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RAPPORT D'EXPLORATION MINIERE, PROJET MEGATEM JV1, BLOC DE SELBAIE OUEST

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RAPPORT D'EXPLORATION MINIÈRE

Projet : MEGATEM JV1, Bloc de Selbaie Ouest
Numéro de projet : 554
Abitibi
32E/14 et 32E/15
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TABLE DES MATIÈRES

1. Objectif des travaux et stratégie d'exploration

Le projet MEGATEM-Selbaie Ouest visait à tester, par géophysique au sol et, éventuellement, par forage, les meilleurs conducteurs détectés par un levé aéroporté de type MEGATEM II effectué à la fin de l'année 2001. Le projet MEGATEM-Selbaie Ouest a été initiés à l'été 2001 suite à la conclusion d'une alliance stratégique entre Noranda inc.-Novicourt inc. (55%) et Virginia Gold Mines inc. (45%). Noranda inc. est l'unique opérateur du projet.

L'alliance stratégique a été conclue dans le but d'effectuer une série de levés de géophysique aéroportée de type MEGATEM II. La technologie MEGATEM II a été développée par la compagnie Fugro Airborne Survey en collaboration avec Noranda inc. Cette technologie, supérieure aux systèmes utilisés par le passé pour la détection d'amas sulfurés, possède une capacité de pénétration accrue du mort-terrain et, par le fait même, une plus grande profondeur d'investigation. En effet, il s'agit d'un levé de type électromagnétique à forte pénétration permettant de détecter des gisements de type sulfures massifs jusqu'à une profondeur de 250 mètres. Le dépôt Persévérance (5 MT à 15,82% Zn, 1,24% Cu et 29,37 gpt Ag) a d'ailleurs été découvert à l'aide d'un levé MEGATEM II au printemps 2000.

Le potentiel de la ceinture volcanique archéenne de l'Abitibi pour les sulfures massifs volcanogènes (SMV) n'est évidemment plus à démontrer de par la présence de camps miniers importants tels que Noranda, Matagami, Selbaie, Joutel et Val d'Or.

2. Description générale

De façon générale, chaque anomalie détectée par le levé MEGATEM a été considérée selon sa signature géophysique, son contexte géologique, la présence de travaux antérieurs et la présence ou non de minéralisation ou d'altération volcanogène proximale. Les anomalies ont ensuite été prioritisées et les plus significatives ont été jalonnées durant l'hiver 2001-2002.

Suite au traitement des données du levé MEGATEM de Selbaie Ouest, les titres miniers sélectionnés couvrant les conducteurs électromagnétiques les plus prometteurs, ont été l'objet de travaux d'exploration au sol.

Les différents travaux de suivi au sol avaient comme objectifs :

- de localiser précisément au sol la position du conducteur sur un réseau de lignes espacées de 100 mètres, soit deux fois plus rapprochées que les lignes de vol du MEGATEM
- de mieux définir la géométrie du conducteur, c'est-à-dire sa longueur, sa largeur, son pendage et sa plongée afin de planifier un forage optimum dans les cas où les résultats indiquaient une cible de taille suffisante.
- de caractériser les propriétés physiques du conducteur, c'est-à-dire sa conductivité, son magnétisme afin de valider la cible et confirmer ou infirmer la pertinence du forage. La cible recherchée devait montrer une conductivité moyenne à élevée normalement obtenue par une réponse claire des canaux 12 et plus du levé 'TDEM' . La cible recherchée pouvait avoir ou ne pas avoir de réponse magnétique mais une anomalie magnétique coïncidente permettait d'augmenter les chances d'intercepter un amas de sulfures.

Les différents travaux de suivi effectués comprenaient donc la coupe de grilles de lignes de localisation, des levés magnétiques et des levés électromagnétiques dans le domaine du temps

à grande boucle (ou 'TDEM'). Ceux-ci ont été réalisés au-dessus des huit cibles MEGATEM sélectionnées.

De plus, des sondages au diamant furent effectués sur les quatre cibles présentant des résultats de géophysique au sol suggérant la présence de sulfures massifs. Finalement, des levés électromagnétiques (de type 'Pulse') furent menés dans les trous de forage afin de vérifier si le sondage avait bien atteint la cible.

3. Localisation des travaux

Les cinq propriétés du projet MEGATEM Selbaie Ouest décrites dans ce rapport sont couvertes par les feuillets SNRC 32E/14 et 32E/15. Les propriétés Brouillan A-02-01 (bloc de 4 claims) et Brouillan A-02-02 (bloc de 50 claims) se trouvent, respectivement, à 3 et 5 km au sud-ouest de la mine Selbaie et couvrent l'anomalie MEGATEM BRO-306 ainsi que les anomalies BRO-02, BRO-101 et BRO-309. Les propriétés Carheil A-02-03 (bloc de 6 claims) et Carheil A-02-09 (bloc de 20 claims) sont localisées, respectivement, à 12.5 km et 15 km à l'ouest de la mine Selbaie et englobent l'anomalie CAR-03 ainsi que les anomalies CAR-11 et CAR-303. Finalement, la propriété Enjalran A-02-01 (bloc de 4 claims), située à 27 km à l'ONO de Selbaie, couvre le conducteur MEGATEM ENJ-101 (figures 1 et 2; annexes 1 et 2).

4. Travaux antérieurs

Les cinq propriétés retenues du projet MEGATEM-Selbaie Ouest se trouvent dans des secteurs où la densité des travaux d'exploration est modérée. Une compilation exhaustive des travaux antérieurs a permis d'éliminer les anomalies MEGATEM qui avaient déjà été vérifiées par forage. Il faut mentionner que de nouveaux conducteurs ont été mis à jour par le levé MEGATEM. Ces derniers représentent des cibles d'exploration vierges de tous travaux antérieurs ciblés.

5. Contexte géologique régional

La composition du socle du territoire situé à l'ouest du secteur de la mine Selbaie est peu connue vu l'important recouvrement quaternaire. Il comprend une alternance de bandes sédimentaires et volcaniques orientées est-ouest faisant partie du Sillon volcano-sédimentaire Harricana-Turgeon (Lacroix, 1990). La moitié nord du secteur regroupant les propriétés comprend les volcanites mafiques à felsiques du Groupe de Brouillan-Fénelon tandis que la moitié sud regroupe principalement les volcanites et les intrusions mafiques appartenant au Groupe d'Enjalran-Bapst. Le contact entre les deux groupes est occupé par une unité sédimentaire composée de tuf et de mudrock graphiteux appartenant au Groupe d'Enjalran-Bapst. Au sud, le Groupe d'Enjalran-Bapst se trouve en contact avec le groupe métasédimentaire de Taïbi lequel est constitué de schiste à amphibole et biotite (grès et mudrock représentent les protolites probables). On note également plusieurs intrusions principalement syn à tarditectoniques de composition gabbroïque à granodioritique qui se sont mises en place au sein de l'empilement volcano-sédimentaire dont les plutons dioritiques à tonalitiques de Brouillan et de Carheil (figure 2).

