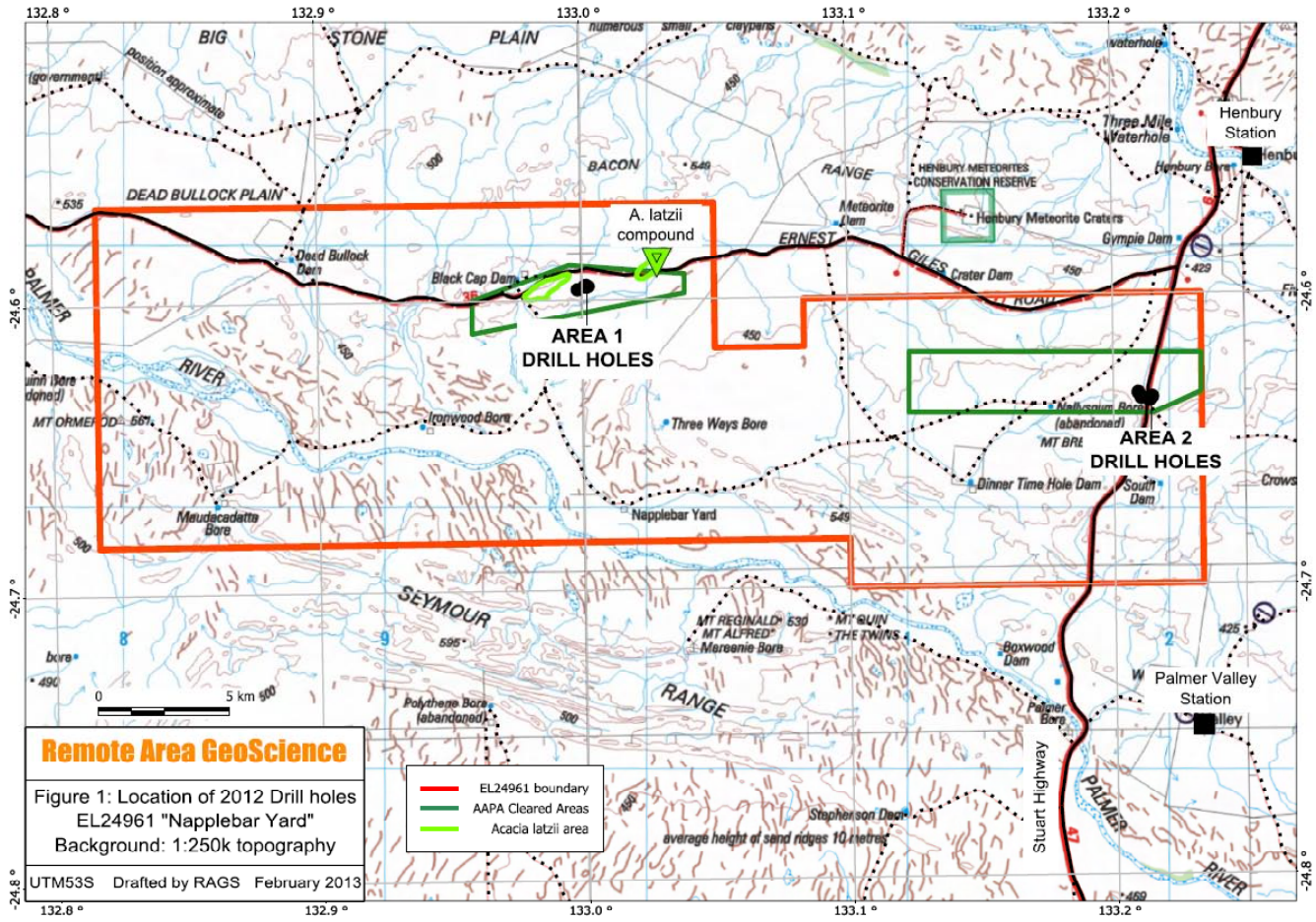

Figure 1: Showing Area at surrender with AAPA Cleared Areas and Drill Hole Locations. Background: 1:250,000 scale topography

