

# ANNUAL REPORT

ELs, 26759 and 29548

**ROPER BAR PROJECT GR40/09** 

FOR THE PERIOD 16/04/13 to 15/04/14

YEAR 6

by

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GDA94 - Zone 53

Target Commodity: Iron Ore

1:250,000 Mount Young (SD-5315) and Hodgson Downs (SD-5314) Map Sheets

1:100,000 St Vidgeon (5867) and Towns (5967) Map Sheets

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#### **SUMMARY**

The Roper Bar Project consists of two granted exploration licences (EL26759 and EL29548) which are 100% owned by Western Desert Resources (WDR) through its wholly owned subsidiary, WDR Iron Ore Pty Ltd.

The Licences are located about 240 km east of Mataranka in the Gulf Country of the Northern Territory. Exploration is being undertaken for hematitic iron ore within the Sherwin Formation.

The Roper Bar project is situated within the Bauhinia Shelf of the McArthur Basin. The McArthur Basin is an intracratonic platform basin of Palaeo to Mesoproterozoic age. Exploration within the area has concentrated on the Sherwin Formation within the Maiwok Subgroup of the Roper Bar Group.

Previous exploration activities have extended outcropping iron mineralisation beneath surface to identify largely flat-lying oolitic hosted mineralisation, particularly at Areas B and Area D prospects.

Exploration activities conducted during the current reporting period comprised geophysical wireline logging of 107 of the 212 drillholes completed in the previous period. In addition metallurgical testwork was conducted on samples taken from the diamond drill program at Area D North and a new Mineral Resource estimate for Area D was undertaken.

The exploration program for the 7th year of licences will consist of close spaced RC and diamond drilling for resource evaluation purposes, and further metallurgical testwork.

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#### 1 INTRODUCTION

#### 1.1 BACKGROUND

The tenements cover ground prospective for iron ore. Western Desert Resources Ltd has been exploring in the area since 2008 and commenced mining on adjacent leases in 2013.

#### 1.2 LOCATION AND ACCESS

The Roper Bar Project is located approximately 200 kilometres east of Mataranka in the north of the Northern Territory (Figure 1 and Figure 2). The Roper Bar Project covers an area of over 1,200 square kilometres and is surrounded by, but excluded from the proposed Limmen National Park.

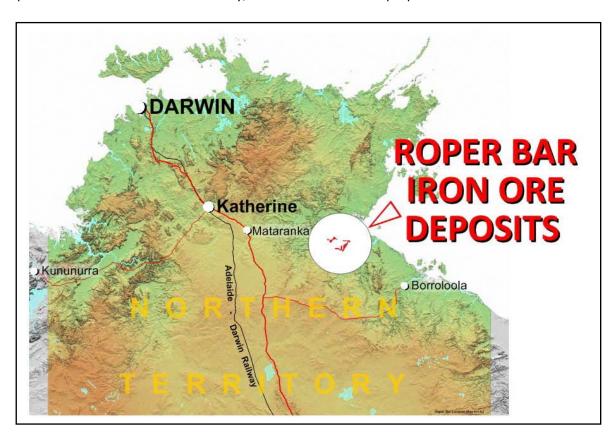


Figure 1: Regional Location of Roper Bar Project

Access to the area is by the sealed Stuart Highway south from Mataranka, then east on the Roper Highway (Savannah Way) towards Roper Bar. The Savannah Way becomes unsealed about 50 km before Roper Bar, and continues to Borroloola further to the south east. The exploration licence area is mostly inaccessible to vehicles due to the dense vegetation and rough terrain, previous exploration has been conducted with helicopter support. In late 2008 a 30 kilometre access track was constructed from the Savannah Way near the Little Towns River crossing southwest into the main exploration area of the project. Further access tracks have been constructed in subsequent exploration seasons.

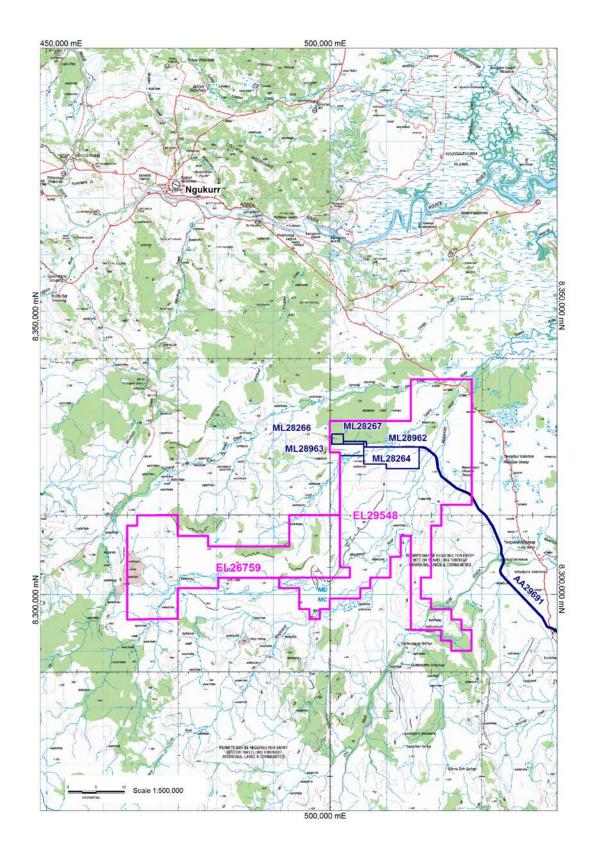


Figure 2: Roper Bar Project Tenement and Mining Lease Location Map

The tenements are located on the 1:250,000 map sheets of Hodgson Downs (SD-5314) and Mount Young (SD-5315), and the St Vidgeon (5867) and Towns (5967) 1:100 000 map sheets.

