

INSPIRATION MINING CORPORATION

TECHNICAL REPORT ON THE INITIAL MINERAL RESOURCE ESTIMATE FOR THE LANGMUIR NORTH AND LANGMUIR #1 NICKEL DEPOSITS, LANGMUIR TOWNSHIP, ONTARIO, CANADA

Reno Pressacco, M.Sc (A), P.Geo., Richard Gowans, P. Eng. Jonathan Steedman

Issued: JANUARY 6, 2010 Revised: JUNE 4, 2015



SUITE 900 - 390 BAY STREET, TORONTO ONTARIO, CANADA M5H 2Y2 Telephone (1) (416) 362-5135 Fax (1) (416) 362 5763



Table of Contents

1.0	SUMMARY	1
1.1	INTRODUCTION	1
1.2	ACCESSIBILITY, CLIMATE, LOCAL RESOURCES,	
	INFRASTRUCTURE AND PHYSIOGRAPHY	
1.3	HISTORY	2
1.4	REGIONAL AND LOCAL GEOLOGY	
1.5	DEPOSIT TYPES AND MINERALIZATION	
1.6	EXPLORATION	4
1.7	DRILLING	5
1.8	SAMPLING METHOD AND APPROACH	5
1.9	SAMPLE PREPARATION, ANALYSES AND SECURITY	5
1.10	DATA VERIFICATION	6
1.11	ADJACENT PROPERTIES	7
1.12	MINERAL PROCESSING AND METALLURGICAL TESTING	7
1.13	MINERAL RESOURCE AND MINERAL RESERVE ESTIMATES	9
1.14	INTERPRETATIONS AND CONCLUSIONS	15
1.15	RECOMMENDATIONS	17
2.0	INTRODUCTION	20
3.0	RELIANCE ON OTHER EXPERTS	22
		•••
4.0	PROPERTY DESCRIPTION AND LOCATION	
4.0 4.1	PROPERTY DESCRIPTION AND LOCATION PROPERTY LOCATION AND ACCESS	23
4.0 4.1 5.0	PROPERTY DESCRIPTION AND LOCATION PROPERTY LOCATION AND ACCESS	23
4.0 4.1 5.0	PROPERTY DESCRIPTION AND LOCATION PROPERTY LOCATION AND ACCESS ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY	23 23
4.0 4.1 5.0 5.1	PROPERTY DESCRIPTION AND LOCATION PROPERTY LOCATION AND ACCESS	23 23 29
4.0 4.1 5.0 5.1 5.2	PROPERTY DESCRIPTION AND LOCATION PROPERTY LOCATION AND ACCESS ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY ACCESSIBILITY AND INFRASTRUCTURE CLIMATE AND LOCAL RESOURCES	23 23 29 29
4.0 4.1 5.0 5.1 5.2 5.3	 PROPERTY DESCRIPTION AND LOCATION	23 23 29 29 29 30
4.0 4.1 5.0 5.1 5.2 5.3	PROPERTY DESCRIPTION AND LOCATION	23 23 29 29 29 30
4.0 4.1 5.0 5.1 5.2 5.3 6.0	PROPERTY DESCRIPTION AND LOCATION PROPERTY LOCATION AND ACCESS ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY ACCESSIBILITY AND INFRASTRUCTURE CLIMATE AND LOCAL RESOURCES PHYSIOGRAPHY HISTORY	23 23 29 29 29 30 31
4.0 4.1 5.0 5.1 5.2 5.3 6.0 7.0	PROPERTY DESCRIPTION AND LOCATION PROPERTY LOCATION AND ACCESS ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY ACCESSIBILITY AND INFRASTRUCTURE CLIMATE AND LOCAL RESOURCES PHYSIOGRAPHY HISTORY GEOLOGICAL SETTING	23 23 23 29 29 29 30 30 31 38
4.0 4.1 5.0 5.1 5.2 5.3 6.0 7.0 7.1	PROPERTY DESCRIPTION AND LOCATION	23 23 23 29 29 29 30 31 38 38
4.0 4.1 5.0 5.1 5.2 5.3 6.0 7.0 7.1 7.2	PROPERTY DESCRIPTION AND LOCATION PROPERTY LOCATION AND ACCESS ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY ACCESSIBILITY AND INFRASTRUCTURE CLIMATE AND LOCAL RESOURCES PHYSIOGRAPHY HISTORY GEOLOGICAL SETTING REGIONAL GEOLOGY LOCAL GEOLOGY	23 23 23 29 29 29 30 31 38 38 40
4.0 4.1 5.0 5.1 5.2 5.3 6.0 7.0 7.1 7.2 8.0	PROPERTY DESCRIPTION AND LOCATION	23 23 29 29 29 30 31 31 38 38 40 42
4.0 4.1 5.0 5.1 5.2 5.3 6.0 7.0 7.1 7.2 8.0 9.0	PROPERTY DESCRIPTION AND LOCATION PROPERTY LOCATION AND ACCESS ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY ACCESSIBILITY AND INFRASTRUCTURE CLIMATE AND LOCAL RESOURCES PHYSIOGRAPHY HISTORY GEOLOGICAL SETTING REGIONAL GEOLOGY LOCAL GEOLOGY MINERALIZATION	23 23 29 29 29 30 30 31 38 38 40 40 42 44
4.0 4.1 5.0 5.1 5.2 5.3 6.0 7.0 7.1 7.2 8.0 9.0 10.0	PROPERTY DESCRIPTION AND LOCATION	23 23 29 29 29 30 31 31 38 38 40 40 42 44 51



	S SURVEYING	
10.3 GE	OPHYSICAL SURVEYS	
10.3.1	Ground Geophysical Surveys	
10.3.2	Airborne Geophysical Surveys	
10.3.3	Geochemical Surveys	65
	•	
11.0 DRII	LING	70
11.1 LA	NGMUIR NORTH ZONE DIAMOND DRILLING	70
11.2 LA	NGMUIR NO. 1 MINE	77
11.3 LA	NGMUIR PROPERTY-WIDE EXPLORATION DRILLING	
13.0 CAN		94
12.0 SAM	PLING METHOD AND APPROACH	
13.0 SAM	PLE PREPARATION. ANALYSES AND SECURITY	
13.1 SA	MPLE PREPARATION	
13.2 OI	ALITY ASSURANCE/OUALITY CONTROL	
(-		
14.0 DAT	A VERIFICATION	96
15.0 ADJ	CENT PROPERTIES	
15.1 LII	BERTY MINERALS REDSTONE MINE	
15.2 GC	LDEN CHALICE DISCOVERY	
		104
16.0 MIN	LKAL PROCESSING AND METALLURGICAL TESTING	
17.0 MIN	ERAL RESOURCE AND MINERAL RESERVE ESTIMATES	
17.0 MIN	E RAL RESOURCE AND MINERAL RESERVE ESTIMATES NGMUIR NORTH DEPOSIT	114
17.0 MIN 17.1 LA 17.1.1	ERAL RESOURCE AND MINERAL RESERVE ESTIMATES NGMUIR NORTH DEPOSIT Description of the Database	114 114 114
17.0 MIN 17.1 LA 17.1.1 17.1.2	ERAL RESOURCE AND MINERAL RESERVE ESTIMATES NGMUIR NORTH DEPOSIT Description of the Database Geological Domain Interpretations	114 114 114 114
17.0 MIN 17.1 LA 17.1.1 17.1.2 17.1.3	ERAL RESOURCE AND MINERAL RESERVE ESTIMATES NGMUIR NORTH DEPOSIT Description of the Database Geological Domain Interpretations Cut-off Grade	114 114 114 114 120
17.0 MIN 17.1 LA 17.1.1 17.1.2 17.1.3 17.1.4	ERAL RESOURCE AND MINERAL RESERVE ESTIMATES NGMUIR NORTH DEPOSIT Description of the Database Geological Domain Interpretations Cut-off Grade Topographic Surface	114 114 114 114 120 121
17.0 MIN 17.1 LA 17.1.1 17.1.2 17.1.3 17.1.4 17.1.5	ERAL RESOURCE AND MINERAL RESERVE ESTIMATES NGMUIR NORTH DEPOSIT Description of the Database Geological Domain Interpretations Cut-off Grade Topographic Surface Grade Capping	114 114 114 114 120 121 122
17.0 MIN 17.1 LA 17.1.1 17.1.2 17.1.3 17.1.4 17.1.5 17.1.6	ERAL RESOURCE AND MINERAL RESERVE ESTIMATES NGMUIR NORTH DEPOSIT Description of the Database Geological Domain Interpretations Cut-off Grade Topographic Surface Grade Capping Compositing Methods.	114 114 114 120 121 122 129
17.0 MIN 17.1 LA 17.1.1 17.1.2 17.1.3 17.1.4 17.1.5 17.1.6 17.1.7	ERAL RESOURCE AND MINERAL RESERVE ESTIMATES NGMUIR NORTH DEPOSIT Description of the Database Geological Domain Interpretations Cut-off Grade Topographic Surface Grade Capping Compositing Methods Bulk Density	114 114 114 114 120 121 122 129 130
17.0 MIN 17.1 LA 17.1.1 17.1.2 17.1.3 17.1.4 17.1.5 17.1.6 17.1.7 17.1.8	ERAL RESOURCE AND MINERAL RESERVE ESTIMATES NGMUIR NORTH DEPOSIT Description of the Database Geological Domain Interpretations Cut-off Grade Topographic Surface Grade Capping Compositing Methods Bulk Density Trend Analysis	114 114 114 114 120 121 122 129 130 131
17.0 MIN 17.1 LA 17.1.1 17.1.2 17.1.3 17.1.4 17.1.5 17.1.6 17.1.7 17.1.8 17.1.9	ERAL RESOURCE AND MINERAL RESERVE ESTIMATES NGMUIR NORTH DEPOSIT Description of the Database Geological Domain Interpretations Cut-off Grade Topographic Surface Grade Capping Compositing Methods Bulk Density Trend Analysis Variography	114 114 114 114 120 121 122 129 130 131 133
17.0 MIN 17.1 LA 17.1.1 17.1.2 17.1.3 17.1.4 17.1.5 17.1.6 17.1.7 17.1.8 17.1.9 17.1.10	ERAL RESOURCE AND MINERAL RESERVE ESTIMATES NGMUIR NORTH DEPOSIT Description of the Database Geological Domain Interpretations Cut-off Grade Topographic Surface Grade Capping Compositing Methods Bulk Density Trend Analysis Variography Block Model Construction	114 114 114 114 120 121 122 129 130 131 133 136
17.0 MIN 17.1 LA 17.1.1 17.1.2 17.1.3 17.1.4 17.1.5 17.1.6 17.1.7 17.1.8 17.1.9 17.1.10 17.1.11	ERAL RESOURCE AND MINERAL RESERVE ESTIMATES NGMUIR NORTH DEPOSIT Description of the Database Geological Domain Interpretations Cut-off Grade Topographic Surface Grade Capping Compositing Methods Bulk Density Trend Analysis Variography Block Model Construction Block Model Validation	114 114 114 114 120 121 122 122 129 130 131 133 136 137
17.0 MIN 17.1 LA 17.1.1 17.1.2 17.1.3 17.1.4 17.1.5 17.1.6 17.1.7 17.1.8 17.1.9 17.1.10 17.1.11 17.1.12	ERAL RESOURCE AND MINERAL RESERVE ESTIMATES NGMUIR NORTH DEPOSIT Description of the Database Geological Domain Interpretations Cut-off Grade Topographic Surface Grade Capping Compositing Methods Bulk Density Trend Analysis Variography Block Model Construction Block Model Validation Mineral Resource Classification Criteria	114 114 114 114 114 120 121 122 129 130 131 133 136 137 140
17.0 MIN 17.1 LA 17.1.1 17.1.2 17.1.3 17.1.4 17.1.5 17.1.6 17.1.7 17.1.8 17.1.9 17.1.10 17.1.10 17.1.11 17.1.12 17.1.13	ERAL RESOURCE AND MINERAL RESERVE ESTIMATES NGMUIR NORTH DEPOSIT Description of the Database Geological Domain Interpretations Cut-off Grade Topographic Surface Grade Capping Compositing Methods Bulk Density Trend Analysis Variography Block Model Construction Block Model Validation Mineral Resource Classification Criteria Open Pit Optimization	114 114 114 114 120 121 122 129 130 131 133 136 137 140 141
17.0 MIN 17.1 LA 17.1.1 17.1.2 17.1.3 17.1.4 17.1.5 17.1.6 17.1.7 17.1.8 17.1.9 17.1.10 17.1.10 17.1.11 17.1.12 17.1.13 17.1.4	ERAL RESOURCE AND MINERAL RESERVE ESTIMATES NGMUIR NORTH DEPOSIT Description of the Database Geological Domain Interpretations Cut-off Grade Topographic Surface Grade Capping Compositing Methods Bulk Density Trend Analysis Variography Block Model Construction Block Model Construction Block Model Validation Mineral Resource Classification Criteria Open Pit Optimization Sensitivity Analysis	114 114 114 114 120 121 122 122 129 130 131 133 136 137 140 141 143
17.0 MIN 17.1 LA 17.1.1 17.1.2 17.1.3 17.1.4 17.1.5 17.1.6 17.1.7 17.1.8 17.1.9 17.1.10 17.1.10 17.1.11 17.1.12 17.1.13 17.1.14 17.1.14 17.1.15	ERAL RESOURCE AND MINERAL RESERVE ESTIMATES NGMUIR NORTH DEPOSIT Description of the Database	114 114 114 114 120 121 122 129 130 131 133 136 137 140 141 143 144
17.0 MIN 17.1 LA 17.1.1 17.1.2 17.1.3 17.1.4 17.1.5 17.1.6 17.1.7 17.1.8 17.1.9 17.1.10 17.1.10 17.1.11 17.1.12 17.1.13 17.1.14 17.1.15 17.1.16	ERAL RESOURCE AND MINERAL RESERVE ESTIMATES NGMUIR NORTH DEPOSIT Description of the Database Geological Domain Interpretations Cut-off Grade Topographic Surface Grade Capping Compositing Methods Bulk Density Trend Analysis Variography Block Model Construction Block Model Construction Block Model Validation Mineral Resource Classification Criteria Open Pit Optimization Sensitivity Analysis Responsibility for Estimation Mineral Resource Estimate	114 114 114 114 120 121 122 129 130 131 133 136 137 140 141 143 144
17.0 MIN 17.1 LA 17.1.1 17.1.2 17.1.3 17.1.3 17.1.4 17.1.5 17.1.6 17.1.7 17.1.8 17.1.9 17.1.10 17.1.11 17.1.12 17.1.13 17.1.14 17.1.15 17.1.16 17.2	ERAL RESOURCE AND MINERAL RESERVE ESTIMATES NGMUIR NORTH DEPOSIT Description of the Database Geological Domain Interpretations Cut-off Grade Topographic Surface Grade Capping Compositing Methods Bulk Density Trend Analysis Variography Block Model Construction Block Model Construction Mineral Resource Classification Criteria Open Pit Optimization Sensitivity Analysis Responsibility for Estimation Mineral Resource Estimate NGMUIR NO. 1 DEPOSIT	114 114 114 114 120 121 122 122 129 130 131 133 136 137 140 141 143 144 144 144 144
17.0MIN17.1LA17.1.117.1.217.1.217.1.317.1.517.1.617.1.717.1.817.1.917.1.1017.1.1017.1.1117.1.1217.1.1317.1.1417.1.1517.1.1617.217.2LA17.2.1	ERAL RESOURCE AND MINERAL RESERVE ESTIMATES NGMUIR NORTH DEPOSIT. Description of the Database Geological Domain Interpretations Cut-off Grade Topographic Surface Grade Capping Compositing Methods Bulk Density Trend Analysis Variography Block Model Construction Block Model Construction Block Model Validation Mineral Resource Classification Criteria Open Pit Optimization Sensitivity Analysis Responsibility for Estimation Mineral Resource Estimate NGMUIR NO. 1 DEPOSIT Description of the Database	114 114 114 114 114 120 121 122 129 130 131 133 136 137 140 141 143 144 144 144 146
17.0MIN 17.1LA17.1.117.1.217.1.317.1.317.1.417.1.517.1.617.1.717.1.817.1.917.1.1017.1.1117.1.1217.1.1317.1.1417.1.1517.1.1617.2LA17.2.117.2.2	ERAL RESOURCE AND MINERAL RESERVE ESTIMATES NGMUIR NORTH DEPOSIT. Description of the Database Geological Domain Interpretations. Cut-off Grade Topographic Surface. Grade Capping Compositing Methods. Bulk Density Trend Analysis Variography Block Model Construction. Block Model Construction. Block Model Validation. Mineral Resource Classification Criteria. Open Pit Optimization Sensitivity Analysis Responsibility for Estimation Mineral Resource Estimate Mineral Resource Estimate NGMUIR NO. 1 DEPOSIT. Description of the Database Geological Domain Modelling	114 114 114 114 114 114 114 114 114 120 121 122 129 130 131 133 136 137 140 141 143 144 144 144 144 144 144 144



17	7.2.3	Cut-off Grade Estimate	149
17	7.2.4	Historical Mine Workings	150
17	7.2.5	Topographic Surface	151
17	7.2.6	Grade Capping	151
17	7.2.7	Compositing Methods	152
17	7.2.8	Bulk Density	154
17	7.2.9	Trend Analysis	155
17	7.2.10	Variography	157
17	7.2.11	Block Model Construction	160
17	7.2.12	Block Model Validation	161
17	7.2.13	Mineral Resource Classification Criteria	162
17	7.2.14	Open Pit Optimization	162
17	7.2.15	Sensitivity Analysis	164
17	7.2.16	Responsibility for Estimation	164
17	7.2.17	Mineral Resource Estimate	165
18.0	OTHE	CR RELEVANT DATA AND INFORMATION	167
19.0	INTE	RPRETATIONS AND CONCLUSIONS	168
19.1	LAN	NGMUIR NORTH DEPOSIT	168
19.2	LAN	NGMUIR NO. 1 DEPOSIT	170
19.3	EXF	PLORATION POTENTIAL	172
20.0	RECO	OMMENDATIONS	175
21.0	REFE	RENCES	178



List of Tables

Table 1.1	Estimated Mineral Resources for the Langmuir North Deposit12
Table 1.2	Estimated Mineral Resources for the Langmuir No. 1 Deposit15
Table 1.3	Proposed Exploration Program and Budget19
Table 4.1	List of Claims, Langmuir Project, Ontario27
Table 6.1	Summary of Nickel Production from the Langmuir Property (after Atkinson, et. al., 2008)
Table 11.1	Diamond Drill Hole Summary for the Langmuir Property, September 1, 2009 (after Jensen, 2009)
Table 11.2	Summary of Mineralized Intersections for the 0.2% Ni Domain Model, Langmuir North Deposit
Table 11.3	Summary of Mineralized Intersections for the 0.2% Ni Domain Model, Langmuir No. 1 Deposit
Table 12.1	Sampling Statistics of the Drilling Programs as of September 1, 2009 (after Jensen, 2009)
Table 14.1	Comparison of Assay Results for Nickel Sulphides and Nickel Silicates (after Jensen, 2009)
Table 15.1	Summary of Nickel Production from the Shaw Dome (after Atkinson, et. al., 2008)
Table 16.1	Head Analysis of Individual Samples (after Peters, 2009)105
Table 16.2	Head Analysis of the Seven Composite Samples (after Peters, 2009)106
Table 16.3	Grindability Test Data (after Peters, 2009)106
Table 16.4	Rougher Kinetics Tests (F1 to F7) (after Peters, 2009)108
Table 16.5	Acid-Based Accounting Test Results (after Peters, 2009)111
Table 16.6	Net Acid Generation Test Results (after Peters, 2009)111
Table 16.7	Elemental Concentrations of Ores from the Langmuir 1 and 2 and McWatters Deposits (after Green and Naldrett, 1981)113
Table 17.1	Summary of the Langmuir North Drill Hole Database (as at December 10, 2009)
Table 17.2	Summary of the Input Parameters Used in Estimation of a Cut-Off Grade and Open Pit Optimization, Langmuir North Deposit
Table 17.3	Summary Statistics for the Raw Assay Samples Within the 0.2% Ni Domain Model, Langmuir North Deposit



Table 17.4	Summary Statistics for the 1m Capped, Composited Samples for the 0.2% Ni Domain Model, Langmuir North Deposit	130
Table 17.5	Summary of Variographic Parameters Within the 0.2% Ni Domain Model, Langmuir North Deposit	135
Table 17.6	Langmuir North Block Model Parameters	136
Table 17.7	Langmuir North Block Model Attributes	137
Table 17.8	Comparison of Block Model Reports to Composite Samples and Geological Models	138
Table 17.9	Summary of Tonnage and Grade for the Base Case Whittle Shell, Langmuir North Deposit	143
Table 17.10	Sensitivity Analysis of Tonnage and Grade For Varying Nickel Prices, Langmuir North Deposit	144
Table 17.11	Estimated Mineral Resources for the Langmuir North Deposit	145
Table 17.12	Summary of the Langmuir No. 1 Drill Hole Database (as at December 10, 2009)	146
Table 17.13	Summary Statistics for the Raw Assay Samples Within the 0.2% Ni Domain Model, Langmuir No. 1 Deposit	152
Table 17.14	Summary Statistics for the Raw Assay Samples Within the 0.2% Ni Domain Model, Langmuir No. 1 Deposit	154
Table 17.15	Summary of Variographic Parameters Within the 0.2% Ni Domain Model, Langmuir No. 1 Deposit	159
Table 17.16	Langmuir North Block Model Parameters	160
Table 17.17	Langmuir North Block Model Attributes	161
Table 17.18	Comparison of Block Model Reports to Composite Samples and Geological Models	162
Table 17.19	Summary of Tonnage and Grade for the Base Case Whittle Shell, Langmuir No. 1 Deposit	163
Table 17.20	Sensitivity Analysis of Tonnage and Grade For Varying Nickel Prices, Langmuir No. 1 Deposit	164
Table 17.21	Estimated Mineral Resources for the Langmuir No. 1 Deposit	165
Table 19.1	Estimated Mineral Resources for the Langmuir North Deposit	170
Table 19.2	Estimated Mineral Resources for the Langmuir No. 1 Deposit	172
Table 20.1	Proposed Exploration Program and Budget	177



List of Figures

Page

Figure 4.1	Location of the Langmuir Project	24
Figure 4.2	Land Holdings Map of the Langmuir Project, Langmuir Township, Ontario (after Jensen, 2009)	
Figure 7.1	Simplified Geology of the Shaw Dome (after Houlé and Hall, 2007)	
Figure 7.2	General Geology of the Northern Part of Langmuir Township (Jensen, 2009)	41
Figure 8.1	Schematic Diagram Illustrating the Genesis of Ore in Komatiite Flows (Jensen, 2009)	43
Figure 9.1	Geologic Plan at the -200 foot (-64 m) Level, Langmuir No. 1 Deposit (after Green and Naldrett, 1981)	45
Figure 9.2	Geologic Plan of the Langmuir No. 2 Deposit at the -1,000 foot (320 m) Level (after Green and Naldrett, 1981)	46
Figure 9.3	Langmuir No. 2 Deposit Composite Set of Level Plans (after Green and Naldrett, 1981)	47
Figure 9.4	Langmuir No. 2 Deposit Simplified Cross Sections (after Green and Naldrett, 1981)	48
Figure 9.5	Langmuir No. 2 Deposit Simplified Longitudinal Section (after Green and Naldrett, 1981)	49
Figure 10.1	Historical Compilation Map of the Langmuir Property (after Jensen, 2009)	52
Figure 10.2	Historical Compilation Map of the Langmuir No. 2 Mine (after Jensen, 2009)	53
Figure 10.3	Vertical Longitudinal Projection of the Langmuir No. 2 Mine (after Jensen, 2009)	54
Figure 10.4	Plan View Compilation Map of the Langmuir No. 1 Mine (after Jensen, 2009)	55
Figure 10.5	Longitudinal Projection of the Langmuir No. 1 Mine (after Jensen, 2009)	
Figure 10.6	Shaded Total Field and Electromagnetic Conductors, Langmuir #1 Grid (after Jensen, 2009)	59
Figure 10.7	Shaded Total Field and Electromagnetic Conductors, North Zone Grid (after Jensen, 2009)	60
Figure 10.8	Shaded Total Field and Electromagnetic Conductors, Central Grid (after Jensen, 2009)	61



Figure 10.9	9.9 Shaded Total Field and Electromagnetic Conductors, Allerston Grid (after Jensen, 2009)		
Figure 10.10	Airborne Total Field Magnetic Intensity with Electromagnetic VTEM Anomalies, Langmuir Property (after Jensen, 2009)	64	
Figure 10.11	Tilt Derivative of the Total Field Magnetic Intensity with Electromagnetic VTEM Anomalies, Langmuir Property (after Jensen, 2009)	65	
Figure 10.12	Range of Nickel Values for the B-Horizon Soil Sample Property Standards by Enzyme Leach Analysis (after Jensen, 2009)	68	
Figure 10.13	Comparison of Nickel Values Between the Original and Duplicate Assay Results of the B-Horizon Soil Samples by Enzyme Leach Analysis (after Jensen, 2009)	68	
Figure 10.14	B-Horizon Soil Geochemical Surveying for Nickel by Enzyme Leach Analysis (after Jensen, 2009)	69	
Figure 11.1	Drill Hole Location Map, Langmuir North Deposit	72	
Figure 11.2	Typical Cross Section Looking To Azimuth 030°, Langmuir North	73	
Figure 11.2	Drill Hole Logation Man. Langmuir No. 1 Danosit	75	
Figure 11.5	Conoral Cross Soction Langmuir No. 1 Deposit	70	
Figure 12.1	Niekal Control Chart for Stondard OPEAS 12D Longmuin Project	/9	
Figure 13.1	Nickel Control Chart for Standard OREAS-13P, Langmuir Project	89	
Figure 13.2 Figure 13.3	Nickel Control Chart for Standard OREAS-72a, Langmuir North Deposit	90	
Figure 13.4	Nickel Control Chart for Standard OREAS-74a, Langmuir North Deposit	90	
Figure 13.5	Blank Control Chart for Langmuir No. 1 and Langmuir North Deposits	91	
Figure 13.6	Nickel Control Chart, Standard OREAS-13P, Langmuir North ReAssay Program	91	
Figure 13.7	Nickel Control Chart, Standard OREAS-14P, Langmuir North ReAssay Program	92	
Figure 13.8	Blank Sample Control Chart, Langmuir North ReAssay Program	92	
Figure 13.9	Duplicate Assay Results for the September 2009 Drilling, Langmuir North Deposit	93	
Figure 13.10	Duplicate Assay Results for the Langmuir North Deposit (after Jensen, 2009)	94	



Figure 13.11	Duplicate Assay Results for the Langmuir No. 1 Deposit (after Jensen, 2009)	95
Figure 14.1	Comparison of Check Assay Results, Drill Holes LN-05-1 and L107- 72	98
Figure 15.1	Location of Nickel Mines and Selected Nickel Occurrences of the Shaw Dome area.	100
Figure 16.1	Millerite Association (after Peters, 2009)	110
Figure 17.1	Cross Section C-C' of the Langmuir North Deposit, Looking to Azimuth 030°	116
Figure 17.2	Cross Section D-D' of the Langmuir North Deposit, Looking to Azimuth 030°	117
Figure 17.3	Frequency Histogram of Raw Assay Nickel Samples, Langmuir North Deposit	122
Figure 17.4	Frequency Histogram of Raw Assay Copper Samples, Langmuir North Deposit	123
Figure 17.5	Frequency Histogram of Raw Assay Palladium Samples, Langmuir North Deposit	124
Figure 17.6	Frequency Histogram of Raw Assay Platinum Samples, Langmuir North Deposit	124
Figure 17.7	Frequency Histogram of Raw Assay Gold Samples, Langmuir North Deposit	125
Figure 17.8	Comparison of Copper vs. Nickel Assays, Langmuir North Deposit	125
Figure 17.9	Comparison of Palladium vs. Nickel Assays, Langmuir North Deposit	126
Figure 17.10	Comparison of Platinum vs. Nickel Assays, Langmuir North Deposit	126
Figure 17.11	Comparison of Gold vs. Nickel Assays, Langmuir North Deposit	127
Figure 17.12	Comparison of Palladium vs. Copper Assays, Langmuir North Deposit	127
Figure 17.13	Comparison of Platinum vs. Copper Assays, Langmuir North Deposit	128
Figure 17.14	Comparison of Gold vs. Copper Assays, Langmuir North Deposit	128
Figure 17.15	Frequency Histogram of 1.0m Composite Samples, Langmuir North Deposit	130
Figure 17.16	Frequency Histogram of Density Readings of the 0.2% Ni Domain Model, Langmuir North Deposit	131
Figure 17.17	Comparison of Bulk Density vs. Nickel Grade, Langmuir North Deposit	131



Figure 17.18	Longitudinal Projection (Looking to Azimuth 300°) Showing the Distribution of Nickel Grades, Langmuir North Deposit	132
Figure 17.19	Down-Hole Variogram, Composited Nickel Samples, Langmuir North Deposit	133
Figure 17.20	Omni-Directional Variogram, Composited Nickel Samples, Langmuir North Deposit	133
Figure 17.21	Down-Dip Variogram, Composited Nickel Samples, Langmuir North Deposit	134
Figure 17.22	Along-Strike Variogram, Composited Nickel Samples, Langmuir North Deposit	134
Figure 17.23	Across-Strike Variogram, Composited Nickel Samples, Langmuir North Deposit	135
Figure 17.24 I	sometric View of the Blocks Involved in the Local Estimate Validation, Langmuir North Deposit	138
Figure 17.25	Comparison of Estimated Block Grades to the Informing Samples, Nearest Neighbour Interpolation Method, Langmuir North Deposit	139
Figure 17.26	Comparison of Estimated Block Grades to the Informing Samples, Inverse Distance, Power 2 Interpolation Method, Langmuir North Deposit	139
Figure 17.27	Comparison of Estimated Block Grades to the Informing Samples, Ordinary Kriging Interpolation Method, Langmuir North Deposit	140
Figure 17.28	View of Profitable Blocks for the 0.2% Ni Domain , Langmuir North Deposit	142
Figure 17.29	View of the Base Case Optimized Open Pit Shell, Langmuir North Deposit	142
Figure 17.30	Longitudinal View of the Location of Higher Grade Nickel Mineralization Below the Base Case Optimized Open Pit Shell, Langmuir North Deposit	143
Figure 17.31	Cross Sectional View of the 0.2% Ni Domain Model, Langmuir No. 1 Deposit	148
Figure 17.32	Isometric View (Looking North East) of the Mine Workings Model Relative to the 0.2% Ni Domain Model, Langmuir No. 1 Deposit	151
Figure 17.33	Frequency Histogram of Raw Assay Nickel Samples, Langmuir North Deposit	152
Figure 17.34	Frequency Histogram of 1.0m Composite Samples, Langmuir No. 1 Deposit	153
Figure 17.35	Frequency Histogram of Density Readings of the 0.2% Ni Domain Model, Langmuir No. 1 Deposit	155



Figure 17.36	Comparison of Bulk Density vs. Nickel Grade, Langmuir No. 1 Deposit	155
Figure 17.37	Longitudinal Projection (Looking to Azimuth 325°) Showing the Distribution of Nickel Grades, Langmuir No. 1 Deposit	156
Figure 17.38	Down-Hole Variogram, Composited Nickel Samples, Langmuir No. 1 Deposit	157
Figure 17.39	Omni-Directional Variogram, Composited Nickel Samples, Langmuir No. 1 Deposit	157
Figure 17.40	Down-Plunge Variogram, Composited Nickel Samples, Langmuir No. 1 Deposit	158
Figure 17.41	Along-Strike Variogram, Composited Nickel Samples, Langmuir No. 1 Deposit	158
Figure 17.42	Across-Dip Variogram, Composited Nickel Samples, Langmuir No. 1 Deposit	159
Figure 17.43	View of the Base Case Optimized Open Pit Shell, Langmuir North Deposit	163
Figure 17.44	Longitudinal View of the Location of Higher Grade Nickel Mineralization Below the Base Case Optimized Open Pit Shell, Langmuir No. 1 Deposit.	164
Figure 19.1	Schematic Compilation Map, Inspiration Langmuir Property	173

APPENDICES

Appendix I List of Collar Locations for the Langmuir North and Langmuir No. 1 Deposits



1.0 SUMMARY

1.1 INTRODUCTION

At the request of Mr. Randy Miller, President and CEO of Inspiration Mining Corporation (Inspiration), Micon International Limited (Micon) has been retained to complete an initial mineral resource estimate for the Langmuir North and Langmuir No. 1 nickel deposits located immediately southeast of the town of Timmins, Ontario, Canada and to prepare a technical report to support its release to the public.

The revisions to this Technical Report were conducted at the request of the Ontario Securities Commission for the following reasons:

- 1) To eliminate or revise footnote 2, below the mineral resource tables, in order to eliminate possible confusion regarding the discussion of inferred resources as conceptual in nature.
- 2) To correct the presentation of the exploration potential as a range of grade as well as a range of tonnage.

Beginning in 2003, Inspiration, through Metal Mines Inc. (its 100% owned subsidiary), has acquired title to a group of mining claims that are located in south eastern Langmuir Township, Ontario and currently owns a 100% interest in 28 unpatented mining claims comprising 69 contiguous claim units (Inspiration, 2009). Two patented mining claims were added to the land holdings in November 2008.

Along with the identification and testing of selected targets on the claim group, exploration activities since then have focussed on the delineation of the extents of the nickel mineralization found in and about the Langmuir #1 deposit as well as the northeastern strike extension of the nickel mineralization at the nearby Langmuir #2 deposit that is referred to as the Langmuir North deposit. The drilling programs carried out at Langmuir North have been successful in outlining nickel mineralization along a strike length of approximately 480 metres, to a depth of approximately 340 metres from surface and across widths ranging from 10 to 90 metres. While the north eastern strike limits of the mineralization appear to have been outlined by drilling, the depth limits of the mineralization have not been located. The drilling completed as of the date of this report has confirmed the extent and the continuity of the mineralization at the Langmuir North deposit with sufficient confidence to allow for the estimation of an initial mineral resource.

1.2 Accessibility, Climate, Local Resources, Infrastructure and Physiography

Inspiration's Langmuir Property currently consists of 28 contiguous unpatented mining claims containing of 69 claim units, which lie within Langmuir Township, Porcupine Mining Division, District of Cochrane, Ontario and located approximately 25 km southeast of Timmins, Ontario. Access to the property is via the all-weather gravel road formerly known



as the "Langmuir Mine" road or currently known as the "Stringer Road" southwards from South Porcupine, for approximately 14.9 km thence westwards on the mine road for approximately 6.7 km to the Langmuir No. 1 Mine and a further 2.4 km to the Langmuir No. 2 Mine.

The mine workings, waste dump and settling pond of the former producing Langmuir No. 1 Mine are located on mining claim 1236554. The former mine operators did not construct a mill or tailings pond on site, as all nickel bearing material was processed off site and very little of the surface infrastructure remains on site. The mine portal is blocked and the underground mine workings are flooded.

The mine workings of the former producing Langmuir No. 2 Mine are located on several mining claims with portions of the mine workings located on Inspiration's claims 1213717 and 1213131, which also contain the rehabilitated rock dump. During the later years of mining, a mine cave-in occurred, resulting in ground subsidence and creating a current water filled pond with portions on these mining claims. The mine's settling pond for the mine is located on Inspiration's mining claim 1213414. Portions of Inspiration's mining claims 1213717, 1240736 and 1219467 cover the tailing pond. Inspiration's mining claim 1213717 covers the Langmuir – South Zone. Inspiration's Langmuir No.2 Mine – North Zone is located on portions of mining claims 1213130, 1213131 and 1213414.

The mine tailings of the former producing Langmuir No. 2 Mine cover a portion of Inspiration's mining claims 1213717, 1240736 and 1219467. Under relevant Ontario Mining Act Regulations, tailings created by previous operators of the property are not a liability of the current landowner, provided the tailings remain undisturbed.

1.3 HISTORY

Geological mapping and studies have been conducted over time by various authors of the Ontario Bureau of Mines, Ontario Department of Mines, Ontario Geological Survey and the Geological Survey of Canada beginning in 1924. Early activities in the townships were for gold exploration after the discovery of the Porcupine Gold Camp in 1908. The earliest record of activity being carried out on the property is by Shoniwigwan Group in 1927. Exploration work was carried out on a sporadic basis through to the 1964-1966 period where work by Mining Corporation of Canada resulted in the discovery of the Langmuir No. 1 and Langmuir No. 2 deposits on joint venture lands held as a 51% Mining Corporation of Canada (1964) Limited and 49% INCO Limited.

In the 1970-73 period, a 446 m deep shaft and a flotation mill were constructed on the property. Production from the Langmuir #2 deposit in the period 1973-78 amounted to 1,133,750 tonnes grading 1.45% Ni. In 1976, a decision was made to develop the Langmuir No.1 deposit as a supplementary ore source to the Langmuir No.2 mine. The Langmuir No.1 deposit was accessed by a 1250-foot long 12 foot by 15-foot ramp, which stopped 400 feet short of the deposit. Noranda ceased underground development in 1977 due to "deteriorating economic conditions at the Langmuir No. 2 deposit".



Timmins Nickel Inc. developed the Langmuir No. 1 Mine, with assistance from Ontario Mineral Incentive Program (OMIP) grants in 1990 (OMIP Grant OM90-118) and 1991 (OMIP Grant OM91-098). Under OMIP Grant OM90-118, Timmins Nickel completed the dewatering of Noranda's 1,250- foot (381m) long ramp, extended the 12 foot by 15 foot ramp for 400 feet (121.92 m) to the 315 foot mine level, completed 4,652 feet (1,417.93 m) of underground diamond drilling, and metallurgical and ore compatibility studies.

During 1990 and 1991, Timmins Nickel milled a total of 111,502 tonnes grading 1.74% Ni at the Redstone Mine property in Eldorado Township. All work at the site ceased in early 1992 when Timmins Nickel Inc. declared bankruptcy.

Additional exploration work was undertaken following the closure of the Langmuir No. 1 mine until acquisition of the land holdings by Inspiration Mining.

1.4 **REGIONAL AND LOCAL GEOLOGY**

The project area is located along the southeastern flank of a geological structure known as the Shaw Dome, which is interpreted to be a large anticlinal structure that plunges to the southeast. The core of the Shaw Dome is composed of an older sequence of rocks that is generally referred to as the Deloro Group while the peripheries of the Dome are composed of a younger sequence of rocks that is generally referred to as the Tisdale Group.

Komatiite flows on the property belong to the upper komatiite horizon and are of the aluminum undepleted komatiite variety. These rocks occur as three northeast trending horizons on the property, which may be fold repetitions of a single horizon. The Langmuir No.1 and No. 2 deposits are localized along the base of the predominately extrusive komatiite sequence, and in some instances show thermal erosion of the underlying rocks. Fold patterns on the property are dominated by northeast-trending anticline/syncline pairs, with steep to vertical, and possibly overturned limbs. However, the locations of the fold axes are poorly constrained, due to a paucity of rock exposures in critical areas.

Several fault directions, with unknown age relationships have been observed or inferred to disrupt the stratigraphy. The major northwest-trending Montreal River Fault causes an apparent sinistral offset of the stratigraphy. Dextral faults trending northeast are more or less parallel to the axial planes of the dominant fold structures that may not cause significant stratigraphic offsets, and are truncated by the Montreal River Fault.

1.5 DEPOSIT TYPES AND MINERALIZATION

Considerable research over the years indicates that komatiite hosted nickel deposits in the Timmins area are similar to the Archean age nickel deposits of the Kambalda and Windarra areas in Western Australia. There are five genetic models to explain volcanogenic nickel sulphide deposits. The preferred deposit model suggests that magmatic nickel sulphides have been transported by the host lava or magma as droplets of immiscible liquid, and that these



deposits have settled out of an ultramafic flow consisting of olivine crystals suspended in an ultramafic liquid. During horizontal movement and/or gravity segregation, immiscible sulphides will settle to the base of the flow to accumulate as massive sulphides. Sulphides, which do not reach the base of the flow, will be suspended about olivine phenocrysts forming disseminated or net textured sulphides. Depressions in the basal contacts of the peridotite bodies and/or relief of the surface onto which the lavas were erupted may control sulphide accumulation because dense sulphide droplets tend to settle out more rapidly into the low-lying areas than silicate phenocrysts.

At the Langmuir No. 1 deposit the nickel ore occurs near the base of a steeply dipping and isoclinally folded pile of ultramafic rocks approximately 150 m thick. The pile comprises 15 to 20 ultramafic flows, the exact number being difficult to determine because many display only a few of the classic flow features. In general the flows toward the top of the pile are thinner, less MgO rich, and contain more spinifex-textured ore. Flows toward the base, which are best delineated by their chemical profiles, are as thick as 50 m, yet some have only a few centimetres of spinifex texture at their upper margins. The bottom half of the lowermost flow contains all the ore-grade mineralization, which grades upward from massive ore to nettextured ore to disseminated sulphides. Much of the ore is located in an apparent footwall depression, suggested by variations in the thickness of the basal ultramafic flow.

At the Langmuir deposit 2, nickel ore is concentrated close to the base of an ultramafic pile that dips steeply to the southeast. As shown in plan, cross section, and longitudinal section, ore in the shallower levels of the mine is largely confined to lenses within what appears to have been a fault-bounded trough. The ultramafic pile containing the nickel ore consists of several flows and related intrusions; the ore zones actually lie within the three lowermost flows. Interflow sedimentary rocks and felsic-intermediate lavas are intercalated in the pile.

Several ore types are encountered in both of the Langmuir deposits. Massive ore is commonly banded, pyrrhotite- or pyrite-rich, and with less common pentlandite. Subordinate chalcopyrite is concentrated in stringers and veinlets. Bands of coarse-grained magnetite comprise up to 70 percent by volume of the ore in places. Net-textured ore, in which grains of olivine were immersed in a continuous network of sulfides, overlies the basal massive ore zone in both deposits. Zones of low-grade disseminated ore are patchy and irregular. Textures within these zones, such as subparallel elongate sulfide grains and sulfides replacing silicates, indicate that extensive recrystallization and remobilization has occurred.

1.6 **EXPLORATION**

Exploration activities carried out by Inspiration have included such items as preparing compilations of all previous exploration and development activities on the property, carrying out surveying programs, conducting geochemical and ground-based geophysical surveys, completing airborne geophysical surveys and carrying out delineation and exploration drilling programs.



1.7 DRILLING

Drilling programs at the Langmuir North Zone were carried out in five phases over a four year period starting in 2005. As a result of these programs, a total of 34,229 metres of drilling was completed in 170 drill holes that were mostly of NQ-sized core. The objective of these drilling programs was to outline a zone of nickel mineralization that is located along strike to the northeast of the Langmuir No. 2 mine.

The drilling programs at the Langmuir No. 1 zone were carried out in three phases over a three year period starting in 2005. A total of 33,570 metres of drilling was completed in 123 drill holes that were mostly of NQ-sized core. The purpose of these drilling programs was to search for the depth extension of the mineralized zones that were exploited by Timmins Nickel.

Exploration drilling programs were also carried out property-wide in three phases over a three year period starting in 2007 in which a total of 21,204 metres of drilling were completed in 65 drill holes. All of the exploration drilling was done using NQ-sized drilling equipment. The purpose of the exploration holes was to evaluate selected exploration targets that were identified by the geophysical and/or geochemical surveys.

The drilling programs were carried out by Larry Salo Drilling of Timmins, Ontario and Crites Diamond Drilling of Connaught, Ontario.

1.8 SAMPLING METHOD AND APPROACH

Initially the drill core was washed, measured and marked at 1 metre intervals to ensure the reported length of the drill hole corresponded to the lengths reported by the drilling crews and to verify the position of the 3-metre marker blocks placed by the drill company to estimate the drill core recovery and to measure the rock quality determination (RQD). Upon completion, the geologist would complete the logging of the drill core and would mark out sampling intervals using coloured china markers and place the sample tag at the end of the interval. All attempts were made to sample at a consistent core length of 1-metre or sampled in intervals relevant to abrupt changes in mineralization and geology.

Commencing in October 2006, two standard reference materials OREAS 13P and OREAS 14P, along with a quartz rock blank, were used. Each suit of 20 samples consisted of 17 core samples, two standard reference material samples and quartz rock blank. The quartz rock blank was used to test for possible contamination in the crushing and grinding circuits of the analytical laboratory. Commencing on March 16, 2008, a blind blank consisting of diabase dyke half was inserted into the sampling stream.

1.9 SAMPLE PREPARATION, ANALYSES AND SECURITY

All core samples were cut by a geo-technician using a stand mounted 14-inch Target diamond blade rock saw with continuous fresh water to eliminate any possible chance of contamination between samples. One half of the cut core was placed in a poly sample bag



along with half of the sample tag and sealed with staples. The samples bags were placed in shipping bags sealed with plastic cable ties and transported by exploration personnel to Swastika Laboratories Ltd, in Swastika, Ontario for analysis.

All initial sample preparation and assaying was completed at Swastika Laboratories, located in Swastika, Ontario. The analytical portion consists of a 0.5 gram sample dissolved in a breaker with 5 ml Nitric Acid (HNO3) plus 10 ml of Hydrochloric Acid (HCl), diluted to 100 ml with distilled water and the solution is analyzed by Atomic Absorption Spectrophotometry. The system detection limit for nickel is 0.001% up to 0.50% then reported to 0.01%. An analytical run consists of 30 samples, 3 repeats, a blank and a control standard.

Micon has reviewed the sample collection, sample preparation, security, and analytical procedures that were followed during the 2009 diamond drilling program. It concludes that the procedures followed are adequate to ensure a representative determination of the metal contents of any intervals of veining, alteration, or sulphide accumulations that were observed in the drill core.

The analytical results from the standard reference materials, blank samples and duplicate samples were provided to Micon by Inspiration as part of the drill hole database information package. Micon then proceeded to construct the control charts for nickel only, which was the subject of routine analysis.

