

Appendix 15.

SLR Consulting Australia (2020f) *Rum Jungle Rehabilitation – Stage 2A- Geotechnical Investigation Waste Storage Facilities and Borrow Areas*. Report to the Department of Mines and Energy, Northern Territory. PART D.





WRTP-14 Looking East



WRTP-14 Looking West



WRTP-14 Backfilled Looking North West



WRTP-14 Northern Pit Wall



Spoil Pile 0.00m to 1.50m



Spoil Pile 1.50m to 3.00m



Spoil Pile 3.00m to 4.00m



Spoil Pile 4.00m to 5.00m

File Location: \\AU.SLR.Local\Corporate\Projects\SLR\



TEST PIT EXCAVATION LOG

HOLE NO.: WRTP-15

PROJECT : Rum Jungle Rehabilitation

LOCATION : Rum Jungle Mine Site

FILE / JOB NO.: 680.10421

DATE STARTED : 17/07/19

POSITION : E: 718886, N: 8564021 (52 AMG84) SURFACE ELEVATION : 85.7m (AHD)

LOGGED BY : BT

DATE COMPLETED : 17/07/19

RIG TYPE : 20t Excavator

ANGLE FROM HORIZONTAL : 90°

CHECKED BY : FC

DATE LOGGED : 17/07/19

DRILLER : C. McGregor

STABILITY : Stable

DRILLING				MATERIAL					OBSERVATION			
METHOD & BUCKET TYPE	PENETRATION	WATER	SAMPLES TESTS REMARKS	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY / RELATIVE DENSITY	DCP RESULTS	ORIGIN	STRUCTURE & Other Observations
Excavator 600mm Toothed Bucket	Groundwater Not Encountered		0.00m (ES)	85		GC	GC - clayey GRAVEL, medium plasticity, fine to medium grained, sub-rounded to sub-angular, orange brown; clay, medium plasticity.	D	D	5	Fill	
			0.01m (ES)			GW	GW - sandy GRAVEL trace clay, well graded, medium to coarse grained, sub-rounded to sub-angular, sub-rounded to sub-angular, brown; sand, fine to coarse grained.	D to M	10	Laterite		
			0.10m (ES)			GC	GC - clayey GRAVEL with sand, fine to coarse grained, sub-rounded to sub-angular, dark orange brown and yellow brown. Clay, medium to high plasticity; sand, fine to coarse grained.	M	15	Saprolite		
			0.50m (ES)			SHALE	SHALE, fine grained, dark greeny grey and orange brown, foliated, Extremely Low Strength, Extremely Weathered, in-situ as cobbles/boulders and clayey gravel. Clay seams throughout rock mass.	VD	20	Extremely Weathered Bedrock		
			0.50m (B)	84		SHALE	SHALE, fine grained, dark grey and red brown, foliated, pyrite crystals, Low Strength, Moderately Weathered.	D to M			Bedrock	
			2			SHALE	SHALE, fine grained, dark grey and red brown, foliated, pyrite crystals, Low Strength, Moderately Weathered.					
				83		SHALE	SHALE, fine grained, dark grey and red brown, foliated, pyrite crystals, Low Strength, Moderately Weathered.					
				82		SHALE	SHALE, fine grained, dark grey and red brown, foliated, pyrite crystals, Low Strength, Moderately Weathered.					
				81		SHALE	SHALE, fine grained, dark grey and red brown, foliated, pyrite crystals, Low Strength, Moderately Weathered.					
							EOH: 4.40m - Refusal					

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See Symbology & Classification notes for details of abbreviations & basis of descriptions.



Rum Jungle



5 Foelsche Street, Darwin, NT 0800



WRTP-15 Looking West



WRTP-15 Looking South



WRTP-15 Backfilled Looking West



WRTP-15 Northern Pit Wall



Spoil Pile 0.00m to 1.00m



Spoil Pile 1.00m to 2.00m



Spoil Pile 2.00m to 3.00m



Spoil Pile 3.00m to 4.40m

File Location: \\AU.SLR.Local\Corporate\Projects\SLR\



TEST PIT EXCAVATION LOG

HOLE NO.: WRTP-16

PROJECT : Rum Jungle

LOCATION : Rum Jungle Mine Site

FILE / JOB NO.: 680.10421

DATE STARTED : 17/07/19

POSITION : E: 718985, N: 8564241 (52 AMG84) SURFACE ELEVATION : 82.1m (AHD)

LOGGED BY : AR

DATE COMPLETED : 17/07/19

RIG TYPE : 20t Excavator

ANGLE FROM HORIZONTAL : 90°

CHECKED BY : FC

DATE LOGGED : 17/07/19

DRILLER : C. McGregor

STABILITY : Stable

DRILLING				MATERIAL					OBSERVATION			
METHOD & BUCKET TYPE	PENETRATION	WATER	SAMPLES TESTS REMARKS	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY / RELATIVE DENSITY	DCP RESULTS	ORIGIN	STRUCTURE & Other Observations
Excavator 600mm Toothed Bucket	Groundwater Not Encountered		0.60m (D) 0.61m (B)	82	[Pattern]	SC	SC - clayey SAND with gravel, fine to medium grained, grey; clay, low plasticity; gravel, fine to medium grained, sub-rounded to sub-angular.	D	VD	5	Topsoil	0.6m: pp = 600KPa 0.9m: 400 KPa > pp > 450KPa
					[Pattern]	GC	GC - clayey GRAVEL with sand, fine to medium grained, sub-rounded to sub-angular, yellow brown. Clay, medium plasticity; sand, fine to coarse grained.			10	Alluvium	
					[Pattern]	CI	CI - sandy CLAY with gravel, medium plasticity, orange brown and dark yellow brown. Sand, fine to coarse grained; gravel, fine to medium grained, sub-rounded to sub-angular.			15	Laterite	
					[Pattern]	CH	CH - sandy CLAY, high plasticity, greeny grey and orange brown. Sand, fine to medium grained; with fine to medium grain black carbonaceous inclusions.			20		
					[Pattern]	CI-CH	CI-CH - silty CLAY with sand, medium to high plasticity, pale grey, greeny grey and orange brown; sand, fine to medium grained; with black fine to medium grain, carbonaceous inclusions.		=PL			
Excavator 600mm Toothed Bucket	Groundwater Not Encountered		2.40m (D)	80	[Pattern]	CI	CI - silty CLAY, medium plasticity, blue and orange brown.		H		Saprolite	
				79	[Pattern]	CI			<<PL			
Excavator 600mm Toothed Bucket	Groundwater Not Encountered			78	[Pattern]	CI	3.7m - 4.6m: Becoming yellow brown, pale grey, greeny grey and orange brown. 4.6m: Becoming yellow brown, orange brown, pale grey and dark grey. EOH: 4.70m - Machine Limit					

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See Symbology & Classification notes for details of abbreviations & basis of descriptions.



Rum Jungle



5 Foelsche Street, Darwin, NT 0800



WRTP-16 Looking East



WRTP-16 Looking South



WRTP-16 Backfilled Looking South West



WRTP-16 Eastern Pit Wall



Spoil Pile 0.00m to 1.00m



Spoil Pile 1.00m to 2.00m



Spoil Pile 2.00m to 3.50m



Spoil Pile 3.50m to 4.70m

File Location: \\AU.SLR.Local\Corporate\Projects\SLR\



TEST PIT EXCAVATION LOG

HOLE NO.: WRTP-17

PROJECT : Rum Jungle Rehabilitation

LOCATION : Rum Jungle Mine Site

FILE / JOB NO.: 680.10421

DATE STARTED : 16/07/19

POSITION : E: 719128, N: 8563964 (52 AMG84) SURFACE ELEVATION : 79m (AHD)

LOGGED BY : AR

DATE COMPLETED : 16/07/19

RIG TYPE : 20t Excavator

ANGLE FROM HORIZONTAL : 90°

CHECKED BY : FC

DATE LOGGED : 16/07/19

DRILLER : C. McGregor

STABILITY : Stable

DRILLING				MATERIAL					OBSERVATION			
METHOD & BUCKET TYPE	PENETRATION	WATER	SAMPLES TESTS REMARKS	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION SOIL/ROCK TYPE; colour, grain characteristics, structure, minor components	MOISTURE CONDITION	CONSISTENCY / RELATIVE DENSITY	DCP RESULTS	ORIGIN	STRUCTURE & Other Observations
Excavator 600mm Toothed Bucket	Groundwater Not Encountered	0.80m (B)		78	[SC]	SC	SC - clayey SAND, fine to medium grained, dark orange brown. Clay, low to medium plasticity.	D		5	Laterite	
					[SP]	SP	SP - gravelly SAND, fine to medium grained, poorly graded, dark greenish grey and red brown. Gravel, fine to medium grained, sub-rounded to sub-angular.		10			
					[GW]	GW	GW - sandy GRAVEL with clay, fine to coarse grained, sub-rounded to sub-angular, well graded, brown. Sand, fine to coarse grained.		15			
					[SC]	SC	SC - silty SAND with gravel, fine to coarse grained, red brown orange and yellow brown; silt, medium plasticity; gravel, fine to medium grained.		20			
Excavator 600mm Toothed Bucket	Groundwater Not Encountered	3.10m (B)		77	[GW]	GW	MIXTURE OF SOIL AND COBBLES/BOULDERS (MATRIX SUPPORTED) - GW - silty sandy GRAVEL, fine to coarse grained, angular, well graded, dark red brown and white; sand, fine to coarse grained; cobbles/boulders; cobbles; <80mm, rounded to sub-rounded; tending towards a quartzite hematite breccia	M	VD		Saprolite	2.7m: Recovered as coarse rounded gravel and rounded cobbles <80mm sized with clayey sand
				76	[GW]	GW					3.6m: Recovered as cobbles <100mm sized	
				75	[GW]	GW					3.9m: Recovered as cobbles and boulders <250mm sized	
							EOH: 4.60m - Refusal					

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See Symbology & Classification notes for details of abbreviations & basis of descriptions.



Rum Jungle



5 Foelsche Street, Darwin, NT 0800



WRTP-17 Looking West



WRTP-17 Looking South East



WRTP-17 Backfilled Looking South



WRTP-17 Northern Pit Wall



Spoil Pile 0.00m to 1.00m



Spoil Pile 1.00m to 2.00m



Spoil Pile 2.00m to 3.00m



Spoil Pile 2.00m to 3.00m

File Location: \\AU.SLR.Local\Corporate\Projects\SLR\



TEST PIT EXCAVATION LOG

HOLE NO.: WRTP-18

PROJECT : Rum Jungle Rehabilitation

LOCATION : Rum Jungle Mine Site

FILE / JOB NO.: 680.10421

DATE STARTED : 18/07/19 POSITION : E: 718976, N: 8563645 (52 AMG84) SURFACE ELEVATION : 76.51m (AHD) LOGGED BY : AR

DATE COMPLETED : 18/07/19 RIG TYPE : 20t Excavator ANGLE FROM HORIZONTAL : 90° CHECKED BY : FC

DATE LOGGED : 18/07/19 DRILLER : C. McGregor STABILITY : Stable

DRILLING				MATERIAL					OBSERVATION			
METHOD & BUCKET TYPE	PENETRATION	WATER	SAMPLES TESTS REMARKS	RL (m)	DEPTH (m)	GRAPHIC LOG CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION SOIL/ROCK TYPE; colour, grain characteristics, structure, minor components	MOISTURE CONDITION	CONSISTENCY / RELATIVE DENSITY	DCP RESULTS	ORIGIN	STRUCTURE & Other Observations
Excavator 600mm Toothed Bucket	0.50m (B)			76	0	SW	SW - clayey gravelly SAND, medium plasticity, well graded, fine to coarse grained, red brown; clay, fine to medium grained, rounded to sub-angular, rounded to sub-angular.	D		5	Cover	1.0m: Recovered wood piece
						GC	GC - clayey sandy GRAVEL, medium plasticity, well graded, fine to medium grained, rounded to sub-rounded, rounded to sub-rounded, red brown; sand, fine to coarse grained.	D to M				
						SC	SC - clayey SAND with gravel, medium to high plasticity, fine to coarse grained, dark orange brown; gravel, fine to medium grained, rounded to sub-rounded.	VD				
							MIXTURE OF SOIL AND COBBLES/BOULDERS (MATRIX SUPPORTED) GC clayey GRAVEL, medium to high plasticity, poorly graded, fine to coarse grained, sub-rounded to sub-angular, yellow brown; cobbles; <300mm, sub-rounded to sub-angular, shale (waste rock).					
	4.20m (B)			74	2	GC		M			Waste Rock	1.6m: Recovered as angular cobbles and gravel
												2.0m: Recovered as gravel, cobbles and boulders = 300 mm sub-rounded to sub-angular
												2.3m: Recovered as boulders sub-angular to angular
				73	3	CI	CI - sandy CLAY with gravel, medium plasticity, dark yellow brown, red brown and dark grey. Sand, fine to medium grained; gravel, fine to medium grained, sub-rounded to sub-angular.	=PL			Fill	3.6m: Recovered geofabric pieces
				72	4	CI	CI - silty CLAY with sand trace gravel, medium plasticity, grey, red brown and orange brown; sand, fine grained; gravel, fine to medium grained, rounded.	>PL				
							EOH: 4.60m - Machine Limit					

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See Symbology & Classification notes for details of abbreviations & basis of descriptions.



Rum Jungle



5 Foelsche Street, Darwin, NT 0800



WRTP-18 Looking North West



WRTP-18 Looking South



WRTP-18 Backfilled Looking South West



WRTP-18 Northern Pit Wall



Spoil Pile 0.00m to 0.50m



Spoil Pile 0.50m to 1.50m



Spoil Pile 1.50m to 3.00m



Spoil Pile 3.00m to 4.60m

File Location: \\AU.SLR.Local\Corporate\Projects\SLR\



TEST PIT EXCAVATION LOG

HOLE NO.: WRTP-19

PROJECT : Rum Jungle Rehabilitation

LOCATION : Rum Jungle Mine Site

FILE / JOB NO.: 680.10421

DATE STARTED : 17/07/19	POSITION : E: 719285, N: 8563368 (52 AMG84)	SURFACE ELEVATION : 65.14m (AHD)	LOGGED BY : AR
DATE COMPLETED : 17/07/19	RIG TYPE : 20t Excavator	ANGLE FROM HORIZONTAL : 90°	CHECKED BY : FC
DATE LOGGED : 17/07/19	DRILLER : C. McGregor	STABILITY : Stable	

DRILLING				MATERIAL					OBSERVATION				
METHOD & BUCKET TYPE	PENETRATION	WATER	SAMPLES TESTS REMARKS	RL (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY / RELATIVE DENSITY	DCP RESULTS	ORIGIN	STRUCTURE & Other Observations
Excavator 600mm Toothed Bucket	Groundwater Not Encountered		0.00m (ES)	65	0.01m (ES)		SM	SM - silty SAND trace gravel, fine to medium grained, grey; gravel, fine to coarse grained, sub-rounded to sub-angular.	D	VD	5	Topsoil	
			GP				GP - sandy GRAVEL, fine to coarse grained, yellow brown and grey; sand, fine to medium grained.			10	Fill		
			CI				MIXTURE OF SOIL AND COBBLES/BOULDERS (MATRIX SUPPORTED) CI silty sandy CLAY, medium plasticity, yellow brown and red brown; sand, fine to medium grained; cobbles; <80 mm, sub-rounded to sub-angular, granite.	<PL	H	15	Laterite		
			CI				MIXTURE OF SOIL AND COBBLES/BOULDERS (MATRIX SUPPORTED) CI silty sandy CLAY, medium plasticity, red brown and greenish grey; sand, fine to coarse grained; boulders; <450mm, very high strength, moderately weathered, granite; tending to an extremely weathered granite	M	VD	20			
			0.60m (B)	64	1								
			0.61m (ES)										
				63	2								
								EOH: 2.20m - Refusal					
					3								
					4								
				61									

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See Symbology & Classification notes for details of abbreviations & basis of descriptions.