The exploration work was carried out from the Western Desert Resources camp, which is located approximately 25 km south of the Little Towns River crossing on the Savannah Way.

#### 1.3 CLIMATE

The project area has a humid monsoonal climate, with mild dry winters and hot humid summers often with heavy monsoonal rains associated with tropical cyclones. The average annual rainfall is 700 mm with most falls between November and April. The wet season renders the area inaccessible for exploration activities.

#### 1.4 TOPOGRAPHY AND VEGETATION

The area falls within the Gulf Fall and Coastal Plains physiographic provinces (Plumb and Roberts 1992). The Gulf Fall is characterised by broad alluvial valleys, here associated with the Magaranyi and Towns Rivers and their tributaries, and low rubbly hills and strike ridges of mainly quartzites. Towards the north east is the Coastal Plain which is an area of low elevation and relief which extends up to 100 km from the coast.

Vegetation consists of low, rather dense scrub with local stands of taller lancewood. The creek beds and water holes of the tributaries of the Towns River extend through the northern part of the area. The Magaranyi River and its tributaries traverse the central part of the project area.

#### 2 TENURE

#### 2.1 MINING/MINERAL RIGHTS

Originally Exploration Licences 24307, 24665, 24944, 25672, 26759 and 26992 formed the Roper Bar Iron Ore Project. Five of these licences were replaced by an amalgamated licence EL29548 as shown in Figure 2 and summarised below in Table 1. The Roper Bar project area covers a total area of 1,145.57 km². Five mining leases (28264, 28266, 28267, 28962 and 28963) have been granted covering a portion of EL29548.

WDR hold 100% ownership of the project and marketing rights.

**Table 1: Tenement Details** 

Tenement No.	Tenement Name	Titleholder Area (sq km)		Application/ Grant date	Expiry/Cancellation Date	
EL29548	Roper Bar Amalgamated	WDR Iron Ore Pty Ltd	748.81	27/08/2012	26/08/2014	
EL24307	Roper Bar North	WDR Iron Ore Pty Ltd	278.51	6/07/2005	26/08/2012	
EL24665	Roper Bar Extended	WDR Iron Ore PtyLtd	152.37	28/04/2006	26/08/2012	
EL24944	Roper Bar East	WDR Iron Ore Pty Ltd	139.15	4/09/2006	26/08/2012	
EL25672	Roper Bar 1	WDR Iron Ore Pty Ltd	129.24	12/09/2007	26/08/2012	
EL26759	St Vidgeon South	WDR Iron Ore Pty Ltd	396.74	31/10/2008	30/10/2014	
EL26992	Roper Bar South	WDR Iron Ore Pty Ltd	49.53	24/04/2009	26/08/2012	
ML28264	Mining lease	WDR Iron Ore Pty Ltd	34.07	29/06/2012	28/06/2042	
ML28266	Mining lease	WDR Iron Ore Pty Ltd	3.6	29/06/2012	28/06/2042	
ML28267	Mining lease	WDR Iron Ore Pty Ltd	1.8	29/06/2012	28/06/2042	
ML28962	Mining lease	WDR Iron Ore Pty Ltd	0.5	3/07/2012	2/07/2042	

#### 2.2 LAND TENURE

The tenements are located within the boundaries of the former St Vidgeon pastoral lease, and the former Nathan River pastoral lease, which were within the proposed Limmen National Park. In May 2012, an updated proposal for the boundary of the Limmen National Park was announced by the NT Government. The project area is now excluded from and not within the Park boundaries.

#### 2.3 NATIVE TITLE

Native Title has been granted over the former St Vidgeon pastoral lease and therefore affects the project tenements. EL 29548 is subject to Native Title Claim DC02/30 Lorella-Nathan River and Native Title Claim DC01/52 Nathan River.

#### 2.4 ABORIGINAL SACRED SITES

Aboriginal Areas Sacred Site Authority conducted a site survey of the project area in 2009, and issued Authority Certificate C2010/106 on 30 April 2010. Several sacred sites were identified within the Roper Bar project area. These sites lie outside of the focus of current exploration activities.

#### 3 GEOLOGY

#### 3.1 REGIONAL GEOLOGY

The tenements are located on the Mount Young (SD-5315) and Hodgson Downs (SD-5314) 1:250,000 Geological Map sheets. The Roper Bar project occurs within the Bauhinia Shelf of the McArthur Basin in north-eastern Northern Territory (refer Figure 3).

The McArthur Basin is an intracratonic platform basin of Palaeo to Mesoproterozoic age with an aerial extent of 180,000 square kilometres. The basin contains thick marine and non-marine sedimentary rocks which were deposited from the late Paleoproterozoic to the early Mesoproterozoic (1800-1430 Ma). The basin also contains some volcanic rocks and related intrusive igneous rocks. The McArthur Basin hosts the world-class McArthur River mine (HYC) zinc-lead-silver deposit, and several smaller mineral and diamond deposits. It unconformably overlies metamorphosed and deformed Palaeoproterozoic rocks of the Pine Creek Orogen to the west, Murphy Inlier to the south and Arnhem Inlier to the northeast.

Phanerozoic sediments of the Georgina, Dunmarra, Carpentaria, and Arafura Basins unconformably overlie the McArthur Basin succession.