Examination of the nickel control charts for the four standard reference materials reveals that, with some exceptions, the nickel values of the standard reported by the Swastika assay laboratory were well within the control limits. It can be seen that a number of single-sample excursions (either above the upper control limit or below the lower control limit) are present for standards OREAS 13P, 14P and 72a. The causes of these excursions can be related to such items as data entry errors, mis-identifying the standard in the database or poor laboratory results.

Examination of the control chart for the blank samples reveals that, apart from one failed sample, the blank samples do not show any evidence of cross-contamination of samples.

1.10 DATA VERIFICATION

Inspiration completed a small program of comparative assaying that examined the impact of the sample digestion method upon the resulting nickel assays.

Micon began its data verification activities by conducting a site visit on June 4 and June 5, 2008, where the surface infrastructure of the project site were reviewed, field procedures for the drilling program were examined, and representative sections of the mineralization in drill core were reviewed. Micon found that the field procedures that were being used to set up the diamond drill, recover the core, transport the core to the logging facilities and the logging and sampling procedures were all being carried out to the best practices currently in use by the Canadian mining industry.



During the site visit Micon completed its own program of check sampling of the Langmuir North and Langmuir No. 1 deposits. After a visual examination of the half core remaining in the core box and a review of the assay values contained in the corresponding drill logs, a total of 22 sample pulps were selected from drill holes LN-05-1 and L107-72 in order to provide an independent confirmation of the presence of nickel values in those samples. The samples were submitted to Acme Analytical Laboratories Ltd. located in Vancouver, British Columbia. The nickel contents were determined using their 7AR method code (Hot Aqua Regia digestion on a 1g split for base-metal sulphide and precious-metal ores followed by an ICP-ES analysis).

Micon then conducted an audit of the digital database using the appropriate function of the Surpac v6.1.1 software package. A number of minor errors of a clerical nature such as mismatched hole lengths and drill hole identification between the collar, survey lithology and assay tables, and mis-matched "From-Tos" in the assay table were detected and were corrected.

Micon completed its data verification activities by conducting a spot check of the drill hole database for the Langmuir North deposit. A total of 19 holes were selected on a semi-random basis, being approximately 10% of the Langmuir North drill hole database, for examination for systematic errors. The information contained in the drill logs and assay sheets was compared to the information contained in the electronic database. In respect of the assay information, the original assay certificates were used as a basis for comparison against the digital database. No significant errors were detected.

1.11 ADJACENT PROPERTIES

As discussed above, Inspiration Mining's Langmuir North and Langmuir No. 1 deposits are located along the south eastern portion of a geological structure known as the Shaw Dome. The package of rocks that contain Inspiration's two nickel deposits have long been known to be favourable hosts for nickel mineralization, and production of nickel in this area has taken place from the Langmuir No. 1 and the Langmuir No. 2 mine (both contained either within or immediately adjacent to Inspiration's mineral claims and the Liberty Minerals Inc.'s (Liberty) Redstone and McWatters mines located to the west of Inspiration's land holdings. In addition to these properties that have hosted nickel production in the past, new nickel discoveries have been found beginning in 2007 by Golden Chalice Resources Inc's (Golden Chalice) to the south of Inspiration's land holdings.

1.12 MINERAL PROCESSING AND METALLURGICAL TESTING

As of the time of the preparation of the mineral resource estimate presented herein, Inspiration has completed preliminary metallurgical testwork on the mineralization found at the Langmuir North deposit. The test work was completed by SGS Lakefield Research Limited.



Inspiration Mining requested SGS to carry out a flowsheet development program for their Langmuir #2 North Zone mineralization. Drill core was received at the SGS Lakefield Research site in late July 2008 and a metallurgical test program was completed over the next 9 months.

The test program included sample preparation, grindability tests, mineralogical characterization of 6 different composites, batch rougher and cleaner tests, QEMSCAN analysis of tailings products, and a basic environmental characterization of the rougher tails. A Rapid Mineral Scan (RMS) was carried out on the Nickel Zone, Intermediate Zone, and the four grade composites. The primary nickel bearing mineral was identified as millerite, which contains almost 65% Ni compared to the more commonly occurring pentlandite with approximately 34% Ni content. Other sulphide minerals identified included violarite, pentlandite, pyrite, and chalcopyrite. Overall, the mid grain size decreases with the head grade of the sample, which is commonly observed relationship for this type of mineralization. A series of seven batch rougher tests were carried out on the Nickel Zone composite.

Although the cleaner circuit design is still ongoing, a number of conclusions can be made at this time:

- The grindability test results revealed that the composites are quite hard. However, flotation results obtained for the Nickel Zone composites suggest that a good Ni recovery can be achieved at a relatively coarse grind size of P80=230 microns. Tests on the other composites have to be completed to confirm that the recovery remains high for the lower grade composites;
- 85% of the Ni units are associated with sulphide minerals. The remaining Ni is tied up in serpentine and chlorite and, therefore, considered non-recoverable by means of flotation;
- Almost all Ni units are associated with millerite, which has the advantage of a higher Ni content compared to pentlandite;
- The achievable rougher Ni recovery in the Nickel Zone composite is 75-77% at a saleable concentrate grade of 13-15% Ni. Results of a first cleaner tests suggests that the concentrate grade may be increased to 20-25% at only moderate Ni losses;
- The rougher tails of the Nickel Zone contains a considerable amount of carbonates, which render the tailings acid-neutralizing. ABA and NAG tests would also have to be carried out on the other composites to confirm that the acid-neutralizing potential is consistent throughout the deposit;
- The Nickel Zone composite contained a large amount of floatable non-sulphide gangue minerals that require the addition of CMC to depress the NSG minerals.



1.13 MINERAL RESOURCE AND MINERAL RESERVE ESTIMATES

1.13.1.1 Langmuir North Deposit

A digital database was provided to Micon by Inspiration wherein such drill hole information as collar location, down hole survey, lithology, density measurements and assays was stored in comma delimited format. The drill hole information was provided on an on-going basis as new information became available after the date of Micon's site visit. The cut-off date for the drill hole database was October 28th, 2009 and included all drill hole information up to and including hole LN-09-171. The drilling was carried out at a nominal spacing of 25 metres vertically on sections spaced 25 metres apart in plan view.

Interpretation of the geological and mineralization features associated with the nickel mineralization found at the Langmuir North deposit was carried out according to the most current understanding and level of knowledge. In summary, the current view of the overall stratigraphic sequence and nickel mineralization at the Langmuir North deposit involves a footwall sequence of pillowed ultramafic flows that acted as a substrate upon which a unit of felsic volcanic rocks was extruded. This footwall felsic volcanic flow was not aerially extensive and pinched out to the northeast. A thick ultramafic flow was erupted onto this footwall surface and remained molten for a sufficient period of time to allow the nucleation of nickel-bearing sulphide minerals. These nickel-bearing sulphide minerals have partially settled to the bottom of the flow (i.e. to the northwest) to form higher nickel concentrations as disseminations, net-textured sulphides and pods of semi-massive to massive sulphides. This thick flow is overlain by a younger unit of felsic volcanic rocks of dacitic composition which are in turn overlain by a vounger-still ultramafic volcanic unit. The entire stratigraphic sequence has been intruded by a series of post-mineralization felsic intrusions of variable thicknesses.

In terms of structural geology, the overall stratigraphic sequence is currently viewed as a simple "layer-cake" succession of bi-modal ultramafic and felsic volcanic rocks. A suggestion of folding is indicated from the distribution of some of the rock units in the stratigraphic sequence. Numerous notations of faulting are contained in the drill hole database however, while indeed the possibility of fault displacements is present, no systematic larger-scale displacements were noted of any of the major lithological units in the preparation of the lithological interpretation. This current understanding of the stratigraphic sequence, structural geology and nickel mineralization may change in the future as further information becomes available.

In respect of the nickel mineralization, the nickel values were displayed on the drill hole traces and were used to establish the outline of the mineralized zone on cross-sections that were spaced nominally at 25 metre centers (viewing windows of +/- 12.5 metres). The nickel domains were drawn so as to include all occurrences of nickel values that were greater than the estimated Break Even Cut-off Grade (BECOG), irrespective of the quantity of sulphides present (i.e. inclusive of massive, semi-massive, stringer and disseminated sulphide mineralization). In cases where lithological information indicated the presence of metre-



scale barren felsic intrusions, these small sections were included with the initial domain model as internal dilution. For this exercise, Micon elected to apply a BECOG of 0.2% Ni construction of the domain model of the nickel mineralization found at the Langmuir North deposit.

In all, interpretation was carried out on 22 cross-sections along a strike length of 600 metres and to a maximum depth of approximately -180 metre elevation (approximately 460 metres beneath the surface). As a result of the domain modeling exercise, it was discovered that the overall strike of the mineralization for the Langmuir North deposit varies from essentially north-south in the south western portion of the deposit to north easterly (025° to 030°) in the central and northeastern portions of the deposit. The dip of the mineralization also seems to vary with the strike of the deposit, being steeply southeast-dipping at an average dip of approximately -75° in the southwestern portion of the deposit, becoming sub-vertical in the central and northeastern portions of the deposit.

The northeastern strike extension of the mineralization appears to have been closed off by two drill hole fences that have tested for the presence of near-surface nickel mineralization to a depth of approximately 200 metres. Micon notes that the depth limits of the favourable host ultramafic unit clearly have not been tested by diamond drilling.

Grade capping (or top cutting) was investigated on the raw nickel assay values in order to ensure that the possible influence of erratic high values did not unduly bias the database or grade estimate. All samples contained within the three-dimensional model of the Langmuir North 0.2% Ni domain model were coded in the database and extracted for analysis. A normal histogram was generated from these extraction files and the descriptive statistics of the sample data set were generated. The grade cap was selected by examining the histogram for the grade at which outlier assays begin to occur. A capping value of 4% Ni is clearly indicated, resulting in the grades of only three samples being reduced.

A total of 5,206 density measurements were made of both mineralized and unmineralized rock. Of these, 4,766 samples were contained within the 0.2% Ni domain model of the Langmuir North deposit. Micon determined that the average bulk density of these samples was 2.71 t/m^3 and applied this value as the average bulk density to estimate the mineral resources for the Langmuir North deposit.

The analysis of the variographic parameters of the mineralization found in the mineralized domain for the 0.2% Ni domain began with the construction of down-hole and omnidirectional variograms using the capped, 1.0-m composited sample data with the objective of determining the global nugget (C0) for the nickel data set. An evaluation of any anisotropies that may be present in the data resulted in successful variograms for the three principal directions with model fits ranging from reasonable to good.

An upright, rotated, whole block model (i.e. blocks receive information such as lithological assignments and metal grade on the basis of whether the block centroid is contained within the volume under consideration) with the long axis of the blocks oriented along an azimuth



030° (i.e. parallel to dominant the nickel domain orientation) was constructed using the Gemcom-Surpac v6.1.1 software package. Nickel grades were interpolated into the individual blocks for the mineralized domain using the Ordinary Kriging, Inverse Distance to the power 2 and Nearest Neighbour interpolation methods. "Hard" domain boundaries were used along the contacts of the mineralized domain model in which only data contained within the nickel domain model were allowed to be used to estimate the grades of the blocks, and only those blocks within the domain limits were allowed to receive grade estimates. The capped, composited grades of all the drill hole intersections were used to derive an estimate of a block's grade for those locations situated between drill hole pierce points.

The primary conceptual exploitation scenario for the nickel mineralization contained in the Langmuir North deposit involves extraction of the mineralized material by means of open pit mining methods and producing a nickel-bearing concentrate using a conventional flotation flow sheet in a plant that would be located on the property. The concentrates would subsequently be shipped to a domestic smelting/refining complex for final processing into nickel metal. Any higher-grade mineralized material that may be located below the bottom of a potential open pit shell would be extracted by means of underground mining methods and would be processed through the same plant. A preliminary open pit shell was developed using the Surpac and Whittle software packages that applied the Lerchs-Grossman optimization algorithm to the input parameters selected as the base case scenario.

The mineral resources for the Langmuir North nickel deposit include all profitable blocks (i.e. all blocks that have a positive net value) that are located within the 0.2% Ni domain model and that are contained with the base case optimized open pit shell. Examination of the block values suggests that the nominal Break Even Cut-off Grade is approximately 0.21% Ni, while the mill-incremental cut-off grade is approximately 0.19% Ni. The mineral resources below incorporate nickel grades that were estimate by means of the Ordinary Kriging interpolation method. The estimated mineral resources for the Langmuir North deposit are set out in Table 1.1.

The mineral resources are estimated at 8,324,000 tonnes grading 0.40% Ni. Micon believes that sufficient information is available to classify the mineral resources in the Indicated Resources category.



Cut-off Grade (% Ni)	Classification	Volume (m ³)	Tonnes	Ni (%)
		Waste:		
0.0 -> 0.19		9,139,000	23,862,000	0.00
		208,000	562,00	0.13
Sub Total		9,346,000	24,424,000	0.00
	Mill Incremental:			
0.19 -> 0.21	Indicated (2)	160,000	433,000	0.20
Sub Total		160,000	433,000	0.20
	Μ	ineralized:		
0.21 -> 10.0	Indicated (2)	2,912,000	7,891,000	0.41
Sub Total		2,912,000	7,891,000	0.41
Total, Mill Increm	Total, Mill Incremental +		8,324,000	0.40
Mineralized	Mineralized			
Total Material	Total Material		32,749,000	0.10
Strip Ratio (W:MI+M)			2.93	

 Table 1.1

 Estimated Mineral Resources for the Langmuir North Deposit

1. Mineral resources which are not mineral reserves do not have demonstrated economic viability. The estimate of mineral resources may be materially affected by environmental, permitting, legal, title, taxation, sociopolitical, marketing or other relevant issues.

- 2. There are currently no measured or inferred mineral resources for the Lanqmuir North deposit.
- 3. Tonnages have been rounded to the nearest thousand tones.
- 4. Sums may not add due to rounding.
- 5. Mineral resources are inclusive of mill incremental material.
- 6. Grade interpolation is estimated by Ordinary Kriging method.

1.13.1.2 Langmuir No. 1 Deposit

A digital database was provided to Micon by Inspiration wherein such drill hole information as collar location, down hole survey, lithology, density measurements and assays was stored in comma delimited format. The drill hole information was provided on an on-going basis as new information became available after the date of Micon's site visit. The cut-off date for the drill hole database was October 28th, 2009 and included all drill hole information up to and including hole L108-123. The drilling was carried out at a nominal spacing of 15 metres vertically on sections spaced 15 metres apart in plan view.

Geological modeling of the lithologies and mineralization found at the Langmuir No. 1 deposit were carried out along a slightly different approach to that presented for the Langmuir North deposit in that the nickel mineralization was perceived to be an example of a komatiite-style deposit. In this style of deposit, the nickel mineralization is hosted by komatiitic lava flows that have erupted upon a floor of dacitic lavas, and can build up over time such that successive flows can be formed upon a paleo-topographic surface of older komatiite flows as well. At the outset of this exercise, the overall strike of the stratigraphy/mineralization was believed to be southwest-north east (~ azimuth 030°), with the dips of the lithologies being steeply southeast. As was the case for the Langmuir North



deposit, given the location of the deposit in the regional context, the facing directions are interpreted to be to the southeast. In contrast to the Langmuir North deposit, no significant quantities of post-mineralization felsic intrusions were observed at the Langmuir No. 1 deposit. Following completion of the construction of the domain models at various nickel BECOG's, Micon elected, in consultation with Inspiration, to apply a break-even nickel cut-off grade of 0.2% Ni in the construction of the domain model of the nickel mineralization found at the Langmuir No. 1 deposit.

As a result of its modeling exercise of the nickel mineralization found at the Langmuir No. 1 deposit, Micon believes that, at a cut-off grade of 0.2% Ni, the nickel mineralization can be shown to be related to a thick ultramafic flow that sits upon a footwall that is composed dominantly of dacite flows containing minor embayments of older ultramafic flow rocks. This thick flow contains higher grade pods of semi-massive to massive sulphides that have formed as a result of sulphide nucleation and gravitational settling.

In all, lithological interpretation was carried out on 25 cross-sections along a strike length of approximately 550 metres and to a maximum depth of approximately -200 metre elevation (approximately 500 metres beneath the surface) while interpretation of the 0.2% Ni mineralization was carried out along a strike length of approximately 250 metres and to a maximum depth of approximately the 0 metre elevation (approximately 300 metres beneath the surface). As a result of the domain modeling exercise, it was discovered that the overall strike of the mineralization for the Langmuir No.1 deposit was to approximately azimuth 060° with an average dip of approximately -75° to the southeast.

Grade capping (or top cutting) was investigated on the raw nickel assay values in order to ensure that the possible influence of erratic high values did not unduly bias the database or grade estimate. All samples contained within the three-dimensional model of the Langmuir No. 1 0.2% Ni domain model were coded in the database and extracted for analysis. A normal histogram was generated from these extraction files and the descriptive statistics of the sample data set were generated. The grade cap was selected by examining the histogram for the grade at which outlier assays begin to occur. A capping value of 3.8% Ni is clearly indicated, resulting in the grades of 35 samples being reduced.

A total of 3,744 density measurements were made of both mineralized and unmineralized rock. Of these, 2,703 samples were contained within the 0.2% Ni domain model of the Langmuir No.1 deposit. Micon determined that the average bulk density of these samples was 2.86 t/m³ and applied this value as an average bulk density to estimate the mineral resources for the Langmuir No.1 deposit for this initial mineral resource estimate.

The analysis of the variographic parameters of the mineralization found in the mineralized domain for the 0.2% Ni domain began with the construction of down-hole and omnidirectional variograms using the capped, 1.0-m composited sample data with the objective of determining the global nugget (C0) for the nickel data set. An evaluation of any anisotropies that may be present in the data resulted in successful variograms for the three principal directions with model fits ranging from reasonable to good.



An upright, rotated, whole block model (i.e. blocks receive information such as lithological assignments and metal grade on the basis of whether the block centroid is contained within the volume under consideration) with the long axis of the blocks oriented along an azimuth 060° (i.e. parallel to dominant the nickel domain orientation) was constructed using the Gemcom-Surpac v6.1.1 software package. Nickel grades were interpolated into the individual blocks for the mineralized domain using the Ordinary Kriging, Inverse Distance to the power 2 and Nearest Neighbour interpolation methods. "Hard" domain boundaries were used along the contacts of the mineralized domain model in which only data contained within the nickel domain model were allowed to be used to estimate the grades of the blocks, and only those blocks within the domain limits were allowed to receive grade estimates. The capped, composited grades of all the drill hole intersections were used to derive an estimate of a block's grade for those locations situated between drill hole pierce points.

A preliminary open pit shell was developed using the Surpac and Whittle software packages that applied the Lerchs-Grossman optimization algorithm using the same input parameters as were applied for the Langmuir North deposit, as these represented the best available estimates at the time of preparation of this mineral resource estimate.

The mineral resources for the Langmuir No. 1 nickel deposit include all profitable blocks (i.e. all blocks that have a positive net value) that are located within the 0.2% Ni domain model and that are contained with the base case optimized open pit shell. Examination of the block values suggests that the nominal Break Even Cut-off Grade is approximately 0.21% Ni, while the mill-incremental cut-off grade is approximately 0.19% Ni. The mineral resources below incorporate nickel grades that were estimate by means of the Ordinary Kriging interpolation method. The estimated mineral resources for the Langmuir North deposit are set out in Table 1.2.

The mineral resources are estimated at 1,733,000 tonnes grading 0.51% Ni. Micon believes that sufficient information is available to classify the mineral resources in the Indicated Resources category.



Ni Ok	Classification	Volume	Tonnes	Ni Ok		
Waste:						
0.0 -> 0.19		8,038,000	21,739,000	0.00		
Sub Total		8,038,000	21,739,000	0.00		
Mill Incremental:						
0.19 -> 0.21	Indicated (2)	23,000	67,000	0.20		
Sub Total		23,000	67,000	0.20		
Mineralized:						
0.21 -> 10.0	Indicated (2)	583,000	1,666,000	0.52		
Sub Total		583,000	1,666,000	0.52		
Total, Mill Incremental			1,733,000	0.51		
+Mineralized						
Total Material		8,645,000	23,473,000	0.04		
Strip Ratio			12.5			

Table 1.2 Estimated Mineral Resources for the Langmuir No. 1 Deposit

1. Mineral resources which are not mineral reserves do not have demonstrated economic viability. The estimate of mineral resources may be materially affected by environmental, permitting, legal, title, taxation, sociopolitical, marketing or other relevant issues.

- 2. There are currently no measured or inferred mineral resources for the Langmuir No. 1 deposit.
- 3. Tonnages have been rounded to the nearest thousand tonnes
- 4. Sums may not add due to rounding
- 5. Mineral resources are inclusive of mill incremental material
- 6. Grade interpolation is estimated by Ordinary Kriging method.

1.14 INTERPRETATIONS AND CONCLUSIONS

Inspiration Mining Corporation has been conducting exploration programs on its Langmuir Project located south of Timmins, Ontario with the goal of discovering additional occurrences of nickel mineralization similar to that which had been exploited in the past at the Langmuir #1 and Langmuir #2 mines. These exploration programs have been successful in outlining sufficient concentrations of nickel at the Langmuir North deposit and at the Langmuir No. 1 deposit to prepare an initial mineral resource estimate. As well, according the information presented in Jensen (2009), exploration drilling elsewhere on the property has been successful in discovering the presence of nickel mineralization of potentially economic grades across potentially mineable widths in such locations as between the Langmuir #1 and Langmuir #2 mines and in the extreme northwestern portion of the property.

The historical production record of the Langmuir property clearly demonstrates that (potentially) economic quantities of nickel mineralization have indeed been demonstrated to be present on the property. While the property has been the subject of previous exploration programs whose goals, presumably, were the location of additional deposits with similar grades as were exploited at Langmuir No. 1 and Langmuir No. 2 mines, Micon believes that given the economic context of the time, little attention has historically been directed towards



evaluating the potential of the presence of near-surface, lower grade mineralization that could be exploited by means of open pit mining methods.

Delineation drilling programs carried out by Inspiration have been successful in outlining two areas of near-surface, ultramafic-hosted nickel mineralization that initial work suggests may be exploited by means of open pit mining methods. Preliminary interpretation of geophysical (magnetic) data suggests that the Langmuir North and Langmuir No. 1 deposits are hosted by two separate units of ultramafic rocks. It is to be noted that the information presented in Figure 19.3.1 has been prepared from data presented in Jensen (2009) and has been prepared to a suitable level of accuracy to be used for illustrative purposes only, and is not intended for use as a basis for detailed planning.

Examination of the magnetic signatures in combination with the known surface-based geology clearly shows that at least four additional ultramafic units which sub-parallel those that host the Langmuir North and Langmuir No. 1 deposits are present on the property.

Exploration drilling along the northeastern strike extension of the Langmuir No. 1 deposit has been successful in identifying the presence of additional nickel mineralization similar to the Langmuir No. 1 deposit along a strike length of approximately 1,000-1,200 metres. As well, limited exploration drilling that tested targets hosted by an ultramafic unit located immediately to the northwest (i.e. in the stratigraphic footwall) of the Langmuir No. 1 mine unit has also been successful in locating near-surface nickel mineralization. The magnetic signatures and geological mapping suggest that this footwall unit can have a strike length on the property on the order of 2,500-2,750 metres.

Limited exploration drilling has also been carried out in the extreme northwestern portion of the property and has also been successful in identifying the presence of additional nickel mineralization similar to the Langmuir North and Langmuir No. 1 deposits along a strike length of approximately 1,200-1,500 metres.

A small number of drill holes, completed to test an ultramafic unit located to the southeast of the Langmuir No. 1 deposit (i.e. in the stratigraphic hangingwall), have also encountered low-grade nickel mineralization, while a fourth suggested ultramafic flow further to the southeast remains essentially untested by drilling.

On the basis of the exploration work completed to-date, Micon agrees with Inspiration's opinion that potential remains to locate additional nickel mineralization. Micon believes that the potential exists on the property to locate an additional 20 to 40 million tonnes of nickelbearing material with an average grade from 0.15% to 0.6% Ni. The potential quantity and grade of any additional nickel-bearing material is conceptual in nature and there has been insufficient exploration to define a mineral resource and that it is uncertain if further exploration will result in the target being delineated as a mineral resource.

Micon believes that Inspiration is justified in carrying out further exploration programs whose goals are to locate additional nickel-bearing zones on the Langmuir Property.



1.15 **Recommendations**

In respect of the Quality Assurance/Quality Control aspects of the project, Micon suggests the following:

- That the sources of the excursions for the standard reference materials OREAS 13P, 14P and 72a be examined in detail and appropriate corrective actions taken for such items as clerical errors. Micon recommends that a small program of re-assaying be carried out for those samples that have been deemed to be due to a poor laboratory result, with additional corrective measures taken if required.
- In respect of the failed blank sample, Micon also recommends that a small program of re-assaying be carried out for those samples that were associated in the sample stream with this blank sample.
- That the possible sources of the poor performance for standards OREAS 13P and 14P that were analyzed as part of the re-assaying program for the Langmuir North be investigated and appropriate corrective actions taken. A possible solution to prevent oxidation of standard reference materials in the future would be to store the materials in a freezer.
- Micon observes that two failed samples are present for the blank sample material that was assayed during the re-assaying program for the Langmuir North deposit. Micon also recommends that a small program of re-assaying be carried out for those samples that were associated in the sample stream with this blank sample.
- That the control charts for the standards, blanks and duplicates be maintained and updated on a regular basis such that any anomalous results can be identified and addressed in a timely manner. As well, Micon recommends that a modification be made to Inspiration's data management methods to construct a separate database that is dedicated to the management of the QA/QC information to facilitate the timely analysis of new QA/QC data.

In respect of the exploration potential of the property, Micon suggests the following:

- Prepare a detailed compilation of the surface and three-dimensional geology and mineralized zones from all available sources to assist in identification of exploration targets in the favourable peridotite units. Such a compilation ideally would be completed using all available drill hole data.
- Deep-searching, surface-based EM surveys be carried out along those magnetic anomalies that are observed or interpreted to be related to ultramafic host rocks. Such surveys would be designed to search for higher grade sulphide mineralization at depth. Anomalies identified should be tested by surface-based diamond drill holes.



- Continue exploration drilling to search for possible concentrations of higher grade nickel mineralization beneath the known deposits (Langmuir #1, Langmuir #2 and Langmuir North. Micon envisions that such drilling be carried out initially at a wide spacing. Down-hole geophysical surveys (bore hole pulse EM) surveys would be carried out in these deeper drill holes to search for the possible presence of conductive sulphide mineralization in the vicinity of these bore holes.
- Examine the environs of the Langmuir #2 deposit by means of shallow drill holes for the possibility of low-grade, near surface mineralization that may be exploited by open pit mining methods.

In respect of the project development aspects of the project, Micon suggests that:

- Given the suggested relationship of the bulk density to the nickel grades at the Langmuir No. 1 deposit, Micon recommends that future mineral resource estimates be prepared using the detailed bulk density information so that accurate local estimates of the mineralized tonnages can be derived.
- The metallurgical test work on the Langmuir North be completed and metallurgical testing be initiated for the Langmuir #1 deposit
- All future met test work should be carried out on a sulphide nickel (Ni(AR)) basis so as to maintain consistency across the project.
- The inter-element relationships show that a positive relationship is present between nickel, palladium and platinum where higher palladium and platinum values are correlated with higher nickel values, suggesting the presence of a Ni-Pd-Pt-bearing mineral such as braggite (Pt, Pd, Ni)S in the mineralization found at the Langmuir North deposit. Micon therefore recommends that the palladium and platinum grades in concentrate be determined in any future metallurgical testing programs.
- Modify the geological drill hole database to explicitly state the assay method used for the nickel assays for clarity.
- Preliminary geotechnical investigations be completed to suggest maximum rock and soil slope angles in support of future open pit modeling exercises.
- Preparation of a preliminary assessment be completed to study the economic viability of the mineralization discovered to-date.

Inspiration has prepared a proposed exploration program and budget for work to be carried out in 2010 as shown in Table 1.3. Micon has reviewed the proposed budget and believes that it is appropriate and warranted.



Item	No. of Units	Unit Cost	Total Cost
Delineation Drilling, Langmuir No. 1 Extension	30,000 m	\$75/m	\$2,250,000
Metallurgical Testing			\$90,000
Preliminary Geotechnical Investigations			\$80,000
Scoping Study			\$150,000
Exploration Drilling	12,000 m	\$75/m	\$900,000
Assaying	32,000 samples	\$12/sample	\$380,000
Salaries	12 months		\$250,000
Transportation			\$50,000
Support Costs			100,000
Sub-total			\$4,250,000
Contingencies 5%			\$200,000
Grand Total			\$4,450,000

Table 1.3Proposed Exploration Program and Budget



2.0 INTRODUCTION

At the request of Mr. Randy Miller, President and CEO of Inspiration Mining Corporation (Inspiration), Micon International Limited (Micon) has been retained to complete an initial mineral resource estimate for the Langmuir North and Langmuir No. 1 nickel deposits located immediately southeast of the town of Timmins, Ontario, Canada and to prepare a technical report to support its release to the public.

The revisions to this Technical Report were conducted at the request of the Ontario Securities Commission for the following reasons:

- 1) To eliminate or revise footnote 2, below the mineral resource tables, in order to eliminate possible confusion regarding the discussion of inferred resources as conceptual in nature.
- 2) To correct the presentation of the exploration potential as a range of grade as well as a range of tonnage.

Beginning in 2003, Inspiration, through Metal Mines Inc. (its 100% owned subsidiary), has acquired title to a group of mining claims that are located in south eastern Langmuir Township, Ontario and currently owns a 100% interest in 28 unpatented mining claims comprising 69 contiguous claim units (Inspiration, 2009). Two patented mining claims were added to the land holdings in November 2008.

Along with the identification and testing of selected targets on the claim group, exploration activities since then have focussed on the delineation of the extents of the nickel mineralization found in and about the Langmuir #1 deposit as well as the northeastern strike extension of the nickel mineralization at the nearby Langmuir #2 deposit that is referred to as the Langmuir North deposit. The drilling programs carried out at Langmuir North have been successful in outlining nickel mineralization along a strike length of approximately 480 metres, to a depth of approximately 340 metres from surface and across widths ranging from 10 to 90 metres. While the north eastern strike limits of the mineralization appear to have been outlined by drilling, the depth limits of the mineralization have not been located. The drilling completed as of the date of this report has confirmed the extent and the continuity of the mineralization at the Langmuir North deposit with sufficient confidence to allow for the estimation of an initial mineral resource.

The current report is based on data provided to Micon by Inspiration and obtained from other relevant, publicly available information from such sources as the World Wide Web, various Canadian Federal and Provincial government maps, reports and databases, and academic journals. This Technical Report discloses the exploration results obtained from the Langmuir North deposit as at October 28, 2009 and includes drilling and assay results up to and including drill hole LN09-171.

The Qualified Persons who prepared this report are Mr. Richard Gowans, P. Eng., President of Micon, Mr. Reno Pressacco, P. Geo., a Senior Geologist with Micon and Mr. Jonathan



Steedman, a Mineral Resource Geologist with Micon. At the time of the revisions to this report, Messer's Pressacco and Steedman were no longer employed by Micon but both have reviewed the revisions and have consented to them. At the time of the original Technical Report, Mr. Steedman was a member of the AusIMM and therefore a QP for the purposes of NI 43-101 regulations. However, Mr. Steedman has since let his membership lapse.

Mr. Pressacco visited the Langmuir property on June 4 and June 5, 2008 where the nature of the mineralization was observed in drill core, the methods of drilling, sampling and analysis were reviewed and discussed, the project's database structure was reviewed, and discussions regarding the conceptual operational scenarios were held. The site visit was conducted in the presence of Mr. Kian Jensen, Consultant to Inspiration and Mr. Allen Mann.



3.0 **RELIANCE ON OTHER EXPERTS**

Micon has reviewed and evaluated the data pertaining to the Langmuir North deposit and has drawn its own conclusions therefrom. Micon has not carried out any independent exploration work, drilled any holes or carried out any sampling and assaying of material from the property, other than the check sampling to confirm the presence of various components of the mineralization which is discussed in Section 14 of this report.

While exercising all reasonable diligence in checking, confirming and testing it, in the preparation of this report Micon has relied upon the data provided by Inspiration and that found in the public domain.

The status of the mining claims or mineral tenements under which Inspiration holds title to the mineral rights for the Langmuir property has not been investigated or confirmed by Micon, and Micon offers no opinion as to the validity of the title claimed by Inspiration. The description of the property, and ownership thereof, as set out in this report, is provided for general information purposes only.

The conclusions and recommendations in this report reflect the authors' best judgment in light of the information available to them at the time of writing. The author and Micon reserve the right, but will not be obliged, to revise this report and conclusions if additional information becomes known to them subsequent to the date of this report. Use of this report acknowledges acceptance of the foregoing conditions.

Unless otherwise indicated, all currency amounts are stated in Canadian dollars (CAD\$). The metric system of units is used in Canada, thus, distance is generally expressed in metres (m) or kilometres (km), area in hectares (ha) and weight in grams (g), kilograms (kg) and metric tonnes (t, 1,000 kg). Nickel and copper grades are generally expressed as percent (%) while platinum, palladium and gold grades are generally expressed as grams per metric tonne (g/t) or as parts per million (ppm).



4.0 PROPERTY DESCRIPTION AND LOCATION

4.1 **PROPERTY LOCATION AND ACCESS**

A description of the property location and access is presented in Jensen (2009) and is excerpted below:

"Inspiration's Langmuir Property currently consists of 28 contiguous unpatented mining claims containing of 69 claim units, which lie within Langmuir Township, Porcupine Mining Division, District of Cochrane, Ontario and located approximately 25 km southeast of Timmins, Ontario as illustrated in [Figure 4.1].

The property lies within NTS map sheets 42A/06. The coordinates of the property are approximately from 496,230mE to 501,350mE and 5,351,940mN to 5,356,090mN (UTM Zone 17, NAD 83) or between Latitude 48° 19.5' to 48° 21.5' North and Longitude 80° 59' to 81° 3' West.

The original package of mining claims was recorded June 3, 1996, with additional mining claims recorded on June 2, 1997 and June 29, 1999. The ownership in these mining claims was transferred 100% to Sea Emerald Corporation on June 29, 1999. In 2000 and 2002, three mining claims were staked and transferred to Sea Emerald Corporation, which brought the total to 21 contiguous unpatented mining claims and became known as the Langmuir Project.

On April 30, 2003, Sea Emerald Development Corporation executed a Letter Option Agreement with Metal Mines Inc., which was then a private Nevada corporation. That agreement provided an option under which Metal Mines Inc. could acquire 100% ownership of those claims in exchange for the issuance to Sea Emerald Development Corporation of 2,500,000 shares of Metal Mines Inc. common stock in staged installments. The Letter Option Agreement also contained certain other agreements between the two parties. Additionally, Sea Emerald Development Corporation reserved a 3% Net Smelter Reserve (NSR) in those 21 contiguous unpatented mining claims, and provided Metal Mines Inc. the further option to acquire 2% of the 3% NSR at any time in the future for a lump sum payment of \$2,000,000 (US dollars).

On December 3, 2003, Sea Emerald Development Corporation executed, delivered and caused to be filed a transfer of its 100% ownership interest in the 21 contiguous unpatented mining claims to Metal Mines Inc.

On April 19, 2004, Metal Mines Inc. completed the process of continuing its place of incorporation to the Province of Ontario from the State of Nevada. Subsequently, on November 10, 2004, Inspiration Mining Corporation acquired all of the outstanding shares of Metal Mines Inc. under a negotiated Share Exchange Agreement. Under that transaction, Inspiration Mining Corporation became the sole owner of Metal Mines Inc., which in turn, owns 100% interest in the original 21 contiguous unpatented mining claims known as the Langmuir Project.



Figure 4.1 Location of the Langmuir Project



During 2004, and again in 2006, Metal Mines Inc. filed litigation against Sea Emerald Development Corporation and its principals, the result of which the Ontario Superior Court of Justice confirmed the full legality of the ownership of those mineral claims in Metal Mines Inc. and forever barred those defendants from challenging that ownership in the future.

The original Langmuir Project consisted of 21 contiguous unpatented mining claims containing 54 claim units and comprising an area of approximately 850.60 ha.

The 7 contiguous unpatented mining claims were recorded on June 3 and 6, 1997 by Lorne Eino Luhta. On June 6, 1997, Mr. Luhta also recorded a 33.00% ownership interest to Ronald James Orchard. Subsequently, on April 19, 1999, Ronald James Orchard filed a transfer of that 33% interest back to Lorne Eino Luhta.



On September 19, 2005, Inspiration Mining Corporation entered into a Purchase Agreement to acquire the 7 contiguous unpatented mining claims, known as the Luhta Project from Lorne Eino Luhta in exchange for the payment of \$5,000 cash plus the issuance to the vendor of 50,000 shares of common stock of Inspiration Mining Corporation and subject to a 1% Net Smelter Return (NSR).

On November 2, 2005, the 7 contiguous unpatented mining claims were transferred to Metal Mines, Inc., the wholly owned Ontario subsidiary corporation of Inspiration Mining Corporation.

The Luhta Project consists of 7 contiguous unpatented mining claims containing 15 claim units and comprising an area of approximately 228.08 ha.

On February 13, 2006, Inspiration Mining Corporation acquired ownership of the patented surface rights on three tracts of land containing an aggregate of 120.09 acres constituting a portion of the Langmuir Property from the City of Timmins. Those surface rights consist of tracts TR 04-46, TR 04-47 and TR 04-48, covering Mining Claims P. 6451, P. 7467 and P.7867 that are covered by the current mining claims of 1213717, 1213130 and 1213131, respectively, in the Township of Langmuir in the City of Timmins, District of Cochrane, Province of Ontario.

On November 21, 2008, Inspiration completed a purchase agreement with Keefe Cooke Corporation to acquire two patented mining claims with mining rights and surface rights, HR1181 and HR1182, located adjacent to the west side of the Langmuir property. Inspiration paid \$75,000 and issued 105,000 common shares, which were subject to a four-month hold period expiring on March 25, 2009.

At present, the Langmuir Property is approximately 1,120.78 ha (2,801.97 acres) within Langmuir Township, Porcupine Mining Division and is approximately 25 km (15.53 miles) southeast of the City of Timmins, Ontario, as summarized in [Table 4.1] as of December 3, 2009 and illustrated in [Figure 4.2].

None of the mining claims are leased. Neither the property boundary nor any of the unpatented mining claim units have been legally surveyed. The boundaries of the patented claims have been surveyed and filed at the Land Title Registry in Cochrane, Ontario. The properties are in good standing order and all mining claims are deemed active. Inspiration must maintain the active status by filing assessment work until the mining claims are brought to lease. To the writer's knowledge there are no outstanding encumbrances or challenges to title of the claims, as shown in records held by the Ministry of Northern Development and Mines (MNDM).

On-going exploration work, including the cutting of survey lines, drill access roads and drill platforms will not require approvals from provincial ministries unless crossing of surface watercourses are required.


Figure 4.2 Land Holdings Map of the Langmuir Project, Langmuir Township, Ontario (after Jensen, 2009)



*Note: dark grey shaded claims have patented surface rights owned by Inspiration Mining Corporation.

The mine workings, waste dump and settling pond of the former producing Langmuir No. 1 Mine are located on mining claim 1236554. The former mine operators did not construct a mill or tailings pond on site, as all nickel bearing material was processed off site and very little of the surface infrastructure remains on site. The mine portal is blocked and the underground mine workings are flooded.

The mine workings of the former producing Langmuir No. 2 Mine are located on several mining claims with portions of the mine workings located on Inspiration's claims 1213717 and 1213131, which also contain the rehabilitated rock dump. During the later years of mining, a mine cave-in occurred, resulting in ground subsidence and creating a current water filled pond with portions on these mining claims. The mine's settling pond for the mine is located on Inspiration's mining claim 1213414. Portions of Inspiration's mining claims 1213717, 1240736 and 1219467 cover the tailing pond. Inspiration's mining claim 1213717 covers the Langmuir – South Zone. Inspiration's Langmuir No.2 Mine – North Zone is located on portions of mining claims 1213130, 1213131 and 1213414.

The mine tailings of the former producing Langmuir No. 2 Mine cover a portion of Inspiration's mining claims 1213717, 1240736 and 1219467. Under relevant Ontario Mining Act Regulations, tailings created by previous operators of the property are not a liability of the current landowner, provided the tailings remain undisturbed.



Mineral Title	Claim Number	Recording Date	Claim Due Date	Percent Option	Work Required	Total Applied	Total Reserve	
MRO & SRO	1213130	1996-Jun-03	2010-Mar-31	100 %	\$ 400	\$ 4,400	\$ 505	
MRO & SRO	1213131	1996-Jun-03	2010-Mar-31	100 %	\$ 400	\$ 4,400	\$ 150,757	
MRO	1213414	1996-Jun-03	2010-Mar-31	100 %	\$ 400	\$ 4,400	\$ 21,238	
MRO & SRO	1213717	1996-Jun-03	2010-Mar-31	100 %	\$ 400	\$ 4,400	\$ 0	
MRO	1214934	1997-Jun-06	2010-Jun-06	100 %	\$ 400	\$ 4,400	\$ 0	
MRO	1219467	2002-Aug-15	2014-Jun-12	100 %	\$ 3,600	\$ 32,400	\$ 0	
MRO	1223513	1997-Jun-06	2010-Jun-06	100 %	\$ 400	\$ 4,400	\$ 0	
MRO	1223514	1997-Jun-06	2010-Jun-06	100 %	\$ 3,200	\$ 35,200	\$ 0	
MRO	1223517	1997-Jun-06	2010-Jun-06	100 %	\$ 400	\$ 4,400	\$ 0	
MRO	1223518	1997-Jun-06	2010-Jun-06	100 %	\$ 400	\$ 4,400	\$ 0	
MRO	1224477	1997-Jun-02	2011-Mar-29	100 %	\$ 400	\$ 4,400	\$ 0	
MRO	1224492	1997-Jun-02	2011-Mar-29	100 %	\$ 400	\$ 4,400	\$ 13,834	
MRO	1224496	1997-Jun-02	2011-Mar-29	100 %	\$ 400	\$ 4,400	\$ 0	
MRO	1228601	1997-Jun-03	2010-Jun-03	100 %	\$ 400	\$ 4,400	\$ 2,964	
MRO	1228602	1997-Jun-03	2010-Jun-03	100 %	\$ 800	\$ 8,800	\$ 0	
MRO	1236554	1999-Jun-29	2013-Apr-26	100 %	\$ 3,600	\$ 39,600	\$ 24,112	
MRO	1236555	1999-Jun-29	2013-Apr-26	100 %	\$ 400	\$ 4,400	\$ 0	
MRO	1236557	1999-Jun-29	2013-Apr-26	100 %	\$ 400	\$ 4,400	\$ 0	
MRO	1236558	1999-Jun-29	2013-Apr-26	100 %	\$ 400	\$ 4,400	\$ 0	
MRO	1236559	1999-Jun-29	2013-Apr-26	100 %	\$ 400	\$ 4,400	\$136	
MRO	1236560	1999-Jun-29	2013-Apr-26	100 %	\$ 1,600	\$ 17,600	\$ 36,484	
MRO	1236561	1999-Jun-29	2013-Apr-26	100 %	\$ 2,000	\$ 22,000	\$ 0	
MRO	1236562	1999-Jun-29	2013-Apr-26	100 %	\$ 1,600	\$ 17,600	\$ 0	
MRO	1236563	1999-Jun-29	2013-Apr-26	100 %	\$ 2,400	\$ 26,400	\$ 0	
MRO	1236676	1999-Aug-03	2013-May-31	100 %	\$ 800	\$ 8,800	\$ 12,787	
MRO	1236774	1999-Sep-03	2013-Jul-01	100 %	\$ 400	\$ 4,400	\$ 0	
MRO	1240736	2000-Jul-06	2014-May-03	100 %	\$ 400	\$ 4,400	\$ 15,020	
MRO	1240739	2000-Jul-06	2014-May-03	100 %	\$ 800	\$ 8,800	\$ 0	
Source: Ontario Ministry of Northern Development and Mines, Mining Lands Web Site, visited December								
(www.mci.mndm.gov.on.ca/Claims/Cf_Claims/clm_csr.cfm)								

 Table 4.1

 List of Claims, Langmuir Project, Ontario

*MRO=Mining Rights, SRO=Surface Rights

Portions of mining claims 1214934, 1236558, 1223518, 1228602 cover the water of St. Peter's Bay, while portions of mining claim 1240739 cover the waters of Carman Bay and portions of mining claim 1223514 cover the waters of Carman Bay and Night Hawk Lake.

In support of an application for an Ontario Ministry of Environment Certificate of Approval to discharge water, BZ Environmental Consulting, Timmins, Ontario, was retained by Inspiration to undertake a characterization of the background conditions



of the environment surrounding the mine sites prior to the re-establishment of mining activities, with the field portion of the study conducted in late May and early June, 2006.

During 2007, Inspiration engaged Blue Heron Solutions for Environmental Management Inc. (Blue Heron) of Timmins, to take the lead role in managing the environmental and permitting for the Langmuir No. 1 Mine Advance Exploration permits.

Inspiration is in the process of complying with the requirements under the Mining Act to bring a portion of the Langmuir Property to mining and surface rights leasing status."



5.0 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

A description of the accessibility, climate, local resources, infrastructure and physiography is presented in Jensen (2009) and is excerpted below:

5.1 ACCESSIBILITY AND INFRASTRUCTURE

"The property is located in the central portion of Langmuir Township, NTS 42A/06. Access to the property is via the all-weather gravel road formerly known as the "Langmuir Mine" road or currently known as the "Stringer Road" southwards from South Porcupine, for approximately 14.9 km thence westwards on the mine road for approximately 6.7 km to the Langmuir No. 1 Mine and a further 2.4 km to the Langmuir No. 2 Mine. The Langmuir Mine road is a seasonal road and is in need of repair due to potholes and washouts from beaver dams. Larger tracked muskeg-type vehicles can negotiate the local terrain in winter without crossing any creeks or rivers. Numerous bush road and trails cross cut the property from previous exploration activities.