Rum Jungle



5 Foelsche Street, Darwin, NT 0800



WRTP-19 Looking North



WRTP-19 Looking West



WRTP-19 Backfilled Looking South



WRTP-19 Western Pit Wall



Spoil Pile 0.00m to 0.50m



Spoil Pile 0.50m to 1.00m



Spoil Pile 1.00m to 1.50m



Spoil Pile 1.50m to 2.20m

File Location: \\AU.SLR.Local\Corporate\Projects\SLR\



TEST PIT EXCAVATION LOG

HOLE NO.: WRTP-20

PROJECT : Rum Jungle Rehabilitation

LOCATION : Rum Jungle Mine Site

FILE / JOB NO.: 680.10421

DATE STARTED : 17/07/19

POSITION : E: 719420, N: 8563544 (52 AMG84)

SURFACE ELEVATION : 69.87m (AHD)

LOGGED BY : AR

DATE COMPLETED : 17/07/19

RIG TYPE : 20t Excavator

ANGLE FROM HORIZONTAL : 90°

CHECKED BY : FC

DATE LOGGED : 17/07/19

DRILLER : C. McGregor

STABILITY : Stable

DRILLING				MATERIAL					OBSERVATION			
METHOD & BUCKET TYPE	PENETRATION	WATER	SAMPLES TESTS REMARKS	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION SOIL/ROCK TYPE; colour, grain characteristics, structure, minor components	MOISTURE CONDITION	CONSISTENCY / RELATIVE DENSITY	DCP RESULTS	ORIGIN	STRUCTURE & Other Observations
Excavator 600mm Toothed Bucket	28/08/2019			69		GW	GW sandy GRAVEL trace silt, well graded, fine to medium grained, sub-rounded to sub-angular, grey and orange brown; sand, fine to coarse grained.	D		5, 10, 15, 20	Fill	
					SP	SP - gravelly SAND with clay, fine to coarse grained, well graded, red brown and yellow brown; gravel, fine to medium grained, sub-rounded to sub-angular.	M	Laterite				
					SC	SC - clayey SAND trace gravel, medium plasticity, well graded, fine to coarse grained, orange brown; gravel, fine to coarse grained, sub-rounded to sub-angular.		H			Saprolite	
					SC	SC - clayey SAND, medium plasticity, poorly graded, fine to medium grained, orange brown, yellow brown and pale grey.	VD					
					CI	CI - clayey SAND, fine to medium grained, yellow brown, orange brown and pale grey; clay, medium plasticity lenses of SC - clayey SAND.		Bedrock				
				68			GRANITE, fine to medium grained, pale grey and pale greeny grey, Extremely Low Strength, Extremely Weathered. GRANITE, fine to medium grained, pale greeny grey and orange brown, Very Low Strength, Highly Weathered.					
				67			EOH: 2.20m - Refusal					
				66								
				65								

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See Symbology & Classification notes for details of abbreviations & basis of descriptions.



Rum Jungle



5 Foelsche Street, Darwin, NT 0800



WRTP-20 Looking West



WRTP-20 Looking South



WRTP-20 Backfilled Looking South West



WRTP-20 Western Pit Wall



Spoil Pile 0.00m to 1.00m



Spoil Pile 1.00m to 1.20m



Spoil Pile 1.20m to 1.80m



Spoil Pile 1.80m to 2.20m

File Location: \\AU.SLR.Local\Corporate\Projects\SLR\

***WRD-SLR-TP* TEST PIT LOGS**

RUM JUNGLE MINE SITE

SLR **OCTOBER 2019** INVESTIGATION



TEST PIT EXCAVATION LOG

HOLE NO.: WRD-SLR-TP01

PROJECT : Rum Jungle

LOCATION : Former Rum Jungle Mine Site

FILE / JOB NO.: 680.10421

DATE STARTED : 07/10/19

POSITION : E: 718433.12, N: 8564207.91 (52 AM(SURFACE ELEVATION : 75m (AHD)

LOGGED BY : FC

DATE COMPLETED : 07/10/19

RIG TYPE : 20T Tracked Komatsu Excavator ANGLE FROM HORIZONTAL : 90°

CHECKED BY : BT

DATE LOGGED : 07/10/19

DRILLER : C. McGregor

STABILITY : Stable

DRILLING				MATERIAL					OBSERVATION						
METHOD & BUCKET TYPE	PENETRATION	WATER	SAMPLES TESTS REMARKS	RL (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY / RELATIVE DENSITY	DCP RESULTS	ORIGIN	STRUCTURE & Other Observations		
Excavator 600mm Toothed Bucket	Groundwater Not Encountered	2.00m (D)		74	1		SM	SM - silty SAND with gravel, fine to medium grained, grey brown; gravel, fine to medium grained, rounded to sub-rounded, siltstone and ironstone; frequent rootlets (<2mm diameter) near surface.	D	MD - D		Topsoil			
				73	2		CI - CH	CI - CH - sandy CLAY with silt trace gravel, medium to high plasticity, red brown mottled orange; sand, fine to coarse grained; gravel, fine to medium grained, rounded to sub-rounded, mudstone and ironstone; frequent lenses of clayey SAND.	<<PL	F - VSt		Laterite			
				72	3										
				71	4										
				70	5										
				EOH: 4.60m - Machine Limit											



Southern Pit Wall



Eastern Pit Wall



Looking West



Spoil Pile

File Location: \\AU.SLR.Local\Corporate\Projects\SLR\



TEST PIT EXCAVATION LOG

HOLE NO.: WRD-SLR-TP02

PROJECT : Rum Jungle

LOCATION : Former Rum Jungle Mine Site

FILE / JOB NO.: 680.10421

DATE STARTED : 07/10/19

POSITION : E: 718520.84, N: 8564336.46 (52 AM) SURFACE ELEVATION : 76m (AHD)

LOGGED BY : FC

DATE COMPLETED : 07/10/19

RIG TYPE : 20T Tracked Komatsu Excavator ANGLE FROM HORIZONTAL : 90°

CHECKED BY : BT

DATE LOGGED : 07/10/19

DRILLER : C. McGregor

STABILITY : Stable

DRILLING				MATERIAL				OBSERVATION					
METHOD & BUCKET TYPE	PENETRATION	WATER	SAMPLES TESTS REMARKS	RL (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY / RELATIVE DENSITY	DCP RESULTS	ORIGIN	STRUCTURE & Other Observations
Excavator 600mm Toothed Bucket	0.50m (D)	Groundwater Not Encountered		76	0		SM	SM - silty SAND with gravel, fine to medium grained, grey brown; gravel, fine to medium grained, rounded to sub-rounded, siltstone and ironstone; frequent rootlets (<2mm diameter) near surface.	MD		5	Topsoil	
				75	1		CI	CI - silty CLAY trace sand and gravel, medium plasticity, red brown mottled grey; sand, fine to coarse grained; gravel, fine to coarse grained, rounded to sub-rounded, mudstone and ironstone; occasional sub-rounded cobbles of mudstone and frequent lenses of SAND.	F - St		10	Laterite	
				74	2		GP	GP - sandy GRAVEL with silt, poorly graded, fine to coarse grained, rounded to sub-angular, siltstone, pale grey mottled green, red and white; sand, fine to medium grained; occasional sub-angular cobble of siltstone.			15	Saprolite	
				73	3		ML	ML - sandy SILT with gravel, low to medium plasticity, pale grey mottled brown and orange; sand, fine to medium grained; gravel, fine to medium grained, rounded to sub-rounded, siltstone; frequent sub-angular cobble of siltstone.	D		20		
				72	4								
				71	5			EOH: 4.60m - Machine Limit					

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See Symbology & Classification notes for details of abbreviations & basis of descriptions.



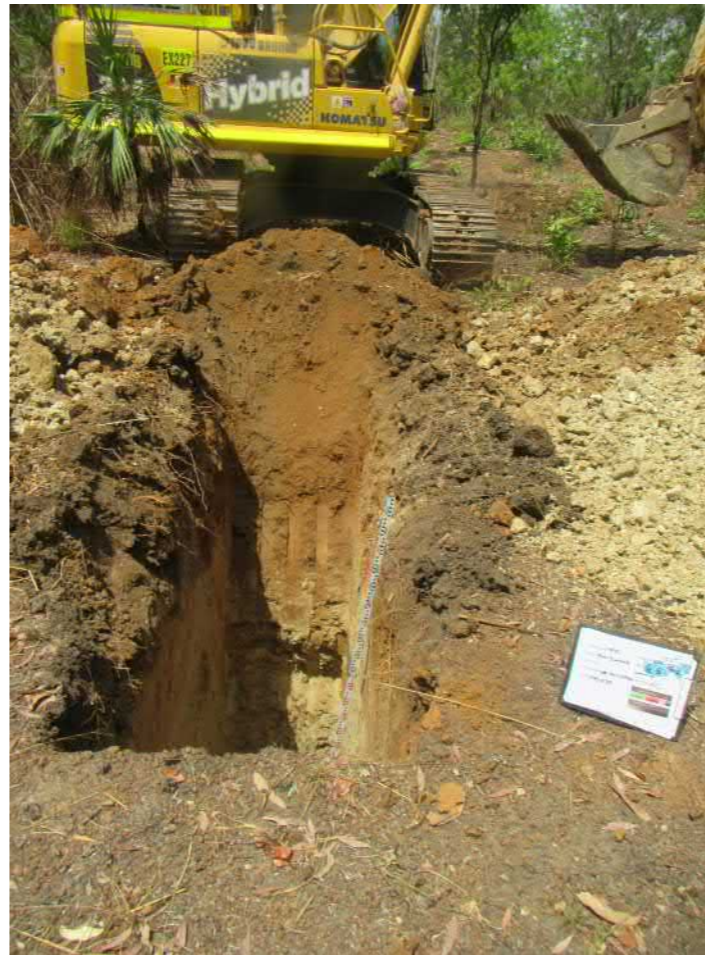
Rum Jungle



5 Foelsche Street, Darwin, NT 0800



Western Pit Wall



Looking South



Eastern Pit Wall



Spoil Pile



Spoil Pile



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Title:	SLR-WRD-SLR-TP02 Photo Log	Drawn:	FC
Client:	DPIR	Reviewed:	BT
Project:	Rum Jungle Rehabilitation	Size:	A3
Project No.:	680.10421	Version:	1.0
Status:	Design	Datum:	AHD
Date:	07/10/2019		





TEST PIT EXCAVATION LOG

HOLE NO.: WRD-SLR-TP03

PROJECT : Rum Jungle

LOCATION : Former Rum Jungle Mine Site

FILE / JOB NO.: 680.10421

DATE STARTED : 07/10/19

POSITION : E: 718555.26, N: 8564202.07 (52 AM) SURFACE ELEVATION : 77m (AHD)

LOGGED BY : FC

DATE COMPLETED : 07/10/19

RIG TYPE : 20T Tracked Komatsu Excavator ANGLE FROM HORIZONTAL : 90°

CHECKED BY : BT

DATE LOGGED : 07/10/19

DRILLER : C. McGregor

STABILITY : Stable

DRILLING				MATERIAL				OBSERVATION				
METHOD & BUCKET TYPE	PENETRATION	WATER	SAMPLES TESTS REMARKS	RL (m)	DEPTH (m)	GRAPHIC LOG CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION SOIL/ROCK TYPE; colour, grain characteristics, structure, minor components	MOISTURE CONDITION	CONSISTENCY / RELATIVE DENSITY	DCP RESULTS	ORIGIN	STRUCTURE & Other Observations
Excavator 600mm Toothed Bucket	Groundwater Not Encountered			76	1	GP	GP - sandy GRAVEL with silt, poorly graded, fine to coarse grained, rounded to sub-angular, siltstone, ironstone and quartz, red brown; sand, fine to medium grained; occasional sub-angular cobble of siltstone.	D	D - VD	5 10 15 20	Fill	
				75	2	ML	FILTER CAKE - sandy SILT with clay, low plasticity, dark brown mottled grey to black; sand, fine grained. 2.5m: Occasional lenses of sandy CLAY present.	D - M	F - St			
				74	3							
				73	4	CI	CI - CH - sandy CLAY with silt trace gravel, medium to high plasticity, red brown; sand, fine to coarse grained; gravel, fine to medium grained, rounded to sub-angular, siltstone, ironstone and quartz; occasional lenses of clayey SAND	D	St - VSt			
				72	5		EOH: 4.70m - Machine Limit	D - M		Laterite		

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See Symbology & Classification notes for details of abbreviations & basis of descriptions.



Rum Jungle



5 Foelsche Street, Darwin, NT 0800



Southern Pit Wall - Black Filter Cake Layer



Looking West



Pit Base and Northern Pit Wall



Spoil Pile



Spoil Pile

File Location: \\AU.SLR.Local\Corporate\Projects\SLR\



TEST PIT EXCAVATION LOG

HOLE NO.: WRD-SLR-TP04

PROJECT : Rum Jungle

LOCATION : Former Rum Jungle Mine Site

FILE / JOB NO.: 680.10421

DATE STARTED : 07/10/19

POSITION : E: 718697.62, N: 8564117.85 (52 AM) SURFACE ELEVATION : 80m (AHD)

LOGGED BY : FC

DATE COMPLETED : 07/10/19

RIG TYPE : 20T Tracked Komatsu Excavator ANGLE FROM HORIZONTAL : 90°

CHECKED BY : BT

DATE LOGGED : 07/10/19

DRILLER : C. McGregor

STABILITY : Stable

DRILLING				MATERIAL					OBSERVATION			
METHOD & BUCKET TYPE	PENETRATION	WATER	SAMPLES TESTS REMARKS	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY / RELATIVE DENSITY	DCP RESULTS	ORIGIN	STRUCTURE & Other Observations
Excavator 600mm Toothed Bucket	Groundwater Not Encountered	1.00m (B)		79		SM	SM - gravelly SAND with silt, poorly graded, fine to medium grained, red brown; gravel, fine to coarse grained, rounded to sub-angular, quartz, ironstone and siltstone; frequent sub-angular cobbles of siltstone.	D	D - VD	5-10	Fill	
				1		ML	FILTER CAKE - clayey SILT trace sand, low plasticity, dark grey to black; sand, fine grained 0.8m - 1.6m: Waste - Filter Cake material not present in the south faces of Test Pit.	D - M	F - St	10-15		
				2		SM	SM - clayey SAND with gravel, fine to coarse grained, orange brown mottled grey; gravel, fine to coarse grained, rounded to sub-angular, sandstone, quartz and ironstone; occasional lenses of sandy CLAY	D	VD	15-20		
				76			EOH: 2.70m - Refusal					
				77								
				76								
				75								

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See Symbology & Classification notes for details of abbreviations & basis of descriptions.



Rum Jungle



5 Foelsche Street, Darwin, NT 0800



Looking North



Spoil Pile



Western Pit Wall - Layer of Filter Cake



Looking North



Western Pit Wall - Filter Cake Layer

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Looking North - Filter Cake in the Eastern Pit Wall



Spoil Pile



Eastern Pit Wall - Filter Cake



Looking North



Western Pit Wall



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Client:	DPIR	Reviewed:	BT
Project:	Rum Jungle Rehabilitation	Size:	A3 Version: 1.0
Project No.:	680.10421	Datum:	AHD
Status:	Design		
Date:	07/10/2019		

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TEST PIT EXCAVATION LOG

HOLE NO.: WRD-SLR-TP06A

PROJECT : Rum Jungle Geotechnical Investigation

LOCATION : Rum Jungle Mine Site

FILE / JOB NO.: 680.10421.02300

DATE STARTED : 05/10/19

POSITION : E: 718681.62, N: 8564289.6 (52 MGA94) SURFACE ELEVATION : 76m (AHD)

LOGGED BY : FC

DATE COMPLETED : 05/10/19

RIG TYPE : 20T Tracked Komatsu Excavator ANGLE FROM HORIZONTAL : 90°

CHECKED BY : BT

DATE LOGGED : 05/10/19

DRILLER : C. McGregor

STABILITY : Stable

DRILLING				MATERIAL				OBSERVATION					
METHOD & BUCKET TYPE	PENETRATION	WATER	SAMPLES TESTS REMARKS	RL (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY / RELATIVE DENSITY	DCP RESULTS	ORIGIN	STRUCTURE & Other Observations
Excavator 600mm Toothed Bucket	Groundwater Not Encountered	1.00m (LB)		75	1		GP	GP - sandy GRAVEL with silt, poorly sorted, fine to medium grained (rare coarse), rounded to sub-rounded, siltstone, ironstone and quartz, reddish brown; sand, fine to medium grained	D	D - VD	5 10 15 20	Fill	
				74	2		GP	MIXTURE OF SOIL AND COBBLES/BOULDERS (MATRIX SUPPORTED) - GP - sandy GRAVEL, fine to coarse grained, poorly graded, pale grey and mottled red and white; sand, fine to coarse grained; cobbles/boulders, sub-angular, siltstone.				Saprolite	
				71	5			EOH: 2.10m - Target depth					
				72	4								
				73	3								

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See Symbology & Classification notes for details of abbreviations & basis of descriptions.