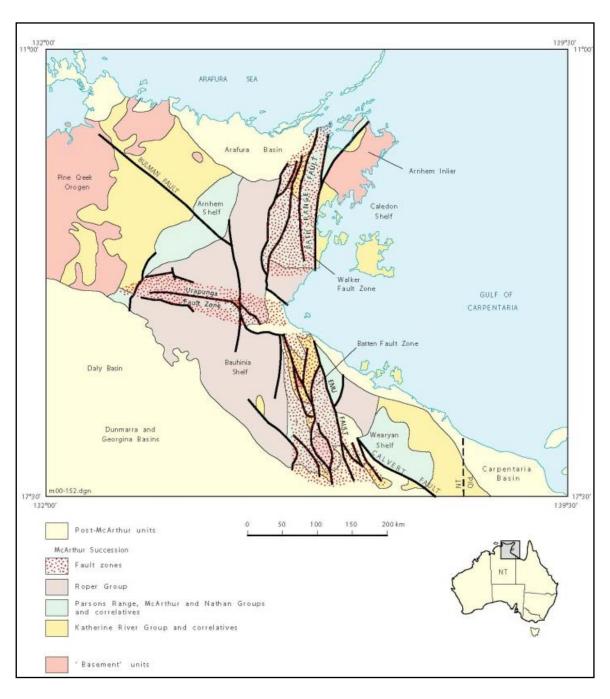


Figure 3: McArthur Basin regional geological setting

#### 3.2 LOCAL GEOLOGY

The dominant stratigraphy in the project area comprises relatively undeformed and unmetamorphosed sediments of the Mesoproterozoic Roper Group. The Roper Group sediments consist of two sub groups, the Collara Subgroup and the Maiwok Subgroup (Abbott, Sweet et al. 2001). Sedimentary oolitic ironstone is present at several intervals within the upper part of the Roper Group and is best developed within the Sherwin Formation of the Maiwok Subgroup. The Sherwin Formation (local name – Sherwin Ironstone Member or SIM) is the target of exploration within the project area.

North-south striking faults are common, although a major east-west structure called the Hells Gate Hinge Line transects the area. The local geological map (refer Figure 4) illustrates the main features of the local geology and the generalised stratigraphy is shown in Figure 5.

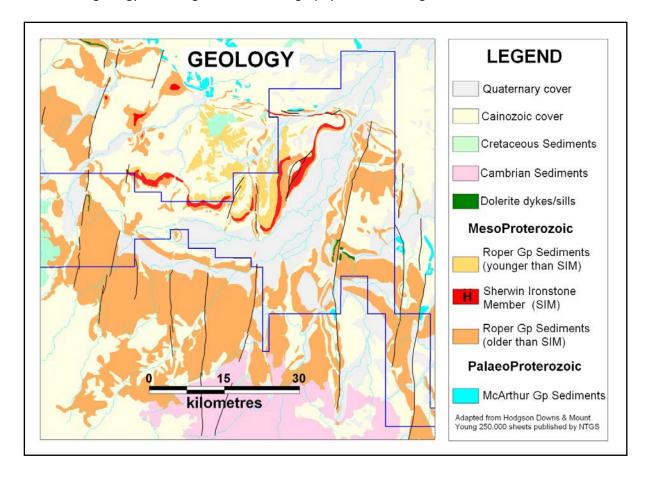


Figure 4: Local Geology Plan

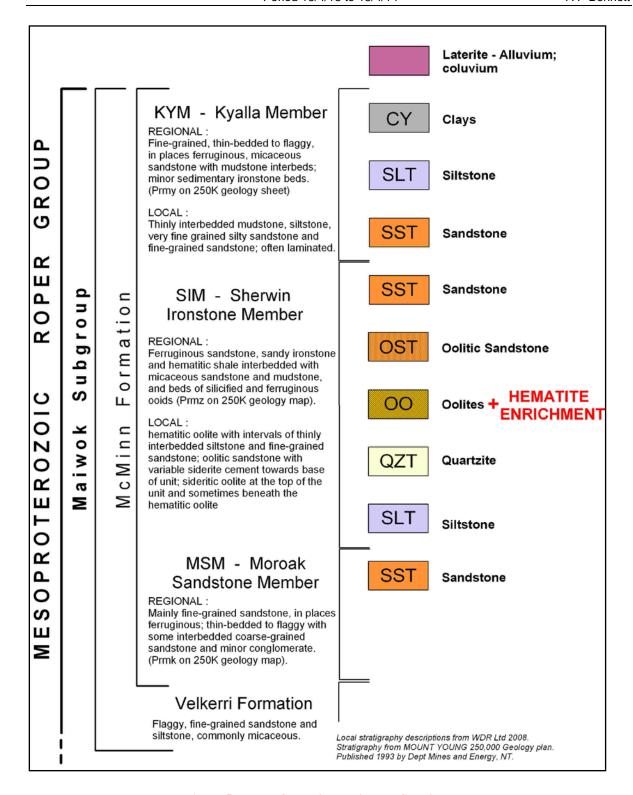


Figure 5: Local Geological Units and Stratigraphy

#### 4 PREVIOUS EXPLORATION

#### 4.1 MINING HISTORY

There has been no mining carried out within the project area.

#### 4.2 EXPLORATION BY PREVIOUS COMPANIES

Very little previous exploration within the Roper Bar project area has been recorded.

1955-61: BHP Ltd - exploration on hematitic sandstones west of Roper Bar, defined as the Roper River Iron Field about 100 kilometres northwest of the Roper Bar Project area. Many individual iron ore prospects were discovered within the Sherwin Formation. Work included geological mapping, a 38 hole diamond drilling program, bulk sampling and metallurgical testing.

1991-96: Ashton Mining Ltd/BHP Ltd - exploration for diamonds, manganese and base metals. Work included reconnaissance chip and bulk sampling, geochemistry, metallurgical work, airborne electromagnetic (EM), ground EM and drilling programs (reverse-circulation and diamond), with 105 holes drilled. Scout drilling covered the northern part of EL 24307.

