

Alistair MacDonald

From: David Swisher [dswisher@tamerlaneventures.com]
Sent: July 24, 2007 1:59 PM
To: Alistair MacDonald
Cc: David Swisher
Subject: Drill Log Undertaking

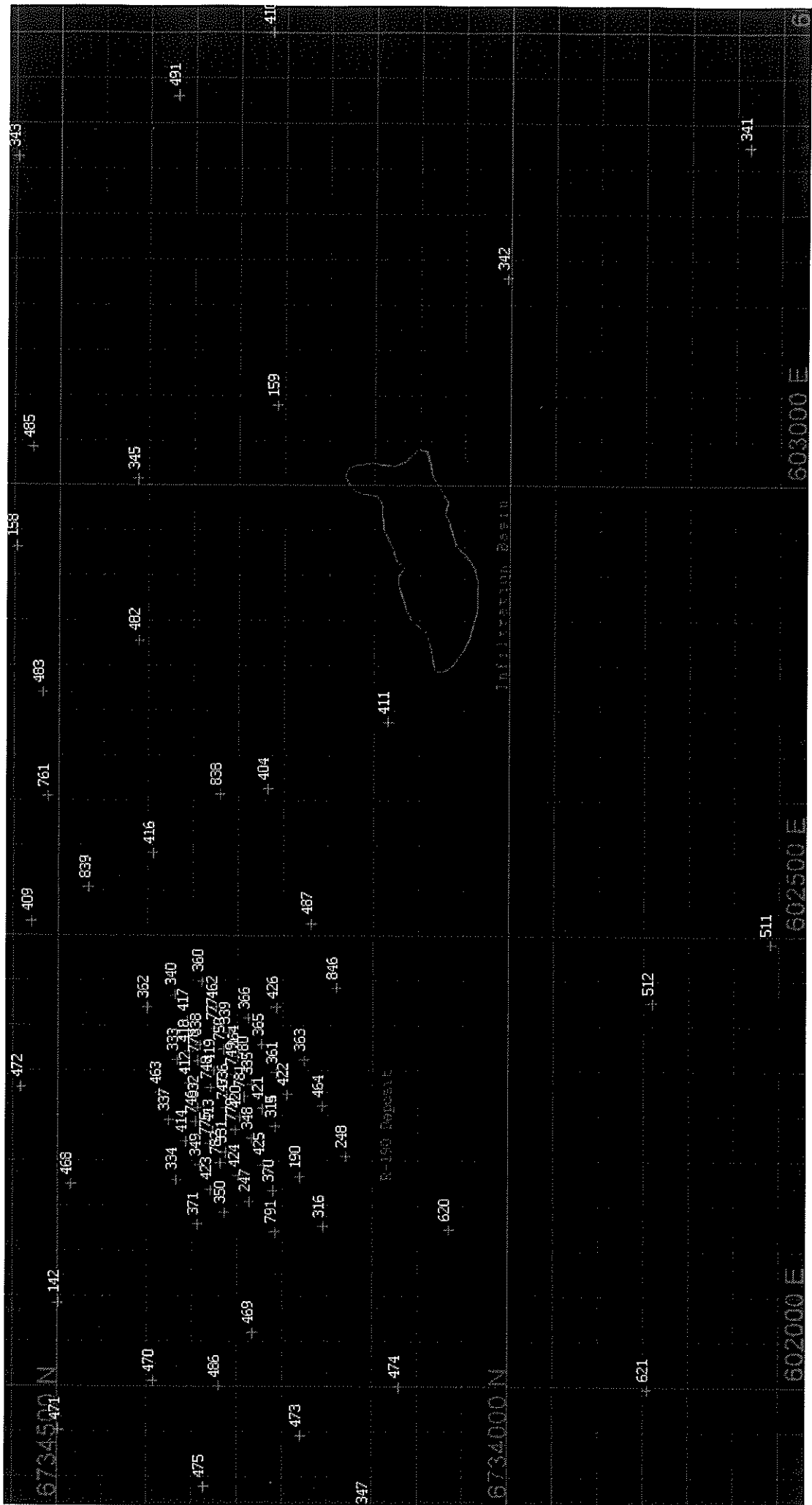
Al,

Please see the attached drill logs for holes near the infiltration basin and some near the R190 deposit. This was designed to show consistency in the overburden depths between the two.

Thanks,

David Swisher

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GREAT SLAVE REEF - WEST REEF PROJECT

ORIGINAL

ORILL LOG SUMMARY

START: March 18, 1977 LOCATION: S-Line LOGGED BY: P T M

COMPLETE: March 20, 1977 O.B. DEPTH: 171 TOTAL DEPTH: 617 HOLE No. 159

HAY RIVER SHALE	SLAVE POINT			WATT MTN.	PINE POINT							KEG RIVER		
	TIDAL FLAT	SHALLOW PLAT - FORM	MARINE		AMCO SHALE	OTHER	PRES - QUILE	C	H	I	C HORIZON		D	E
171-182		182-204	311-357	357-364		396-612		396-453	453-536	536-546	546-596		612-617	
	204-258	258-262	364-376											
	262-272	272-300												
	300-311													

ASSAYS				GEOCHEM				GEOCHEM				
SAMPLE No.	INTERVAL	ESTIMATE Pb/Zn/Fe	Pb Zn Fe	SAMPLE No.	INTERVAL	Pb Zn Fe	Pb Zn Fe	SAMPLE No.	INTERVAL	Pb Zn Fe	Pb Zn Fe	
				821	171-182				-480			
					-200				-500			
					-220				-520			
					-240				-540			
					-260				-560			
					-280				-580			
					-300				-600			
					-320				-612			
					-340			845	-617			
					-358							
					-364							
					-376							
					-394							
					-420							
					-440							
					-460							

WESTERN MINES DIAMOND DRILL RECORD

Project..... GSR S-Line Elev. Collart..... Brg..... Dpt..... Logged By:..... PTM
 Start: March 18, 1977 Complete: March 20, 1977 DDH No.:..... 159 Total Depth:..... 617

Footage From To	Core Rec.	Description	Sample No.	Sample Length	Assay Results	
					Cu.	
0 171		OVERBURDEN				
171 182	90	HAY RIVER SHALE - limestone; greenish-grey; fissile; thick-shelled brachiopods; disseminated marcasite;				
182 291	85	SLAVE POINT FORMATION - Limestone				
		182-204 - Shallow Platform - blotchy; dirty brown and grey; amphipora, stromatoporids and few brachs; carbonaceous partings; cavity at 204; fractured to broken R = 60%				
		204-258 - Mainly Tidal Flat - micritic sand; brown-grey; fractured to broken; carbonaceous partings; some amphipora beds; some disseminated oil and bitumen; R = 80%;				
		258-262 - Shallow Platform - sandy micrite; grey and maroon; porous to vuggy; disseminated oil and bitumen; abundant stromatoporids and amphipora;				
		262-272 - Tidal Flat - micrite and sandy micrite; grey and cream-brown lamination; fractured 269 to 272;				