Timmins, a major mining and manufacturing city, can provide all of the necessary infrastructure and technical support for any exploration and development work including mining. Modern telecommunications, scheduled commercial airlines, limited rail service and numerous truck transportation companies service the Timmins area. Xstrata Copper currently has an idle nickel processing circuit at its metallurgical plant located approximately 21.8 km (13.6 miles) east of Timmins. Any nickel concentrate produced can be refined at either Xstrata or INCO smelters in Sudbury located approximately 467 km (290 miles) south of Timmins. Additional exploration personnel can be provided from the surrounding local communities.

Electric power could be obtained from the hydro line that extends from South Porcupine to the Redstone Mine along the Langmuir Mine road or "Stringer Road" or from portable electric generators stationed on the property.

The property is of sufficient size to accommodate all facilities required to allow mining activities to proceed, if economic mineralization in sufficient quantities is discovered on the property."

5.2 CLIMATE AND LOCAL RESOURCES

"The climate is temperate with four distinct seasons, typical of the Southern Shield, and moderated by the proximity of the Great Lakes to some extent and by James Bay. Other than some small beaver ponds, exploration activities can be completed year around with preference in the winter months. Water for diamond drilling on Langmuir Property can be obtained from various ponds and small creeks. Several of the diamond drill holes that have produced water are capped and may be used as a source of water for drilling purposes.

The daily winter temperatures for Timmins range from 0° C to -8° C in November to -11° C to -24° C in January with extreme temperatures recorded in December to



February of -44° C or greater. The daily summer temperature range from 2° C to 24° C with extreme temperatures recorded of 31° C to 39° C. The average annual rainfall is approximately 580 mm with the majority of precipitation occurring from May to October. The average annual snowfall is approximately 352 cm with the majority occurring from November to March.

The property lies within the Boreal Forest Region and is subdivided into two subsections, the Northern Clay and the Hudson Bay Lowlands. The Northern Clay Subsection has large stretches of low-lying areas covered with tag alders, cedar and black spruce with minor amounts of balsam and tamarack. The higher topographic areas are dominated by white spruce, jack pine and poplar with minor and varying amounts birch and black spruce in limited amounts of merchantable timber."

5.3 **Physiography**

"The first glacial advance of the Wisconsinan ice over the area was in a southeast direction that deposited a sandy till. After the retreat of the ice about 8,400 years before present (BP), Lake Barlow-Ojibway was formed and deposits varved clays, silt and fine sand were formed. These glaciolacustrine deposits are only exposed south of the property approximately. The property area and northwards these same glaciolacustrine deposits are covered by the Cochrane till. About 8,100 years BP, the second phase of the Cochrane lobe re-advancement covered the area, which modified and capped the eskers and the Lake Barlow-Ojibway lacustrine deposits with a clayey till and molded drumlinoid landforms with southeast orientation.

The Langmuir Property area is generally low, relatively flat silty sandy clay till and reworked till. The elevation ranges from approximately 275 metres ASL near Carman Bay to slightly higher than 295 metres ASL for higher ground around the tailings dam and the southern portion of the property. Small meandering creeks control drainage on the property, which drains north and east into Carman Bay of Nighthawk Lake. Bedrock exposure is poor to locally moderate with approximate overall coverage of 5 percent."



6.0 HISTORY

A description of the history of the property is presented in Jensen (2009) and is excerpted below:

"Geological mapping and studies have been conducted by various authors of the Ontario Bureau of Mines, Ontario Department of Mines, Ontario Geological Survey and the Geological Survey of Canada, notably Burrows (1924), Hurst (1939), Ferguson (1968), Pyke (1970, 1973, 1974, 1975, 1978, 1982), Coad (1979), Pirashco and Kettle (1991), and Pressacco (1999) and Houle (2004, 2005). Several thesis have been completed on the various aspects of the geology and gold mineralization of Tisdale Township and the Porcupine Gold camp, most notable is Green (1978) on the evolution of Fe-Ni sulfide ores associated with Archean ultramafic komatiites, Langmuir Township.

Early activities in the townships were for gold exploration after the discovery of the Porcupine Gold Camp. In 1927, Shoniwigwam Group completed 13 trenches along a gossan (suspected iron formation) located west of the current tailings pond at Langmuir No.2 Mine on Inspiration's current mining claim 1219467. All assay results indicated trace values (Assessment File T-3618).

More recent activities happened after McWatters Gold Mines Limited discovered nickel in 1964 with a narrow layer of serpentinite in Langmuir Township. The McWatters deposit was estimated to contain approximately 643,500 (short) tons averaging 1.04 percent nickel (diluted) (Pyke, 1970)."

It is to be noted that this estimate has not been reviewed by Micon, should be viewed as having a limited reliability as the parameters that were used at the time may not be relevant under current market conditions and may not conform to the current standards set out in NI 43-101 as this estimate was prepared prior to the establishment of these standards.

"In 1959-60, Texas Gulf Sulphur Company completed an airborne geophysical survey, ground geophysical surveys and 194 m of diamond drilling (2 holes) that intersected massive pyrite-pyrrhotite zones in iron formation with inconclusive results (Assessment File T-451).

Following the announcement of this discovery and the Kidd Creek discovery in 1964, Mespi Mines Limited contracted a combined airborne AMAG and AEM survey over a large area that included the Langmuir property. There is no follow-up exploration work recorded as a result of this survey.

In 1966, Mining Corporation of Canada Limited optioned the Con Shawkey Gold Mines Ltd. southern property that is covered by Inspiration's mining claim 1236563 and completed a magnetic and VEM survey, which located several conductors. This was followed up with minor trenching and 6, AXT size diamond drill holes totaling 2,642 feet (805.3m). No assay results are reported. During 1966 and 1969 the property was geologically mapped (Assessment File T-1292).



In 1966, Larchmont Mines Limited conducted electromagnetic, magnetic and IP surveys. The eastern portion of their property is currently the junction of Inspiration's mining claims 1236561, 1236562, 1236563 and 1236554 (Pyke, 1970).

In the period 1964-66 Mining Corporation of Canada (1964) Limited (later merged with Noranda Mines Limited) conducted magnetic and HLEM surveys followed by 33 diamond drill holes totaling 7,079 m. This work resulted in the discovery of the Langmuir No. 1 and No. 2 deposits on joint venture lands held as a 51% Mining Corporation of Canada (1964) Limited and 49% INCO Limited Joint Venture. Limited information is available regarding the drill results. Research of the assessment files indicated drill hole L1-12 contained 1.07%, 1.57% and 1.27% Ni while drill hole L1-16 contained 4.21% Ni. The sample width and the drill hole locations are unknown (Assessment File T-1018).

Between 1966 and 1972, the Noranda – INCO Joint Venture, completed further land acquisition. Additional magnetic, HLEM surveys, geological surveys and diamond drilling were completed. An ensuing feasibility study identified indicated reserves of 1,360,500 tonnes grading 1.87% Ni, with undisclosed Cu and PGE credits within the Langmuir No. 2 deposit."

It is to be noted that this estimate has not been reviewed by Micon, should be viewed as having a limited reliability as the parameters that were used at the time may not be relevant under current market conditions and may not conform to the current standards set out in NI 43-101 as this estimate was prepared prior to the establishment of these standards.

"In 1967, Mespi Mines Limited contracted Hunting Survey Corporation to complete an airborne magnetic and electromagnetic survey over parts of Langmuir, Eldorado, Carman and Douglas Townships.

During 1971, INCO completed drill hole number 43228 after a magnetic survey on Inspiration's current mining claim 1236562. Limited information is available regarding the drill results. (Assessment File T-74)

In the 1970-73 period, a 446 m deep shaft and a flotation mill were constructed on the property. Production from the Langmuir #2 deposit in the period 1973-78 amounted to 1,133,750 tonnes grading 1.45% Ni. Indicated resources at the Langmuir No. 1 deposit were estimated by the Noranda and INCO Joint Venture to be 149,000 tonnes grading 2.1% Ni with undisclosed Cu and PGE credits."

It is to be noted that this estimate has not been reviewed by Micon, should be viewed as having a limited reliability as the parameters that were used at the time may not be relevant under current market conditions and may not conform to the current standards set out in NI 43-101 as this estimate was prepared prior to the establishment of these standards.

"In 1970 Garfield Appraisals and Consultants Limited completed a VLEM survey over a small claim group located in the northwestern part of the current claim holdings. A weak conductor detected by the survey was not investigated (Assessment File T-684).



In 1971, Marvel Minerals Limited completed several diamond drill holes from Night Hawk Lake. Drill hole 71-3 and 71-4 located at or near the northern boundary of Inspiration's mining claim, intersected low values of nickel of 0.10% Ni at the quartzite and peridotite contact and 6 samples ranging from 0.10% to 0.13% Ni within the serpentinized peridotite, respectively.

During 1972, INCO completed a 3 hole orientation basal till sampling program over the Langmuir No.1 mineralization. The objective of the program was to determine the maximum sampling distance from nickel mineralization and also to characterize the anomaly amplitude in the up-ice and down-ice directions. The holes yielded 69 ppm Cu and 12,900 ppm Ni at the top of the basal till while the bottom of the basal till yielded 292 ppm Cu and 6,500 ppm Ni (Assessment File T-3547).

In 1972 Noranda Exploration Company Ltd. completed a single diamond drill hole (153 m) to investigate an untested AEM anomaly located southwest of the Langmuir No. 2 deposit. Analytical results indicated anomalous Ni values within a mixed ultramafic and rhyolitic sequence of rocks.

In 1976, a decision was made to develop the Langmuir No.1 deposit as a supplementary ore source to the Langmuir No.2 mine. The Langmuir No.1 deposit was accessed by a 1250-foot long 12 foot by 15-foot ramp, which stopped 400 feet short of the deposit. Noranda ceased underground development in 1977 due to "deteriorating economic conditions at the Langmuir No. 2 deposit".

Noranda Exploration Co. Ltd. completed line cutting and a total field magnetic survey in 1978 that covers a portion of current mining claims1236563 and 1236554 (Assessment File T-1811).

In 1980, Amax Minerals Exploration Limited contracted a combined AMAG and AEM survey over a large area south of the DPFZ that included the Langmuir property. Amax did not report any follow-up exploration work (Assessment File T-1978).

During 1986, Noranda Exploration Co. Ltd. donated the drill core (to the drill core library maintained by the Ontario Geological Survey) for drill hole number L72-8, which is located in the Langmuir No.2 Mine area, along with complete geology and assay results. The zone averaged 0.335% Ni over 131.1 feet (39.96m) containing highest results of 1.31% Ni over 0.4 feet (0.12m) (Assessment File T-1660).

In 1988, the Ontario Geological Survey (OGS) contracted a combined airborne magnetic and electromagnetic survey over the Timmins area, which included the whole of Langmuir Township. A number of strong AEM responses resulting from this survey do not appear to have been previously drill tested. The OGS (in 2004) contracted Aerodat to cover the regional area with a helicopter mounted frequency domain EM system and a cesium vapour magnetometer. This geophysical data was released into the public domain in 2004, and shows basically the same EM anomalies as the previous airborne survey.

The exploration activities of Timmins Nickel Inc. during 1989 were covered by a report by Derry, Michener, Booth and Wahl (Timmins Assessment File T-4077.)



They completed an independent resource estimation of the Langmuir No.1 deposit which resulted in 164,450 tons at 2.10% Ni. This is based only on the INCO diamond drilling during the 1960's, as the Noranda drilling completed in 1976 was not available to them. The parameters used were 4 foot minimum mining width, 0.95% Ni minimum grade (cut-off), 50 foot projection to nearest hole and if none present then a projection of 25 feet were used, 95% recovery of nickel mineralization, a 20% dilution factor and a tonnage factor of 11.0 cubic feet per ton. The resource was calculated from 50 feet to 400 feet vertically from surface. The crown pillar area from 50 to 150 feet below surface contained 7,493 tons averaging 2.21% Ni (contained in the above resource figure)."

It is to be noted that this estimate has not been reviewed by Micon, should be viewed as having a limited reliability as the parameters that were used at the time may not be relevant under current market conditions and may not conform to the current standards set out in NI 43-101 as this estimate was prepared prior to the establishment of these standards.

"In 1989, Timmins Nickel Inc. after obtaining an option to purchase a 100% interest in the Langmuir property, completed line cutting, magnetic, HLEM and IP surveys. This was followed by 6 diamond drill holes in the Langmuir No.2 Mine – North Zone totaling 6,334 feet (1,930.6 m), 4 diamond drill holes in the Langmuir No.2 Mine – South Zone totaling 8,939 feet (2,724.6 m), and 8 diamond drill holes to evaluate various geophysical exploration targets totaling 7,190 feet (2,191.5 m).

The drill collars for the South Zone drilling are located on current mining claim 1236288 of Starfire Minerals Inc. The intersections obtained in these drill holes (L89-1, L89-2, L89-5) are on Inspiration's current mining claim 1213717. Limited information is available on these drill holes (Assessment File T-4077, Memo dated Jan.11/90).

Timmins Nickel Inc. developed the Langmuir No. 1 Mine, with assistance from Ontario Mineral Incentive Program (OMIP) grants in 1990 (OMIP Grant OM90-118) and 1991 (OMIP Grant OM91-098). The following descriptions of activities are summarized and were obtained from Assessment File T-3547.

Under OMIP Grant OM90-118, Timmins Nickel completed the dewatering of Noranda's 1,250- foot (381m) long ramp, extended the 12 foot by 15 foot ramp for 400 feet (121.92 m) to the 315 foot mine level, completed 4,652 feet (1,417.93 m) of underground diamond drilling, and metallurgical and ore compatibility studies.

The 19 hole drill program was completed in 2 phases, phase 1 consisted of 9 AQsized drill holes (LH-1 to LH-9) totaling 3,627 feet (1,105.5 m) completed in the ramp before the ramp extension commenced and phase 2 consisted of 10 AQ-sized drill holes (LH-10 to LH-19) totaling 1,025 feet (312.4 m) located on the 250 foot level upon completion of the exploration drifting.

The metallurgical sampling indicated that the Langmuir No. 1 ore created difficulties when combined with the Redstone ore. The preliminary testing indicated a recovery of 81.5% on a 1.80% Ni feed grade. Additional metallurgical testing was recommended.



Under OMIP Grant OM91-098, Timmins Nickel completed 106.6 km of grid, 100.3 km of magnetic survey, 70.5 km of electromagnetic Max-Min II surveying, 212 overburden basal till drill holes with the samples being assayed by an aqua regia partial digestion method, 28 underground diamond drill holes totaling 2,545 feet (778.46 m) series L-19 to L-46, underground diamond drill holes series 91-11 to 91-14 totaling 2,040 feet (621.79 m) to test the mineralization below the 315 foot mine level, and 4 surface drill holes, series 91-01 to 91-04 totaling 687.5 feet (209.55 m), directly above the mineralized zones to obtain the overburden thickness.

Underground development consisted of waste drifting (1,227 feet or 374.0 m) and raising (356 feet or 108.5 m) producing 16,881 tons and ore drifting (1,587 feet or 483.72m), slashing (596 feet or 181.66m) which produced 23,618 tons and raise development of 699 feet (213.06m) and slashing (64 feet or 19.5m) to produce a combined 2,740 tons of ore material.

The geophysical surveys resulted in the definition of 5 major conductive zones, the delineation of iron formations and variously altered ultramafic rocks.

Till sampling was undertaken in areas northwest and east of the Langmuir No. 1 deposit, and north of the Langmuir No. 2 deposit. The areas selected for till sampling were identified on the basis of MAG and HLEM data. A total of 214 sites were sampled using a "flow through sampler". Nickel values in excess of 300 ppm (aqua regia partial digestion) were considered anomalous. Nine sites located along the strike of the known deposits, or associated with HLEM conductors were identified as exploration targets for massive sulphide type mineralization.

During 1990 and 1991, Timmins Nickel milled a total of 111,502 tonnes grading 1.74% Ni at the Redstone Mine property in Eldorado Township. (Atkinson, et. al., 2006). All work at the site ceased in early 1992 when Timmins Nickel Inc. declared bankruptcy.

In 1998 Mr. M. G. Caron completed 10.9 km of line cutting followed by a magnetic total field survey on current claims 1213131, 1213414, 1224477, 1240739, 1224492, 1224496, and along a single line traversing current claims 1236560, 1236676 and 1219467. The readings were taken at 12.5 m intervals and positive magnetic features are interpreted as being caused by the presence of magnetite iron formation. A pole-dipole time domain Induced Polarization (IP) survey (a = 50m, n = 6) was conducted on claims 1240739, 1213414, 1224477 and 1224496. Three strong IP responses adjacent to magnetite iron formations were identified which warranted drill testing for their PGE potential (Assessment File T-4001).

In 1997, the Luhta Property was optioned to BMA Mining Corporation. The option expired with no work completed on the property. In 1999, L.E. Luhta contracted Geoserve Canada Inc. to complete a report on line cutting, total field magnetic, HLEM and IP surveys (Assessment File T-4212). Several conductors were located and recommended for drilling. During February 2000, the property was optioned to Pacific North West Capital Corporation. A total of 557 metres of diamond drilling were completed in 5 drill holes. A total of 78 core samples were submitted to XRAL Analytical Laboratories in Rouyn-Noranda and yielded low values for Au, Pt, Pd, Cu and Ni (Assessment File T-4403).



In 2001 Sea Emerald Development Corporation attempted 2 diamond drill holes (total 120 m) on current claim 1236554 northeast of the Langmuir No. 1 Mine. Both drill holes were abandoned without testing the targets. Three other diamond drill holes (total 537 m) were completed on current claim 1224492 west of the Langmuir No. 2 Mine, testing IP responses delineated in the 1998 geophysical program. All diamond drill holes intersected sulphide iron formations hosted in mafic volcanic rocks (Polk, 2001, Assessment File T-4618 and T-4621). These drill holes were relogged and sampled by the author in 2003 for Sea Emerald Development Corporation. No assays have been reported.

During the summer of 2001, Sea Emerald Development Corporation completed 7 auger holes on the western portion of the tailings pond covered by mining claim 1219467 and 1240736 to evaluate the metal content of the tailings. The assaying was completed at Swastika Laboratories Ltd. and returned very low values (Assessment File T-4732).

In 2002, Sea Emerald Development Corporation contracted Exsics Exploration Limited to complete line cutting and geophysical surveying consisting of total field magnetic survey and horizontal loop electromagnetic (HLEM) surveys on the North Grid covered by mining claims 1213414, 1213131, 1213130, 1224497 and 1224498 (Langmuir No.2 Mine – North Zone area) and the West Grid covered by mining claims 1236563, 1236564, 1236555 and 1236561 (Langmuir No.1 Mine area). The surveys outlined the ultramafic metavolcanics and several conductive iron formations (Assessment File T-4763).

During 2003, 2004428 Ontario Inc. (Assessment File T-4953) and Liberty Mineral Exploration Inc. contracted Paterson, Grant and Watson Limited to process and interpret geophysical data sets in the Shaw Dome area to outline the structural, lithology and intrusive activity from airborne geophysics and surface mapping and to select favourable zones of potential nickel and platinum group elements. The airborne geophysics used was the GETEM magnetic and electromagnetic data contracted to Geoterrex Ltd. in 1987 by the MNDM. The magnetic data was edited, IGRF removed, micro-leveled and leveled to the GSC master grid. The survey also included a gravity survey.

Several favourable zones of potential nickel and platinum group elements were located of which Targets T1 and T2A were located within Inspiration's Langmuir Property. Target T1 was interpreted by a series of strong strike- limited EM conductors, indicative of sulphide mineralization at the komatiite southern contact. This target is covered by Inspiration's current mining claims 1236555 and 1219467. Target T1A area is located just south of Inspiration's current mining claim 1213717 and the interpreted komatiite unit may be evidence of "skarn" type alteration at the edge of a gabbro intrusive. Target T2A or the Larchmont target is located on Inspiration's current mining claims 1236561 (southern portion) and 1236554 (northern portion) and interpreted as lean, or silica-rich iron formation in favourable lithology of komatiite and buried intrusive gabbro contact (north), and a strong strike limited EM conductor located at the contact."

A summary of the nickel production from the Langmuir Property is provided in Table 6.1.



Table 6.1 Summary of Nickel Production from the Langmuir Property (after Atkinson, et. al., 2008)

Mine	Years of Production	Ore Milled	Grade
Langmuir #1	1990-1991	11,502 tons	1.74% Ni
Langmuir #2	1972-1978	1.1 M tons	1.43% Ni

*Note: tonnages are given in short tons (2,000 lbs, or ~909 Kg)



7.0 GEOLOGICAL SETTING

Given the high level of mineral endowment in the Timmins area, the geological setting of the region has been the subject of study for a period of time approaching 100 years. As such, details of the regional geology of the area have been updated over the years as additional geological information has become available and the level of understanding has increased. Consequently, a great body of work is available in regards to the various aspects of the regional and local geology of this area, the details of which are available from such publicly available sources as the Ontario Geological Survey, the Geological Survey of Canada, various technical publications and from academia. In the interests of brevity, only an overall summary of the regional and local geology will be presented in this report.

7.1 **REGIONAL GEOLOGY**

The project area is located along the southeastern flank of a geological structure known as the Shaw Dome, which is interpreted to be a large anticlinal structure that plunges to the southeast. The core of the Shaw Dome is composed of an older sequence of rocks that is generally referred to as the Deloro Group while the peripheries of the Dome are composed of a younger sequence of rocks that is generally referred to as the Tisdale Group.

The following description of the regional geology was excerpted from Pressacco (1999):

"The Tisdale Group is a mixed assemblage of mafic and ultramafic volcanic rocks containing interbedded clastic and graphitic sediments that have had a complex folding and intrusive history. The rock units include members of the Tisdale, Krist, Porcupine, and Three Nation Assemblages as defined in Jackson and Fyon (1991). Additional descriptions of these rock units have been provided by such other authors as Ferguson, et. al. (1968), Pyke (1982), Brisbin (1998), and the references contained therein. Although a detailed division of the stratigraphic units of this area was done at the assemblage level by Jackson and Fyon (1991), many workers in the Timmins camp utilize the broader nomenclature (eg. Tisdale and Deloro Groups) as defined by Dunbar (1948) and modified by Pyke (1982). This broader usage is essentially identical to that of Jackson and Fyon, except for the inclusion of the Krist Assemblage in the Tisdale Group. These regional units are briefly summarized below:

The Tisdale Group consists of: i) a lower portion consisting of mixed ultramafic and Mg-tholeiite mafic metavolcanic rocks that have returned an age date of 2707 Ma, ii) a middle sequence dominated by Fe-tholeiitic basalts capped by two distinctive variolitic units, and iii) an upper sequence consisting dominantly of calc-alkaline felsic pyroclastic rocks (Krist Assemblage, 2698 Ma) with minor amounts of carbonaceous argillite. The Tisdale Group is in fault contact in southern Tisdale Township with the older Deloro Group (2727 Ma) located to the south across the Destor-Porcupine fault zone. The rock types in the Deloro Group are dominantly calc-alkaline basalts, andesites, rhyolitic and dacitic tuffs, chemical sediments (Eldorado Assemblage), and lapilli tuffs. A sequence of clastic sediments (Porcupine Assemblage) conformably overlie the Tisdale Group units, and are in turn



unconformably overlain by younger clastic sediments of the Timiskaming Assemblage that are at least 2679 Ma in age.

The Destor-Porcupine Fault is the most significant structure in the area and it consists of a number of zones of shearing and ductile deformation focused mainly within ultramafic flows and intrusions. The fault is either vertical, or dips steeply to the north, has been traced continuously eastwards to the Duparquet, Quebec area where it splits into the east-trending Manneville Tectonic Zone and the southeast-trending Parforu Lake Fault (Couture 1991). The Destor-Porcupine Fault has an apparent sinistral sense of movement in the Timmins area. A set of brittle faults oriented in a general northwesterly direction is present throughout the region. An example of these brittle faults is the north trending Burrows-Benedict fault which passes through the eastern portions of the mine property. These brittle faults are the youngest structural features in the area and offset all stratigraphic units and older structures."

Subsequent work by the Ontario Geological Survey in the area has consisted of detailed compilation, field work including the selection of samples for geochronological dating and geophysical interpretation (Houlé and Hall, 2007). This work has revealed that the felsic rocks (dacite flows and felsic tuff units) along the peripheries of the Shaw Dome were formed during the same time period as the younger Tisdale Group sequence (Figure 7.1).



Figure 7.1 Simplified Geology of the Shaw Dome (after Houlé and Hall, 2007)



7.2 LOCAL GEOLOGY

A description of the property scale geological setting is provided in Jensen (2009) and is excerpted below:

"Komatiite flows on the property belong to the upper komatiite horizon (Jensen, 1985) and are of the aluminum undepleted komatiite variety as defined by Sproule et al (2003). These rocks occur as three northeast trending horizons on the property, which may be fold repetition of a single horizon. The Langmuir No.1 and No. 2 deposits are localized along the base of the predominately extrusive komatiite sequence, and in some instances show thermal erosion of the underlying rocks. Invariably the komatiite rocks are altered to serpentine and carbonate minerals. However relict spinifex texture and polygonal jointing have occasionally been observed on surface but more frequently in diamond drill core.

Synvolcanic quartz – feldspar porphyry and gabbro intrusions are noted in the southwestern part of the property, and spatially distinct from a large trondhjemite intrusion in the western part of the property. Numerous north-trending Matachewan swarm dykes traverse the property, and intrude all rock types.

Fold patterns on the property are dominated by northeast-trending anticline / syncline pairs, with steep to vertical, and possibly overturned limbs. However, the locations of the fold axes are poorly constrained, due to a paucity of rock exposures in critical areas. Detailed mapping and interpretation indicates that both the Langmuir No.1 and No.2 deposits occur at the same stratigraphic position on opposite limbs of an anticline / syncline pair and implies that the favourable stratigraphy may be repeated at several locations on the property.

Several fault directions, with unknown age relationships have been observed or inferred to disrupt the stratigraphy. The major northwest-trending Montreal River Fault causes an apparent sinistral offset of the stratigraphy. Dextral faults trending northeast are more or less parallel to the axial planes of the dominant fold structures that may not cause significant stratigraphic offsets, and are truncated by the Montreal River Fault."

Figure 7.2 General Geology of the Northern Part of Langmuir Township (Jensen, 2009)

INTERNATIONAL

| mineral | industry | consultants





8.0 **DEPOSIT TYPES**

A description of the types of nickel deposits as found on the Langmuir property is provided in Jensen (2009) and is excerpted below:

"Considerable research over the years indicates that komatiite hosted nickel deposits in the Timmins area are similar to the Archean age nickel deposits of the Kambalda and Windarra areas in Western Australia (Coad, 1979, Hill, 2001, Green, 1978, Green and Naldrett, 1981,).

It appears that all the nickel deposits occur in the peridotite komatiites at or near the base of the Tisdale Group. The footwall rocks of the Deloro Group consist of felsic tuff and breccias, sulphide iron formation, calc-alkaline basalt-andesite, or serpentinite.

There are five genetic models to explain volcanogenic nickel sulphide deposits, these being:

a) A sulphurization model originally proposed by Naldrett (1966) was subsequently discounted by Naldrett (1973) but is used to explain local occurrences of nickel mineralization at contacts of certain intrusive bodies whereby introduced sulphur reacts with nickel bearing silicates.

b) The second model proposed by Naldrett (1973) suggests that magmatic nickel sulphides have been transported by the host lava or magma as droplets of immiscible liquid, and that these deposits have settled out of an ultramafic flow consisting of olivine crystals suspended in an ultramafic liquid. During horizontal movement and/or gravity segregation, immiscible sulphides will settle to the base of the flow to accumulate as massive sulphides. Sulphides, which do not reach the base of the flow, will be suspended about olivine phenocrysts forming disseminated or net textured sulphides.

c) The third model as suggested by Hill (2001) uses depressions in the basal contacts of the peridotite bodies and/or relief of the surface onto which the lavas were erupted may control sulphide accumulation because dense sulphide droplets tend to settle out more rapidly than silicate phenocrysts.

d) The fourth model as proposed by Ross and Hopkins (1975) would explain certain features that are similar to the Kambalda deposits in Western Australia. They suggest that the emplacement of the massive and disseminated sulphide layers as separate flow units into a zinc rich aqueous environment would account for the four primary features at the Kambalda deposits, and would account for sharp contacts between the massive and disseminated sulphide zones.

e) Lusk (1976) suggested that a magmatic volcanic-exhalative origin would account for mineralogical layering, local stringer type ore, a relative enrichment in pyrite, zones of footwall bleaching, local abundance of millerite and associated exhalative sedimentary rocks.



The following description of the two main nickel sulphide ore genesis type has been taken from Hill, R.E.T., 2001 and is illustrated in Figure 8.1.

Type I deposits the bulk of the ore is in either massive Fe–Ni–Cu sulphide or a variable mixture of massive sulphide and 'matrix' ore consisting of olivine crystals in a continuous matrix of sulphide which makes up 30–75% by volume. Nickel grades in massive sulphide ore range from 2–20 wt% and those of the matrix ore generally fall in the range 1–5 wt% (average 2.5 wt%). The ore deposits vary from lensoid to tongue-shaped, 5–50 m thick, 5–300 m wide and extend down plunge up to 2 km. Tonnages range from 0.05–50 Mt. Examples of Type I deposits in WA are Kambalda, Silver Swan, Perseverance, Cosmos, Rockys Reward, Maggie Hays, Digger Rocks, Nepean, Honeymoon Well, and deposits at Widgiemooltha.

Type II deposits comprise stratiform accumulations of disseminated Ni–Cu sulphide in central zones of olivine mesocumulate–adcumulate bodies, which occupy very large erosional pathways, in Flood Flow Facies Komatiites. They exhibit consistency in the proportion of fine-grained sulphide (2–5 vol%), and primary bulk sulphide composition, such that Ni grades are generally <1 wt% and average 0.6 wt%. Examples of Type II deposit in WA are Mt. Keith and Yakabindie."

Figure 8.1 Schematic Diagram Illustrating the Genesis of Ore in Komatiite Flows (Jensen, 2009)





9.0 MINERALIZATION

The following description of the mineralization at the Langmuir No. 1 and Langmuir No. 2 deposits was provided by Green and Naldrett (1981):

"Langmuir Deposit 1

Interpretation of deposit 1 is based on two dozen diamond drill holes. The nickel ore occurs near the base of a steeply dipping and isoclinally folded pile of ultramafic rocks approximately 150 m thick [Figure 9.1]. The pile comprises 15 to 20 ultramafic flows, the exact number being difficult to determine because many display only a few of the classic flow features described by Arndt (1975). In general the flows toward the top of the pile are thinner, less MgO rich, and contain more spinifex-textured ore.

Flows toward the base, which are best delineated by their chemical profiles, are as thick as 50 m, yet some have only a few centimetres of spinifex texture at their upper margins. The bottom half of the lowermost flow contains all the ore-grade mineralization, which grades upward from massive ore to net-textured ore to disseminated sulphides. Much of the ore is located in an apparent footwall depression, suggested by variations in the thickness of the basal ultramafic flow.

A detailed investigation of the basal ultramafic flow yielded the following evidence:

- 1) A regular sequence is observed. At its fullest development, massive ore (up to 1.5 m thick) is overlain by interstitial ore (net-textured and spinifex-sulphide textured, up to 7 m thick), disseminated sulphides (up to 13 m thick) in cumulate olivine peridotite, barren cumulate olivine peridotite, spinifex-textured peridotite, and a brecciated flow top.
- 2) In some intersections, the massive ore zone is split in two by a layer of olivine peridotite. In these cases the top of the massive ore zone is now a sheared, tectonic contact.
- 3) The degree of concentration of sulphides toward the footwall differs amoung the holes, suggesting that immiscible sulfides may have undergone incomplete gravitational settling.
- 4) The interstitial ore zone is complex. It can be divided into subunits bearing flow textures that may have resulted from movement of the flow during cooling and solidification.
- 5) The diverse shapes and sizes of olivine grains in the flow, as seen from their well-preserved replacement textures and from the gradation in shape and size over short intervals of drill core intersections through the flow, suggest that many olivine grains crystallized more or less in situ rather than being extruded as phenocrysts.



6) Well-preserved textures suggest that the now-altered olivine grains were connected to one another, forming irregular chains, and definitely did not constitute a series of equant grains of constant diameter.

Figure 9.1 Geologic Plan at the -200 foot (-64 m) Level, Langmuir No. 1 Deposit (after Green and Naldrett, 1981)



7) Up to 60 vol percent sulfides in the bulk rock are encountered in the interstitial ores.

Langmuir Deposit 2

At the Langmuir deposit 2, nickel ore is concentrated close to the base of an ultramafic pile that dips steeply to the southeast. As shown in plan [Figures 9.2 and 9.3], cross section [Figure 9.4], and longitudinal section [Figure 9.5], ore in the shallower levels of the mine is largely confined to lenses within what appears to have been a fault-bounded trough.



The ultramafic pile containing the nickel ore consists of several flows and related intrusions; the ore zones actually lie within the three lowermost flows. Interflow sedimentary rocks and felsic-intermediate lavas are intercalated in the pile.





The south end of the main ore zone is underlain by andesite. The north end is underlain by ultramafic rocks, which are interpreted to be a near-surface magma chamber or lava pool feeding the overlying flows and grading laterally into flows. Sub-economic nickel sulfides are common throughout these ultramafic rocks. A discordant sill or wedge of ore-bearing ultramafic rock connects the footwall ultramafic body to the ultramafic flows of the main ore zone. This may represent a feeder between the magma chamber and the overlying flows.

The feeder was traced back into the footwall by drilling, but after 200 m it is cut by a zone of deformation beyond which correlation of stratigraphy is insubstantiable. No such recognizable feeder has been found for the related





Figure 9.3 Langmuir No. 2 Deposit Composite Set of Level Plans (after Green and Naldrett, 1981)

Western Australian deposits, but this may be due to insufficient exposure or preservation rather than the deposit being distal from its point of eruption.

The small south ore zone (ca. 100,000 metric tonnes) lies 200 m south of the main ore zone of deposit 2, enclosed in a lateral continuation of the same ultramafic pile. Spinifex-bearing ultramafic flows showing all the classic features described from Munro Township (Pyke et. al., 1973) occur 200 m or more to the west of the main zone beneath the emergency tailings pond, but their stratigraphic relationship to the ore-bearing ultramafic rocks in unknown because of the structural complexity and lack of outcrop.





Figure 9.4 Langmuir No. 2 Deposit Simplified Cross Sections (after Green and Naldrett, 1981)

Deposit 2 exhibits the following ore relationships:

- 1) There are different zones of mineralization and, unlike deposit 1, some zones of nickel sulfides lying above the footwall of the ultramafic pile were of sufficient size and grade to constitute ore.
- 2) As mentioned above, the basal ore zone is localized within a trough bounded by two faults, at the south end and at the north end. Deeper in the mine, the downward continuation of the fault forming the southern end of the trough, plus other irregularities in the contact, in particular a paleotopgraphic ridge between the 6 and 7 levels of the mine, appear to have had an important effect on ore control. Control of the basal massive ore zone is further illustrated by a three-dimensional view of the paleotopography in [Figure 9.6]. The landscape was produced by tilting the strata back to their originally horizontal positions, as indicated by flow tops and sedimentary horizons. The variation in thickness of the ultramafic flow that hosts the basal ore zone ... supports the interpretation of a paleotopographic feature, though later folding and faulting undoubtedly have modified the structure in a minor way.





Figure 9.5 Langmuir No. 2 Deposit Simplified Longitudinal Section (after Green and Naldrett, 1981)

- 3) Almost all massive ore (which is from 0-2.5 m thick) is located close to the interface between the andesite footwall and the ultramafic host rock and is overlain by net-textured ore (up to 12 m thick) and then disseminated ore (up to 28 m thick).
- 4) The first overlying ore zone is located near the base of a second ultramafic flow but is not obviously localized by paleotopographic irregularities. Other overlying and less regular ore zones are localized in shears.
- 5) The lack of mineralization in the ultramafic dikes that crosscut the basal ore zone, including a zone where sulfides have replaced spinifex-textured ore, indicates that the replacement took place prior to intrusion of the dikes. The dikes are probably almost contemporaneous with the ultramafic flows, and they were deformed and metamorphosed along with the enclosing flows. Thus, the mineralization is probably penecontemporaneous with the ultramafic flows.

Ore Petrology

Several ore types are encountered in both of the Langmuir deposits. Massive ore is commonly banded, pyrrhotite- or pyrite-rich, and with less common pentlandite. Subordinate chalcopyrite is concentrated in stringers and veinlets. Bands of coarse-grained magnetite comprise up to 70 percent by volume of the ore in places. Sheared ore and breccia ore containing fragments of deformed ultramafic rocks are common at the south end of the deposit 2 and constitute approximately 30 percent of the ore present. In the breccia ore, sulfides surround and replace rock fragments. These ores probably formed from remobilization of sulfides by plastic flow. However, textures indicating brittle deformation of pyrite have also been observed.





Figure 9.6 Isometric View of the Langmuir No. 2 Deposit (after Green and Naldrett, 1981)

Net-textured ore, in which grains of olivine were immersed in a continuous network of sulfides, overlies the basal massive ore zone in both deposits. The sulfide-plusoxide content ranges up to 60 to 65 percent in places, although 30 to 40 percent is typical. An unusual spinifex-textured sulfide-bearing rock occurs in both Langmuir deposits. It is similar to, and in places gradational with, net-textured ore, but the olivine grains are skeletal. This ore is found at flow tops, where large parallel books of olivine identical to those found in spinifex-textured lavas occur in a matrix of sulfide. The matrix appears to have replaced the pyroxene and glass that normally form the matrix in spinifex-textured peridotite. A similar texture formed in the interstitial ore zone near the base of the flows, where the olivine spinifex texture consists of randomly oriented skeletal grains. Pockets of spinifex-textured rock similar to that just described but lacking sulfides are found within cumulus olivine peridotite at the base of komatiitic flows.

Zones of low-grade disseminated ore are patchy and irregular. Textures within these zones, such as subparallel elongate sulfide grains and sulfides replacing silicates, indicate that extensive recrystallization and remobilization has occurred.

Three gradational ore mineral assemblages occur at Langmuir: relatively unaltered, pyrrhotite-rich ore, texturally altered, pyrite-rich ore, and highly oxidized, millerite-pyrite-magnetite ore. The formation of these ores may be explained by the control of nickeliferous opaque mineral assemblages by alteration reactions in ultramafic rocks (Eckstrand, 1975; Chamberlain et. al., 1965; Groves et. al., 1974).



10.0 EXPLORATION

A description of the exploration activities that have been carried out by Inspiration on the Langmuir property is provided in Jensen (2009) and is excerpted below:

10.1 COMPILATIONS

"Noranda and INCO have conducted the most significant exploration programs since 1965 and more recent programs have been carried out by Timmins Nickel Inc. in the 1990's. The only public-domain information of drill logs and assays are available for Timmins Nickel's diamond drilling. Limited information on Noranda's and INCO's diamond drilling is available from compilation work completed by Timmins Nickel Inc., who presumably had access to non-public domain information at that time. The Langmuir Property compilation is illustrated in [Figure 10.1] indicating geophysical and geochemical anomalies and drill holes.

The author has compiled the underground workings for the Langmuir No.1 and No.2 Mines. The compilation of the Langmuir No.2 Mine is based on Noranda's O.L.S 1969 survey map. This map included their Baseline that was oriented at a bearing of N33°35'40"E, and survey layout plans of the mine infrastructure. The author also used information contained in the Ministry of Northern Development of Mines Resident Geologist's Files confidential mine longitudinal and closure underground level plans at a scale of 1 inch to 50 feet and certified by A.A. Adamson, P.Eng. ... The author believes these plans to be true and accurate surveyed representations of the underground development and mined zones and has no reason to believe otherwise.

The underground development and ore zones at the Langmuir No.2 Mine, historical drill hole locations, electromagnetic conductors and overburden geochemical anomalies compiled by the author are illustrated in [Figure 10.2] and the Langmuir No.2 Mine longitudinal projection with historical diamond drill holes is illustrated in [Figure 10.3].

The compilation by the author of the Langmuir No.1 Mine is based on Timmins Nickel's 1990 mine survey plan map with layout plans of the mine infrastructure and survey control points. ... None of the survey control points were located and the majority of the exploration and mine data that was stored at the Redstone Mine formerly operated by Timmins Nickel has been destroyed."

A plan view of the compilation map for the Langmuir No. 1 mine is presented in Figure 10.4 while a longitudinal projection is presented in Figure 10.5.

Figure 10.1 Historical Compilation Map of the Langmuir Property (after Jensen, 2009)









Figure 10.2 Historical Compilation Map of the Langmuir No. 2 Mine (after Jensen, 2009)

Figure 10.3 Vertical Longitudinal Projection of the Langmuir No. 2 Mine (after Jensen, 2009)



*Note: View is looking grid west (approximately azimuth 303°)



Figure 10.4 Plan View Compilation Map of the Langmuir No. 1 Mine (after Jensen, 2009)



Figure 10.5 Longitudinal Projection of the Langmuir No. 1 Mine (after Jensen, 2009)





10.2 GPS SURVEYING

"Talbot Surveys Limited (Talbot), Timmins, Ontario has been contracted since 2005 to supply all ground geodetic surveying information, which is completed with a dual frequency Topcon Legacy surveying instrument. The RTK / Kinematic accuracy is 10mm + 1ppm horizontal and 15mm + 1ppm vertical, or basically the surveying accuracy is 0.010m horizontal and 0.015m vertically. Astronomic north is 0 degrees 13 minutes to the east of Geodetic North on the Langmuir Property.

Some of the mine infrastructure foundations and all diamond drill holes located todate have been surveyed by Talbot. All mine workings have been digitized and stored in both the G.P.S. (NAD 83 – Zone 17) as well as the local exploration coordinate systems.

During the ongoing G.P.S. surveying by Talbot, several older version diamond drill collars have been located and picked up by survey. The comparisons between the newly surveyed collars and Timmins Nickel's plans and sections indicate that the Timmins Nickel collars have an error of -0.02 m to -0.12 m in their eastings and 0.70 m to 1.10 m in their northings. The comparisons suggest that Noranda's collars have an error of +14.16 m to +17.34 m in their eastings and -6.59 m to +6.54 m in their northings. As well, INCO's collars have an error of +3.7 m to +14.63 m in their easting and -0.17 m to 9.09 m in their northings. Also, all of the previous companies generally used the acid test method for determination of down hole dip, but the method does not permit the determination of the drill hole direction. In contrast, Inspiration has used Reflex's Maxibor 3 directional down hole surveying method which determines both the drill hole dip and azimuth at a given point along the drill hole. From this comparison, both Noranda's and INCO's drill hole information should be used only for historical purposes, and, although Timmins Nickel collars have minor errors in easting and northing, the down hole directional surveying documentation is not available.

During May 2007, Talbot surveyed several control stations required by Dudley Thompson Mapping Corporation Inc. (DTM) of Surrey, British Columbia. DTM flew the Langmuir property and produced a set of coloured air photographs (scale 1:10,000), mylar topographic contour maps at a 1 metre contour interval and digital maps. These maps have been used for the overall property as base maps."

10.3 GEOPHYSICAL SURVEYS

10.3.1 Ground Geophysical Surveys

"Since acquiring the Langmuir Project in early 2004 and the Luhta Project in late 2005, Inspiration has refurbish both Langmuir No.1 Mine and Langmuir No.2 North Zone grids, conducted preliminary confirmation magnetic and electromagnetic surveys, and reconnaissance and detail in-filling diamond drilling programs.

During 2005, Inspiration contracted M.C. Exploration Services of Timmins to complete a total field magnetic survey utilizing a GEM GSM-19 magnetometer and an Apex Parametrics Max Min II electromagnetic surveys, which recorded 3



frequencies, on 2 northwest to southeast trending grid lines north of the Langmuir No. 1 Mine. (Assessment File T-5127) Mr. Matthew Johnston of Timmins completed the report and interpretation. The surveys indicated 2 electromagnetic conductors trending in a northeasterly direction between a magnetic iron formation to the southeast and a weaker magnetic body to the northwest.

During the fall and winter of 2006, Inspiration contracted MC Exploration Services Inc. of Timmins, Ontario, to complete an imperial diamond drill grid at Langmuir No. 1 Mine site area with pickets every 25 feet with line separations at 50 foot interval over the Langmuir underground mine workings and nickel bearing zones. Additional grid lines were established to the northeast and southwest of this area at 100-foot intervals. This grid was later expanded to the southeast. Geophysical surveying of total field magnetic and data processing was completed in March, 2007. During October and November, 2007, the expanded Langmuir No.1 grid was surveyed with total field magnetic and the complete Langmuir No.1 grid was surveyed with and Max-Min II electromagnetic survey recording frequencies 444 Hz, 1777 Hz and 3520 Hz. The Langmuir No.1 grid totaled 49.7 km (30.9miles).

During 2007, MC Exploration Services Inc. established the Allerston (46.4 km), Central (33.1 km) and North Zone (33.8km) Grids and completed a total field magnetic and Max-Min II electromagnetic surveys of frequencies 444 Hz, 1777 Hz and 3520 Hz. The North Zone Grid was established also as a diamond drill grid with lines parallel and on the drill section lines. Mr. Matthew Johnston (P.Geoph.) of Timmins, Ontario completed the data reduction, processing and preliminary maps during 2007 and early 2008 to assist in the exploration drilling programs. The final report was completed on March 14, 2009.