1996-97: Roper Resources Ltd - EL 9041, which generally coincides with much of EL 25672. Rock chip sampling was undertaken with 16 samples assayed for iron and silica only.

#### 5 EXPLORATION COMPLETED BY WESTERN DESERT RESOURCES

#### 5.1 YEAR 1 – 2008/2009

Activities during the first year of exploration included aerial photography acquisition, mapping and rock chip sampling, a 27 hole reverse-circulation (RC) and five hole diamond drilling program, downhole geophysical acquisition, mineralogical and metallurgical work (Roberts 2009).

A total of 2,259 m of RC percussion drilling was completed on two section lines within EL25672. Five diamond holes totalling 426.5 m were drilled to acquire core for metallurgical testwork. Most of the holes were wireline logged.

Initial iron ore characterisation and beneficiation testing was carried out by Amdel Mineral Laboratories on 3 core samples with results received in 2010.

A selection of rock samples and RC drilling chip samples were submitted to Pontifex and Associates for mineralogical and petrological analysis.

Aerometrex acquired 25 centimetre resolution colour aerial photography over the area. A Digital Terrain Model was produced from the aerial data over part of the project area.

## 5.2 YEAR 2 - 2009/2010

Exploration activities during the second year included aerial photography, mapping and rock chip sampling, reverse circulation and diamond drilling, wireline logging, airborne geophysics, ground geophysics, resource estimation, mineralogical and metallurgical test work (Fabray 2010).

Rock chip sampling of ironstone outcrops was carried out in EL25672 and EL26759 with 141 surface samples recorded. Drilling was targeted on or near surface iron ore mineralisation in EL24307, EL24944 and EL25672. 275 RC holes for 10,873 m and 15 diamond holes for 458.8 m were completed during the reporting period. Most of the holes were wireline logged. 33 drill core samples were submitted to Pontifex and Associates for mineralogical investigation.

Amdel Ltd finalised iron ore beneficiation testwork on three samples of drill core collected during 2008. The work included size reduction and sizing tests, heavy liquid separation tests and magnetic separation tests. One sample from the beneficiation testwork was sent to SGS Mineral Services for QEMSCAN particle mineralogical analysis. Amdel also conducted quantitative XRD analysis on five samples of products from the heavy liquid separation tests. Further metallurgical testwork was also carried out by AMMTEC Ltd. Eight samples of drillcore from the diamond holes on EL24307 were tested for their physical and thermal characteristics.

Airborne magnetic and radiometric data was acquired over two separate areas within the project. The survey was flown by Daishsat Pty Ltd using a helicopter system at a sensor height of 30-50 m with a line spacing of 50 m (Prospect Areas E and F), and 75m (Prospect Areas A, B and C), respectively. In addition, digital aerial photography with a resolution of 10 cm was flown over Prospect Area F (East), and the northern part of Prospect Area E (East).

Daishsat Pty Ltd acquired gravity readings over closely spaced lines in EL24307 and over two regional lines. The survey at Area F East was conducted on north-south lines 100 m apart with readings at 10, 20 and 40 m intervals; Area E regional line was orientated north-south with 25 and 50 m readings; and Area D regional line was orientated east-west with readings at 50 m intervals.

An electromagnetic survey was completed over six ground traverses. NanoTEM data were collected along the six lines at 20 m station spacing with 20 x 20 m transmitter loops and 5 x 5 m receiver loops. A two turn transmitter loop and a 40 x 40 m transmitter loop were tried on line 4 (8322400N).

AMC Consultants modelled a maiden JORC Inferred resource of 116 million tonnes at an average grade of 39% Fe, including a possible DSO resource of 7 million tonnes at 59.3% Fe.

## 5.3 YEAR 3 – 2010/2011

Exploration activities during the third year included geophysical surveys, reverse circulation and diamond drilling, wireline logging, resource estimation, mineralogical and metallurgical test work (Bennett 2011).

Activity	Details	Area	Quantity	Total
Geophysics	Ground Gravity	Area F	3,370 stations	
	Airborne Mag Rad	Area D, G	4,935 line km	
Drilling	Diamond Drilling	Area E South	9 holes	177.6 m
	RC Drilling	Area B	90 holes	4,262 m
		Area C	29 holes	626 m
		Area D	31 holes	704 m
		Area D North	43 holes	1,486 m
		Area E South	180 holes	6,520 m
		Area E East	62 holes	4,665 m
		Area F East	39 holes	3,084 m
		Area F West	21 holes	1,050 m
	Total RC Drilling	•	495 holes	22,397 m

**Table 2: Exploration Activity Summary Year 3** 

Daishsat Geodetic Surveyors conducted a 3,370 station ground gravity survey in August 2010, covering two prospect areas (Area E East and Area F West), using a Scintrex CG-5 digital gravity meter. The detailed gravity survey was designed to extend upon the 2009 Roper Bar survey to map the extent of the Sherwin Ironstone over these areas. Gravity data was acquired at 10 m, 20 m & 40 m station spacing measured along lines 100 m apart running perpendicular to the geological strike.

UTS Aeroquest conducted an airborne magnetic, radiometric and digital terrain survey for a total of 4,935 total line kilometres. The survey was carried out over prospect Areas D and G at 50 m line spacing and a nominal 30 m sensor height in an east-west direction, with 500 m spaced north-south tie lines. The survey was flown in conjunction with the neighbouring Mountain Creek Project, also operated by WDR.

496 RC holes were drilled during the reporting period, covering Areas B, C, D, E and F. Most holes were wireline logged, utilising Borehole Wireline Services. A total of 13,342 samples (including duplicates and standards), were submitted for geochemical analysis by XRF methods to Amdel Laboratories in Adelaide and ALS Laboratories in Alice Springs.

