APPENDIX B

Geological and Geotechnical

Drill Logs 1-44 - Volume 3 of 3

Noranda Minerals Wisconsin Corp.

LYNNE PROJECT

20

(p. 211-280)

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

LYN91-105

SULFIDES: (T)

% A:1-5,B:5-10
C:10-25,D:25-40
E:40-60,F:>60

Run	%	RQD	Rf	ABCDE	Jn	Jrc	Ja	SpG	Fol	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	T
											Ground upper contact.								
									-40C	R1	^^ 145.0 160.8 Rhyolite Lapilli Tuff								
									-60C	SL	^^ 160.8 167.3 Siltstone, buff to lt. grey, cherty or ashy, high angle laminations								
									-30B										
									-30B										
									-35C	R1	^^ 167.3 200.0 Rhyolite Lapilli Tuff								
											Note: @ 188.0-189.0 Fracture, Chlorite, Fe staining								
										ChT	^^ 200.0 205.0 Cherty Tuff, medium grey, subtle laminations								
										Wf	^^ 205.0 206.7 Feldspathic Wacke								
										SL	^^ 206.0 211.5 Siltstone								
										Rcl	^^ 211.5 270.5 Rhyolite Crystal Lapilli Tuff								

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

LYN91-105

SULFIDES: % (T)
A:1-5,B:5-10
C:10-25,D:25-40
E:40-60,F:>60

Run	%	RQD	Rf	ABCDE	Jn	Jrc	Ja	SpG	Fol	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	T
										gR	^^ 270.5 289.0 Granophyric Rhyolite								
										SS	^^ 289.0 298.0 Sandstone, medium grey, massive								

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

LYN91-105

SULFIDES: (T)

% A:1-5,B:5-10 C:10-25,D:25-40 E:40-60,F:>60

Run	%	RQD	Rf	ABCDE	Jn	Jrc	Ja	SpG	Fol	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	T
										gR	~~ 298.0 319.0 Granophyric Rhyolite								
										Wf	~~ 319.0 330.0 Feldspathic Wacke								
										SL	>< 330.0 429.5 SILTSTONE, fine-grained, blue grey, laminated								

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

LYN91-105

SULFIDES: (T)
% A:1-5,B:5-10
C:10-25,D:25-40
E:40-60,F:>60

Run	%	RQD	Rf	ABCDE	Jn	Jrc	Ja	SpG	Fol	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	T
											Note: @ 384.5-390.0 Coarser-grained, wacke-ish								
										R	⋇⋇ 429.5 507.0 RHYOLITE								
										Rcl	^^ 429.5 460.0 Rhyolite Crystal Lapilli Tuff								

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

LYN91-105

SULFIDES: (T) % A:1-5,B:5-10 C:10-25,D:25-40 E:40-60,F:>60

Run	%	RQD	Rf	ABCDE	Jn	Jrc	Ja	SpG	Fol	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	T
										WI	^^ 460.0 507.0 Lapilli Wacke, with cherty tuff intervals								
										SL	×× 507.0 537.0 SILTSTONE, fine-grained, blue-grey, laminated	a				3	2		5
									-20	pRd	^^ 519.0 529.0 Rhyolite Porphyry Dike, high-angle								
									-20										

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

LYN91-105

SULFIDES: % A:1-5,B:5-10 C:10-25,D:25-40 E:40-60,F:>60 (T)

Run	%	RQD	Rf	ABCDE	Jn	Jrc	Ja	SpG	Fol	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	T
										R	** 537.0 723.5 RHYOLITE								
										Rcl	^^ 537.0 590.2 Rhyolite Crystal Lapilli Tuff, almost cherty-looking rhyolite flow ?, with lapilli								
										W*	^^ 554.0 557.0 Tactite, (Amph-Mt altered wacke, forest green stuff)								
										Rt	^^ 590.2 605.0 Rhyolite Tuff, (Sandstone ?)								
										Rc	^^ 605.0 642.7 Rhyolite Crystal Tuff, with occasional lapilli, bleached to lt.								

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

LYN91-105

SULFIDES: (T)

A:1-5,B:5-10
% C:10-25,D:25-40
E:40-60,F:>60

Run	%	RQD	Rf	ABCDE	Jn	Jrc	Ja	SpG	Fol	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	T
											grey, with glassy intervals. Blue quartz eyes present but infrequent. Could be more of a flow than straight crystal tuff.								
										Rt	^^ 642.7 723.5 Rhyolite Tuff to Sandstone, fine-grained , massive, silicified in places, granophyric, pyrite along fractures								

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

LYN91-105

SULFIDES: % A:1-5,B:5-10 C:10-25,D:25-40 E:40-60,F:>60 (T)

Run	%	RQD	Rf	ABCDE	Jn	Jrc	Ja	SpG	Fol	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	T
											Note: @ 723.5-726.5 Quartz Lapilli Wacke								
										Rc,SL	** 723.5 780.0 INTERBEDDED RHYOLITE CRYSTAL TUFF, (OR QUARTZ LAPILLI WACKE), & SILTSTONES								
									-60B		Note: @ 726.5-739.0 Siltstone								
									-60B		Note: @ 739.0-780.0 Alternating rhyolite crystal tuff, quartz lapilli wacke, scattered pyrrhotite, pyrite @ tops of unit								
									-60B										

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-110
C:10-30,D:30-100
E:>100 cm..

LYN91-105

SULFIDES: (T) % A:1-5,B:5-10 C:10-25,D:25-40 E:40-60,F:>60

Run	%	RQD	Rf	ABCDE		Jn	Jrc	Ja	SpG	Fol	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	T
780.0										-60B	SS,t	** 780.0 792.0 SANDSTONE, Talcose								
	100	90	R2	c	5	2														
				c	40															
				c																
				c																
790.0				c																
	99	90	R2	c	10	3					CS,t	** 792.0 800.0 CALCAREOUS SEDIMENT, talcose								
				b	20															
				a	50															
				a							CSs,t	^^ 796.5 800.0 Calcareous Sediment, talcose, with sulfides	b	5						5
				a						-60B			b	5						5
800.0													b	5						5
	99	90	R2	a	10	3					SS	** 800.0 827.0 SANDSTONE	b	5						5
				a	20															
805.0				a	50															
	100	95	R2	a	10	2														
				b	40															
				b																
				a																
814.0				b						-70B										
	100	100	R2	b	20	2														
815.0					40															
	99	90	R2	b	10	2														
				a	30															
821.0				b																
	100	95	R3	b	20	2														
				a	40															
826.0				b																
	99	90	R2	a	20	2					SLP	** 827.0 832.0 SILTSTONE, laminated, with pyrrhotite	d				25			25
				b	50								d				25			25
				a						-75B			d				25			25

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

LYN91-105

SULFIDES: % A:1-5,B:5-10 C:10-25,D:25-40 E:40-60,F:>60 (T)

Run	%	RQD	Rf	ABCDE		Jn	Jrc	Ja	SpG	Fol	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	T
				b						-78B	SSP,t	** 832.0 845.0 SANDSTONE, with pyrrhotite, possible talcose	d					25		25
836.0				c																
	100	95	R2	b	20	2				-85C	CSp	~~ 838.0 841.5 Calcareous Sediment, with pyrrhotite	c					20		20
				c	50					-65B			c					20		20
				b									b					8		8
				c									b					8		8
846.0				b																
	99	95	R3	a	15	2					Chtp,l	** 845.0 858.5 CHERTY TUFF, with pyrrhotite, laminated	c					20		20
				a	40					-65B			c					20		20
				a									c	2		1		7		10
				b									c	2		1		7		10
856.0				b									c	2		1		7		10
	100	95	R3	b	20	2				-60B			c	2		1		7		10
				b	60						*R	** 858.5 862.0 SPHERULITIC RHYOLITE	c	2		1		7		10
				b																
				c							SSs,t	** 862.0 877.2 SANDSTONE, talcose ?, with sulfides	b	5				3		8
866.0				c						-75B			b	5				3		8
	100	100	R2	b	30	2							b	5				3		8
				c	50								b	5				3		8
				c									b	5				3		8
				c									b	5				3		8
876.0				c									b	5				3		8
	100	95	R2	c	30	2					*R	** 877.2 883.0 SPHERULITIC RHYOLITE	b	5				3		8
				b	50								b	5				3		8
				c									a					2		2
				c							SS	** 883.0 899.0 SANDSTONE	a					2		2
886.0				c									a					2		2
	99	95	R2	c	30	2							a					2		2
				c	60								a					2		2
				c									a					2		2
				c									a					2		2
896.0				c									a					2		2
	100	100	R2	c	30	2							a					2		2
				c	60					-70B	TS	** 899.0 909.5 TALCOSE SEDIMENT	a					2		2
				c									a					2		2
				c																
906.0				c																
	100	95	R2	c	30	2														
				c	60					-70B	ChtP,l	** 909.5 936.0 CHERTY TUFF, laminated,	c			2	15			17