Le secteur décrit est affecté par quatre phases de déformation bien que les deux premières soient de loin les plus importantes. La première phase est à l'origine du grain tectonique et de la schistosité régionale orientés NO-SE à est-ouest.

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6. Travaux réalisés en 2002 et 2003

Au cours de l'année 2002, sept grilles de lignes de localisation ont été coupées sur les cinq propriétés afin de bien couvrir les anomalies MEGATEM visées. Ces petites grilles sont, en général, composées de quatre lignes longues de 900 mètres et de deux lignes de 600 mètres ainsi que d'une ligne de base et d'une ligne de rattachement de 500 mètres de longueur. Elles comportent 5.8 kilomètres de lignes au total.

Ces grilles ont ensuite été couvertes par des levés géophysiques au sol incluant des levés magnétiques, exécutés par la compagnie Services Exploration enr. de Rouyn-Noranda, et des levés électromagnétiques dans le domaine du temps à grande boucle ('TDEM'), effectués par la compagnie Quantec Géoscience inc. de Porcupine en Ontario. Les méthodes utilisées et les résultats de ces levés sont présentés dans les annexes 6 et 7.

Quatre sondages ont été réalisés sur quatre anomalies MEGATEM différentes au printemps 2003 par la compagnie Forage Major de Val-d'Or pour un total de 452 mètres forés (annexe 3). Les résultats de ces forages sont résumés dans le tableau I. Quelques 109 échantillons ont été prélevés en forage dont 19 pour les analyses de roche entière et 90 pour les analyses économiques (annexes 4 et 5). Les éléments majeurs (roche entière) ont été analysés par la méthode fluorescence X tandis que les échantillons économiques ont été analysés par 'ICP' ('Induced Coupled Plasma'). Tous les échantillons ont été envoyés chez ALS Chemex Chimitec de Vald'Or.

Trois des quatre sondages ont fait l'objet d'un levé électromagnétique avec la méthode PULSE-EM en forage par la compagnie Géophysique TMC de Val d'Or (annexe 8).

7. Résultats des travaux par propriété

Propriété Brouillan A-02-01

Le levé magnétique au sol montre que le conducteur MEGATEM BRO-306 (situé le plus à l'est des trois signaux MEGATEM) se trouve au sein d'une zone faiblement magnétique. Les valeurs maximales y sont légèrement plus élevées que la valeur moyenne des lectures (annexe 6). Le levé électromagnétique dans le domaine du temps à grande boucle ('TDEM') montre sans équivoque que le conducteur en est un de mort-terrain. En effet, celui-ci ne ressort que sur les premiers canaux et n'apparaît pas sur le dixième et encore moins sur le quinzième canal. Aucun travail supplémentaire n'a donc été réalisé sur cette cible.

Propriété Brouillan A-02-02

Cette propriété renferme trois grilles de lignes lesquelles couvrent les anomalies MEGATEM BRO-02, BRO-101 et BRO-302.

Le levé magnétique au sol indique que l'anomalie MEGATEM BRO-02 (le plus à l'est deux signaux MEGATEM) se trouve en bordure d'une anomalie magnétique plus ou moins circulaire d'environ 200 mètres de diamètre (annexe 6). Les valeurs y sont de 1.5 à 2 fois plus élevées que la moyenne des valeurs environnantes. Le levé électromagnétique dans le domaine du temps à grande boucle ('TDEM') indique clairement que le conducteur se situe dans le socle

TABLEAU I : Sommaire des résultats des sondages.

TROU NO.	GRILLE LOC X	GRILLE LOC Y	AZIMUTH	PLONGÉE	TERMINÉ LE	MORT-TERRAIN	LONGUEUR	RÉSULTATS	ROCHE HÔTE	INTERVALLE	RÉSULTATS D'ANALYSES
BRO-101-03-01	200 E	280 S	N020	-55	7-Mar-03	51.0	275.0	30-50% Po-Py as semi-massive to massive forms	Felsic lapillis-crystals tuff	1) 137.0 - 138.6 2) 140.2 - 141.0	n.s.a.
CAR-03-03-01	200 E	270 S	N350	-55	19-Mar-03	62.0	275.0	Semi-massive to massive sulphides 40-80% Po-Py (nodular)	horitic horizon located at the contact between a massive and brecciated andesites	136.1 - 138.5	n.s.a.
BRO-309-03-01	200 E	280 S	N015	-55	22-Mar-03	9.0	200.0	3-5% Po-Py mainly as dissemination	Intermediate crystals tuff	63.5 - 89.5	n.s.a.
BRO-02-03-01	800 E	215 N	N015	-55	27-Mar-03	40.0	260.0	1) 5-15% Py-Po-Mt as dissemination and stringers 2) 5-15% Po, Py, Cp as disseminations, stringers and semi-massive bands	Breccia flows amdesite	1) 103.4 - 124.6 2) 165.7 - 167.5	n.s.a.

puisqu'il est perçu dans les quinze premiers canaux. Le sondage BRO-02-03-01 visant à tester ce conducteur a intercepté deux niveaux de brèche de coulée andésitique minéralisés entre 103.4 et 124.6 et entre 165.7 et 167.5 mètres. Ils contiennent 5 à 15% de sulfures (pyrrhotite, pyrite et, localement, chalcopyrite) et de la magnétite sous forme disséminée et/ou en veinules. Le second intervalle renferme un horizon de 30 centimètres d'épaisseur avec 25% de pyrrhotite en petites bandes semi-massives de 5 à 10 centimètres d'épaisseur. Aucune valeur significative n'a été obtenue à l'analyse. La minéralisation rencontrée en forage expliquant probablement le conducteur ciblé, aucun travail additionnel n'est proposé.

L'anomalie BRO-309 est constituée de deux signaux MEGATEM dont le plus fort est à l'est. Elle est située juste à la marge nord d'une faible anomalie magnétique allongée selon un axe est-ouest et longue d'environ 150 mètres. Le levé 'TDEM' la fait ressortir très bien dans les quinze premiers canaux; il s'agit clairement d'une anomalie de socle. Le conducteur est probablement associé à un tuf intermédiaire minéralisé contenant 3 à 5% de pyrrhotite et de pyrite disséminées dans l'intervalle 63.5 à 89.5 mètres. Le levé 'PULSE-EM' effectué dans le trou de forage BRO-309-03-01 corrobore d'ailleurs cette interprétation. Aucune teneur significative n'a été retournée par les échantillons prélevés.