Rum Jungle Geotechnical Investigation



5 Foelsche Street, Darwin, NT 0800



Looking North



Spoil Pile



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Title:	SLR-HR-SLR-TP06A Photo Log	Drawn:	FC
Client:	DPIR	Reviewed:	BT
Project:	Rum Jungle Rehabilitation	Size:	A3 Version: 1.0
Project No.:	680.10421	Datum:	None
Status:	Design		
Date:	02/10/2019		





TEST PIT EXCAVATION LOG

HOLE NO.: WRD-SLR-TP06B

PROJECT : Rum Jungle Geotechnical Investigation

LOCATION : Rum Jungle Mine Site

FILE / JOB NO.: 680.10421

DATE STARTED : 05/10/19	POSITION : E: 718679.54, N: 8564274.01 (52 MGA94)	SURFACE ELEVATION : 75m (AHD)	LOGGED BY : FC
DATE COMPLETED : 05/10/19	RIG TYPE : 20T Tracked Komatsu Excavator	ANGLE FROM HORIZONTAL : 90°	CHECKED BY : BT
DATE LOGGED : 05/10/19	DRILLER : C. McGregor	STABILITY : Stable	

DRILLING				MATERIAL				OBSERVATION				
METHOD & BUCKET TYPE	PENETRATION	WATER	SAMPLES TESTS REMARKS	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY / RELATIVE DENSITY	DCP RESULTS	ORIGIN	STRUCTURE & Other Observations
Excavator 600mm Toolhead Bucket	Groundwater Not Encountered			74		ML	ML - sandy SILT with clay trace gravel, low to medium plasticity, reddish brown; sand, fine to coarse grained; gravel, fine to medium grained, rounded to sub-angular, siltstone, ironstone and quartz	F - St	5	5	Topsoil	
				73		GP	MIXTURE OF SOIL AND COBBLES/BOULDERS (MATRIX SUPPORTED) - GP - sandy GRAVEL, fine to coarse grained, rounded to sub-angular, poorly graded, pale grey and mottled white and yellow; sand, fine to coarse grained; cobbles/boulders, sub-rounded, siltstone.	D	10	10	Saprolite	
				72		GP		VD	15	15		
				71		GP		VD	20	20		
				70		GP		VD				
							EOH: 5.20m - Machine Limit					

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Rum Jungle Geotechnical Investigation



5 Foelsche Street, Darwin, NT 0800



Eastern Pit Wall



Spoil Pile



Spoil Pile



Western Pit Wall



Looking North

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TEST PIT EXCAVATION LOG

HOLE NO.: WRD-SLR-TP06C

PROJECT : Rum Jungle	LOCATION : Former Rum Jungle Mine Site	FILE / JOB NO.: 680.10421
DATE STARTED : 07/10/19	POSITION : E: 718679.42, N: 8564258.85 (52 AMG84)	SURFACE ELEVATION : 75m (AHD)
DATE COMPLETED : 07/10/19	RIG TYPE : 20T Tracked Komatsu Excavator	ANGLE FROM HORIZONTAL : 90°
DATE LOGGED : 07/10/19	DRILLER : C. McGregor	STABILITY : Stable

DRILLING				MATERIAL				OBSERVATION					
METHOD & BUCKET TYPE	PENETRATION	WATER	SAMPLES TESTS REMARKS	RL (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY / RELATIVE DENSITY	DCP RESULTS	ORIGIN	STRUCTURE & Other Observations
Excavator 600mm Toothed Bucket	Groundwater Not Encountered	1.40m (D)		74	1		CI	Cl - sandy CLAY with silt trace gravel, low to medium plasticity, red brown; sand, fine to coarse grained; gravel, fine to medium grained, rounded to sub-angular, siltstone, ironstone and quartz	F - St		5 10 15 20	Fill	
							GP	MIXTURE OF SOIL AND COBBLES/BOULDERS (MATRIX SUPPORTED) GP sandy GRAVEL, poorly graded, fine to coarse grained, rounded to sub-rounded, pale grey and mottled white; sand, fine to coarse grained.	MD - D			Saprolite	
				73	2								
				72	3								
				71	4								
				70	5								

EOH: 1.80m - Machine Limit

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Looking North



Spoil Pile



Looking North



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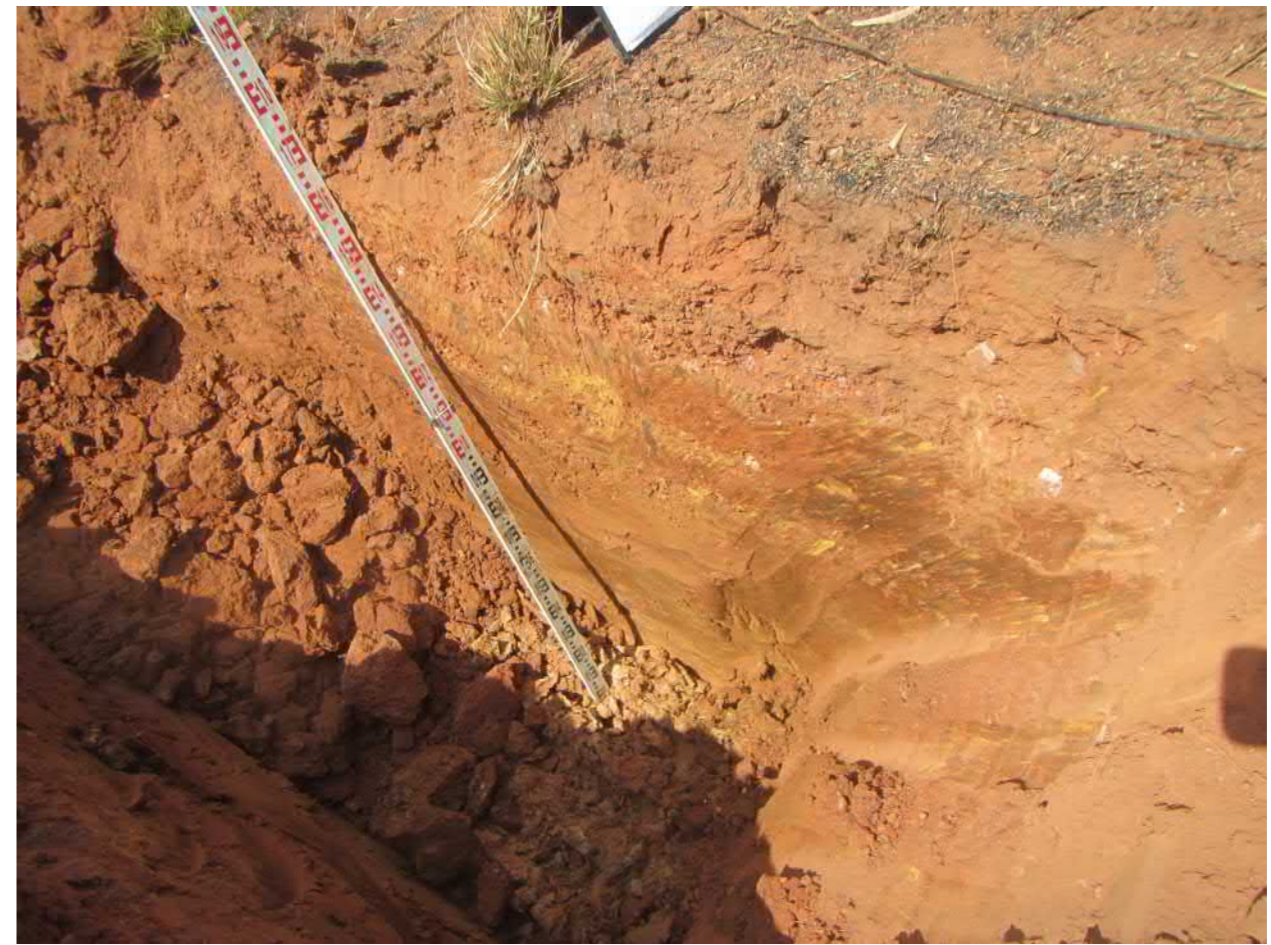
Title:	SLR-WRD-SLR-TP06C Photo Log	Drawn:	FC
Client:	DPIR	Reviewed:	BT
Project:	Rum Jungle Rehabilitation	Size:	A3 Version: 1.0
Project No.:	680.10421	Datum:	AHD
Status:	Design		
Date:	07/10/2019		

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Looking North



Eastern Pit Wall



Spoil Pile



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Title:	SLR-WRD-SLR-TP06D Photo Log	Drawn:	FC
Client:	DPIR	Reviewed:	CDM
Project:	Rum Jungle Rehabilitation	Size:	A3 Version: 1.0
Project No.:	680.10421	Datum:	None
Status:	Design		
Date:	07/10/2019		

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TEST PIT EXCAVATION LOG

HOLE NO.: WRD-SLR-TP07

PROJECT : Rum Jungle

LOCATION : Former Rum Jungle Mine Site

FILE / JOB NO.: 680.10421

DATE STARTED : 05/10/19

POSITION : E: 718787.77, N: 8564346.96 (52 AM) SURFACE ELEVATION : 82m (AHD)

LOGGED BY : FC

DATE COMPLETED : 05/10/19

RIG TYPE : 20T Tracked Komatsu Excavator ANGLE FROM HORIZONTAL : 90°

CHECKED BY : BT

DATE LOGGED : 05/10/19

DRILLER : C. McGregor

STABILITY : Stable

DRILLING				MATERIAL				OBSERVATION					
METHOD & BUCKET TYPE	PENETRATION	WATER	SAMPLES TESTS REMARKS	RL (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY / RELATIVE DENSITY	DCP RESULTS	ORIGIN	STRUCTURE & Other Observations
Excavator 600mm Toothed Bucket	Groundwater Not Encountered	1.80m (B)		81	1		SM	SM - silty SAND with gravel, fine to medium grained, red brown; gravel, fine to medium grained, rounded to sub-rounded, siltstone and ironstone; frequent rootlets (<2mm diameter) near surface			5	Topsoil	
							GP	GP - sandy GRAVEL with silt, poorly graded, fine to medium grained (rare coarse), rounded to sub-rounded, siltstone, ironstone and quartz, orange brown; sand, fine to medium grained	MD - D	10			
							CI - CH	CI - CH - silty CLAY trace sand, medium to high plasticity, pale grey mottled red, orange and brown; sand, fine to medium grained; rare fine to medium grained sub-rounded gravel of quartz and ironstone	St		Laterite		
							GP	GP - sandy GRAVEL trace silt, poorly graded, fine to coarse grained, rounded to sub-angular, mudstone, pale grey mottled red and white; sand, fine to coarse grained; frequent sub-angular cobbles of siltstone	D		Saprolite		
				78	4			EOH: 4.50m - Machine Limit					
				77	5								

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Rum Jungle



5 Foelsche Street, Darwin, NT 0800



Northern Pit Wall



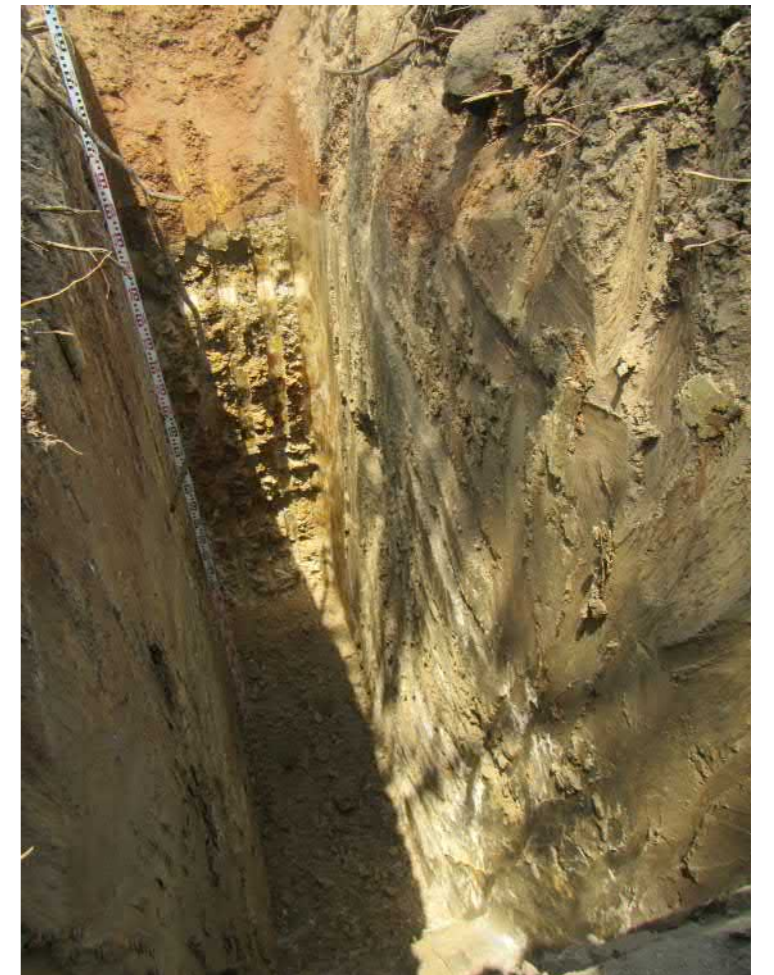
Spoil Pile



Spoil Pile



Looking East



Looking East



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Client:	DPIR	Reviewed:	BT
Project:	Rum Jungle Rehabilitation	Size:	A3
Project No.:	680.10421	Version:	1.0
Status:	Design	Datum:	None
Date:	07/10/2019		





TEST PIT EXCAVATION LOG

HOLE NO.: WRD-SLR-TP08

PROJECT : Rum Jungle

LOCATION : Former Rum Jungle Mine Site

FILE / JOB NO.: 680.10421

DATE STARTED : 04/10/19

POSITION : E: 718832, N: 8564203 (52 AMG84) SURFACE ELEVATION : 81m (AHD)

LOGGED BY : FC

DATE COMPLETED : 04/10/19

RIG TYPE : 20T Tracked Komatsu Excavator ANGLE FROM HORIZONTAL : 90°

CHECKED BY : BT

DATE LOGGED : 04/10/19

DRILLER : C. McGregor

STABILITY : Stable

DRILLING				MATERIAL				OBSERVATION			
METHOD & BUCKET TYPE	PENETRATION	WATER	SAMPLES TESTS REMARKS	DEPTH (m)	GRAPHIC LOG CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY / RELATIVE DENSITY	DCP RESULTS	ORIGIN	STRUCTURE & Other Observations
Excavator 600mm Toolhead Bucket	Groundwater Not Encountered			80	SM	SM - silty SAND with gravel, fine to medium grained, red brown; gravel, fine to medium grained, rounded to sub-rounded, siltstone and ironstone; frequent rootlets (<2mm diameter) near surface and rare sub-angular cobble of siltstone			5	Topsoil	
				1	ML	FILTER CAKE - sandy SILT, low plasticity, dark grey to black; sand, fine grained			10		
				2	ML				15		
				3	CI	CI - gravelly CLAY with sand, low to medium plasticity, pale grey mottled red and yellow; sand, fine to coarse grained; gravel, fine to medium grained, rounded to sub-rounded, quartz and ironstone			20		
				4	CI						
				77	ML	MI - clayey SILT with sand trace gravel, low to medium plasticity, pale grey mottled red and white; sand, fine to coarse grained; gravel, fine to medium grained, rounded to sub-rounded, ironstone and quartz; frequent sub-angular cobbles of siltstone				Laterite	
				76		EOH: 5.20m - Machine Limit					