[Figure 10.6] illustrates the survey results for the Langmuir No.1 grid with electromagnetic conductors shown as L1 to L12. Conductors L3, L4 and L5 are very conductive trends and indicate a high conductivity-width and may represent strongly mineralized zones. Conductors L5 and L6 show a direct correlation to high anomalous magnetic signatures, which are suspected to be ultramafic metavolcanics. Conductor L6 appears to correlate with the Langmuir No.1 Mine nickel mineralization. Conductor L2 and L3 appear to correlate with a sulphide iron formation at the contact between the felsic pyroclastics of the Deloro Group and the mafic to ultramafic metavolcanics of the Tisdale Group. Depths to the top of the conductive anomalies range from 7.5 to 38 metres. The lack of response on the 444 Hz frequency indicates a low conductivity-width and may represent a weakly mineralized shear or fault zones.





Figure 10.6 Shaded Total Field and Electromagnetic Conductors, Langmuir #1 Grid (after Jensen, 2009)

[Figure 10.7] illustrates the survey results for the Langmuir No.2 Mine North Zone grid with electromagnetic conductors shown as N1 to N10. Conductors N1, N4, N5, N6, N7, N9 and N10 are very conductive trends and indicate a high conductivity-width and may represent strongly mineralized zones. Depths to the top of the conductive anomalies range from 5 to 35 metres. Conductors N7, N9 and N10 show a direct correlation to high anomalous magnetic signatures. It appears that all the conductors detected are associated with either sulphide or magnetite iron formations within the Deloro Group of felsic pyroclastics (western side of the grid) or cherty sulphide iron formations in the Middle Tisdale Group of mafic metavolcanics. The North Zone nickel bearing mineralization is located on the western flank of the oval magnetic high opposite conductor N4.







[Figure 10.8] illustrates the survey results for the Central Grid with electromagnetic conductors shown as C1 to C6. Conductors C3, C4 and C5 are very conductive trends and indicate a high conductivity-width and may represent strongly mineralized zones. Depths to the top of the conductive anomalies range from 5 to 35 metres. Conductor C3 appears to correlate with a high magnetic anomaly and may represent sulphide mineralization in a suspected ultramafic unit.

[Figure 10.9] illustrates the survey results for the Allerston Grid with electromagnetic conductors shown as A1 to A15. Conductors A2 and A7 are the strongest conductive trends and indicates a high conductivity-width and may represent strongly mineralized zones. Depths to the top of the conductive anomalies range from 5 to 40 metres. Conductors A6, A7, A9, A13 and A14 are associated with either the eastern or western flanks of moderate to strong magnetic signatures, which may represent sulphide mineralization at or near the contacts of suspected mafic to ultramafic metavolcanics. The remainder of the conductors may be related to sulphide zones within the thick Deloro group of pillows, tuffs and pyroclastic metavolcanic units."





Figure 10.8 Shaded Total Field and Electromagnetic Conductors, Central Grid (after Jensen, 2009)




Figure 10.9 Shaded Total Field and Electromagnetic Conductors, Allerston Grid (after Jensen, 2009)

10.3.2 Airborne Geophysical Surveys

"During July 4 to 12, 2008, Geotech Ltd. (Geotech) of Aurora, Ontario completed an airborne electromagnetic VTEM and magnetic surveys, which covered the Langmuir, Cleaver and Douglas properties.

Principal geophysical sensors included a versatile time domain electromagnetic (VTEM) system and a caesium magnetometer. Twenty-four time measurement gates (ch10 to ch33) were used for the final VTEM data processing in the range from 120 ms to 6578 ms. The EM data were subjected to an anomaly recognition process using all time domain geophysical channels and using both the B-Field and dB/dt profiles. The resulting EM anomaly picks are presented as overlays on all maps.

The magnetic sensor utilized for the survey was a Geometrics optically pumped caesium vapour magnetic field sensor, mounted in a separate bird, 13 metres below the helicopter.



The sensitivity of the magnetic sensor is 0.02 nanoTesla (nT) at a sampling interval of 0.1 seconds. The processing of the magnetic data involved the correction for diurnal variations by using the digitally recorded ground base station magnetic values. The base station magnetometer data were edited and merged into the Geosoft GDB database on a daily basis for diurnal variations correction. Tie line leveling was carried out by adjusting intersection points along traverse lines. A micro-leveling procedure was applied to remove persistent low-amplitude components of flight-line noise remaining in the data. The corrected magnetic data were interpolated between survey lines using a random point gridding method to yield x-y grid values for a standard grid cell size of approximately 0.25 cm at the mapping scale. The Minimum Curvature algorithm was used to interpolate values onto a rectangular regular spaced grid.

A combined magnetometer/GPS base station was utilized on this project. A Geometrics Caesium vapour magnetometer was used as a magnetic sensor with a sensitivity of 0.001 nT. The base station was recording the magnetic field together with the GPS time at 1 Hz on a base station computer. The base station magnetometer sensor was installed in an isolated area behind the hotel's rear parking lot (Lat 48°28'28"N/Long 81°23'26"W), away from electric transmission lines and moving ferrous objects such as motor vehicles. The base station data were backed-up to the data processing computer at the end of each survey day.

The ancillary equipment included a GPS navigation system and a radar altimeter. The navigation system used was a Geotech PC based unit consisting of a NovAtel's CDGPS (Canada-Wide Differential Global Positioning System Correction Service) enabled OEM4-G2-3151W GPS receive. As many as 11 GPS and two CDGPS satellites may be monitored at any one time. The positional accuracy or circular error probability (CEP) was 1.8 metres with CDGPS active it was 1.0 metre.

A Terra TRA 3000/TRI 40 radar altimeter was used to record terrain clearance. The survey was flown using a Eurocopter Aerospatiale 350 B2 helicopter, registration CFDEV. Expedition Helicopters Ltd. operated the helicopters with a total of 313.4 line-km flown to cover the Langmuir blocks.

The survey operations were based in Timmins, Ontario. In-field data quality assurance and preliminary processing were carried out on a daily basis during the acquisition phase. Preliminary and final data processing, including generation of digital data and map products, were undertaken from the office of Geotech Ltd. in Aurora, Ontario.

The Langmuir blocks were flown at a 100 metre traverse line spacing wherever possible with a number of different flight directions, while the tie lines were flown perpendicular to the traverse lines at a spacing of 1000 metres also with a number of different flight directions.

Final maps were produced at a scale of 1:10,000. The coordinate/projection system used was NAD83, UTM Zone 17 North. All maps show the flight path trace and topographic data; latitude and longitude are also noted on maps. The preliminary and final results of the survey are presented as EM profiles, a late-time gate gridded EM channel, and color magnetic TMI contour maps.



[Figure 10.10] presents airborne total magnetic intensity map with the electromagnetic VTEM anomalies, and [Figure 10.11] shows the corresponding Tilt derivative of the magnetic field. Tilt derivative provides useful information on the horizontal location and extent of the magnetic sources. It is the ratio of vertical derivative to the horizontal gradient of the magnetic field."

Figure 10.10 Airborne Total Field Magnetic Intensity with Electromagnetic VTEM Anomalies, Langmuir Property (after Jensen, 2009)





Figure 10.11 Tilt Derivative of the Total Field Magnetic Intensity with Electromagnetic VTEM Anomalies, Langmuir Property (after Jensen, 2009)



10.3.3 Geochemical Surveys

"During July to November 2007, Inspiration conducted an Enzyme Leach B-Horizon soil geochemical survey under the supervision of the author. Several of the geotechnicians were knowledgeable and experienced with the sampling techniques required for this type of soil and vegetation geochemical surveys.

The samples were collected at 25 metre intervals along grid lines on the Allerston and Central grid systems and at 25-foot intervals along grid lines on the Langmuir No.1 grid system.

Several types of soils were encountered during the survey due to variations in topography and types of glacial deposits, usually glaciolacustrine sand, silt and clay with minor till. In addition some soils present significant variations in color for a given soil type: grey, beige to light brown, brown and orange sandy soil; grey, beige to light brown, brown sandy clay and brown sandy till.



The origin of the soil particles was not studied in detail in the field since the soil geochemical survey uses a very weak selective leaching method that only decomposes Fe- and Mn-coating materials to extract weakly bonded chemical elements on the surface of soil particles. Thus the chemical method used does not rely primarily on the type of soil particles and their origin.

Large areas of the Langmuir Property are covered by low-lying spruce to tag alder muskeg swamps. When B-Horizon soils were not available, the peat or humus was collected.

In areas of sub-crop to bedrock exposure and the good coverage of trees present in the area, black spruce trees were sampled, since they sample larger areas than soil samples through their root systems.

A test area of anomalous nickel in the basal till previously identified by TNI was selected for a combination of B-Horizon soil, humus and twig biogeochemical survey methods. This test area is located in the northeastern portion of the Langmuir No.1 Mine grid.

Soil sample, B-soil or decomposed organic matter from horizon A1, is collected at a depth of 15 to 20 cm below the contact of the A0 soil horizon (litter composed of living organic matter and leaves material) with the next soil horizon (B or A1 horizon). The author has been using this depth of sampling for both soil types for over 12 years and it was recently shown to be the best depth of sampling in soil profiles for maximum enrichment in trace elements extracted by enzyme leach and MMI methods (S. Hamilton 2002, personal communication).

The soil sample is collected with an Auger, Eijelkemp model. The soil sample size was about one full auger, which corresponds to about 300-500g. The auger and the soil sample are directly introduced into a zip lock sample bag. This method allows dropping the sample directly into the sample bag without hand contact in order to limit possible sample contamination by the field personnel.

Peat was mainly found in low depression areas and commonly bounded by low hummocky hills of more resistant bedrock to glacial erosion. Peat or humus samples were collected only if a B-Horizon soil was not encountered. The humus sample size was about one full auger, which corresponds to about 300-500g. The auger and the humus sample are directly introduced into a ziplock sample bag. This method allows dropping the sample directly into the sample bag without hand contact in order to limit possible sample contamination by the field personnel.

In areas of poor soil conditions such as near-surface sub-crop or bedrock exposure, samples were collected by the biogeochemical method. The dominant tree species in the area suitable for this type of survey was black spruce (*Picea mariana*). Samples were taken within a 5m radius of the station if not found along the line. The dead twig samples, generally about $1\frac{1}{2}$ to 2 cm in diameter, which represented material of approximately 5 to 7 years of growth, were collected approximately +/-1 metre above ground level around the tree trunk to limit bias due to sun orientation. To eliminate possible environmental contamination, the sampling personnel wearing



work gloves rubbed off any bark from the dead twig and placed into a brown paper bag.

All sample sites were marked with flagging tape bearing the sample identification number. The field personnel recorded the line and station number, sample number, type of sample (soil, humus or bio), soil type (sand, silt, clay, till) and soil colour, drainage direction, vegetation and distance from the station picket. This information was recorded in an Excel spreadsheet.

About 300-500g of soil samples were submitted to Actlabs in Ancaster, Ontario. Soil samples were dried and sieved at a constant temperature of 40° C at the laboratory facility. A 1 g sample of -60 mesh B-Horizon soil material is leached in a glucose oxidaze solution, which contains an enzyme. The enzyme reacts with amorphous MnO₂ dissolving it. The metals are complexed with the gluconic acid present. The solutions are analyzed on a Perkin Elmer ELAN 6000 or 6100 Inductively Coupled Plasma-Mass Spectrometry (ICP/MS). The analytical package consists of a suite of 61 elements at sub-ppb to ppm levels. Selected anomalous samples are checked by repeating the process. Duplicate samples are run one for every 15 samples.

The organic (humus) material is dried below 60° C, and macerated. Samples weighing 6 to 15 g are compressed with 30 tons of pressure to form a briquette (smaller samples are weighed in vials). Briquettes are stacked and irradiated at a thermal flux of 7 x 1012 n cm-2 s-1 for 15 minutes. The samples were analyzed for 35 elements by Instrumental Neutron Activation Analysis (INAA).

Tree samples (twigs) were dried and shredded before being ashed at 480°C at Actlabs facility in Ancaster (Ontario). The sample ashes were irradiated by epithermal neutron and analyzed for 65 elements by Inductively Coupled Plasma-Mass Spectrometry (ICP/MS).

The author collected a quantity of orange brown sandy till from the Langmuir No.1 Mine grid at Line 39+00 North and 10+388 East. This material was carefully dry sieved to remove any organics and small pebbles and rock fragments and thoroughly mixed to produce a property type standard. A total of 2,282 B-Horizon soil samples were collected with an additional 66 property standards randomly inserted were submitted for analysis. Actlabs duplicated analyses on a total of 147 soil samples, 5 property standards and inserted 21 standards for Quality Control. Of the 97 humus samples submitted for analysis, Actlabs insert 6 standards for Quality Control. A total of 92 twig biogeochemical samples were submitted for analysis with Actlabs duplicating 5 samples and inserted 3 standards for Quality Control.

[Figure 10.12] illustrates the range of nickel values for the 66 property B-Horizon soil standards by Enzyme Leach analysis. [Figure 10.13] illustrates the comparison between the original and duplicate nickel values of the 152 duplicate B-Horizon soil samples by Enzyme Leach analysis."



Figure 10.12 Range of Nickel Values for the B-Horizon Soil Sample Property Standards by Enzyme Leach Analysis (after Jensen, 2009)



The results for nickel of the B-Horizon soil geochemical surveying are shown in Figure 10.14.

Figure 10.13 Comparison of Nickel Values Between the Original and Duplicate Assay Results of the B-Horizon Soil Samples by Enzyme Leach Analysis (after Jensen, 2009)





Figure 10.14 B-Horizon Soil Geochemical Surveying for Nickel by Enzyme Leach Analysis (after Jensen, 2009)





11.0 DRILLING

A summary of the drilling activities and procedures followed for the drilling campaigns carried out by Inspiration is provided in Jensen (2009) and is excerpted below:

"... Upon the completion of each diamond drill hole, Reflex Instrument North America of Timmins, Ontario, completed down the hole directional surveying utilizing the MaxiBor system at 3 metre intervals with the exception of drill hole LN05-05, which was surveyed with the acid dip test method. These survey files were emailed to the author and incorporated into the drill hole databases.

Inspiration's diamond drill hole collars were surveyed after the drill holes were completed and the drill moved off of the collars by Talbot Surveys Limited (Talbot) of Timmins, Ontario, commencing in May 2006 and have been ongoing since that date. Talbot established a survey control station at the Langmuir No.2 Mine site and at the Langmuir No.1 Mine site.

Several old diamond drill holes at the Langmuir No.1 Mine by Timmins Nickel (91-2 and 91-4), Noranda (76-3 and 76-4) and INCO (30703 or 30716, 30722, 30729, 30734, 30738, 30755 and 30760) have been located and surveyed by Talbot.

At the Langmuir No.2 Mine – North Zone, several of Timmins Nickel drill holes (L89-H7, H9, H11 and H13) have been located and surveyed by Talbot. None of INCO's, Noranda's or Timmins Nickel 1992 drill collars have been located and surveyed.

... [Table 11.1] summarizes the various diamond drill hole programs completed on the Langmuir Property by Inspiration as of September 1, 2009."

11.1 LANGMUIR NORTH ZONE DIAMOND DRILLING

"Phase 1 of the diamond drill program consisted of 18 BQ diamond drill holes totaling 3,289 m at the Langmuir No.2 Mine – North Zone by Inspiration Mining Corporation commenced on July 20, 2005 and was completed on October 25, 2005 using Larry Salo Drilling of South Porcupine under the supervision of consulting geologist, Mr. John Boissoneault P.Eng., from August 8, 2005 to October 26, 2005. A skid mounted Longyear 38 drill rig was used for the program.

Phase 2 of the diamond drill program consisted of 4 BQ diamond drill holes totaling 451.85 m at the Langmuir No.2 Mine – North Zone by Inspiration Mining Corporation commenced on November 29, 2005 and was completed on December 8, 2005 using Larry Salo Drilling of South Porcupine. A skid mounted Longyear 38 drill rig was used for the program.



 Table 11.1

 Diamond Drill Hole Summary for the Langmuir Property, September 1, 2009 (after Jensen, 2009)

Location	Drill Program Commencement	Drill Program Completion	Drill Holes	Core Size	Total Footage (m)	Total Samples
Langmuir No. 1 Mine	December 11, 2005	January 11, 2006	6	BQ	1,052.64	511
	October 10, 2006	December 15, 2006	12	NQ	2,827.34	2,114
	January 7, 2007	June 30, 2008	105	NQ	29,689.85	16,151
	Totals for Langmuir	No. 1 Mine	123		33,569.83	18,776
Langmuir No. 2 - North Zone	July 20, 2005	December 8, 2005	22	BQ	3,740.85	2,923
	May 16, 2006	December 8, 2006	41	NQ	4,752.81	2,979
	September 17, 2007	March 31, 2008	60	NQ	13,183.95	6,249
	July 14, 2008	November 11, 2008	28	NQ	8,532.77	4,342
	June 10, 2009	August 9, 2009	19	NQ	4,018.75	in progress
	Totals for Langmuir	No. 2 - North Zone	170		34,229.13	16,493
Langmuir South Zone	January 9, 2007	February 14, 2007	3	NQ	1,518.37	281
Langmuir Exploration	December 11, 2006	April 25, 2007	9	NQ	2,664.42	1,496
	April 13, 2008	November 16, 2008	48	NQ	17,021.12	8,660
	May 19, 2009	June 9, 2009	5	NQ	1,380.63	1,397
	Totals for Langmuir	Exploration Targets	65		21,203.91	11,834
	-					
Totals for Langmuir Project			358		89,002.87	47,106

Phase 3 of Inspiration's drill programs consisted of 41 NQ diamond drill holes totaling 4,754 m commenced on May 16, 2006 and was completed on December 8, 2006. Phase 4 of the drill program consisted of 60 NQ diamond drill holes totaling 13,183.95 m commencing on September 17, 2007 and was completed on March 31, 2008. Phase 5 of the drill program consisted of 28 NQ diamond drill holes totaling 8,532.77 m commencing on July 14, 2008 and was completed on November 11, 2008.

Crites Diamond Drilling of Connaught, Ontario completed Phases 3, 4 and 5 drill programs, which employed a skid mounted Longyear 38 drill rig. Due to the large deviations experienced in the earlier drilling, the drilling from Phase 3 onwards was completed with NQ drill core, a hexagonal core barrel and double reaming shells. These measures proved to stabilize the drill holes and minimize the deviation.

Several of Inspiration's drill holes, LN05-5 to LN05-11, inclusively, had the drill casing removed before accurate location surveying was done. The author terminated this practice and all drill casing commencing with LN05-12 have been left for accurate surveying for drill hole collar location and drill hole azimuth."

The locations of the North Zone drill holes completed by Inspiration are illustrated in Figure 11.1.





Figure 11.1 Drill Hole Location Map, Langmuir North Deposit

Figure 11.2 illustrates a typical cross section of the 0.2% nickel mineralization halo. A summary of the significant mineralized intersections contained within the 0.2% Ni domain model is presented in Table 11.2.





Figure 11.2 Typical Cross Section Looking To Azimuth 030°, Langmuir North Deposit. Location shown in Figure 11.1.



Hole ID	From	То	Length	Ni (%)	Cu (%)	Pd (g/t)	Pt (g/t)
LN05-1	117	151	34	0.24	0.01	0.01	0.01
LN05-10	59	143	84	0.43	0.01	0.19	0.09
LN05-11	34	130	96	0.26	0.01	0.03	0.02
LN05-12	61.35	116.89	55.54	0.26	0.01	0.11	0.05
LN05-13	34	114	80	0.23	0.00	0.01	0.01
LN05-14	14.5	97.8	83.3	0.31	0.01	0.04	0.02
LN05-15	12	138	126	0.45	0.02	0.08	0.04
LN05-16	54	67	13	0.48	0.02	0.14	0.07
LN05-17	57	86	29	0.33	0.02	0.07	0.04
LN05-18	86	105	19	0.30	0.04	0.23	0.12
LN05-19	18	93.5	75.5	0.45	0.01	0.10	0.05
LN05-2	118	223	105	0.29	0.00	0.03	0.01
LN05-20	9	98.2	89.2	0.46	0.03	0.14	0.06
LN05-21	11.36	99.09	87.73	0.27	0.01	0.08	0.04
LN05-22	9.33	100	90.67	0.34	0.01	0.15	0.06
LN05-3	109	116	7	0.83	0.03	0.11	0.05
LN05-4	66	186	120	0.39	0.01	0.09	0.05
LN05-6	92	116	24	0.73	0.03	0.02	0.01
LN05-6	127	133	6	0.75	0.04	0.03	0.02
LN05-7	92	116	24	0.68	0.02	0.11	0.06
LN06-23	65.5	128.4	62.9	0.35	0.01	0.29	0.14
LN06-24	15.15	90	74.85	0.31	0.01	0.08	0.05
LN06-25	11.86	118.5	106.64	0.38	0.01	0.10	0.05
LN06-26	10.55	55.66	45.11	0.50	0.01	0.15	0.07
LN06-27	20	56.17	36.17	0.54	0.01	0.13	0.06
LN06-28	24.83	44	19.17	0.62	0.02	0.09	0.05
LN06-30	32.3	110.75	78.45	0.35	0.01	0.07	0.03
LN06-31	105.9	138.8	32.9	0.65	0.02	0.20	0.09
LN06-32	16.5	109.88	93.38	0.25	0.00	0.02	0.02
LN06-33	15.88	107.3	91.42	0.45	0.01	0.08	0.04
LN06-34	22.29	148.63	126.34	0.64	0.02	0.13	0.07
LN06-35	11.3	74	62.7	0.36	0.01	0.10	0.05
LN06-36	20.55	51.4	30.85	0.32	0.01	0.08	0.04
LN06-37	56.7	133	76.3	0.43	0.01	0.09	0.05
LN06-38	44	112.7	68.7	0.46	0.01	0.09	0.04
LN06-39	10.18	87.43	77.25	0.52	0.01	0.11	0.05
LN06-40	10.47	67.8	57.33	0.54	0.01	0.11	0.05
LN06-41	15.2	37.25	22.05	0.55	0.01	0.08	0.04
LN06-42	62	100	38	0.24	0.02	0.03	0.02
LN06-43	88	109.3	21.3	0.27	0.02	0.02	0.01
LN06-44	93.75	108.35	14.6	1.39	0.05	0.28	0.14
LN06-44	118.2	126.4	8.2	0.69	0.04	0.20	0.09
LN06-44	130.15	145.3	15.15	0.37	0.01	0.09	0.04
LN06-45	98	108	10	0.27	0.01	0.01	0.01
LN06-45	117	127	10	0.23	0.01	0.02	0.01
LN06-45	144.3	152.9	8.6	0.46	0.01	0.07	0.04
LN06-46	65	77.9	12.9	0.30	0.02	0.05	0.03

 Table 11.2

 Summary of Mineralized Intersections for the 0.2% Ni Domain Model, Langmuir North Deposit



Hole ID	From	То	Length	Ni (%)	Cu (%)	Pd (g/t)	Pt (g/t)
LN06-46	85	100	15	0.51	0.03	0.13	0.06
LN06-46	108.84	115.4	6.56	0.38	0.02	0.07	0.03
LN06-47	44	51.9	7.9	0.20	N.A.	N.A.	N.A.
LN06-47	67.78	78.8	11.02	0.33	0.01	0.16	0.07
LN06-47	85.95	93.1	7.15	0.26	0.02	0.09	0.05
LN06-48	25	31	6	0.21	0.00	0.01	0.01
LN06-49	44	55	11	0.28	0.01	0.02	0.01
LN06-50	28.5	44.6	16.1	0.27	0.01	0.04	0.03
LN06-52	69.5	140.77	71.27	0.31	0.01	0.04	0.03
LN06-53	43.5	119.7	76.2	0.32	0.00	0.04	0.02
LN06-54	14.65	98.03	83.38	0.34	0.00	0.04	0.02
LN06-55	10.45	82.1	71.65	0.32	0.01	0.04	0.02
LN06-56	11.65	52.05	40.4	0.39	0.01	0.05	0.03
LN06-57	85.25	260.35	175.1	0.37	0.01	0.06	0.03
LN06-58	133.25	152.79	19.54	0.47	0.02	0.10	0.05
LN06-59	137.52	150.38	12.86	0.87	0.05	0.12	0.06
LN06-59	168.83	184.87	16.04	0.21	0.00	0.12	0.06
LN06-60	48	144.89	96.89	0.27	0.01	0.04	0.03
LN06-61	35.54	75.2	39.66	0.34	0.02	0.03	0.02
LN06-62	25.7	70.94	45.24	0.26	0.01	0.02	0.01
LN06-63	10.27	108.14	97.87	0.31	0.01	0.07	0.04
LN07-100	88.98	227.92	138.94	0.35	0.01	0.05	0.03
LN07-101	97.2	237	139.8	0.35	0.01	0.16	0.03
LN07-64	92	169.95	77.95	0.18	0.00	0.03	0.02
LN07-65	32 75	52.98	20.23	0.26	0.00	0.09	0.02
LN07-66	33.06	65	31.94	0.20	0.02	0.37	0.16
LN07-67	34	76.68	42.68	0.20	0.02	0.03	0.02
LN07-67	80 59	86	5 41	1.00	0.01	0.05	0.02
LN07-68	59	108 57	49 57	0.32	0.02	0.04	0.02
LN07-69	68	117.1	49.1	0.32	0.01	0.11	0.02
LN07-70	19.52	52.88	33 36	0.44	0.01	0.05	0.03
LN07-71	49	81	32	0.12	0.01	0.02	0.03
LN07-72	152.55	158	5.45	0.27	0.00	0.05	0.03
LN07-72	168 58	184 5	15.92	0.29	0.00	0.02	0.03
LN07-72	195.16	201	5.84	0.55	0.00	0.02	0.03
LN07-73	172.6	191	18.4	0.33	0.00	0.07	0.03
LN07-73	200.26	213	12.74	0.33	0.00	0.03	0.01
LN07-74	100	118.1	18.1	0.62	0.02	0.17	0.09
LN07-75	108 75	132	23.25	0.31	0.02	0.04	0.07
LN07-76	70.2	87.96	17.76	0.67	0.02	0.08	0.07
LN07-78	30.16	47.95	17.70	0.07	0.02	0.05	0.09
LN07-79	112.09	126.75	14.66	1.02	0.07	0.03	0.09
LN07-80	12.07	161.93	34.93	0.34	0.01	0.03	0.02
LN07-81	111 81	118 61	68	0.93	0.06	0.03	0.02
LN07-81	129.11	147.5	18 39	0.53	0.02	0.17	0.06
LN07-82	173	191	18	0.29	0.02	0.12	0.04
LN07-83	76	114 16	38.16	0.40	0.01	0.08	0.04
LN07-86	54	68 64	14 64	0.48	0.01	0.00	0.04
LN07-87	65.4	71.6	62	0.40	0.04	0.02	0.04
LN07-87	109	116	7	0.30	0.00	0.10	0.04



Hole ID	From	То	Length	Ni (%)	Cu (%)	Pd (g/t)	Pt (g/t)
LN07-88	12.91	58.43	45.52	0.80	0.02	0.22	0.09
LN07-89	15.34	81.25	65.91	0.48	0.02	0.25	0.11
LN07-90	29	145.21	116.21	0.31	0.01	0.09	0.04
LN07-91	50	111.25	61.25	0.27	0.00	0.05	0.03
LN07-92	55	123.29	68.29	0.17	0.00	0.06	0.03
LN07-93	40	121	81	0.22	0.00	0.01	0.01
LN07-94	61	132	71	0.28	0.00	0.01	0.01
LN07-95	113.53	161	47.47	0.28	0.00	0.07	0.03
LN07-96	58	133	75	0.23	0.00	0.01	0.01
LN07-97	55.92	152.7	96.78	0.24	0.00	0.01	0.01
LN07-98	35	133	98	0.23	0.00	0.01	0.01
LN07-99	71	166	95	0.55	0.01	0.13	0.07
LN08-102	75.25	146	70.75	0.42	0.03	0.25	0.11
LN08-103	93.27	209.7	116.43	0.21	0.01	0.07	0.04
LN08-104	106.8	227.81	121.01	0.48	0.01	0.12	0.05
LN08-105	80.5	201.3	120.8	0.34	0.01	0.05	0.03
LN08-106	86.95	224.12	137.17	0.34	0.01	0.06	0.03
LN08-107	226.6	327.16	100.56	0.34	0.01	0.10	0.05
LN08-108	306	381.8	75.8	0.53	0.01	0.09	0.04
LN08-109	111	137.6	26.6	0.26	0.01	0.02	0.01
LN08-110	162.34	168.63	6.29	0.08	N.A.	N.A.	N.A.
LN08-110	230.27	242.38	12.11	0.01	N.A.	N.A.	N.A.
LN08-111	98	144.63	46.63	0.22	0.02	0.03	0.02
LN08-112	111	151.29	40.29	0.26	0.00	0.02	0.02
LN08-113	157.8	179.3	21.5	0.20	0.01	0.02	0.02
LN08-113	223.8	226	2.2	0.53	0.01	0.19	0.08
LN08-114	180	185	5	0.26	N.A.	N.A.	N.A.
LN08-114	242.8	270	27.2	0.26	0.00	0.01	0.01
LN08-115	311.7	363.5	51.8	0.28	0.00	0.01	0.01
LN08-116	371	380	9	0.21	0.00	0.01	0.01
LN08-117	465.01	476.94	11.93	0.23	0.00	0.01	0.01
LN08-118	135.7	146.9	11.2	0.69	0.03	0.09	0.05
LN08-119	164.28	172	7.72	0.40	0.00	0.05	0.03
LN08-124	115.2	146.23	31.03	0.49	N.A.	N.A.	N.A.
LN08-125	138.8	193.85	55.05	0.39	N.A.	N.A.	N.A.
LN08-126	19.15	112.5	93.35	0.43	N.A.	N.A.	N.A.
LN08-127	139.92	237.25	97.33	0.39	N.A.	N.A.	N.A.
LN08-128	143	276.05	133.05	0.44	N.A.	N.A.	N.A.
LN08-129	196	334.7	138.7	0.34	N.A.	N.A.	N.A.
LN08-130	226	346	120	0.30	N.A.	N.A.	N.A.
LN08-131	82	164.8	82.8	0.27	N.A.	N.A.	N.A.
LN08-132	103	179.6	76.6	0.27	N.A.	N.A.	N.A.
LN08-133	140	268.9	128.9	0.35	N.A.	N.A.	N.A.
LN08-134	133	263.05	130.05	0.35	N.A.	N.A.	N.A.
LN08-135	178	299.73	121.73	0.37	N.A.	N.A.	N.A.
LN08-136	194.06	360.42	166.36	0.29	N.A.	N.A.	N.A.
LN08-137	98.58	130.7	32.12	0.12	N.A.	N.A.	N.A.
LN08-138	142	163.11	21.11	0.26	N.A.	N.A.	N.A.
LN08-139	170.5	223.83	53.33	0.16	N.A.	N.A.	N.A.
LN08-140	173.4	207.31	33.91	0.30	N.A.	N.A.	N.A.



Hole ID	From	То	Length	Ni (%)	Cu (%)	Pd (g/t)	Pt (g/t)
LN08-140	211.15	266.17	55.02	0.26	N.A.	N.A.	N.A.
LN08-141	126	322.2	196.2	0.43	N.A.	N.A.	N.A.
LN08-142	144	328.47	184.47	0.32	N.A.	N.A.	N.A.
LN08-143	199.56	345.8	146.24	0.29	N.A.	N.A.	N.A.
LN08-144	280	321.67	41.67	0.36	N.A.	N.A.	N.A.
LN08-145	300.3	363.76	63.46	0.30	N.A.	N.A.	N.A.
LN08-146	187	195	8	0.28	N.A.	N.A.	N.A.
LN08-147	263.03	266.88	3.85	0.08	N.A.	N.A.	N.A.
LN08-149	66	164	98	0.24	N.A.	N.A.	N.A.
LN08-150	83.1	173	89.9	0.22	N.A.	N.A.	N.A.
LN08-151	35	138	103	0.23	N.A.	N.A.	N.A.
LN08-152	23.25	118.82	95.57	0.21	N.A.	N.A.	N.A.

*N.A. = Not Assayed

11.2 LANGMUIR NO. 1 MINE

The following is excerpted from Jensen (2009):

"As part of the Phase 2 of the diamond drill, the drill rig was moved to the Langmuir No.1 Mine where 6 BQ diamond drill holes totaling 1,052.64m were completed between December 11, 2005 and January 11, 2006 under the supervision of consulting geologist, Mr. Kian A. Jensen, P.Geo.

As part of Phase 3 of the drill programs, a second Longyear 38 drill rig from Crites Diamond Drilling was used to complete 12 NQ diamond drill holes totaling 2,812m commenced on October 10, 2006 and was completed on December 15, 2006. Due to the large deviations experienced in the earlier drilling, Phase 3 drilling was completed with NQ drill core, a hexagonal core barrel and double reaming shells. These measures proved to stabilize the drill holes and minimize the deviation.

Phase 4 of the drill program consisted of 105 NQ diamond drill holes totaling 29,689.85m commencing on January 7, 2007 and was completed on June 30, 2008."

The locations of the North Zone drill holes completed by Inspiration are illustrated in Figure 11.3. A generalized cross section is presented in Figure 11.4.





Figure 11.3 Drill Hole Location Map, Langmuir No. 1 Deposit





Figure 11.4 General Cross Section, Langmuir No. 1 Deposit Location as shown above.

A summary of significant mineralized intervals contained within the 0.2% Ni domain model are presented in Table 11.3.

 Table 11.3

 Summary of Mineralized Intersections for the 0.2% Ni Domain Model, Langmuir No. 1 Deposit

Hole ID	From	То	Length (m)	Ni (%)
L105-1	75	112.58	37.58	0.32
L105-1	117.77	125.2	7.43	0.92
L105-2	104.41	162.14	57.73	0.48
L105-3	115.82	132.92	17.1	0.38
L105-3	145.94	153.6	7.66	3.31
L105-4	115.25	172.18	56.93	0.50
L105-5	110	154.18	44.18	0.48
L105-6	101.48	158.15	56.67	0.45



Hole ID	From	То	Length (m)	Ni (%)
L106-10	149	158	9	0.44
L106-10	193.6	230	36.4	0.59
L106-11	184	196	12	0.43
L106-11	207	248.7	41.7	0.47
L106-12	245	255	10	0.53
L106-13	109.76	167.9	58.14	0.33
L106-14	142.5	193.32	50.82	0.40
L106-16	116.56	143.04	26.48	0.37
L106-17	114	157.2	43.2	0.99
L106-18	114.9	173.86	58.96	0.61
L106-19	141	209	68	0.30
L106-7	164	173	9	0.22
L106-7	193	214	21	0.26
L106-8	207.83	252.6	44.77	1.17
L106-9	250.1	274.35	24.25	0.74
L107-100	202.42	220.07	17.65	0.47
L107-101	237	245.55	8.55	0.26
L107-20	94	124.57	30.57	0.30
L107-20	135.74	137.18	1.44	1.49
L107-21	102	154.58	52.58	0.38
L107-22	204.63	230	25.37	0.48
L107-23	242	251.06	9.06	0.30
L107-24	156.5	161.5	5	0.41
L107-25	203.96	239.42	35.46	0.23
L107-28	179.35	186.57	7.22	2.24
L107-29	137.2	156	18.8	0.25
L107-29	169	175.3	6.3	0.97
L107-30	128.43	176.6	48.17	0.35
L107-31	142.8	159.2	16.4	0.27
L107-31	169	185.2	16.2	0.95
L107-32	150	198.48	48.48	1.19
L107-33	216.66	260	43.34	0.53
L107-34	153.55	159.65	6.1	0.10
L107-34	163.33	211	47.67	0.40
L107-35	112.3	192	79.7	0.30
L107-36	153	211.35	58.35	0.31
L107-37	209	252.2	43.2	0.56
L107-38	30.9	60.1	29.2	0.37
L107-39	60.6	69.7	9.1	0.54
L107-40	151	203.9	52.9	0.39
L107-41	100	111	11	0.51
L107-41	122.1	128.3	6.2	1.96
L107-42	116	121.9	5.9	0.37
L107-42	126.4	128	1.6	0.32
L107-45	27	52.73	25.73	0.36
L107-46	86	101.1	15.1	0.21
L107-47	93.1	110.2	17.1	0.31
L107-47	135.08	160	24.92	0.78
L107-48	142.5	164.5	22	0.39
L107-48	174	184.1	10.1	0.88



Hole ID	From	То	Length (m)	Ni (%)
L107-49	168.93	203.3	34.37	0.42
L107-50	54	70.7	16.7	0.35
L107-51	92.7	124.14	31.44	0.34
L107-52	104	164.71	60.71	0.33
L107-52	194.9	197.92	3.02	0.94
L107-53	169.9	173.93	4.03	0.70
L107-53	207	251	44	0.58
L107-56	173.5	176.37	2.87	1.48
L107-57	137.35	172.4	35.05	0.65
L107-60	118	139	21	0.37
L107-60	151.7	156.25	4.55	1.76
L107-61	125.4	130	4.6	0.35
L107-61	137.1	140.7	3.6	0.45
L107-63	260	285	25	0.88
L107-67	297	317.55	20.55	0.32
L107-71	204.1	248	43.9	0.67
L107-72	223.3	251.3	28	1.07
L107-73	240	257.7	17.7	1.03
L107-74	157.6	198.48	40.88	0.37
L107-75	193.4	200.46	7.06	0.49
L107-75	207.95	218.04	10.09	1.55
L107-76	158.5	162.2	3.7	0.23
L107-76	220.59	232	11.41	1.01
L107-78	109	135.5	26.5	0.32
L107-79	181.5	185.5	4	0.38
L107-80	200.2	240	39.8	0.42
L107-82	89.4	151.28	61.88	0.28
L107-84	220	240.12	20.12	0.66
L107-85	269.6	284	14.4	0.90
L107-86	238.36	242.9	4.54	0.31
L107-86	251.4	253.8	2.4	0.34
L107-89	138	200	62	0.23
L107-89	207	230.3	23.3	0.45
L107-90	160.65	192.02	31.37	0.31
L107-90	201.93	238.8	36.87	0.32
L107-91	222.6	240.5	17.9	0.29
L107-92	270.64	290.44	19.8	0.74
L107-93	143	197.43	54.43	0.20
L107-94	197.6	235.3	37.7	0.56
L107-95	222.6	242.08	19.48	0.49
L107-96	317	321	4	0.22
L107-97	145.7	152.78	7.08	0.23
L107-97	171	176	5	0.41
L107-97	188.51	202	13.49	0.84
L107-97	218.84	221.65	2.81	2.29
L107-98	242.7	244.65	1.95	0.34
L107-99	171.63	201.39	29.76	0.33
L108-102	114.8	122	7.2	0.38
L108-102	134	136.27	2.27	0.94
L108-105	85	129.07	44.07	0.54



Hole ID	From	То	Length (m)	Ni (%)
L108-106	103	137.56	34.56	0.34
L108-106	147.52	154.7	7.18	1.65
L108-107	60.5	71.8	11.3	0.27
L108-108	82	118.5	36.5	0.64
L108-109	169.3	231.6	62.3	0.47
L108-110	95.36	150.05	54.69	0.61
L108-115	207	212.63	5.63	0.28
L108-115	241.66	249.1	7.44	0.65
L108-116	244	274	30	0.27
L108-118	90	134.98	44.98	0.92
L108-119	239	245	6	0.33

11.3 LANGMUIR PROPERTY-WIDE EXPLORATION DRILLING

The following is excerpted from Jensen (2009):

"Inspiration commenced their evaluation of additional exploration targets in several phases. As part of Phase 3 of the drill programs, a Longyear 38 drill rig from Crites Diamond Drilling was used to complete 9 NQ-sized diamond drill holes consisting of 2,664.42 m. The purpose of the drill holes was to evaluate several of the previously located basal till nickel geochemical anomalies. This part of the program commenced on December 11, 2006 and was completed on April 25, 2007.

The diamond drilling of the majority of the targets intersected hanging wall mafic metavolcanics followed by ultramafic metavolcanics of the Tisdale Group and terminated in intermediate to felsic pyroclastic metavolcanics of the Deloro group. The sulphide mineralization intersected was predominately very fine grained pyrite and pyrrhotite, which contained low grades of nickel mineralization generally <0.25% Ni.

As part of Phase 4 of the drill programs, a Longyear 38 drill rig from Crites Diamond Drilling was used to complete 3 NQ-sized diamond drill holes at the Langmuir No.2 Mine - South Zone totaling 1,518.37 m in length. Drilling activities were carried out from January 9, 2007 to February 14, 2007.

Phase 5 of the diamond drill program was conducted with a third Longyear 38 drill rig from Crites Diamond Drilling. The continuous exploration drilling commenced on April 13, 2008 and was completed on November 16, 2008 with 48 NQ-sized diamond drill holes totaling 17,021.12 m being completed. These drill holes were planned to evaluate the remainder of the basal tilt nickel geochemical anomalies, the ground and airborne geophysical electromagnetic and magnetic anomalies and the B-Horizon soil Enzyme Leach anomalies.

During 2009, Inspiration commenced with another phase of diamond drilling contracted to T-Drilling of Timmins, Ontario, equipped with a skid mounted Longyear 38 drill rig.



Five exploration NQ-sized diamond drill holes were completed on the newly acquired patented mining claims. The drilling commenced on May 19, 2009 and was completed on June 9, 2009 totaling 1,380.63 m in length. These drill holes were designed to follow-up on the results of the diamond drilling on the Allerston grid completed during 2008.

A total of 19 NQ-sized diamond drill holes were completed on the Langmuir No. 2 Mine – North Zone commencing on June 10, 2009 and completed on August 11, 2009 with a total 4,018.75 m drilled. These drill holes were designed to test the northern extension of the magnetic anomaly as planned in 2008."



12.0 SAMPLING METHOD AND APPROACH

A description of the sampling method and approach followed for the drilling programs carried out on the Langmuir Property were presented in Jensen (2009) and is excerpted below:

"The drill core was delivered after each drilling shift to the secure facilities in Porcupine where core logging and diamond sawing of the samples were completed. Initially the drill core was washed, measured and marked at 1 metre intervals to ensure the reported length of the drill hole corresponded to the lengths reported by the drilling crews and to verify the position of the 3-metre marker blocks placed by the drill company (Salo Drilling for the 2005 drilling programs and Crites Diamond Drilling for the 2006-2008 drilling program and T-Drilling for the 2009 drilling program), to estimate the drill core recovery and to measure the rock quality determination (RQD). Upon completion, the geologist would complete the logging of the drill core and would mark out sampling intervals using coloured china markers and place the sample tag at the end of the interval. All attempts were made to sample at a consistent core length of 1-metre or sampled in intervals relevant to abrupt changes in mineralization and geology. The drill core was then photographed initially dry and then wet using a digital camera.

All core samples were cut by a geo-technician using a stand mounted 14-inch Target diamond blade rock saw with continuous fresh water to eliminate any possible chance of contamination between samples. One half of the cut core was placed in a poly sample bag along with half of the sample tag and sealed with staples. Contiguous sample tag series were used for core logging. Sample intervals were recorded on sample ticket books and computerized drill logs. The samples bags were placed in shipping bags sealed with plastic cable ties and transported by exploration personnel to Swastika Laboratories Ltd, in Swastika, Ontario for analysis. The majority of the drill core was sampled. Sludge samples were not collected.

The remaining half core was replaced in the core box with the start and end of the sample identified and the second half of the sample tag replaced at the end of the sample. The drill core was cross-piled in locked sea shipping containers at the core logging facility for future reference. The returning bags of rejects and pulps from the assay laboratory are labeled to identify the drill hole number. The bags of rejects are then stored on top of their respective cross-piled drill core in the locked sea shipping containers. The pulps are stored on shelves inside the locked sea shipping containers.

Prior to December 2005, a quality assurance and quality control (QA/QC) program was not in place. The author implemented a QA/QC commencing in early December 2005 with drill hole L105-2 (Langmuir No.1 Mine) and LN05-23 (Langmuir No.2 Mine – North Zone). Initially, one base metal standard, OREAS 14P, was used due to the availability of standard reference material from December 2005 to June 2006. The standard was randomly placed into the sample stream at a frequency of approximately every 20 samples. A standard reference material was not used for a period from June to October 2006 due to the lack of availability of standard reference material.



Commencing in October 2006, two standard reference materials OREAS 13P and OREAS 14P, along with a quartz rock blank, were used. Each suit of 20 samples consisted of 17 core samples, two standard reference material samples and quartz rock blank. The quartz rock blank was used to test for possible contamination in the crushing and grinding circuits of the analytical laboratory.

Commencing on March 16, 2008, a blind blank consisting of diabase dyke half was inserted into the sampling stream. The diabase dyke drill core was obtained from exploration drill hole IMCEX-4. The geo-technicians sawed the core in half and placed both halves into the core boxes. The geologist would measure 0.5 metres of diabase core placing it in a poly sample bag with the hole ID number and the footage of the drill core, which when used was recorded in the sample tag books.

The standard reference material samples (OREAS 13P, OREAS 14P) were purchased either from Analytical Solutions Ltd. of Toronto, Ontario or Ore Research & Exploration Pty Ltd. of Victoria, Australia. After depletion, the initial standards were replaced with OREAS 72A and OREAS 74A commencing in 2009 for drill holes LN09-153 to LN09-171.

During core logging, sections of ground core or lost core were encountered. When this occurred, the geologist recorded the footage intervals and would end the sample at the start of the lost core. The beginning of the next sample would commence at the end of the lost core. In the assay databases, the lost core intervals would be given a zero or nil Ni grade.

The completed sample books were stored for future reference and data entry verification. The author entered all collar, down hole survey, geology and sampling information into either the North Zone, Langmuir No.1 or the exploration databases.

[Table 12.1] represents the sampling statistics of the drilling programs as of September 1, 2009 for the Langmuir No.2 Mine – North Zone, Langmuir No.1 Mine and exploration drilling by Inspiration from 2005 to 2009. Three drill holes for the Langmuir No.2 Mine – North Zone are being processed [as of September 1, 2009]."