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

LYN91-105

SULFIDES: (T) % A:1-5,B:5-10 C:10-25,D:25-40 E:40-60,F:>60

Run	%	RQD	Rf	ABCDE		Jn	Jrc	Ja	SpG	Fol	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	T
				b						-70B		with pyrrhotite	c				2	15		17
				c						-72B			c				2	15		17
916.0				b									c				2	15		17
	100	100	R3	b	10	3							c				2	15		17
				b	30					-75B		Note: Bedding angles fluctuate from	c				2	15		17
				c	60							60-80 degrees and individual beds show	c				2	15		17
				c						-78B		tiny folds.	c				2	15		17
926.0				c						-60B			c				2	15		17
	100	90	R3	b	10	3				-82B			c				2	15		17
				c	30					-60B			c				2	15		17
932.0				b	60								c				2	15		17
	100	95	R3	b	10	2							c				2	15		17
				a	30					-50C	gQD	** 936.0 941.0 QUARTZ DIORITE, Granophyric	c				2	15		17
				b									c				2	15		17
				c																
942.0				b						-50C	BPp,l	** 941.0 966.0 BEDDED PYRRHOTITE,								
	100	100	R3	b	10	2				-80B		laminated, with pyrite	e				5	45		50
				c	30								e				5	45		50
				c						-55B			e				5	45		50
				c						-40B			e				5	45		50
951.0				c									e				5	45		50
	100	100	R3	c	15	2				-70B			e				5	45		50
				c	30					-60B			e				5	45		50
				c						-60B			e				5	45		50
				c									e				5	45		50
961.0				c									e				5	45		50
	100	100	R3	c	40	1							e				5	45		50
				c									e				5	45		50
				c							SSP	^^ 966.0 990.0 Sandstone, with pyrrhotite	e				5	45		50
				c									e				5	45		50
				c									c				5	15		20
971.0				c									c				5	15		20
	100	95	R3	c	20	2							c				5	15		20
				c	40								c				5	15		20
				c									c				5	15		20
				c									c				5	15		20
981.0				c									c				5	15		20
	100	95	R3	c	20	2							c				5	15		20
986.0				c	40								c				5	15		20
	99	90	R2	c	20	2							c				5	15		20
				c	40						TSP	** 990.0 1002.5 TALCOSE SEDIMENT, with	c				5	15		20

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

LYN91-105

SULFIDES: (T)
A:1-5,B:5-10
% C:10-25,D:25-40
E:40-60,F:>60

Run	%	RQD	Rf	ABCDE		Jn	Jrc	Ja	SpG	Fol	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	T
				b								pyrrhotite and pyrite	e				5	45		50
996.0				b									e				5	45		50
				c									e				5	45		50
	100	100	R3	c	20	3							e				5	45		50
				c	40								e				5	45		50
				c	60								e				5	45		50
				b							Rt	>< 1002.5 1068.3 RHYOLITE TUFF, hornfelsed, lt. grey, silicified							
1006.0				a																
	100	95	R3	a	20	3														
				a	40															
				a	60															
1016.0				a																
	100	90	R3	a	10	3														
				a	30															
				a	60															
1024.0				a																
										-40	gQD	^^ 1043.0 1043.5 Quartz Diorite, Granophyric								
										-40										
										-65	QD	>< 1068.3 1120.0 QUARTZ DIORITE								

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

LYN91-105

SULFIDES: % (T)
A:1-5,B:5-10
C:10-25,D:25-40
E:40-60,F:>60

Run	%	RQD	Rf	ABCDE	Jn	Jrc	Ja	SpG	Fol	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	T
										gQD	^^ 1068.3 1120.0 Granophyric								
									-30	sQD	^^ 1068.3 1095.0 Sheared								
											Note: @ 1070.5 Gouged shear zone								
											Note: @ 1080.0-1090.0 Fracture zone @ 20 degrees to axis								

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

LYN91-105

SULFIDES: (T)

A:1-5,B:5-10
% C:10-25,D:25-40
E:40-60,F:>60

Run	%	RQD	Rf	ABCDE	Jn	Jrc	Ja	SpG	Fol	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	T
											E.O.H. 1120' (total depth)								

Noranda Exploration Inc.
Eastern Divison

HOLE SURVEY DATA

Footage	Bearing	Inclination
25'	181.3	-57.5
50'	180.0	-57.7
75'	180.3	-56.6
435'	180.3	-56.6

PROJECT: LYNNE P.D. 1876
CONTRACTOR: Midwest Drilling Co.
LOGGED BY: T. Harding
DATE COLLARED: 3-5-91
REMARKS:
CORE SIZE: NQ

HOLE NO: LYN91-106 (WDNR #272)

CO./STATE: Oneida, WI
SCALE: 1"=10'
DATE COMPLETED: 3-7-91

BEARING: S181.3E INCLINATION: -57.1 T.D: 435'
COORDINATES: L9300 E, 10970 N
ELEV: 1562.5' SEC: 15 TWP: 37N RANGE: 4E

DATE: 11-20-91
PAGE 1 OF 7

DRILL HOLE SUMMARY

FOOTAGE	ROCK QUALITY	CODE	GEOLOGIC UNITS	MINERALIZATION & ALTERATION
0.0 37.0			** 0.0 37.0 OVERBURDEN	
37.0 40.0	(not recovered)			
40.0 151.3		R	** 40.0 151.3 RHYOLITE	
151.3 176.3		SLch	** 151.3 176.3 SILTSTONE, Cherty	
176.3 201.0		Rcl	** 176.3 201.0 RHYOLITE CRYSTAL LAPILLI TUFF	
201.0 228.3		D	** 201.0 228.3 DACITE	
228.3 241.0		Chc*	** 228.3 241.0 CHERT-DIOPSIDE/FAULT ZONE	
241.0 259.5		SSchp	** 241.0 259.5 SANDSTONE, Cherty, With Pyrrhotite	
259.5 271.2		D	** 259.5 271.2 DACITE	
271.2 435.0		gQD	** 271.2 435.0 QUARTZ DIORITE, Granophyric	
			E.O.H. 435' (total depth)	

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

DRILL HOLE: LYN91-106

SULFIDES: (T) % A:1-5,B:5-10 C:10-25,D:25-40 E:40-60,F:>60

Run	%	RQD	Rf	ABCDE	Jn	Jrc	Ja	SpG	Fol	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	T
0.0 37.0											** 0.0 37.0 OVERBURDEN								
										gR	** 37.0 151.0 RHYOLITE, predominantly grey granophyric rhyolite, with numerous high angle fractures and lt. grey to pink granophyric dike (?) zone								
									-42F										
									-10F		Note: @ 48.0-51.0 Fracture Zone, high angle, with pink granophyric material								
											Note: @ 76.0-94.0 Fracture Zone, high angle withwhite to pink granophyric material								
									-90C										

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

DRILL HOLE: LYN91-106

SULFIDES: (T)

% A:1-5,B:5-10 C:10-25,D:25-40 E:40-60,F:>60

Run	%	RQD	Rf	ABCDE	Jn	Jrc	Ja	SpG	Fol	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	I
									-50B	SLch	** 151.3 176.3 SILTSTONE, cherty, interbedded laminated siltstone and chert								
									-40B										
									-42B										
									-30B										
									-50B										
									-40C										
										Rcl	** 176.3 201.0 RHYOLITE CRYSTAL LAPILLI TUFF, dark matrix, plag-rich blue quartz eyes, beige clasts or porphyroblasts								
									-22F										

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

DRILL HOLE: LYN91-106

SULFIDES: (T)
A:1-5,B:5-10
% C:10-25,D:25-40
E:40-60,F:>60

Run	%	RQD	Rf	ABCDE		Jn	Jrc	Ja	SpG	Fol -80C	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	I
											D	** 201.0 228.3 DACITE, dark black, tiny plag, massive								
225.00																				
	95	80	R2	a	15	2														
				a	40						FZ	** 228.3 241.0 CHERT-DIOPSIDE/FAULT ZONE, core broken with slickensides, chlorite and quartz diorite filled fractures, and talcose patches, with sulfides (Sp +Cp)	c	1	1		3	6		11
230.00													c	1	1		3	6		11
	98	85	R3	a	20	2				-30F			c	1	1		3	6		11
				a	40								c	1	1		3	6		11
				b						-20F			c	1	1		3	6		11
				b									c	1	1		3	6		11
				c						-25			c	1	1		3	6		11
240.00													a		1			2		3
	100	100	R3	b	5	2						** 241.0 259.5 CHERTY SANDSTONE, with pyrrhotite	a		1			2		3
				b	20								a		1			2		3
				b						-10F			a		1			2		3
				b																
250.00				b																
	100	100	R3	c	10	2														
				c	60															
				c						-47F										
258.00				c																
	100	100	R3	b	10	2					D	** 259.5 271.2 DACITE, hornfelsed, dark matrix, plag-rich, glassy matrix, high angle fractures								
				a	50					-30C										
				a																
				b																
268.00				a																
										-30C	QD	** 271.2 435.0 QUARTZ DIORITE, high								

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

DRILL HOLE: LYN91-106

SULFIDES: (T) % A:1-5,B:5-10 C:10-25,D:25-40 E:40-60,F:>60

Run	%	RQD	Rf	ABCDE	Jn	Jrc	Ja	SpG	Fol	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	T
											angle contact								
										gQD	^^ 271.2 364.0 Granophyric Quartz Diorite, with numerous xenoliths of country rock, white with no pinkish cast								
									-25C	Md	^^ 397.0 419.0 Mafic Dike, high angle faulted upper contact								
									-20C										
									-19C										
											E.O.H. 435' (total depth)								

Noranda Exploration Inc.
Eastern Divison

HOLE SURVEY DATA

Footage	Bearing	Inclination
200'	182.0	-58.3
400'	184.0	-58.6
600'	187.3	-58.9
800'	188.9	-55.7
991'	192.5	-54.1

PROJECT: LYNNE P.D. 1876
CONTRACTOR: Midwest Drilling Co.
LOGGED BY: T. Harding
DATE COLLARED: 3-5-91
REMARKS:
CORE SIZE: NQ

HOLE NO: LYN91-107 (WDNR #243)