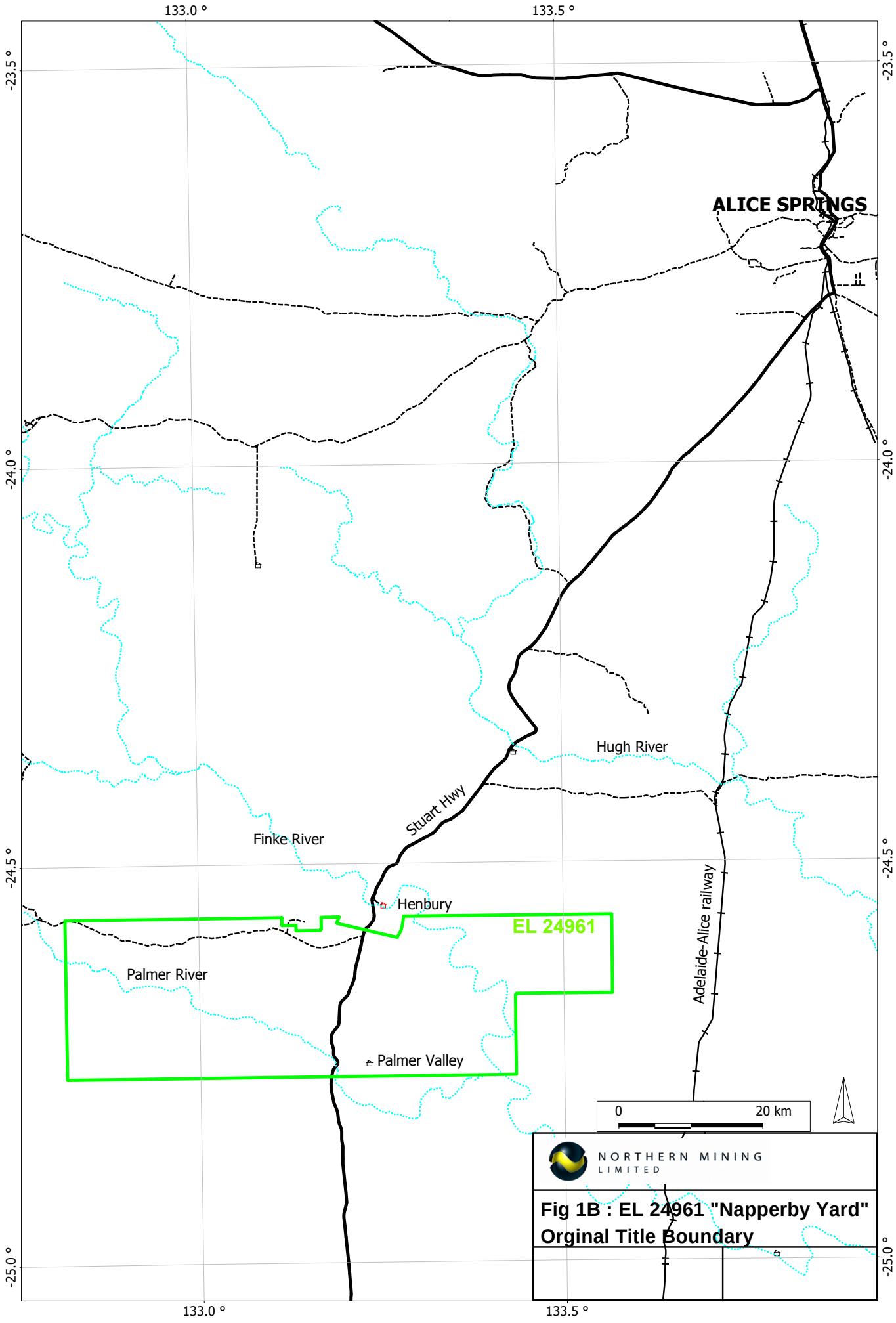

Figure 1B: EL24961 "Napperby Yard" Showing Area at Grant