WESTERN MINES

DIAMOND DRILL RECORD

Project: Start: Complete: Logged By: Total Depth:
 Location: Elev. Collt.: Brg.: Dip:
 Core Rec. No.:

Footage From To	Core Rec.	Description	Sample No.	Sample Length	Assay Results	
					Cu.	
		SLAVE POINT - Limestone (cont'd)				
		272-281 - sandy micrite to micritic sand; brown;				
		281-285 - Shallow Platform - micritic sand; I.F. breccia and fossiliferous (thin-shelled brachs, few stroms, and amhipora); oil stain;				
		285-291 - sandy micrite and micritic sand; grey-brown;				
291	296	" - Dolomite - fine crystalline; dark grey to grey due to disseminated oil and bitumen; highly porous; calcite filling few vugs;				
296		" - Limestone				
		296-300 - micritic sand; brown and grey; roughly laminated; thin- shelled brachs and amhipora;				
		300-305 - Tidal Flat - micrite; varved cream and grey (darker to depth);				
		305-311 - sandy micrite; dark brown-grey; shaly 307 to 308; fractured to broken; vuggy sections;				

WESTERN MINES DIAMOND DRILL RECORD

Project: Start: Complete: Logged By: Total Depth:
 Location: Elev. Collert. Brgt. Dip:
 Core Rec.

Footage From To	Core Rec.	Description	Sample No.	Sample Length	Assay Results	
					Cu.	
311 357	90	SLAVE POINT - Dolomite				
		311-330 - Marine - sandy micrite to fine crystalline; shaly and slightly argillaceous; shaly green to dark brown-grey;				
		abundant disseminated oil and bitumen; porous with vuggy sections; limy sections; minor sulphur; cloudy grey wisps at 329 containing fine disseminated marcasite;				
		330-357 - Marine - fine crystalline; grey to brown; porous with disseminated oil and bitumen; relict fossils sporadically throughout;				
357 364	95	" - Amco Shale - dolomite; greenish-grey; sandy micrite; carbonaceous partings;				
364 365	95	" - Amco Marine - stroms, oil stain;				
365 376	90	" - Dolomite - sandy micrite to fine crystalline; grey to dark grey; porous; disseminated oil and bitumen; shaly sections; few stroms and amphipora;				

WESTERN MINES DIAMOND DRILL RECORD

DDH No. 159

Project: Start: Complete: Logged By: Total Depth:

Location: Elev. Collar: Brg:

Footage From To	Core Rec.	Description	Sample No.	Sample Length	Assay Results	
					Cu.	
376 396	85	WATT MOUNTAIN FORMATION - dolomite; ?brown marker bed 376 to 377 (buff sandy micrite, cloudy wisps); fine crystalline to granular medium crystalline; grey with green watt mud; 394 to 396 presquillized watt; fractured sections;				
396 442	50	PINE POINT FORMATION - Presquille (Gastropod Facies) - coarse crystalline; grey, dark grey and spary white dolomite; minor spary blue-grey dolomite; abundant green relict gastropods; vuggy; fractured to broken;				
442 453	75	" - Presquille (Gastropod Facies) - coarse crystalline; grey with spary white and blue-grey dolomite; porous and vuggy; some bitumen and oil stain; fractured sections;				
453 507	85	" - Presquille (Amphipora Facies) - coarse crystalline; sections of light buff, light grey, buff and grey; spary white dolomite and some blue-grey; mottling, zebra texture; vuggy with porous sections; some oil and bitumen; fractured sections; leached gypsum needles 465 to 472; fine crystalline marcasite filling vug at 461 and fracture at 488;				

WESTERN MINES DIAMOND DRILL RECORD

DDH No. 159

Project: Start: Complete: Logged By:

Location: Elev. Collar: Brg.: Dip: Total Depth:

Footage From To	Core Rec.	Description	Sample No.	Sample Length	Assay Results	
					Cu.	
507 533	85	PINE POINT (cont'd) - Presquile (Amphipora Facies) - medium to coarse crystalline;				
		bleached buff to buff and grey due to bitumen filling porous				
		sections; well mottled; dense to highly vuggy; fine crystalline				
		marcasite lining fracture at 528;				
533 534	80	" - C-Horizon - micritic sand; dense; buff-grey; cloudy wisps;				
534 536	80	" - Presquile (Amphipora Facies) - medium crystalline; buff and grey;				
		few vugs;				
536 546	70	" - C-Horizon - fine, dense; light buff-grey; few cloudy wisps containing				
		disseminated marcasite; some bitumen lining few small vugs;				
546 596	60	" - Presquile (D-Facies) medium to coarse crystalline; bleached buff and				
		light grey; mottling; abundant stromatoporids; some amphipora;				
		broken sections; vuggy; minor fine crystalline marcasite filling				
		vug at 566;				

WESTERN MINES DIAMOND DRILL RECORD

Project: 6SR Start: Jan. 13, 1979. Complete: Jan. 16, 1979. DDH No.: 334

Location: 200' N of 331 (R-190) Elev. Collar: Brg.: Dip: MRR Logged By: Total Depth: 571

Footage From To	Core Rec.	Description	Sample No.	Sample Length	Assay Results	
					Cu.	
0 100		OVERBURDEN				
100 165	95	HAY RIVER SHALE: grey limestone; fissile; muddy; laminated; many scattered brachs; finely disseminated marcasite.				
165 266		SLAVE POINT FORMATION - Limestone				
		165-186 Shallow Platform: blotchy; grey, brown and grey-brown; sandy micrite to micritic sand; stylolites; argillaceous partings; massive stroms, corals, amphipora, brachs; some laminated sections; slightly fractured; sandy sections; some soft sediment textures; few scattered vugs lined with calcite;				
	90-95	186-266 Mixed Tidal Flat and Shallow Platform: laminated tidal flat alternating with blotchy, fossiliferous shallow platform; fractured;				
		- 199-202, 211, 216-218, 227-231, 232-236, 256: sections with abundant stroms, amphipora, corals; some vugs and pores with bitumen and calcite; sandy micrite to micritic sand; grey and brown blotchy;				
		- other sections micrite to micritic sand; grey brown; laminated;				

WESTERN MINES DIAMOND DRILL RECORD

DDH No. 334

Project: Start: Complete: Logged By: Dip: Core Rec. Description Sample No. Sample Length Assay Results