Location	Drill	Total	Total	Total Swastika Laboratory		Activation Laboratory (Actlabs)				
	Holes	Drilled (m)	Sampled (m)	Assays	Check Assays	Standards and Blanks	Assays	Duplicate Assay	Standards	Client Standards
North Zone	152	30,547.55	19,883.10	21,290	2,398	879	5,225	1,084	2,221	463
NZ-2009	19	4,019.00	in pr	ogress - a	ssays pen	ding				
Langmuir No.1	123	33,569.83	17,278.63	18,137	2,096	944	3,765	868	2,652	470
Exploration-IMCEX	57	19,768.56	11,746.78	12,163	1,329	625				
Exploration-SZ	3	1,485.75	253.72	267	28	14				
Exploration-KCC	5	1,380.63	1,361.36	1,397	151	73				
Totals	359	90,771.32	50,523.59	53,254	6,002	2,535	8,990	1,952	4,873	933

 Table 12.1

 Sampling Statistics of the Drilling Programs as of September 1, 2009 (after Jensen, 2009)



13.0 SAMPLE PREPARATION, ANALYSES AND SECURITY

13.1 SAMPLE PREPARATION

A summary of the sample preparation, analyses and security measures followed by Inspiration for its drilling program has been provided in Jensen (2009) and is excerpted below:

"The core samples were split by a contract technician using a stand mounted 14-inch Target diamond blade rock saw with continuous fresh water to eliminate any possible chance of contamination between samples. The drill core was split in a half. One half of the cut core was placed in a poly sample bag along with half of the sample tag and sealed with staples. Contiguous sample tag series were used for core logging. Sample intervals were recorded on sample ticket books and computerized drill logs. The samples bags were placed in shipping bags sealed with plastic cable ties and transported by the following method: personal transport by the author, transported by the technician, by Ontario Northland bus or shipped by Manitoulin Transport to Swastika Laboratories Ltd, in Swastika, Ontario. The core sawing workstation was regularly cleaned of rock chips and dust to reduce the chance of sample contamination. Pulp samples prepared by True North Mineral Laboratory of Timmins were shipped to Actlabs by Ontario Northland parcel express.

All initial sample preparation and assaying was completed at Swastika Laboratories, located in Swastika, Ontario. The sample preparation protocol consists of:

- Drying samples if required.
- Crush total sample to ¹/₂ inch in Jaw Crusher.
- Crush total sample to 10 mesh in Roll Crusher.
- Split approximately 350 grams using a Jones riffle.
- Remaining rejects placed in plastic sample with sample tag, packed in cartons listing sample number and assay certificate.
- Pulverize the 350 gram sample.
- Homogenize the pulp.
- When required a second pulp is prepared from the stored rejects.

The analytical portion consists of a 0.5 gram sample dissolved in a breaker with 5 ml Nitric Acid (HNO3) plus 10 ml of Hydrochloric Acid (HCl), diluted to 100 ml with distilled water and the solution is analyzed by Atomic Absorption Spectrophotometry. The system detection limit for nickel is 0.001% up to 0.50% then reported to 0.01%. An analytical run consists of 30 samples, 3 repeats, a blank and a control standard.

Swastika Laboratory has a Certificate of Laboratory Proficiency, CCRMP ISO 9001:2000 and PTP-MAL for specific mineral analysis parameters (gold, platinum, palladium, silver, copper, lead, nickel, cobalt). PTP-MAL uses criteria for laboratory proficiency established by the Task Accreditation Sub-Committee Working Group for Mineral Analysis Laboratories of the Standards Council of Canada."



Micon has reviewed the sample collection, sample preparation, security, and analytical procedures that were followed during the 2009 diamond drilling program. It concludes that the procedures followed are adequate to ensure a representative determination of the metal contents of any intervals of veining, alteration, or sulphide accumulations that were observed in the drill core.

13.2 QUALITY ASSURANCE/QUALITY CONTROL

Jensen (2009) summarized the quality assurance and quality control procedures as follows:

"Prior to December 2005, a quality assurance and quality control (QA/QC) program was not in place. The author implemented a QA/QC commencing in early December 2005 with drill hole L105-2 (Langmuir No.1 Mine) and LN05-23 (Langmuir No.2 Mine – North Zone). Initially, one base metal standard, OREAS 14P, was used due to the availability of standard reference material from December 2005 to June 2006. The standard was randomly placed into the sample stream at a frequency of approximately every 20 samples. A standard reference material was not used for a period from June to October 2006 due to the depletion of the current standard reference material. After October 2006, two standard reference materials (OREAS 13P and OREAS 14P) and a quartz rock blank were used. Each suite of approximately 20 samples consisted of 17 core samples, two-control standard reference material sample and quartz rock blank. The quartz rock blank was used to test for possible contamination in the crushing and grinding circuits of the analytical laboratory. The standard reference material samples (OREAS 13P and OREAS 14P) were purchased from Analytical Solutions Ltd., Toronto, Ontario or Ore Research & Exploration Pty Ltd., Victoria, Australia.

Commencing on March 16, 2008, a blind blank consisting of diabase dyke was inserted into the sampling stream, which was obtained from exploration drill hole IMCEX-4 and samples may contain sulphide mineralization. The geologist measured 0.5 metres of diabase core placing it in a poly sample bag with the hole ID number and the footage of the drill core, which when used was recorded in the sample tag books.

Commencing in 2009 with LN09-153 to LN09-171, the standard reference material OREAS 13P and OREAS 14P were not available and were replaced with the standard reference material OREAS 72A and OREAS 74A, which were purchased from Analytical Solutions Ltd., Toronto, Ontario.

The duplicate assays from the pulps were completed at the Activation Laboratory [facility located in Ancaster, Ontario], which is ISO/IEC 17025 certified with the CAN-P-1579 designation. [A description of the CAN-P-1579 Guidelines can be found on the Actlabs web site at www.actlabs.com.]

A 100 gram sample of the pulp was mixed, split and weighed from the original pulp package from Swastika Labs by True North Mineral Laboratory of Timmins, Ontario which is associated with Activation Laboratories [Actlabs]. These samples were shipped to Actlabs in Ancaster, Ontario by Northland Bus Express. Upon receiving the pulps, Actlabs split the pulps into a 30 gram sample and mixed it with fire assay



fluxes and fused it at 1,050°C for 1 hour. After cooling, the lead button is separated from the slag and cupelled at 1,000°C to recover the Ag (doré bead) + Au, Pt, Pd. The Ag doré bead was digested in hot (95°C) HNO3 + HCl. After cooling for 2 hours the sample solution was analyzed for Au, Pt, Pd by Fire Assay with Inductively Coupled Plasma – Mass Spectrometry (FA-ICP/MS). A 10 gram sample of the pulp was used for Inductively Coupled Plasma – Optical Emission Spectrometry (ICP-OES) analysis for Ni and Cu. Another split of the pulp was used for the measurement of Specific Gravity (S.G.). The remainder of the pulp, approximately 50 gm was used for either check assaying for Au+Pt+Pd or for duplicate check assaying.

Of the 5,225 sample pulps, which included 463 client standards, submitted to Actlabs for the North Zone, Actlabs insert a total of 2,221 standards and blanks and completed a total of 1,084 duplicate check assays. Of the 3,765 sample pulps, which included 470 client standards, submitted to Actlabs for the Langmuir No.1 Mine, Actlabs insert a total of 2,652 standards and blanks and completed a total of 868 duplicate check assays."

The analytical results from the standard reference materials, blank samples and duplicate samples were provided to Micon by Inspiration as part of the drill hole database information package. Micon then proceeded to construct the control charts as shown in Figures 13.1 through 13.9, inclusive. Control charts were prepared for nickel only, which was the subject of routine analysis. Reconnaissance-type assaying for the remaining metals such as copper, palladium, platinum and gold suggested that they are not present in sufficient quantities to be of potential economic significance.

Examination of the nickel control charts for the four standard reference materials (Figures 13.1 to 13.4) reveals that, with some exceptions, the nickel values of the standard reported by the Swastika assay laboratory were well within the control limits. It can be seen that a number of single-sample excursions (either above the upper control limit or below the lower control limit) are present for standards OREAS 13P, 14P and 72a. The causes of these excursions can be related to such items as data entry errors, mis-identifying the standard in the database or poor laboratory results.

Examination of the control chart for the blank samples reveals that, apart from one failed sample, the blank samples do not show any evidence of cross-contamination of samples.





Figure 13.1 Nickel Control Chart for Standard OREAS-13P, Langmuir Project

Figure 13.2 Nickel Control Chart for Standard OREAS-14P, Langmuir Project







Figure 13.3 Nickel Control Chart for Standard OREAS-72a, Langmuir North Deposit

Figure 13.4 Nickel Control Chart for Standard OREAS-74a, Langmuir North Deposit







Figure 13.5 Blank Control Chart for Langmuir No. 1 and Langmuir North Deposits

Figure 13.6 Nickel Control Chart, Standard OREAS-13P, Langmuir North ReAssay Program







Figure 13.7 Nickel Control Chart, Standard OREAS-14P, Langmuir North ReAssay Program

Figure 13.8 Blank Sample Control Chart, Langmuir North ReAssay Program







Figure 13.9 Duplicate Assay Results for the September 2009 Drilling, Langmuir North Deposit

Micon recommends that the sources of the excursions for the standard reference materials OREAS 13P, 14P and 72a be examined in detail and appropriate corrective actions taken for such items as clerical errors. Micon recommends that a small program of re-assaying be carried out for those samples that have been deemed to be due to a poor laboratory result, with additional corrective measures taken if required.

In respect of the failed blank sample, Micon also recommends that a small program of reassaying be carried out for those samples that were associated in the sample stream with this blank sample.

In respect of the nickel control charts for standards OREAS 13P and 14P that were analyzed as part of the re-assaying program for the Langmuir North deposit, it can be seen that the analytical results for these two standards show a poor correlation with the recommended values. Discussions with Inspiration staff suggested that a possible source of this poor performance may be due to oxidation of the standard reference materials. Micon recommends that the possible sources of this poor performance be investigated and appropriate corrective actions taken. A possible solution to prevent oxidation of standard reference materials in the future would be to store the materials in a freezer.

Micon observes that two failed samples are present for the blank sample material that was assayed during the re-assaying program for the Langmuir North deposit. Micon also recommends that a small program of re-assaying be carried out for those samples that were associated in the sample stream with this blank sample.



Micon also recommends that the control charts for the standards, blanks and duplicates be maintained and updated on a regular basis such that any anomalous results can be identified and addressed in a timely manner. As well, Micon recommends that a modification be made to Inspirations data management methods to construct a separate database that is dedicated to the management of the QA/QC information to facilitate the timely analysis of new QAQC data.

The results of the duplicate assaying program for the Langmuir North and the Langmuir No. 1 deposit are presented in Figure 13.10 and Figure 13.11, respectively.



Figure 13.10 Duplicate Assay Results for the Langmuir North Deposit (after Jensen, 2009)



Figure 13.11 Duplicate Assay Results for the Langmuir No. 1 Deposit (after Jensen, 2009)





14.0 DATA VERIFICATION

Inspiration completed a small program of comparative assaying that examined the impact of the sample digestion method upon the resulting nickel assays. Jensen (2009) describes the results as follows:

"Early in the 2005 diamond drill program, Inspiration requested that Swastika Laboratories conduct testing for nickel in sulphides and silicate minerals for a small number of samples. The assaying technique used is the industry standard for base metal assaying, which uses nitric and hydrochloric acids to extract nickel only from sulphide mineralization and not from nickel silicate minerals. [Table 14.1] compares the amount of nickel that is reported from the nickel sulphides verses the total nickel extracted from both the nickel sulphides and silicate minerals."

 Table 14.1

 Comparison of Assay Results for Nickel Sulphides and Nickel Silicates (after Jensen, 2009)

Drill Hole	LN05-22	Digestion Acids	Aqua Re (Nitric and	Aqua Rega Partial Digestion (Nitric and Hydrochloric Acids)			Nitric, Hydrochloric and Hydrofluoric Acids	
From (m)	To (m)	Sample Number	Original Assay Ni (%)	Check Assay Ni (%)	Averaged Assay Ni (%)	Total Nickel Ni (%)	Nickel Silicates Ni (%)	
70.75	71.45	34514	1.020	0.980	1.000	1.100	0.100	
71.45	72.12	34515	0.510	-	0.510	0.520	0.010	
75.00	75.70	34519	0.098	0.090	0.094	0.106	0.012	
79.44	79.85	34525	0.740	-	0.740	0.820	0.080	
82.60	83.02	34530	0.600	-	0.600	0.700	0.100	
83.02	83.63	34531	0.770	-	0.770	0.790	0.020	
84.40	84.97	34533	0.800	0.770	0.785	0.780	-0.005	
84.97	85.65	34534	0.444	-	0.444	0.441	-0.003	
85.65	86.58	34535	1.680	-	1.680	1.720	0.040	
88.85	89.16	34539	1.600	1.750	1.675	1.690	0.015	
95.14	95.66	34547	2.210	2.190	2.200	2.190	-0.010	
96.86	98.00	34550	0.790	0.830	0.810	0.850	0.040	

Micon began its data verification activities by conducting a site visit on June 4 and June 5, 2008, where the surface infrastructure of the project site were reviewed, field procedures for the drilling program were examined, and representative sections of the mineralization in drill core were reviewed. Micon found that the field procedures that were being used to set up the diamond drill, recover the core, transport the core to the logging facilities and the logging and sampling procedures were all being carried out to the best practices currently in use by the Canadian mining industry.



During the site visit Micon completed its own program of check sampling of the Langmuir North and Langmuir No. 1 deposits. After a visual examination of the half core remaining in the core box and a review of the assay values contained in the corresponding drill logs, a total of 22 sample pulps were selected from drill holes LN-05-1 and L107-72 in order to provide an independent confirmation of the presence of nickel values in those samples. The samples were submitted to Acme Analytical Laboratories Ltd. located in Vancouver, British Columbia. The nickel contents were determined using their 7AR method code (Hot Aqua Regia digestion on a 1g split for base-metal sulphide and precious-metal ores followed by an ICP-ES analysis). The numeric results of Micon's check assaying of these 22 sample pulps is presented in Table 14.2 and a graphical presentation is given in Figure 14.1.

Hole ID	Sample No.	From	То	ISM Original (% Ni)	Micon Check (% Ni)					
	Langmuir North Deposit:									
LN05-1	34266	65.00	66.00	0.292	0.37					
LN05-1	34267	66.00	67.00	0.366	0.385					
LN05-1	34268	67.00	68.05	0.299	0.295					
LN05-1	34269	68.05	68.51	0.55	0.592					
LN05-1	34270	68.51	69.52	0.34	0.363					
LN05-1	34271	69.52	70.38	0.46	0.531					
LN05-1	34272	70.38	71.05	0.283	0.268					
LN05-1	34273	71.05	71.62	1.51	1.484					
LN05-1	34274	71.62	72.45	2.05	2.05					
LN05-1	34275	72.45	73.04	1.24	1.449					
LN05-1	34276	73.04	73.56	0.412	0.516					
LN05-1	34277	73.56	74.18	0.6	0.538					
	•	Langmu	ir No. 1 Dej	posit:						
L107-72	56047	229.30	230.30	0.486	0.515					
L107-72	56048	230.30	231.30	0.71	0.747					
L107-72	56049	231.30	232.30	0.64	0.703					
L107-72	56050	232.30	233.30	0.532	0.515					
L107-72	56051	233.30	234.30	1.125	1.274					
L107-72	56052	234.30	235.30	2.38	2.396					
L107-72	56053	235.30	236.30	1.62	1.726					
L107-72	56054	236.30	237.30	1.82	1.861					
L107-72	56055	237.30	238.30	1.615	1.467					
L107-72	56056	238.30	239.30	1.91	1.798					

 Table 14.2

 Results of Micon Check Samples




Figure 14.1 Comparison of Check Assay Results, Drill Holes LN-05-1 and L107-72

Acme states on its web site that its North American laboratories achieved its ISO 9001 certification in 1996 and has retained that certification in good standing since then. Acme also states on its web site that its Vancouver and Santiago hub laboratories are working towards the ISO17025:2005 certification and expects to complete the accreditation process within the next year.

The selection of such a small number of samples cannot be considered as constituting a comprehensive validation of the assay values contained within the database. Consequently the objective of this check sampling program is to independently confirm the presence of metal and to duplicate the original assay results as closely as possible. It can be seen that the check sample results obtained by Micon correlate well with the original results obtained by Inspiration.

Micon then conducted an audit of the digital database using the appropriate function of the Surpac v6.1.1 software package. A number of minor errors of a clerical nature such as mismatched hole lengths and drill hole identification between the collar, survey lithology and assay tables, and mis-matched "From-Tos" in the assay table were detected and were corrected.

Micon completed its data verification activities by conducting a spot check of the drill hole database for the Langmuir North deposit. A total of 19 holes were selected on a semi-random basis, being approximately 10% of the Langmuir North drill hole database, for examination for systematic errors. The information contained in the drill logs and assay sheets was compared to the information contained in the electronic database. In respect of the assay information, the original assay certificates were used as a basis for comparison against the digital database. No significant errors were detected.



15.0 ADJACENT PROPERTIES

As discussed above, Inspiration Mining's Langmuir North and Langmuir No. 1 deposits are located along the south eastern portion of a geological structure known as the Shaw Dome. The package of rocks that contain Inspiration's two nickel deposits have long been known to be favourable hosts for nickel mineralization, and production of nickel in this area has taken place from the Langmuir No. 1 and the Langmuir No. 2 mine (both contained either within or immediately adjacent to Inspiration's mineral claims and the Liberty Minerals Inc.'s (Liberty) Redstone and McWatters mines located to the west of Inspiration's land holdings. A summary of the nickel production from this area is provided in Table 15.1 and the locations of the mines and significant nickel occurrences are shown in Figure 15.1.

Mine	Township	Years of Production	Ore Milled	Grade
Langmuir #1	Langmuir	1990-1991	11,502 tons	1.74% Ni
Langmuir #2	Langmuir	1972-1978	1.1 M tons	1.43% Ni
McWatters	Langmuir	2008	15, 361 tonnes	0.55% Ni
Redstone	Eldorado	1989-1992	294,895 tons	2.4% Ni
		1995-1996	10,228 tons	1.7% Ni
		2006-2008	133,295 tonnes	1.92% Ni

 Table 15.1

 Summary of Nickel Production from the Shaw Dome (after Atkinson, et. al., 2008)

*Note: tonnages are given in short tons (2,000 lbs, or ~909 Kg) or tonnes (1,000 Kg)

In addition to these properties that have hosted nickel production in the past, new nickel discoveries have been found beginning in 2007 by Golden Chalice Resources Inc's (Golden Chalice) to the south of Inspiration's land holdings. Brief reviews of the nickel mineralization found on the Redstone property and the new discoveries by Golden Chalice are provided below and additional information can be found on the respective company web pages and public domain documents.

15.1 LIBERTY MINERALS REDSTONE MINE

The following information was obtained from the Liberty's web site (<u>http://www.libertymines.com</u>, visited December 9, 2009). It is to be noted that Micon has not been able to verify the information and that the information is not necessarily indicative of the mineralization on the property that is the subject of this Technical Report. The mineralization described herein is located on mineral claims held by Liberty, which are located to the west of Inspiration's land holdings.





Figure 15.1 Location of Nickel Mines and Selected Nickel Occurrences of the Shaw Dome area.

"Redstone Mine

Underground drilling at the Redstone mine was completed in April 2007 to the 508m level to enable a National Instrument 43-101 resource calculation to be done. A measured (274,085 tonnes) and indicated (144,846 tonnes) resource of 418,931 tonnes grading 2.32% nickel ("Ni") to and above the 508 m level of the mine was released on December 18, 2007. An updated 43-101 technical report is scheduled to be released in 2009. Construction of the shaft surface infrastructure is complete. Once the shaft is sunk to the 1,150 m level, the deeper mineralization can be mined at a reduced cost and increased tonnage.

Eleven boreholes drilled in 2007 from the 789 m to 1,155 m levels have confirmed a large section of the "Inco Anomaly" tested within the Redstone channel (see Redstone Project) is a nickel bearing orebody. More drilling is required to test the



entire extent of the geophysical anomaly below 1,150 m and further to the west at depth. Some highlights of the deep drilling include:

- 3.45m of 3.9% Ni at the 675m level;
- 8.5m of 2.4% Ni at 789m below the surface; and
- 4.65m of 3.62% Ni encountered 1064m below the surface.

Redstone Nickel Concentrator

The 2000 tonne per day Redstone nickel concentrator was commissioned in July 2007. It will initially operate at approximately 450 tonnes per day until the McWatters nickel mine ramps up to full production. The mill contains a sophisticated flotation circuit to effectively separate nickel sulphides from the high magnesium hydroxide (talc) component typical of altered komatiite nickel mineralization in the Shaw Dome Nickel Belt. It is fully automated including an online analyzer which can isolate both light and heavy elements. A gravity circuit is also planned to enhance the payable amounts for platinum, palladium and gold.

Liberty ships its nickel in concentrate to Jilin Jien Nickel Industry Company Ltd. of China and to Xstrata Nickel's smelter in Sudbury, Ontario.

McWatters Mine

Construction began in mid November 2007 at the McWatters nickel mine, located approximately 9 km to the east of the Redstone Mine. Definition drilling was completed in November 2007 and a technical report to NI 43-101 standards was posted on Sedar December 18, 2008. The ramp is completed to the 105 m level. Development continues to complete the ramp to the bottom level at 155 m. Production from the bottom level is anticipated to begin in November 2009 with declaration of commercial production in early 2010.

Hart Mine

Drilling commenced in March 2007 at the Hart nickel project which is located about 6 km east of the Redstone Mine. The first phase of drilling was completed in May 2008 which defined the bulk of the mineralization to the 500 m level. The mineralized body has been defined with an average strike length of approximately 265m that can be subdivided into two zones based on sulphide content and mineralized zone width: the upper zone contained within the top 275 m below surface, and the lower zone found below this elevation. A NI 43-101 resource calculation, which was released on SEDAR October 20, 2008, stated an indicated resource of 1,390,000 tonnes grading 1.50% Ni and 0.1% Cu and an inferred resource of 286,000 tonnes grading 1.36% Ni and 0.09% Cu. These tonnages represent the largest NI 43-101 compliant resource in the Shaw Dome identified to date with an average grade of 1.5% Ni. The resource calculation included drilling only to the 460 m level. Drilling will commence as soon as possible to bring the inferred resource into the indicated category. Mineralization is also known to exist down to the 550 m level, so additional deep drilling will attempt to extend the resource at depth. The



Hart deposit will become Liberty's third nickel mine; application for a mining lease has been submitted and permitting of the project is in progress."

15.2 GOLDEN CHALICE DISCOVERY

The following information was obtained from the Golden Chalice's web site (<u>http://www.goldenchaliceresources.com/s/Langmuir.asp</u>, visited December 9, 2009). It is to be noted that Micon has not been able to verify the information and that the information is not necessarily indicative of the mineralization on the property that is the subject of this Technical Report. The mineralization described herein is located on mineral claims held by Golden Chalice, which are located to the south of Inspiration's land holdings.

Background

"Langmuir Property is accessible by road and is only 30 km south of Xstrata's Timmins Metallurgical Facility that commissioned a nickel circuit in late 2004 to process ore from their Montcalm deposit, over 100 km to the west by road.

The primary exploration target is Kambalda style nickel sulphide mineralization occurring in ultramafic flows and sills. The Langmuir property includes over 30 km of ultramafic and mafic flows and sills favourable for hosting nickel, copper and platinum group mineralization (pgm).

The entire property has been flown by Geotech's state-of-the-art VTEM B-field airborne system. More than 18 separate clusters of airborne EM anomalies have been identified.

The Langmuir nickel discovery was found by drilling one of the anomalies in one of the clusters in early 2007. Many of the other VTEM airborne anomalies and clusters appear on strike with the discovery zone and occur in an arcing trend that wraps around the Shaw Dome. This geological environment bears a striking similarity to Kambalda nickel ore deposits and host rocks that are localized along the flanks of the Kambalda Dome in Western Australia.

Nickel ore deposits in the Kambalda camp often occur in groups or clusters. For example, 12 nickel deposits occur within an ultramafic flow unit of approximately 8 km by 4 km in area. Golden Chalice will drill test all the clusters of airborne anomalies on its Langmuir Property that occur within similar types of ultramafic flows. The ultramafic flow package is over 35 km long and up-to 4 km wide on the Langmuir Property. Therefore, the potential exists on the Langmuir Property to have one or more clusters or groupings of Kambalda style nickel deposits.

Kambalda deposits can be very high grade nickel (+/- Cu, Co, PGE) deposits as exemplified by the type deposits in the western part of Australia. Western Mining Corp. (WMC) was one of the first companies to explore and develop Kambalda nickel deposits in the late 1960's. By the late 1990's, WMC was still mining and reportedly producing up-to 35,000 tonnes of nickel annually from its' Kambalda operations alone. This equates to about 77 million pounds of nickel per year. The current price for nickel is about US\$12.50 per pound.



Geology and Mineralization

May 2007 drilling intersected 1.14% nickel over 72.45 metres, including two separate heavily mineralized intervals of 2.23% Nickel (Ni), 0.22% Copper (Cu), 0.20 g/t Platinum (Pt), and 0.50 g/t Palladium (Pd) over 17.50 metres of drill core, and 1.74 % Ni, 0.12% Cu, 0.20 g/t Pt, and 0.47 g/t Pd over 13.10 metres of drill core.

Golden Chalice geologists are currently computer modeling and interpreting the shape and size of the nickel mineralized discovery zone based on drilling to date. The nickel mineralization has been traced for a strike extent of approximately 200 meters and is defined to at least a depth of 250 meters below surface. In addition, nickel mineralization has been intersected at approximately 375 meters vertically below surface on the eastern down plunge extent of the C Zone.

Based upon recent interpretive work, the nickel mineralization displays exceptionally good continuity in the three (A,B,C) nickel zones intersected to date. Golden Chalice is now drilling from north to south with tighter spaced drilling to validate continuity between drill intercepts and confirm true widths of the mineralization. Drilling will also continue to determine the down plunge extent of mineralization, and near surface projection of the discovery zone to assess the open pit mining potential.

In addition to the drilling, and of significant importance, are the results of recent new modeling done by GCR's geophysicist on the airborne VTEM survey data. The initial assessment of the VTEM survey data resulted in the drilling of the discovery hole in May 2007. The new assessment of the VTEM data, using a proven computer modeling technique, has accurately identified the size of the discovery zone and the potential for similar mineralization at depths below any drilling to date. This modeling software has been successfully employed in the Australian Kambalda mining district for well over a decade by CSIRO and Macquary University, and has been further supported by international mining companies such as Western Mining, BHP and Anglo-American.

The new modeling has detected numerous large conductive bodies at depth that have geophysical signatures similar to the discovery zone. The conductive bodies occur at depths of over 300 meters beneath the discovery zone. They can be traced for over 2 kilometres along strike.

They have never been tested and occur well beneath any drilling to date. One of these deep conductive bodies is currently in the process of being drilled and the stratigraphy intersected at depth to date possesses strong similarities to the rocks hosting the Langmuir nickel discovery. This is the first drill hole to be drilled on these deep seated conductive bodies."



16.0 MINERAL PROCESSING AND METALLURGICAL TESTING

As of the time of the preparation of the mineral resource estimate presented herein, Inspiration has completed preliminary metallurgical testwork on the mineralization found at the Langmuir North deposit. The test work was completed by SGS Lakefield Research Limited and the results are presented in Peters (2009). A summary of the results is excerpted below:

Introduction

"Inspiration Mining requested SGS to carry out a flowsheet development program for their Langmuir #2 North Zone mineralization. Drill core was received at the SGS Lakefield Research site in late July 2008 and a metallurgical test program was completed over the next 9 months.

The test program included sample preparation, grindability tests, mineralogical characterization of 6 different composites, batch rougher and cleaner tests, QEMSCAN analysis of tailings products, and a basic environmental characterization of the rougher tails.

Sample Description and Ore Characterization

A shipment of twenty-five (25) pails was received at the SGS Lakefield site on June 11, 2008 and was given the sample receipt number 0158-JUN08. The total weight of the shipment was approximately 360 kg.

The pails contained twenty-three (23) different samples. K.A. Jensen & Associates Ltd provided a list that specified the contents of each pail.

Each pail was inventoried and the weights were recorded before the content of each pail was crushed to minus $\frac{1}{2}$ ". At that time, a sub-sample was extracted for head analysis and submitted for Ni, Ni (by aqua regia) and S assays. Two samples consisted of two pails (LN06-40 and LN06-40 Zone) and the subsamples of pails 11 and 12 as well as 13 and 14 were combined to produce a head sample for analysis. The analytical results for the 23 samples are presented in [Table 16.1].

The contents of the pails were blended according to the instructions included to generate the following six composites:

- Nickel Zone Composite.
- Intermediate Zone Composite.
- 0.20 to 0.25 Composite.
- 0.25 to 0.30 Composite.
- 0.30 to 0.50 Composite.
- 0.50 to >1.00 Composite.



Occurred a UD	D.11.#	Head Assay, %					
Sample ID	Pall #	Ni	Ni (AR)	S			
LN05-10	1	0.31	0.30	0.16			
LN05-10 Zone	2	0.86	0.88	0.60			
LN05-15	3	0.40	0.39	0.19			
LN05-15 Zone	4	0.83	0.87	0.36			
LN05-20	5	0.40	0.37	0.37			
LN05-20 Zone	6	1.02	1.04	0.54			
LN06-26	7	0.45	0.43	0.31			
LN06-26 Zone	8	0.69	0.69	0.35			
LN06-31	9	0.50	0.46	0.26			
LN06-31 Zone	10	1.22	1.24	0.81			
LN06-40	11 & 12	0.42	0.39	0.23			
LN06-40 Zone	13 & 14	0.74	0.73	0.30			
0.20-0.25 Grey 1	15	0.25	0.26	0.15			
0.20-0.25 Grey Zone 2	16	0.24	0.24	0.04			
0.20-0.25 Grey Zone 3	17	0.23	0.25	0.04			
0.25-0.30 Blue 1	18	0.29	0.32	0.22			
0.25-0.30 Blue 2	19	0.36	0.34	0.17			
0.25-0.30 Blue 3	20	0.27	0.28	0.11			
0.30-0.50 Yellow 1	21	0.42	0.43	0.38			
0.30-0.50 Yellow 2	22	0.47	0.45	0.37			
0.30-0.50 Yellow 3	23	0.42	0.44	0.28			
0.50-1.00+ Orange 1	24	0.53	0.54	0.70			
0.50-1.00+ Orange + Red 2	25	1.20	1.12	1.03			

 Table 16.1

 Head Analysis of Individual Samples (after Peters, 2009)

A 25-kg sub-sample was removed from each composite for grindability tests. A predetermined sample mass was then extracted from each composite and stagecrushed to minus 10 mesh. Sub-samples from the Nickel Zone and Intermediate Zone composites were blended in a ratio of 55:45 to generate a seventh composite, titled "Blend Composite".

Each of the seven composites was blended thoroughly before the ore was rotary-split into 2-kg test charges. A representative head sample was submitted for Ni, Ni (AR), Cu, S, Au, Ag, Pt, Pd, Hg, ICP, and whole rock analysis (WRA). All test charges and the remaining minus $\frac{1}{2}$ " ore were stored in a freezer to minimize the risk of sample oxidation.

The [base and precious metal] analytical results for the seven composites are shown in Table 16.2.

Grindability

Samples of the original six composites were subjected to Bond ball mill and Bond rod mill grindability tests to provide data for mill sizing. Due to limited sample availability, no grindability test was performed on the highest grade composite "0.5->1.0 Comp". The results of these tests are summarized in Table 16.3.

^{*}Ni(AR)=Nickel by Aqua Regia digestion (i.e. sulphide nickel)



Samula	Assay, %				Assay, g/t			
Sample	Ni	Ni (AR)	Cu	s	Au	Ag	Pt	Pd
Nickel Zone	0.88	0.90	0.012	0.60	0.09	1.5	0.08	0.20
Intermediate zone comp	0.42	0.41	0.012	0.51	< 0.02	< 0.5	0.03	0.06
Blend Comp	0.66	0.66	0.012	0.40	0.03	< 0.5	0.05	0.14
0.20-0.25 Comp	0.24	0.24	0.013	0.09	0.07	< 0.5	< 0.02	< 0.02
0.25-0.30 comp	0.28	0.28	0.016	0.13	< 0.02	< 0.5	< 0.02	0.03
0.30-0.50 comp	0.43	0.42	0.018	0.36	< 0.02	< 0.5	0.05	0.08
0.50-1.00 comp	0.95	0.95	0.024	0.75	0.11	< 0.5	0.08	0.20

Table 16.2 Head Analysis of the Seven Composite Samples (after Peters, 2009)

The Bond ball mill work indices of the Langmuir #2 North Zone ore of more than 20 kWh/t were well above average for this type of ore. The Bond rod mill work indices ranged between 16.6 and 17.7 kWh/t.

Table 16.3 Grindability Test Data (after Peters, 2009)

Samplo	BWI,	kWh/t	RWI, kWh/t		
Sample	metric	imperial	metric	imperial	
Nickel Zone	21.4	19.4	17.2	15.6	
Intermediate Zone	21.9	19.8	17.7	16.1	
0.20-0.25 Comp	23.7	21.5	17.7	16.0	
0.25-0.30 Comp	23.3	21.1	17.1	15.5	
0.30-0.50 Comp	20.4	18.5	16.6	15.0	

Mineralogy

A Rapid Mineral Scan (RMS) was carried out on the Nickel Zone, Intermediate Zone, and the four grade composites. The primary nickel bearing mineral was identified as millerite, which contains almost 65% Ni compared to the more commonly occurring pentlandite with approximately 34% Ni content. Other sulphide minerals identified included violarite, pentlandite, pyrite, and chalcopyrite. Overall, the mid grain size decreases with the head grade of the sample, which is commonly observed relationship for this type of mineralization.

The fact that talc and lizardite were identified as minerals that are present in minor to moderate concentrations was an indication that floatable gangue minerals could constitute a metallurgical challenge. The dolomite that was identified in the Nickel Zone composite has acid-neutralizing potential and is beneficial in lowering the acid-generating potential of the floation tails.



Flotation

Batch Rougher Tests

A series of seven batch rougher tests were carried out on the Nickel Zone composite. A summary of pertinent test conditions and mass balance data of these seven tests is presented in [Table 16.4].

The first two rougher tests evaluated the response of the composite to the Strathcona and Montcalm rougher conditions. The objective was to determine if the Langmuir #2 North Zone ore could be processed through the existing Montcalm or Strathcona circuits. While the Montcalm rougher test yielded a high Ni recovery of 91.6%, the mass pull into the rougher concentrate of 59.2% was the highest of all seven tests.

Although the mass pull decreased in the Strathcona test F2, it remained high at 34.5%. The final Ni recovery in this test was 85.6%. During the two tests a significant amount of non-sulphide gangue (NSG) reported to the rougher concentrate, which resulted in the high mass recovery. Hence, the NSG depressant carboxymethyl cellulose (CMC) was introduced in the next rougher flotation test in an effort to improve the selectivity between sulphide and NSG minerals.

Tests F3 to F5 evaluated the flotation response of the Nickel Zone composite to different primary grind sizes between P_{80} =56 microns and P_{80} =233 microns. The collectors were Sodium Isopropyl Xanthate (SIPX) and Potassium Amyl Xanthate (PAX) and Methylisobutyl carbinol (MIBC) was used as the frother. The Ni recovery of the three tests ranged between 75.3% and 77.4%. Although the Ni recovery in these tests was slightly lower than that achieved in tests F1 and F2, the mass recovery into the rougher concentrate decreased significantly to 4.1-6.3%, which suggests that CMC was successful in depressing the NSG minerals. As a result of the more selective flotation, the rougher concentrate grade increased from 1.4-2.2% Ni in tests F1 and F2 to 10.1%Ni in test F4 and even 15.5%Ni in test F5.

The Ni recovery in tests F3 to F5 ranged only by 2%, which falls within the typical test-to-test variance. Hence, the primary grind size does not appear to have impact on the Ni recovery in the range between $P_{80}=56$ microns and $P_{80}=233$ microns. This statement is only valid for the Nickel Zone composite and would have to be confirmed for the other composites. Since the mid grain size of the lower grade composites were smaller, it is postulated that a finer primary grind may be required for those composites to achieve a satisfactory liberation between sulphide and NSG minerals.



Test #/	Droduct	Weight		Assays, %		9	Distributio	n
Conditions	Product	%	NI	Cu	s	NI	Cu	S
	Rougher 1	20.1	1.35	0.03	0.82	30.9	34.8	34.0
F1	Rougher 1 & 2	46.5	1.38	0.03	0.77	73.0	71.6	74.3
Montonim Rougher	Rougher 1 - 3	52.6	1.49	0.03	0.88	89.3	82.8	95.6
Kurss um	Rougher 1 - 4	55.1	1.44	0.03	0.86	90.4	85.1	97.8
pH=10.2	Rougher 1 - 5	57.1	1.40	0.03	0.84	91.1	87.1	98.7
Na ₂ CO ₃ for pH adj.	Rougher 1 - 6	59.2	1.36	0.03	0.81	91.6	88.6	99.2
SIBX/MIBC	Rougher Tall	40.8	0.18	0.01	0.01	8.4	11.4	0.8
	Head (calc.)		0.88	0.02	0.48	100	100	100
	Rougher 1	15.3	3.82	0.07	2.15	67.4	55.4	63.7
F2	Rougher 1 & 2	22.3	3.07	0.05	1.78	79.0	64.0	77.1
Circibeena Reusber	Rougher 1 - 3	25.0	2.82	0.05	1.72	81.2	67.5	83.1
Ku =130 um	Rougher 1 - 4	29.2	2.48	0.05	1.69	83.5	71.1	95.6
pH=9.2/8.0	Rougher 1 - 5	32.3	2.27	0.04	1.55	84.7	73.8	96.9
lime for pH adl.	Rougher 1 - 6	34.5	2.16	0.04	1.46	85.6	75.6	97.5
PIBX/DF250	Rougher Tall	65.5	0.19	0.01	0.02	14.4	24.4	2.5
	Head (calc.)		0.87	0.02	0.52	100	100	100
E9	Ro Conc 1	1.2	40.1	0.84	24.6	52.2	54.6	47.2
гə	Ro Conc1- 2	1.6	36.7	0.71	22.4	67.6	65.2	60.8
Assess Primary Grind Size	Ro Conc 1-3	2.9	23.2	0.46	15.7	74.0	72.6	73.8
K80=56 mm	Ro Conc1- 4	4.2	16.3	0.33	12.7	75.9	76.7	87.3
pH=9.7/8.0	Ro Conc 1-5	5.1	13.5	0.28	10.7	76.6	78.8	89.0
SIBX/PAX/MIBC	Ro Tall	94.9	0.22	0.00	0.07	23.4	21.2	11.0
CIEVE / COMINGO	Head (calc.)		0.89	0.02	0.61	100	100	100
E4	Ro Conc 1	2.4	22.1	0.35	15.2	65.1	35.9	64.0
F4	Ro Conc1- 2	3.8	16.3	0.28	11.7	74.0	43.8	76.1
Assess Primary Grind Size	Ro Conc 1-3	4.3	14.5	0.25	11.1	75.8	46.1	83.1
K80-117 mm	Ro Conc1- 4	5.3	11.9	0.21	9.52	76.7	47.7	87.6
pH=9.6/8.0	Ro Conc 1-5	6.3	10.1	0.18	8.11	77.4	48.8	88.7
SIBX/RAX/MIRC	Ro Tall	93.7	0.20	0.01	0.07	22.6	51.2	11.3
orbyer Poolenibo	Head (calc.)		0.83	0.02	0.58	100	100	100
E5	Ro Conc 1	2.2	25.7	0.39	16.3	66.5	30.4	65.0
10	Ro Conc1- 2	2.7	22.7	0.36	15.8	71.3	33.9	76.3
Assess Primary Grind Size	Ro Conc 1-3	3.2	19.9	0.33	14.5	73.7	36.3	82.9
K80-233 mm	Ro Conc1- 4	3.6	17.7	0.30	13.1	74.6	37.7	85.1
pH=9.6/8.0	Ro Conc 1-5	4.1	15.5	0.27	11.5	75.3	39.1	86.2
SIBX/PAX/MIBC	Ro Tall	95.9	0.22	0.02	0.08	24.7	60.9	13.8
	Head (calc.)		0.85	0.03	0.55	100	100	100
FC	Ro Conc 1	7.6	0.57	0.04	0.27	5.0	14.2	3.4
	Ro Conc1- 2	9.4	5.24	0.08	3.56	61.5	50.0	58.3
Pre-Float	Ro Conc 1-3	9.9	5.68	0.09	3.96	69.2	55.8	67.5
K80-199 mm	Ro Conc1- 4	10.5	5.69	0.10	4.54	73.5	60.7	81.6
pH=9.5 (natural)	Ro Conc 1-5	11.1	5.46	0.09	4.59	74.5	62.8	86.9
SIBX/PAX/MIBC	Ro Tall	88.9	0.25	0.01	0.09	25.5	37.2	13.1
charter room and	Head (calc.)		0.87	0.02	0.61	100	100	100
F7	Ro Conc 1	6.2	7.21	0.16	4.31	50.4	39.9	48.9
	Ro Conc1- 2	10.1	6.16	0.12	3.68	69.3	47.0	67.2
Alternative Collectors	Ro Conc 1-3	13.8	4.92	0.10	2.98	76.0	52.9	74.8
K80=116 mm	Ro Conc1- 4	15.9	4.36	0.09	2.66	77.7	54.8	76.9
pH=9.6 (natural)	Ro Conc 1-5	18.5	3.82	0.08	2.36	79.0	61.0	79.3
AD7/3477/MIRC	Ro Tall	81.5	0.23	0.01	0.14	21.0	39.0	20.7
	Head (calc.)		0.89	0.03	0.55	100	100	100

Table 16.4Rougher Kinetics Tests (F1 to F7) (after Peters, 2009)

In an effort to reduce the amount of CMC that is required in the rougher to control the flotation of NSG minerals, test F6 employed a pre-float prior to the rougher stage. Approximately 5% of the Ni value reported to the pre-float product. In the following rougher circuit, the CMC dosage was reduced from 550 g/t to 200 g/t without a loss in flotation selectivity. The final rougher concentrate yielded a grade of 17.4% Ni at a recovery of 69.5%.



The final rougher test in the series used the collectors AERO 407 and AERO 3477 instead of SIBX Although the Ni recovery improved marginally to 79%, the mass pull into the rougher concentrate of 18.5% was much higher, which in turn lowered the rougher concentrate grade to 3.8% Ni.

The fact that most tests failed to produce a Ni rougher recovery of more than 80% raised the question of Ni deportment. The RMS identified minor to moderate quantities of lizardite and chlorite in the Langmuir #2 North Zone composites, which often contain Ni in solid solution. In order to develop a better understanding of the Ni losses in the rougher tails, a sample of the F6 rougher tails was subjected to a QEMSCAN and electron microprobe analysis. The findings of this investigation are presented in the following section.

QEMSCAN Analysis of Rougher Tails

Throughout the rougher flotation tests, Ni losses to the rougher tails were consistently between 25% and 20%. In order to determine the Ni deportment, a sample of the rougher flotation test F6 was submitted for QEMSCAN analysis and microprobe analysis.

Less than 1% of the Ni units that were accounted for in sulphide minerals reported to pentlandite, while almost 99% were associated with millerite. The millerite association is depicted in [Figure 16.1]. Approximately 22% of the millerite was associated with complex mineral grains containing more than four different mineral species. Approximately 45% of the millerite was locked in binary and ternary mineral grains and only 33% was liberated. However, the majority of the liberated millerite was less than 5 microns in size, which makes it very difficult to recovery by means of flotation. Based on these results, the potential to recovery additional Ni units in sulphide mineral is limited. Since the flotation kinetics of millerite decreases for the finer particle sizes, a longer rougher flotation time may help to recovery a certain percentage of the liberated millerite particles. Further, it would also increase the probability to recovery millerite units in some of the less complex mineral grains.

The 0.087% Ni in sulphides only represent 35% of the Ni units that reported to the rougher tails. Hence, the tailings were submitted for a microprobe analysis to quantify the Ni losses to non-sulphide gangue minerals.

A total of 65 serpentine grains and 21 chlorite grains were analyzed. The average Ni content in the serpentine was 0.18% Ni with a maximum value of 0.47% Ni. The Ni concentration in the chlorite was significantly lower at an average value of 0.013% Ni.

Due to the abundance of serpentine, the Ni units reporting to this NSG mineral account for almost 15% of the Ni units contained in the sample. Hence, only 85% of the Ni is associated with sulphide minerals and, therefore, recoverable by means of flotation. Considering these results, the Ni rougher recovery of 75- 80% represents a recovery of 88 to 94% of the sulphide minerals.





Figure 16.1 Millerite Association (after Peters, 2009)

Tailings Characterisation

In order to lower the pH in the scavenger stage of the rougher tests to 8.0 a considerable amount of acid was required. Further, the X-ray diffraction results of the RMS analysis identified dolomite in the Nickel Zone feed, which suggests that the sample may have an appreciable acid-neutralizing potential. In order to quantify this acid-neutralizing potential, a sample of the F6 rougher tails was submitted for acid-based accounting (ABA) and net-acid generation (NAG) tests. The results of the two tests are presented in Table [16.5] and Table [16.6]. The tailings contained approximately 3.5% carbonates, which resulted in a net neutralizing potential of more than 50 t CaCO₃ equivalent per 1,000t.