Au moins deux des signaux MEGATEM constituant l'anomalie BRO-101 sont situées à la bordure nord d'une anomalie magnétique englobant deux hauts magnétiques dont les valeurs sont 1.5 à 2 fois supérieures à celles de la moyenne. La signature de ce conducteur obtenue par le levé 'TDEM' se superpose très bien à celle de l'anomalie magnétique. Le sondage BRO-101-03-01, réalisé pour vérifier le conducteur, a recoupé un tuf felsique à lapilis et à cristaux minéralisé renfermant 5 à 50% de pyrite et de pyrrhotite sous forme disséminée à massive. L'unité comprise dans l'intervalle 120.7 à 141.0 mètres montre une altération variable en séricite, en silice et en chlorite. Le levé 'PULSE-EM' fait ressortir un conducteur qui correspond à celui décrit. Les échantillons recueillis n'ont pas donné de valeur significative.

Propriété Carheil A-02-03

Le levé magnétique effectué sur cette propriété couvre l'anomalie MEGATEM CAR-03 laquelle se trouve dans une dépression magnétique. Le levé électromagnétique 'TDEM' a détecté le conducteur seulement dans les canaux les plus élevés; ceci étant dû à la forte épaisseur de mort-terrain qui masque le conducteur.

Le sondage CAR-03-03-01 lequel visait ce conducteur a recoupé, entre 136.10 et 138.5 mètres, un horizon de roche chloriteuse vert foncé contenant 40 à 50% de pyrite et de pyrrhotite nodulaires semi-massives à massives. L'horizon est situé au contact entre une épaisse unité felsique fragmentaire et une coulée intermédiaire à felsique. Le levé 'PULSE_EM' en forage a confirmé l'existence d'un conducteur traversé par le sondage à une profondeur de 130 mètres. Il indique également qu'il se poursuit en allant vers le sud-est. Aucune valeur significative n'est ressortie des résultats d'analyse.

Propriété Carheil A-02-09

L'anomalie MEGATEM CAR-11 se trouvant sur cette propriété correspond au signal électromagnétique le plus au nord sur la grille. Le levé magnétique indique que CAR-11 se trouve juste au sud-ouest d'une très petite anomalie magnétique dont les valeurs sont très légèrement au-dessus de celle de la moyenne. De plus, le levé électromagnétique dans le domaine du temps à grande boucle ('TDEM') ne fait ressortir aucune anomalie de socle (annexe

7). Les patrons très fluctuant obtenus aux différents canaux sont, en bonne partie, attribuables à la forte épaisseur de mort-terrain conducteur. Aucun sondage n'est donc proposé sur cette cible.

Propriété Enjalran A-02-01

La grille de cette propriété couvre le conducteur MEGATEM ENJ-101 lequel se situe à la bordure est d'une petite anomalie magnétique bien circonscrite de moins de 100 mètres de diamètre et dont les valeurs atteignent 2 fois celles environnantes. Le levé électromagnétique montre que l'anomalie détectée dans les dix premiers canaux ne persiste pas jusqu'au quinzième canal. Il s'agit probablement de l'effet d'une forte épaisseur de mort-terrain conducteur. Ces résultats peu prometteurs ne justifient pas de travaux supplémentaires sur cette cible.

8. Conclusions et recommandations

Les levés de géophysique au sol réalisés sur les cinq propriétés ont permis de mieux définir les cinq anomalies MEGATEM sélectionnées. Particulièrement, les levés électromagnétiques dans le domaine du temps à grande boucle ont permis de distinguer efficacement entre les conducteurs de socle et ceux de mort-terrain. Ainsi, les quatre conducteurs les plus prometteurs, BRO-02, BRO-101, BRO-309 et CAR-03, ont été testés par forage. Malheureusement, aucun de ceux-ci n'a retourné de résultats analytiques significatifs.

Compte tenu des résultats décevants obtenus lors de cette campagne, il n'est pas recommandé d'effectuer des travaux additionnels sur ces propriétés dans un avenir rapproché. Une réévaluation de ce secteur en utilisant les nouvelles données récoltées lors des travaux permettra peut-être de modifier notre approche afin d'optimiser les chances de succès.

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9. Références

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Lacroix, S., 1990. Géologie de la région des rivières Turgeon et Théo. Ministère de l'Énergie et des Ressources du Québec. MB 90-28. 22 pages, 12 plans.