Location: Elev. Collar: Brg: Total Depth: 571

Footage From To	Core Rec.	Description	Sample No.	Sample Length	Assay Results	
					Cu.	
		stylolytes; occasional amphiopora beds; soft sediment and clastic textures; thin fractures with calcite; some argillaceous partings; few vugs with calcite; some I.F. breccia; porous sections choked with calcite and bitumen; few mud seams;				
266 290		SLAVE POINT FORMATION: mixed limestone and dolomite				
		266-290 Mixed Tidal Flat to Marine:				
266 281 90-95		- 266-275: grey; abundant fossil fragments: brachs, stroms; leached,				
281 290 70-80		porous; pores filled with sulfur, bitumen, calcite/dolomite; 269-272: dolomite and limy dolomite; rest limestone; I.F. breccia and clastic textures;				
		- laminated sections: brown, brown-grey, grey, black; porous; disseminated bitumen; fractured to broken: small vugs with calcite; sandy micrite to fine sandy;				

WESTERN MINES

DIAMOND DRILL RECORD

Project: Start: Complete: DDH No.: 334

Location: Elev. Collar: Brg.: Dip: Logged By: Total Depth: 571

Footage From To	Core Rec.	Description	Sample No.	Sample Length	Assay Results	
					Cu.	
290 348	90-95	SLAVE POINT FORMATION - Dolomite				
		290-348 Mainly Marine: grey, brown-grey, dark dirty brown (almost black); porous and vuggy sections; holes filled with sulfur, calcite/dolomite; bitumen; micrite to sandy; some mud seams; laminated sections; argillaceous sections; few stylolytes; marcasite wisps; few fractures lined with dolomite; 318-324 fossiliferous: brachs, stroms, amphipora;				
		330-335 Amco Equivalent: brown-grey, micritic; dense; argillaceous wisps, dolomite;				
		- occasional crinoids, amphipora;				
348 366	80-90	WATT MOUNTAIN FORMATION				
		348-349 Brown Marker Bed: laminated; argillaceous wisps; dolomite; micritic to argillaceous;				
		349-366 varies from micrite to medium crystalline; dolomite; green mud in fractures; marcasite/argillaceous wisps; few fractures with dolomite;				

WESTERN MINES DIAMOND DRILL RECORD

Project: Start: Complete: DDH No.: 334
 Location: Elev. Collar: Brg.: Dip: Logged By: Total Depth: 571

Footage From To	Core Rec.	Description	Sample No.	Sample Length	Assay Results	
					Cu.	
		stylolytes; fine laminations;				
366 527		PINE POINT FORMATION - Presquile				
	85	366-370 Presquiled Watt Mountain				
		green watt mud disseminated through grey and white presquile;				
	50-75	370-412 Gastropod Facies: coarse crystalline; grey and white; green mud in				
		fractures and vugs; vuggy; vugs lined with spary white vein dolomite;				
		some blue-grey dolomite; minor oil stain and disseminated bitumen;				
		fractures healed with white vein dolomite; relict gastropods; 402-408				
		fairly abundant blue-grey dolomite; fractured to broken sections;				
	45-65	412-487 Amphipora Facies: coarse crystalline; grey, white, buff, mottled;				
		vuggy; green mud in fractures and vugs; sulfur, spary white dolomite				
		in vugs; 417-422: thick green mud seam; bitumen in vugs; small blue				
		grey dolomite; 440-445: dark section due to disseminated bitumen; some				
		sections mostly buff; relict amphipora: eyebrow texture; relict gypsum				
		pseudomorphs; 464-469: disseminated bitumen; laminated; fractured with				
		broken sections;				

WESTERN MINES

DIAMOND DRILL RECORD

Project: Start: Complete: DDH No.: 334

Location: Elev. Collar: Brg.: Logged By: Total Depth: 571

Footage From To	Core Rec.	Description	Sample No.	Sample Length	Assay Results	
					Cu.	
	60-75	487-527 D-Facies with Amphipora Beds: coarse crystalline; grey, white; some buff mottled; vuggy; stroms, brachs, amphipora; fossils rimmed with fine marcasite 487-489; sulfur, bitumen and spary white dolomite in vugs; fractured to broken; 497.5-498, 501-502, 504, 511: C-Horizons: fine grained; slight laminations: grey/brown; small pores; sulfur in pores; bitumen on fractures;				
527	553 50-75	PINE POINT FORMATION - Partially Presquillized D-facies: brown, grey, minor white vein dolomite; porous; few vugs; calcite/dolomite in vugs; stroms, amphipora and other fossil fragments; fine to medium crystalline; fractured and broken sections; 537-539: fine; disseminated marcasite; 543: marcasite on fracture;				
553	566 70-80	- Partially Presquillized B-Facies: brown, fine to medium crystalline; some white vein dolomite on fractures; abundant fossil fragments: stroms, brachs, crinoids; few vugs with calcite/dolomite, bitumen; broken;				

WESTERN MINES DIAMOND DRILL RECORD

Project: GSR Start: Jan. 10, 1979 Complete: Jan. 13, 1979 DDH No.: 341

Location: 2000' S. of 159 (S-Line) Elev. Collar: Brg.: Dip: Logged By: AWR & MRR Total Depth: 576

Footage From To	Core Rec.	Description	Sample No.	Sample Length	Assay Results	
					Cu.	
0 116		OVERBURDEN 112-116 Cored Overburden; clay till with granitic and limestone pebbles;				
116 215		SLAVE POINT - Limestone				
	90	116-144 Shallow Platform - blotchy; Stroms; amphipora; corals; brachs; sandy; brown;				
	90	144-191 Mixed Shallow Platform and Tidal Flat - blotchy fossiliferous sections interlayered with laminated grey sections; some sections with abundant amphipora e.g. 163-165; fractured with some broken sections;				
		179-183 vuggy section with abundant bitumen and some calcite filling				
		vugs; 183-191 abundant fossils - amphipora, brachs, Stroms and some corals, some oil staining;				
	80-90	191-215 Mainly Tidal Flat - grey micritic to brown fine sandy; generally laminated; some argillaceous bands;				
		SLAVE POINT - mixed Limestone and Dolomite - mainly Shallow Marine;				
	60	215-223 broken, grey, brown, sandy;				

WESTERN MINES DIAMOND DRILL RECORD

Project:..... Start:..... Complete:.....

Location:..... Elev. Collar:..... Brg.:..... Dip:..... Logged By:.....

Footage From To	Core Rec.	Description	Sample No.	Sample Length	Assay Results	
					Cu.	
	70	223-230 fossiliferous, stroms, amhipora; vuggy due to leached fossils; calcite and bitumen in vugs;				
	40	230-239 laminated; grey; micritic to fine sandy; broken;				
239 290		SLAVE POINT - Marine - Dolomite				
	40	239-277 grey, black, brown; sandy to fine crystalline; broken;				
	40	277-283 brown; vuggy due to leached fossils; some calcite and dolomite lining vugs;				
	65	283-290 brown; generally fine sandy with carbonaceous wisps; fractured to broken;				
290 300	65	SLAVE POINT - Amco Shale - broken;				
300 313		SLAVE POINT - Rapid Transition to Tidal Flat; 300-301 Amco Marine - Limestone, fractured;				
	75	301-313 Tidal Flat - grey, laminated, micrite; fractured to broken;				
313 328		MATT MOUNTAIN - Limestone; generally pale-grey micrite; fractured to broken; minor green mud and shale; 313-314 brown marker, tilted bedding;				

WESTERN MINES

DIAMOND DRILL RECORD

Project:..... Start:..... Complete:..... DDH No.:.....341.....