DATE: 12-5-91
PAGE 1 OF 15

CO./STATE: Oneida, WI
SCALE: 1"=10'
DATE COMPLETED: 3-10-91

BEARING: S180.1E INCLINATION: -59.0 T.D: 991'
COORDINATES: 10000 E, 11705 N
ELEV: 1558.7' SEC: 15 TWP: 37N RANGE: 4E

DRILL HOLE SUMMARY

FOOTAGE	ROCK QUALITY	CODE	GEOLOGIC UNITS	MINERALIZATION & ALTERATION
0.0 66.0			0.0 66.0 OVERBURDEN	
66.0 68.5	(not recovered)			
66.0 142.0		SS	66.0 142.0 SANDSTONE	
142.0 159.5		R	142.0 159.5 RHYOLITE	
159.5 165.3		SS	159.5 165.3 SANDSTONE	
165.3 176.0		Rc	165.3 176.0 RHYOLITE CRYSTAL TUFF	
176.0 204.0		SS	176.0 204.0 SANDSTONE	
204.0 234.0		R	204.0 234.0 RHYOLITE	
234.0 277.3		SL	234.0 277.3 SILTSTONE	
277.3 289.0		R	277.3 289.0 RHYOLITE	
289.0 315.5		SS	289.0 315.5 SANDSTONE	

Noranda Exploration Inc.
Eastern Divison

HOLE SURVEY DATA

Footage	Bearing	Inclination
200'	182.0	-58.3
400'	184.0	-58.6
600'	187.3	-58.9
800'	188.9	-55.7
991'	192.5	-54.1

PROJECT: LYNNE P.D. 1876
CONTRACTOR: Midwest Drilling Co.
LOGGED BY: T. Harding
DATE COLLARED: 3-5-91
REMARKS:
CORE SIZE: NQ

HOLE NO: LYN91-107 (WDNR #243)
CO./STATE: Oneida, WI
SCALE: 1"=10'
DATE COMPLETED: 3-10-91

DATE: 12-5-91
PAGE 1 OF 15

BEARING: S180.1E INCLINATION: -59.0 T.D: 991'
COORDINATES: 10000 E, 11705 N
ELEV: 1558.7' SEC: 15 TWP: 37N RANGE: 4E

DRILL HOLE SUMMARY

FOOTAGE	ROCK QUALITY	CODE	GEOLOGIC UNITS	MINERALIZATION & ALTERATION
315.5 404.5		R	315.5 404.5 RHYOLITE	
404.5 415.0		D	404.5 415.0 DACITE	
415.0 437.0		R	415.0 437.0 RHYOLITE	
437.0 453.0		SS	437.0 453.0 SANDSTONE OR DACITE	
453.0 553.0		R	453.0 553.0 RHYOLITE	
553.0 560.0		D	553.0 560.0 DACITE	
560.0 663.0		R	560.0 663.0 RHYOLITE	
663.0 670.0		SLch	663.0 670.0 SILTSTONE, Cherty	
670.0 738.0		R,TS	670.0 738.0 INTERBEDDED RHYOLITE CRYSTAL TUFF, SPHERULITIC RHYOLITE AND MINOR TALCOSE SEDIMENTS	

Noranda Exploration Inc.
Eastern Divison

HOLE SURVEY DATA

Footage	Bearing	Inclination
200'	182.0	-58.3
400'	184.0	-58.6
600'	187.3	-58.9
800'	188.9	-55.7
991'	192.5	-54.1

PROJECT: LYNNE P.D. 1876
CONTRACTOR: Midwest Drilling Co.
LOGGED BY: T. Harding
DATE COLLARED: 3-5-91
REMARKS:
CORE SIZE: NQ

HOLE NO: LYN91-107 (WDNR #243)

CO./STATE: Oneida, WI
SCALE: 1"=10'
DATE COMPLETED: 3-10-91

BEARING: S180.1E INCLINATION: -59.0 T.D: 991'
COORDINATES: 10000 E, 11705 N
ELEV: 1558.7' SEC: 15 TWP: 37N RANGE: 4E

DATE: 12-5-91

DRILL HOLE SUMMARY

FOOTAGE	ROCK QUALITY	CODE	GEOLOGIC UNITS	MINERALIZATION & ALTERATION
738.0 751.0		TS	** 738.0 751.0 TALC SEDIMENT	
751.0 762.6		Chp	** 751.0 762.6 CHERT, With Pyrrhotite	
762.6 771.0		BP	** 762.6 771.0 BEDDED PYRITE AND PYRRHOTITE	
771.0 782.0		TS	** 771.0 782.0 TALCOSE SEDIMENT	
782.0 792.0		CS,t	** 782.0 792.0 CALCAREOUS SEDIMENT, Talcose	
792.0 807.0		SS,t	** 792.0 807.0 SANDSTONE, Talcose	
807.0 829.0		D	** 807.0 829.0 DACITE	
829.0 844.0		TSp	** 829.0 844.0 TALC SEDIMENT, With Pyrrhotite	
844.0 859.0		VCS	** 844.0 859.0 VOLCANICLASTIC SEDIMENT	
859.0 990.6		QD	** 859.0 990.6 QUARTZ DIORITE	

Noranda Exploration Inc.
Eastern Divison

HOLE SURVEY DATA

Footage	Bearing	Inclination
200'	182.0	-58.3
400'	184.0	-58.6
600'	187.3	-58.9
800'	188.9	-55.7
991'	192.5	-54.1

PROJECT: LYNNE P.D. 1876
CONTRACTOR: Midwest Drilling Co.
LOGGED BY: T. Harding
DATE COLLARED: 3-5-91
REMARKS:
CORE SIZE: NQ

HOLE NO: LYN91-107 (WDNR #243)

DATE: 12-5-91
PAGE 1 OF 15

CO./STATE: Oneida, WI
SCALE: 1"=10'
DATE COMPLETED: 3-10-91

BEARING: S180.1E INCLINATION: -59.0 T.D: 991'
COORDINATES: 10000 E, 11705 N
ELEV: 1558.7' SEC: 15 TWP: 37N RANGE: 4E

DRILL HOLE SUMMARY

FOOTAGE	ROCK QUALITY	CODE	GEOLOGIC UNITS	MINERALIZATION & ALTERATION
			E.O.H. 991' (total depth)	

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

DRILL HOLE: LYN91-107

SULFIDES: (T)

% A:1-5,B:5-10 C:10-25,D:25-40 E:40-60,F:>60

Run	%	RQD	Rf	ABCDE	Jn	Jrc	Ja	SpG	Fol	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	T
0.0 66.0											>< 0.0 66.0 OVERBURDEN								
											^^ 0.0 30.0 Sand								
											^^ 30.0 45.0 Silty sand								
											^^ 45.0 50.0 Sand, gravel, and cobbles								
											^^ 50.0 66.0 Sand, gravel, and boulders								
											Note: @ 55.0 60.0 Lost circulation								
										SS	>< 66.0 142.0 SANDSTONE, black, fine-grained, patchy light green epidote alteration, minor plag-phyric zones								

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

DRILL HOLE: LYN91-107

SULFIDES: % (T)
A:1-5,B:5-10
C:10-25,D:25-40
E:40-60,F:>60

Run	%	RQD	Rf	ABCDE	Jn	Jrc	Ja	SpG	Fol	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	T
										R	⋇⋇ 142.0 159.5 RHYOLITE								
										Rc	^^ 142.0 147.0 Rhyolite Crystal Tuff, dark salmon, granophyric matrix								
										Rlb	^^ 147.0 156.5 Rhyolite Lapilli Breccia, grey beige granophyric matrix, with pumice and pR clasts								
										Rc	^^ 156.5 159.5 Rhyolite Crystal Tuff, as above, more compacted.								
									-50C	SS	⋇⋇ 159.5 165.3 SANDSTONE, green-black, fine-grained, massive								
									-50B	Rc	⋇⋇ 165.3 176.0 RHYOLITE CRYSTAL TUFF, fine-grained, coarsening with depth. Blue-grey with tiny quartz eyes to bedded with sericite-altered matrix and blue quartz eyes at base.								
										SS	⋇⋇ 176.0 204.0 SANDSTONE, green-grey, possible faint laminations.								

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

DRILL HOLE: LYN91-107

SULFIDES: (T) % A:1-5,B:5-10 C:10-25,D:25-40 E:40-60,F:>60

Run	%	RQD	Rf	ABCDE	Jn	Jrc	Ja	SpG	Fol	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	T
										R	** 204.0 234.0 RHYOLITE								
										gR	^^ 204.0 210.5 Granophyric Rhyolite Tuff								
									-45C	Rc	^^ 210.5 234.0 Rhyolite Crystal Tuff, feldspathic, with tiny quartz eyes, lower contact broken.								
									-30B	SL	** 234.0 277.3 SILTSTONE, blue-grey, laminated								
									-50B										
									-63B										

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

DRILL HOLE: LYN91-107

SULFIDES: (T)

% A:1-5,B:5-10
C:10-25,D:25-40
E:40-60,F:>60

Run	%	RQD	Rf	ABCDE	Jn	Jrc	Ja	SpG	Fol	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	T
									-60B										
									-60C	Rc	>< 277.3 289.0 RHYOLITE, cherty to rhyolitic clasts in a crystal tuff matrix in a predominatly sandy matrix								
									-60C	SS	>< 289.0 315.5 SANDSTONE, black to green, massive								
									-50C	R	>< 315.5 404.5 RHYOLITE								
										Rc	^^ 315.5 350.6 Rhyolite Crystal Tuff, fine-grained, green-grey, silicic matrix								

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

DRILL HOLE: LYN91-107

SULFIDES: (T) % A:1-5,B:5-10 C:10-25,D:25-40 E:40-60,F:>60

Run	%	RQD	Rf	ABCDE	Jn	Jrc	Ja	SpG	Fol	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	T
									-30C	pR	^^ 350.6 363.5 Porphyritic Rhyolite, plag-phyric, black with orange iron altered zones, hi-angle contacts								
									-30C	gR	^^ 363.5 374.5 Granophyric Rhyolite								
											^^ 374.5 399.5 Rhyolite Flows, three flow units, top crystal to lapilli tuff, lower crystal tuff, lowest-banded, with rhyolitic clasts								
									-60C -70C	TSp	^^ 399.5 400.0 Talc Sediment, with pyrrhotite	c				10	15		25
										Rc	^^ 400.0 404.5 Rhyolite Crystal Tuff								
										D	>< 404.5 415.0 DACITE, dacitic tuff or sandstone, to plag-phyric at base, hi-angle intrusive lower contact								