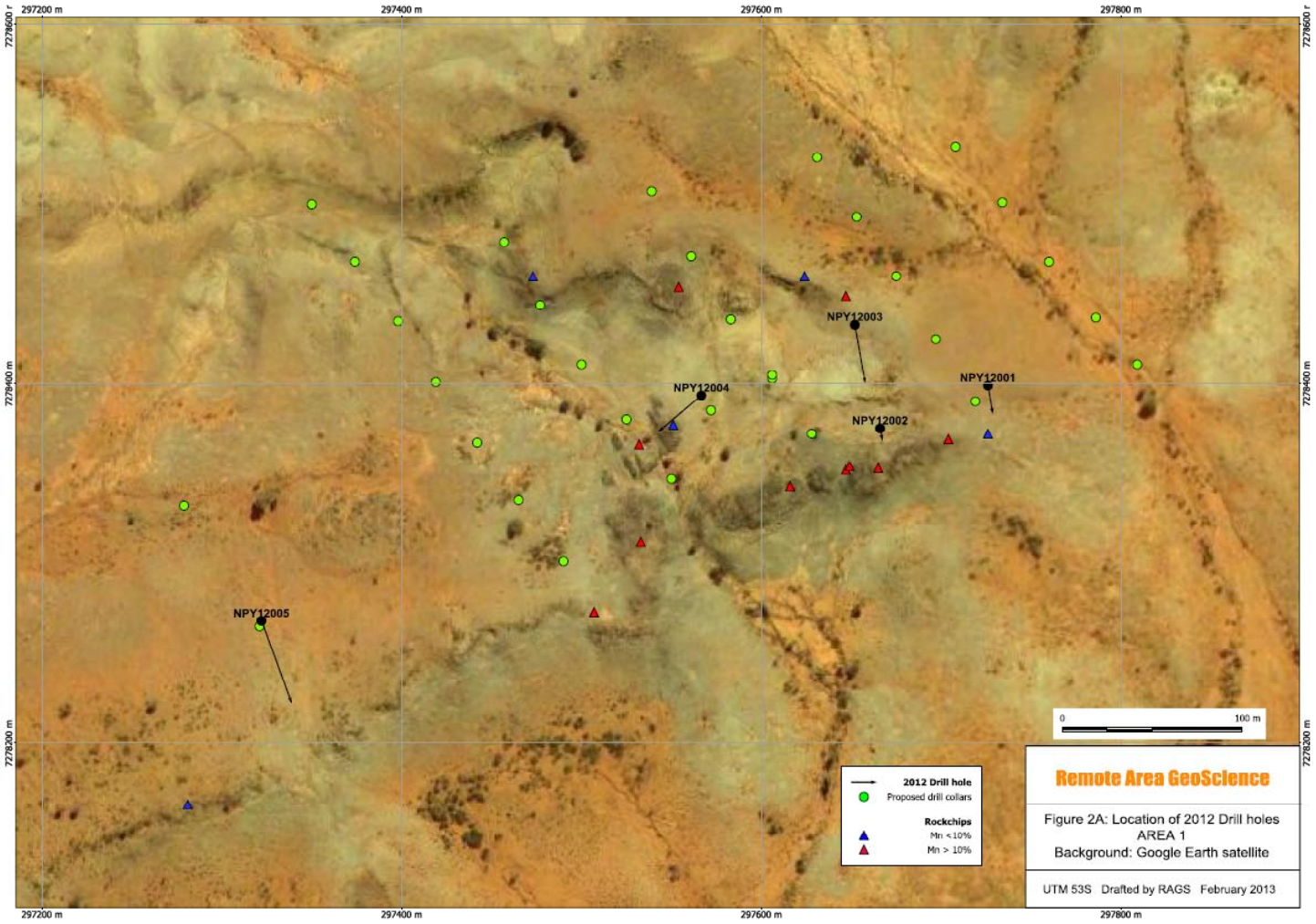

Figure 2A: Location of 2012 Drill Holes Area 1