Location:..... Elev. Collar:..... Brg.:..... Logged By:..... Total Depth:.....576.....

Footage From To	Core Rec.	Description	Sample No.	Sample Length	Assay Results	
					Cu.	
328 343	70	PINE POINT - C-Facies - Limestone, grey micrite, ghost fossil remnants; abundant green mud and shale;				
343		PINE POINT - Presquile				
60-75		343-383 Gastropod Facies - grey, white, vuggy; some green mud and shale;				
		375-376 limestone (C-facies); 372-373 relict gypsum; fractured with some broken sections;				
75-80		383-470 Amphipora Facies - some Gastropod sections; grey white and mottled sections alternate with grey white and mottled sections; vuggy; bitumen lining vugs; some sections with abundant spary white vein dolomite; sections with abundant oil stain;				
470 482	85-90	PINE POINT FORMATION - South Flank: brown, disseminated bitumen; fractured to broken;				
		470-472 fine dense; porous layers;				
		472-475 sandy; bitumen; porous;				
		475-482 fine laminated; pores and tiny vugs; leached fossils replaced with calcite and bitumen; argillaceous; soft sediment slumping;				

WESTERN MINES

DIAMOND DRILL RECORD

Project:..... Start:..... Complete:..... DDH No.:..... 341.....

Location:..... Elev. Collar:..... Brg.:..... Dips:..... Logged By:..... Total Depth:..576.....

Footage From	Footage To	Core Rec.	Description	Sample No.	Sample Length	Assay Results	
						Cu.	
482	557	55-75	PINE POINT FORMATION - Presquile				
			482-524 Amphipora Facies: coarse crystalline; grey, white, buff, mottled; vuggy and porous; much disseminated bitumen; spary white vein dolomite and blue grey dolomite; bitumen in vugs; eyebrow textures; occasional relict stroms; few narrow gastropod sections; fractured with broken sections; some sections quite dense (no vugs); remnant gypsum pseudomorphs;				
			524-557 Amphipora Facies (20-Facies)				
			scattered stroms in amphipora beds; grey, white and buff mottled; white vein and spary white dolomite; gypsum pseudomorphs;				
			550-554, 555, 556-557: brecciated Amphipora cemented with bitumen rich matrix;				
557	567	40-50	PINE POINT FORMATION - E-Facies				
			- buff; sandy; clean; fractured; porous;				
			557-562: dense; some laminated; small vugs lined with calcite crystals;				

WESTERN MINES

DIAMOND DRILL RECORD

Project:.....GSR..... Start: Jan. 13, 1979. Complete: Jan. 16, 1979. DDH No.:.....342.....

Locations: ..1000' S. of. 159. (S-Line) Elev. Collar:..... Brg:..... Dip:..... Logged By:..... PTM & MRR..... Total Depth:.....596.....

Footage From To	Core Rec.	Description	Sample No.	Sample Length	Assay Results	
					Cu.	
0 155		OVERBURDEN				
155 277		SLAVE RIVER FORMATION - Limestone				
	85	155-178 Shallow Platform - blotchy; stromatoporoids and slumping in dirty brown sand; argillaceous partings; few amphiopora; fractured;				
	85	178-213 Transition to Tidal Flat - alternating I.F. breccia, clastic and finer sediments, blotchy as above 203-207; fractured; argillaceous partings and few amphiopora;				
	+90	213-232 Mainly Tidal Flat - sandy micrite with minor I.F. breccia throughout; blotchy 229-232; grey; coarse translucent calcite lining the few vugs;				
	+90	232-257 Tidal Flat - sandy micrite and micrite, minor I.F. breccia; grey and light grey; generally laminated;				
	85-90	257-277 Mainly Tidal Flat - 257-261 grey-brown sand; 261-265 grey, dark-grey porous medium crystalline; few relict stroms; disseminated bitumen;				

WESTERN MINES

DIAMOND DRILL RECORD

Project: Start: Complete: DDH No.: 342

Location: Elev. Collar: Brg.: Dip: Logged By: Total Depth:

Footage From To	Core Rec.	Description	Sample No.	Sample Length	Assay Results	
					Cu.	
		265-271 dark grey-brown sandy micrite, few stroms and amphipora beds;				
		271-277 cherty micrite; light and dark grey; badly broken;				
277 308		SLAVE POINT FORMATION - mixed dolomite and limy dolomite				
	80-90	277-308 Marine: ranges from buff to brown to grey-brown; argillaceous sections; porous and vuggy sections, mostly filled with sulphur; some laminations; sandy to sandy micrite;				
308 315		SLAVE POINT FORMATION - limestone				
	80-90	308-315 ?Marine - pale grey laminated micrite, much I.F. breccia;				
315 338		SLAVE POINT FORMATION - dolomite				
	80-90	315-328 Marine - grey to brown-grey; 315-322 vuggy section: leached fossils?, calcite in vugs; rest no fossils; massive; laminated;				
	80-90	328-336 Amco Shale: typical; dolomite				
	80-90	336-338 Amco Marine: dolomite; remnants of stroms, some fine crystallization;				
338 347		SLAVE POINT FORMATION - mixed dolomite and limestone				
	80-90	338-347 some laminations, few scattered amphipora and small ?stroms; some				

WESTERN MINES

DIAMOND DRILL RECORD

Project: Start: Complete: DDH No.: 342

Location: Elev. Collar: Brg.: Dip: Logged By: Total Depth:

Footage From To	Core Rec.	Description	Sample No.	Sample Length	Assay Results	
					Cu.	
347 364	80-90	WATT MOUNTAIN FORMATION fine intercrystalline porosity with some sulphur;				
		347-350 Brown marker bed; brown; laminated; argillaceous;				
		350-364 grey; typical; micrite (mainly fine); green shale bands;				
364 370		PINE POINT FORMATION C-Facies: grey micrite with ghost remnants of fossils: stroms; limestone;				
370 496		PINE POINT FORMATION - Presquile				
	80	370-414 Gastropod Facies - coarse crystalline; grey and white; vuggy; fractured with broken sections; oil and bitumen stain; few grains of sphalerite and galena; minor watt mud in fractures;				
	75-85	414-496 Amphipora Facies with occasional Gastropod Facies sections - coarse crystalline; mottled; buff, grey, spary white and white vein dolomite; relict amphipora; vuggy; eyebrow texture; some oil stain and bitumen; remnant gypsum pseudomorphs; few scattered grains of sphalerite and galena; occasional watt mud on fractures;				