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

DRILL HOLE: LYN91-107

SULFIDES: (T)

A:1-5,B:5-10
% C:10-25,D:25-40
E:40-60,F:>60

Run	%	RQD	Rf	ABCDE	Jn	Jrc	Ja	SpG	Fol	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	T
										R	⋇⋇ 415.0 437.0 RHYOLITE								
									-0 C	pRd	^^ 415.0 419.0 Porphrytic Rhyolite Dike, tan-orange to black								
										Rl	^^ 419.0 431.0 Rhyolite Lapilli Tuff, rounded rhyolitic clasts, minor elongated pumice								
										Wql	^^ 431.0 437.0 Quartz Lithic Wacke, sandstone matrix, with quartz and rhyolitic clasts								
										SS	⋇⋇ 437.0 453.0 SANDSTONE OR DACITE								
									-80C -90	pR	^^ 445.4 448.3 Porphyritic Rhyolite Sill, orange, minor blue quartz eyes								
										R	⋇⋇ 453.0 553.0 RHYOLITE								
										gR	^^ 453.0 456.5 Rhyolite Flow, granophyric, pink								
										Rc	^^ 459.0 553.0 Rhyolite Crystal Tuff, medium to dark grey matrix, predominantly plag crystals, small blue quartz eyes. Fe-staining to 484.0 of plag rims and along fractures								

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

DRILL HOLE: LYN91-107

SULFIDES: % (T)
A:1-5,B:5-10
C:10-25,D:25-40
E:40-60,F:>60

Run	%	RQD	Rf	ABCDE	Jn	Jrc	Ja	SpG	Fol	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	T
											NOTE: @ 525.0 541.0 trace disseminated py and po								
535.0																			
	100	100	R3	c	20	2													
				c	55														
				c						Rc*	^^ 541.0 544.0 Rhyolite Crystal Tuff, chlorite-magnetite altered matrix	a				5			5
				c								a				5			5
545.0				c															
	100	95	R3	c	20	2				Rc*	^^ 546.8 553.0 Rhyolite Crystal Tuff, altered								
				b	40														
				c															
				c															
555.0				c						D	** 553.0 560.0 DACITE								
	100	100	R3	c	20	2													

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

DRILL HOLE: LYN91-107

SULFIDES: (T)

A:1-5,B:5-10
% C:10-25,D:25-40
E:40-60,F:>60

Run	%	RQD	Rf	ABCDE		Jn	Jrc	Ja	SpG	Fol	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	T
560.0				b a	50						R	** 560.0 663.0 RHYOLITE								
											R1	^^ 560.0 563.8 Rhyolite Lapilli Tuff								
											*R	^^ 563.8 571.5 Spherulitic Rhyolite								
											gR	^^ 571.5 647.0 Rhyolite Tuff, granophyric, lt. grey matrix, with subtle quartz eyes								
												Note: @ 580.5 585.0 Sandstone, fine-grained @ top to coarser @ base, reworked debris flow								

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

DRILL HOLE: LYN91-107

SULFIDES: (T)

% A:1-5,B:5-10
C:10-25,D:25-40
E:40-60,F:>60

Run	%	RQD	Rf	ABCDE	Jn	Jrc	Ja	SpG	Fol	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	T
										Rc	^^ 647.0 650.0 Rhyolite Crystal Tuff								
										CS	^^ 650.0 652.0 Calcareous Sediment, light green, bedded								
										Rc	^^ 652.0 662.0 Rhyolite Crystal Tuff, coarse-grained, abundant blue quartz eyes brown (sercite matrix)								
										Rl	^^ 662.0 663.0 Rhyolite Lapilli Tuff								
										SLch	** 663.0 670.0 SILTSTONE, cherty, chootic bedding, with cherty or ashy clasts and beds. Bedded iron sulfides.	a a a a a				1 1 1 1 1	1 1 1 1 1		2 2 2 2 2
										R,TS	** 670.0 738.0 INTERBEDDED RHYOLITE CRYSTAL TUFF, SPHERULITIC RHYOLITE, and minor talcose sediments.								

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

DRILL HOLE: LYN91-107

SULFIDES: (T)

% A:1-5,B:5-10
C:10-25,D:25-40
E:40-60,F:>60

Run	%	RQD	Rf	ABCDE	Jn	Jrc	Ja	SpG	Fol	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	T
712.0																			
	100	80	R2	a	10	2					Note: @ 709.0 Talcose intervals								
715.0				b	50														
	100	95	R2	b	20	2													
				b	50														
				c															
				c															
725.0				b															
	100	100	R2	b	10	2					Note: @ 724.0 739.0 Increase in bedded iron sulfides and laminated cherty intervals	c				5	5		10
				a	60							c				5	5		10
				b								c				5	5		10
				c								c				5	5		10
735.0				b								c				5	5		10
	100	85	R2	b	10	2						c				5	5		10
				b	40					TS	** 738.0 751.0 TALC SEDIMENT, RHYOLITE CRYSTAL TUFF AND SPHERULITIC RHYOLITE protolith with talcose overprint	c				5	5		10
				b								c				5	5		10
744.0				b								a				1	1		2
	99	80	R2	b	15	2						a				1	1		2
				b	40							a				1	1		2
				b								a				1	1		2
				b								a				1	1		2
754.0				b								a				1	1		2
	100	95	R2	b	15	2				Chp	** 751.0 762.6 CHERT, with pyrrhotite, fluctuating, hi-angle bedding	c				1	10		12
755.0					40							c				1	10		12
	100	90	R2	b	10	2						c				1	10		12
				a	30							c				1	10		12
				b						BP	** 762.6 771.0 BEDDED PYRITE AND PYRRHOTITE	d				15	15		30
				c								d				15	15		30
765.0				c								d				15	15		30
	100	100	R2	c	15	2						d				15	15		30
				c	30							d				15	15		30
				c								d				15	15		30
				b						TS	** 771.0 782.0 STRINGERY PYRRHOTITE, spherulitic appearance to 773.0, cherty clasts @ 776.0-779.0 Lapilli Tuff, moderate talc alteration, minor disseminated sulfides	b	1			5	5		11
775.0				b								b	1			5	5		11
	100	80	R2	b	15	2						b	1			5	5		11
				b	40							b	1			5	5		11
				b								b	1			5	5		11
												b	1			5	5		11

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

DRILL HOLE: LYN91-107

SULFIDES: % A:1-5,B:5-10 C:10-25,D:25-40 E:40-60,F:>60 (T)

Run	%	RQD	Rf	ABCDE		Jn	Jrc	Ja	SpG	Fol	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	T
				b							CS,t	** 782.0 792.0 CALCAREOUS SEDIMENT, talcose	b	2			5	5		12
				b									b	2			5	5		12
785.0													b	2			5	5		12
	100	90	R2	b	15	2							b	2			5	5		12
788.5				b	40								b	2			5	5		12
	100	90	R2	b	15	2					SS,t	** 792.0 807.0 SANDSTONE, talcose, medium-grey, scattered quartz in intervals looking like reworked crystal tuff	b	2			5	5		12
				b	30								b	2			5	5		12
				b									b	2			5	5		12
795.0				b									b	2			5	5		12
	99	90	R2	a	15	2							b	2			5	5		12
				a	40															
				a								Note: @ 806.5-807.5 Core broken, probable fault or shear zone								
				a																
805.0				a																
	100	90	R3	a	20	3					D	** 807.0 829.0 DACITE, subtle plag-phyric zones								
				a	40															
				a	60															
				a							TSp	^^ 814.0 827.0 Talcose Sediment, with pyrrhotite	c				15			15
815.0				a									c				15			15
	100	90	R3	a	25	2							c				15			15
				a	50							Note: @ 816.3 818.5 Granophyric quartz diorite sill	c				15			15
				b									c				15			15
				b									c				15			15
				b									c				15			15
											SS	^^ 827.0 829.0 Sandstone, reworked rhyolite crystal tuff, black, fine-grained, with scattered quartz	c				15			15
825.0													c				15			15
	100	100	R2	b	25	2							c				15			15
				b	40						TSp	** 829.0 844.0 TALC SEDIMENT, with pyrrhotite, massive sediment, with calcareous patches, disseminated pyrrhotite and pyrite	c				15			15
				b									c				15			15
				c									c				15			15
835.0				c									c				15			15
	100	100	R2	c	20	2							c				15			15
				c	40								c				15			15
				c									c				15			15
				c									c				15			15
845.0				b							VCS	** 844.0 859.0 VOLCANICLASTIC SEDIMENT, dark grey black, weakly bedded, reworked crystal tuff, has scattered quartz and spherulitic beds	c				15			15
	100	100	R3	b	30	2														
				b	50															
				b																

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

DRILL HOLE: LYN91-107

SULFIDES: (T)

A:1-5,B:5-10
% C:10-25,D:25-40
E:40-60,F:>60

Run	%	RQD	Rf	ABCDE	Jn	Jrc	Ja	SpG	Fol	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	T
										CSp	^^ 853.0 855.5 Calcareous Sediment, with pyrrhotite and chalcopyrite. VCS protolith.	c c		2 2			10 10		12 12
855.0				c c							Note: @ 854.0 855.0 Trace chalcopyrite and magnetite								
	100	100	R3	b	30	2													
				a	50				-45C	QD	** 859.0 990.6 QUARTZ DIORITE								
863.0				b b						gQD	^^ 859.0 864.8 Granophyric Quartz Diorite								
										Dd	^^ 864.8 867.1 Dacite Dike, plag-phyric								
									-30C -30C	gQD	^^ 867.1 892.0 Granophyric Quartz Diorite								