ANNEXE 1

Liste des propriétés et des titres miniers

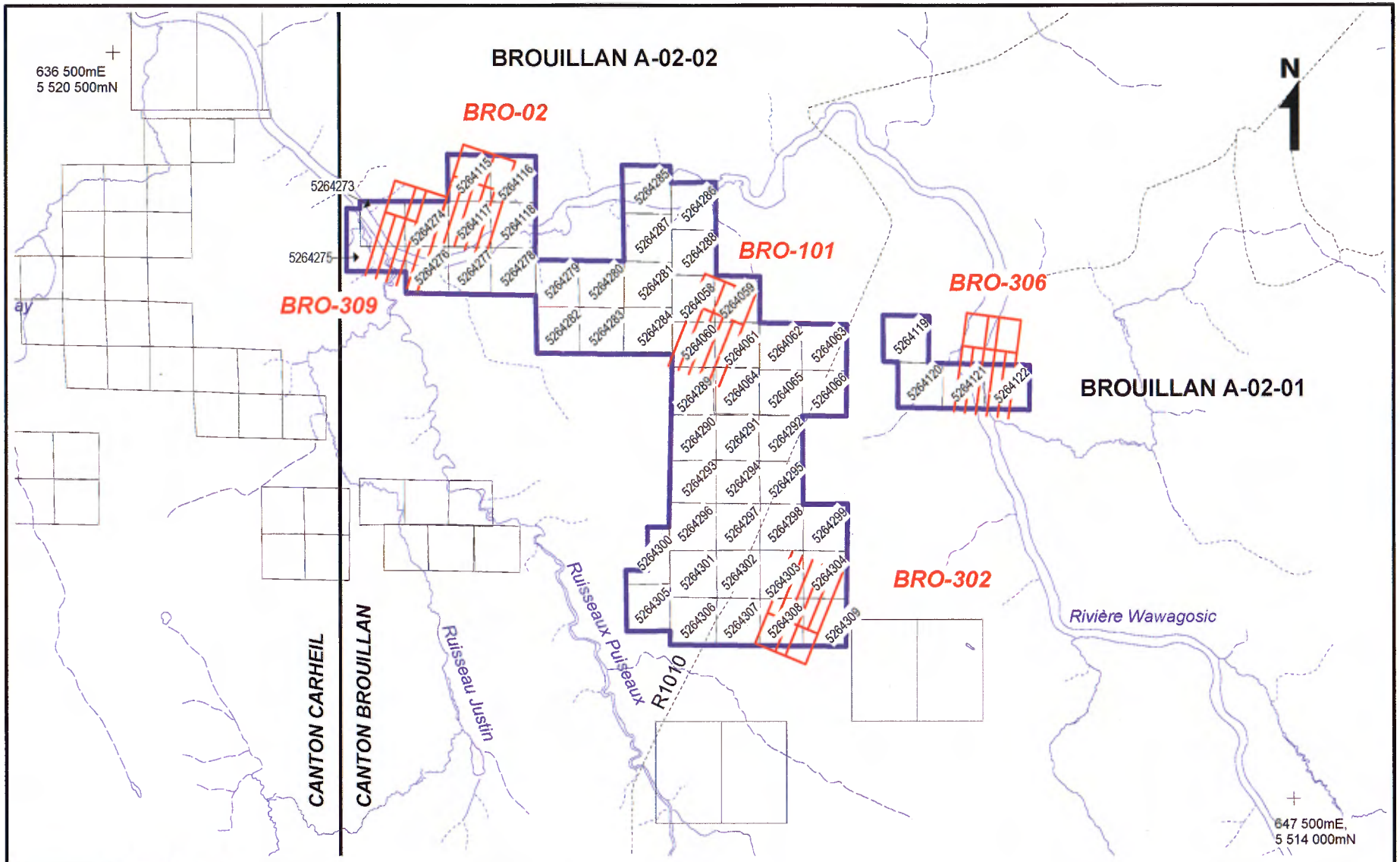
LISTE DES PROPRIÉTÉS ET DES CLAIMS

Propriété	Canton	No de claim	No de rang	No de lot	Superficie	Date d'enregistr.	Date d'expir.
Brouillan A-02-01	BROUILLAN	5264119	19	14	16.00	20020619	20040618
	BROUILLAN	5264120	18	14	16.00	20020619	20040618
	BROUILLAN	5264121	18	15	16.00	20020619	20040618
	BROUILLAN	5264122	18	16	16.00	20020619	20040618
Brouillan A-02-02	BROUILLAN	5264058	20	9	16.00	20020619	20040618
	BROUILLAN	5264059	20	10	16.00	20020619	20040618
	BROUILLAN	5264060	19	9	16.00	20020619	20040618
	BROUILLAN	5264061	19	10	16.00	20020619	20040618
	BROUILLAN	5264062	19	11	16.00	20020619	20040618
	BROUILLAN	5264063	19	12	16.00	20020619	20040618
	BROUILLAN	5264064	18	10	16.00	20020619	20040618
	BROUILLAN	5264065	18	11	16.00	20020619	20040618
	BROUILLAN	5264066	18	12	16.00	20020619	20040618
	BROUILLAN	5264115	22	4	16.00	20020619	20040618
	BROUILLAN	5264116	22	5	16.00	20020619	20040618
	BROUILLAN	5264117	21	4	16.00	20020619	20040618
	BROUILLAN	5264118	21	5	16.00	20020619	20040618
	BROUILLAN	5264273	21	2	16.00	20020801	20040731
	BROUILLAN	5264274	21	3	16.00	20020801	20040731
	BROUILLAN	5264275	0	0	16.65	20020801	20040731
	BROUILLAN	5264276	20	3	16.00	20020801	20040731
	BROUILLAN	5264277	20	4	16.00	20020801	20040731
	BROUILLAN	5264278	20	5	16.00	20020801	20040731
	BROUILLAN	5264279	20	6	16.00	20020801	20040731
	BROUILLAN	5264280	20	7	16.00	20020801	20040731
	BROUILLAN	5264281	20	8	16.00	20020801	20040731
	BROUILLAN	5264282	19	6	16.00	20020801	20040731
	BROUILLAN	5264283	19	7	16.00	20020801	20040731
	BROUILLAN	5264284	19	8	16.00	20020801	20040731
	BROUILLAN	5264285	22	8	16.00	20020801	20040731
	BROUILLAN	5264286	22	9	16.00	20020801	20040731
	BROUILLAN	5264287	21	8	16.00	20020801	20040731
	BROUILLAN	5264288	21	9	16.00	20020801	20040731
	BROUILLAN	5264289	18	9	16.00	20020801	20040731
	BROUILLAN	5264290	17	9	16.00	20020801	20040731
	BROUILLAN	5264291	17	10	16.00	20020801	20040731
	BROUILLAN	5264292	17	11	16.00	20020801	20040731
	BROUILLAN	5264293	16	9	16.00	20020801	20040731
	BROUILLAN	5264294	16	10	16.00	20020801	20040731
	BROUILLAN	5264295	16	11	16.00	20020801	20040731
	BROUILLAN	5264296	15	9	16.00	20020801	20040731
	BROUILLAN	5264297	15	10	16.00	20020801	20040731
	BROUILLAN	5264298	15	11	16.00	20020801	20040731
	BROUILLAN	5264299	15	12	16.00	20020801	20040731
	BROUILLAN	5264300	14	8	16.00	20020801	20040731
	BROUILLAN	5264301	14	9	16.00	20020801	20040731
	BROUILLAN	5264302	14	10	16.00	20020801	20040731
	BROUILLAN	5264303	14	11	16.00	20020801	20040731
	BROUILLAN	5264304	14	12	16.00	20020801	20040731
	BROUILLAN	5264305	13	8	16.00	20020801	20040731
	BROUILLAN	5264306	13	9	16.00	20020801	20040731
	BROUILLAN	5264307	13	10	16.00	20020801	20040731
	BROUILLAN	5264308	13	11	16.00	20020801	20040731
	BROUILLAN	5264309	13	12	16.00	20020801	20040731

Propriété	Canton	No de claim	No de rang	No de lot	Superficie	Date d'enregistr.	Date d'expir.
Carheil A-02-03	CARHEIL	5264089	21	33	16.00	20020619	20040618
	CARHEIL	5264090	21	34	16.00	20020619	20040618
	CARHEIL	5264091	20	33	16.00	20020619	20040618
	CARHEIL	5264092	20	34	16.00	20020619	20040618
	CARHEIL	5267038	0	0	14.90	20030929	20050928
	CARHEIL	5267039	0	0	15.25	20030929	20050928
Carheil A-02-09	CARHEIL	5264082	26	23	16.00	20020619	20040618
	CARHEIL	5264083	26	24	16.00	20020619	20040618
	CARHEIL	5264084	26	25	16.00	20020619	20040618
	CARHEIL	5264085	26	26	16.00	20020619	20040618
	CARHEIL	5264086	26	27	16.00	20020619	20040618
	CARHEIL	5264087	25	24	16.00	20020619	20040618
	CARHEIL	5264088	25	25	16.00	20020619	20040618
	CARHEIL	5264125	25	26	16.00	20020619	20040618
	CARHEIL	5264126	25	27	16.00	20020619	20040618
	CARHEIL	5264127	24	25	16.00	20020619	20040618
	CARHEIL	5264128	24	26	16.00	20020619	20040618
	CARHEIL	5264129	24	27	16.00	20020619	20040618
	CARHEIL	5264130	23	25	16.00	20020619	20040618
	CARHEIL	5264131	23	26	16.00	20020619	20040618
	CARHEIL	5264132	23	27	16.00	20020619	20040618
	CARHEIL	5267031	9	42	17.33	20030929	20050928
	CARHEIL	5267032	0	0	18.09	20030929	20050928
	CARHEIL	5267045	0	0	17.64	20030929	20050928
	CARHEIL	5267046	0	0	18.31	20030929	20050928
	CARHEIL	5267047	0	0	17.08	20030929	20050928
Enjalran A-02-01	ENJALRAN	5264093	30	35	16.00	20020619	20040618
	ENJALRAN	5264094	30	36	16.00	20020619	20040618
	ENJALRAN	5264095	29	35	16.00	20020619	20040618
	ENJALRAN	5264096	29	36	16.00	20020619	20040618