WESTERN MINES

DIAMOND DRILL RECORD

Project: Start: Complete: DDH No.: 342

Location: Elev. Collar: Brg.: Dip: Logged By: Total Depth:

Footage From To	Core Rec.	Description	Sample No.	Sample Length	Assay Results	
					Cu.	
		421-424, 461-464 gastropod facies bands;				
		424-438 buff, grey and mottled pale blue-grey; includes strom remnants;				
		459-460 minor blue-grey dolomite;				
		464-468 generally fine crystalline (partially presquillized);				
		469-484 alternating bands of ?gastropod facies and amphipora facies;				
		488-494 buff, amphipora facies				
		494-496 brown, ?amphipora facies; partially presquillized;				
496	505	PINE POINT FORMATION - C-Horizon: brown, sandy to fine crystalline; some fine laminated sections; intercrystalline porosity; calcite and/or dolomite on fractures around 498; bitumen and sulphur with calcite/dolomite;				
505	558	PINE POINT FORMATION - Presquile				
505	523	D-Facies: mainly buff; some pale grey sections; vuggy; fractured to broken; abundant remnants of stroms; fine to medium crystalline; bitumen; moderate white vein dolomite;				
523	543#0-50					
543	558					

WESTERN MINES DIAMOND DRILL RECORD

Project:..... G. S. R. Start:..... Feb. 25/79 Complete:..... Feb. 27/79 DDH No.:..... 365

Location: 100' S of 364 (R-190) Elev. Collar:..... Brg.:..... Dip:..... Logged By:..... MRR Total Depth:..... 585

Footage From To	Core Rec.	Description	Sample No.	Sample Length	Assay Results	
					Cu.	
0 100		OVERBURDEN				
100 146		HAY RIVER SHALE: fissile & muddy; laminated limestone; disseminated marcasite; scattered brachs;				
146		SLAVE POINT FORMATION: Limestone				
	90	146-174 Shallow Platform: blotchy; stroms, corals; brachs, amphipora; fractured to broken; very fine disseminated marcasite;				
	90	174-202 Mixed Tidal Flat & Shallow Platform: alternating grey; laminated & fossiliferous sections; fossils; amphipora beds, stroms, brachs; micrite to fine micritic sand; fine disseminated marcasite; scattered brachs in laminated sections;				
		175-181: fine, clastic section; occasional mud seam; some argillaceous partings; bitumen on fractures; fractured to broken				
	85-90	202-251 Tidal Flat: mainly grey laminated micrite; some argillaceous partings; amphipora beds; occasional scattered brachs; fractured with broken sections; few vugs with calcite & bitumen; 206-222: leached & pin-point porosity with bitumen & calcite in holes;				

WESTERN MINES DIAMOND DRILL RECORD

DDH No.: 365

Project: Start: Complete:

Location: Elev. Collar: Brg.: Dip: Logged By: Total Depth:

Footage From To	Core Rec.	Description	Sample No.	Sample Length	Assay Results	
					Cu.	
251 277		SLAVE POINT FORMATION: mixed limestone, dolomite & limy dolomite;				
		251-277 Transition to Marine: grey to brown-grey; micrite to fine crystalline; some pin-point porosity with bitumen; scattered brachs; laminated sections;				
		occasional fine clastic sections; amphipora beds; soft sediment slumping;				
		occasional scattered vugs with calcite; argillaceous intervals; fractured with broken sections; sulphur in some vugs & fractures; occasional mud seams;				
277 337		SLAVE POINT FORMATION: dolomite				
		277-337 Marine: grey & brown; argillaceous sections; some vugs & porosity; sulphur & calcite in holes; laminated sections; minor I.F. breccia; soft sediment slumping; sandy micrite to sandy; abundant amphipora section 305-307; below 307: scattered leached fossil fragments; amphipora, brachs, ?stroms, crinoids; leached porosity filled with calcite/dolomite; some limy dolomite sections; fractured with broken sections;				
337 354	90	WATT MOUNTAIN FORMATION:				
		337-339 Brown Marker: laminated; brown dolomite; carbonaceous/marcasite wisps;				

WESTERN MINES DIAMOND DRILL RECORD

DDH No.: 365

Start: Complete:

Project:

Total Depth:

Logged By:

Dip:

Brg:

Elev. Collar:

Location:

Footage From To	Core Rec.	Description	Sample No.	Sample Length	Assay Results	
					Ca.	
		339-347 grey & grey-brown; mainly micritic dolomite; some recrystallized sections;				
		sulphur & calcite in fracture at 343.5; some marcasite/carbonaceous wisps;				
		some green mud; minor I.F. breccia; fractured;				
		347-354 grey micrite limestone; green mud on fractures; faint laminations; some				
		I.F. breccia; broken & fractured				
354	490	PINE POINT FORMATION: C-Facies, grey micrite limestone with abundant green mud; I.F. breccia;				
		remnant fossil fragments; broken				
360	490	PINE POINT FORMATION: Presquite				
		360-400 Gastropod Facies: grey & white vein dolomite, minor buff; broken; moderately				
		vuggy; vugs filled and lined with bitumen, spary white dolomite & clear				
		dolomite crystals; tar & oil stain between 361-363; limestone remnant (C-facies)				
		363-365; some zebra-texture; minor blue-grey dolomite mottles; some green				
		mud in holes & fractures; remnant gastropods;				
		400-490 Amphipora Facies: mainly buff & white vein dolomite; mottled; some brown &				
400	475	75 blue-grey bands & mottles; some grey due to disseminated bitumen; weakly to				

WESTERN MINES DIAMOND DRILL RECORD

Project: Start: Complete: DDH No.: 365

Location: Elev. Collar: Brg.: Dip: Logged By: Total Depth:

Footage From To	Core Rec.	Description	Sample No.	Sample Length	Assay Results %		
					Pb	Zn	Fe
445 485	20-40	moderately vuggy; spary white dolomite, clear dolomite crystals; bitumen &					
485 490	80	sulphur in vugs; remnant gypsum pseudomorphs; broken with crumbly sections					
		(eg 434-435, 455-457, 465 -474); galena crystals in crumbly rock at 465;					
		occasional crystals of pale brown sphalerite (eg 476)					
490 507	85-90	PINE POINT FORMATION: C-Horizon: intercalated presquile sections with stroms & amhipora;					
		buff to buff-grey; fine, dense; abundant fine vuggy porosity; sulphur &					
		marcasite disseminated on vugs & fractures; 504-506: fossiliferous with					
		abundant marcasite replacing stroms & ?amhipora;					
507 550		PINE POINT FORMATION: Presquile					
	40-60	507-531 D-Facies: broken; vuggy; buff; white, brown; strom remnant & some amhipora					
		moderately vuggy with bitumen & sulphur in holes; sections of massive	3900	523-531	.14	.39	15.75
		marcasite: 507-508; 523-525, 527-529; disseminated marcasite elsewhere	3901	540	.15	.73	4.50
	60	531-535 ?Amhipora Bed: fine, rounded forms; buff, brown, mottled; vuggy; appear to	3902	546	.88	4.21	.40
		be amhipora; 523-531: scattered sphalerite & galena (est. 1-2% Pb-Zn) 531-532	3903	550	.54	11.25	.55
		replaced by massive marcasite;	3904	555	.09	.19	.25

WESTERN MINES DIAMOND DRILL RECORD

Project:..... Start:..... Complete:..... DDH No.:..... 365

Location:..... Elev. Coller:..... Brg.:..... Dip:..... Logged By:..... Total Depth:.....