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Rum Jungle



5 Foelsche Street, Darwin, NT 0800



Looking East



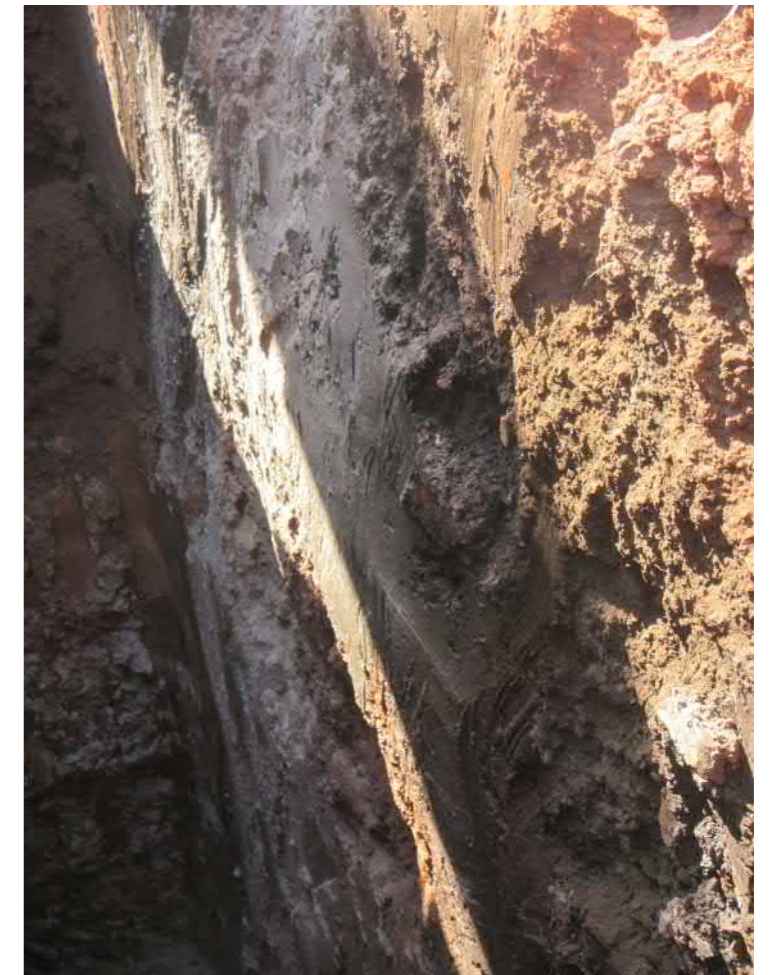
Spoil Pile



Spoil Pile



Looking East



Southern Pit Wall - Grey Filter Cake



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Client:	DPIR	Reviewed:	BT
Project:	Rum Jungle Rehabilitation	Size:	A3
Project No.:	680.10421	Version:	1.0
Status:	Design	Datum:	None
Date:	07/10/2019		

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TEST PIT EXCAVATION LOG

HOLE NO.: WRD-SLR-TP09

PROJECT : Rum Jungle

LOCATION : Former Rum Jungle Mine Site

FILE / JOB NO.: 680.10421

DATE STARTED : 05/10/19

POSITION : E: 718939, N: 8564106 (52 AMG84) SURFACE ELEVATION : 84m (AHD)

LOGGED BY : FC

DATE COMPLETED : 05/10/19

RIG TYPE : 20T Tracked Komatsu Excavator ANGLE FROM HORIZONTAL : 90°

CHECKED BY : BT

DATE LOGGED : 05/10/19

DRILLER : C. McGregor

STABILITY : Stable

DRILLING				MATERIAL				OBSERVATION			
METHOD & BUCKET TYPE	PENETRATION	WATER	SAMPLES TESTS REMARKS	RL (m)	DEPTH (m)	GRAPHIC LOG CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION SOIL/ROCK TYPE; colour, grain characteristics, structure, minor components	MOISTURE CONDITION CONSISTENCY / RELATIVE DENSITY	DCP RESULTS	ORIGIN	STRUCTURE & Other Observations
Excavator 600mm Toothed Bucket	Groundwater Not Encountered		0.60m (B)	83	1	SM	SM - silty SAND with gravel, fine to medium grained, orange brown mottled yellow; gravel, fine to medium grained, rounded to sub-rounded, siltstone, ironstone and quartz; frequent rootlets (<2mm diameter) near surface	MD - D	5, 10, 15, 20	Fill	
				82	2		SM - gravelly SAND trace silt and clay, poorly graded, fine to medium grained, red brown; gravel, fine to coarse grained, rounded to sub-rounded, quartz, ironstone, shale and meta-sediment; occasional lenses sandy CLAY and SILT				
				81	3		CI - sandy CLAY with silt and gravel, medium to high plasticity, pale grey mottled red, green and brown; sand, fine to coarse grained; gravel, fine to coarse grained, rounded to sub-angular, mudstone, quartz and ironstone; frequent sub-rounded cobbles of mudstone 2.6m: Frequent lenses of mudstone present.	D			
				80	4	CI	CI - silty CLAY trace sand and gravel, medium to high plasticity, pale grey mottled red and yellow; sand, fine to coarse grained; gravel, fine to coarse grained, rounded to sub-angular, mudstone, quartz and ironstone; frequent lenses of gravelly SAND	F - VSt		Laterite	
				79	5		EOH: 4.70m - Machine Limit				

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See Symbology & Classification notes for details of abbreviations & basis of descriptions.



Rum Jungle



5 Foelsche Street, Darwin, NT 0800



Looking East



Spoil Pile



Spoil Pile



Looking East



Pit Walls and Base



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Client:	DPIR	Reviewed:	BT
Project:	Rum Jungle Rehabilitation	Size:	A3
Project No.:	680.10421	Version:	1.0
Status:	Design	Datum:	None
Date:	07/10/2019		





TEST PIT EXCAVATION LOG

HOLE NO.: WRD-SLR-TP10

PROJECT : Rum Jungle

LOCATION : Former Rum Jungle Mine Site

FILE / JOB NO.: 680.10421

DATE STARTED : 05/10/19

POSITION : E: 718866.59, N: 8564323.66 (52 AM) SURFACE ELEVATION : 83m (AHD)

LOGGED BY : FC

DATE COMPLETED : 05/10/19

RIG TYPE : 20T Tracked Komatsu Excavator ANGLE FROM HORIZONTAL : 90°

CHECKED BY : BT

DATE LOGGED : 05/10/19

DRILLER : C. McGregor

STABILITY : Stable

DRILLING				MATERIAL				OBSERVATION				
METHOD & BUCKET TYPE	PENETRATION	WATER	SAMPLES TESTS REMARKS	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY / RELATIVE DENSITY	DCP RESULTS	ORIGIN	STRUCTURE & Other Observations
Excavator 600mm Toothed Bucket	Groundwater Not Encountered	0.90m (B)		82		ML	ML - sandy SILT with gravel, low plasticity, grey brown; sand, fine to coarse grained; gravel, fine to medium grained, rounded to sub-angular, siltstone, ironstone and quartz; frequent rootlets (<2mm diameter)	St			Topsoil	
						GP	GP - sandy GRAVEL with silt, poorly graded, fine to medium grained (rare coarse), rounded to sub-rounded, siltstone, ironstone and quartz, orange brown; sand, fine to medium grained	D			Laterite	
				1		CI	CI - CH - silty CLAY trace sand, medium to high plasticity, pale grey mottled red, orange and brown; sand, fine to medium grained; rare fine to medium grained sub-rounded gravel of quartz and ironstone	St				
						GP	GP - sandy GRAVEL trace silt, poorly graded, fine to coarse grained, rounded to sub-angular, mudstone, pale grey mottled red, orange and brown; sand, fine to coarse grained; frequent sub-angular cobbles of mudstone	D				
				2	2.3m: Becomes sandy GRAVEL with silt. Occasional lenses of white siltstone present.		D					
80		3		GP		D - VD	Saprolite					
79		4										
78		5					EOH: 5.00m - Machine Limit					

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See Symbology & Classification notes for details of abbreviations & basis of descriptions.



Rum Jungle



5 Foelsche Street, Darwin, NT 0800



Looking South



Spoil Pile



Spoil Pile



Eastern Pit Wall



Looking South



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Client:	DPIR	Reviewed:	BT
Project:	Rum Jungle Rehabilitation	Size:	A3
Project No.:	680.10421	Version:	1.0
Status:	Design	Datum:	None
Date:	07/10/2019		





TEST PIT EXCAVATION LOG

HOLE NO.: WRD-SLR-TP11

PROJECT : Rum Jungle

LOCATION : Former Rum Jungle Mine Site

FILE / JOB NO.: 680.10421

DATE STARTED : 04/10/19

POSITION : E: 719120.87, N: 8564217.07 (52 AM) SURFACE ELEVATION : 76m (AHD)

LOGGED BY : FC

DATE COMPLETED : 04/10/19

RIG TYPE : 20T Tracked Komatsu Excavator ANGLE FROM HORIZONTAL : 90°

CHECKED BY : BT

DATE LOGGED : 04/10/19

DRILLER : C. McGregor

STABILITY : Stable

DRILLING				MATERIAL				OBSERVATION				
METHOD & BUCKET TYPE	PENETRATION	WATER	SAMPLES TESTS REMARKS	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY / RELATIVE DENSITY	DCP RESULTS	ORIGIN	STRUCTURE & Other Observations
Excavator 600mm Toothed Bucket	Groundwater Not Encountered		0.70m (B)	75		ML	ML - sandy SILT with gravel, low plasticity, grey brown; sand, fine to coarse grained; gravel, fine to medium grained, rounded to sub-angular, siltstone, ironstone and quartz; frequent rootlets (<2mm diameter)	St	5		Topsoil	
						SM	SM - silty SAND with gravel, fine to medium grained, red brown mottled grey; gravel, fine to medium grained, rounded to sub-angular, siltstone, ironstone and quartz; rare sub-rounded cobble of mudstone		10			
						GP	GP - SAND & GRAVEL trace silt, poorly graded, fine to coarse grained, rounded to sub-angular, mudstone, ironstone and quartz, dark red brown mottled grey; sand, fine to medium grained	D - VD	15	Laterite		
						CI	CI - sandy CLAY with silt and gravel, medium to high plasticity, pale grey mottled red and brown; sand, fine to coarse grained; gravel, fine to medium grained, rounded to sub-rounded, mudstone and ironstone; frequent lenses of clayey SAND	D	20			
				74			3.0m: Trace gravel present.					
			2.00m (D)	72		ML	ML - sandy SILT with gravel, low to medium plasticity, pale grey mottled red and brown; sand, fine to coarse grained; gravel, fine to medium grained, rounded to sub-rounded, siltstone; frequent lenses of clayey SAND	St - VSt				
				71			EOH: 5.00m - Machine Limit	M				

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Rum Jungle



5 Foelsche Street, Darwin, NT 0800



Looking East



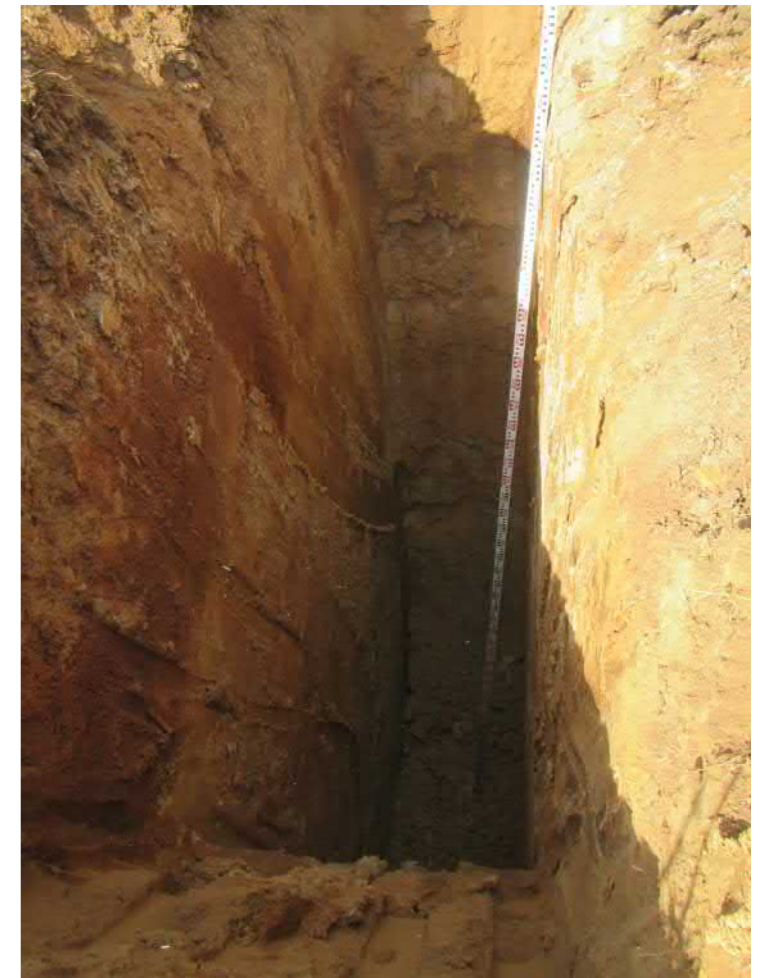
Spoil Pile



Spoil Pile



Northern Pit Wall



Looking East



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Client:	DPIR	Reviewed:	BT
Project:	Rum Jungle Rehabilitation	Size:	A3 Version: 1.0
Project No.:	680.10421	Datum:	None
Status:	Design		
Date:	07/10/2019		





TEST PIT EXCAVATION LOG

HOLE NO.: WRD-SLR-TP12

PROJECT : Rum Jungle

LOCATION : Former Rum Jungle Mine Site

FILE / JOB NO.: 680.10421

DATE STARTED : 04/10/19

POSITION : E: 719109.11, N: 8564116.25 (52 AM) SURFACE ELEVATION : 77m (AHD)

LOGGED BY : FC

DATE COMPLETED : 04/10/19

RIG TYPE : 20T Tracked Komatsu Excavator ANGLE FROM HORIZONTAL : 90°

CHECKED BY : BT

DATE LOGGED : 04/10/19

DRILLER : C. McGregor

STABILITY : Stable

DRILLING				MATERIAL				OBSERVATION					
METHOD & BUCKET TYPE	PENETRATION	WATER	SAMPLES TESTS REMARKS	RL (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY / RELATIVE DENSITY	DCP RESULTS	ORIGIN	STRUCTURE & Other Observations
Excavator 600mm Toothed Bucket		Groundwater Not Encountered		76	1		SP	SHALE; extremely weathered, red brown mottled grey, low strength; Recovered as SAND & GRAVEL trace silt, poorly graded, fine to coarse grained, rounded to sub-angular, shale and slate, red brown mottled grey; sand, fine to medium grained . 0.3m: Becomes grey mottled brown and red.	D	VD		Extremely Weathered Bedrock	
				75	2								
				74	3								
				73	4								
				72	5			EOH: 1.90m - Refusal					





Looking North



Western Pit Wall



Spoil Pile



Eastern Pit Wall



Western Pit Wall

File Location: \\AU.SLR.Local\Corporate\Projects\SLR\



TEST PIT EXCAVATION LOG

HOLE NO.: WRD-SLR-TP13

PROJECT : Rum Jungle

LOCATION : Former Rum Jungle Mine Site

FILE / JOB NO.: 680.10421

DATE STARTED : 04/10/19

POSITION : E: 719196.84, N: 8563985.87 (52 AMG84) SURFACE ELEVATION : 77m (AHD)

LOGGED BY : FC

DATE COMPLETED : 04/10/19

RIG TYPE : 20T Tracked Komatsu Excavator ANGLE FROM HORIZONTAL : 90°

CHECKED BY : BT

DATE LOGGED : 04/10/19

DRILLER : C. McGregor

STABILITY : Stable

DRILLING				MATERIAL				OBSERVATION			
METHOD & BUCKET TYPE	PENETRATION	WATER	SAMPLES TESTS REMARKS	DEPTH (m)	GRAPHIC LOG CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY / RELATIVE DENSITY	DCP RESULTS	ORIGIN	STRUCTURE & Other Observations
Excavator	600mm Toothed Bucket	Groundwater Not Encountered	0.10m (B)	76	SM	SM - gravelly SAND trace silt, poorly graded, fine to medium grained, reddish brown; gravel, fine to coarse grained, sub-rounded to sub-angular, siltstone, shale and meta-sediment; occasional sub-rounded cobbles of siltstone.	D			Fill	
				75	SM	SM - gravelly SAND trace silt, poorly graded, fine to coarse grained, reddish brown mottled grey; gravel, fine to coarse grained, rounded to sub-angular, shale and meta-sediment; occasional lenses and cobbles of shale.	VD				
				74		SM - gravelly SAND with silt, poorly graded, fine to medium grained, greyish brown mottled red; gravel, fine to coarse grained, rounded to sub-angular, siltstone and slate; frequent cobbles of sub-angular to angular slate. 3.2m: Becomes very gravelly.					
				73	GP	GP - sandy GRAVEL, poorly sorted, fine to coarse grained, rounded to sub-angular, slate, greyish brown; sand, fine to medium grained; frequent sub-angular cobbles of slate.	D - M			Saprolite	
						SHALE, dark grey and mottled brown, Extremely Low Strength, Extremely Weathered, highly fractured.				Extremely Weathered Bedrock	
						EOH: 4.90m - Machine Limit					
				72							

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See Symbology & Classification notes for details of abbreviations & basis of descriptions.