Parameter	Unit	F6 Ro Tail	F6 Ro Tail Repeat
Paste pH	units	9.62	9.56
Fizz Rate		1	1
Sample	weight(g)	1.99	2
HCI added	mL	39.3	43.90
HCI	Normality	0.10	0.10
NaOH	Normality	0.10	0.10
NaOH to	pH=8.3 mL	8.30	8.65
Final pH	units	1.72	1.82
NP ¹	t CaCO ₃ /1000 t	76.4	88.1
AP	t CaCO ₃ /1000 t	1.02	3.61
Net NP	t CaCO₃/1000 t	75.4	84.5
NP/AP	ratio	75.2	24.4
S	%	0.078	0.12
SO4	%	0.05	< 0.01
Sulphide	%	0.03	0.12
C	%	3.01	2.92
Carbonate	%	3.51	3.48
CO ₃ NP ²	t CaCO ₃ /1000 t	58.3	57.8
CO ₃ Net NP	t CaCO ₃ /1000 t	57.2	54.2
CO3 NP/AP	Ratio	57.1	16.0
Classification	based on ABA NP ¹	PAN	PAN
Classification	based on CO ₃ NP ²	PAN	PAN

Table 16.5 Acid-Based Accounting Test Results (after Peters, 2009)

LIMS CA10368-FEB09, CA10385-FEB09

¹ measured in ABA test

² theoretical, based on CO₃ content alone.

Green highlighting indicates Net NP values less than 20.

Orange highlighting indicates NP/AP ratios less than 3.

PAG - Potentially Acid Generating based on interpretation of ABA test data alone.

PAN - Potentially Acid Neutralizing based on interpretation of ABA test data alone.

uncertain - acid generation potential is uncertain based on interpretation of ABA test data alone.

Table 16.6 Net Acid Generation Test Results (after Peters, 2009)

Sample	Sample	Vol H ₂ O ₂	Final pH	NaOH	NaOH to pH 4.5	NaOH to pH 7.0	NAG	NAG
Sample	weight(g)	mL	units	Normality	mL	mL	@pH4.5	@pH7
F6 Ro Tails	1.48	150	9.07	0.1	0	0	< 0.1	< 0.1

Conclusions and Recommendations

Although the cleaner circuit design is still ongoing, a number of conclusions can be made at this time:

• The grindability test results revealed that the composites are quite hard. However, flotation results obtained for the Nickel Zone composites suggest that a good Ni recovery can be achieved at a relatively coarse grind size of P80=230 microns. Tests on the other composites have to be completed to confirm that the recovery remains high for the lower grade composites.



- 85% of the Ni units are associated with sulphide minerals. The remaining Ni is tied up in serpentine and chlorite and, therefore, considered non-recoverable by means of flotation.
- Almost all Ni units are associated with millerite, which has the advantage of a higher Ni content compared to pentlandite.
- The achievable rougher Ni recovery in the Nickel Zone composite is 75-77% at a saleable concentrate grade of 13-15% Ni. Results of a first cleaner tests suggests that the concentrate grade may be increased to 20-25% at only moderate Ni losses.
- The rougher tails of the Nickel Zone contains a considerable amount of carbonates, which render the tailings acid-neutralizing. ABA and NAG tests would also have to be carried out on the other composites to confirm that the acid-neutralizing potential is consistent throughout the deposit.
- The Nickel Zone composite contained a large amount of floatable nonsulphide gangue minerals that require the addition of CMC to depress the NSG minerals.

The following tests are planned to finalize this phase of testing:

- Optimize cleaner circuit conditions (2-3 tests).
- Subject the remaining composites to the proposed flowsheet (6 tests).
- Submit tailings from each composite for preliminary environmental characterization."

A summary of the historical concentrate grades from the Langmuir 1, 2 and McWatters deposit have been presented in Green and Naldrett (1981) as shown in Table 16.7.



Deposit	Ore Type	No. of	Cu	Ni	Со	S	Se	Zn	Pb	As
Deposit	Ole Type	Samples	(%)	(%)	(%)	(%)	(g/t)	(g/t)	(g/t)	(g/t)
Langmuir	All Ores	42	0.26	6.52	0.13	19.5	10.5	27	8	25
1 and 2	Mill Concentrate,	1	0.44	8.80	0.25	29.0	10.4	150		
	18-month									
	composite									
	Pyrrhotite-rich	18	0.25	7.97	0.16	25.6	11.0	26	6	20
	ores									
	Pyrite-rich ores	8	0.29	8.20	0.15	23.5	9.8	21	8	60
	Millerite-rich ores	12	0.21	5.54	0.099	11.6	11.6	19	11	7
	Metasedimentary	4	0.26	1.79	0.20	6.5	6.5			
	Ores									
McWatters	Pyrite-rich	1	0.24	10.6	0.16	21.3	13	14	5	
	÷									
Deposit	Ore Type	No. of	Os	Ir	Ru	Rh	Pt	Pd	Au	
Deposit	Ore Type	No. of Samples	Os (g/t)	Ir (g/t)	Ru (g/t)	Rh (g/t)	Pt (g/t)	Pd (g/t)	Au (g/t)	
Deposit Langmuir	Ore Type All Ores	No. of Samples 42	Os (g/t) 172	Ir (g/t) 103	Ru (g/t) 321	Rh (g/t) 100	Pt (g/t) 322	Pd (g/t) 606	Au (g/t) 48	
Deposit Langmuir 1 and 2	Ore Type All Ores Mill Concentrate,	No. of Samples 42 1	Os (g/t) 172 320	Ir (g/t) 103 120	Ru (g/t) 321 420	Rh (g/t) 100 112	Pt (g/t) 322 350	Pd (g/t) 606 900	Au (g/t) 48 100	
Deposit Langmuir 1 and 2	Ore Type All Ores Mill Concentrate, 18-month	No. of Samples 42 1	Os (g/t) 172 320	Ir (g/t) 103 120	Ru (g/t) 321 420	Rh (g/t) 100 112	Pt (g/t) 322 350	Pd (g/t) 606 900	Au (g/t) 48 100	
Deposit Langmuir 1 and 2	Ore Type All Ores Mill Concentrate, 18-month composite	No. of Samples 42 1	Os (g/t) 172 320	Ir (g/t) 103 120	Ru (g/t) 321 420	Rh (g/t) 100 112	Pt (g/t) 322 350	Pd (g/t) 606 900	Au (g/t) 48 100	
Deposit Langmuir 1 and 2	Ore Type All Ores Mill Concentrate, 18-month composite Pyrrhotite-rich	No. of Samples 42 1 18	Os (g/t) 172 320 222	Ir (g/t) 103 120 134	Ru (g/t) 321 420 360	Rh (g/t) 100 112 125	Pt (g/t) 322 350 395	Pd (g/t) 606 900 566	Au (g/t) 48 100 43	
Deposit Langmuir 1 and 2	Ore Type All Ores Mill Concentrate, 18-month composite Pyrrhotite-rich ores	No. of Samples 42 1 18	Os (g/t) 172 320 222	Ir (g/t) 103 120 134	Ru (g/t) 321 420 360	Rh (g/t) 100 112 125 125	Pt (g/t) 322 350 395	Pd (g/t) 606 900 566	Au (g/t) 48 100 43	
Deposit Langmuir 1 and 2	Ore Type All Ores Mill Concentrate, 18-month composite Pyrrhotite-rich ores Pyrite-rich ores	No. of Samples 42 1 18 8	Os (g/t) 172 320 222 221	Ir (g/t) 103 120 134 159	Ru (g/t) 321 420 360 579	Rh (g/t) 100 112 125 140	Pt (g/t) 322 350 395 256	Pd (g/t) 606 900 566 703	Au (g/t) 48 100 43 35	
Deposit Langmuir 1 and 2	Ore Type All Ores Mill Concentrate, 18-month composite Pyrrhotite-rich ores Pyrite-rich ores Millerite-rich ores	No. of Samples 42 1 18 8 12	Os (g/t) 172 320 222 221 141	Ir (g/t) 103 120 134 159 63	Ru (g/t) 321 420 360 579 184	Rh (g/t) 100 112 125 140 120	Pt (g/t) 322 350 395 256 386	Pd (g/t) 606 900 566 703 720	Au (g/t) 48 100 43 35 78	
Deposit Langmuir 1 and 2	Ore Type All Ores Mill Concentrate, 18-month composite Pyrrhotite-rich ores Pyrite-rich ores Millerite-rich ores Metasedimentary	No. of Samples 42 1 1 18 8 12 4	Os (g/t) 172 320 222 221 141 7	Ir (g/t) 103 120 134 159 63 0.6	Ru (g/t) 321 420 420 360 579 184 40 40	Rh (g/t) 100 112 125 140 120 3	Pt (g/t) 322 350 395 256 386 125	Pd (g/t) 606 900 566 703 720 350	Au (g/t) 48 100 43 43 35 78 15	
Deposit Langmuir 1 and 2	Ore TypeAll OresMill Concentrate, 18-month compositePyrrhotite-rich oresPyrrhotite-rich oresPyrite-rich oresMillerite-rich oresMetasedimentary Ores	No. of Samples 42 1 18 8 12 4	Os (g/t) 172 320 222 221 141 7	Ir (g/t) 103 120 134 159 63 0.6	Ru (g/t) 321 420 360 579 184 40	Rh (g/t) 100 112 125 140 120 3	Pt (g/t) 322 350 395 256 386 125	Pd (g/t) 606 900 566 703 720 350	Au (g/t) 48 100 43 43 35 78 15	

Table 16.7 Elemental Concentrations of Ores from the Langmuir 1 and 2 and McWatters Deposits (after Green and Naldrett, 1981)



17.0 MINERAL RESOURCE AND MINERAL RESERVE ESTIMATES

17.1 LANGMUIR NORTH DEPOSIT

17.1.1 Description of the Database

A digital database was provided to Micon by Inspiration wherein such drill hole information as collar location, down hole survey, lithology, density measurements and assays was stored in comma delimited format. The drill hole information was provided on an on-going basis as new information became available after the date of Micon's site visit. The cut-off date for the drill hole database was October 28th, 2009 and included all drill hole information up to and including hole LN-09-171. The drilling was carried out at a nominal spacing of 25 metres vertically on sections spaced 25 metres apart in plan view.

This drill hole information was modified slightly so as to be compatible with the format requirements of the Gemcom-Surpac v6.1.1 mine planning software and was imported into that software package. As well, the detailed information contained within the Lithology table was simplified for ease of use by creating a separate column to contain the major lithology labels only. A number of additional tables were created during the process of creating a grade block model of the mineralization found at the Langmuir North deposit to store such information as composite assays, zone composites and assorted domain codes. A description of the revised database is provided in Table 17.1 and a plan-view map showing the drill hole locations was provided in Chapter 11 above. A summary of the drill hole collar locations is provided in Appendix I.

Table Name	able Name Data Type Table Type		Records
Assay_raw	Interval	Time-independent	25,222
Collar			170
Litho	Interval	Time-independent	6,145
Ni_cap	Interval	Time-independent	0
Styles			71
Survey			10,900
Translation			0
Zone_flags_02ni	Interval	Time-independent	182

 Table 17.1

 Summary of the Langmuir North Drill Hole Database (as at December 10, 2009)

17.1.2 Geological Domain Interpretations

Interpretation of the geological and mineralization features associated with the nickel mineralization found at the Langmuir North deposit was carried out according to the most current understanding and level of knowledge. As presented in Chapter 9 above, the presence of nickel mineralization within the ultramafic rocks around the Langmuir #2 mine, the controls on the location of the mineralization and the general geology of the property has long been understood.



On the basis of its review of the drill hole information and discussions carried out during the site visit, Micon agrees that the major host lithology consists of a steeply southeast dipping, bi-modal assemblage of felsic and ultramafic metavolcanic rocks which contain minor amounts of interbedded sediments. From a regional perspective, the overall strike of the stratigraphic package is southwest-north east and the facing directions (the direction in which the age of the rocks becomes younger) is to the southeast.

Micon began to prepare a three dimensional model of the lithologies encountered by the drill holes completed on the Langmuir North deposit according to this historical perspective and noted that indeed the overall stratigraphic sequence conformed to the historical perspective. In general terms, the overall stratigraphy was found to comprise a northeast striking ultramafic unit that was in contact with a layer of felsic volcanic rocks to the southeast (i.e. stratigraphically younger). Limited drill hole information suggests that this felsic volcanic unit is, in turn, overlain by another layer of ultramafic rocks. The presence of a second felsic volcanic layer located, for the most part, at depth (i.e. does not extend to surface) was intersected by a number of the deeper drill holes in the southwestern portion of the area under consideration. Limited information in the extreme southwestern corner of the Inspiration claims (i.e. along the contact of the Langmuir #2 mine claim) suggests that this footwall felsic volcanic flow can be interpreted to extend to surface on one cross section. The dips of the stratigraphy, as defined by the drill hole information, are seen to vary from moderately southeast in the extreme southwestern portion of the central and northeastern portions of the deposit.

A detailed examination of the lithological units encountered by the drill holes revealed the presence of a number of intervals of felsic intrusive rocks that decreased in size and frequency from the southwest to northeast. While no detailed age dating information is available for these felsic intrusive rocks, they were interpreted to be post-mineralization in age (and thus barren) according to Micon's general understanding of the stratigraphic relationships of the rocks in the Shaw Dome area. The size of these felsic intrusive rocks ranged from metre-scale to tens of metres in thickness. Consequently Micon attempted to create an interpretation of the distribution of the larger of these (barren) felsic intrusions for the larger occurrences, as insufficient information was available to complete a detailed interpretation for all of the occurrences of felsic intrusions (Figure 17.1).

Upon detailed examination of the distribution of the nickel values in relation to the overall stratigraphic sequence in the north eastern portions of the area under consideration, it was noted that an abrupt decrease in nickel values was often observed to be associated with the ultramafic rocks located to the north west (i.e. stratigraphically below) of the host nickeliferous` ultramafic unit. Examination of the detailed drill hole information for these (older) rocks revealed that, for the most part, these older rocks seemed to be composed of mostly pillowed ultramafic rocks, suggesting that this older unit may be dominated more by ultramafic flow rocks that have undergone rapid cooling and thus have not allowed sufficient time for the nucleation and segregation of nickel-bearing sulphide minerals. Consequently, the lithological model was modified from the simpler, original understanding to include a



footwall unit to the nickel-bearing ultramafic rocks that is dominated by ultramafic flows (Figure 17.2).









Figure 17.2 Cross Section D-D' of the Langmuir North Deposit, Looking to Azimuth 030° Section Location as Shown in Figure 11.1



In summary, the current view of the overall stratigraphic sequence and nickel mineralization at the Langmuir North deposit involves a footwall sequence of pillowed ultramafic flows that acted as a substrate upon which a unit of felsic volcanic rocks was extruded. This footwall felsic volcanic flow was not aerially extensive and pinched out to the northeast. A thick ultramafic flow was erupted onto this footwall surface and remained molten for a sufficient period of time to allow the nucleation of nickel-bearing sulphide minerals. These nickelbearing sulphide minerals have partially settled to the bottom of the flow (i.e. to the northwest) to form higher nickel concentrations as disseminations, net-textured sulphides and pods of semi-massive to massive sulphides. This thick flow is overlain by a younger unit of felsic volcanic rocks of dacitic composition which are in turn overlain by a younger-still ultramafic volcanic unit. The entire stratigraphic sequence has been intruded by a series of post-mineralization felsic intrusions of variable thicknesses.

In terms of structural geology, the overall stratigraphic sequence is currently viewed as a simple "layer-cake" succession of bi-modal ultramafic and felsic volcanic rocks. A suggestion of folding is indicated from the distribution of some of the rock units in the stratigraphic sequence. Numerous notations of faulting are contained in the drill hole database however, while indeed the possibility of fault displacements is present, no systematic larger-scale displacements were noted of any of the major lithological units in the preparation of the lithological interpretation. This current understanding of the stratigraphic sequence, structural geology and nickel mineralization may change in the future as further information becomes available.

In respect of the nickel mineralization, the nickel values were displayed on the drill hole traces and were used to establish the outline of the mineralized zone on cross-sections that were spaced nominally at 25 metre centers (viewing windows of +/- 12.5 metres). The nickel domains were drawn so as to include all occurrences of nickel values that were greater than the estimated Break Even Cut-off Grade (BECOG), irrespective of the quantity of sulphides present (i.e. inclusive of massive, semi-massive, stringer and disseminated sulphide mineralization). In cases where lithological information indicated the presence of metrescale barren felsic intrusions, these small sections were included with the initial domain model as internal dilution. The locations of the mineralized contacts were "snapped" to the observed location in the individual drill holes such that the sectional interpretations "wobbled" in three dimensional space, to either side of the section plane.

Subsequent to completion of the initial domain model, Micon then examined the distribution of the nickel values in an attempt to determine whether sub-domains would be required to model the distribution of the higher nickel values in detail. Micon observed that while higher grade nickel values in excess of 1% Ni have indeed been intersected by the drill holes, the vertical and lateral extent of this higher grade mineralization according to the adjacent drill holes was suggested to be limited. While continuity of higher grade nickel values can be seen to be present between drill holes in some instances, no systematic pattern of higher grade mineralization (i.e. as pools of massive sulphide along the bottom of the host ultramafic flow) was observed.



For this exercise, Micon elected to apply a BECOG of 0.2% Ni construction of the domain model of the nickel mineralization found at the Langmuir North deposit. Due to the nature of the distribution of the nickel mineralization at Langmuir North, in a number of instances the entire width of mineralized zone does not contain nickel values above the 0.20% cut-off grade. In these instances the nickel mineralization consists of a series of above-cut-off grade intervals that are separated by sections of below-cut-off grade material that are likely a result of a lower density of sulphide mineralization. In many cases, there are a sufficient number of higher grade samples to produce an average grade that is above the BECOG, resulting in a wider interval of mineralized material. In these cases, the limit of the mineralization domain is drawn as the last point at which the average assay value is above the BECOG. Some situations occurred where isolated higher grade assays were located beyond the limit of the 0.2% Ni domain model and were separated by material containing nickel values below the BECOG. In these situations, the higher grade assays were included in the mineralized domain model only if the average grade of the incremental material was above the BECOG.

In many instances, it was seen that nickel mineralization above the BECOG threshold was intersected by the deepest drill holes on the cross section under consideration. In these cases, the limits of the nickel mineralization domain model were projected a nominal distance of 40 metres in the down dip direction. For those instances where the limits of the nickel mineralization were found to occur between adjacent drill holes or between adjacent sections, the limit of the domain model was drawn as being one-half of the spacing between the drill holes or cross sections.

Details regarding the input parameters for this nickel cut-off grade are provided in the following section.

In all, interpretation was carried out on 22 cross-sections along a strike length of 600 metres and to a maximum depth of approximately -180 metre elevation (approximately 460 metres beneath the surface), and the resulting "wobbly polylines" for both the lithological model and the 0.2% Ni domain model were then linked together to form a three-dimensional solid of the mineralized zone.

As a result of the domain modeling exercise, it was discovered that the overall strike of the mineralization for the Langmuir North deposit varies from essentially north-south in the south western portion of the deposit to north easterly (025° to 030°) in the central and northeastern portions of the deposit. The dip of the mineralization also seems to vary with the strike of the deposit, being steeply southeast-dipping at an average dip of approximately - 75° in the southwestern portion of the deposit.

The northeastern strike extension of the mineralization appears to have been closed off by two drill hole fences that have tested for the presence of near-surface nickel mineralization to a depth of approximately 200 metres. Micon notes that the depth limits of the favourable host ultramafic unit clearly have not been tested by diamond drilling.



17.1.3 Cut-off Grade

Given the relatively early stage of the Langmuir North deposit exploration and development history, no studies have been undertaken that contemplate potential operating scenarios and limited information is available for such items as metallurgical recoveries and smelting/refining terms. For the purposes of this assignment, a conceptual operating scenario was developed wherein nickel-bearing material was contemplated to be excavated using open pit mining methods and a nickel concentrate to be produced at a plant located on the property which employs a flowsheet incorporating a flotation process to generate a nickel-rich sulphide concentrate. This concentrate would then be transported to a domestic smelting/refining complex. This conceptual scenario will likely change as more information becomes available for this deposit.

The price of nickel is cyclical, responding to the supply and demand relationship and influenced to a degree by market speculation and technical analyses. The nickel metal prices have varied widely since the year 2000, have recently retreated from record high levels and more recently have recovered from dramatic lows. Given the cyclical nature of metal prices it is not reasonable to utilize the metal price at any one point in time, as it is certain that the price will change in the future. While history has shown that it is impossible to predict what the future metal prices will be with a high degree of accuracy, a reasonable alternative is to utilize the average metal price over a time period rather than using the metal prices at the close of any particular business day.

In light of the fact that the prices of nickel have now retreated from their peak prices, the use of trailing averages may result in values that are above the current spot prices – a situation that is clearly inappropriate. In the absence of a more formal metal price forecast, on a cost-of-production basis, Micon believes that an appropriate choice of a long-term nickel price for the purposes of an initial mineral resource estimate is USD8.00/lb.

Given the early stage of the project's history, no detailed information is available in respect of many of the important input parameters required to prepare an accurate cut-off grade estimate such as operating costs for mining, processing and general and administration, metallurgical recovery, smelter accountabilities, freight and refining charges, and the like in respect of a potential open pit mining operation. Consequently, Micon derived estimates for these items on the basis of its experience in the region and from general knowledge as shown in Table 17.2. It is to be noted that the estimates presented below are presented only for the purpose of developing an initial domain model, open pit optimization and reporting criteria, and the assumed values will likely change as new information is obtained as a result of further work.



Table 17.2 Summary of the Input Parameters Used in Estimation of a Cut-Off Grade and Open Pit Optimization, Langmuir North Deposit

Item	Estimated Value	Source
Bulk Densities:	Overburden (102): 2.0	Overburden density is derived
	Main Peridotite (404): 2.79	from a Micon estimate. Rock
	Footwall Pillowed UM (114):	densities are averages of
	2.79	density measurements from the
	Felsic Volcanics (106): 2.70	drill hole database
	Mineralization (408): 2.71	
Metal Prices:		Cost-of-production estimate
Nickel (USD/lb)	\$8.00	
Exchange Rate (CDN/USD)	1.05	Current exchange rate
Metal Prices:		
Nickel (CDN/lb)	\$8.40	
Recovery to Concentrate:		Metallurgical testing
Nickel	Ni: 77%	Note: Recovery stated on a
		total nickel basis while
		geological database is stated on
		a sulphide nickel basis.
Concentrate Grade:		
Nickel	Fixed 10% Ni	Metallurgical testing
Smelter Payable:		
Nickel	90%	Micon estimate
Concentrate Terms:		
Smelting Charge (CDN)	CDN \$250 DMT conc	Micon estimate
Penalty (CDN)	Allow CDN\$10.00/misc	Micon estimate
Freight (CDN)	CDN\$45/wmt	Micon estimate
Concentrate Moisture	8%	Micon estimate
Refining Charge-Nickel	CDN \$1.72/kg Ni	Micon estimate
Mass Pull	2 7%	Re-calculated from
	2.170	metallurgical work for lower
		head grades
Pit Walls:		licad grades
All Sectors	54°	Micon estimate
Operating Costs:		Wieon estimate
Mining (Ore & Waste)	CDN\$2 0/tonne	Micon estimate
Processing	CDN \$11.00/tonne	Micon estimate
G&A - Site	CDN \$3.50/tonne	Micon estimate
Boyalties	Nil	Inspiration Mining
Royalties	N1l	Inspiration Mining

17.1.4 Topographic Surface

A digital model of the topographic surface in the vicinity of the Langmuir North Deposit was provided to Micon by Inspiration. The topography in this area is relatively flat-lying with a low relief ranging on the order of 1-10 metres. The most significant topographic feature of this area is Carmen Bay, being the southern portion of Nighthawk Lake.



17.1.5 Grade Capping

Grade capping (or top cutting) was investigated on the raw nickel assay values in order to ensure that the possible influence of erratic high values did not unduly bias the database or grade estimate. All samples contained within the three-dimensional model of the Langmuir North 0.2% Ni domain model were coded in the database and extracted for analysis.

A normal histogram was generated from these extraction files (Figure 17.3) and the descriptive statistics of the sample data set were generated. The grade cap was selected by examining the histogram for the grade at which outlier assays begin to occur. As can be seen, a capping value of 4% Ni is clearly indicated, resulting in the grades of only three samples being reduced. A comparison of the descriptive statistics for the capped and uncapped raw nickel assays is presented in Table 17.3 along with the descriptive statistics for copper, palladium, platinum and gold. Normal histograms were prepared for the copper, palladium, platinum and gold assays that were contained within the 0.2% Ni domain model and are presented in Figures 17.4, 17.5, 17.6 and 17.7, respectively.

An examination of the inter-element relationships between copper, palladium, platinum and gold as a function of nickel grades is presented in Figures 17.8, 17.9, 17.10 and 17.11, respectively. An examination of the relationship of palladium, platinum and gold as a function of copper grades is presented in Figures 17.12, 13 and 14, respectively.



Figure 17.3 Frequency Histogram of Raw Assay Nickel Samples, Langmuir North Deposit



Table 17.3
Summary Statistics for the Raw Assay Samples Within the 0.2% Ni Domain Model, Langmuir North
Deposit

Item	Ni (%)	Ni (%)	Cu	Pd	Pt	Au (g/t)
	Uncapped	Capped	(%)	(g/t)	(g/t)	
Arithmetic Mean	0.35	0.35	0.01	0.08	0.04	0.02
Length-Weighted Mean	0.34	0.34				
Standard Error	0.00	0.00	0.00	0.00	0.00	0.00
Median	0.25	0.25	0.01	0.03	0.02	0.00
Mode	0.23	0.23	0.00	0.01	0.01	0.00
Standard Deviation	0.33	0.32	0.02	0.14	0.07	0.10
Coefficient of Variation-Arithmetic	0.95	0.94	1.93	1.73	1.58	4.51
Coefficient of Variation-Weighted	0.97	0.95				
Sample Variance	0.11	0.10	0.00	0.02	0.00	0.01
Kurtosis	31.94	24.12	974.86	24.98	31.13	307.62
Skewness	4.35	4.00	22.34	4.05	4.31	14.48
Range	5.96	4.00	0.95	1.77	0.98	3.01
Minimum	0.00	0.00	0.00	0.01	0.01	0.00
Maximum	5.96	4.00	0.95	1.77	0.98	3.01
Sum	3,664.68	3,661.51	50.19	386.98	199.42	103.96
Count	10,603	10,603	4,782	4,752	4,752	4,752

Figure 17.4 Frequency Histogram of Raw Assay Copper Samples, Langmuir North Deposit







Figure 17.5 Frequency Histogram of Raw Assay Palladium Samples, Langmuir North Deposit

Figure 17.6 Frequency Histogram of Raw Assay Platinum Samples, Langmuir North Deposit









Figure 17.8 Comparison of Copper vs. Nickel Assays, Langmuir North Deposit







Figure 17.9 Comparison of Palladium vs. Nickel Assays, Langmuir North Deposit

Figure 17.10 Comparison of Platinum vs. Nickel Assays, Langmuir North Deposit







Figure 17.11 Comparison of Gold vs. Nickel Assays, Langmuir North Deposit

Figure 17.12 Comparison of Palladium vs. Copper Assays, Langmuir North Deposit







Figure 17.13 Comparison of Platinum vs. Copper Assays, Langmuir North Deposit

Figure 17.14 Comparison of Gold vs. Copper Assays, Langmuir North Deposit



It can be seen that the average grades of copper, palladium, platinum and gold for the samples contained within the 0.2% Ni domain model are quite low and, in Micon's opinion, are not likely to provide a material contribution from a block modeling perspective. Consequently Micon proceeded with completion of the mineral resource estimate of the



Langmuir North deposit on the basis of nickel grades only for the purposes of this initial mineral resource estimate.

While the inter-element relationships suggest that no relation is present between nickel and copper values, it can be seen, however, that a positive relationship is present between nickel, palladium and platinum where higher palladium and platinum values are correlated with higher nickel values. This suggests the presence of a Ni-Pd-Pt-bearing mineral such as braggite (Pt, Pd, Ni)S in the mineralization found at the Langmuir North deposit. The possible presence of such a Ni-PGE-bearing mineral suggests that while the average grades of palladium and platinum may be low in the overall feed grades, elevated palladium and platinum grades can be expected in nickel concentrates generated from the Langmuir North deposit. Indeed, the historical information of the concentrate grades presented in Table 16.4 above does suggest that elevated palladium and platinum grades in concentrate be determined in any future metallurgical testing programs.

In respect of the relationship of gold values to the nickel grades, a subtle relationship is suggested wherein elevated gold grades (to the 1.5-2.0 g/t Au range) can be seen to be related to a group of samples which contain nickel values in the 0.25-0.50% range. This relationship may merit further investigation in future mineral resource estimates of the Langmuir North deposit.

No correlations of palladium, platinum and gold with copper assays are suggested.

17.1.6 Compositing Methods

Micon examined the distribution of the lengths of the samples contained within the Langmuir North 0.2% Ni domain model (Figure 17.15). After consideration of such items as the distribution of raw sample lengths, the relation of the sample lengths to the width of the mineralization, to the anticipated block sizes and search ellipse criteria that would be utilized for the construction of the grade-block model, in Micon's opinion, a composite length of 1.0 m was appropriate for this assignment.

All samples of the capped nickel assays were composited to an equal length of 1.0 m using the down hole compositing function of the Gemcom-Surpac mine modelling software. In this function, compositing begins at the point in a drill hole at which the zone of interest is encountered and continues down the length of the hole until the end of the zone is reached. As often happens, the thickness of the mineralized zone encountered by any given drill hole is not an even multiple of the composite length. In these cases, if the remaining length was 75% or greater of the composite length (in this case 0.75 m), the composite was accepted as part of the data set. The remaining sample lengths less than 75% of the composite length were discarded from consideration. The descriptive statistics of the capped, composited samples are presented in Table 17.4.







Table 17.4

Summary Statistics for the 1m Capped, Composited Samples for the 0.2% Ni Domain Model, Langmuir North Deposit

Item	1m Composite
Arithmetic Mean	0.34
Length Weighted Mean	0.34
Standard Error	0.00
Median	0.25
Mode	0.24
Standard Deviation	0.29
Coefficient of Variation- Arithmetic	0.85
Coefficient of Variation-Weighted	0.85
Sample Variance	0.08
Kurtosis	21.67
Skewness	3.74
Range	4.27
Minimum	0.00
Maximum	4.27
Sum	3,387.81
Count	9,981

17.1.7 Bulk Density

Bulk densities were measured by the analytical laboratories as described in Section 12 of this report. A total of 5,206 density measurements were made of both mineralized and unmineralized rock. Of these, 4,766 samples were contained within the 0.2% Ni domain model of the Langmuir North deposit (Figure 17.16). Micon determined that the average bulk density of these samples was 2.71 t/m^3 and applied this value as the average bulk



density to estimate the mineral resources for the Langmuir North deposit. A comparison of the bulk density as a function of the nickel grade is presented in Figure 17.17.





Figure 17.17 Comparison of Bulk Density vs. Nickel Grade, Langmuir North Deposit



17.1.8 Trend Analysis

As an aid in carrying out a variography study of the continuity of the nickel grades at Langmuir North, Micon conducted a short study of the overall trends that may be present.



For this exercise, a data file was prepared that contained the average nickel grade for each drill hole that pierced the 0.2% Ni domain model. In the cases where a drill hole intersected two or more nickel-bearing intervals, the nickel grades of these multiple intervals were combined on a length-weighted basis and the resulting combined average was plotted at the centroid location of the longest sample interval. The resulting nickel grades were contoured on a longitudinal projection and the results are shown in Figure 17.18.

Figure 17.18 Longitudinal Projection (Looking to Azimuth 300°) Showing the Distribution of Nickel Grades, Langmuir North Deposit





17.1.9 Variography

The analysis of the variographic parameters of the mineralization found in the mineralized domain for the 0.2% Ni domain began with the construction of down-hole and omnidirectional variograms using the capped, 1.0-m composited sample data with the objective of determining the global nugget (C0) for the nickel data set (Figure 17.19 and 17.20, respectively). An evaluation of any anisotropies that may be present in the data resulted in successful variograms for the three principal directions with model fits ranging from reasonable to good (Figures 17.21, 17.22 and 17.23). The results of this variography analysis are presented in Table 17.5.



Figure 17.19 Down-Hole Variogram, Composited Nickel Samples, Langmuir North Deposit

Figure 17.20 Omni-Directional Variogram, Composited Nickel Samples, Langmuir North Deposit






Figure 17.21 Down-Dip Variogram, Composited Nickel Samples, Langmuir North Deposit

Figure 17.22 Along-Strike Variogram, Composited Nickel Samples, Langmuir North Deposit







Figure 17.23 Across-Strike Variogram, Composited Nickel Samples, Langmuir North Deposit

 Table 17.5

 Summary of Variographic Parameters Within the 0.2% Ni Domain Model, Langmuir North Deposit

Item	Nickel Cap (D1)
Variogram Type	Spherical
NUGGET:	
Nugget (Downhole)	0.016
Sill (C1-Downhole)	0.037
Sill (C2-Downhole)	0.034
Range (Downhole)	44 m
Nugget (OmniDirectional)	0.015
Sill (C1-OmniDirectional)	0.038
Sill (C2-OmniDirectional)	0.037
Range (OmniDirectional)	44 m
ANISOTROPIES:	
Along Strike:	
Orientation	$0^{\circ} \rightarrow 30^{\circ}$
Angular Tolerance	30°
Sill, Range (C1)	0.046, 33m
Sill, Range (C2)	0.033, 108 m
Down Dip:	
Orientation	-90° → 120°
Angular Tolerance	30°
Sill, Range (C1)	0.035, 6m
Sill, Range (C2)	0.036, 40 m
Across Strike:	
Orientation	$0^{\circ} \rightarrow 120^{\circ}$



Item	Nickel Cap (D1)
Angular Tolerance	60°
Sill, Range (C1)	0.018, 3 m
Sill, Range (C2)	0.056, 21 m
SEARCH ELLIPSE:	
Major Axis (Pass 2, Short Range)	110m@030°(0°)
Semi-Major Axis	40m@120°(-90°)
Minor Axis	20m@120°(0°)
Major/Semi-Major Ratio	2.75
Major/Minor Ratio	5.5
Number of Points	9,981
Range for Pass 1 (Long Range)	175
Minimum Number of Points	5
Maximum Number of Points	10
Search Ellipse Type	Quadrant

17.1.10 Block Model Construction

An upright, rotated, whole block model (i.e. blocks receive information such as lithological assignments and metal grade on the basis of whether the block centroid is contained within the volume under consideration) with the long axis of the blocks oriented along an azimuth 030° (i.e. parallel to dominant the nickel domain orientation) was constructed using the Gemcom-Surpac v6.1.1 software package and the parameters presented in Table 17.6. A number of attributes were also created to store such information as metal grades by the various interpolation methods, distances to, and number of, informing samples, domain codes, and resource classification codes. These are presented in Table 17.7.

Given the early stage of discovery of the Langmuir North deposit, little information relating to the most appropriate open pit mining rate(s) is available, consequently, the selection of block dimensions is preliminary in nature. Selection of block dimensions may need to be revised at a later date as new information permits the identification of the most appropriate production rate(s) and as data density increases.

Туре	Y (across-dip)	X (along strike)	Z (down-dip)
Minimum Coordinates	5,354,500	499,200	-300
Maximum Coordinates	5,356,000	500,400	325
User Block Size	5	5	5
Min. Block Size	5	5	5
Rotation	30.000	0.000	0.000

 Table 17.6

 Langmuir North Block Model Parameters



Attribute	Туре	Decimals	Background	Description	
Name					
Kvar	Real	3	-99	Kriging Variance	
Avgdist_id2	Real	1	0	Average Distance of Informing Samples,	
				Inverse Distance Squared	
Density	Real	2	2.79	Ovb=2.0, 106=2.7, 113 & 404=2.79	
Litho	Integer	-	0	102=Ovb, 106=Deloro Felsics, 113=FW	
				Pillowed UM, 404=Msv Perdiotite	
Min_zone	Integer	-	0	408=0.2% Ni Shell	
Nearest_id2	Real	1	0	Distance to Nearest Informing Sample, Inverse	
				Distance Squared	
Ni_id2	Real	2	0	Nickel by Inverse Distance, Power 2	
Ni_nn	Real	2	0	Nickel by Nearest Neighbour	
Ni_ok	Real	2	0	Nickel by Ordinary Kriging	
Nosample_id2	Integer	-	0	Number of Informing Samples, Inverse	
				Distance Squared	
Pass_no	Integer	-	0	Pass $1 = 35m$ range, Pass $2 = 75m$ range	
Val_vol_800ni	Real	2	0	Nett Value at USD\$8.00/lb nickel	

 Table 17.7

 Langmuir North Block Model Attributes

Nickel grades were interpolated into the individual blocks for the mineralized domain using the Ordinary Kriging, Inverse Distance to the power 2 and Nearest Neighbour interpolation methods. A two-pass approach was used wherein the information from the variography analysis described above was used to establish the parameters of the search ellipse for the short range pass. The size of the search ellipse was increased for the long-range pass in order to fill all blocks within the nickel domain model. Details regarding the search ellipse parameters have been presented in Table 17.5 above.

"Hard" domain boundaries were used along the contacts of the mineralized domain model in which only data contained within the nickel domain model were allowed to be used to estimate the grades of the blocks, and only those blocks within the domain limits were allowed to receive grade estimates. The capped, composited grades of all the drill hole intersections were used to derive an estimate of a block's grade for those locations situated between drill hole pierce points. In this manner, lower grade or barren assay results that occur within the domain boundary were allowed to influence the estimated block grades and act as internal dilution.

17.1.11 Block Model Validation

Validation efforts for the mineral resource estimate at the Langmuir North deposit consisted of a comparison of the average block grades for the capped and uncapped metal values against the respective informing composite samples. As well, the volumes reported from the block model were compared to the volumes of the solid model of the Langmuir North 0.2% Ni mineralized domain. The reconciliation report is presented in Table 17.8. It can be seen that there is a good correlation for the average block grades estimated using the three interpolation methods, and between the average estimated block grades and the informing



composite samples. As well, there is a good fit between the reported volumes for the mineralized domain model, with the block model reporting a slightly less volume in comparison to the original solid model.

Data Source	Volume	Tonnes	Ni Id2	Ni Nn	Ni Ok
Block Model	4,802,875	13,015,791	0.34	0.38	0.36
Composite Averages			0.34	0.34	0.34
Solid Volume	4,799,203	Difference (BM-Solid) = $+3,672 \text{ m}^3$			
		9,951 tonnes @ 2.71 tonnes/m ³			

 Table 17.8

 Comparison of Block Model Reports to Composite Samples and Geological Models

Micon completed its validation efforts by examining the accuracy of the block model estimates at a local scale. In this method, the estimated block values for those blocks that are pierced by a given drill hole are compared to the values of the informing samples in the respective drill hole intervals (Figure 17.24). The comparisons of the estimated block grades to the local informing samples for the Nearest Neighbour, Inverse Distance, Power 2 and Ordinary Kriging methods are presented in Figures 17.25, 17.26 and 17.27, respectively.

It can be seen that all three interpolation methods produced estimated block grades that were, on average, slightly lower in grade (approximately 5%) than the local informing sample grades. As well, it can be seen that the Nearest Neighbour and Ordinary Kriging interpolation methods have resulted in a mis-estimation of the grades of a small number of blocks at the local scale while the Inverse Distance interpolation method has resulted in an estimate with a high degree of precision.

Figure 17.24 Isometric View of the Blocks Involved in the Local Estimate Validation, Langmuir North Deposit









Figure 17.26 Comparison of Estimated Block Grades to the Informing Samples, Inverse Distance, Power 2 Interpolation Method, Langmuir North Deposit







Figure 17.27 Comparison of Estimated Block Grades to the Informing Samples, Ordinary Kriging Interpolation Method, Langmuir North Deposit

In summary, as a result of its validation efforts Micon finds that the average grades of the Langmuir North block model have been shown to correspond well with the average grades of the informing samples. At a local scale, the block grades that were interpolated by means of the Nearest Neighbour and Inverse Distance, Power 2 methods were found to have resulted in a slight under-estimation, however the block grades that were interpolated using the Ordinary Kriging interpolation method have resulted in a good correlation with the informing samples. A small number of blocks were observed to be the subject of a local error for the Nearest Neighbour and Ordinary Kriging interpolation methods, while the Inverse Distance, Power 2 interpolation method was found to have generated a high degree of precision.

17.1.12 Mineral Resource Classification Criteria

The mineral resources in this report were estimated in accordance with the definitions contained in the Canadian Institute of Mining, Metallurgy and Petroleum (CIM) Standards on Mineral Resources and Reserves Definitions and Guidelines that were prepared by the CIM Standing Committee on Reserve Definitions and adopted by the CIM Council on December 11, 2005.

The mineralized material was classified into either the Indicated or Inferred mineral resource category on the basis of the search ellipse ranges presented in Table 17.4 above. Those blocks which received interpolated grades that were within the nickel variogram ranges were classified as Indicated mineral resources (i.e. those blocks informed with the short-range pass), while the remaining blocks were classified into the Inferred mineral resource category.



As is often the case in the construction of block model estimates, a lack of information resulting from a slight data gap generated by drill hole deviation. This often results in a small number of blocks that are required to have their grades estimated using a larger search ellipse, and subsequent reduction in their classification. In the case of the Langmuir North deposit, the level of drill hole information has resulted in a complete filling of the blocks, and this situation was not encountered.

17.1.13 Open Pit Optimization

As described above, the primary conceptual exploitation scenario for the nickel mineralization contained in the Langmuir North deposit involves extraction of the mineralized material by means of open pit mining methods and producing a nickel-bearing concentrate using a conventional flotation flow sheet in a plant that would be located on the property. The concentrates would subsequently be shipped to a domestic smelting/refining complex for final processing into nickel metal. Any higher-grade mineralized material that may be located below the bottom of a potential open pit shell would be extracted by means of underground mining methods and would be processed through the same plant. A preliminary open pit shell was developed using the Surpac and Whittle software packages that applied the Lerchs-Grossman optimization algorithm to the input parameters presented in Table 17.2 above as the base case scenario.

Given the early stage of the project's development, no detailed information is available in respect of operating costs for mining, processing and general and administration in respect of a potential open pit mining operation. As well, no geotechnical information is available upon which to estimate an overall slope angle. Consequently, Micon derived estimates for these items on the basis of its experience in the region and from general knowledge. It is to be noted that the estimates presented are only for the purpose of developing an initial optimized open pit shell, and the assumed values will likely change with further detailed work.

The nickel grades are used to calculate the revenues and costs for each block within the 0.2% Ni domain model and derive a net profit for each block (i.e. net profit = revenues - costs). Figure 17.28 presents a view of the profitability of all the blocks contained within the 0.2% Ni domain using a base case nickel price of US\$8.00/lb.

Once the profitability of the blocks has been calculated, the software programs proceed to determine how many waste tonnes can be moved to achieve the maximum net present value for the resource in question. The resulting surface is presented in Figure 17.29 for the base case scenario of a nickel price of US\$8.00/lb, and the resulting tonnage report is presented in Table 17.9.





Figure 17.28 View of Profitable Blocks for the 0.2% Ni Domain , Langmuir North Deposit

*Note: Property outline is an approximation only.





*Note: Property outline is an approximation only.

Higher-grade nickel mineralization that is located below the bottom of the base case open pit shell has been outlined by drilling (Figure 17.30).



 Table 17.9

 Summary of Tonnage and Grade for the Base Case Whittle Shell, Langmuir North Deposit

Material	Tonnes	Ni (%)	Ni Metal (lbs)	Ni Metal (Kg)
Waste	24,425,532			
Mineralization	8,348,709	0.40	73,622,255	33,464,660
Grand Total	32,764,240	Strip Ratio=2.92		

*Note: Mineralized tonnes are inclusive of mill-incremental material

Figure 17.30 Longitudinal View of the Location of Higher Grade Nickel Mineralization Below the Base Case Optimized Open Pit Shell, Langmuir North Deposit.



*Green Blocks=0.7-1.0% Ni, Red Blocks=>1.0% Ni

17.1.14 Sensitivity Analysis

A sensitivity analysis was then carried out which examined the impact of a change in the nickel price from the base case scenario. A total of 99 pit shells were generated, only a selection of which are presented in Table 17.10 in the interests of brevity.



Pit Shell	Metal Price CND\$/lb	Rock Tonnes	Waste Tonnes	Ore Tonnes	Strip Ratio	Ni Grade %	Ni Metal lbs
1	3.02	1,272,165	795,812	476,353	1.67	0.91	9,556,527
7	4.03	3,097,601	2,073,070	1,024,531	2.02	0.74	16,714,240
13	5.04	6,073,558	4,240,311	1,833,247	2.31	0.63	25,461,931
19	6.05	10,439,030	7,641,897	2,797,133	2.73	0.55	33,916,077
28	7.56	29,097,941	22,349,045	6,748,896	3.31	0.44	65,465,911
33	8.40	32,764,240	24,415,531	8,348,709	2.92	0.4	73,622,255
37	9.07	36,591,933	27,502,946	9,088,987	3.03	0.39	78,146,565
43	10.08	41,051,004	31,287,466	9,763,538	3.2	0.38	81,793,844
49	11.09	54,350,462	43,596,950	10,753,512	4.05	0.38	90,087,332
55	12.10	56,534,236	45,571,685	10,962,551	4.16	0.38	91,838,552
66	13.94	69,962,540	58,289,525	11,673,015	4.99	0.37	95,217,017
77	15.96	76,703,981	64,717,576	11,986,405	5.4	0.37	97,773,345
84	18.06	80,546,059	68,389,915	12,156,144	5.63	0.37	99,157,910
89	20.16	82,041,977	69,794,357	12,247,620	5.7	0.37	99,904,081
93	21.84	84,193,418	71,893,623	12,299,795	5.85	0.37	100,329,674
98	23.94	85,936,380	73,556,967	12,379,413	5.94	0.37	100,979,119

 Table 17.10

 Sensitivity Analysis of Tonnage and Grade For Varying Nickel Prices, Langmuir North Deposit

17.1.15 Responsibility for Estimation

The estimate of the mineral resources for the Langmuir North nickel deposit presented in this report was prepared by Mr. Reno Pressacco, M.Sc.(A), P.Geo., and Mr. Jonathan Steedman, MAusIMM, both of whom were qualified persons as defined in NI 43-101 at the time of the publication of the original report, and are independent of Inspiration.