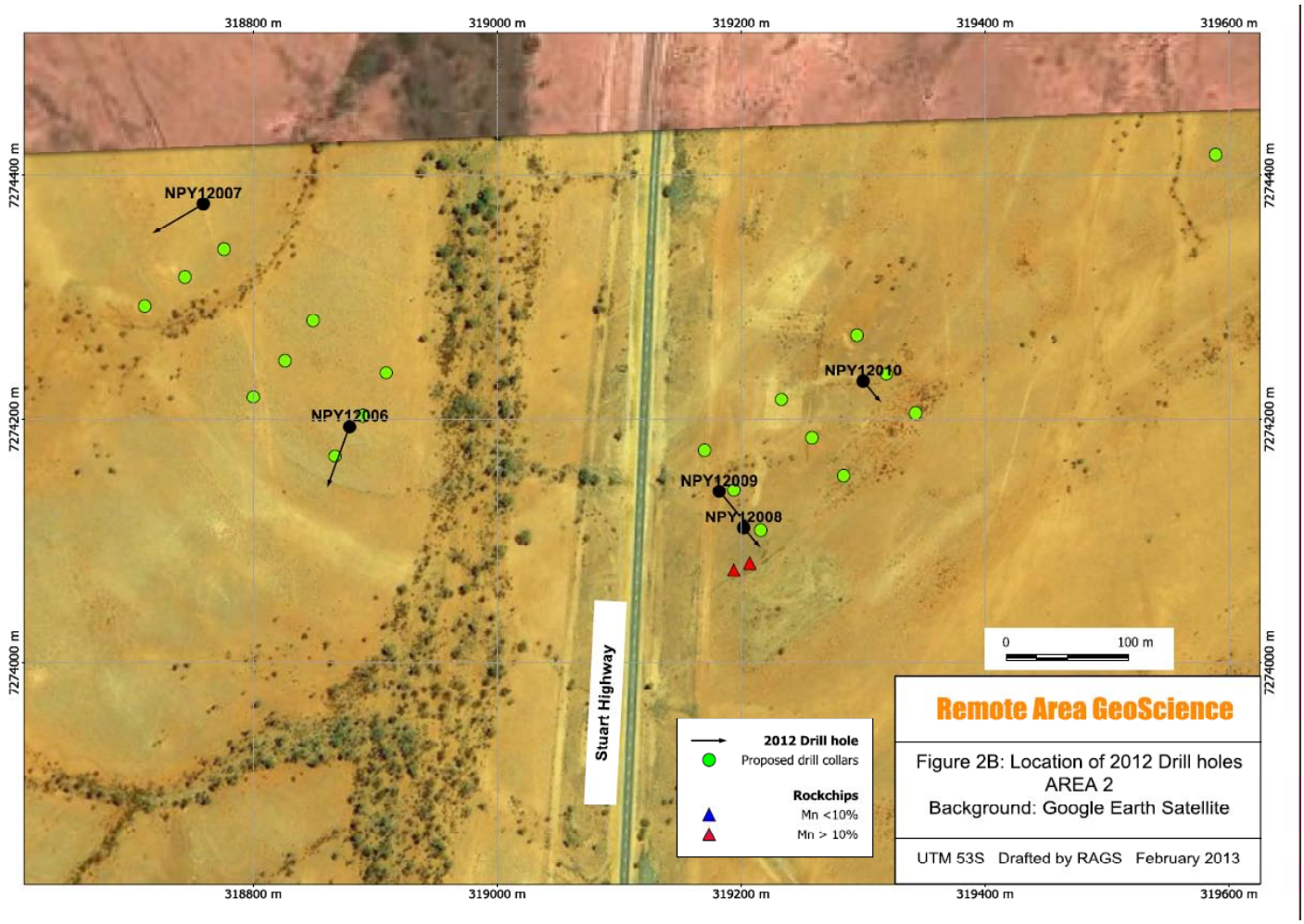

Figure 2B: Location of 2012 Drill Holes Area 2

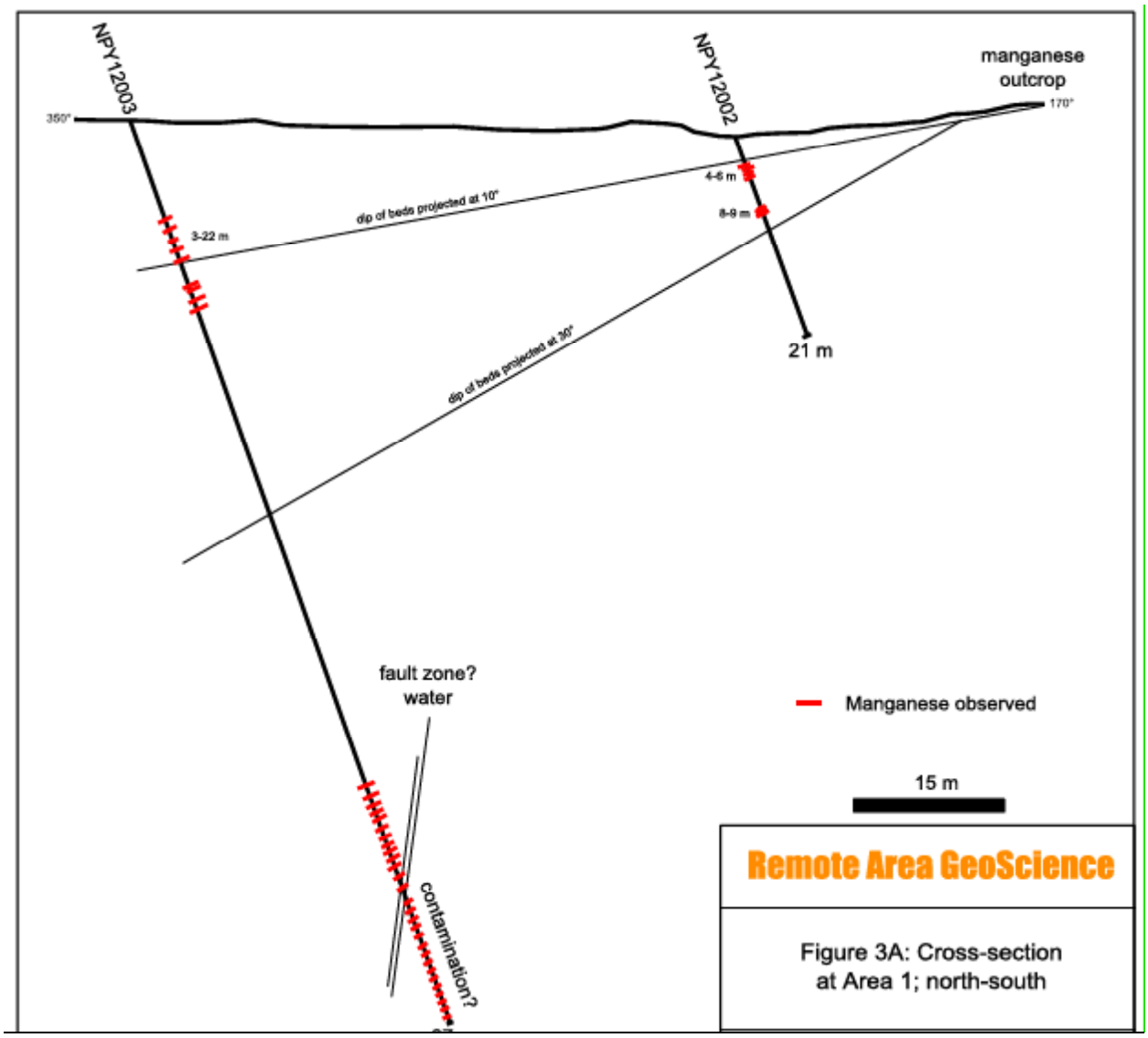