Nine PQ diamond cored holes for 177.6 m were drilled at Area E South for metallurgical sampling for beneficiation testwork.

Drilling at Area B was conducted on widely spaced 400-800 m lines, with 90 RC holes completed for 4,262 metres drilled. Drilling intersected moderate grade iron mineralisation typically 40-45% Fe in thin bands of oolite up to 4 m in thickness. The central high grade outcropping portion of Area B along the main north-south trending ridge remains essentially untested due to difficult terrain access.

Drilling at Area C was conducted on widely spaced lines 1,000-1,600 m apart, with 29 RC holes completed for 626 m. Large areas of surficial hematitic oolite were exposed during access track and drill pad construction. Subsequent drilling confirmed that shallow dipping hematitic oolite occurs from the surface and is continuous over a 14 km strike length. The thickness and quality of the oolitic hematite mineralisation is of low grade.

Drilling at Area D and Area D North added a further 31 RC holes for 704 m and 43 RC holes for 1,486 m respectively. Grades are mostly low (30-45% Fe), with occasional thin (1-4 m) moderate grades of 45-58 % Fe, which is consistent with previous results. At Area D, the SIM is generally shallow dipping and the upper portion of the SIM is often eroded. This is particularly evident in the southern portion where the topography shows more variation than in the north. The dip of the mineralisation is steep along the ridge at Area D North becoming shallow dipping (consistent with Area D), towards the west. The hematite mineralisation extends continuously west of the ridge under cover for at least two kilometres as shown in the 2008 drilling.

At Area E South, 180 RC holes were drilled for 6,520 m at 100 m spacing on lines 200 m apart. One portion of the area was drilled on a  $50 \times 50$  m grid to test the continuity and variability of the iron mineralisation. The Sherwin Formation in this area is shallow dipping to the north between  $5-10^{\circ}$  and is 15-20 m thick. Iron grades typically increase towards the east as the dip of the mineralisation gradually steepens. Siderite (FeCO3) proportions increase laterally and at depth towards the west in the drilling.

62 RC holes for 4,665 m were drilled at Area E East. The stratigraphy dips to the west at typically 45 degrees at the southern end proximal to Area E South, becoming steeper towards the north end. Thickness of direct shipping ore (DSO) is 5-10 m which is enveloped within a halo of lower grade oolitic ironstone.

Drilling at Area F East added 39 RC holes for 3,084 m. Drilling focussed on the western extension of the SIM, where it is covered by a thin veneer of soil, and confirmed the continuation of the SIM at depth and that the hematite mineralisation extends westwards under cover. Area F East hosts the majority of DSO resource at the Roper Bar project.

Drilling at Area F West comprised 21 holes for 1,050 m, and focussed on the eastern end adjacent to the Area F East resource. Drilling confirmed mineralisation is less continuous than at Area F East, but the hematite enrichment is still well developed.

## 5.4 YEAR 4 PERIOD 2011/2012

Exploration on the Roper Bar project during year 4 of tenure consisted of diamond drilling, reverse circulation, an airborne gravity survey, downhole wireline logging, outcrop mapping and metallurgical studies of the iron-ore mineralisation.

Fugro Airborne Surveys Pty Ltd of Osborne Park, Western Australia were contracted to fly the Falcon<sup>™</sup> airborne gravity system over the northern portion of the Roper Bar project area, in conjunction with a second survey area covering WDR-operated Exploration Licence 27143. The survey totalled 318 line kilometres.

During the reporting period, 580 reverse circulation holes for 30,407 m were drilled on the project, with drilling covering prospect Areas B, D North, E South, E East, F East and F West.

During the reporting period, 11 diamond cored holes for 641.03 m were drilled at Areas F East and F West.

Table 3: Exploration Activity Summary Year 4

Activity	Details	Prospect Area	Quantity	Total
Geophysics	Falcon Airborne Gravity Gradiometer		318 line km	318 line km
Drilling	RC Drilling	Area B	137 holes	3,313m
		Area D North	95 holes	2,670m
		Area D North	52 holes	2,444m
		Area E East	78 holes	7,749m
		Area E South	5 holes	176m
		Area E South	75 holes	3,737m
		Area F East	79 holes	7,111m
		Area F West	59 holes	3,207m
	Total RC Drilling		580 holes	30,407 m
	DDH Drilling	Area F East	8 holes	476.86m
		Area F West	3 holes	164.17m
	Total DDH Drilling		11 holes	641.03 m

Seven holes (RBDD0994 – RBDD1000) for 341.5 m were completed for metallurgical testwork and four holes (RBDD1444 – RBDD1447) for 299.53 m were drilled for geotechnical logging to provide data for the mining pit wall design.

Borehole Wireline of Adelaide, South Australia completed the digital downhole wireline logging of most of the drill holes. The holes were logged for natural gamma, deep/short induction (conductivity), short/deep focussed resistivity, short/long spaced density, magnetic susceptibility, downhole deviation (hole azimuth and inclination), and temperature.

A structural mapping program of the outcropping Sherwin Iron Formation was conducted during the reporting period. 154 Bedding measurements were collected from representative outcrops every 100 to 200 m around the perimeter of the outcropping Sherwin Iron Formation. The bedding measurement data is used for modelling the mineralisation from drilling intersections and projection of the mineralisation to the surface by providing an indication of the dip of the stratigraphy for the given section.

Sargon Engineering were engaged to determine the optimum methods for recovery of iron into marketable product grades from two ore types: a high grade halo ore surrounding the DSO ore (High Grade Halo), and a beneficiable ore (BFO) represented in two samples – "Sandy Comp" and "RC Chip". An optimal grade of +60 % Fe was the initial aim; however this proved to be difficult to obtain for the sample ore types, and a lower target grade of 58 % Fe was used to determine potential recoveries for the competing processing methods being tested.