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

DRILL HOLE: LYN91-107

SULFIDES: % (T)
A:1-5,B:5-10
C:10-25,D:25-40
E:40-60,F:>60

Run	%	RQD	Rf	ABCDE	Jn	Jrc	Ja	SpG	Fol	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	T
											E.O.H. 991.0' (total depth)								

Noranda Exploration Inc.
Eastern Divison

HOLE SURVEY DATA

Footage	Bearing	Inclination

PROJECT: LYNNE P.D. 1876
CONTRACTOR: Midwest Drilling Co.
LOGGED BY: T. Harding
DATE COLLARED: 3-7-91
REMARKS:
CORE SIZE: NQ

HOLE NO: LYN91-108 (WDNR #276)

CO./STATE: Oneida, WI
SCALE: 1"=10'
DATE COMPLETED: 3-12-91

BEARING: S180E INCLINATION: -90 T.D: 521'
COORDINATES: L11400 E, 10100 N
ELEV: 1562.5' SEC: 15 TWP: 37N RANGE: 4E

DRILL HOLE SUMMARY

FOOTAGE	ROCK QUALITY	CODE	GEOLOGIC UNITS	MINERALIZATION & ALTERATION
0.0 71.0			** 0.0 71.0 OVERBURDEN	
71.0 105.3		R	** 71.0 105.3 RHYOLITE	
105.3 105.8		RS	** 105.3 105.8 TALC SEDIMENT OR TALC-ALTERED CRYSTAL TUFF	
105.8 125.0		R	** 105.8 125.0 RHYOLITE	
125.0 134.0		TS	** 125.0 134.0 TALC SEDIMENT OR TALC-ALTERED CRYSTAL TUFF	
134.0 202.0		R	** 134.0 202.0 RHYOLITE	
202.0 207.0		SS	** 202.0 207.0 SANDSTONE	
207.0 395.4		R	** 207.0 395.4 RHYOLITE	
368.0 373.0		FZ	Note: @ 368.0-373.0 Fault Zone	
373.0 395.4		DS	Note: @ 373.0-395.4 Dike Swarm	
395.4 401.8		Dd	** 395.4 401.8 DACITE DIKE, Plagphyric	
401.8 419.0		gQDd	** 401.8 419.0 QUARTZ DIORITE DIKE, Granophyric	

Noranda Exploration Inc.
Eastern Divison

HOLE SURVEY DATA

Footage	Bearing	Inclination

PROJECT: LYNNE P.D. 1876
CONTRACTOR: Midwest Drilling Co.
LOGGED BY: T. Harding
DATE COLLARED: 3-7-91
REMARKS:
CORE SIZE: NQ

HOLE NO: LYN91-108 (WDNR #276)

DATE: 12-18-

CO./STATE: Oneida, WI
SCALE: 1"=10'
DATE COMPLETED: 3-12-91

BEARING: S180E INCLINATION: -90 T.D: 521'
COORDINATES: L11400 E, 10100 N
ELEV: 1562.5' SEC: 15 TWP: 37N RANGE: 4E

DRILL HOLE SUMMARY

FOOTAGE	ROCK QUALITY	CODE	GEOLOGIC UNITS	MINERALIZATION & ALTERATION
419.0 439.0		pRd	** 419.0 439.0 PORPHYRITIC RHYOLITE DIKE	
439.0 469.5		gQDd	** 439.0 469.5 QUARTZ DIORITE DIKE, Granophyric	
469.5 505.3		SS	** 469.5 505.3 SANDSTONE	
505.3 521.0		QD	** 505.3 521.0 QUARTZ DIORITE	
505.3 510.0		gQD	^^ 505.3 510.0 Quartz Diorite, Granophyric	
			E.O.H. 521.0' (total depth)	

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

DRILL HOLE: LYN91-108

SULFIDES: % (T)

A:1-5,B:5-10
C:10-25,D:25-40
E:40-60,F:>60

Run	%	RQD	Rf	ABCDE	Jn	Jrc	Ja	SpG	Fol	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	T
0.0 71.0											** 0.0 71.0 OVERBURDEN								
										R	** 71.0 105.3 RHYOLITE								
										pRd	^^ 71.0 85.5 Rhyolite Porphyry Dike, oxidized, core broken, porphyritic texture, epidote alteration								
										Rc	^^ 85.5 105.3 Rhyolite Crystal Tuff, fine-grained, blue quartz eyes, very glassy, 1-2% iron sulfides-pyrite, core broken.	a				1			1
												a				1			1
												a				1			1
												a				1			1
												a				1			1
												a				1			1
												a				1			1
												a				1			1
												a				1			1
												a				1			1
									-70C	TS	** 105.3 105.8 TALC SEDIMENT, talc-chlorite altered rhyolite tuff, sharp depositional contacts, 2% py	a				1			1
												a				2			2
										Rc	** 105.8 125.0 RHYOLITE CRYSTAL TUFF, very glassy beige matrix, with blue quartz eyes and distinctive blotchy epidote alteration, especially @ 115.0-118.0								
										TS	** 125.0 134.0 TALC SEDIMENT, talc-chlorite sediment or altered crystal tuff								
										Rc	** 134.0 202.0 RHYOLITE CRYSTAL TUFF, as								

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

DRILL HOLE: LYN91-108

SULFIDES: % (T)
A:1-5,B:5-10
C:10-25,D:25-40
E:40-60,F:>60

Run	%	RQD	Rf	ABCDE	Jn	Jrc	Ja	SpG	Fol	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	T
											above.								
										pRs	^^ 137.0 141.0 Porphyritic Rhyolite Sill ?, upper contact broken, 50 degree lower contact rounded and lath-like plag with < 5% blue quartz eyes, grey, silicic matrix								
									-22C	Rc	^^ 141.0 168.0 Rhyolite Crystal Tuff, lt. grey, homogeneous, blue quartz eyes, fine-grained glassy matrix, patchy epidote or sericite alteration and patches or xenoliths of talcose chloritic material (like 132) with 1-2% py								
									-70B -70F -40F	Ch	^^ 168.0 169.0 Chert or silica-flooded VCS. At least 25 Ep-Chl-quartz fractures @ 70 degrees, 40 degrees to axis.								
										Rt	^^ 169.0 181.0 Rhyolite Tuff, as above.								
									-30B										
										Rc	^^ 181.0 202.0 Rhyolite Crystal Tuff Note: @ 181.0-189.5 Spherulitic top to homogeneous crystal tuff, with blue quartz eyes. Medium grey, chlorite-talc alteration @ base with 2-3% py. Reworked. Note: @ 189.5-202.0 At least five graded units, with crystal-rich bases. Lowest unit								

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

DRILL HOLE: LYN91-108

SULFIDES: (T)

A:1-5,B:5-10
% C:10-25,D:25-40
E:40-60,F:>60

Run	%	RQD	Rf	ABCDE	Jn	Jrc	Ja	SpG	Fol	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	T
											has lapilli @ base. Dacitic material increases toward top. Reworked.								
									-80C	SS	** 202.0 207.0 SANDSTONE, dark grey, massive epidote along fractures. 3-5% py and cp along fractures.								
										R	** 207.0 395.4 RHYOLITE								
										Rc	^^ 207.0 232.0 Rhyolite Crystal Tuff, glassy matrix, chlorite-blue quartz clots								
									-35C -50B										
										gR	^^ 232.0 252.0 Granophyric Rhyolite, glassy to granophyric, grey with pink patches, patchy epidote @ top								
									-90F										
									-45B	IR	^^ 252.0 343.8 Intrusive Rhyolite, porphyritic sill, with epidote alteration along fractures. Chilled margins.								

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

DRILL HOLE: LYN91-108

SULFIDES: (T)

% A:1-5,B:5-10
C:10-25,D:25-40
E:40-60,F:>60

Run	%	RQD	Rf	ABCDE	Jn	Jrc	Ja	SpG	Fol	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	T
									-10F										
									-5F -2F		Note: @ 330.8-333.0 Fracturing parallel to core axis								
									-32C	Rc	^^ 343.8 362.6 Rhyolite Crystal Tuff, fine-grained, subtle white feldspars, small blue								

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

DRILL HOLE: LYN91-108

SULFIDES: % (T)

A:1-5,B:5-10
C:10-25,D:25-40
E:40-60,F:>60

Run	%	RQD	Rf	ABCDE	Jn	Jrc	Ja	SpG	Fol	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	T
											quartz eyes, medium grey.								
									-52B										
										IR	^^ 362.6 373.0 Intrusive Rhyolite, beige, aphanitic								
									-20F		Note: @ 368.0-373.0 Fault Zone @ 20 degrees to core axis								
									-85F										
									-25F	pR	^^ 373.0 395.4 Porphyritic Rhyolite, large blue quartz eyes, distinct white feldspars, epidote alteration around fractures. Dark matrix.								
									-32F -35V		^^ 385.0 395.4 Phaneritic, epidote-altered to 395.4, upper contact spun.								
									-20C	D	** 395.4 401.8 DACITE, small white feldspars								
										QDd	** 401.8 419.0 QUARTZ DIORITE DIKE								
									-20C	Md	** 404.9 409.0 MAFIC DIKE								
									15C										
									-25C	pRd	** 419.0 439.0 PORPHYRITIC RHYOLITE DIKE, dark matrix, with porphyritic intervals and epidote alteration								

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

DRILL HOLE: LYN91-108

SULFIDES: % (T)

A:1-5,B:5-10
C:10-25,D:25-40
E:40-60,F:>60

Run	%	RQD	Rf	ABCDE	Jn	Jrc	Ja	SpG	Fol	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	T
										gQD	** 439.0 469.5 QUARTZ DIORITE, granophyric								
									-20C	SS	** 469.5 505.3 SANDSTONE, dense, grainy, fine-grained, black, calcite filled fractures, minor pyrite, flat lower contact crystal-rich beds @ 488.0-490.0	a				1		1
												a				1			1
												a				1			1
												a				1			1
												a				1			1
												a				1			1
												a				1			1
												a				1			1
												a				1			1
												a				1			1
												a				1			1
												a				1			1
												a				1			1
												a				1			1
												a				1			1
												a				1			1
												a				1			1
									-80C	QD	** 505.3 521.0 QUARTZ DIORITE	a				1			1