17.1.16 Mineral Resource Estimate

As a result of the concepts and processes described above, the mineral resources for the Langmuir North nickel deposit include all profitable blocks (i.e. all blocks that have a positive net value) that are located within the 0.2% Ni domain model and that are contained with the base case optimized open pit shell. Examination of the block values suggests that the nominal Break Even Cut-off Grade is approximately 0.21% Ni, while the mill-incremental cut-off grade is approximately 0.19% Ni. The mineral resources below incorporate nickel grades that were estimate by means of the Ordinary Kriging interpolation method. The estimated mineral resources for the Langmuir North deposit are set out in Table 17.11.

The mineral resources are estimated at 8,324,000 tonnes grading 0.40% Ni. Micon believes that sufficient information is available to classify the mineral resources in the Indicated Resources category.



Cut-off Grade (% Ni)	Classification	Volume (m ³)	Tonnes	Ni (%)
		Waste:		
0.0 -> 0.19		9,139,000	23,862,000	0.00
		208,000	562,00	0.13
Sub Total		9,346,000	24,424,000	0.00
	Mill	Incremental:		
0.19 -> 0.21	Indicated (2)	160,000	433,000	0.20
Sub Total		160,000	433,000	0.20
	M	ineralized:		
0.21 -> 10.0	Indicated (2)	2,912,000	7,891,000	0.41
Sub Total		2,912,000	7,891,000	0.41
Total, Mill Incremental +			8,324,000	0.40
Mineralized				
Total Material		12,418,000	32,749,000	0.10
Strip Ratio (W:MI	+M)		2.93	

 Table 17.11

 Estimated Mineral Resources for the Langmuir North Deposit

1. Mineral resources which are not mineral reserves do not have demonstrated economic viability. The estimate of mineral resources may be materially affected by environmental, permitting, legal, title, taxation, sociopolitical, marketing or other relevant issues.

- 2. There are currently no measured or inferred mineral resources for the Langmuir North deposit.
- 3. Tonnages have been rounded to the nearest thousand tonnes
- 4. Sums may not add due to rounding
- 5. Mineral resources are inclusive of mill incremental material
- 6. Grade interpolation is estimated by Ordinary Kriging method.

There is a degree of uncertainty associated with the estimation of mineral resources and mineral reserves and their corresponding metal grades. The estimation of mineralization is a somewhat subjective process and the accuracy is a function of the accuracy, quantity and quality of available data, the accuracy of statistical computations, and the assumptions used and judgments made in interpreting engineering and geological information. Until mineral reserves or mineral resources are actually mined and processed, and the characteristics of the deposit assessed, their quantity and grade should be considered as estimates only. In addition, the quantity of mineral reserves and mineral resources may vary depending on many factors such as exchange rates, energy costs and metal prices. Fluctuation in metal or commodity prices, results of additional drilling, metallurgical testing, receipt of new information and production and the evaluation of mine plans subsequent to the date of any mineral resource estimate may require revision of such an estimate.

Micon has considered the mineral resource estimates in light of known environmental, permitting, legal, title, taxation, socio-economic, marketing, political and other relevant issues and has no reason to believe at this time that the mineral resources will be materially affected by these items. Given the early stage of the Langmuir North deposit's exploration and discovery history, no studies have yet been completed that examine whether the mineral resources may be materially affected by mining, infrastructure or other relevant factors.



Limited metallurgical testing has been completed on a small number of samples taken from the Langmuir North deposit.

17.2 LANGMUIR NO. 1 DEPOSIT

17.2.1 Description of the Database

A digital database was provided to Micon by Inspiration wherein such drill hole information as collar location, down hole survey, lithology, density measurements and assays was stored in comma delimited format. The drill hole information was provided on an on-going basis as new information became available after the date of Micon's site visit. The cut-off date for the drill hole database was October 28th, 2009 and included all drill hole information up to and including hole L108-123. The drilling was carried out at a nominal spacing of 15 metres vertically on sections spaced 15 metres apart in plan view.

This drill hole information was modified slightly so as to be compatible with the format requirements of the Gemcom-Surpac v6.1.1 mine planning software and was imported into that software package. As well, the detailed information contained within the Lithology table was simplified for ease of use by creating a separate column to contain the major lithology labels only. A number of additional tables were created during the process of creating a grade block model of the mineralization found at the Langmuir No. 1 deposit to store such information as composite assays, zone composites and assorted domain codes. A description of the revised database is provided in Table 17.12 and a plan-view map showing the drill hole locations was provided in Chapter 11 above. A summary of the drill hole collar locations is provided in Appendix I.

Table Name	Data Type	Table Type	Records
Assay_raw	Interval	Time-independent	17,093
Collar			123
Litho	Interval	Time-independent	7,466
Ni_cap	Interval	Time-independent	3,179
Styles			36
Survey			10,810
Translation			0
Zone_flags	Interval	Time-independent	0
Zone_flags_015ni	Interval	Time-independent	138
Zone_flags_02nib	Interval	Time-independent	119
Zone_flags_05ni	Interval	Time-independent	91
Zone_flags_07ni	Interval	Time-independent	91

 Table 17.12

 Summary of the Langmuir No. 1 Drill Hole Database (as at December 10, 2009)



17.2.2 Geological Domain Modelling

Geological modeling of the lithologies and mineralization found at the Langmuir No. 1 deposit were carried out along a slightly different approach to that presented for the Langmuir North deposit in that the nickel mineralization was perceived to be an example of a komatiite-style deposit. In this style of deposit, the nickel mineralization is hosted by komatiitic lava flows that have erupted upon a floor of dacitic lavas, and can build up over time such that successive flows can be formed upon a paleo-topographic surface of older komatiite flows as well.

Examination of the drill hole information suggests that, in contrast to the setting at Langmuir North, only one major felsic-ultramafic contact is present at the Langmuir No. 1 deposit, however, no evidence was readily apparent for the presence of multiple, stacked komatiite flows.

Given the perception that the mineralization at Langmuir No. 1 is an example of a komatiitehosted deposit, Micon prepared an interpretation of the distribution of the felsic volcanic (dacite) flows only, as these units are interpreted to represent the substrate upon which the ultramafic flows have erupted. Hence, mapping the form and location of the paleotopographic surface was believed to be an important control upon the location and distribution of nickel mineralization.

At the outset of this exercise, the overall strike of the stratigraphy/mineralization was believed to be southwest-north east (~ azimuth 030°), with the dips of the lithologies being steeply southeast. As was the case for the Langmuir North deposit, given the location of the deposit in the regional context, the facing directions are interpreted to be to the southeast. In contrast to the Langmuir North deposit, no significant quantities of post-mineralization felsic intrusions were observed at the Langmuir No. 1 deposit.

In respect of the nickel mineralization, the nickel values were displayed on the drill hole traces and were used to establish the outline of the mineralized zone on cross-sections that were spaced nominally at 15 metre centers (viewing windows of +/- 7.5 metres). The nickel domains were drawn at several Break Even Cut-off Grades (BECOG) in order to examine several potential exploitation scenarios including excavation of the mineralization by means of underground and/or open pit mining methods. In cases where lithological information indicated the presence of metre-scale barren felsic intrusions, these small sections were included with the initial domain model as internal dilution. The locations of the mineralized contacts were "snapped" to the observed location in the individual drill holes such that the sectional interpretations "wobbled" in three dimensional space, to either side of the section plane.

Following completion of the construction of the domain models at various nickel BECOG's, Micon elected, in consultation with Inspiration, to apply a break-even nickel cut-off grade of 0.2% Ni in the construction of the domain model of the nickel mineralization found at the Langmuir No. 1 deposit. Due to the nature of the distribution of the nickel mineralization at



Langmuir No. 1, in a number of instances the entire width of mineralized zone does not contain nickel values above the 0.20% cut-off grade. In these instances the nickel mineralization consists of a series of above-cut-off grade intervals that are separated by sections of below-cut-off grade material that are likely a result of a lower density of sulphide mineralization. In many cases, there are a sufficient number of higher grade samples to produce an average grade that is above the BECOG, resulting in a wider interval of mineralized material. In these cases, the limit of the mineralization domain is drawn as the last point at which the average assay value is above the BECOG. Some situations occurred where isolated higher grade assays were located beyond the limit of the 0.2% Ni domain model and were separated by material containing nickel values below the BECOG. In these situations, the higher grade assays were included in the mineralized domain model only if the average grade of the incremental material was above the BECOG.

An example of the resulting lithological and nickel mineralization domain models is provided in Figure 17.31. As a result of its modeling exercise of the nickel mineralization found at the Langmuir No. 1 deposit, Micon believes that, at a cut-off grade of 0.2% Ni, the nickel mineralization can be shown to be related to a thick ultramafic flow that sits upon a footwall that is composed dominantly of dacite flows containing minor embayments of older ultramafic flow rocks. This thick flow contains higher grade pods of semi-massive to massive sulphides that have formed as a result of sulphide nucleation and gravitational settling.



Figure 17.31 Cross Sectional View of the 0.2% Ni Domain Model, Langmuir No. 1 Deposit Section Location Shown in Figure 11.3



In several instances, it was seen that nickel mineralization above the BECOG threshold was intersected by the deepest drill holes on the cross section under consideration. In these cases, the limits of the nickel mineralization domain model were projected a nominal distance of 15 metres in the down dip direction, being the nominal distance of the drill hole pattern. For those instances where the limits of the nickel mineralization were found to occur between adjacent drill holes or between adjacent sections, the limit of the domain model was drawn as being one-half of the spacing between the drill holes or cross sections.

Details regarding the input parameters for this nickel cut-off grade are provided in the following section.

In all, lithological interpretation was carried out on 25 cross-sections along a strike length of approximately 550 metres and to a maximum depth of approximately -200 metre elevation (approximately 500 metres beneath the surface) while interpretation of the 0.2% Ni mineralization was carried out along a strike length of approximately 250 metres and to a maximum depth of approximately the 0 metre elevation (approximately 300 metres beneath the surface). The resulting "wobbly polylines" for both the lithological model and the 0.2% Ni domain model were then linked together to form a three-dimensional solid model.

As a result of the domain modeling exercise, it was discovered that the overall strike of the mineralization for the Langmuir No.1 deposit was to approximately azimuth 060° with an average dip of approximately -75° to the southeast. The limits of the mineralization along this segment of the favourable ultramafic unit appear to have been defined by the drilling that has been completed to-date.

17.2.3 Cut-off Grade Estimate

Given the relatively early stage of the Langmuir No. 1 deposit exploration and development history by Inspiration, no studies have been undertaken that contemplate potential operating scenarios and no information is available for such items as metallurgical recoveries and smelting/refining terms. For the purposes of this assignment, a conceptual operating scenario was developed wherein nickel-bearing material was contemplated to be excavated using open pit mining methods and a nickel concentrate to be produced at a plant located on the property which employs a flowsheet incorporating a flotation process to generate a nickel-rich sulphide concentrate. This concentrate would then be transported to a domestic smelting/refining complex. This conceptual scenario will likely change as more information becomes available for this deposit.

The price of nickel is cyclical, responding to the supply and demand relationship and influenced to a degree by market speculation and technical analyses. The nickel metal prices have varied widely since the year 2000, have recently retreated from record high levels and more recently have recovered from dramatic lows. Given the cyclical nature of metal prices it is not reasonable to utilize the metal price at any one point in time, as it is certain that the price will change in the future. While history has shown that it is impossible to predict what the future metal prices will be with a high degree of accuracy, a reasonable alternative is to



utilize the average metal price over a time period rather than using the metal prices at the close of any particular business day.

In light of the fact that the prices of nickel have now retreated from their peak prices, the use of trailing averages may result in values that are above the current spot prices – a situation that is clearly inappropriate. In the absence of a more formal metal price forecast, on a cost-of-production basis, Micon believes that an appropriate choice of a long-term nickel price for the purposes of an initial mineral resource estimate is USD\$8.00/lb.

Given the early stage of the project's history, no detailed information is available in respect of many of the important input parameters required to prepare an accurate cut-off grade estimate such as operating costs for mining, processing and general and administration, metallurgical recovery, smelter accountabilities, freight and refining charges, and the like in respect of a potential open pit mining operation. Consequently, Micon applied the estimates for these items that were prepared for the Langmuir North deposit and presented in Table 17.2 above. It is to be noted that the estimates presented below are presented only for the purpose of developing an initial domain model, open pit optimization and reporting criteria, and the assumed values will likely change as new information is obtained as a result of further work.

17.2.4 Historical Mine Workings

As described above, mining activities have taken place at the Langmuir No. 1 deposit most recently in the 1990's. Unfortunately few accurate records of the mine workings were available to Micon at the time of its preparation of this initial mineral resource estimate, apart from generalized plan views of the mine workings as presented in Chapter 10 above. These plan views were provided to Micon in digital format that were done in the same grid system as was the drilling programs. In addition, the location of the ramp collar and the ventilation raise were also depicted on the digital topographic map that was provided to Micon.

Using these two pieces of information, Micon applied its general understanding of rampaccess underground mine design to derive reasonable estimates for the average slope of the ramp decline and proceeded to create a three-dimensional model that attempted to approximate the location of the mine workings and the location of the mining areas. In respect of the mined out stope areas, very little information was available to assist in the preparation of the three-dimensional model of these areas apart from the stope outlines on the plan views. Micon proceeded to construct a model of the mined out areas with the view that these volumes are approximations only. The purpose of these solids models is to provide a general view of the location of the previously mined out areas relative to the mineralization discovered by the newly completed diamond drilling. An isometric view of the result of Micon's efforts is presented in Figure 17.32.



Figure 17.32 Isometric View (Looking North East) of the Mine Workings Model Relative to the 0.2% Ni Domain Model, Langmuir No. 1 Deposit



* Blue=Ramp, Ventilation Raise and Drift Model, Purple=Stope Models

17.2.5 Topographic Surface

A digital model of the topographic surface in the vicinity of the Langmuir No.1 deposit was provided to Micon by Inspiration. The topography in this area is relatively flat-lying with a low relief ranging on the order of 1-10 metres.

17.2.6 Grade Capping

Grade capping (or top cutting) was investigated on the raw nickel assay values in order to ensure that the possible influence of erratic high values did not unduly bias the database or grade estimate. All samples contained within the three-dimensional model of the Langmuir No. 1 0.2% Ni domain model were coded in the database and extracted for analysis.

A normal histogram was generated from these extraction files (Figure 17.33) and the descriptive statistics of the sample data set were generated. The grade cap was selected by examining the histogram for the grade at which outlier assays begin to occur. As can be seen, a capping value of 3.8% Ni is clearly indicated, resulting in the grades of 35 samples being reduced. A comparison of the descriptive statistics for the capped and uncapped raw nickel assays is presented in Table 17.13.







 Table 17.13

 Summary Statistics for the Raw Assay Samples Within the 0.2% Ni Domain Model, Langmuir No. 1

 Deposit

Item	Ni (%)	Ni (%)
	Uncapped	Capped
Arithmetic Mean	0.54	0.50
Length-Weighted Mean	0.51	0.49
Standard Error	0.02	0.01
Median	0.30	0.30
Mode	0.51	3.80
Standard Deviation	0.89	0.61
Coefficient of Variation-Arithmetic	1.66	1.20
Coefficient of Variation-Weighted	1.74	1.25
Sample Variance	0.80	0.37
Kurtosis	93.22	11.92
Skewness	7.83	3.18
Range	15.61	3.80
Minimum	0.00	0.00
Maximum	15.61	3.80
Sum	1,709.10	1,601.91
Count	3,179.00	3,179.00

17.2.7 Compositing Methods

Micon examined the distribution of the lengths of the samples contained within the Langmuir No. 1 0.2% Ni domain model (Figure 17.34). After consideration of such items as the distribution of raw sample lengths, the relation of the sample lengths to the width of the mineralization, to the anticipated block sizes and search ellipse criteria that would be utilized



for the construction of the grade-block model, in Micon's opinion, a composite length of 1.0 m was appropriate for this assignment.

All samples of the capped nickel assays were composited to an equal length of 1.0 m using the down hole compositing function of the Gemcom-Surpac mine modelling software. In this function, compositing begins at the point in a drill hole at which the zone of interest is encountered and continues down the length of the hole until the end of the zone is reached. As often happens, the thickness of the mineralized zone encountered by any given drill hole is not an even multiple of the composite length. In these cases, if the remaining length was 75% or greater of the composite length (in this case 0.75 m), the composite was accepted as part of the data set. The remaining sample lengths less than 75% of the composite length were discarded from consideration. The descriptive statistics of the capped, composited samples are presented in Table 17.14.

Figure 17.34 Frequency Histogram of 1.0m Composite Samples, Langmuir No. 1 Deposit





Table 17.14 Summary Statistics for the Raw Assay Samples Within the 0.2% Ni Domain Model, Langmuir No. 1 Deposit

Item	Ni (%)	Ni (%)
Item	Uncapped	Capped
Arithmetic Mean	0.51	0.48
Length-Weighted Mean	0.51	0.48
Standard Error	0.01	0.01
Median	0.31	0.31
Mode	0.64	0.64
Standard Deviation	0.72	0.52
Coefficient of Variation-Arithmetic	1.42	1.07
Coefficient of Variation-Weighted	1.43	1.07
Sample Variance	0.52	0.27
Kurtosis	107.29	11.16
Skewness	7.86	2.99
Range	15.52	3.80
Minimum	0.00	0.00
Maximum	15.52	3.80
Sum	1,499.08	1,425.86
Count	2,963	2,963

17.2.8 Bulk Density

Bulk densities were measured by the analytical laboratories as described in Section 12 of this report. A total of 3,744 density measurements were made of both mineralized and unmineralized rock. Of these, 2,703 samples were contained within the 0.2% Ni domain model of the Langmuir No.1 deposit (Figure 17.35). A comparison of the bulk density as a function of the nickel grade is presented in Figure 17.36 which shows that the bulk density is generally proportional to the nickel grade up to approximately 4% Ni, after which no correlation of the bulk density and nickel grade is readily apparent.

Micon determined that the average bulk density of these samples was 2.86 t/m^3 and applied this value as an average bulk density to estimate the mineral resources for the Langmuir No.1 deposit for this initial mineral resource estimate. Given the suggested relationship of the bulk density to the nickel grades, Micon recommends that future mineral resource estimates be prepared using the detailed bulk density information so that accurate local estimates of the mineralized tonnages can be derived.







Figure 17.36 Comparison of Bulk Density vs. Nickel Grade, Langmuir No. 1 Deposit



17.2.9 Trend Analysis

As an aid in carrying out a variography study of the continuity of the nickel grades at Langmuir No. 1 deposit, Micon conducted a short study of the overall trends that may be present. For this exercise, a data file was prepared that contained the average nickel grade



for each drill hole that pierced the 0.2% Ni domain model. In the cases where a drill hole intersected two or more nickel-bearing intervals, the nickel grades of these multiple intervals were combined on a length-weighted basis and the resulting combined average was plotted at the centroid location of the longest sample interval. The resulting nickel grades were contoured on a longitudinal projection and the results are shown in Figure 17.37.

Figure 17.37 Longitudinal Projection (Looking to Azimuth 325°) Showing the Distribution of Nickel Grades, Langmuir No. 1 Deposit





17.2.10 Variography

The analysis of the variographic parameters of the mineralization found in the mineralized domain for the 0.2% Ni domain began with the construction of down-hole and omnidirectional variograms using the capped, 1.0-m composited sample data with the objective of determining the global nugget (C0) for the nickel data set (Figure 17.38 and 17.39, respectively). An evaluation of any anisotropies that may be present in the data resulted in successful variograms for the three principal directions with model fits ranging from reasonable to good (Figures 17.40, 17.41 and 17.42). The results of this variography analysis are presented in Table 17.15.



Figure 17.38 Down-Hole Variogram, Composited Nickel Samples, Langmuir No. 1 Deposit

Figure 17.39 Omni-Directional Variogram, Composited Nickel Samples, Langmuir No. 1 Deposit





Figure 17.40 Down-Plunge Variogram, Composited Nickel Samples, Langmuir No. 1 Deposit



Figure 17.41 Along-Strike Variogram, Composited Nickel Samples, Langmuir No. 1 Deposit







Figure 17.42 Across-Dip Variogram, Composited Nickel Samples, Langmuir No. 1 Deposit

Table 17.15

Summary of Variographic Parameters Within the 0.2% Ni Domain Model, Langmuir No. 1 Deposit

Item	Nickel Cap (D2)
Variogram Type	Spherical
NUGGET:	
Nugget (Downhole)	0.014
Sill (C1-Downhole)	0.127
Sill (C2-Downhole)	0.126
Range (Downhole)	37 m
Nugget (OmniDirectional)	0.016
Sill (C1-OmniDirectional)	0.141
Sill (C2-OmniDirectional)	0.138
Range (OmniDirectional)	40 m
ANISOTROPIES:	
Along Strike:	
Orientation	$+40^{\circ} \rightarrow 050^{\circ}$
Angular Tolerance	60°
Sill, Range (C1)	0.152, 5m
Sill, Range (C2)	0.126, 60 m
Down Plunge:	
Orientation	-50° → 070°
Angular Tolerance	60°
Sill, Range (C1)	0.156, 7m
Sill, Range (C2)	0.115, 58 m
Across Strike:	
Orientation	$+10^{\circ} \rightarrow 150^{\circ}$
Angular Tolerance	60°
Sill, Range (C1)	0.047, 9 m



Item	Nickel Cap (D2)
Sill, Range (C2)	0.479, 61 m
SEARCH ELLIPSE:	
Major Axis (Pass 2, Short Range)	60m@050°(+40°)
Semi-Major Axis	55m@070°(-50°)
Minor Axis	50m@150°(+10°)
Major/Semi-Major Ratio	1.09
Major/Minor Ratio	1.2
Number of Points	
Range for Pass 1 (Long Range)	
Minimum Number of Points	5
Maximum Number of Points	10
Search Ellipse Type	Quadrant

17.2.11 Block Model Construction

An upright, rotated, whole block model (i.e. blocks receive information such as lithological assignments and metal grade on the basis of whether the block centroid is contained within the volume under consideration) with the long axis of the blocks oriented along an azimuth 060° (i.e. parallel to dominant the nickel domain orientation) was constructed using the Gemcom-Surpac v6.1.1 software package and the parameters presented in Table 17.16. A number of attributes were also created to store such information as metal grades by the various interpolation methods, distances to, and number of, informing samples, domain codes, and resource classification codes. These are presented in Table 17.17.

Given the early stage of development of the Langmuir No. 1 deposit, little information relating to the most appropriate open pit mining rate(s) is available, consequently, the selection of block dimensions is preliminary in nature. Selection of block dimensions may need to be revised at a later date as new information permits the identification of the most appropriate production rate(s) and as data density increases.

Туре	Y (across-dip)	X (along strike)	Z (down-dip)
Minimum Coordinates	5,352,600	497,400	-100
Maximum Coordinates	5,353,600	498,500	350
User Block Size	5	5	5
Min. Block Size	5	5	5
Rotation	-30.000	0.000	0.000

 Table 17.16

 Langmuir North Block Model Parameters



Attribute Name	Туре	Decimals	Background	Description		
Classification	Integer	-	0	1=Measured, 2=Indicated, 3=Inferred		
Density	Real	2	2.79	Ovb=2.0, Air & Mined Out=0,		
				0.2%Ni Domain=2.86		
Kvar_ni	Real	2	0	Kriging Variance, Nickel		
litho	Integer	-	113	UM=113, Felsic Volcanic=106,		
				Ovb=102, Air=0, Sed=101		
Min_code	Integer	-	0	406=0.2% Ni Domain Model		
Mined_out	Integer	-	0	0=In-Situ, 1=Mined Out		
Ni_avg_distance	Real	1	0	Average Distance of Informing		
				Samples, Nickel By ID2		
Ni_id2	Real	2	0	Nickel By Inverse Distance, Power 2		
Ni_nearest_id2	Real	1	0	Distance to Nearest Informing		
				Sample, Nickle By ID2		
Ni_nn	Real	2	0	Nickel By Nearest Neighbour		
Ni_ok	Real	2	0	Nickel By Ordinary Kriging		
No_sample_ni_i	Integer	-	0	Number of Informing Samples, Nickel		
d2				By ID2		
Pass_no	Integer	-	0	Pass Number		
Value	Real	2	0	Net Value per Block		
Value_vol	Real	2	0	Net Value per Cubic Meter		

Table 17.17 Langmuir North Block Model Attributes

Nickel grades were interpolated into the individual blocks for the mineralized domain using the Ordinary Kriging, Inverse Distance to the power 2 and Nearest Neighbour interpolation methods. A single-pass approach was used wherein the information from the variography analysis described above was used to establish the parameters of the search ellipse. Details regarding the search ellipse parameters have been presented in Table 17.15 above.

"Hard" domain boundaries were used along the contacts of the mineralized domain model in which only data contained within the nickel domain model were allowed to be used to estimate the grades of the blocks, and only those blocks within the domain limits were allowed to receive grade estimates. The capped, composited grades of all the drill hole intersections were used to derive an estimate of a block's grade for those locations situated between drill hole pierce points. In this manner, lower grade or barren assay results that occur within the domain boundary were allowed to influence the estimated block grades and act as internal dilution.

17.2.12 Block Model Validation

Validation efforts for the mineral resource estimate at the Langmuir No. 1 deposit consisted of a comparison of the average block grades for the capped and uncapped metal values against the respective informing composite samples. As well, the volumes reported from the block model were compared to the volumes of the solid model of the Langmuir North 0.2% Ni mineralized domain. The reconciliation report is presented in Table 17.18. It can be seen that there is a good correlation for the average block grades estimated using the three



interpolation methods, and between the average estimated block grades and the informing composite samples. As well, there is a good fit between the reported volumes for the mineralized domain model, with the block model reporting a slightly less volume in comparison to the original solid model.

Data Source	Volume	Tonnes	Ni Id2	Ni Ok	Ni Nn	
Block Model	785,750	2,245,815	0.50	0.50	0.50	
Composite Averages			0.48	0.48	0.48	
Solid Volume	784,099	Difference (BM-Solid) = $+1,651 \text{ m}^3$				
		4,722 tonnes @ 2.86 tonnes/ m^3				

 Table 17.18

 Comparison of Block Model Reports to Composite Samples and Geological Models

17.2.13 Mineral Resource Classification Criteria

The mineral resources in this report were estimated in accordance with the definitions contained in the Canadian Institute of Mining, Metallurgy and Petroleum (CIM) Standards on Mineral Resources and Reserves Definitions and Guidelines that were prepared by the CIM Standing Committee on Reserve Definitions and adopted by the CIM Council on December 11, 2005.

The mineralized material was classified into either the Indicated or Inferred mineral resource category on the basis of the search ellipse ranges presented in Table 17.15 above. Those blocks which received interpolated grades that were within the nickel variogram ranges were classified as Indicated mineral resources, while the remaining blocks were classified into the Inferred mineral resource category. As is often the case in the construction of block model estimates, a lack of information resulting from a slight data gap generated by drill hole deviation may be present. This often results in a small number of blocks that are required to have their grades estimated using a larger search ellipse, and subsequent reduction in their classification. In the case of the Langmuir No. 1 deposit, the level of drill hole information has resulted in a complete filling of the blocks, and this situation was not encountered.

17.2.14 Open Pit Optimization

As described above, the primary conceptual exploitation scenario for the nickel mineralization contained in the Langmuir No. 1 deposit involves extraction of the mineralized material by means of open pit mining methods and producing a nickel-bearing concentrate using a conventional flotation flow sheet in a plant that would be located on the property. The concentrates would subsequently be shipped to a domestic smelting/refining complex for final processing into nickel metal. Any higher-grade mineralized material that may be located below the bottom of a potential open pit shell would be extracted by means of underground mining methods and would be processed through the same plant. A preliminary open pit shell was developed using the Surpac and Whittle software packages that applied the Lerchs-Grossman optimization algorithm using the same input parameters as were applied



for the Langmuir North deposit, as these represented the best available estimates at the time of preparation of this mineral resource estimate.

Given the early stage of the project's development, no detailed information is available in respect of operating costs for mining, processing and general and administration in respect of a potential open pit mining operation. As well, no geotechnical information is available upon which to estimate an overall slope angle. Consequently, Micon derived estimates for these items on the basis of its experience in the region and from general knowledge. It is to be noted that the estimates presented are only for the purpose of developing an initial optimized open pit shell, and the assumed values will likely change with further detailed work.

The resulting surface is presented in Figure 17.43 for the base case scenario of a nickel price of US\$8.00/lb, and the resulting tonnage report is presented in Table 17.19. Higher-grade nickel mineralization that is located below the bottom of the base case open pit shell has been outlined by drilling (Figure 17.44).



Figure 17.43 View of the Base Case Optimized Open Pit Shell, Langmuir North Deposit.

 Table 17.19

 Summary of Tonnage and Grade for the Base Case Whittle Shell, Langmuir No. 1 Deposit

Material	Tonnes	Ni (%)	Ni Metal (lbs)	Ni Metal (Kg)		
Waste	21,761,027					
Mineralization	1,746,030	0.51	19,631,418	8,923,372		
Grand Total	23,507,057	Strip Ratio=12.5				

*Note: Mineralized tonnes are inclusive of mill-incremental material



Figure 17.44 Longitudinal View of the Location of Higher Grade Nickel Mineralization Below the Base Case Optimized Open Pit Shell, Langmuir No. 1 Deposit.



*Green Blocks=0.7-1.0% Ni, Red Blocks=>1.0% Ni

17.2.15 Sensitivity Analysis

A sensitivity analysis was then carried out which examined the impact of a change in the nickel price from the base case scenario. A total of 46 pit shells were generated, only a selection of which are presented in Table 17.20 in the interests of brevity.

 Table 17.20

 Sensitivity Analysis of Tonnage and Grade For Varying Nickel Prices, Langmuir No. 1 Deposit

Pit	Metal	Rock	Waste	Ore	Strip	Ni	Ni Metal
	Price	Tonnes	Tonnes	Tonnes	Ratio	Grade	lbs
	CND\$/lb					%	
1	6.22	7,968,689	7,304,454	664,235	11	0.55	8,054,049
6	7.06	8,578,523	7,783,085	795,438	9.78	0.51	8,943,475
13	8.40	23,507,057	21,761,027	1,746,030	12.46	0.51	19,631,418
16	8.90	24,681,699	22,862,024	1,819,675	12.56	0.51	20,459,443
21	10.08	28,528,208	26,537,290	1,990,918	13.33	0.51	22,384,807
25	11.09	29,036,779	27,009,754	2,027,025	13.32	0.51	22,790,775
27	12.10	29,870,873	27,814,890	2,055,983	13.53	0.51	23,116,363
31	14.20	30,015,639	27,939,994	2,075,645	13.46	0.51	23,337,432
35	16.13	30,792,774	28,693,534	2,099,240	13.67	0.50	23,139,923
39	19.95	31,219,908	29,111,015	2,108,893	13.8	0.50	23,246,328
46	24.36	32,636,283	30,504,510	2,131,773	14.31	0.50	23,498,534

17.2.16 Responsibility for Estimation

The estimate of the mineral resources for the Langmuir No. 1 nickel deposit presented in this report was prepared by Mr. Reno Pressacco, M.Sc.(A), P.Geo. and Mr. Jonathan Steedman,



MAusIMM, both of whom were qualified persons as defined in NI 43-101 at the time of the publication of the original report, and are independent of Inspiration.

17.2.17 Mineral Resource Estimate

As a result of the concepts and processes described above, the mineral resources for the Langmuir No. 1 nickel deposit include all profitable blocks (i.e. all blocks that have a positive net value) that are located within the 0.2% Ni domain model and that are contained with the base case optimized open pit shell. Examination of the block values suggests that the nominal Break Even Cut-off Grade is approximately 0.21% Ni, while the mill-incremental cut-off grade is approximately 0.19% Ni. The mineral resources below incorporate nickel grades that were estimate by means of the Ordinary Kriging interpolation method. The estimated mineral resources for the Langmuir North deposit are set out in Table 17.21.

The mineral resources are estimated at 1,733,000 tonnes grading 0.51% Ni. Micon believes that sufficient information is available to classify the mineral resources in the Indicated Resources category.

Ni Ok	Classification	Volume	Tonnes	Ni Ok			
Waste:							
0.0 -> 0.19		8,038,000	21,739,000	0.00			
Sub Total		8,038,000	21,739,000	0.00			
		Mill Increment	al:				
0.19 -> 0.21	Indicated (2)	23,000	67,000	0.20			
Sub Total		23,000	67,000	0.20			
	Mineralized:						
0.21 -> 10.0	Indicated (2)	583,000	1,666,000	0.52			
Sub Total		583,000	1,666,000	0.52			
Total, Mill Inc	cremental		1,733,000	0.51			
+Mineralized							
Total Materia	ıl	8,645,000	23,473,000	0.04			
Strip Ratio			12.5				

Table 17.21Estimated Mineral Resources for the Langmuir No. 1 Deposit

1. Mineral resources which are not mineral reserves do not have demonstrated economic viability. The estimate of mineral resources may be materially affected by environmental, permitting, legal, title, taxation, sociopolitical, marketing or other relevant issues.

- 2. There are currently no measured or inferred mineral resources for the Langmuir No. 1 deposit.
- 3. Tonnages have been rounded to the nearest thousand tonnes
- 4. Sums may not add due to rounding
- 5. Mineral resources are inclusive of mill incremental material
- 6. Grade interpolation is estimated by Ordinary Kriging method.

There is a degree of uncertainty associated with the estimation of mineral resources and mineral reserves and their corresponding metal grades. The estimation of mineralization is a



somewhat subjective process and the accuracy is a function of the accuracy, quantity and quality of available data, the accuracy of statistical computations, and the assumptions used and judgments made in interpreting engineering and geological information. Until mineral reserves or mineral resources are actually mined and processed, and the characteristics of the deposit assessed, their quantity and grade should be considered as estimates only. In addition, the quantity of mineral reserves and mineral resources may vary depending on many factors such as exchange rates, energy costs and metal prices. Fluctuation in metal or commodity prices, results of additional drilling, metallurgical testing, receipt of new information and production and the evaluation of mine plans subsequent to the date of any mineral resource estimate may require revision of such an estimate.

Micon has considered the mineral resource estimates in light of known environmental, permitting, legal, title, taxation, socio-economic, marketing, political and other relevant issues and has no reason to believe at this time that the mineral resources will be materially affected by these items. Given the early stage of the Langmuir No. 1 deposit's exploration and discovery history, no studies have yet been completed that examine whether the mineral resources may be materially affected by mining, infrastructure or other relevant factors. No metallurgical testing has been completed by Inspiration on any samples taken from the Langmuir No. 1 deposit.



18.0 OTHER RELEVANT DATA AND INFORMATION

All relevant data and information in regard to the exploration activities at, and required to support the disclosure of a mineral resource estimate for, the Langmuir North and Langmuir No. 1 deposits are included in other sections of this report.



19.0 INTERPRETATIONS AND CONCLUSIONS

Inspiration Mining Corporation has been conducting exploration programs on its Langmuir Project located south of Timmins, Ontario with the goal of discovering additional occurrences of nickel mineralization similar to that which had been exploited in the past at the Langmuir #1 and Langmuir #2 mines. These exploration programs have been successful in outlining sufficient concentrations of nickel at the Langmuir North deposit and at the Langmuir No. 1 deposit to prepare an initial mineral resource estimate. As well, according the information presented in Jensen (2009), exploration drilling elsewhere on the property has been successful in discovering the presence of nickel mineralization of potentially economic grades across potentially mineable widths in such locations as between the Langmuir #1 and Langmuir #2 mines and in the extreme northwestern portion of the property.

19.1 LANGMUIR NORTH DEPOSIT

The stratigraphic sequence at the Langmuir North deposit has been refined as a result of the detailed drill hole information that has been gathered by Inspiration Mining. The current view of the overall stratigraphic sequence and nickel mineralization at the Langmuir North deposit involves a footwall sequence of pillowed ultramafic flows that acted as a substrate upon which a unit of felsic volcanic rocks was extruded. This footwall felsic volcanic flow was not aerially extensive and pinched out to the north east. A thick ultramafic flow was erupted onto this footwall surface and remained molten for a sufficient period of time to allow the nucleation of nickel-bearing sulphide minerals. These nickel-bearing sulphide minerals have partially settled to the bottom of the flow (i.e. to the northwest) to form higher nickel concentrations as disseminations, net-textured sulphides and pods of semi-massive to massive sulphides. This thick flow is overlain by a younger unit of felsic volcanic rocks of dacitic composition which are in turn overlain by a series of post-mineralization felsic intrusions of variable thicknesses.

In terms of structural geology, the overall stratigraphic sequence is currently viewed as a simple "layer-cake" succession of bi-modal ultramafic and felsic volcanic rocks. A suggestion of folding is indicated from the distribution of some of the rock units in the stratigraphic sequence. Numerous notations of faulting are contained in the drill hole database however, while indeed the possibility of fault displacements is present, no systematic larger-scale displacements of any of the major lithological units were noted in the preparation of the lithological interpretation. This current understanding of the stratigraphic sequence, structural geology and nickel mineralization may change in the future as further information becomes available.

For this exercise, Micon elected to apply a break-even nickel cut-off grade of 0.2% Ni in the construction of the domain model of the mineralization found at the Langmuir North deposit. As a result of the domain modeling exercise, it was discovered that the overall strike of the mineralization for the Langmuir North deposit varies from essentially north-south in the



southwestern portion of the deposit to northeasterly (025 to 030°) in the central and northeastern portions of the deposit. The dip of the mineralization also seems to vary with the strike of the deposit, being steeply south east-dipping at an average dip of approximately -75° in the southwestern portion of the deposit, becoming sub-vertical in the central and northeastern portions of the deposit.

Given the relatively early stage of the Langmuir North deposit exploration and development history, no studies have been undertaken by Inspiration that contemplate potential operating scenarios and limited information is available for such items as metallurgical recoveries and smelting/refining terms. For the purposes of this assignment, a conceptual operating scenario was developed wherein nickel-bearing material was contemplated to be excavated using open pit mining methods and a nickel concentrate to be produced at a plant located on the property which employs a flowsheet incorporating a flotation process to generate a nickel-rich sulphide concentrate. This concentrate would then be transported to a domestic smelting/refining complex. This conceptual scenario will likely change as more information becomes available for this deposit.

The analysis of the variographic parameters of the mineralization found in the 0.2% Ni domain resulted in successful variograms for the three principal directions with model fits ranging from reasonable to good. An upright, rotated, whole block model with the long axis of the blocks oriented along an azimuth 030° was constructed and nickel grades were interpolated into the individual blocks for the mineralized domain using the Ordinary Kriging, Inverse Distance to the power 2 and Nearest Neighbour interpolation methods. The mineralized material was classified into either the Indicated or Inferred mineral resource category on the basis of the search ellipse ranges developed from the results of the variography study.

A preliminary open pit shell was developed using the Surpac and Whittle software packages that applied the Lerchs-Grossman optimization algorithm to the selected input parameters. A sensitivity analysis was then carried out in which the impact of a change in the nickel price from base case scenario. A total of 99 pit shells were generated.

As a result of the concepts and processes described above, the mineral resources for the Langmuir North nickel deposit include all profitable blocks (i.e. all blocks that have a positive net value) that are located within the 0.2% Ni domain model and that are contained with the base case optimized open pit shell. Examination of the block values suggests that the nominal Break Even Cut-off Grade is approximately 0.21% Ni, while the mill-incremental cut-off grade is approximately 0.19% Ni. The mineral resources below incorporate nickel grades that were estimated by means of the Ordinary Kriging interpolation method. The estimated mineral resources for the Langmuir North deposit are set out in Table 19.1.


The mineral resources for the Langmuir North deposit are estimated at 8,324,000 tonnes grading 0.40% Ni. Micon believes that sufficient information is available to classify the mineral resources in the Indicated Resources category.

Cut-off Grade (% Ni)	Classification	Volume (m ³)	Tonnes	Ni (%)
		Waste:		
0.0 -> 0.19		9,139,000	23,862,000	0.00
		208,000	562,00	0.13
Sub Total		9,346,000	24,424,000	0.00
	Mill	Incremental:		
0.19 -> 0.21	Indicated (2)	160,000	433,000	0.20
Sub Total		160,000	433,000	0.20
	Μ	ineralized:		
0.21 -> 10.0	Indicated (2)	2,912,000	7,891,000	0.41
Sub Total		2,912,000	7,891,000	0.41
Total, Mill Incremental + Mineralized			8,324,000	0.40
Total Material		12,418,000	32,749,000	0.10
Strip Ratio (W:MI	+M)		2.93	

 Table 19.1

 Estimated Mineral Resources for the Langmuir North Deposit

1. Mineral resources which are not mineral reserves do not have demonstrated economic viability. The estimate of mineral resources may be materially affected by environmental, permitting, legal, title, taxation, sociopolitical, marketing or other relevant issues.

- 2. There are currently no measured or inferred mineral resources for the Langmuir North deposit.
- 3. Tonnages have been rounded to the nearest thousand tonnes
- 4. Sums may not add due to rounding
- 5. Mineral resources are inclusive of mill incremental material
- 6. Grade interpolation is estimated by Ordinary Kriging method.

19.2 LANGMUIR NO. 1 DEPOSIT

Geological modeling of the lithologies and mineralization found at the Langmuir No. 1 deposit began using a slightly different approach to that presented for the Langmuir North deposit in that the nickel mineralization was perceived to be an example of a komatiite-style deposit. In this style of deposit, the nickel mineralization is hosted by komatiitic lava flows that have erupted upon a floor of dacitic lavas, and can build up over time such that successive flows can be formed upon a paleo-topographic surface of older komatiite flows as well. Examination of the drill hole information suggests that, in contrast to the setting at Langmuir North, only one major felsic-ultramafic contact is present at the Langmuir No. 1 deposit. At the outset of this exercise, the overall strike of the stratigraphy/mineralization was believed to be southwest-north east (~ azimuth 030°), with the dips of the lithologies being steeply southeast.



As a result of its modeling exercise of the nickel mineralization found at the Langmuir No. 1 deposit, Micon believes that, at a cut-off grade of 0.2% Ni, the nickel mineralization can be shown to be related to a thick ultramafic flow that sits upon a footwall that is composed dominantly of dacite flows containing minor embayments of older ultramafic flow rocks. This thick flow contains higher grade pods of semi-massive to massive sulphides that have formed as a result of sulphide nucleation and gravitational settling. As a result of the domain modeling exercise, it was discovered that the overall strike of the mineralization for the Langmuir No.1 deposit was to approximately azimuth 060° with an average dip of approximately -75° to the south east. The limits of the mineralization along this segment of the favourable ultramafic unit appear to have been defined by the drilling that has been completed to-date.

Given the relatively early stage of the Langmuir No. 1 deposit exploration and development history, no studies have been undertaken by Inspiration that contemplate potential operating scenarios and no information is available for such items as metallurgical recoveries and smelting/refining terms. For the purposes of this assignment, a conceptual operating scenario was developed wherein nickel-bearing material was contemplated to be excavated using open pit mining methods and a nickel concentrate to be produced at a plant located on the property which employs a flowsheet incorporating a flotation process to generate a nickel-rich sulphide concentrate. This concentrate would then be transported to a domestic smelting/refining complex. This conceptual scenario will likely change as more information becomes available for this deposit.

The analysis of the variographic parameters of the mineralization found in the 0.2% Ni domain resulted in successful variograms for the three principal directions with model fits ranging from reasonable to good. An upright, rotated, whole block model with the long axis of the blocks oriented along an azimuth 060° was constructed and nickel grades were interpolated into the individual blocks for the mineralized domain using the Ordinary Kriging, Inverse Distance to the power 2 and Nearest Neighbour interpolation methods. The mineralized material was classified into either the Indicated or Inferred mineral resource category on the basis of the search ellipse ranges developed from the results of the variography study.

A preliminary open pit shell was developed using the Surpac and Whittle software packages that applied the Lerchs-Grossman optimization algorithm to the selected input parameters. A sensitivity analysis was then carried out in which the impact of a change in the nickel price from base case scenario. A total of 46 pit shells were generated.

As a result of the concepts and processes described above, the mineral resources for the Langmuir No. 1 nickel deposit include all profitable blocks (i.e. all blocks that have a positive net value) that are located within the 0.2% Ni domain model and that are contained with the base case optimized open pit shell. Examination of the block values suggests that the nominal Break Even Cut-off Grade is approximately 0.21% Ni, while the mill-incremental cut-off grade is approximately 0.19% Ni. The mineral resources below incorporate nickel grades that were estimated by means of the Ordinary Kriging interpolation



method. The estimated mineral resources for the Langmuir No.1 deposit are set out in Table 19.2.

Ni Ok	Classification	Volume	Tonnes	Ni Ok						
	Waste:									
0.0 -> 0.19		8,038,000	21,739,000	0.00						
Sub Total		8,038,000	21,739,000	0.00						
	Mill Incremental:									
0.19 -> 0.21	Indicated (2)	23,000	67,000	0.20						
Sub Total		23,000	67,000	0.20						
		Mineralized	:							
0.21 -> 10.0	Indicated (2)	583,000	1,666,000	0.52						
Sub Total		583,000	1,666,000	0.52						
Total, Mill Inc	cremental		1,733,000	0.51						
+Mineralized										
Total Materia	1	8,645,000	23,473,000	0.04						
Strip Ratio			12.5							

 Table 19.2

 Estimated Mineral Resources for the Langmuir No. 1 Deposit

1. Mineral resources which are not mineral reserves do not have demonstrated economic viability. The estimate of mineral resources may be materially affected by environmental, permitting, legal, title, taxation, sociopolitical, marketing or other relevant issues.