Testwork on the High Grade Halo Ore was conducted using jigs, wet tabling and Wet High Intensity Magnetic Separation (WHIMS). Laboratory wet table tests were performed to simulate spiral recovery of the ore which was ground to minus 300 microns. WHIMS was tested for the minus 300 and minus 106 micron fractions.

The jig tests successfully upgraded Halo Ore of 52 % Fe, to between 58 and 60 % Fe; however for Halo Ore of 37 % Fe, an upgrade to 58 % Fe was not attained. Interpolation of the jig test predicts that the cut-off grade for Halo Ore is around 45 % Fe. In this instance the jig Fe recovery would be reduced to approximately 16 %.

Wet tabling of Halo Ore produced higher recoveries than the jigs, with 70 % and 48 % Fe recovery for the 52 % and 37 % Fe grade ores respectively; however in grinding the ores down to the appropriate sizing for wet tables and spirals, only around 45 % by mass reported to the optimal range of 106 to 300 microns, with the remainder being within the minus 106 micron range. Testwork indicates that for 45 % Fe Halo ore the recovery would be 27 %; however grind optimisation has the potential to double the mass reporting to the 106 to 300 microns fraction and would double the Fe recovery to over 50 %.

The WHIMS testwork was unsuccessful in all size ranges of the Halo ores tested; however the use of improved technology using Pulsed High Gradient Magnetic Separation (PHGMS), could be expected to yield superior results.

The first test conducted for the beneficiation process was flotation. Eight tests were completed under varying conditions and the final test achieved ~59 % Fe with 55 to 60 % recovery; however this recovery was achieved with high reagent usage. It was expected that other methods would prove to be more cost effective.

Most of the BFO test program has focussed on WHIMS and PHGMS magnetic separation tests to generate recoveries similar to that obtained for near optimal flotation; at +50 % Fe recovery, to a 58 % Fe grade. The results for batch SLon (i.e. the original type of PHGMS) tests and for the pilot scale WHIMS800 unit (also known as GZRINM) have obtained 57 to 58 % Fe grade magnetics products at near 50 % Fe recoveries. Further tests are now recommended to optimise the magnetic separation equipment types and flow sheet options.

A simple filtration test of the milled BFO magnetic separated material was completed which showed that vacuum filtration would not be adequate for dewatering the finely milled slurry.

Following collection and interpretation of the drilling data, AMC Consultants provided an updated JORC compliant resource estimate for Area F (AMC 2012).

A hydrogeology report was conducted by Golders Associates to better understand the implications of groundwater conditions with respect to planned mining activities (Puhalovich 2012). Selective permeability testing of exploration drill holes, water quality sampling and analysis indicates that there is insufficient variation in the hydraulic conductivities of the geological units to classify these as separate hydrogeological units or aquifers. The permeability testing indicated that the hydraulic conductivities were low to moderate. There were some significant permeability variations recorded and it was inferred that these may be structurally controlled. Assuming a hydraulic connection

between these structures and surface and underlying ground water systems, major aquifers could be associated with these structures which would greatly impact on the potential mine pit inflows. An early result of the study is that the pit walls are likely to inconsistently drain in response to mining.

## 5.5 YEAR 5 PERIOD 2012/2013

Exploration activities conducted on EL26759 during the reporting period consisted of 192 reverse-circulation (RC) drill holes for 4,401 m of drilling at the Area B Prospect. Results from the drilling in the main central zone showed similar results to the drilling conducted previously and confirms the continuity of iron-ore mineralization along the trend of the north-south antiformal structure.

Exploration activities conducted on EL29548 during the reporting period consisted of 5 diamond cored holes for 161.4 m and 15 reverse-circulation (RC) drill holes for 1,420 m of drilling at Area D North. Three diamond holes were drilled to provide samples for metallurgical testing, and a further 2 diamond holes were drilled next to existing RC holes to confirm results. The RC holes were drilled to the west along existing sections.

The assays from the diamond drilling confirmed and repeated the grades as derived from the RC drilling, adding confidence to the RC drilling results. The RC drilling extended the known mineralisation further to the west, and shows that the mineralisation contained within the Sherwin Formation dips shallowly to the west.

Table 4: Exploration Activity Summary Year 5

Activity	Licence#	Prospect Area	Quantity	Total
RC Drilling	26759	Area B	192 holes	4,401m
	29548	Area D North	15 holes	1,420m
Total RC Drilling:			27 holes	5,821 m
DDH Drilling 29548 Area		Area D North	5 holes	161.4m
Total DDH Drilling:		5 holes	161.4 m	

## 6 WORK COMPLETED DURING THE CURRENT PERIOD 2013/2014

During the reporting period the focus was on the development and subsequent opening of the Roper Bar Mine located on ML28264 in the north of EL29548. No new drilling was completed but exploration continued in the form of wireline logging, metallurgical testing and resource estimation.

## 6.1 Wireline Logging

Borehole Wireline of Adelaide, South Australia completed the downhole wireline logging of most of the drill holes completed in the previous reporting period. The holes were logged for natural gamma, deep/short induction (conductivity), short/deep focussed resistivity, short/long spaced density, magnetic susceptibility, downhole deviation (hole azimuth and inclination), and in some cases temperature. A summary of the holes logged can be found in Table 5 and the digital LAS files of the logged holes are provided in Appendix 1.