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

DRILL HOLE: LYN91-108

SULFIDES: (T) % A:1-5,B:5-10 C:10-25,D:25-40 E:40-60,F:>60

Run	%	RQD	Rf	ABCDE	Jn	Jrc	Ja	SpG	Fol	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	T
										gQD	^^ 505.3 510.0 Granophyric Quartz Diorite								
											E.O.H. 521' (total depth)								

Noranda Exploration Inc.
Eastern Divison

HOLE SURVEY DATA

Footage	Bearing	Inclination

PROJECT: LYNNE P.D. 1876
CONTRACTOR: Midwest Drilling Co.
LOGGED BY: T. Harding
DATE COLLARED: 3-7-91
REMARKS:
CORE SIZE: NQ

HOLE NO: LYN91-109 (WDNR #280)

CO./STATE: Oneida, WI
SCALE: 1"=10'
DATE COMPLETED: 3-18-91

BEARING: S180E INCLINATION: -63 T.D: 1705'
COORDINATES: L10600 E, 12330 N
ELEV: 1558.1' SEC: 15 TWP: 37N RANGE: 4E

DATE: 1-7-92

DRILL HOLE SUMMARY

FOOTAGE	ROCK QUALITY	CODE	GEOLOGIC UNITS	MINERALIZATION & ALTERATION
0.0 32.0			** 0.0 32.0 OVERBURDEN	
32.0 33.5		R	** 32.0 33.5 RHYOLITE	
33.5 41.0		D	** 33.5 41.0 DACITE	
41.0 49.5		R	** 41.0 49.5 RHYOLITE	
49.5 147.0		D	** 49.5 147.0 DACITE	
147.0 156.0		R	** 147.0 156.0 RHYOLITE	
156.0 188.5		D	** 156.0 188.5 DACITE	
188.5 352.0		SL	** 188.5 352.0 SILTSTONE	
352.0 492.5		R	** 352.0 492.5 RHYOLITE	
492.5 541.0		SL	** 492.5 541.0 SILTSTONE	
541.0 555.0		pR	** 541.0 555.0 PORPHYRITIC RHYOLITE	
555.0 591.0		SS	** 555.0 591.0 SANDSTONE	
591.0 748.0		R	** 591.0 748.0 RHYOLITE	
748.0 792.0		SL	** 748.0 792.0 SILTSTONE	

Noranda Exploration Inc.
Eastern Divison

HOLE SURVEY DATA

Footage	Bearing	Inclination

PROJECT: LYNNE P.D. 1876
CONTRACTOR: Midwest Drilling Co.
LOGGED BY: T. Harding
DATE COLLARED: 3-7-91
REMARKS:
CORE SIZE: NQ

HOLE NO: LYN91-109 (WDNR #280)

CO./STATE: Oneida, WI
SCALE: 1"=10'
DATE COMPLETED: 3-18-91

BEARING: S180E INCLINATION: -63 T.D: 1705'
COORDINATES: L10600 E, 12330 N
ELEV: 1558.1' SEC: 15 TWP: 37N RANGE: 4E

DRILL HOLE SUMMARY

FOOTAGE	ROCK QUALITY	CODE	GEOLOGIC UNITS	MINERALIZATION & ALTERATION
792.0 794.8		R	** 792.0 794.8 RHYOLITE	
794.8 840.0		SS	** 794.8 840.0 SANDSTONE	
840.0 855.0		R	** 840.0 855.0 RHYOLITE	
855.0 870.0		Ch	** 855.0 870.0 CHERT	
870.0 897.5		Chp	** 870.0 897.5 CHERT, With Pyrrhotite	
897.5 910.5		SS	** 897.5 910.5 SANDSTONE, QUARTZ WACKE	
910.5 918.5		TS	** 910.5 918.5 TALC SEDIMENT	
918.5 954.5		SS	** 918.5 954.5 SANDSTONE	
954.5 974.5		Ch	** 854.5 974.5 CHERT	
974.5 1105.5		R	** 974.5 1105.5 RHYOLITE	
1105.5 1126.5		SS	** 1105.5 1126.5 SANDSTONE	
1126.5 1670.4		R	** 1126.5 1670.4 RHYOLITE	
1670.4 1705.0		gQD	** 1670.4 1705.0 QUARTZ DIORITE, Granophyric	
			E.O.H. 1705' (total depth)	

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

LYN91-109

SULFIDES: % (T)

A:1-5,B:5-10
C:10-25,D:25-40
E:40-60,F:>60

Run	%	RQD	Rf	ABCDE	Jn	Jrc	Ja	Sp6	Fol	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	T
0.0 32.0											** 0.0 32.0 OVERBURDEN								
										R1	** 32.0 33.5 RHYOLITE LAPILLI TUFF, pink beige glassy subangular clasts and wispy pumice clasts in dark matrix. Flat lower contact with epidote alteration								
									-80C	D	** 33.5 41.0 DACITE, medium to dark grey, subtle plag phenocrysts. Epidote alteration.								
										R1	** 41.0 49.5 RHYOLITE LAPILLI TUFF, black matrix, pink-beige glassy clasts and pumice wisps as above, epidote alteration along contacts.								
									-80C	D	** 49.5 147.0 DACITE, medium to dark grey, subtle plag phenocrysts, grainy-looking. Patchy epidote alteration.								
									-80C -40C	R	^^ 100.3 101.7 Rhyolite, irregular embayed contacts, dark grey glassy matrix, highly fractured with iron staining.								
											Note: @ 118.0-120.0 Zone of orange								

ROCK QUALITY: FRACTURE FREQ. A:0-3,B:3-10 C:10-30,D:30-100 E:>100 cm.

LYN91-109

SULFIDES: (T) % A:1-5,B:5-10 C:10-25,D:25-40 E:40-60,F:>60

Run	%	RQD	Rf	ABCDE	Jn	Jrc	Ja	SpG	Fol	CODE	alteration	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	T
										Wf	~~	142.0 143.0 Feldspathic Wacke								
											~~	143.0 147.0 Vesiculated Basalt ?								
									-60C	R1	**	147.0 156.0 RHYOLITE, feldspathic-rich crystal tuff to lapilli tuff at base. Dark grey matrix with porphyritic rhyolite clasts.							
									-60C	D	**	156.0 188.5 DACITE, dark grey to black, plag-phyric intervals, with amgydaloidal or lapilli rich intervals @ 180.0-188.5							
												Note: @ 182.5 Minor actinolite or fiberous talc minerals, minor brecciation, also a decrease of feldspars in matrix.							
									-45C	SL	**	188.5 352.5 SILTSTONE, dark black, fine-grained, laminated							
									-40B			Note: @ 210.0-250.0 Minor quartz veining along fractures							

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

LYN91-109

SULFIDES: (T)

% A:1-5,B:5-10 C:10-25,D:25-40 E:40-60,F:>60

Run	%	RQD	Rf	ABCDE	Jn	Jrc	Ja	SpG	Fol	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	I
											Note: @ 238.0-240.5 Strong shearing								
									-50F	FZ	^^ 238.0 285.0 Fault Zone, zones of most intense shearing, brecciation and carbonate along fractures are noted.								
									-20F										
									-30F		Note: @ 248.0-250.0 Strong shearing								
									-30F		Note: @ 256.0-263.0 Intense shearing								
									-15F										
											Note: @ 264.0-266.0 Intense shearing								
									-40F		Note: @ 266.0-272.0 Strong shearing								
									-20F		Note: @ 272.0-282.0 Very intense shearing, brecciation and carbonate (including rhodonite) along fractures, trace serpentine.								
									-25F										
									-25F										
									-30F										
									-35B										
									-40B										
									-50F	FZ	^^ 325.0 327.0 Fault Zone, carbonblanite								

ROCK QUALITY: FRACTURE FREQ. A:0-3,B:3-10 C:10-30,D:30-100 E:>100 cm.

LYN91-109

SULFIDES: (T) % A:1-5,B:5-10 C:10-25,D:25-40 E:40-60,F:>60

Run	%	RQD	Rf	ABCDE	Jn	Jrc	Ja	SpG	Fol	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	T
									-30B		Note: @ 327.0-352.5 Laminations are more silicious "cherty".								
									-40B										
										R	** 352.5 492.5 RHYOLITE, predominantly rhyolite crystal lapilli tuff, with black and white plag-rich matrix, with lapilli-sized clasts of pink-beige porphyritic rhyolite. Upper contact ground.								
									-60C	pR	^^ 405.0 410.0 Porphyritic Rhyolite, black matrix, blue quartz eyes, chilled margins								

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

LYN91-109

SULFIDES: (T)

A:1-5,B:5-10
% C:10-25,D:25-40
E:40-60,F:>60

Run	%	RQD	Rf	ABCDE	Jn	Jrc	Ja	Sp6	Fol	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	T
									-20F		Note: @ 457.0-459.5 Fault zone, abundant clay gouge @ 459.0								
									-50C	SL	xx 492.5 541.0 SILTSTONE, black, very fine-grained, laminated								
									-50B	SLch	^^ 496.0 497.0 Siltstone, cherty, grey-black, laminated								
									-40F		Note: @ 507.0 Small (.1") fault or shear								
									-40B										

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

LYN91-109

SULFIDES: (T)