Footage From To	Core Rec.	Description	Sample No.	Sample Length	Assay Results %		
					Pb	Zn	Fe
	75	535-550 D-Facies: interlayered with amhipora beds: buff, brown, white mottled; fractured to broken; scattered sulphur & bitumen; scattered marcasite; some semi-massive sections; scattered sphalerite & galena on fractures & disseminated (est 1-5% Pb-Zn)	3905	555-565	.17	.40	.20
			3906	575	.51	1.43	.25
550 585	80	PINE POINT FORMATION: B-Facies: buff to brown; sucrosic; moderately vuggy; some intercrystalline porosity; fractured with broken sections; abundant fossil fragments: stroms, corals, branching & rounded forms (?bryozoa): 562; most fossils leached; fractures at 60° to 30° to core axis; minor scattered sulphur & bitumen in vugs; botryoidal sphalerite & some galena lining vugs & occasional on steeply inclined fractures; some minor amounts of finely disseminated sphalerite & galena (est 3-5% Pb-Zn) 567: 2" section of massive botryoidal sphalerite & galena	3907	585	.28	1.18	.25
		END					

WESTERN MINES

DIAMOND DRILL RECORD

Project: Start: Complete: DDH No.: 411

Location: Elev. Collar: Brg.: Dip: Logged By: Total Depth:

Footage	Core Rec.	Description	Sample No.	Sample Length	Assay Results	
					Cu.	
	90	317-322 Amco Shale: Dolomite; typical				
		322-323 Amco Marine: dolomite;				
	90	323-333 Transition to Tidal Flat: mixed limestone and dolomite; sandy micrite and fine crystalline; shaly layer 326-327; porous and finely vuggy zones; grey and dark grey, some oil stain; amphipora 331-332; broken zones;				
333 351	95	WATT MOUNTAIN FORMATION - brown marker 333-335; micritic limestone and dolomitic fine crystalline to sucrosic; watt mud 343-351; minor watt I.F. breccia; light grey and light buff-grey; fractured;				
351 354	85	PINE POINT - C-Facies: cherty micrite and sucrosic; light and dark grey; badly broken, healed with watt mud;				
354 484		- Presquille				
354 406		- Gastropod Facies: well presquillized, grey dark grey, some white vien with blue-grey at 375, 400 and 405-406; fractured to broken; vuggy, bitumen lining 50%				
		of vugs; semi massive marcasite associated with coarse white dolomite at 393;				

WESTERN MINES

DIAMOND DRILL RECORD

Project: Start: Complete: DDH No.: 411

Location: Elev. Collar: Brg.: Dip: Logged By: Total Depth:

Footage From To	Core Rec.	Description	Sample No.	Sample Length	Assay Results	
					Cu.	
406 443		- Amphipora Facies: pale buff, buff and abundant coarse white and some blue-grey dolomite;				
406 425	70	mottled dark grey 423-424; large black (? bitumen lined) gypsum spars 416-				
425 443	20	429; some mottling and eye-brow textures; broken and moderately vuggy; bitumen lining 25% of vugs;				
443 470	75	PINE POINT - Presquile - ? Gastropod Facies: crumbly and sucrosic; dark grey, grey and some white; badly broken; moderately vuggy, bitumen lining fractures and 75% of vugs;				
470 484		- Presquile - D-Facies: pale buff, numerous small vugs all lined with bitumen;				
470 475	75	broken with crumbly sections relict stromatolites;				
475 484	40					
484 492	25	PINE POINT - C-Horizon: cherty fine crystalline; buff-grey, very badly broken; bitumen lining the few thin-fractures;				

WESTERN MINES DIAMOND DRILL RECORD

Project: Start: Complete: DDH No.: 411

Location: Elev. Collar: Brg.: Dip: Logged By: Total Depth:

Footage From To	Core Rec.	Description	Sample No.	Sample Length	Assay Results	
					Cu.	
492 568	PINE	POINT FORMATION: Presquite				
492 510		- Amphipora Bed: buff, faint mottling; bitumen lining thin fractures 40% of vugs;				
492 500	50	moderately vuggy; broken;				
500 510	60					
510 559		- D-Facies: buff, brown mottling and some white; broken and vuggy generally relict				
510 545	60	stromatolites, bitumen lining 50% of vugs; amphipora beds 530-535, abundant				
545 555	80	stromatolites;				
555 559	60					
559 568	60	PINE POINT - Partially presquilized ? Amphipora Bed: buff with abundant fine vugs to 565, lined with bitumen; medium crystalline; fractured to broken;				
568 584	80	PINE POINT - B-Facies: typical-brown; sandy, porous; grey wisps; fractured;				
		E N D				

WESTERN MINES DIAMOND DRILL RECORD

Project: G.S.R. Start: July 5/79 Complete: July 11/79 DDH No.: 426

Location: R-190: 6E - 2S 100'S of #366 Elov. Collar: Brg.: Dip: Logged By: M.R.R. & A.W.R. Total Depth: 655

Footings		Core Rec.	Description	Sample No.	Sample Length	Assay Results		
						Pb	Zn	Fe
0	100		OVERBURDEN					
100	137		HAY RIVER SHALE					
137	327		SLAVE POINT FORMATION					
		85-90	137-158 Shallow Platform: limestone; brown and grey-brown; abundant oil stain; fossil fragments; stromatolites, amphiopora; bleb of galena at 155; argillaceous partings; fractured and broken; some laminated sections; sandy micrite to sandy;					
		90	158-187 Transition to Tidal Flat: limestone; laminated and fossiliferous sections; fractured; grey; clastic sections; some I.F. breccia; argillaceous partings;					
		90	187-241 Mainly Tidal Flat: limestone; grey; generally laminated; argillaceous partings; fossiliferous sections: 203-212.5; clastic sections: 190, 221-224; sections of leached porosity filled with calcite and bitumen: 195-205; fractured to broken; scattered brachiopods;					
			241-256 Transition to Marine: generally limestone; some limy-dolomite; generally laminated; some fossils: 247-250: stromatolites, brachiopods;					