ANNEXE 2

Cartes de localisation des propriétés et des titres miniers



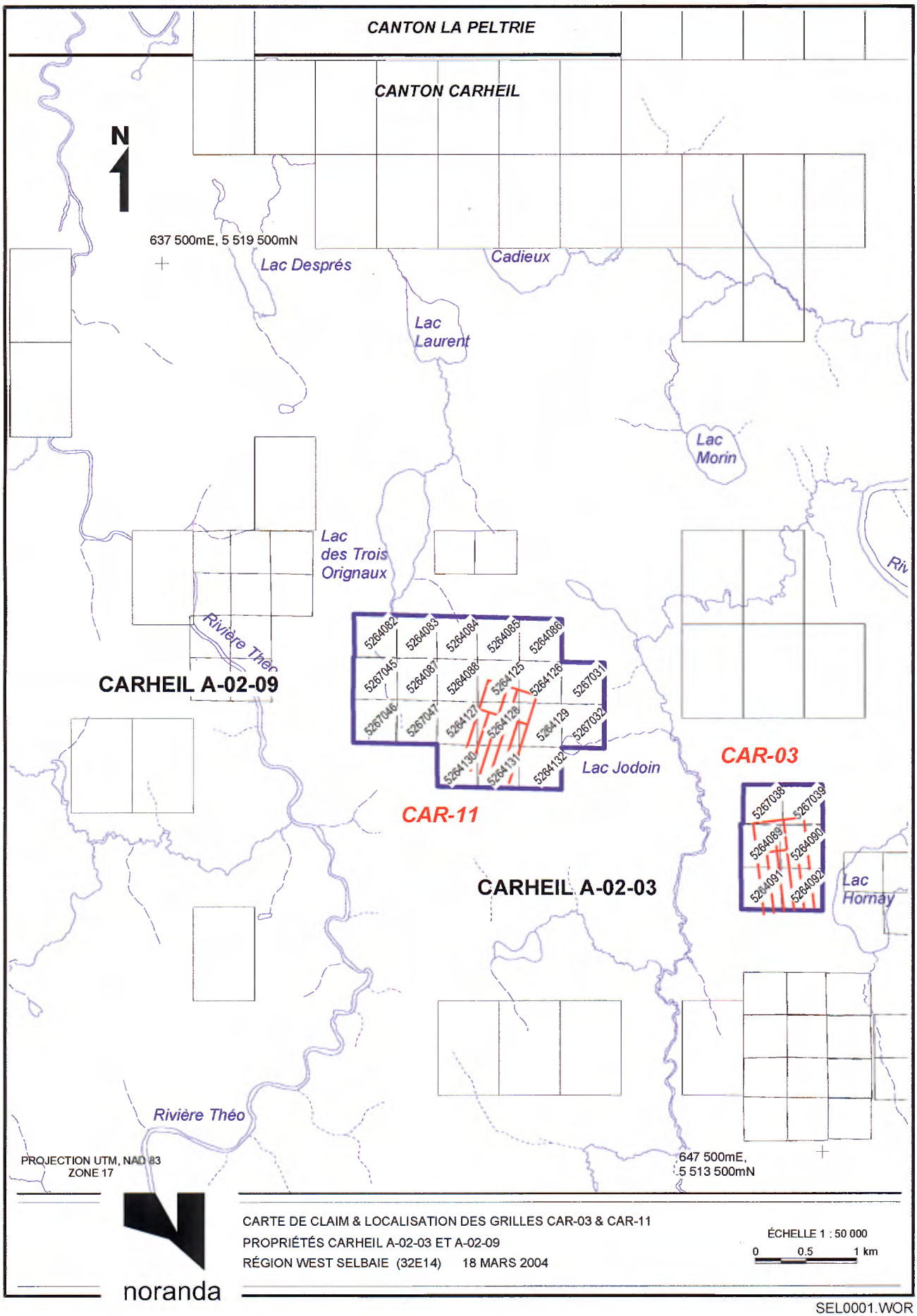
CARTE DE CLAIM ET LOCALISATION DES GRILLES BRO-02, BRO-101, BRO-302, BRO-306 & BRO-309
PROPRIÉTÉS BROUILLAN A-02-01 & A-02-07, CARHEIL A-02-02
RÉGION WEST SELBAIE (32E14) 18 MARS 2004