Table 5. Summary wireline logging table EL26759

EL#	Hole Type	Hole Number Range	No of Holes
EL26759	RC	RBRC1887 – 1891, RBRC1893 – 1895, RBRC1897 – 1899, RBRC1901, RBRC 1903 – 1908, RBRC1910 – 1925, RBRC1937 – 1946, RBRC1948 – 1987 RBRC1989 – 1990, RBRC1992, RBRC2101, RBRC2155 - 2156	90
EL29548	RC	RBRC2095, 2099-2100, RBRC2201 – 2204, 2206 – 2207, 2210 -2212	11
EL29548	DDH	RBDD1881 - 1886	6
	107		

## 6.2 Metallurgy

ALS Metallurgy conducted a defined program of comminution testwork on twenty-four (24) samples/composites originating from the Roper Bar Iron Ore Project, Northern Territory.

Of these samples 4 were composites from the diamond drilling program at D North (refer Tables 6 & 7). This work included Sample preparation, Bond Rod Mill Work and Bond Ball Mill Work index determination. Results of this work are attached in Appendix 2. Refer ALS Metallurgy (2013) Metallurgical Testwork conducted upon samples from Roper bar Iron Ore Project for Western Desert Resources. Report No. A14919.

One of these samples (RBMT102) was sent to Eriez to perform 2in column flotation tests on the iron ore sample to investigate the flotation response. Refer *Erierz* (2013) Interim Report IR212323-02.

In April 2013 Nagrom conducted Wet Table and Comminuition Test work on samples RBMT102-105. The objective of the testwork was to achieve maximum mass recovery while achieving grades of >58% Fe and <11% SiO2. Refer Nagrom (2013) Nagrom Metallurgical Report. Reference 1195.

Results of the metallurgical work are attached in Appendix 2.

**Table 6: Metallurgical Sample Summary Table** 

Sample ID	Weight:	Domain
RBMT102	213.71kg	1 Oxidised zone
RBMT103	88.55kg	2 Oxidised zone
RBMT104	150.16kg	4 Oxidised Zone
RBMT105	47.14kg	5 Oxidised Zone

**Table 7: Composite Sample Source Table** 

Sample ID	Hole ID	East	North	FROM	то	Area
RBMT102	RBDD1881	509237.4	8319200	14.07	14.9	D North
RBMT102	RBDD1881	509237.4	8319200	14.9	15.5	D North
RBMT102	RBDD1881	509237.4	8319200	15.5	16.4	D North
RBMT102	RBDD1881	509237.4	8319200	16.4	17.5	D North
RBMT102	RBDD1881	509237.4	8319200	17.5	18.6	D North
RBMT102	RBDD1881	509237.4	8319200	18.6	20	D North
RBMT102	RBDD1881	509237.4	8319200	20	21	D North
RBMT102	RBDD1881	509237.4	8319200	21	22	D North
RBMT102	RBDD1882	509252.3	8319200	14.15	15.2	D North
RBMT102	RBDD1882	509252.3	8319200	15.2	16	D North
RBMT102	RBDD1882	509252.3	8319200	16	17	D North
RBMT102	RBDD1882	509252.3	8319200	17	18	D North
RBMT102	RBDD1882	509252.3	8319200	18	18.55	D North
RBMT102	RBDD1882	509252.3	8319200	18.55	19.2	D North
RBMT102	RBDD1883	509267.3	8319200	14	15	D North

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RBMT102	RBDD1883	509267.3	8319200	15	16	D North
RBMT102	RBDD1883	509267.3	8319200	16	17	D North
RBMT102	RBDD1883	509267.3	8319200	17	18	D North
RBMT102	RBDD1884	509281.9	8319198	12.9	13.95	D North
RBMT102	RBDD1884	509281.9	8319198	13.95	14.6	D North
RBMT102	RBDD1884	509281.9	8319198	14.6	15.6	D North
RBMT102	RBDD1884	509281.9	8319198	15.6	16.6	D North
RBMT102	RBDD1884	509281.9	8319198	16.6	17.65	D North
RBMT102	RBDD1885	509297.2	8319197	11.4	12.65	D North
RBMT102	RBDD1885	509297.2	8319197	12.65	13.4	D North
RBMT102	RBDD1885	509297.2	8319197	13.4	14.15	D North
RBMT102	RBDD1885	509297.2	8319197	14.15	15	D North
RBMT102	RBDD1885	509297.2	8319197	15	16.1	D North
RBMT103	RBDD1881	509237.4	8319200	11.15	12	D North
RBMT103	RBDD1881	509237.4	8319200	12	13	D North
RBMT103	RBDD1881	509237.4	8319200	13	14.07	D North
RBMT103	RBDD1882	509252.3	8319200	11	12	D North
RBMT103	RBDD1882	509252.3	8319200	12	13	D North
RBMT103	RBDD1882	509252.3	8319200	13	14.15	D North
RBMT103	RBDD1883	509267.3	8319200	11	12	D North
RBMT103	RBDD1883	509267.3	8319200	12	13	D North
RBMT103	RBDD1883	509267.3	8319200	13	14	D North
RBMT103	RBDD1884	509281.9	8319198	12	12.9	D North
RBMT103	RBDD1885	509297.2	8319197	7.8	8.65	D North
RBMT103	RBDD1885	509297.2	8319197	8.65	9.5	D North
RBMT103	RBDD1885	509297.2	8319197	9.5	10.35	D North
RBMT103	RBDD1885	509297.2	8319197	10.35	11.4	D North
RBMT104	RBDD1881	509237.4	8319200	5.2	6	D North
RBMT104	RBDD1881	509237.4	8319200	6	7	D North
RBMT104	RBDD1881	509237.4	8319200	7	8.1	D North
RBMT104	RBDD1882	509252.3	8319200	4	5	D North
RBMT104	RBDD1882	509252.3	8319200	5	6	D North
RBMT104	RBDD1882	509252.3	8319200	6	7	D North
RBMT104	RBDD1882	509252.3	8319200	7	7.8	D North
RBMT104	RBDD1883	509267.3	8319200	4	5	D North
RBMT104	RBDD1883	509267.3	8319200	5	6	D North
RBMT104	RBDD1883	509267.3	8319200	6	7	D North
RBMT104	RBDD1884	509281.9	8319198	3	4	D North
RBMT104	RBDD1884	509281.9	8319198	4	5	D North
RBMT104	RBDD1884	509281.9	8319198	5	6	D North
RBMT104	RBDD1884	509281.9	8319198	6	6.9	D North
RBMT104	RBDD1885	509297.2	8319197	1.1	2.2	D North
RBMT104	RBDD1885	509297.2	8319197	2.2	3.3	D North
RBMT104	RBDD1885	509297.2	8319197	3.3	4.45	D North
RBMT105	RBDD1881	509237.4	8319200	0	1	D North
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RBMT105	RBDD1881	509237.4	8319200	1	2.2	D North
RBMT105	RBDD1882	509252.3	8319200	0	1	D North
RBMT105	RBDD1882	509252.3	8319200	1	2	D North
RBMT105	RBDD1883	509267.3	8319200	0	1	D North
RBMT105	RBDD1884	509281.9	8319198	0	1	D North
RBMT105	RBDD1884	509281.9	8319198	1	2.2	D North