WESTERN MINES

DIAMOND DRILL RECORD

Project: Start: Complete: DDH No.: 426

Location: Elev. Collar: Brg.: Dip: Logged By: Total Depth:

Footage From To	Core Rec.	Description	Sample No.	Sample Length	Assay Results		
					Pb	Zn	Fe
	90	241-247 fine crystalline; limy dolomite; porous with bitumen and calcite in pores; calcite on fractures;					
		- fractured to broken; fractured // to C.A. lined with calcite;					
	90	256-327 Mainly Marine: mixed dolomite and limestone; grey, browns and blacks; sandy micrite and argillaceous to fine sandy; swirly soft sediment slumping; generally laminations; porosity along laminations: filled with calcite, dolomite and sulphur; some marcasite wisps; sections of leached fossils: 288-291? 292-301, 304-305;					
		Anco Shale Equivalent: 305-312: brown, sandy, crinoids?;					
327 347		WATT MOUNTAIN					
	80	327-328 laminated brown marker, dolomite, fractured to broken;					
	90	328-340 dense grey; fine crystalline, dolomite; some green shale in more granular sections; fractured;					
	80	340-347 medium to coarse crystals; granular; abundant green shale; fractured to broken with crumbly sections;					

WESTERN MINES

DIAMOND DRILL RECORD

Project: Start: Complete: DDH No.: 426

Location: Elev. Collar: Brg.: Dip: Logged By: Total Depth:

Footage From To	Core Rec.	Description	Sample No.	Sample Length	Assay Results		
					Pb	Zn	Fe
347 480		PINE POINT - Presquite					
		347-392 Gastropod Facies - grey, white, coarse crystals, granular; some crumbly sections near top with abundant green shale; bitumen and some oil stain; fractured to broken; sections of spary blue-grey dolomite; vuggy;					
	40-60	392-480 Amphipora Facies - buff, white, brown, often mottled; vuggy; fractured to broken; bitumen; minor sulphur; some bands of spary blue-grey dolomite; some crumbly granular sections eg. 362-366; minor sphalerite and galena especially in crumbly sections;					
480 495		PINE POINT - C-Horizon - fine dense, buff-grey to buff-brown; some sulphur on vugs and fractures; fractured to broken; vugs scattered to moderately abundant in some sections;					
495 554	10-60	Presquite					
		495-554 D-Facies with Amphipora beds - generally buff, white, brown, mottled; vuggy; fractured to broken; minor sulphur and bitumen; blebs of fine marcasite scattered through with occasional short sections to 5%;					

WESTERN MINES DIAMOND DRILL RECORD

DDH No.:..... 426

Project:..... Start:..... Complete:.....

Location:..... Elev. Collar:..... Brg.:..... Dip:..... Legged By:..... Total Depth:.....

Footage From To	Core Rec.	Description	Sample No.	Sample Length	Assay Results			
					Pb	Zn	Fe	Sr%
		becomes only partially presquilized near bottom of section;						
		537-554 bands of silicification in the stromatolite beds;						
554 655	20-60	PINE POINT - B-Facies - dolomite;						
		- brown, sandy to sucrosic; mostly broken with some fractured sections;						
		scattered vugs; stromatolite fragments; scattered corals;						
		615-618 Fault breccia;						
		652 - 1.5' section of gypsum; becomes more sandy and cleaner washed below gypsum;						
		marcasite disseminated and on fractures scattered through; galena scattered						
		through section both on vugs and fractures as well as disseminated; est. 1-2% Pb.	0374	558-567	.19	.22	.85	0.019
		Zn; some sphalerite in vugs;	0375	635-645	.36	.40	.42	0.013
		? may be just getting into better mineralized zone.	0376	-655	.07	.19	.52	0.019
		E N D						

WESTERN MINES DIAMOND DRILL RECORD

Project: G.S.R. Start: Sept. 19/79 Complete: Sept. 22/79 DDH No.: 464
 Location: R-190 : 2 S + 2 E Elev. Collar: Brg.: Dip: M. R. R. Total Depth: (NQ core)
 200' E of 248

Footage	Core Rec.	Description	Sample No.	Sample Length	Assay Results		
					Pb	Zn	Fe
0 118		OVERBURDEN: 115-118: clay till;					
118 161	100	HAY RIVER SHALE: grey limestone; fissile; scattered brachiopods; muddy places; disseminated marcasite; hard compact places; fractured along bedding;					
161 353		SLAVE POINT FORMATION					
	100	161-185 Shallow Platform: limestone; blotchy; fractured; few occasional broken sections;					
	100	185-193 Transition to Tidal Flat limestone; clastic; some blotchy and laminated sections;					
	90-95	193-263 Tidal Flat: limestone; generally laminated, occasional I.F. breccia; occasional fossiliferous sections: 204-212 & 230-234 & 256; occasional amphipora beds; occasional clastics and disseminated bitumen; leached porosity with abundant bitumen: 221-226 & 238-241; soft sediment slumps; generally fractured with some broken sections; few scattered mud seams: 235; scattered occasional vugs with sulphur ? & mud;					
	95	263-281 Transition to Marine: limestone; laminated and clastics; some leaching with bitumen; black & white varved laminated sections;					

WESTERN MINES DIAMOND DRILL RECORD

Project:..... Start:..... Complete:.....

Location:..... Elev. Collar:..... Brg.:..... Dip:..... Logged By:..... Total Depth:.....

Footage From To	Core Rec.	Description	Sample No.	Sample Length	Assay Results		
					Pb	Zn	Fe
		Layer with abundant thin brachiopods; 272-273; occasional leached porosity;					
		minor sulphur on fractures; fractured & broken;					
	60-70	281-306 Marine: mixed limestone and dolomite; broken; mainly argillaceous; abundant					
		leached porosity; indistinct laminations; some sulphur in Porosity and on					
		fractures; brown & grey-brown; occasional mud seam (300);					
	80	306-323 Marine: dolomite; brown, buff; argillaceous to sandy; more massive than					
		above; scattered marcasite wisps; some laminations; some leached porosity with					
		some sulphur; fossil fragments (leached): 319-323; broken with some fractured;					
	90	323-339 Marine: dolomite; generally sandy to fine crystalline; some argillaceous					
		material mixed in; faint laminations; fossil (?) remnants: 325-330 (crinoids?);					
		dirty brown and dark grey-brown; Amco Equivalent?: 330-339; occasional marcasite					
		wisps; fractured;					
	85-90	339-353 Marine: dolomite; grey & grey-brown; some leached fossils; abundant leached					
		porosity some with calcite and sulphur and bitumen;					

WESTERN MINES DIAMOND DRILL RECORD

Project: G. S. R. Start: Feb. 7/80 Complete: Feb. 9/80 DDH No.: 511

Location: R-line: 1000' S. of 316' Elev. Collar: Brg.: Dip: Logged By: AWR & RJV Total Depth: 585