Rum Jungle



5 Foelsche Street, Darwin, NT 0800



Looking East



Spoil Pile



Spoil Pile



Looking East



Northern Pit Wall



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Title:	SLR-WRD-SLR-TP14 Photo Log	Drawn:	FC
Client:	DPIR	Reviewed:	BT
Project:	Rum Jungle Rehabilitation	Size:	A3
Project No.:	680.10421	Version:	1.0
Status:	Design	Datum:	None
Date:	07/10/2019		



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TEST PIT EXCAVATION LOG

HOLE NO.: WRD-SLR-TP14

PROJECT : Rum Jungle

LOCATION : Former Rum Jungle Mine Site

FILE / JOB NO.: 680.10421

DATE STARTED : 04/10/19

POSITION : E: 719203.9, N: 8563863.2 (52 AMG8 SURFACE ELEVATION : 76m (AHD))

LOGGED BY : FC

DATE COMPLETED : 04/10/19

RIG TYPE : 20T Tracked Komatsu Excavator ANGLE FROM HORIZONTAL : 90°

CHECKED BY : BT

DATE LOGGED : 04/10/19

DRILLER : C. McGregor

STABILITY : Stable

DRILLING				MATERIAL				OBSERVATION				
METHOD & BUCKET TYPE	PENETRATION	WATER	SAMPLES TESTS REMARKS	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY / RELATIVE DENSITY	DCP RESULTS	ORIGIN	STRUCTURE & Other Observations
Excavator 600mm Toothed Bucket	Groundwater Not Encountered			75		SM	SM - gravelly SAND with silt, poorly graded, fine to medium grained, red brown; gravel, fine to coarse grained, rounded to sub-angular, siltstone, shale and quartz	D	D - VD	5 10 15 20	Fill	
				74		GP	GP - SAND & GRAVEL trace silt and clay, poorly graded, fine to coarse grained, yellow brown mottled red; gravel, fine to coarse grained, rounded to sub-angular, quartz and siltstone; rare sub-rounded cobble of siltstone					
				73		CI	CI - sandy CLAY with gravel, medium to high plasticity, yellow brown mottled red and grey; sand, fine to coarse grained; gravel, fine to medium grained, rounded to sub-rounded, siltstone, ironstone and quartz; frequent lenses of SAND	D - M	St - VSt		Saprolite	
				72		GP	GP - SAND & GRAVEL trace silt and clay, poorly graded, fine to coarse grained, yellow brown mottled red; gravel, fine to coarse grained, rounded to sub-angular, quartz and siltstone; occasional sub-angular cobble of quartz and frequent lenses of gravelly CLAY	D	VD			
				EOH: 4.00m - Machine Limit								

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See Symbology & Classification notes for details of abbreviations & basis of descriptions.



Rum Jungle



5 Foelsche Street, Darwin, NT 0800



Looking South



Spoil Pile



Spoil Pile



Western Pit Wall



Eastern Pit Wall

File Location: \\AU.SLR.Local\Corporate\Projects\SLR\



TEST PIT EXCAVATION LOG

HOLE NO.: WRD-SLR-TP15

PROJECT : Rum Jungle

LOCATION : Former Rum Jungle Mine Site

FILE / JOB NO.: 680.10421

DATE STARTED : 04/10/19

POSITION : E: 719352.66, N: 8563847.53 (52 AM) SURFACE ELEVATION : 70m (AHD)

LOGGED BY : FC

DATE COMPLETED : 04/10/19

RIG TYPE : 20T Tracked Komatsu Excavator ANGLE FROM HORIZONTAL : 90°

CHECKED BY : BT

DATE LOGGED : 04/10/19

DRILLER : C. McGregor

STABILITY : Unstable

DRILLING				MATERIAL				OBSERVATION				
METHOD & BUCKET TYPE	PENETRATION	WATER	SAMPLES TESTS REMARKS	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION SOIL/ROCK TYPE; colour, grain characteristics, structure, minor components	MOISTURE CONDITION	CONSISTENCY / RELATIVE DENSITY	DCP RESULTS	ORIGIN	STRUCTURE & Other Observations
Excavator 600mm Toothed Bucket				69		ML	ML - sandy SILT with gravel, low plasticity, brown grey; sand, fine to coarse grained; gravel, fine to medium grained, rounded to sub-angular, siltstone, ironstone and quartz	St			Topsoil	
						GP	GP - sandy GRAVEL trace silt, poorly graded, fine to medium grained, rounded to sub-rounded, siltstone and ironstone, orange brown; sand, fine to medium grained 0.5m: Becomes less sandy.	D - VD				
						CI	CI - CH - silty CLAY with gravel, medium to high plasticity, pale grey mottled red and brown; gravel, fine to medium grained, rounded to sub-rounded, ironstone and siltstone; frequent lenses of sandy GRAVEL					
						MI	MI - clayey SILT trace sand and gravel, low to medium plasticity, pale grey mottled red and white; sand, fine to coarse grained; gravel, fine to medium grained, rounded to sub-rounded, ironstone and siltstone					
						ML	MI - clayey SILT trace sand and gravel, low to medium plasticity, pale grey mottled red and white; sand, fine to coarse grained; gravel, fine to medium grained, rounded to sub-rounded, ironstone and siltstone; frequent sub-angular cobbles and lenses of siltstone	St - Vst				
				EOH: 4.40m - Target depth								

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See Symbology & Classification notes for details of abbreviations & basis of descriptions.



Rum Jungle



5 Foelsche Street, Darwin, NT 0800



Looking North



Looking North



Spoil Pile



Eastern Pit Wall



Western Pit Wall

File Location: \\AU.SLR.Local\Corporate\Projects\SLR\



TEST PIT EXCAVATION LOG

HOLE NO.: WRD-SLR-TP16

PROJECT : Rum Jungle

LOCATION : Former Rum Jungle Mine Site

FILE / JOB NO.: 680.10421

DATE STARTED : 04/10/19

POSITION : E: 719322, N: 8564100 (52 AMG84) SURFACE ELEVATION : 73m (AHD)

LOGGED BY : FC

DATE COMPLETED : 04/10/19

RIG TYPE : 20T Tracked Komatsu Excavator ANGLE FROM HORIZONTAL : 90°

CHECKED BY : BT

DATE LOGGED : 04/10/19

DRILLER : C. McGregor

STABILITY : Stable

DRILLING				MATERIAL				OBSERVATION			
METHOD & BUCKET TYPE	PENETRATION	WATER	SAMPLES TESTS REMARKS	DEPTH (m)	GRAPHIC LOG CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION SOIL/ROCK TYPE; colour, grain characteristics, structure, minor components	MOISTURE CONDITION	CONSISTENCY / RELATIVE DENSITY	DCP RESULTS	ORIGIN	STRUCTURE & Other Observations
Excavator 600mm Toothed Bucket	Groundwater Not Encountered	1.90m (D)		72	SM	SM - silty SAND, fine to coarse grained, yellow brown; frequent rootlets (<2mm diameter) SM - gravelly SAND with silt, poorly graded, fine to medium grained, red brown; gravel, fine to coarse grained, rounded to sub-rounded, siltstone, ironstone and quartz; occasional sub-rounded cobbles and lenses of siltstone 1.0m: Becomes very gravelly.	St		5 10 15 20	Topsoil	
				71	CI-CH	CI - CH - sandy CLAY trace gravel, medium to high plasticity, yellow brown mottled red and grey; sand, fine to medium grained; gravel, fine to medium grained, rounded to sub-rounded, ironstone and quartz CH - gravelly CLAY trace sand, medium to high plasticity, pale grey mottled red and brown; gravel, fine to medium grained, sub-rounded, mudstone, ironstone and quartz; sand, fine to medium grained 2.4m - 3.5m: Frequent lenses of clayey SAND with gravel present.	D			Laterite	
				70	CI-CH		St - VSt				
				69	ML	ML - sandy SILT with clay, low plasticity, pale grey mottled yellow and white; sand, fine to coarse grained; rare sub-rounded fine to medium grained gravel of siltstone					
				68		EOH: 4.80m - Machine Limit					

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See Symbology & Classification notes for details of abbreviations & basis of descriptions.



Rum Jungle



5 Foelsche Street, Darwin, NT 0800



Looking West



Spoil Pile



Spoil Pile



Looking West



Looking West

File Location: \\AU.SLR.Local\Corporate\Projects\SLR\



TEST PIT EXCAVATION LOG

HOLE NO.: WRD-SLR-TP17

PROJECT : Rum Jungle

LOCATION : Former Rum Jungle Mine Site

FILE / JOB NO.: 680.10421

DATE STARTED : 03/10/19

POSITION : E: 719111.94, N: 8563692.97 (52 AM) SURFACE ELEVATION : 75m (AHD)

LOGGED BY : FC

DATE COMPLETED : 03/10/19

RIG TYPE : 20T Tracked Komatsu Excavator ANGLE FROM HORIZONTAL : 90°

CHECKED BY : BT

DATE LOGGED : 03/10/19

DRILLER : C. McGregor

STABILITY : Stable

DRILLING				MATERIAL				OBSERVATION			
METHOD & BUCKET TYPE	PENETRATION	WATER	SAMPLES TESTS REMARKS	RL (m)	DEPTH (m)	GRAPHIC LOG CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION SOIL/ROCK TYPE; colour, grain characteristics, structure, minor components	MOISTURE CONDITION CONSISTENCY / RELATIVE DENSITY	DCP RESULTS	ORIGIN	STRUCTURE & Other Observations
Excavator 600mm Toothed Bucket	Groundwater Not Encountered			74	1	[Hatched Pattern]	SHALE; extremely weathered, red brown, low strength; Recovered as sandy GRAVEL with silt, poorly graded, fine to coarse grained, sub-rounded, siltstone and shale, red brown; sand, fine to medium grained.	D D - VD	5 10 15 20	Extremely Weathered Bedrock	
				73	2	[Hatched Pattern]	SHALE; extremely weathered, red brown, low strength; Recovered as sandy GRAVEL with silt, poorly graded, fine to coarse grained, sub-rounded, siltstone and shale, red brown; sand, fine to medium grained; occasional sub-rounded to sub-angular cobbles of shale and slate.				
				72	3	[Hatched Pattern]	EOH: 3.00m - Machine Limit				
				71	4	[Hatched Pattern]					
				70	5	[Hatched Pattern]					

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See Symbology & Classification notes for details of abbreviations & basis of descriptions.



Rum Jungle



5 Foelsche Street, Darwin, NT 0800



Looking East



Looking East



Spoil Pile



Spoil Pile



Southern Pit Wall

File Location: \\AU.SLR.Local\Corporate\Projects\SLR\



TEST PIT EXCAVATION LOG

HOLE NO.: WRD-SLR-TP18

PROJECT : Rum Jungle

LOCATION : Former Rum Jungle Mine Site

FILE / JOB NO.: 680.10421

DATE STARTED : 04/10/19

POSITION : E: 719284, N: 8563710 (52 AMG84) SURFACE ELEVATION : 74m (AHD)

LOGGED BY : FC

DATE COMPLETED : 04/10/19

RIG TYPE : 20T Tracked Komatsu Excavator ANGLE FROM HORIZONTAL : 90°

CHECKED BY : BT

DATE LOGGED : 04/10/19

DRILLER : C. McGregor

STABILITY : Stable

DRILLING				MATERIAL				OBSERVATION			
METHOD & BUCKET TYPE	PENETRATION	WATER	SAMPLES TESTS REMARKS	RL (m)	DEPTH (m)	GRAPHIC LOG CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION SOIL/ROCK TYPE; colour, grain characteristics, structure, minor components	MOISTURE CONDITION CONSISTENCY / RELATIVE DENSITY	DCP RESULTS	ORIGIN	STRUCTURE & Other Observations
Excavator 600mm Toothed Bucket	[Penetration Diagram]	Groundwater Not Encountered	1.80m (D)	73	1	ML	ML - sandy SILT with gravel, low to medium plasticity, pale grey brown; sand, fine to medium grained; gravel, fine to coarse grained, sub-rounded, quartz, granite and siltstone; frequent rootlets (<2mm diameter)	St	[DCP Results]	Topsoil	
							0.9m - 1.9m: Becomes sandy GRAVEL with frequent cobbles of granite.	D		Extremely Weathered Bedrock	
				72	2						
				71	3						
				70	4						
				69	5						
							EOH: 1.90m - Refusal				

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See Symbology & Classification notes for details of abbreviations & basis of descriptions.



Rum Jungle



5 Foelsche Street, Darwin, NT 0800



Looking North



Looking North



Eastern Pit Wall



Spoil Pile



Spoil Pile

















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



Title:	SLR-WRD-SLR-TP18 Photo Log	Drawn:	FC
Client:	DPIR	Reviewed:	BT
Project:	Rum Jungle Rehabilitation	Size:	A3
Project No.:	680.10421	Version:	1.0
Status:	Design	Datum:	AHD
Date:	07/10/2019		



CLASSIFICATION SYMBOLS AND SOIL DESCRIPTION

PARTICLE SIZE DEFINITIONS*				GRAPHIC LOG			
Fraction	Components	Subdivision	Size (mm)				
Oversize	BOULDERS		>200		PEAT		TOPSOIL
	COBBLES		63-200		CLAY		FILL
Coarse grained soil	GRAVEL	Coarse	19-63		SILT		BASALT
		Medium	6.7-19		SAND		GREYWACKE
		Fine	2.36-6.7		GRAVEL		METAMORPHIC
	SAND	Coarse	0.6-2.36		COBBLES		LIMESTONE
		Medium	0.21-0.6		BOULDERS		CORAL
		Fine	0.075-0.21				
Fine grained soil	SILT		0.002-0.075				
	CLAY		<0.002				

MOISTURE CONDITION*			
Term	Description	For Fine Grained Soils*	
Dry (D)	- Non-cohesive and free-running	'Moist, dry of plastic limit'	- Hard and friable or powdery, or ('w < PL').
Moist (M)	- Soil feels cool, darkened in colour. - Soil tends to stick together.	'Moist, near plastic limit'	- Soils can be moulded at a moisture content approximately equal to the plastic limit, or ('w ≈ PL').
Wet (W)	- Soil feels cool, darkened in colour. - Soil tends to stick together, free water forms when handling.	'Moist, wet of plastic limit'	- Soils usually weakened and free water forms on hands when handling, or ('w > PL').
		'Wet, near liquid limit'	- Or ('w ≈ LL').
		'Wet, wet of liquid limit'	- Or ('w > LL').

USCS SOIL CLASSIFICATION CODES		WATER
GW - well graded gravel GP - poorly graded gravel GM - silt gravel GC - clayey gravel SW - well graded sand SP - poorly graded sand SM - silty sand SC - clayey sand	ML - silt, low plasticity CL - clay, low plasticity CI - clay, medium plasticity OL - organic silt / organic clay MH - silt, high plasticity CH - clay, high plasticity OH - organic silt / organic clay, high plasticity Pt - peat	 - Level (date observed)  - Inflow  - Partial Loss  - Complete Loss
G= Gravel, S= Sand, M= Silt, C= Clay		

CONSISTENCY*			RELATIVE DENSITY*	
Term	Field guide to consistency	Indicative Undrained Shear Strength (kPa)	Term	Density index %
Very Soft (VS)	Exudes between the fingers when squeezed in hand	≤12	Very Loose (VL)	≤15
Soft (S)	Can be moulded by light finger pressure	>12 and ≤25	Loose (L)	>15 and ≤35
Firm (F)	Can be moulded by strong finger pressure	>25 and ≤50	Medium Dense (MD)	>35 and ≤65
Stiff (St)	Cannot be moulded by fingers	>50 and ≤100	Dense (D)	>65 and ≤85
Very Stiff (VSt)	Can be indented by thumbnail	>100 and ≤200	Very Dense (VD)	>85
Hard (H)	Can be indented with difficulty by thumbnail	>200		
Friable (Fr)	Can be easily crumbled or broken into small pieces by hand	-		

PLASTICITY (fine grained soil)*			GRADING (coarse grained soil)*	
Term	Range of liquid limit for silt	Range of liquid limit for clay	Term	Description
Non-Plastic (NP)	Not applicable	Not applicable	Well Graded (WG)	Having good representation of all particle sizes from the largest to the smallest.
Low Plasticity (LP)	≤50	≤35	Poorly Graded (PG)	With one or more intermediate sizes poorly represented.
Medium Plasticity (IP)	Not applicable	35 and ≤50	Gap Graded (GG)	With one or more intermediate sizes absent.
High Plasticity (HP)	>50	>50	Uniform (UG)	Essentially of one size.