Results of the metallurgical work are attached in Appendix 2.

#### 6.3 Resource Estimation

AMC Consultants were contracted to perform a Mineral Resource estimate over Area D. A draft report was issue in May 2013, however due to other priorities it is not yet finalised. A total of 10 mineralisation domains were defined, which included four oolite domains, four high grade domains within the oolites, a SIM domain outside the oolties and an unmineralised waste domain outside of the SIM as depicted in Figure 6.

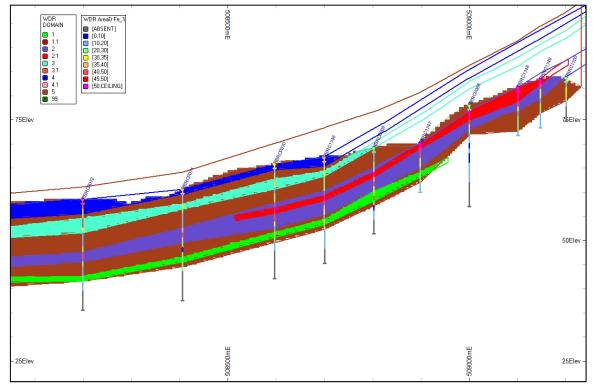


Figure 6: Cross Section of Grade Domain Boundaries used in Reource Estimation at Area D

Measured, Indicated, and Inferred Mineral Resource, as defined in the JORC Code (Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves, 2012 Edition) have been estimated for Area D (Figure 7). The Mineral Resources extend from 8,311,900 m N through 8,323,950 m N across Area D. The total Mineral Resource is 248.5Mt using a 30%Fe cut-off (Table 8).

**Table 8: Area D Mineral Resource** 

TOTAL AREA D MINERAL RESOURCE (>30% Fe)									
DOMAIN	Tonnes (000s)	Fe (%)	SiO <sub>2</sub> (%)	Al <sub>2</sub> O <sub>3</sub> (%)	P (%)	LOI (%)	CaO (%)	MnO (%)	S (%)
1	25,129	35.8	34.7	1.50	0.004	10.1	0.08	0.47	0.05
1.1	1,764	52.1	13.7	0.72	0.002	8.9	0.08	0.40	0.02
2	102,518	38.1	30.5	3.52	0.007	9.1	0.07	0.46	0.04
2.1	8,478	52.7	17.0	1.72	0.004	4.8	0.04	0.32	0.02
3	65,406	36.8	29.6	3.40	0.008	11.3	0.09	0.71	0.04
3.1	951	51.6	19.2	1.43	0.003	4.6	0.03	0.36	0.01
4	43,811	34.8	31.0	1.97	0.006	13.8	0.11	1.01	0.06
4.1	356	52.6	20.7	0.82	0.004	2.4	0.01	0.62	0.01
5	135	30.7	35.4	2.46	0.005	14.6	0.13	0.79	0.07
Total	248,548	37.6	30.1	2.92	0.007	10.4	0.08	0.62	0.04

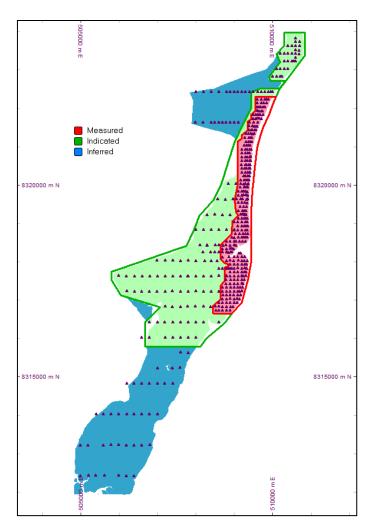


Figure 7: Projected plan view of Mineral Resource Classification Boundaries – Area D

#### 7 PROPOSALS FOR FUTURE WORK

The proposed exploration programme for Year 6 will include:

- RC resource definition drilling at Area B (close spaced drilling in a small area of known high grade mineralisation). Estimate 32 holes (350m)
- Diamond drilling at Area B to detect whether RC grade are biased due to loss of fines to dust, as has been observed elsewhere in the project and also to collect bulk sample for testwork
- RC resource definition drilling at Area D (close spaced drilling in a small area of known high grade mineralisation). Estimate 26 holes (454m)
- Scout drilling of CID target and weak magnetic linear that is observed approximately 1km to the east of the Area D ridge. Estimate 27 hole (240m)
- Continuing beneficiation testwork

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