ÉCHELLE 1 : 50 000
0 0.5 1 km

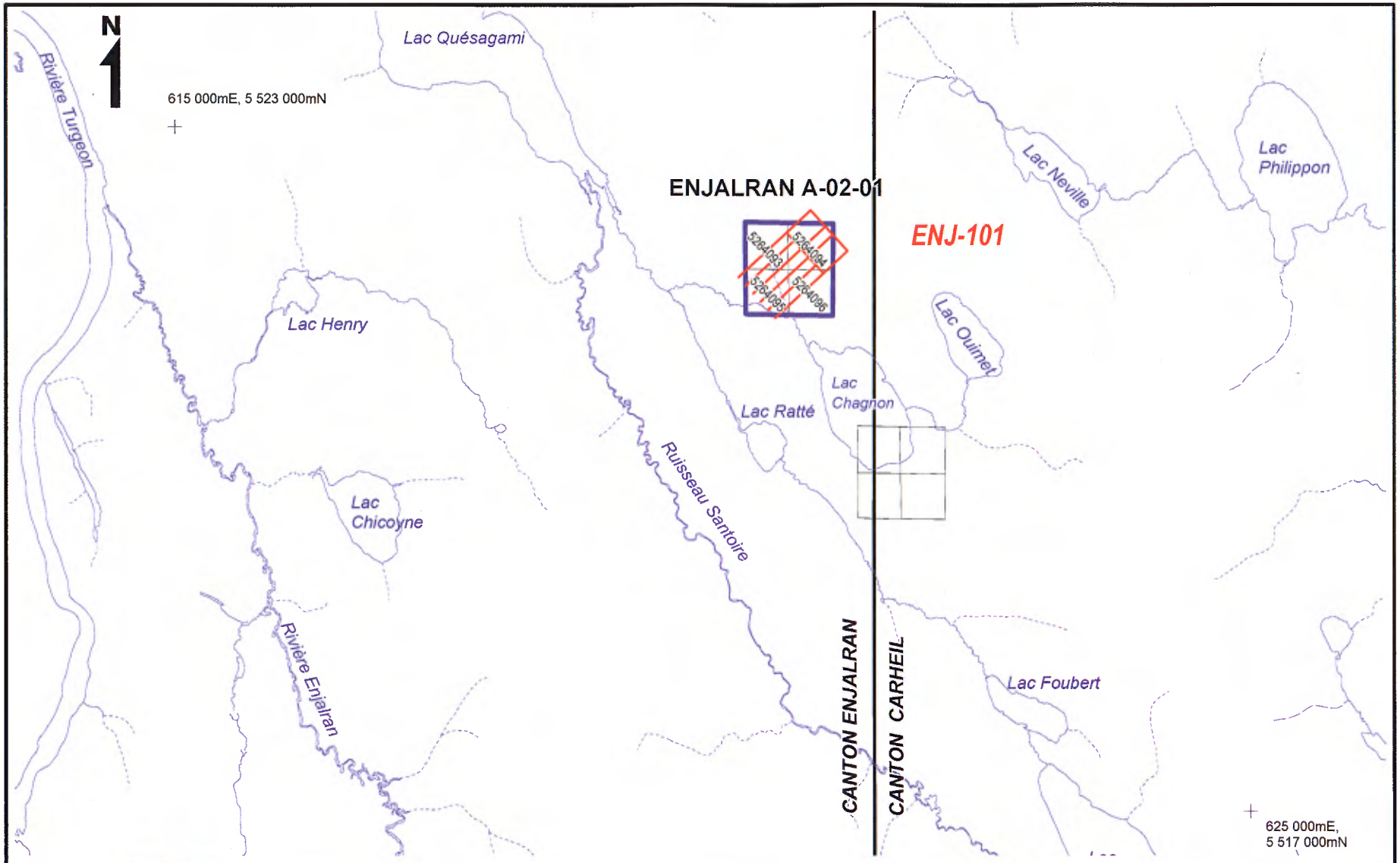
PROJECTION UTM, NAD 83
ZONE 17

noranda

SEL0001.WOR


CANTON LA PELTRIE
CANTON CARHEIL
N
637 500mE, 5 519 500mN
Lac Després
Cadieux
Lac Laurent
Lac Morin
Lac des Trois Orignaux
Rivière Théo
CARHEIL A-02-09
5264082
5264083
5264084
5264085
5264086
5267045
5264087
5264088
5264125
5264126
5267031
5267046
5267047
5264127
5264128
5264129
5267032
5264130
5264131
5264132
Lac Jodoin
CAR-11
CAR-03
5267038
5267039
5264089
5264090
5264091
5264092
Lac Hornay
CARHEIL A-02-03
Rivière Théo
PROJECTION UTM, NAD 83
ZONE 17
647 500mE,
5 513 500mN
CARTE DE CLAIM & LOCALISATION DES GRILLES CAR-03 & CAR-11
PROPRIÉTÉS CARHEIL A-02-03 ET A-02-09
RÉGION WEST SELBAIE (32E14) 18 MARS 2004
ÉCHELLE 1 : 50 000
0 0,5 1 km
noranda

SEL0001.WOR



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CARTE DE CLAIM ET LOCALISATION DE LA GRILLE ENJ-101
PROPRIÉTÉ ENJALRAN A-02-01
RÉGION WEST SELBAIE (32E14) 18 MARS 2004

ÉCHELLE 1 : 50 000
0 0,5 1 km

PROJECTION UTM, NAD 83
ZONE 17

SEL0001G.WOR

ANNEXE 3

Journaux de sondage et sections

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Journal de sondage

Noranda Inc.

Forage	**BRO-02-03-01**
Projet	**WEST SELBAIE**
No Projet	**554**

Sondage

Azimut:	15
Pendage:	-55
Longueur:	275,00 mètres
Débuté le:	2003-03-25
Terminé le:	2003-03-27
Rédigé le:	2003-03-06
Cointé :	Non
Type de coin:	

Tubage

Longueur:	40 mètres
Retiré:	Oui
Bouchon:	Non
Cimenté:	Non

Carotte

Dimension:	BQ
Entreposage:	MINE HORNE

Localisation

Canton:	BROUILLAN
Lot :	***Rang :***
No Claim :	CL5264115
SNRC :	32 E/14

Coordonnée - UTM

Est:	639858
Nord:	5518887
Elévation:	
Système de référence:	NAD27 Z17

Coordonnées - Grille

Est:	800
Nord:	215
Elévation:	
Grille:	
Mag Decli:	

Intervenant

Compagnie:	NORANDA INC.
Contracteur:	MAJOR DOMINIK
Localisé par:	M. PLANTE
Arpenté par:	
Rédigé par:	D. VERMETTE
Révisé par:	
Compilé par:	
Source:	

Cible: Anomalie MégaTEM BRO-02

Geophysique:

Commentaire: L'anomalie MégaTEM BRO-02 est associée: 1) à la présence de 5-15% de pyrrhotine, pyrite et localement de chalcopyrite disséminées et sous forme de filonets (165,7 à 167,5 m) et 2) de 25% de pyrrhotine sous forme de bandes semi-massives de 5-10 cm d'épaisseur (166,1 à 166,4 m). La minéralisation est principalement encaissée dans des coulées de brèche de composition andésitique.

Test de Déviation

Distance	*Azimuth*	*Plongée*	*Type*
0,00	15,00	-55,00	C
130,00	-	-53,00	A

noranda

Description Géologique

Noranda Inc.