Notes
 * AS1726:2017
 ** AGS3.1 RTA























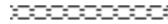
CLASSIFICATION SYMBOLS AND ROCK DESCRIPTION

<i>MOISTURE CONDITION*</i>	<i>ALTERATION*</i>								
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 20%;">Term</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>Dry (D)</td> <td>Looks and feels dry.</td> </tr> <tr> <td>Moist (M)</td> <td>Feels cool, darkened in colour, but no water is visible on the surface.</td> </tr> <tr> <td>Wet (M)</td> <td>Feels cool, darkened in colour, water film or droplets visible on the surface.</td> </tr> </tbody> </table>	Term	Description	Dry (D)	Looks and feels dry.	Moist (M)	Feels cool, darkened in colour, but no water is visible on the surface.	Wet (M)	Feels cool, darkened in colour, water film or droplets visible on the surface.	<p>XA - Extremely Altered HA - Highly Altered MA - Moderately Altered DA - Distinctly Altered SA - Slightly Altered</p>
Term	Description								
Dry (D)	Looks and feels dry.								
Moist (M)	Feels cool, darkened in colour, but no water is visible on the surface.								
Wet (M)	Feels cool, darkened in colour, water film or droplets visible on the surface.								

<i>STRENGTH*</i>	<i>WEATHERING**</i>																								
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;">Term</th> <th style="width: 35%;">Uniaxial Compressive Strength MPa</th> <th style="width: 35%;">Point load strength index $I_s(50)$ MPa</th> </tr> </thead> <tbody> <tr> <td>Extremely Low Strength (EL) **</td> <td style="text-align: center;">-</td> <td style="text-align: center;">-</td> </tr> <tr> <td>Very Low Strength (VL)</td> <td style="text-align: center;">0.6 to 2</td> <td style="text-align: center;">0.03 to 0.1</td> </tr> <tr> <td>Low Strength (L)</td> <td style="text-align: center;">2 to 6</td> <td style="text-align: center;">0.1 to 0.3</td> </tr> <tr> <td>Medium Strength (M)</td> <td style="text-align: center;">6 to 20</td> <td style="text-align: center;">0.3 to 1</td> </tr> <tr> <td>High Strength (H)</td> <td style="text-align: center;">20 to 60</td> <td style="text-align: center;">1 to 3</td> </tr> <tr> <td>Very High Strength (VH)</td> <td style="text-align: center;">60 to 200</td> <td style="text-align: center;">3 to 10</td> </tr> <tr> <td>Extremely High Strength (EH)</td> <td style="text-align: center;">more than 200</td> <td style="text-align: center;">more than 10</td> </tr> </tbody> </table>	Term	Uniaxial Compressive Strength MPa	Point load strength index $I_s(50)$ MPa	Extremely Low Strength (EL) **	-	-	Very Low Strength (VL)	0.6 to 2	0.03 to 0.1	Low Strength (L)	2 to 6	0.1 to 0.3	Medium Strength (M)	6 to 20	0.3 to 1	High Strength (H)	20 to 60	1 to 3	Very High Strength (VH)	60 to 200	3 to 10	Extremely High Strength (EH)	more than 200	more than 10	<p>RS - Residual Soil* EW - Extremely Weathered (XW *) HW - Highly Weathered MW - Moderately Weathered DW - Distinctly Weathered * SW - Slightly Weathered F - Fresh (FR *)</p>
Term	Uniaxial Compressive Strength MPa	Point load strength index $I_s(50)$ MPa																							
Extremely Low Strength (EL) **	-	-																							
Very Low Strength (VL)	0.6 to 2	0.03 to 0.1																							
Low Strength (L)	2 to 6	0.1 to 0.3																							
Medium Strength (M)	6 to 20	0.3 to 1																							
High Strength (H)	20 to 60	1 to 3																							
Very High Strength (VH)	60 to 200	3 to 10																							
Extremely High Strength (EH)	more than 200	more than 10																							

<i>TEXTURE*</i>	<i>FABRIC*</i>																		
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 15%;">Term</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>Bedding</td> <td>Layering produced by changes in sedimentation, which may be defined by grain size, colour, or other features.</td> </tr> <tr> <td>Lamination</td> <td>Similar to bedding but developed in layer thicknesses of less than 20 mm.</td> </tr> <tr> <td>Foliation</td> <td>The parallel arrangement of minerals due to metamorphic processes.</td> </tr> <tr> <td>Cleavage</td> <td>A type of foliation developed in fine grained metamorphic rocks such as slates.</td> </tr> <tr> <td>Flow Banding</td> <td>A layering produced during flow of a partially solidified igneous rock that causes crystals to become oriented. Sometimes called a trachytic fabric.</td> </tr> </tbody> </table>	Term	Description	Bedding	Layering produced by changes in sedimentation, which may be defined by grain size, colour, or other features.	Lamination	Similar to bedding but developed in layer thicknesses of less than 20 mm.	Foliation	The parallel arrangement of minerals due to metamorphic processes.	Cleavage	A type of foliation developed in fine grained metamorphic rocks such as slates.	Flow Banding	A layering produced during flow of a partially solidified igneous rock that causes crystals to become oriented. Sometimes called a trachytic fabric.	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 15%;">Term</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>Indistinct fabric</td> <td>There is little effect on strength properties.</td> </tr> <tr> <td>Distinct fabric</td> <td>The rock may break more easily parallel to the fabric.</td> </tr> </tbody> </table>	Term	Description	Indistinct fabric	There is little effect on strength properties.	Distinct fabric	The rock may break more easily parallel to the fabric.
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<i>BLOCK SHAPE*</i>	Description
Polyhedral blocks	Irregular discontinuities without arrangement into distinct sets, and of small persistence.
Tabular blocks	One dominant set of parallel discontinuities (1), for example bedding planes, with other noncontinuous joints; thickness of blocks much less than length or width.
Prismatic blocks	Two dominant sets of discontinuities (1 and 2), approximately orthogonal and parallel, with a third irregular set; thickness of blocks much less than length or width.
Equidimensional blocks	Three dominant sets of discontinuities (1, 2 and 3), approximately orthogonal, with occasional irregular joints, giving equidimensional blocks.
Rhomboidal blocks	Three (or more) dominant, mutually oblique, sets of joints (1, 2 and 3) giving oblique-shaped, equidimensional blocks.
Columnar blocks	Several, usually more than three sets of continuous, parallel joints (1, 2, 3, 4, 5) usually crossed by irregular joints; lengths much greater than other dimensions.

<i>DISCONTINUITY SYMBOLS</i>					
 BD - Bedding	 CS - Crushed Seam	 DK - Dyke	 FC - Fracture	 JT - Joint	 SZ - Shear Zone
 CL - Cleavage	 DZ - Decomposed Zone	 FL - Fault	 FZ - Fracture Zone	 SH - Schistosity	 SI - Sill
 CO - Contact	 DB - Drilling Break	 VN - Vein	 HB - Handling Break	 SM - Seam	 VO - Void
 CZ - Crush Zone	 DL - Drilling Lift	 FL - Foliation	 IS - Infilled Seam	 SS - Shear Seam	

Notes
 * AS1726:2017
 ** AGS3.1 RTA








DRILLING / EXCAVATION METHOD

AD/T - Auger Drilling with TC-bit
 AD/V - Auger Drilling with V-bit
 AS - Auger Screwing
 AT - Air Track
 B - Dozer Blade
 BH - Backhoe Bucket
 CT - Cable Tool
 DB - Washbore Drag Bit
 DT - Diatube















E - Excavator
 EH - Excavator with Hammer
 HA - Hand Auger
 HMLC - HMLC Core Barrel
 HQ3 - HQ3 Core Barrel
 MZ - Mazier
 N - Natural Exposure
 NMLC - NMLC Core Barrel
 NQ3 - NQ3 Core Barrel

PQ3 - PQ3 Core Barrel
 Pushed SPT - Pushed SPT
 PT - Push Tube
 R - Ripper
 RR - Rock Roller
 SPT - Driven SPT
 WB - Washbore
 X - Existing Excavation
















BACKFILL TYPES

 Bituminous Material (BITUBKFL)	 Sand (SANDBKFL)	 Cuttings (CUTTBKFL)
 Concrete (CONCBKFL)	 Bentonite (BENTBKFL)	 Gravel (GRAVBKFL)
		 Grout (GROUBKFL)

SAMPLES & TESTS **

 B - Bulk Disturbed Sample	 G - Gas Sample
 BLK - Block Sample	 LB - Large Bulk Disturbed Sample (earthworks testing)
 C - Core Sample (general)	 M - Mazier Type Sample
 CBR - CBR Mould Sample	 P - Piston Sample
 D - Small Disturbed Sample	 U - Undisturbed Sample - Open Drive
 ES - Soil Sample for Environmental Testing	 W - Water Sample
 EW - Water Sample for Environmental Testing	 SPT - Standard Penetration Test - No Liner

TEST TYPE **

 BH - Borehole	 INST - Instrument	 S - Shaft
 CPT - Core Penetration Test	 IRDX - In Situ Redox Test	 SRAL - Seismic Refraction Line
 DCP - Dynamic Cone Pentrometer	 IVAN - In Situ Vane Test	 TP - Trial Pit/ Trench
 EXP - Logged Exposure	 OP - Observation Pit/ Trench	 IDEN - In Situ Density Test
 ICBR - In Situ CBR Test	 PM - Pressuremeter Test Hole	 TRAV - Linear Logging, Traverse, or Scanline Survey

TOTAL CORE RECOVERY*

Total core recovery (TCR) is defined as:

$$TCR = \frac{\text{Length of core recovered}}{\text{Length of core run}} \times 100\%$$

PIEZOMETER TYPE

EPIE - Electronic Piezometer
 HPIE - Hydraulic Piezometer
 PPIE - Pneumatic Piezometer
 SPIE - Standpipe Piezometer

Notes

* AS1726:2017

** AGS3.1 RTA

DPIR TEST PIT LOGS

BORROW AREA A

DPIR **MAY 2019** INVESTIGATION



TEST PIT EXCAVATION LOG

HOLE NO.: DPIR-TP01

PROJECT : Rum Jungle

LOCATION : Clay Borrow Area

FILE / JOB NO.: 680.10421

DATE STARTED : 14/05/19

POSITION : E: 715528, N: 8557573 (52 AMG84)

SURFACE ELEVATION : 68.46m (AHD)

LOGGED BY : GF

DATE COMPLETED : 14/05/19

RIG TYPE : 30t Excavator with 800mm toothed bucket ANGLE FROM HORIZONTAL : 90°

CHECKED BY : BT

DATE LOGGED : 14/05/19

OPERATOR : Unknown

STABILITY : Stable

DRILLING				MATERIAL				OBSERVATION						
METHOD & BUCKET TYPE	PENETRATION	WATER	SAMPLES TESTS REMARKS	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY / RELATIVE DENSITY	DCP RESULTS	ORIGIN	STRUCTURE & Other Observations		
Excavator 800mm toothed bucket	VELOCITY	Groundwater Not Encountered	0.60m (D)	68	[SM]	SM	SM - silty SAND trace organic matter (root fibres less than 2mm diameter), fine to medium grained, brown.	M		5	10	15	20	
					[SC]	SC	SC - clayey SAND trace gravel, medium plasticity, fine to medium grained, orange brown; gravel, fine grained, rounded.							
				1	[CI]	CI	CI - sandy CLAY, medium plasticity, red brown; sand, fine to medium grained; increasing sand content with depth.	D					Laterite	
				2	[SC]	SC	SC - clayey SAND trace gravel, medium plasticity, fine to medium grained, red brown; gravel, fine grained, rounded.							
			2.80m (D)	65	[OH]	OH	OH - clayey sandy SILT, high plasticity, white mottled yellow orange; clay, high plasticity, sand, fine to medium grained.					Saprolite		
			4.40m (D)	64										
EOH: 5.00m - Machine Limit														

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See Symbology & Classification notes for details of abbreviations & basis of descriptions.



Rum Jungle



5 Foelsche Street, Darwin, NT 0800



TEST PIT EXCAVATION LOG

HOLE NO.: DPIP-TP02

PROJECT : Rum Jungle

LOCATION : Clay Borrow Area

FILE / JOB NO.: 680.10421

DATE STARTED : 14/05/19

POSITION : E: 715598, N: 8557875 (52 AMG84)

SURFACE ELEVATION : 73.84m (AHD)

LOGGED BY : GF

DATE COMPLETED : 14/05/19

RIG TYPE : 30t Excavator with 800mm toothed bucket ANGLE FROM HORIZONTAL : 90°

CHECKED BY : BT

DATE LOGGED : 14/05/19

OPERATOR : Unknown

STABILITY : Stable

DRILLING				MATERIAL					OBSERVATION			
METHOD & BUCKET TYPE	PENETRATION	WATER	SAMPLES TESTS REMARKS	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY / RELATIVE DENSITY	DCP RESULTS	ORIGIN	STRUCTURE & Other Observations
Excavator 800mm toothed bucket	Groundwater Not Encountered	0.40m (D)		73	[Brown soil pattern]	SP	SP - SAND with clay, medium plasticity, medium to coarse grained, brown.	D	5 10 15 20		Topsoil	
				72	[Brown soil pattern]	SC	SC - clayey SAND trace gravel, medium plasticity, fine to medium grained, orange brown.	M			Laterite	
				71	[Blue diagonal lines pattern]	CI	CI - sandy CLAY trace gravel, medium plasticity, orange brown and grey; gravel, fine to medium grained, angular, shale.	D			Saprolite	
				69	[Blue diagonal lines pattern]							
		4.60m (D)					4.5m - 5.0m: inclusions of cobbles; angular, sandstone					
							EOH: 5.00m - Machine Limit					

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See Symbology & Classification notes for details of abbreviations & basis of descriptions.