- 2. There are currently no measured or inferred mineral resources for the Langmuir No. 1 deposit.
- 3. Tonnages have been rounded to the nearest thousand tonnes
- 4. Sums may not add due to rounding
- 5. Mineral resources are inclusive of mill incremental material
- 6. Grade interpolation is estimated by Ordinary Kriging method.

19.3 EXPLORATION POTENTIAL

The historical production record of the Langmuir property clearly demonstrates that (potentially) economic quantities of nickel mineralization have been demonstrated to be present on the property. While the property has been the subject of previous exploration programs whose goals, presumably, were the location of additional deposits with similar grades as were exploited at Langmuir No. 1 and Langmuir No. 2 mines, Micon believes that given the economic context of the time, little attention has historically been directed towards evaluating the potential of the presence of near-surface, lower grade mineralization that could be exploited by means of open pit mining methods.

Delineation drilling programs carried out by Inspiration have been successful in outlining two areas of near-surface, ultramafic-hosted nickel mineralization that initial work suggests may be exploited by means of open pit mining methods. Preliminary interpretation of geophysical (magnetic) data suggests that the Langmuir North and Langmuir No. 1 deposits are hosted by two separate units of ultramafic rocks (Figure 19.1). It is to be noted that the information presented in Figure 19. 1 has been prepared from data presented in Jensen (2009)



and has been prepared to a suitable level of accuracy to be used for illustrative purposes only, and is not intended for use as a basis for detailed planning.



Figure 19.1 Schematic Compilation Map, Inspiration Langmuir Property

Examination of the magnetic signatures in combination with the known surface-based geology clearly shows that at least four additional ultramafic units which sub-parallel those that host the Langmuir North and Langmuir No. 1 deposits are present on the property.



Exploration drilling along the northeastern strike extension of the Langmuir No. 1 deposit has been successful in identifying the presence of additional nickel mineralization similar to the Langmuir No. 1 deposit along a strike length of approximately 1,000-1,200 metres. As well, limited exploration drilling that tested targets hosted by an ultramafic unit located immediately to the northwest (i.e. in the stratigraphic footwall) of the Langmuir No. 1 mine unit has also been successful in locating near-surface nickel mineralization. The magnetic signatures and geological mapping suggest that this footwall unit can have a strike length on the property on the order of 2,500-2,750 metres.

Limited exploration drilling has also been carried out in the extreme northwestern portion of the property and has also been successful in identifying the presence of additional nickel mineralization similar to the Langmuir North and Langmuir No. 1 deposits along a strike length of approximately 1,200-1,500 metres.

A small number of drill holes, completed to test an ultramafic unit located to the southeast of the Langmuir No. 1 deposit (i.e. in the stratigraphic hangingwall), have also encountered low-grade nickel mineralization, while a fourth suggested ultramafic flow further to the southeast remains essentially untested by drilling.

On the basis of the exploration work completed to-date, Micon agrees with Inspiration's opinion that potential remains to locate additional nickel mineralization. Micon believes that the potential exists on the property to locate an additional 20 to 40 million tonnes of nickelbearing material with an average grade from 0.15% to 0.6% Ni. The potential quantity and grade of any additional nickel-bearing material is conceptual in nature and there has been insufficient exploration to define a mineral resource and that it is uncertain if further exploration will result in the target being delineated as a mineral resource.

Micon believes that Inspiration is justified in carrying out further exploration programs whose goals are to locate additional nickel-bearing zones on the Langmuir Property.

Micon believes that this report has met the objectives set out in Chapter 3 above.



20.0 **RECOMMENDATIONS**

In respect of the Quality Assurance/Quality Control aspects of the project, Micon suggests the following:

- That the sources of the excursions for the standard reference materials OREAS 13P, 14P and 72a be examined in detail and appropriate corrective actions taken for such items as clerical errors. Micon recommends that a small program of re-assaying be carried out for those samples that have been deemed to be due to a poor laboratory result, with additional corrective measures taken if required.
- In respect of the failed blank sample, Micon also recommends that a small program of re-assaying be carried out for those samples that were associated in the sample stream with this blank sample.
- That the possible sources of the poor performance for standards OREAS 13P and 14P that were analyzed as part of the re-assaying program for the Langmuir North be investigated and appropriate corrective actions taken. A possible solution to prevent oxidation of standard reference materials in the future would be to store the materials in a freezer.
- Micon observes that two failed samples are present for the blank sample material that was assayed during the re-assaying program for the Langmuir North deposit. Micon also recommends that a small program of re-assaying be carried out for those samples that were associated in the sample stream with this blank sample.
- That the control charts for the standards, blanks and duplicates be maintained and updated on a regular basis such that any anomalous results can be identified and addressed in a timely manner. As well, Micon recommends that a modification be made to Inspiration's data management methods to construct a separate database that is dedicated to the management of the QA/QC information to facilitate the timely analysis of new QA/QC data.

In respect of the exploration potential of the property, Micon suggests the following:

- Prepare a detailed compilation of the surface and three-dimensional geology and mineralized zones from all available sources to assist in identification of exploration targets in the favourable peridotite units. Such a compilation ideally would be completed using all available drill hole data.
- Deep-searching, surface-based EM surveys be carried out along those magnetic anomalies that are observed or interpreted to be related to ultramafic host rocks. Such surveys would be designed to search for higher grade sulphide mineralization at depth. Anomalies identified should be tested by surface-based diamond drill holes.



- Continue exploration drilling to search for possible concentrations of higher grade nickel mineralization beneath the known deposits (Langmuir #1, Langmuir #2 and Langmuir North. Micon envisions that such drilling be carried out initially at a wide spacing. Down-hole geophysical surveys (bore hole pulse EM) surveys would be carried out in these deeper drill holes to search for the possible presence of conductive sulphide mineralization in the vicinity of these bore holes.
- Examine the environs of the Langmuir #2 deposit by means of shallow drill holes for the possibility of low-grade, near surface mineralization that may be exploited by open pit mining methods.

In respect of the project development aspects of the project, Micon suggests that:

- Given the suggested relationship of the bulk density to the nickel grades at the Langmuir No. 1 deposit, Micon recommends that future mineral resource estimates be prepared using the detailed bulk density information so that accurate local estimates of the mineralized tonnages can be derived.
- The metallurgical test work on the Langmuir North be completed and metallurgical testing be initiated for the Langmuir #1 deposit
- All future met test work should be carried out on a sulphide nickel (Ni(AR)) basis so as to maintain consistency across the project.
- The inter-element relationships show that a positive relationship is present between nickel, palladium and platinum where higher palladium and platinum values are correlated with higher nickel values, suggesting the presence of a Ni-Pd-Pt-bearing mineral such as braggite (Pt, Pd, Ni)S in the mineralization found at the Langmuir North deposit. Micon therefore recommends that the palladium and platinum grades in concentrate be determined in any future metallurgical testing programs.
- Modify the geological drill hole database to explicitly state the assay method used for the nickel assays for clarity.
- Preliminary geotechnical investigations be completed to suggest maximum rock and soil slope angles in support of future open pit modeling exercises.
- Preparation of a preliminary assessment be completed to study the economic viability of the mineralization discovered to-date.

Inspiration has prepared a proposed exploration program and budget for work to be carried out in 2010 as shown in Table 20.1. Micon has reviewed the proposed budget and believes that it is appropriate and warranted.



Item	No. of Units	Unit Cost	Total Cost
Delineation Drilling, Langmuir No. 1 Extension	30,000 m	\$75/m	\$2,250,000
Metallurgical Testing			\$90,000
Preliminary Geotechnical Investigations			\$80,000
Scoping Study			\$150,000
Exploration Drilling	12,000 m	\$75/m	\$900,000
Assaying	32,000 samples	\$12/sample	\$380,000
Salaries	12 months		\$250,000
Transportation			\$50,000
Support Costs			100,000
Sub-total			\$4,250,000
Contingencies 5%			\$200,000
Grand Total			\$4,450,000

Table 20.1Proposed Exploration Program and Budget

MICON INTERNATIONAL LIMITED

"Reno Pressacco" {signed and sealed}

Reno Pressacco, P.Geo., January 6, 2010 and revised June 4, 2015.

"Richard Gowans" {signed and sealed}

Richard Gowans, P.Eng. President, Micon International Limited January 6, 2010 and revised June 4, 2015.

"Jonathan Steedman" {signed}

Jonathan Steedman. January 6, 2010 and revised June 4, 2015.



21.0 **REFERENCES**

Arndt, N.T., 1975, Ultramafic Rocks of Munro Township and Their Volcanic Setting: Unpublished Ph. D. thesis, University of Toronto, 192 p.

Atkinson, B.T., Hailstone, M., Seim, G.Wm., Wilson, A.C., Draper, D.M., Pace, A. and Woo, H., 2006, Report of Activities 2005, Resident Geologist Program, Timmins Regional Resident Geologist Report: Timmins and Sault Ste.Marie Districts: Ontario Geological Survey, Open File Report 6183, 88p.

Atkinson, B., Pace, A., Woo, H., Wilson, A.C., Butorac, S., and Draper, D.M., 2008, Report of Activities, 2008, Resident Geologist Program, Timmins Regional Resident Geologists Report, Timmins and Sault Ste. Marie Mining Districts: Ontario Geological Survey Open File Report 6235, 109 p.

Ayer, J.A., and Trowell, N.F., 1998, Geological Compilation of the Timmins Area, Abitibi Greenstone Belt: Ontario Geological Survey Preliminary Map P. 3379, scale 1:100 000

Ayre, J.A., Thurston, P.C., Bateman, R., Dubé, B., Gibson, H.L., Hamilton, M.A., Hathway, B., Hocker, S.M., Houlé, M.G., Hudak, G., Ispolatov, V.O., Lafrance, B., Lesher, C.M., MacDonald, P.J., Péloquin, A.S., Piercey, S.J., Reed, L.E., and Thompson, P.H., 2005, Overview of Results from the Greenstone Architecture Project: Discover Abitibi Initiative: Ontario Geological Survey, Open File Report 6154, 146 p.

Brisbin, D.I., 1998, Geological Setting of Gold Deposits in the Porcupine Gold Camp, Timmins, Ontario: Ph.D. thesis, Queens University, Kingston, Ontario 523 p.

Chamberlain, J.A., McLeod, C.R., Traill, R.J., and Lachance, G.R., 1965, Native Metals in the Muskox Intrusion: Canadian Journal of Earth Sciences, v. 2, p. 188-215.

Coad, P.R., 1979, Nickel Sulphide Deposits Associated with Ultramafic Rocks of the Abitibi Belt and Economic Potential of Mafic-Ultramafic Intrusions: Ontario Geological Survey Study 20, 84 p.

Dunbar, W.R., 1948, Structural Relationships of the Porcupine Ore Deposits: <u>in</u> Structural Geology of Canadian Ore Deposits, Volume 1, Canadian Institute of Mining and Metallurgy, Montreal, v. 1, p. 442-456.

Eckstrand, O.R., 1975, The Dumont Serpentinite: A Model for Control of Nickeliferous Opaque Mineral Assemblages by Alteration Reactions in Ultramafic Rocks: Economic Geology, v. 70, p. 183-201.

Ferguson, S.A., Buffam, B.S.W., Griffis, A.T., Homes, T.C., Hurst, M.E, Jones, W. A., Lane, H.C., and Longley, C.S., 1968, Geology and Ore Deposits of Tisdale Township, District of Cochrane: Ontario Department of Mines Geological Report 58, 177 p., 13 maps



Green, A.H., 1978, Evolution of Fe-Ni Sulfide Ores Associated with Archean Ultramafic Komatiites, Langmuir Township, Ontario: Unpublished Ph.D. thesis, University of Toronto, 355 p.

Green, A., and Naldrett, A.J., 1981, The Langmuir Volcanic Peridotite-Associated Nickel Deposits: Canadian Equivalents to the Western Australian Occurrences: Economic Geology, v. 76, pp. 1503-1523.

Groves, D.I., Hudson, D.R., and Hack, T.B.C., 1974, Modification of Iron-Nickel Sulphides During Serpentinization and Talc-Carbonate Alteration at Black Swan, Western Australia: Economic Geology, v. 69, p. 1265-1281.

Hill, R.E.T., 2001, Komatiite Volcanology, Volcanological Setting and Primary Geochemical Properties of Komatiite Associated Nickel Deposits: <u>in</u> Geochemistry, Exploration, Environment, Analysis, Vol. 1, 2001, p. 365-381.

Houle, M.G. and Guilmette, C., 2004, Geology and Mineral Potential of Carman and Langmuir Townships, Shaw Dome Area: <u>in</u> Summary of Field Work and Other Activities 2004, Ontario Geological Survey, Open File Report 6145, p 7-1 to 7-16.

Houle, M.G., and Guilmette, C., 2005, Precambrian Geology of Carman and Langmuir Townships: Ontario Geological Survey Preliminary Map P3268

Houlé, M. G., and Hall, L.A.F., 2007, Geological Compilation of the Shaw Dome Area, Northeastern Ontario: Ontario Geological Survey Preliminary Map P3595, scale 1:50,000

Inspiration Mining Corporation, 2009, Form 51-102, Management Discussion and Analysis for Fiscal Quarter Ended June 30, 2009, 20 p.

Jackson, S.L., and Fyon, J.A., 1991, The Western Abitibi Subprovince in Ontario: <u>in</u> Geology of Ontario, Ontario Geological Survey Special Volume 4, p. 426-429.

Jensen, K.A., 2009, Technical Report of the Langmuir Property Shaw Dome Area, NTS 42A/06 in Langmuir Township, Porcupine Mining Division, District of Cochrane, Ontario, Canada: Unpublished Document available under Inspiration Mining Corporations filings on the SEDAR web site at www.SEDAR .com.

Naldrett, A.J., 1966, The Role of Sulphurization in the Genesis of Iron-Nickel Sulphide Deposits of the Porcupine District, Ontario; CIMM Trans. Vol.69, p 147-155.

Naldrett, A.J., 1973, Nickel Sulphide Deposits – Their Classification and Genesis, with Special emphasis on Deposits of Volcanic Association; CIMM Trans. Vol.76, p 183-201.



Peters, O., 2009, An Investigation into the Recovery of Nickel from the Langmuir #2 North Zone, prepared for Inspiration Mining, Interim Draft Report April 12, 2009: Unpublished Internal Company Document, 103 p.

Pressacco, R., ed. 1999, Special Project: Timmins Ore Deposits Descriptions: Ontario Geological Survey Open File 5985, 189 p.

Pyke, D.R., 1970, Geology of Langmuir and Blackstock Townships, District of Timiskaming: Ontario Department of Mines, Geological Report 86, 65 p.

Pyke, D.R., 1973, Geology of Peterlong Lake Area, District of Timiskaming and Sudbury: Ontario Division of Mines, Preliminary Map P.810

Pyke, D.R., 1974, Timmins Area, District of Timiskaming and Cochrane: Ontario Division of Mines, Preliminary Map P.941

Pyke, D.R., 1975, Geology of Adams and Eldorado Townships, District of Timiskaming: Ontario Division of Mines, Geological Report 121

Pyke, D.R., 1978, Geology of the Redstone River Area, District of Timiskaming: Ontario Division of Mines, Geological Report 161, 75 p.

Pyke, D.R., 1982, Geology of the Timmins Area: Ontario Geological Survey Geological Report 219, 141 p.

Pyke, D.R., Naldrett, A.J., and Eckstrand, O.R., 1973, Archean Ultramafic Flows in Munro Township, Ontario: Geological Society of America Bulletin, v. 84, p. 955-978.

CERTIFICATE FOR RENO PRESSACCO

As co-author of this report on certain mineral properties of Inspiration Mining Corporation located in Ontario, Canada, I, Reno Pressacco, do hereby certify that:

- At the time of the publication of the original report I was employed as a Senior Geologist by, and carried out this assignment for Micon International Limited Suite 900, 390 Bay Street Toronto, Ontario, M5H 2Y2 tel. (416) 362-5135 fax (416) 362-5763 e-mail: rpressacco@micon-international.com
- 2. I hold the following academic qualifications:

CET (Geological Engineering)	Cambrian College	1982
B.Sc. (Geology)	Lake Superior State College	1984
M.Sc.(A) (Mineral Exploration)	McGill University	1986

- 3. I am a registered Professional Geoscientist with the Association of Professional Geoscientists of Ontario (Registration Number 0939) and with the Association of Professional Geoscientists of the Province of Manitoba (Registration Number 32726). As well, I am a member in good standing of other technical associations and societies, including the Prospectors and Developers Association of Canada.
- 4. I have worked as a geologist in the minerals industry for 29 years.
- 5. I do, by reason of education, experience and professional registration, fulfill the requirements of a Qualified Person as defined in NI 43-101. My experience includes mineral exploration, advanced exploration and mine development, open pit production, environmental compliance, financial evaluation and mine commissioning with a variety of deposit types including gold, silver, copper, zinc, lead, uranium, nickel, platinum-group metals and industrial minerals.
- 6. I visited the Langmuir project site on June 4 and 5, 2008.
- 7. I am responsible for the preparation of Chapters 2 through 15, inclusive, Chapter 18 and portions of Chapters 1, 17, 19 and 20 of this Technical Report titled "Technical Report on the Initial Mineral Resource Estimate for the Langmuir North and Langmuir No. 1 Deposits, Langmuir Township, Ontario, Canada" and dated January 6, 2010.
- 8. Other than providing consulting services, I am independent of the issuer for which this report is required, as defined in Section 1.4 of NI 43-101.
- 9. I have had no prior involvement with the mineral property in question.
- 10. I have read NI 43-101 and this report has been prepared in compliance with the Instrument.
- 11. As of the date of this certificate, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make this report not misleading.

Dated this 6th day of January, 2010 and revised June 4, 2015.

"Reno Pressacco" {signed and sealed}

Reno Pressacco, P.Geo.

CERTIFICATE OF AUTHOR – RICHARD M. GOWANS P.Eng.

As a co-author of this report entitled "Technical Report on the Initial Mineral Resource Estimate for the Langmuir North and Langmuir No. 1 Deposits, Langmuir Township, Ontario, Canada", dated January 6, 2010, I, Richard M. Gowans P. Eng. do hereby certify that:

1. I am employed by, and carried out this assignment for

Micon International Limited Suite 900, 390 Bay Street Toronto, Ontario M5H 2Y2 tel. (416) 362-5135 fax (416) 362-5763 e-mail: rgowans@micon-international.com

2. I hold the following academic qualifications:

B.Sc. (Hons) Minerals Engineering, The University of Birmingham, U.K. 1980

- 3. I am a registered Professional Engineer of Ontario (membership number 90529389); as well, I am a member in good standing of the Canadian Institute of Mining, Metallurgy and Petroleum.
- 4. I have worked as an extractive metallurgist in the minerals industry for over 28 years.
- 5. I do, by reason of education, experience and professional registration, fulfill the requirements of a Qualified Person as defined in NI 43-101. My work experience includes the management of technical studies and design of numerous metallurgical testwork programs and metallurgical processing plants.
- 6. I have not visited the project site.
- 7. I am responsible for the preparation of Section 16 and portions of Sections 1, 19 and 20 of this report.
- 8. I am independent of the issuer as defined in Section 1.4 of NI 43-101.
- 9. I have had no prior involvement with the mineral property in question.
- 10. I have read NI 43-101 and the portions of this report for which I am responsible have been prepared in compliance with the instrument.
- 11. As of the date of this certificate, to the best of my knowledge, information and belief, the sections of this Technical Report for which I am responsible contain all scientific and technical information that is required to be disclosed to make this report not misleading.

Dated this 6th day of January, 2010 and revised June 4, 2015.

"Richard M. Gowans" {signed and sealed}

Richard M. Gowans, P.Eng.

CERTIFICATE FOR JONATHAN STEEDMAN

As co-author of this report on certain mineral properties of Inspiration Mining Corporation located in Ontario, Canada, I, Jonathan Steedman, do hereby certify that:

1. At the time of the publication of the original Technical Report I was employed as a Mineral Resource Geologist by, and carried out this assignment for

Micon International Limited Suite 10, Keswick Hall Norwich, UK, NR4 6TJ tel. (01603) 501501 fax (01603) 507007

2. I hold the following academic qualifications:

B.Sc. (Geology)	University of Aberdeen	1999
M.Sc. (Mineral Exploration)	University of Leicester	2001

- 3. At the time of the publication of the original Technical Report, I was a Certified Member (Number 227377) of the Australasian Institute of Mining and Metallurgy (AusIMM)
- 4. I have worked as a geologist in the minerals industry since 2001.
- 5. I did, by reason of education, experience and professional registration, fulfill the requirements of a Qualified Person as defined in NI 43-101, at the time of the original report. My experience includes mineral exploration, mine development, open pit production with a variety of deposit types including gold, silver, copper, zinc, lead, nickel, platinum-group metals and industrial minerals.
- 6. I have not visited the project site.
- 7. I am responsible for the preparation of portions of Chapters 1, 17, 19 and 20 of this Technical Report titled "Technical Report on the Initial Mineral Resource Estimate for the Langmuir North and Langmuir No. 1 Deposits, Langmuir Township, Ontario, Canada" and dated January 6, 2010.
- 8. Other than providing consulting services, I am independent of the issuer for which this report is required, as defined in Section 1.4 of NI 43-101.
- 9. I have had no prior involvement with the mineral property in question.
- 10. I have read NI 43-101 and this report has been prepared in compliance with the Instrument.
- 11. As of the date of this certificate, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make this report not misleading.

Dated this 6th day of January, 2010 and revised June 4, 2015

"Jonny Steedman" {signed}

Jonathan Steedman.

APPENDIX I LIST OF COLLAR LOCATIONS FOR THE LANGMUIR NORTH AND LANGMUIR No. 1 DEPOSITS

Langmuir North Drill Hole Collars:

Hole ID	Northing	Easting	Elevation	Depth	Dip	Azimuth
LN05-1	5354447.91	500125.08	285.95	228.80	-45.00	305.00
LN05-10	5354596.83	500150.84	283.03	256.00	-50.30	300.00
LN05-11	5354520.78	500103.08	285.98	157.50	-50.10	300.00
LN05-12	5354645.61	500154.57	285.52	282.00	-50.00	294.00
LN05-13	5354696.92	500178.31	286.53	213.00	-50.60	298.00
LN05-14	5354596.32	500108.72	285.45	127.00	-49.50	296.60
LN05-15	5354596.14	500109.13	285.39	166.70	-64.60	295.90
LN05-16	5354393.20	500058.28	284.51	95.80	-51.30	301.00
LN05-17	5354392.94	500058.68	284.60	107.20	-66.40	302.70
LN05-18	5354392.88	500058.84	284.50	118.10	-73.40	305.90
LN05-19	5354624.11	500105.01	285.21	101.00	-49.10	313.90
LN05-2	5354495.76	500167.40	285.92	240.30	-50.00	299.90
LN05-20	5354623.74	500105.33	285.01	125.00	-64.60	315.30
LN05-21	5354642.45	500117.81	285.26	101.00	-49.30	313.30
LN05-22	5354642.02	500118.21	285.26	124.88	-62.40	314.40
LN05-3	5354394.23	500101.36	285.20	220.00	-50.00	295.90
LN05-4	5354544.80	500152.59	285.35	194.50	-50.00	301.50
LN05-5	5354496.00	500228.00	280.00	119.00	-45.00	270.00
LN05-6	5354413.62	500093.29	284.48	205.40	-50.00	300.00
LN05-7	5354344.01	500099.87	285.15	200.00	-50.00	300.00
LN05-8	5354294.04	500101.13	286.12	203.70	-50.00	300.00
LN05-9	5354244.54	500098.96	285.74	158.00	-53.40	300.00
LN06-23	5354645.45	500154.48	285.56	137.00	-56.00	300.00
LN06-24	5354664.36	500123.85	285.95	148.61	-49.36	303.35
LN06-25	5354664.04	500124.31	286.02	199.95	-63.12	303.30
LN06-26	5354675.88	500106.67	284.57	128.09	-48.80	300.55
LN06-27	5354640.64	500082.65	283.90	58.90	-48.90	295.20
LN06-28	5354658.74	500088.13	284.09	47.00	-47.50	300.50
LN06-29	5354650.92	500100.82	284.08	64.78	-49.70	299.70
LN06-30	5354636.67	500125.60	285.75	127.86	-63.20	300.00
LN06-31	5354628.91	500138.41	286.39	151.90	-63.80	301.40
LN06-32	5354684.83	500158.95	286.54	109.88	-50.00	300.40
LN06-33	5354592.70	500117.98	285.19	131.00	-48.70	302.20
LN06-34	5354592.40	500118.43	285.06	151.00	-63.40	302.30
LN06-35	5354609.72	500089.46	285.34	92.00	-48.10	299.80
LN06-36	5354620.63	500071.32	283.97	68.00	-48.80	299.90
LN06-37	5354557.43	500124.86	285.20	155.00	-50.00	297.30
LN06-38	5354569.00	500102.85	286.21	140.00	-49.80	296.80
LN06-39	5354579.78	500083.47	285.28	107.00	-50.00	298.60
LN06-40	5354591.14	500070.15	284.22	80.37	-50.00	300.20
LN06-41	5354601.41	500052.79	283.45	56.00	-48.80	299.60
LN06-42	5354495.54	500086.48	284.84	131.00	-50.60	301.50
LN06-43	5354495.31	500086.86	284.89	152.00	-60.70	302.70
LN06-44	5354434.43	500090.87	285.05	146.30	-51.00	297.90
LN06-45	5354434.23	500091.27	285.04	167.14	-60.70	298.60
LN06-46	5354444.93	500072.47	284.24	119.20	-50.60	299.40
LN06-47	5354455.31	500054.17	283.82	95.30	-50.40	299.10
LN06-48	5354464.33	500038.22	283.72	71.30	-51.10	298.60

Hole ID	Northing	Easting	Elevation	Depth	Dip	Azimuth
LN06-49	5354425.65	500053.63	283.84	115.97	-51.00	301.70
LN06-50	5354434.41	500040.63	283.63	87.15	-37.80	303.90
LN06-51	5354446.14	500023.68	283.58	65.05	-50.60	307.30
LN06-52	5354529.27	500128.79	286.58	169.45	-50.00	295.80
LN06-53	5354538.63	500109.26	286.08	141.65	-49.20	296.80
LN06-54	5354548.78	500089.59	285.39	116.10	-49.80	299.10
LN06-55	5354559.08	500070.46	284.76	91.74	-50.10	296.70
LN06-56	5354568.52	500052.78	284.14	74.90	-50.50	298.50
LN06-57	5354544.25	500152.84	285.25	298.63	-64.90	301.60
LN06-58	5354328.07	500129.09	286.15	160.21	-46.90	297.40
LN06-59	5354327.94	500129.36	285.90	184.87	-55.40	297.50
LN06-60	5354504.03	500116.05	286.56	154.65	-49.00	305.60
LN06-61	5354527.53	500074.62	284.95	106.95	-50.10	299.10
LN06-62	5354537.90	500056.15	284.24	79.50	-48.80	300.60
LN06-63	5354620.70	500114.51	286.00	109.17	-50.00	304.80
LN07-100	5354579.20	500139.93	283.75	229.94	-67.30	300.40
LN07-101	5354579.01	500140.14	283.68	280.48	-73.20	296.90
LN07-64	5354519.89	500147.98	286.60	199.90	-48.80	296.20
LN07-65	5354509.05	500013.15	283.51	106.99	-52.30	300.10
LN07-66	5354497.83	500031.70	283.76	78.86	-49.90	300.00
LN07-67	5354487.16	500048.73	284.08	107.21	-50.20	300.40
LN07-68	5354475.59	500067.89	284.56	158.09	-50.00	303.30
LN07-69	5354475.43	500068.25	284.59	185.03	-61.20	300.90
LN07-70	5354518.72	500043.24	283.89	86.08	-49.30	300.40
LN07-71	5354507.31	500064.30	284.64	106.91	-50.30	298.30
LN07-72	5354327.06	500128.71	286.20	269.01	-59.90	299.70
LN07-73	5354327.01	500128.76	286.09	238.10	-50.00	299.30
LN07-74	5354343.87	500099.19	285.55	125.13	-49.90	300.00
LN07-75	5354343.67	500099.51	285.52	154.79	-59.20	301.30
LN07-76	5354358.96	500072.84	285.30	92.14	-49.10	295.80
LN07-77	5354370.34	500053.23	284.72	68.10	-49.70	297.10
LN07-78	5354407.79	500040.04	284.06	100.86	-50.00	300.60
LN07-79	5354378.20	500089.88	284.99	194.23	-65.10	299.20
LN07-80	5354378.05	500090.15	285.04	199.63	-71.50	301.90
LN07-81	5354307.84	500111.71	286.65	181.81	-48.50	301.20
LN07-82	5354307.54	500112.18	286.73	206.20	-59.80	299.90
LN07-83	5354321.23	500088.81	286.25	159.95	-50.40	298.50
LN07-84	5354335.29	500065.26	285.67	159.92	-51.30	299.40
LN07-85	5354348.60	500042.57	285.72	92.10	-49.60	300.30
LN07-86	5354421.43	500065.01	284.39	181.05	-48.90	297.10
LN07-87	5354421.22	500065.36	284.38	197.43	-59.70	296.60
LN07-88	5354690.87	500116.00	285.46	77.03	-50.00	299.80
LN07-89	5354680.75	500132.60	286.13	98.08	-51.00	300.50
LN07-90	5354670.21	500150.32	286.86	602.27	-48.20	301.40
LN07-91	5354669.93	500150.87	286.97	194.69	-61.50	300.80
LN07-92	5354669.75	500151.14	287.39	202.69	-69.00	302.90
LN07-93	5354673.03	500175.31	285.72	197.12	-50.15	299.63
LN07-94	5354672.80	500175.63	285.74	190.94	-60.32	299.17
LN07-95	5354672.68	500175.84	285.64	169.67	-70.20	298.80
LN07-96	5354685.18	500201.69	285.52	175.71	-50.20	300.80

Hole ID	Northing	Easting	Elevation	Depth	Dip	Azimuth
LN07-97	5354684.90	500202.23	285.70	188.09	-58.90	300.30
LN07-98	5354712.87	500204.29	286.50	173.00	-51.10	300.70
LN07-99	5354579.39	500139.64	283.83	202.96	-58.30	300.20
LN08-102	5354595.66	500158.63	283.69	180.40	-49.90	299.10
LN08-103	5354595.42	500158.99	283.69	250.35	-60.40	299.30
LN08-104	5354595.31	500159.24	283.47	260.06	-67.30	296.80
LN08-105	5354536.64	500161.59	284.53	226.89	-50.50	299.10
LN08-106	5354536.53	500161.77	284.41	263.36	-56.20	298.10
LN08-107	5354434.82	500188.84	283.68	407.01	-60.40	301.30
LN08-108	5354434.66	500189.10	283.63	464.24	-67.30	301.30
LN08-109	5354431.26	500098.41	285.40	199.97	-63.00	298.90
LN08-110	5354431.08	500098.70	285.37	265.93	-72.30	310.60
LN08-111	5354462.27	500092.90	285.24	181.86	-59.50	300.80
LN08-112	5354462.10	500093.15	285.13	235.90	-66.60	300.70
LN08-113	5354447.91	500116.78	286.37	248.03	-64.80	300.20
LN08-114	5354447.79	500116.98	286.21	281.02	-71.70	298.40
LN08-115	5354380.42	500187.86	282.72	371.73	-67.40	301.10
LN08-116	5354380.40	500187.91	282.49	408.82	-70.80	298.50
LN08-117	5354380.23	500188.22	282.70	558.49	-77.00	298.50
LN08-118	5354395.06	500118.48	285.08	211.19	-50.10	298.90
LN08-119	5354394.71	500119.00	285.14	235.17	-60.70	297.80
LN08-120	5354394.57	500119.27	285.20	282.85	-70.10	297.90
LN08-121	5354589.06	500023.02	283.87	411.40	-50.00	300.80
LN08-122	5354788.56	500077.40	282.85	302.21	-55.00	293.90
LN08-123	5354655.25	499910.17	283.71	479.92	-52.40	298.70
LN08-124	5354627.75	500155.43	285.29	199.82	-59.16	297.73
LN08-125	5354627.57	500155.81	285.28	203.45	-71.71	299.15
LN08-126	5354616.75	500123.85	286.43	169.89	-50.35	300.95
LN08-127	5354503.79	500171.94	285.98	256.71	-55.11	304.05
LN08-128	5354503.90	500171.97	285.73	277.67	-59.30	297.90
LN08-129	5354503.78	500172.10	285.77	377.46	-64.97	299.48
LN08-130	5354503.68	500172.26	285.83	454.69	-69.48	303.00
LN08-131	5354496.16	500130.29	287.12	199.47	-50.63	298.85
LN08-132	5354495.96	500130.58	287.04	261.75	-58.73	298.32
LN08-133	5354478.98	500159.45	286.56	323.25	-56.80	299.78
LN08-134	5354478.93	500159.53	286.46	340.36	-60.35	300.10
LN08-135	5354478.86	500159.73	286.59	434.67	-65.62	297.82
LN08-136	5354478.75	500159.87	286.58	413.47	-70.01	299.53
LN08-137	5354479.66	500112.25	286.22	229.29	-55.85	299.03
LN08-138	5354479.49	500112.49	286.38	260.39	-61.17	298.32
LN08-139	5354452.64	500157.99	285.80	287.35	-54.37	300.57
LN08-140	5354452.53	500158.15	285.78	310.46	-61.89	300.38
LN08-141	5354532.86	500172.31	283.68	326.40	-65.62	298.15
LN08-142	5354532.74	500172.42	283.99	385.71	-69.42	304.53
LN08-143	5354532.63	500172.56	284.01	448.94	-74.20	313.53
LN08-144	5354422.09	500160.87	284.58	407.87	-65.80	300.10
LN08-145	5354421.93	500161.14	284.61	461.38	-72.74	300.32
LN08-146	5354392.99	500165.65	283.55	291.49	-50.89	300.18
LN08-147	5354392.79	500165.98	283.58	332.09	-59.19	299.48
LN08-149	5354684.88	500202.18	285.70	188.00	-63.49	299.95

Hole ID	Northing	Easting	Elevation	Depth	Dip	Azimuth
LN08-150	5354684.78	500202.09	285.64	233.44	-70.08	300.10
LN08-151	5354713.12	500204.07	286.38	199.07	-58.12	300.32
LN08-152	5354741.46	500204.97	284.65	176.07	-50.79	299.10
LN09-153	5354909.54	500164.85	282.70	251.47	-51.49	117.80
LN09-154	5354909.81	500164.27	282.88	299.47	-60.22	118.60
LN09-155	5354867.02	500139.72	283.14	251.36	-51.39	118.27
LN09-156	5354867.27	500139.29	283.05	305.22	-61.87	118.38
LN09-157	5354867.42	500138.98	283.13	353.95	-70.19	115.77
LN09-158	5354824.83	500114.54	283.30	251.45	-50.77	120.43
LN09-159	5354824.66	500114.83	283.30	302.55	-60.65	119.65
LN09-160	5354824.39	500115.29	283.32	350.44	-70.18	128.72
LN09-161	5354741.29	500205.28	284.53	170.38	-59.91	299.77
LN09-162	5354741.10	500205.64	284.46	221.47	-70.68	296.58
LN09-163	5354759.29	500174.18	284.91	100.85	-50.53	297.98
LN09-164	5354732.81	500171.10	285.79	146.09	-50.38	300.05
LN09-165	5354751.33	500139.07	285.13	101.05	-50.65	301.47
LN09-166	5354710.68	500159.33	285.69	107.20	-50.36	300.80
LN09-167	5354731.64	500124.77	285.43	65.03	-50.33	301.07
LN09-168	5354692.04	500143.55	285.77	137.20	-50.15	301.18
LN09-169	5354709.34	500113.39	285.56	101.10	-50.11	302.10
LN09-170	5354713.21	500204.36	286.22	221.09	-65.14	297.68
LN09-171	5354713.10	500204.62	286.12	281.38	-74.67	296.45

Langmuir No. 1 Drill Hole Collars:

Hole ID	Northing	Easting	Elevation	Depth	Dip	Azimuth
L105-1	5353205.50	497546.90	297.10	149.00	-54.80	304.85
L105-2	5353205.30	497547.20	297.10	199.97	-64.60	305.13
L105-3	5353192.70	497568.70	298.20	176.00	-44.50	307.50
L105-4	5353192.50	497569.10	298.30	190.95	-54.30	306.28
L105-5	5353217.20	497585.30	298.00	161.85	-49.10	299.45
L105-6	5353217.10	497585.50	297.70	174.87	-58.08	298.82
L106-10	5353193.70	497621.60	298.60	254.05	-54.52	302.48
L106-11	5353193.50	497621.80	298.60	302.00	-62.34	302.05
L106-12	5353193.40	497621.90	298.60	350.00	-67.67	302.18
L106-13	5353169.20	497546.50	297.60	215.00	-49.72	306.60
L106-14	5353168.90	497546.80	297.70	214.65	-60.33	304.97
L106-15	5353249.10	497591.30	297.70	109.98	-53.25	303.88
L106-16	5353231.50	497618.50	298.60	167.45	-53.95	298.47
L106-17	5353204.00	497576.00	297.90	182.28	-49.47	301.30
L106-18	5353203.80	497576.20	297.70	221.30	-56.74	302.60
L106-19	5353203.60	497576.60	298.00	251.75	-65.70	298.35
L106-7	5353174.10	497594.10	298.30	251.26	-55.75	303.97
L106-8	5353173.80	497594.50	298.60	269.00	-64.33	305.38
L106-9	5353173.80	497594.60	298.30	290.37	-69.91	304.50
L107-100	5353130.80	497548.10	297.60	287.55	-63.54	305.18
L107-101	5353130.70	497548.40	297.70	290.60	-71.47	304.58
L107-20	5353194.30	497535.60	297.00	167.24	-50.20	301.63
L107-21	5353194.10	497536.00	297.20	205.24	-58.40	298.38
L107-22	5353153.70	497569.90	298.20	245.65	-63.50	298.68
L107-23	5353153.60	497570.10	298.00	281.28	-71.70	299.90

Hole ID	Northing	Easting	Elevation	Depth	Dip	Azimuth
L107-24	5353215.00	497643.70	298.50	216.45	-54.07	301.70
L107-25	5353214.70	497644.10	298.80	311.30	-63.28	300.57
L107-26	5353267.30	497619.10	298.80	187.70	-51.23	302.72
L107-27	5353267.10	497619.20	298.70	198.85	-58.17	303.65
L107-28	5353266.90	497619.60	298.60	251.30	-70.23	304.68
L107-29	5353148.90	497515.30	297.30	239.40	-50.71	302.97
L107-30	5353148.70	497515.70	297.30	290.50	-59.81	302.70
L107-31	5353193.60	497621.60	298.90	245.65	-48.28	301.85
L107-32	5353183.00	497608.50	298.70	221.30	-47.20	302.90
L107-33	5353182.70	497609.00	298.60	317.55	-62.70	304.33
L107-34	5353182.80	497608.70	298.80	230.70	-51.64	303.87
L107-35	5353171.00	497568.90	298.20	215.55	-56.24	306.82
L107-36	5353171.00	497568.90	298.00	230.50	-59.05	304.73
L107-37	5353162.60	497611.40	298.60	280.90	-55.20	302.92
L107-38	5353224.30	497518.50	296.90	260.02	-50.56	301.95
L107-39	5353198.50	497501.80	296.70	96.31	-56.22	302.45
L107-40	5353241.10	497657.90	298.70	260.40	-63.91	304.47
L107-41	5353138.90	497480.90	297.40	170.65	-50.41	304.83
L107-42	5353138.60	497481.00	297.20	213.07	-60.80	303.75
L107-43	5353113.40	497464.30	297.40	170.15	-50.09	302.27
L107-44	5353113.10	497464.50	297.30	212.50	-59.77	302.12
L107-45	5353201.20	497467.70	296.60	70.00	-50.77	301.48
L107-46	5353176.50	497505.30	296.80	107.40	-51.44	303.70
L107-47	5353176.30	497505.70	296.90	176.70	-57.60	301.95
L107-48	5353155.30	497538.10	297.30	212.85	-53.39	302.90
L107-49	5353155.00	497538.50	297.50	251.35	-63.91	301.02
L107-50	5353236.20	497554.50	296.70	101.05	-53.72	302.42
L107-51	5353228.30	497593.40	298.30	155.50	-49.07	304.03
L107-52	5353227.90	497593.80	298.30	212.34	-65.22	302.58
L107-53	5353179.10	497642.30	298.50	287.74	-52.23	303.22
L107-54	5353261.70	497653.50	299.20	197.35	-49.74	307.17
L107-55	5353261.80	497653.30	299.50	257.50	-56.97	303.17
L107-56	5353228.80	497648.80	298.30	196.20	-48.50	304.93
L107-57	5353228.60	497649.10	298.50	230.63	-58.59	303.88
L107-58	5353266.80	497674.40	298.50	229.82	-60.27	305.73
L107-59	5353267.00	497674.20	298.40	258.23	-65.89	305.00
L107-60	5353142.60	497501.90	296.90	214.75	-49.06	304.03
L107-61	5353142.40	497502.20	296.80	252.00	-58.95	305.47
L107-62	5353113.80	497683.70	297.30	531.75	-64.62	302.30
L107-63	5353161.90	497641.00	298.60	348.04	-60.20	302.92
L107-64	5353141.20	497701.80	297.50	540.32	-64.73	304.32
L107-65	5353165.10	497717.40	297.40	531.00	-63.92	302.45
L107-66	5353190.60	497734.10	297.30	530.55	-65.00	305.45
L107-67	5353216.50	497750.20	297.50	529.40	-65.25	303.00
L107-68	5353242.20	497767.00	296.80	529.80	-64.36	298.77
L107-69	5353267.80	497783.70	296.90	483.45	-62.80	302.77
L107-70	5353268.00	497783.50	297.00	552.00	-55.35	304.47
L107-71	5353152.00	497597.70	298.50	257.40	-57.00	302.58
L107-72	5353151.90	497597.90	298.50	285.03	-60.60	301.35
L107-73	5353151.80	497598.00	298.60	301.92	-65.00	300.57

Hole ID	Northing	Easting	Elevation	Depth	Dip	Azimuth
L107-74	5353145.90	497551.00	297.80	230.48	-55.00	303.15
L107-75	5353145.80	497551.20	297.70	299.96	-65.98	303.60
L107-76	5353220.30	497661.60	298.60	287.94	-64.90	303.60
L107-77	5353241.60	497601.90	298.10	188.00	-55.50	304.40
L107-78	5353241.40	497602.20	298.20	170.00	-63.57	303.45
L107-79	5353198.90	497666.20	298.10	293.52	-51.22	304.58
L107-80	5353198.70	497666.50	298.20	279.28	-63.00	302.93
L107-81	5353183.00	497526.40	1296.90	161.30	-52.12	280.17
L107-82	5353182.20	497526.40	297.00	177.93	-60.00	302.72
L107-83	5353241.20	497657.70	298.50	214.90	-51.80	304.28
L107-84	5353240.90	497657.80	298.60	242.47	-69.89	303.13
L107-85	5353162.10	497641.00	298.20	389.70	-64.60	302.47
L107-86	5353129.00	497577.00	298.00	287.00	-65.12	303.42
L107-87	5353128.90	497577.10	298.30	317.55	-70.00	298.13
L107-88	5353128.80	497577.20	298.26	365.50	-73.76	298.48
L107-89	5353205.70	497627.60	298.55	259.90	-59.83	303.77
L107-90	5353205.00	497627.70	298.55	287.68	-63.68	304.35
L107-91	5353205.60	497627.80	298.42	272.32	-69.79	302.68
L107-92	5353163.60	497610.80	298.46	347.50	-71.36	294.18
L107-93	5353180.90	497584.00	298.25	221.40	-54.32	303.87
L107-94	5353147.40	497579.70	298.35	269.98	-56.52	301.48
L107-95	5353147.30	497579.90	298.30	287.74	-63.19	299.00
L107-96	5353147.10	497580.20	298.42	356.60	-74.28	301.35
L107-97	5353220.50	497661.30	298.27	238.85	-60.63	304.17
L107-98	5353220.30	497661.60	298.29	290.45	-70.51	301.87
L107-99	5353131.00	497547.90	297.60	233.50	-55.96	305.43
L108-102	5353131.00	497492.80	297.20	191.15	-51.88	303.12
L108-103	5353130.80	497493.20	297.20	203.50	-60.88	301.28
L108-104	5353130.60	497493.50	297.20	248.50	-70.93	301.45
L108-105	5353159.20	497476.50	297.00	211.33	-48.80	303.60
L108-106	5353146.80	497495.00	297.20	208.10	-54.89	302.77
L108-107	5353240.80	497573.20	297.20	140.45	-49.94	303.38
L108-108	5353240.60	497573.30	296.90	179.13	-63.43	306.68
L108-109	5353195.60	497587.80	298.50	269.55	-65.49	305.43
L108-110	5353201.50	497553.50	297.10	185.38	-53.11	302.48
L108-111	5353098.60	497486.00	297.30	308.70	-60.91	305.05
L108-112	5353071.20	497471.80	297.60	302.80	-50.08	305.77
L108-113	5353046.00	497455.30	298.00	302.88	-49.77	303.12
L108-114	5353242.90	497681.20	298.30	254.23	-60.32	305.28
L108-115	5353242.70	497681.30	298.20	290.03	-67.42	306.43
L108-116	5353242.70	497681.50	298.40	344.53	-72.46	301.18
L108-117	5353073.80	497856.30	296.20	900.22	-68.24	306.37
L108-118	5353182.90	497525.50	297.50	179.42	-49.90	302.97
L108-119	5353181.60	497692.50	297.90	272.94	-51.66	305.87
L108-120	5353181.30	497692.70	297.90	310.75	-62.69	305.55
L108-121	5353075.90	497857.40	296.80	728.66	-56.00	295.38
L108-122	5353142.50	497893.50	296.80	602.61	-49.26	302.18
L108-123	5353142.20	497893.80	296.80	701.30	-59.29	302.03