Forage	BRO-02-03-01
Projet	WEST SELBAIE
No Projet	554

De (m)	À (m)	Description	Numéro	De	à	Long. m	Cu %	Cu ppm	Zn %	Zn ppm	Au ppb	Ag ppm	Pb ppm
0,00	40,00	**MORT-TERRAIN (M.T.)** **Formation :** M.T.											
40,00	103,40	**ARÉNITE SUB-ARKOSIQUE (S2AK)** **Formation :** Arénite sub-arkosique (siltstone et/ou grès) de couleur gris pâle. Les lits d'arénite alternent par endroits avec des horizons de mudstone argilleux et parfois graphitique. Contact avec l'unité inférieure de brèche AC=60 degré. De 40,0 à 73,0 m: Faille Roche très fragmentée avec récupération difficile du matériel car la roche est sans trop grande cohésion. Arénite fortement limonitisée (altération de surface). Boue de faille par endroits entre 61,5 et 73,0 m avec une perte de la roche évaluée à environ 40%. De 92,3 à 93,4 m: Injections de veines de quartz contenant des traces de pyrite disséminée. S2AK	270067	92,30	93,40	1,10	0,00	35	0,00	31	-5	-0,2	-2,0
			270068	102,40	103,40	1,00	0,00	44	0,01	76	-5	-0,2	-2,0
103,40	124,60	**(V2ABX/SF)** **Formation :** Horizon correspondant probablement à une brèche de coulée basaltique minéralisée. Caractérisée dans l'ensemble par des fragments centimétriques de basalte de couleur vert foncé supportés par une matrice riche en quartz et parfois calcite. La minéralisation observée se compose principalement de pyrrhotine, pyrite et magnétite se présentant sous forme disséminée, de filonets ou de fragments (ou amas) massifs. 103,4 à 108,1 m: Epidotisation (?) et chloritisation d'intensité modérée à forte, 10-15% de pyrrhotine, pyrite et magnétite principalement sous forme de filonets. Possible traces de sphalérite disséminée. 108,1 à 118,9 m: Intervalle présentant localement une silicification d'intensité modérée. Contient dans l'ensemble de 3-5% de pyrrhotine, pyrite et magnétite disséminées ou en amas (fragments ?) massif.	270069	103,40	104,40	1,00	0,00	24	0,01	79	-5	-0,2	-2,0
			270070	104,40	105,40	1,00	0,00	24	0,01	86	8	-0,2	-2,0
			270071	105,40	106,40	1,00	0,00	19	0,01	72	-5	-0,2	-2,0
			270072	106,40	107,40	1,00	0,00	16	0,01	75	-5	-0,2	-2,0
			270073	107,40	108,10	0,70	0,00	17	0,01	55	-5	-0,2	-2,0
			270074	108,10	109,10	1,00	0,00	20	0,01	60	56	-0,2	-2,0
			270076	109,10	110,10	1,00	0,00	14	0,00	45	-5	-0,2	3,0
			270077	110,10	111,10	1,00	0,00	12	0,00	38	-5	-0,2	-2,0
			270078	111,10	112,10	1,00	0,00	13	0,00	38	-5	-0,2	-2,0
			270079	112,10	113,10	1,00	0,00	17	0,00	41	-5	-0,2	-2,0
			270080	113,10	114,10	1,00	0,00	10	0,00	36	-5	-0,2	-2,0
			270081	114,10	115,10	1,00	0,00	14	0,00	32	-5	-0,2	-2,0
			270082	115,10	116,10	1,00	0,00	10	0,00	31	-5	-0,2	-2,0

De (m)	À (m)	Description	Numéro	De	à	Long. m	Cu %	Cu ppm	Zn %	Zn ppm	Au ppb	Ag ppm	Pb ppm
		118,9 à 124,6 m: Intervalle présentant une chloritisation (chlorite verte) d'intensité modérée. Contient de 10-15% de pyrrhotine, pyrite et magnétite disséminée ou en filonets. V2ABX/CL,EP/PO,PY,MG,SP	270083	116,10	117,10	1,00	0,00	12	0,00	17	-5	-0,2	4,0
			270084	117,10	118,10	1,00	0,00	12	0,00	25	-5	-0,2	-2,0
			270086	118,10	119,10	1,00	0,00	10	0,00	34	-5	-0,2	2,0
			270087	119,10	120,10	1,00	0,00	12	0,00	32	-5	-0,2	5,0
			270088	120,10	121,10	1,00	0,00	5	0,00	39	-5	-0,2	2,0
			270089	121,10	122,10	1,00	0,00	9	0,00	29	-5	-0,2	3,0
			270090	122,10	123,10	1,00	0,00	14	0,00	37	-5	-0,2	4,0
			270091	123,10	124,10	1,00	0,01	62	0,00	47	-5	-0,2	-2,0
			270092	124,10	124,60	0,50	0,01	54	0,00	36	26	-0,2	2,0
124,60	**165,70**	**ANDÉSITE MASSIVE (V2AMAS)**	270093	124,60	125,60	1,00	0,00	26	0,00	48	-5	-0,2	-2,0
		Formation :	270094	164,70	165,70	1,00	0,00	44	0,01	67	-5	-0,2	-2,0
		Coulées massives d'andésite aphanitique de couleur vert pâle. Très faible fracturation avec injections de quartz. Très localement on note des traces de pyrite disséminée associée aux injections de quartz. V2AMAS											
165,70	**167,50**	**BRÈCHE DE COULÉE ANDÉSITIQUE (V2ACBX/SF)**	270095	165,70	166,10	0,40	0,01	61	0,00	41	-5	0,2	6,0
		Formation :	270096	166,10	166,40	0,30	0,01	110	0,01	58	6	0,7	22,0
		Bréche de coulée andésitique, silicifiée (chert laminée local) et chloritisé (chlorite verte). Contient de 10-15% de sulfures principalement composés de pyrrhotine avec des traces de pyrite et de chalcopyrite. Également, présence locale de magnétite. Les sulfures et la magnétite se présentent sous forme de filonets (stringers) ou disséminée.	270097	166,40	167,50	1,10	0,00	25	0,01	124	-5	0,6	10,0
		De 166,1 à 166,4 m: Contient 25% de pyrrhotine et des traces de pyrites sous forme bandes semi-massive de 5-10 cm d'épaisseur. Le contact de ces bandes est de AC=60 degré. V2ACBX/CL,SI/PO,PY,MG											
167,50	**242,30**	**(T1LBX)**	270098	167,50	168,50	1,00	0,00	21	0,01	59	-5	-0,2	7,0
		Formation :	270099	168,50	169,50	1,00	0,00	27	0,01	62	-5	-0,2	6,0
		Coulées de tuf à cendre de composition felsique contenant moins de 5% de lapillis et de blocs de compositions felsique (couleur gris pâle) et mafique (couleur gris foncé). Contient également des cristaux de plagioclase. Contact	270100	169,50	170,50	1,00	0,00	19	0,01	55	-5	-0,2	5,0

De (m)	À (m)	Description	Numéro	De	à	Long. m	Cu %	Cu ppm	Zn %	Zn ppm	Au ppb	Ag ppm	Pb ppm

supérieur avec la brèche AC=45 degré.