Figure 3A: Cross Section at Area 1; north-south

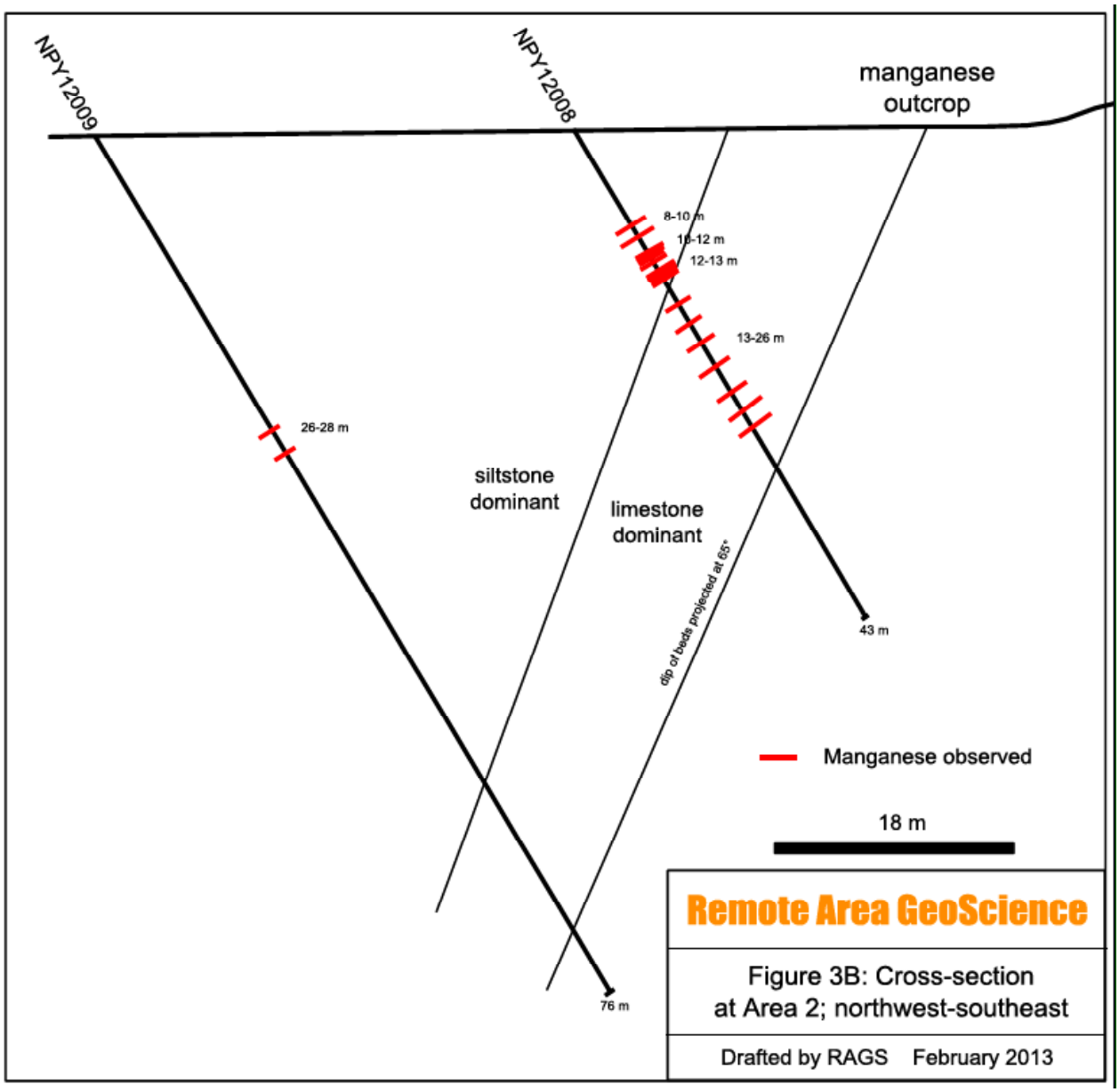

Figure 3B: Cross Section at Area 2; northwest-southeast

Figure 4: Rehabilitation at drill site NPY1210