A:1-5,B:5-10
% C:10-25,D:25-40
E:40-60,F:>60

Run	%	RQD	Rf	ABCDE	Jn	Jrc	Ja	Sp6	Fol	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	T
									-45C	pR	** 541.0 555.0 PORPHYRITIC RHYOLITE, black matrix, blue quartz eyes, subtle upper contact-not chilled, roughly parallel to bedding.								
									-45C	SS	** 555.0 591.0 SANDSTONE, dark grey to black, massive and grainy								
									-30F	FZ	^^ 555.0 558.0 Fault Zone, intense shearing, moderate clay gouge and carbonate development, minor breccia and serpentine								
										R	** 591.0 748.0 RHYOLITE								
									-55C -50B -50B -30B	gIR	^^ 591.0 604.5 Granophyric Intrusive Rhyolite (?), tan granophyric matrix, moderate flow banding								
									-30C	Rcl	^^ 604.5 625.5 Rhyolite Crystal Lapilli Tuff, feldspar crystal rich, grey matrix, minor small blue quartz eyes.								
									-10C	Md	^^ 625.5 635.0 Mafic Dike, green-black, aphanitic								

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

LYN91-109

SULFIDES: % A:1-5,B:5-10 C:10-25,D:25-40 E:40-60,F:>60 (T)

Run	%	RQD	Rf	ABCDE	Jn	Jrc	Ja	Sp6	Fol	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	T
											medium grey, quartz eyes are small and grey.								
										Rcl	^^ 645.2 707.8 Rhyolite Crystal Lapilli Tuff, lt. to medium grey matrix, white plag-rich, blue quartz eyes.								
										gIR	^^ 707.8 723.0 Granophyric Intrusive Rhyolite, tan-orange to grey, feldspar rich.								
										gR	^^ 723.0 734.0 Granophyric Rhyolite, grey matrix with white plag laths								
									-608	Rc,ch	^^ 734.0 748.0 Interbedded Rhyolite Crystal Tuff and Cherty or Ashy Sediment								

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

LYN91-109

SULFIDES: (T)

% A:1-5,B:5-10 C:10-25,D:25-40 E:40-60,F:>60

Run	%	RQD	Rf	ABCDE		Jn	Jrc	Ja	Sp6	Fol	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	T
											SL	** 748.0 792.0 SILTSTONE								
	100	100	R3	c	10	3					SL	^^ 748.0 760.0 Siltstone, well laminated with interbedded laminated magnetite.								
				a	30															
				b	55					-70B										
				b																
755.0				c						-55B										
	100	100	R3	b	5	3														
				b	25					-35C	pRd	^^ 760.0 772.5 Porphyritic Rhyolite Dike, feldspar rich, large 3-5 mm feldspar phenocrysts, minor blue quartz eyes								
				b	50															
				b																
765.0				c																
	100	100	R3	b	10	2														
				c	35															
				c						-35C	SL	^^ 772.5 792.0 Siltstone, with moderate chlorite content, well laminated, abundant laminated magnetite, minor chert, laminations off-set by fractures, minor load casting (flame structures)								
				c						-64B										
775.0				c						-68B										
	100	100	R3	b	5	3				-48B										
				a	20					-25B										
				b	40															
				b																
785.0				b																
	100	100	R3	b	5	3														
790.0				c	30															
				c	60						R1	** 792.0 794.8 RHYOLITE LAPILLI TUFF, beige colored, ashy matrix, with subangular ashy clasts and quartz eyes	b			10			10
	100	95	R3	b	5	3							b			10				10
				b	30															
				b	50															
				b																
795.0				b							SS	^^ 794.8 840.0 Sandstone, green to black, very fine-grained, massive, weakly magnetic, epidote alteration and Fe-sulfides along high angle fractures.								
	100	100	R3	c	35	2														
				c	60															
				c																
				c																
805.0				c																
	100	100	R3	c	10	2														
				c	60															
				c																
				c																
815.0				c																

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

LYN91-109

SULFIDES: (T)

% A:1-5,B:5-10 C:10-25,D:25-40 E:40-60,F:>60

Run	%	RQD	Rf	ABCDE		Jn	Jrc	Ja	Sp6	Fol	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	T
											Rc	** 840.0 855.0 RHYOLITE CRYSTAL TUFF, trace lapilli sized cherty clasts, green chloritic matrix, medium to coarse-grained, occasional feldspar rich zones							
855.0																				
	100	90	R3	a	5	2					Ch	** 855.0 870.0 CHERT, grey to white, with epidote and possible feldspar, trace Fe-sulfides	a				1		1
				a	30								a				1		1
				b									a				1		1
				b									a				1		1
865.0				b									a				1		1
	100	100	R3	b	5	3							a				1		1
				c	30								a				1		1
				b	50						Chp	** 870.0 897.5 CHERT, with pyrrhotite, laminated, pyrite and pyrrhotite, minor brecciation or cherty clasts	b				3	5	8
874.0				b									b				3	5	8
	99	90	R3	b	5	3							b				3	5	8
875.0					30					-75B			b				3	5	8
					50								b				3	5	8
	99	90	R3	b	5	3							b				3	5	8
				c	30								b				3	5	8
880.0				b	50								b				3	5	8
	100	100	R3	c	35	2				-70B			b				3	5	8
				c	60								a				3		3
				c									a				3		3
				c						-65B			c	1			10		11
890.0				c									c	1			10		11
	100	100	R3	c	10	2							c	1			10		11
				c	30								c	1			10		11
895.0				c									c	1			10		11
	100	100	R3	c	10	2							c	1			10		11
				c	35						Wq	** 897.5 902.0 QUARTZ WACKE, with minor chert clasts	c	1			10		11
				c															
				c							SS	** 902.0 910.5 SANDSTONE, black, medium to coarse-grained, (similar texture as the above quartz wacke)							
				c															
905.0																			
	100	100	R3	c	10	2													
				c	30						TS	** 910.5 918.5 TALC SEDIMENT, grey soft sediment with bedded chert-pyrrhotite intervals and round glassy clasts as in LYN91-132.	a				5		5
				c									a				5		5
				b									a				5		5
915.0				c									a				5		5
	100	90	R3	c	15	2							a				5		5
				b	35					-70B	SS	** 918.5 954.5 SANDSTONE, green-black, fine to medium-grained, trace magnetite	b	1			5		6
				b															
923.0				c															
	100	90	R3	b	15	3													
				c	30														
930.0				b	50														
	100	100	R3	c	15	3													
				c	30														
935.0				c	50														

ROCK QUALITY: FRACTURE FREQ. A:0-3,B:3-10 C:10-30,D:30-100 E:>100 cm.

LYN91-109

SULFIDES: (T) % A:1-5,B:5-10 C:10-25,D:25-40 E:40-60,F:>60

Run	%	RQD	Rf	ABCDE	Jn	Jrc	Ja	SpG	Fol	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	T
										Ch	** 954.5 974.5 CHERT, grey, fractured								
											Note: @ 965.0-970.0 Rock very strongly fractured and broken, fault zone, minor gouge								
										R	** 974.5 1105.0 RHYOLITE								
										R1	^^ 974.5 1029.5 Rhyolite Lapilli Tuff, lt. grey to white matrix, with angular brown to dark brown pumice clasts. Subhedral pyrite 1-2%. Bedding/banding increases with depth. Biotite and epidote alteration of clasts. Distinctive because lack of blue quartz eyes.	a				1			1
												a				1			1
												a				1			1
												a				1			1
									-40B			a				1			1
												a				1			1
												a				1			1
												a				1			1
												a				2			2
												a				2			2
									-40B			a				2			2
												a				2			2
												a				2			2
												a				2			2
												a				2			2
												a				2			2
									-30B			a				2			2
												a				2			2
												a				2			2
												a				2			2
												a				2			2
												a				2			2
												a				2			2
												a				2			2
									-80C	*R	^^ 1029.5 1105.5 Spherulitic Rhyolite, grey, fine-grained matrix with spherulites or quartz phenocrysts, flat depositional upper, gradational lower contact	a				2			2

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

LYN91-109

SULFIDES: (T)

% A:1-5,B:5-10
C:10-25,D:25-40
E:40-60,F:>60

Run	%	RQD	Rf	ABCDE	Jn	Jrc	Ja	Sp6	Fol	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	T
											Note: @ 1054.3-1083.0 Increase in ash content, lt. grey to beige bleached zones and increased lapilli or shard content								
											Note: @ 1074.0-1126.5 Fault Zone, at high angle to core axis, quartz-carb-epidote-pyrrhotite gouge @ 1099.0, with brecciation in hanging wall, quartz vein @ 1095.0								
									-5F										
									-8F										
									-15F										
									-20F										
									-10F										
									-20F										
										SS	** 1105.5 1126.5 SANDSTONE, dark blue grey, massive, grainy, quartz-carb veinlets, with alteration @ margins								
									-20F										
									-17F	Rd	^^ 1111.5 1117.5 Rhyolite Dike, porphyritic to granophyric, highly fractured and oxidized.								
									-45F	R	** 1126.5 1670.4 RHYOLITE								
										Rt	^^ 1126.5 1164.5 Rhyolite Tuff, lt. grey, silicic pyroclastic base with blue quartz eyes, pumice clasts and shards. Fines up to fine-grained tuff with crystal beds and cherty beds and or clasts.								

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 ca.