Rum Jungle



5 Foelsche Street, Darwin, NT 0800



TEST PIT EXCAVATION LOG

HOLE NO.: DPIR-TP04

PROJECT : Rum Jungle

LOCATION : Clay Borrow Area

FILE / JOB NO.: 680.10421

DATE STARTED : 14/05/19

POSITION : E: 715303, N: 8557887 (52 AMG84)

SURFACE ELEVATION : 70.88m (AHD)

LOGGED BY : GF

DATE COMPLETED : 14/05/19

RIG TYPE : 30t Excavator with 800mm toothed bucket

ANGLE FROM HORIZONTAL : 90°

CHECKED BY : BT

DATE LOGGED : 14/05/19

OPERATOR : Unknown

STABILITY : Stable

DRILLING				MATERIAL				OBSERVATION			
METHOD & BUCKET TYPE	PENETRATION	WATER	SAMPLES TESTS REMARKS	DEPTH (m)	GRAPHIC LOG CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION SOIL/ROCK TYPE; colour, grain characteristics, structure, minor components	MOISTURE CONDITION	CONSISTENCY / RELATIVE DENSITY	DCP RESULTS	ORIGIN	STRUCTURE & Other Observations
Excavator 800mm toothed bucket	VE WATER	Groundwater Not Encountered		70	SM	SM - silty SAND trace organic matter (root fibres less than 2mm diameter), fine to medium grained, brown.	M		5	Topsoil	
				1	SC	SC - clayey SAND, medium plasticity, medium to coarse grained, orange brown.			10		
				2	CH	CH - silty CLAY trace sand & gravel, high plasticity, orange brown with grey and yellow mottle; silt, high plasticity; sand, medium to coarse grained, gravel, fine grained, rounded.			15		
				3	CH				20		
				69							
				68						Laterite	
				67						Saprolite	
				66							

1.00m (D)

2.80m (D)

4.30m (D)

EOH: 5.00m - Machine Limit





TEST PIT EXCAVATION LOG

HOLE NO.: DPIR-TP05

PROJECT : Rum Jungle

LOCATION : Clay Borrow Area

FILE / JOB NO.: 680.10421

DATE STARTED : 14/05/19	POSITION : E: 715016, N: 8557894 (52 AMG84)	SURFACE ELEVATION : 70.05m (AHD)	LOGGED BY : GF
DATE COMPLETED : 14/05/19	RIG TYPE : 30t Excavation with 800mm toothed	ANGLE FROM HORIZONTAL : 90°	CHECKED BY : BT
DATE LOGGED : 14/05/19	OPERATOR : Unknown	STABILITY : Stable	

DRILLING				MATERIAL					OBSERVATION					
METHOD & BUCKET TYPE	PENETRATION	WATER	SAMPLES TESTS REMARKS	RL (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY / RELATIVE DENSITY	DCP RESULTS	ORIGIN	STRUCTURE & Other Observations	
Excavator 800mm toothed bucket	VE UNIT	Groundwater Not Encountered	0.80m (D)	70	0		SC	SP - SAND with silt trace organic matter (root fibres less than 2mm diameter), fine to medium grained, brown	D		5 10 15 20	Topsoil		
				69	1		SM	SM - silty gravelly SAND with clay trace organic matter (roots greater than 2mm diameter), fine to medium grained, red brown; silt, medium plasticity, gravel, fine to medium grained, sub-rounded to sub-angular.	M			Laterite		
				68	2									
				67	3		CI	CI - CLAY trace sand, medium plasticity, brown with mottled orange white; sand, coarse grained.						Saprolite
			3.00m (D)	66	4			CI - CLAY with sand, high plasticity, brown with orange white mottling; sand, fine to coarse grained.						
EOH: 5.00m - Machine Limit														





TEST PIT EXCAVATION LOG

HOLE NO.: DPIR-TP06

PROJECT : Rum Jungle

LOCATION : Clay Borrow

FILE / JOB NO.: 680.10421

DATE STARTED : 15/05/19

POSITION : E: 714834, N: 8557643 (52 AMG84)

SURFACE ELEVATION : 66m (AHD)

LOGGED BY : GF

DATE COMPLETED : 15/05/19

RIG TYPE : 30T Excavator with 800mm toothed

ANGLE FROM HORIZONTAL : 90°

CHECKED BY : BT

DATE LOGGED : 15/05/19

OPERATOR : Unknown

STABILITY : Stable

DRILLING				MATERIAL					OBSERVATION			
METHOD & BUCKET TYPE	PENETRATION	WATER	SAMPLES TESTS REMARKS	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY / RELATIVE DENSITY	DCP RESULTS	ORIGIN	STRUCTURE & Other Observations
Excavator 800mm toothed bucket	[Penetration Diagram]	[Water Level]	0.80m (D)	65	[SM Graphic]	SM	SM - silty SAND with organic matter (root fibres less than 2mm diameter), fine to medium grained, brown.	D	[Moisture/Consistency]	[DCP Results]	Topsoil	
				64	[CI Graphic]	CI	CI - sandy CLAY, medium plasticity, dark red; sand, fine to coarse grained.				Laterite	
				63	[SC Graphic]	SC	SC - clayey silty SAND trace gravel, medium to coarse grained, orange brown with white mottle; clay, high plasticity, silt, high plasticity; gravel, fine to medium grained, rounded.				Saprolite	
				62	[Bedrock Graphic]		Bedrock				Bedrock	
				EOH: 5.00m - Machine Limit								

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See Symbology & Classification notes for details of abbreviations & basis of descriptions.



Rum Jungle



5 Foelsche Street, Darwin, NT 0800

SLR TEST PIT LOGS

BORROW AREA A

SLR **JULY 2019** INVESTIGATION



NTP-01 Looking East



NTP-01 Looking South



NTP-01 Backfilled Looking South West



NTP-01 Eastern Pit Wall



Spoil Pile 0.00m to 1.50m



Spoil Pile 1.50m to 3.00m



Spoil Pile 3.00m to 4.50m



Spoil Pile 4.50m to 5.40m

File Location: \\AU.SLR.Local\Corporate\Projects\SLR\



TEST PIT EXCAVATION LOG

HOLE NO.: NTP-02

PROJECT : Rum Jungle

LOCATION : Clay and Growth Borrow

FILE / JOB NO.: 680.10421

DATE STARTED : 10/07/19

POSITION : E: 714765, N: 8557770 (52 AMG84)

SURFACE ELEVATION : 66.94m (AHD)

LOGGED BY : BT

DATE COMPLETED : 10/07/19

RIG TYPE : 20t Excavator

ANGLE FROM HORIZONTAL : 90°

CHECKED BY : FC

DATE LOGGED : 10/07/19

OPERATOR : C. McGregor

STABILITY : Stable

DRILLING				MATERIAL				OBSERVATION			
METHOD & BUCKET TYPE	PENETRATION	WATER	SAMPLES TESTS REMARKS	DEPTH (m)	GRAPHIC LOG CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION SOIL/ROCK TYPE; colour, grain characteristics, structure, minor components	MOISTURE CONDITION	CONSISTENCY / RELATIVE DENSITY	DCP RESULTS	ORIGIN	STRUCTURE & Other Observations
Excavator 600mm Toothed Bucket	Groundwater Not Encountered	0.80m (B)		66	SC	SC - clayey SAND, medium plasticity, fine to medium grained, dark red brown.	D	VD	5-15	Topsoil	
				1	CH	CH - sandy CLAY with silt, high plasticity, red brown; sand, fine to medium grained.	<<PL				
				2	CH		<PL				
				3			H				
				3.4m - 3.7m: MIXTURE OF SOIL AND COBBLES/BOULDERS (MATRIX SUPPORTED) - ; duricrust; Cobbles <150mm, sub-rounded to sub-angular, sanstone/breccia.	=PL						
63	MH	MH clayey SILT with sand trace gravel, high plasticity, yellow brown with green grey and grey mottling; sand, fine to medium grained; gravel, fine to medium grained, sub-angular to angular; friable.						Saprolite			
4	MH	4.3m - 4.9m: becoming yellow brown with dark grey inclusion, occasional highly weathered cobbles	=PL to <PL								
62				5		MIXTURE OF SOIL AND COBBLES/BOULDERS (MATRIX SUPPORTED) - MH - clayey sandy SILT, high plasticity, yellow brown and green grey; clay, high plasticity, sand, fine to medium grained; cobbles/boulders, rounded to sub-rounded, up to 200mm.	<PL				
EOH: 5.40m - Machine Limit											

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See Symbology & Classification notes for details of abbreviations & basis of descriptions.



Rum Jungle



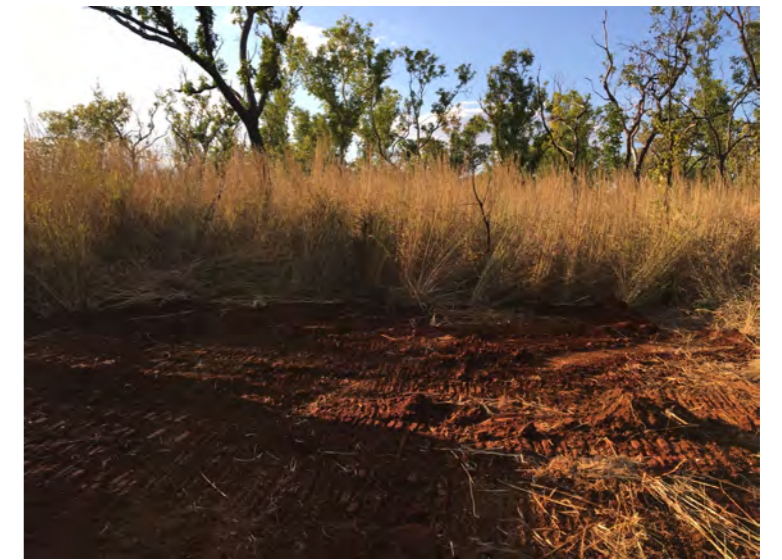
5 Foelsche Street, Darwin, NT 0800



NTP-02 Looking North East



NTP-02 Looking West



NTP-02 Backfilled Looking Northern



NTP-02 Northern Pit Wall



Spoil Pile 0.00m to 1.20m



Spoil Pile 1.20m to 2.50m



Spoil Pile 2.50m to 4.00m



Spoil Pile 4.00m to 5.40m

File Location: \\AU.SLR.Local\Corporate\Projects\SLR\



TEST PIT EXCAVATION LOG

HOLE NO.: NTP-05

PROJECT : Rum Jungle

LOCATION : Clay and Growth Borrow

FILE / JOB NO.: 680.10421

DATE STARTED : 10/07/19

POSITION : E: 715919, N: 8557889 (52 AMG84) SURFACE ELEVATION : 79.35m (AHD)

LOGGED BY : BT

DATE COMPLETED : 10/07/19

RIG TYPE : 20t Excavator

ANGLE FROM HORIZONTAL : 90°

CHECKED BY : FC

DATE LOGGED : 10/07/19

DRILLER : C. McGregor

STABILITY : Stable

DRILLING				MATERIAL					OBSERVATION			
METHOD & BUCKET TYPE	PENETRATION	WATER	SAMPLES TESTS REMARKS	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY / RELATIVE DENSITY	DCP RESULTS	ORIGIN	STRUCTURE & Other Observations
Excavator 600mm Toothed Bucket Groundwater Not Encountered			0.00m (ES)	79		SM	SM silty SAND trace organic matter (root fibres less than 2mm diameter) & gravel, fine to medium grained, dark grey; gravel, fine to medium grained, rounded.	D	MD	5	Topsoil	1.1m - 1.5m: PP @ 1.10m: 400kPa to >600 kPa
			0.30m (ES)			CI	CI - sandy CLAY, medium plasticity, orange brown; sand, fine and medium grained.	<PL	Vst	10		
			0.90m (B)	1			1.0m - 1.5m: Occasional cobbles; <90mm, extremely weathered, extremely low strength dolostone.	<PL	St	15		
			1.50m (ES)				GC clayey GRAVEL with sand, medium plasticity, poorly graded, fine to medium grained, sub-rounded to sub-angular, orange brown; sand, fine to coarse grained.		Vst	20		
			1.50m (B)				1.8m - 2.2m: Gravel becoming fine to coarse size.		H			
			1.50m (B)	77		GC	MIXTURE OF SOIL AND COBBLES/BOULDERS (MATRIX SUPPORTED) GC clayey GRAVEL with sand, medium plasticity, well graded, fine to coarse grained, sub-rounded to sub-angular, orange brown; sand, fine to coarse grained.	<PL to =PL	VD		Laterite	
			3.40m (ES)	76		CI-CH	CI-CH sandy CLAY, medium to high plasticity, greeny grey and dark yellow brown; sand, fine to medium grained.				Saprolite	
			3.50m (B)					<<PL	H			
			4.20m (B)	75		CH	CH CLAY with sand, high plasticity, dark blue and dark grey; sand, fine to medium grained; highly fissured and friable.	<<PL to =PL			Saprolite	4.2m - 5.0m: Moisture within fissures.
			4.20m (ES)				EOH: 5.00m - Machine Limit					

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See Symbology & Classification notes for details of abbreviations & basis of descriptions.



Rum Jungle



5 Foelsche Street, Darwin, NT 0800



NTP-05 Looking South West



NTP-05 Looking North



NTP-05 Backfilled Looking North East



NTP-05 Eastern Pit Wall



Spoil Pile 0.00m to 1.50m



Spoil Pile 1.50m to 2.50m



Spoil Pile 2.50m to 3.50m



Spoil Pile 3.50m to 5.00m

File Location: \\AU.SLR.Local\Corporate\Projects\SLR\



TEST PIT EXCAVATION LOG

HOLE NO.: NTP-06

PROJECT : Rum Jungle

LOCATION : Clay and Growth Borrow

FILE / JOB NO.: 680.10421

DATE STARTED : 09/07/19

POSITION : E: 716215, N: 8557813 (52 AMG84)

SURFACE ELEVATION : 83.37m (AHD)

LOGGED BY : BT

DATE COMPLETED : 09/07/19

RIG TYPE : 20t Excavator

ANGLE FROM HORIZONTAL : 90°

CHECKED BY : FC

DATE LOGGED : 09/07/19

OPERATOR : C. McGregor

STABILITY : Stable

DRILLING				MATERIAL					OBSERVATION			
METHOD & BUCKET TYPE	PENETRATION	WATER	SAMPLES TESTS REMARKS	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY / RELATIVE DENSITY	DCP RESULTS	ORIGIN	STRUCTURE & Other Observations
Excavator 600mm Toothed Bucket	Groundwater Not Encountered			83		GC	GC clayey GRAVEL, low plasticity, poorly graded, fine to medium grained, sub-rounded to sub-angular, dark red brown.	D	D	5	Topsoil	
				0.30m (D)		GW	MIXTURE OF SOIL AND COBBLES/BOULDERS (MATRIX SUPPORTED) - GW - clayey GRAVEL; fine to coarse, well graded, red brown; gravel, rounded to sub-angular; clay; low to medium plasticity; cobbles <150mm rounded to surrounded cobbles.	D to M	10			
				0.90m (D)		GC	GC clayey GRAVEL, medium plasticity, well graded, fine to coarse grained, red brown.	M	15			
				1.80m (B)		GC	GC - clayey GRAVEL with sand, low to medium plasticity, well graded, fine to coarse grained, red brown; sand, fine to medium grained; <150mm cobbles, rounded to subrounded.		20	Laterite		
				3		SC	SC clayey SAND with gravel, low plasticity, fine to coarse grained, red brown; gravel, fine to medium grained, rounded to sub-rounded.	<PL	H			
3.40m (D)		CI	CI sandy CLAY with gravel, medium plasticity, red brown; sand, fine to coarse grained; gravel, fine to medium grained, sub-rounded to sub-angular.									
4		MH	MH - CLAY & SILT trace sand & gravel, high plasticity, high plasticity, dark grey and blue grey; sand, fine to medium grained, gravel, fine grained, rounded to sub-rounded.	EOH: 4.60m - Machine Limit			Saprolite					
4.20m (D)												

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See Symbology & Classification notes for details of abbreviations & basis of descriptions.



Rum Jungle



5 Foelsche Street, Darwin, NT 0800



NTP-06 Looking East



NTP-06 Looking South



NTP-06 Backfilled Looking South West



NTP-06 Eastern Pit Wall



Spoil Pile 0.00m to 1.50m



Spoil Pile 2.00m to 3.00m



Spoil Pile 3.00m to 4.00m



Spoil Pile 4.00m to 4.50m

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TEST PIT EXCAVATION LOG

HOLE NO.: NTP-07

PROJECT : Rum Jungle

LOCATION : Clay and Growth Borrow

FILE / JOB NO.: 680.10421

DATE STARTED : 09/07/19	POSITION : E: 716096, N: 8557629 (52 AMG84)	SURFACE ELEVATION : 77.93m (AHD)	LOGGED BY : BT
DATE COMPLETED : 09/07/19	RIG TYPE : 20t Excavator	ANGLE FROM HORIZONTAL : 90°	CHECKED BY : FC
DATE LOGGED : 09/07/19	OPERATOR : C. McGregor	STABILITY : Stable	

DRILLING				MATERIAL				OBSERVATION			
METHOD & BUCKET TYPE	PENETRATION	WATER	SAMPLES TESTS REMARKS	DEPTH (m)	GRAPHIC LOG CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION SOIL/ROCK TYPE; colour, grain characteristics, structure, minor components	MOISTURE CONDITION	CONSISTENCY / RELATIVE DENSITY	DCP RESULTS	ORIGIN	STRUCTURE & Other Observations
Excavator 600mm Toothed Bucket	Groundwater Not Encountered		0.10m (ES)	77	SM	SM - silty SAND, fine to medium grained, dark grey and grey.	D	D	5	Topsoil	
			0.70m (D)		GW	GW - clayey sandy GRAVEL, medium plasticity, well graded, fine to medium grained, yellow brown; clay, fine to coarse grained.	D to M	D - VD	10		
			0.80m (ES)		GC	GC - clayey GRAVEL with sand, medium plasticity, gap graded, fine to medium grained, yellow brown; sand, fine to coarse grained.		VD	15		
			1.10m (LB)		CI	CI - gravelly CLAY, medium plasticity, yellow brown and orange brown; gravel, fine to medium grained, rounded to sub-rounded.			20		
Excavator 600mm Toothed Bucket	Groundwater Not Encountered		1.7m - 2.0m: Sand becoming fine to coarse grained.	76	SC	SC - clayey silty SAND with gravel, fine to medium grained, yellow brown and red brown; clay, low plasticity, silt, low plasticity; gravel, fine to medium grained.	=PL to <PL	H		Laterite	
			2.2m - 2.4m: 2mm to 10mm diameter solution voids throughout soil matrix.								
			2.4m - 3.4m: Becoming dark red brown with dark yellow brown and grey mottle.								
Excavator 600mm Toothed Bucket	Groundwater Not Encountered		2.80m (ES) 2.90m (B)	75	MH	MH - clayey SILT, high plasticity, grey and blue; clay, high plasticity.				Saprolite	
			3.70m (B) 3.80m (ES)								
						EOH: 4.40m - Machine Limit					

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See Symbology & Classification notes for details of abbreviations & basis of descriptions.