Footage From To	Core Rec.	Description	Sample No.	Sample Length	Assay Results		
					Pb	Zn	Fe
0	110	OVERBURDEN - granite boulders till at base;					
110	138	HAY RIVER SHALE - generally laminated; blotchy sections; generally very soft;					
138	528	SLAVE POINT FORMATION					
	100	138-169 Shallow Platform - limestone, blotchy					
	100	169-182 Shallow Platform - mixed clastic, blotchy and laminated Tidal Flat; limestone					
	95-100	182-258 Mostly Tidal Flat (Includes Transition to Marine at base) - limestone; generally laminated; grey to brown; 199-202 leached vuggy porosity filled with calcite and bitumen; scattered amphiopora beds; 212-214 leached stroms and amphiopora bed; 242-253 clastic section with abundant thin-shelled brachs and algal coated clasts; 253-258 blue-varved (like) section; 245-249 fine intercrystalline porosity although still limy;					
	258-317	Marine - mostly dolomite; generally sandy to fine crystalline with several argillaceous to shaly seams; generally brown to black; some porous sections; scattered sulphur; large cabbage stroms scattered through, often partially leached; 300-317 Amco Equivalent; sphalerite ? crystals in fractures at 317;					

WESTERN MINES DIAMOND DRILL RECORD

Project:..... Start:..... Complete:..... DDH No.:..... 511

Location:..... Elev. Collar:..... Brg.:..... Dip:..... Logged By:..... Total Depth:.....

Footage From	To	Core Rec.	Description	Sample No.	Sample Length	Assay Results		
						Pb	Zn	Fe
		100	317-328 Mostly Shallow Platform - buff-brown; few scattered stroms; some calcite filled vugs also some sulphur;					
328	343	100	WATT MOUNTAIN FORMATION					
			328-331 brown laminated marker; dolomite; green shale band at top					
			331-343 limestone; generally pale grey micrite with some green shale and mud seams; some I.F. breccia;					
343	346.5	100	PINE POINT FORMATION - C-Facies - pale-grey to dark grey micrite limestone; abundant fossils, brachs, stroms, ?corals; green mud and shale on fractures;					
346.5	477		PINE POINT FORMATION - Presquite					
		80-90	346.5-385 Gastropod F - grey, white; coarse crystal; vuggy fractured; some calcite filled vugs; abundant green shale on fractures near top; abundant well preserved gastropods; 346.5-347.5 crystalline sphalerite est. 5% Zn; -minor scattered sphalerite and galena elsewhere in section; 337 green mud seam; 367 mud seam; Appears to be some brachs and stroms;					

WESTERN MINES

DIAMOND DRILL RECORD

Project: Start: Complete: DDH No.: 511

Location: Elev. Collars: Brg.: Logged By: Total Depth:

Footage	Core Rec.	Description	Sample No.	Sample Length	Assay Results		
					Pb	Zn	Fe
	90-95	Mixed Gastropod and Amhipora F - mixed blotchy buff and white and grey and white vein dolomite; scattered gypsum pseudomorphs; abundant calcite replacement and between fragments; fractured with broken sections;					
	90-95	Amhipora Facies - mainly buff and white vein dolomite mottled; scattered gypsum pseudomorphs; some blue-grey mottling; 5-10% vugs; vugs filled with spary white dolomite, bitumen and calcite; sections of highly disseminated bitumen; scattered green mud; moderate to abundant sulphur 419-421, 427-429, 435-463; 4 inches of semi-massive marcasite 443; mainly broken;					
477-483	20-30 (475-485)	PINE POINT FORMATION - C-Horizon - dense dolomite; dark grey; sulphur; massive marcasite at 479; broken					
483		PINE POINT FORMATION - Presquile					
		483-513 Amhipora Facies - as above with scattered stroms; abundant blue-grey mottling					
		511-512; sulphur 490-491; fractured and broken;					
	95	D-Facies? - creamy-brown, moderate white vein dolomite; very little spary white dolomite; abundant calcite and bitumen disseminated in pores and vugs;					

WESTERN MINES DIAMOND DRILL RECORD

Project: G. S. R. Start: Feb. 10/80 Complete: Feb. 14/80 DDH No.: 512

Location: R-Line: 500' S. of 316 Elev. Collar: Brg.: Dpt.: Logged By: AWR Total Depth: 580.

Footage From To	Core Rec.	Description	Sample No.	Sample Length	Assay Results		
					Pb	Zn	Fe
0 124		OVERBURDEN - 75-85 mostly boulders; 85-115 clay till; 115-126 boulders, till and Hay River Shale debris;					
124 153	90-100	HAY RIVER SHALE - typical, soft and muddy in places;					
153 345		SLAVE POINT FORMATION					
	100	153-194 Shallow Platform - limestone; blotchy					
	100	194-263 Shallow Platform and Tidal Flat mixed - limestone; generally laminated, interspersed with section of blotchy strom, brach and amphipora beds; few vuggy sections with calcite fillings; minor oil stain;					
	100	263-290 Tidal Flat - Marine - dolomite with some limestone sections: - fractured to broken with abundant small vugs; generally laminated;					
	100	290-345 Marine - dolomite, grey to brown to black; generally massive sandy but with some laminated sections; 297 argillaceous bed; 313-321 leached stroms and corals; 338 mud seam; 332 and 339? crinoids;					
345 363		WATT MOUNTAIN FORMATION					
	80-90	345-348 brown laminated dolomite marker					

WESTERN MINES

DIAMOND DRILL RECORD

Project: Start: Complete: DDH No.: 512

Location: Elev. Collar: Brg.: Logged By: Total Depth:

Footage From To	Core Rec.	Description	Sample No.	Sample Length	Assay Results		
					Pb	Zn	Fe
	80-90	348-363 cream-grey micrite; some calastic sections; some green shales;					
363 367	80	PINE POINT FORMATION - C-Facies - grey micrite with abundant fossils and green shale;					
367 580		PINE POINT FORMATION - Presquile					
	78-80	367-413 Gastropod F - grey, white, coarse crystal; fractured with some broken and crumbly sections;					
		400 and 408 mud seams, abundant green shale on fractures elsewhere; some massive spary white dolomite in lower part of section;					
	60-80	413-487 Amphipora F with intercolated Gastropod F - buff, white mottled sections alternate with grey-white sections, broken to crumbly; some blue-grey dolomite; scattered sulphur;					
487 496		PINE POINT FORMATION - C-Horizon - grey to buff-grey; generally fine and dense					
	30-50	496-580 D-Facies (not well developed, includes abundant amphipora beds) - buff. white, mottled minor blue-grey dolomite; vuggy; generally very broken; stroms scattered through;					
		596-580 considerable massive white dolomite;					