LYN91-109

SULFIDES: (T)

A:1-5,B:5-10
% C:10-25,D:25-40
E:40-60,F:>60

Run	%	RQD	Rf	ABCDE	Jn	Jrc	Ja	SpG	Fol	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	T
											Note: @ 1154.5-1157.5 Minor crystal tuff interbed with blue quartz eyes								
									-25C	Dd	^^ 1164.5 1178.6 Dacite Dike, fine to medium-grained, numerous calcite filled fractures								
									-30C	gIR	^^ 1178.5 1179.5 Granophyric Rhyolite Dike grey, glassy								
									-40C	Rc	^^ 1179.5 1191.0 Rhyolite Crystal Tuff, tiny white plag laths and blue quartz eyes in fine-grained grey matrix								
									-40C	Rt	^^ 1191.0 1203.0 Rhyolite Tuff, fine-grained, medium grey, distinctive fracturing @ 40-60 degrees to axis with quartz-biotite (?) alteration. Also zoned alteration of round clasts or spots (0.5-1.0")								
										Rc	^^ 1203.0 1255.0 Rhyolite Crystal Tuff, granophyric grey matrix with tiny white plag laths and occasional blue quartz eyes. Quartz-feldspar-epidote alteration along fractures.								
									-30F										
									-30F										

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

LYN91-109

SULFIDES: (T)

A:1-5,B:5-10
% C:10-25,D:25-40
E:40-60,F:>60

Run	%	RQD	Rf	ABCDE	Jn	Jrc	Ja	Sp6	Fol	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	T
									-30C		aphanitic, epidote-carb alteration @ margins.								
										Rc	^^ 1256.0 1319.0 Rhyolite Crystal Tuff, as above.								
										Rc	^^ 1319.0 1344.0 Rhyolite Crystal Tuff, lt. grey to white, medium to coarse-grained, frequent blue quartz eyes, texture similar to a spherulitic rhyolite.								
										IR	^^ 1344.0 1370.0 Intrusive Rhyolite, moderately sheared @ 10-15 degrees to axis mottled texture, light grey matrix,								
									-25F										

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

LYN91-109

SULFIDES: (T)

A:1-5,B:5-10
% C:10-25,D:25-40
E:40-60,F:>60

Run	%	RQD	Rf	ABCDE	Jn	Jrc	Ja	Sp6	Fol	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	T
									-15F										
									-8F										
										Rc	^^ 1370.0 1407.0 Rhyolite Crystal Tuff, lt. grey to white, spherulitic-looking matrix, with blue quartz eyes. Chilled lower margin.								
									-20F	Dd	^^ 1407.0 1443.0 Dacite Dike, greenish-black, fine-grained, massive, high angle irregular upper contact, high angle lower contact.								
									-10F -15F	FZ	Note: @ 1422.0 1423.0 Fault Zone, moderate shearing and brecciation, with carbonate and chlorite alteration.								
									-30C	Rc	^^ 1443.0 1475.0 Rhyolite Crystal Tuff, lt. to medium grey, granophyric matrix, with blue quartz eyes and beige subrounded alteration spots.								

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

LYN91-109

SULFIDES: % (T)
A:1-5,B:5-10
C:10-25,D:25-40
E:40-60,F:>60

Run	%	RQD	Rf	ABCDE	Jn	Jrc	Ja	Sp6	Fol	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	T
											Note: @ 1462.0-1465.0 Matrix more crystal-rich, quartz eyes are much smaller.								
											Note: @ 1471.5-1475.0 Wispy pumice clasts with biotite & sericitic alteration.								
									-50C	SS	^^ 1475.0 1484.0 Sandstone, fine to medium-grained, massive, blue grey irregular alteration @ 50 degrees to core axis suggest subtle laminations. Fractured, irregular upper contact looks depositional lower contact gradational.								
										Rc	^^ 1484.0 1544.0 Rhyolite Crystal Tuff, lt. to medium grey, granophyric matrix with blue quartz eyes and possible spherulites.								
											Note: @ 1520.0-1544.0 Quartz eyes are in clots with epidote alteration, 1% Fe sulfides.	a				1			1
												a				1			1
												a				1			1
												a				1			1
												a				1			1
												a				1			1
												a				1			1
												a				1			1
												a				1			1
												a				1			1
												a				1			1
												a				1			1
									-10F	pRd	^^ 1544.0 1557.5 Porphyritic Rhyolite Dike, black matrix with large feldspars and blue quartz eyes, upper contact broken.	a				1			1

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

LYN91-109

SULFIDES: (T)

A:1-5,B:5-10
% C:10-25,D:25-40
E:40-60,F:>60

Run	%	RQD	Rf	ABCDE	Jn	Jrc	Ja	Sp6	Fol	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	T
											very silicic, medium to dark grey, granophyric matrix, tiny blue quartz eyes, not as many as above.								
											Note: @ 1568.0-1573.0 Rock very broken								
											Note: @ 1590.0-1670.4 Matrix become more silicic and mottled increased epidote alteration.								

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

LYN91-109

SULFIDES: (T)

A:1-5,B:5-10
% C:10-25,D:25-40
E:40-60,F:>60

Run	%	RQD	Rf	ABCDE	Jn	Jrc	Ja	Sp6	Fol	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	T
									-60C	gQD	** 1670.4 1705.0 QUARTZ DIORITE, Granophyric, lt. grey granophyric matrix with large anhedral feldspar phenocrysts, subtle contact-pronounced textural change, no blue quartz eyes or reddish discoloration.								
									-30										
											E.O.H. 1705' (total depth)								

Noranda Exploration Inc.
Eastern Divison

HOLE SURVEY DATA

Footage	Bearing	Inclination
150'	182.0	-56.0
300'	183.2	-55.2
450'	183.7	-53.6
600'	185.3	-52.0
750'	186.9	-51.2
935'	188.9	-48.0

PROJECT: LYNNE P.D. 1876
CONTRACTOR: Midwest Drilling Co.
LOGGED BY: T. Harding
DATE COLLARED: 3-10-91
REMARKS:
CORE SIZE: NQ

HOLE NO: LYN91-110 (WDNR #277)

CO./STATE: Oneida, WI
SCALE: 1"=10'
DATE COMPLETED: 3-14-91

BEARING: S183.9E INCLINATION: -58.2 T.D: 935'
COORDINATES: L8400 E, 12400 N
ELEV: 1561.1' SEC: 15 TWP: 37N RANGE: 4E

DATE: 9-10-91
PAGE 1 OF 13

DRILL HOLE SUMMARY

FOOTAGE	ROCK QUALITY	CODE	GEOLOGIC UNITS	MINERALIZATION & ALTERATION
0.0 66.0			** 0.0 66.0 OVERBURDEN	
66.0 191.5		R	** 66.0 191.5 RHYOLITE	
191.5 258.7		SS	** 191.5 258.7 SANDSTONE	
258.7 712.5		R	** 258.7 712.5 RHYOLITE	
309.0 329.5		SS	^^ 309.0 329.5 Sandstone	
712.5 746.6		D/SS	** 712.5 746.6 DACITE/SANDSTONE	
746.6 789.5		R	** 746.6 789.5 RHYOLITE	
789.5 851.0		D	** 789.5 851.0 DACITE	
825.0 829.7		gQD	^^ 825.0 829.7 Quartz Diorite Dike, Granophyric	
851.0 935.0		QD	** 851.0 935.0 QUARTZ DIORITE	
851.0 880.0		gQD	^^ 851.0 880.0 Granophyric Quartz Diorite	
			E.O.H. 935' (total depth)	

DRILL HOLE: LYN91-110

ROCK QUALITY: FRACTURE FREQ. A:0-3,B:3-10 C:10-30,D:30-100 E:>100 cm.

SULFIDES: % (T) A:1-5,B:5-10 C:10-25,D:25-40 E:40-60,F:>60

Run	%	RQD	Rf	ABCDE	Jn	Jrc	Ja	SpG	Fol	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	T
0.0 66.0											** 0.0 66.0 OVERBURDEN								
										R	** 66.0 191.5 RHYOLITE								
										RI	^^ 66.0 120.5 Rhyolite Lapilli Tuff to Rhyolite Crystal Lapilli Tuff, oxidized crystals								
											Note: @ 70.0 100.0 Core brolen								
										SL	^^ 120.5 121.5 Siltstone								
										pR	^^ 121.5 124.5 Porphyritic Rhyolite								
										SL	^^ 124.5 133.0 Siltstone, grainy, but laminated, green-grey								

ROCK QUALITY: FRACTURE FREQ. A:0-3,B:3-10 C:10-30,D:30-100 E:>100 cm.

DRILL HOLE: LYN91-110

SULFIDES: (T) % A:1-5,B:5-10 C:10-25,D:25-40 E:40-60,F:>60

Run	%	RQD	Rf	ABCDE	Jn	Jrc	Ja	SpG	Fol	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	T
										R	^^ 133.0 191.5 Rhyolite Flow, green-grey glassy matrix with porphyritic rhyolite clasts, clast size increases with depth							
										SS	** 191.5 258.7 SANDSTONE, green-grey, bleached, massive, looks sheared (almost schisty)							

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

DRILL HOLE: LYN91-110

SULFIDES: % (T)
A:1-5,B:5-10
C:10-25,D:25-40
E:40-60,F:>60

Run	%	RQD	Rf	ABCDE	Jn	Jrc	Ja	SpG	Fol	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	I
											Note: @ 226.0 235.5 Weird white brassy alteration								
										R	** 258.7 712.5 RHYOLITE								
										Rcl	^^ 258.7 309.0 Rhyolite Crystal Lapilli Tuff								

ROCK QUALITY:

FRACTURE FREQ.
A:0-3,B:3-10
C:10-30,D:30-100
E:>100 cm.

DRILL HOLE: LYN91-110

SULFIDES: (T)

A:1-5,B:5-10
% C:10-25,D:25-40
E:40-60,F:>60

Run	%	RQD	Rf	ABCDE	Jn	Jrc	Ja	SpG	Fol	CODE	Lithology	Total%	Sp	Cp	Ga	Py	Po	As	T
											Note: @ 297.0 300.0 Calcareous alteration								
										SS	^^ 309.0 329.5 Sandstone								
											Note: @ 329.5 332.0 Fracture, granophyric dike.								
										gR	^^ 329.5 438.5 Granophyric Rhyolite, moderately sheared (possibly Intrusive Rhyolite)								
									-30		Note: @ 340.5 Fracture, dike infilling, chlorite and carbonate margins								