Rum Jungle



5 Foelsche Street, Darwin, NT 0800



NTP-07 Looking South



NTP-07 Looking South East



NTP-07 Backfilled Looking North



NTP-07 Eastern Pit Wall



Spoil Pile 0.00m to 1.00m



Spoil Pile 1.00m to 2.00m



Spoil Pile 2.00m to 3.00m



Spoil Pile 3.00m to 4.40m

File Location: \\AU.SLR.Local\Corporate\Projects\SLR\



TEST PIT EXCAVATION LOG

HOLE NO.: NTP-08

PROJECT : Rum Jungle

LOCATION : Clay and Growth Borrow

FILE / JOB NO.: 680.10421

DATE STARTED : 10/07/19

POSITION : E: 715944, N: 8557719 (52 AMG84)

SURFACE ELEVATION : 76.39m (AHD)

LOGGED BY : BT

DATE COMPLETED : 10/07/19

RIG TYPE : 20t Excavator

ANGLE FROM HORIZONTAL : 90°

CHECKED BY : FC

DATE LOGGED : 10/07/19

DRILLER : C. McGregor

STABILITY : Stable

DRILLING				MATERIAL					OBSERVATION				
METHOD & BUCKET TYPE	PENETRATION	WATER	SAMPLES TESTS REMARKS	RL (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY / RELATIVE DENSITY	DCP RESULTS	ORIGIN	STRUCTURE & Other Observations
Excavator 600mm Toothed Bucket	Groundwater Not Encountered			76	0.40m (B)		GM	GM - silty sandy GRAVEL, well graded, fine to medium grained, grey and brown; silt, fine to coarse grained.	D	MD	5	Topsoil	
								GC - clayey GRAVEL with sand, medium plasticity, fine to medium grained, orange brown and red brown; sand, fine to coarse grained.	D - M	MD - D	10		
								GC clayey GRAVEL trace silt, medium plasticity, fine to coarse grained, sub-rounded to sub-angular, dark red brown; Cobbles; <100mm, sub-rounded to sub-angular, extremely weathered, extremely low strength, sandstone			15		
								GC clayey sandy GRAVEL, medium plasticity, fine to coarse grained, sub-rounded to sub-angular, orange brown; sand, fine to coarse grained.	M	D	20		
								MIXTURE OF SOIL AND COBBLES/BOULDERS (MATRIX SUPPORTED) GC clayey GRAVEL, medium plasticity, well graded, fine to coarse grained, purple and red brown; Cobbles; <200mm, sub-rounded to sub-angular, sandstone.					
				75	1.50m (B)		GC				Laterite		
				74	1.90m (D)								
				73	3.10m (B)		CH	CH silty CLAY trace sand, high plasticity, greeny grey, grey and pale grey; sand, fine to medium grained.	<PL	H		Saprolite	
				73	3.40m (ES)			3.3m - 4.1m: Soil becoming light grey and blue. Rock structure evident. White quartz crystallization throughout. Tending to extremely low strength, extremely weathered dolostone.					
								EOH: 4.10m - Refusal					

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See Symbology & Classification notes for details of abbreviations & basis of descriptions.



Rum Jungle



5 Foelsche Street, Darwin, NT 0800



NTP-08 Looking East



NTP-08 Looking South



NTP-08 Backfilled Looking South West



NTP-08 Eastern Pit Wall



Spoil Pile 0.00m to 1.00m



Spoil Pile 1.00m to 2.00m



Spoil Pile 2.00m to 3.00m



Spoil Pile 3.00m to 4.10m

File Location: \\AU.SLR.Local\Corporate\Projects\SLR\

SLR TEST PIT LOGS

BORROW AREA B

SLR **JULY 2019** INVESTIGATION



TEST PIT EXCAVATION LOG

HOLE NO.: STP-01

PROJECT : Rum Jungle Rehabilitation

LOCATION : Granular & Growth Borrow

FILE / JOB NO.: 680.10421

DATE STARTED : 12/07/19

POSITION : E: 717521, N: 8561240 (52 AMG84)

SURFACE ELEVATION : 80.82m (AHD)

LOGGED BY : BT

DATE COMPLETED : 12/07/19

RIG TYPE : 20t Excavator

ANGLE FROM HORIZONTAL : 90°

CHECKED BY : FC

DATE LOGGED : 12/07/19

DRILLER : C. McGregor

STABILITY : Stable

DRILLING				MATERIAL					OBSERVATION		
METHOD & BUCKET TYPE	PENETRATION	WATER	SAMPLES TESTS REMARKS	DEPTH (m)	GRAPHIC LOG CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY / RELATIVE DENSITY	DCP RESULTS	ORIGIN	STRUCTURE & Other Observations
Excavator 600mm Toothed Bucket	Groundwater Not Encountered			80.82	SW	SW - gravelly SAND trace organic matter (root fibres less than 2mm diameter), fine to coarse grained, well graded, grey; gravel, fine grained, sub-angular.	D	L - MD	5	Topsoil	
				80.52	SW	SW - gravelly SAND, fine to coarse grained, quartz, well graded, orange brown; gravel, fine grained, sub-rounded to sub-angular.		MD - D	10		
				80.22	SC	SC - clayey gravelly SAND, fine to coarse grained, orange brown and yellow brown; clay, low plasticity, gravel, fine to medium grained, sub-angular.			15		
				79.92	SC	2.5m - 4.3m: Increase in cementation strength, recovered as cobble-sized pieces <250 mm.	M	D - VD	20		
				77.00		EOH: 4.30m - Refusal					

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See Symbology & Classification notes for details of abbreviations & basis of descriptions.



Rum Jungle



5 Foelsche Street, Darwin, NT 0800



STP-01 Looking East



STP-01 Looking North



STP-01 Backfilled Looking South West



STP-01 Eastern Pit Wall



Spoil Pile 0.00m to 1.00m



Spoil Pile 1.00m to 2.00m



Spoil Pile 2.00m to 3.00m



Spoil Pile 3.00m to 4.30m

File Location: \\AU.SLR.Local\Corporate\Projects\SLR\



TEST PIT EXCAVATION LOG

HOLE NO.: STP-02

PROJECT : Rum Jungle Rehabilitation

LOCATION : Granular & Growth Borrow

FILE / JOB NO.: 680.10421

DATE STARTED : 12/07/19

POSITION : E: 717776, N: 8561484 (52 AMG84) SURFACE ELEVATION : 79.9m (AHD)

LOGGED BY : BT

DATE COMPLETED : 12/07/19

RIG TYPE : 20t Excavator

ANGLE FROM HORIZONTAL : 90°

CHECKED BY : FC

DATE LOGGED : 12/07/19

DRILLER : C. McGregor

STABILITY : Stable

DRILLING				MATERIAL					OBSERVATION			
METHOD & BUCKET TYPE	PENETRATION	WATER	SAMPLES TESTS REMARKS	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY / RELATIVE DENSITY	DCP RESULTS	ORIGIN	STRUCTURE & Other Observations
Excavator 600mm Toothed Bucket	[Penetration Diagram]	Groundwater Not Encountered	0.30m (B)	79	[SW Graphic]	SW	SW gravelly SAND trace organic matter (root fibres less than 2mm diameter) & silt, well graded, fine to coarse grained, dark grey; gravel, fine to medium grained, sub-rounded to sub-angular.	D	MD - D	5	Topsoil	
				78	[SC Graphic]	SC	SC clayey gravelly SAND, medium plasticity, well graded, fine to coarse grained, yellow brown, orange brown, red brown; gravel, fine to medium grained, sub-rounded to sub-angular.	M	D - VD	10		
			1.40m (B)	78	[EOH Graphic]		EOH: 2.00m - Refusal		VD	15	Residual Soil	
				77								
				76								
				75								

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See Symbology & Classification notes for details of abbreviations & basis of descriptions.



Rum Jungle



5 Foelsche Street, Darwin, NT 0800



STP-02 Looking South



STP-02 Looking East



STP-02 Backfilled Looking West



STP-02 Northern Pit Wall



Spoil Pile 0.00m to 0.75m



Spoil Pile 0.75m to 1.50m



Spoil Pile 1.50m to 2.00m

File Location: \\AU.SLR.Local\Corporate\Projects\SLR\



TEST PIT EXCAVATION LOG

HOLE NO.: STP-03

PROJECT : Rum Jungle Rehabilitation

LOCATION : Granular & Growth Borrow

FILE / JOB NO.: 680.10421

DATE STARTED : 12/07/19

POSITION : E: 718060, N: 8561756 (52 AMG84)

SURFACE ELEVATION : 76.28m (AHD)

LOGGED BY : BT

DATE COMPLETED : 12/07/19

RIG TYPE : 20t Excavator

ANGLE FROM HORIZONTAL : 90°

CHECKED BY : FC

DATE LOGGED : 12/07/19

DRILLER : C. McGregor

STABILITY : Stable

DRILLING				MATERIAL				OBSERVATION					
METHOD & BUCKET TYPE	PENETRATION	WATER	SAMPLES TESTS REMARKS	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY / RELATIVE DENSITY	DCP RESULTS	ORIGIN	STRUCTURE & Other Observations	
Excavator 600mm Toothed Bucket	Groundwater Not Encountered		0.00m (ES)	76		SW	SW - gravelly SAND, well graded, fine to coarse grained, grey and dark grey; gravel, fine to medium grained, sub-rounded to sub-angular.	D	D	5, 10, 15, 20	Topsoil		
			0.01m (ES)										
			0.20m (B)										
			0.40m (ES)			GW	GW - sandy GRAVEL, well graded, fine to medium grained, rounded to sub-angular, yellow brown; sand, fine to coarse grained.						
			0.90m (ES)	1		SC	SC - gravelly SAND, well graded, fine to coarse grained, orange brown and yellow brown; gravel, fine to medium grained.	M	MD - VD		Residual Soil		
		1.00m (B)											
			2.20m (B)	2			1.8m - 2.2m: Becoming pale grey and yellow brown, structure evident, trending towards extremely weathered, extremely low strength granite. Gravel throughout, fine to medium grain, angular to sub-angular.						
				3			2.2m - 3.3m: Increase in clay content. Recovered as pale red brown, yellow brown and pale gray.						
				EOH: 3.30m - Refusal									

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See Symbology & Classification notes for details of abbreviations & basis of descriptions.



Rum Jungle



5 Foelsche Street, Darwin, NT 0800



STP-03 Looking South West



STP-03 Looking North East



STP-03 Backfilled Looking North East



STP-03 Western Pit Wall



Spoil Pile 0.00m to 0.80m



Spoil Pile 0.80m to 1.60m



Spoil Pile 1.60m to 2.40m



Spoil Pile 2.40m to 3.30m

File Location: \\AU.SLR.Local\Corporate\Projects\SLR\



TEST PIT EXCAVATION LOG

HOLE NO.: STP-04

PROJECT : Rum Jungle Rehabilitation

LOCATION : Granular & Growth Borrow

FILE / JOB NO.: 680.10421

DATE STARTED : 11/07/19

POSITION : E: 717935, N: 8560353 (52 AMG84) SURFACE ELEVATION : 88m (AHD)

LOGGED BY : BT

DATE COMPLETED : 11/07/19

RIG TYPE : 20t Excavator

ANGLE FROM HORIZONTAL : 90°

CHECKED BY : FC

DATE LOGGED : 11/07/19

DRILLER : C. McGregor

STABILITY : Stable

DRILLING				MATERIAL				OBSERVATION					
METHOD & BUCKET TYPE	PENETRATION	WATER	SAMPLES TESTS REMARKS	RL (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY / RELATIVE DENSITY	DCP RESULTS	ORIGIN	STRUCTURE & Other Observations
Excavator	600mm Toothed Bucket	Groundwater Not Encountered	0.30m (B)	87	1		SP GW GP	SP - SAND with silt, poorly graded, fine to coarse grained, grey and pale grey. GW - sandy GRAVEL with silt, well graded, fine to medium grained, grey; sand, fine to coarse grained. MIXTURE OF SOIL AND COBBLES/BOULDERS (MATRIX SUPPORTED) - GW - sandy GRAVEL, fine to coarse grained, sub-rounded to sub-angular, well graded, grey; sand, fine to coarse grained; cobbles/boulders; <100mm, sub-angular to angular, granite. GRANITE, red brown and pale grey, Extremely Low Strength, Extremely Weathered. EOH: 1.00m - Refusal	D	5, 10, 15, 20	5, 10, 15, 20	Topsoil Residual Soil Extremely Weathered Bedrock	
				86	2								
				85	3								
				84	4								

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See Symbology & Classification notes for details of abbreviations & basis of descriptions.



Rum Jungle



5 Foelsche Street, Darwin, NT 0800



STP-04 Looking North East



STP-04 Looking South East



STP-04 Backfilled Looking South West



STP-04 Eastern Pit Wall



Spoil Pile 0.00m to 0.50m



Spoil Pile 0.50m to 1.00m

File Location: \\AU.SLR.Local\Corporate\Projects\SLR\



TEST PIT EXCAVATION LOG

HOLE NO.: STP-05

PROJECT : Rum Jungle Rehabilitation

LOCATION : Granular & Growth Borrow

FILE / JOB NO.: 680.10421

DATE STARTED : 11/07/19

POSITION : E: 718642, N: 8561314 (52 AMG84)

SURFACE ELEVATION : 76.93m (AHD)

LOGGED BY : BT

DATE COMPLETED : 11/07/19

RIG TYPE : 20t Excavator

ANGLE FROM HORIZONTAL : 90°

CHECKED BY : FC

DATE LOGGED : 11/07/19

DRILLER : C. McGregor

STABILITY : Stable

DRILLING				MATERIAL					OBSERVATION			
METHOD & BUCKET TYPE	PENETRATION	WATER	SAMPLES TESTS REMARKS	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY / RELATIVE DENSITY	DCP RESULTS	ORIGIN	STRUCTURE & Other Observations
Excavator 600mm Toothed Bucket	Groundwater Not Encountered		0.00m (ES)	76		SM	SM - silty gravelly SAND, fine to medium grained, dark grey; gravel, fine to medium grained, sub-rounded to sub-angular.	D		5 10 15 20	Residual Soil	2.0m: Spoil recovered as gravelly cobbles
			0.01m (ES)				SC clayey SAND with gravel, medium plasticity, fine to coarse grained, pale yellow brown; gravel, fine to medium grained, sub-angular.	D - M				
			0.50m (ES)			SC	SC clayey SAND with gravel, medium plasticity, fine to coarse grained, dark orange brown and yellow brown; gravel, fine to medium grained, sub-angular to angular.	M				
							0.60m (B)	GRANITE recovered as GW - sandy GRAVEL, fine to coarse grained, well graded, pale green grey and pale grey; sand, fine to coarse grained, quartz; tending towards an extremely weathered, extremely low strength granite.				
			1.80m (B)			GW	GRANITE, fine to coarse grained, pale green grey and pale grey, Extremely Low Strength, Extremely Weathered.	D - M				
			EOH: 2.30m - Refusal									
				74								
				73								
				72								

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See Symbology & Classification notes for details of abbreviations & basis of descriptions.



Rum Jungle



5 Foelsche Street, Darwin, NT 0800