T1LBX

242,30 260,00 TUF FELSIQUE À LAPILLI (T1L)

Formation :

Tuf felsique à lapillis de couleur gris moyen. Lapillis de composition bimodale caractérisée par des fragments de roche felsique et des fragments de roche mafique. Contact avec l'unité supérieurs AC=

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Lithogéochimie

Noranda Inc.

Forage	**BRO-02-03-01**
Projet	**WEST SELBAIE**
No Projet	**554**

Lithogéochimie -- oxyde (partie 1 de 5)

			----- Roche -----																	
De	*à*	*Numéro*	*Code*	*Classe*	*SiO2* (%)	*TiO2* (%)	*Al2O3* (%)	*Total Fe2O3* (%)	*Fe2O3* (%)	*FeO* (%)	*Total FeO* (%)	*T_C Fe0*	*MnO* (%)	*MgO* (%)	*CaO* (%)	*Na2O* (%)	*K2O* (%)	*P2O5* (%)	*LOI* (%)	*T_C LOI*	*Total* (%)
87.80	88.00	270232	S2AK		58.67	0.74	18.23	-	6.71	-	-	-	0.10	3.24	1.59	7.50	0.06	0.15	2.65	-	99.66
136.70	136.80	270233	V2AMAS		60.46	0.69	16.28	-	6.42	-	-	-	0.09	2.99	3.64	5.02	0.54	0.14	2.94	-	99.25

Lithogéochimie -- élement trace (partie 2 de 5)

			----- Roche -----		Ba	Sr	Rb	Zr	Y	Nb	Cu	Zn	La	Ce	Pr	Nd	Pm	Sm	Eu	Gd	Tb
De	*à*	*Numéro*	*Code*	*Classe*	*(ppm)*	*(ppm)*	*(ppm)*	*(ppm)*	*(ppm)*	*(ppm)*	*(ppm)*	*(ppm)*	*(ppm)*	*(ppm)*	*(ppm)*	*(ppm)*	*(ppm)*	*(ppm)*	*(ppm)*	*(ppm)*	*(ppm)*
87.80	88.00	270232	S2AK		90	172	2	174	18	7	94	76	-	-	-	-	-	-	-	-	-
136.70	136.80	270233	V2AMAS		210	192	11	159	18	6	29	73	-	-	-	-	-	-	-	-	-

Lithogéochimie -- terre rare (partie 3 de 5)

			----- Roche -----	
De	***à***	***Numéro***	***Code***	***Classe***
87.80	88.00	270232	S2AK	
136.70	136.80	270233	V2AMAS	

Lithogéochimie -- indice pétrologique (partie 4 de 5)

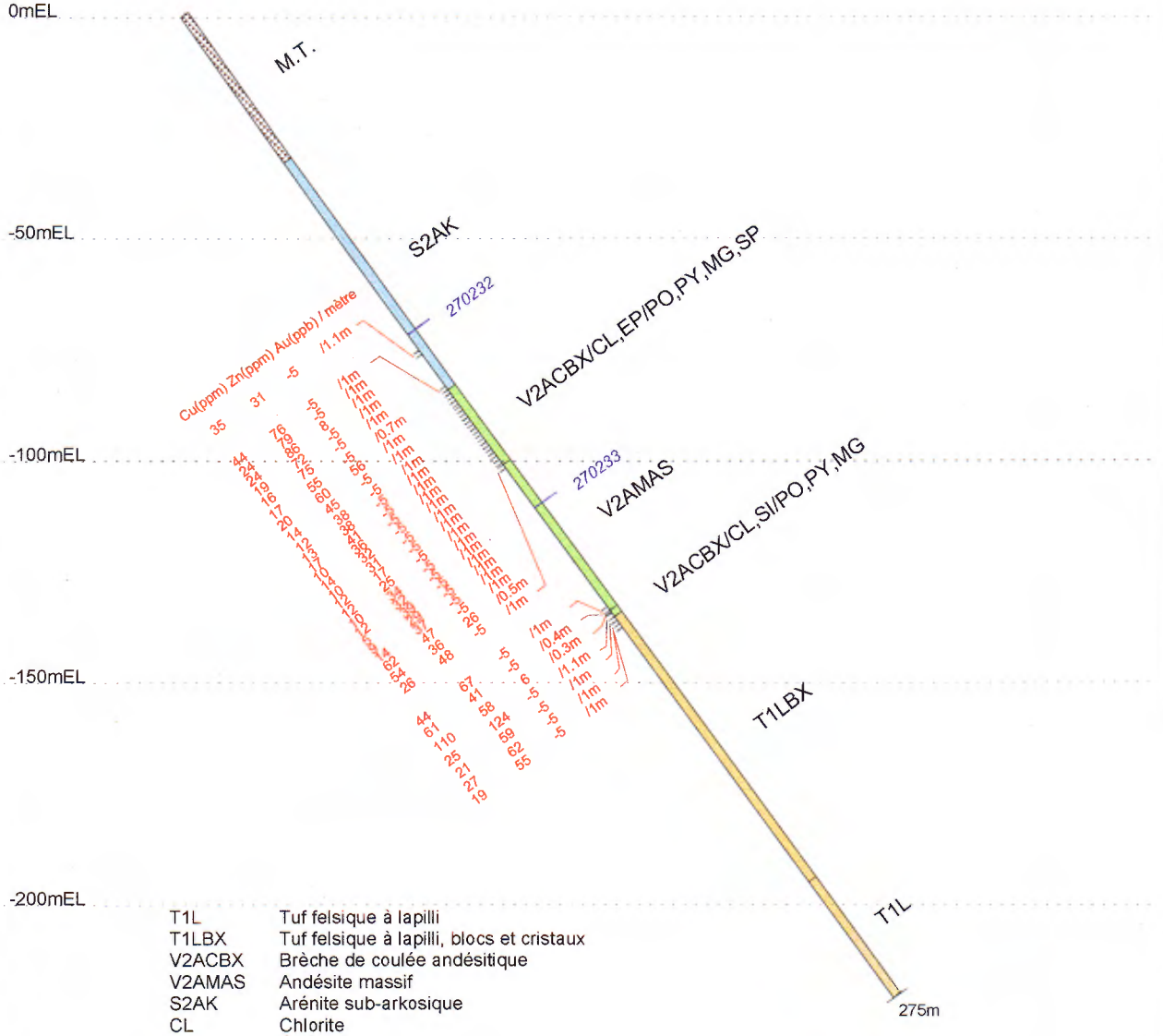
De	*à*	*Numéro*	*Roche Code*	*Al_Ti*	*Ti_Zr*	*Si_Ti*	*Zr_Y*
87.80	88.00	270232	S2AK	24.64	25.52	nc	9.67
136.70	136.80	270233	V2AMAS	23.59	26.04	nc	8.83

Lithogéochimie -- indice d'altération (partie 5 de 5)

De	à	Numéro	ISHI	CUZN	ZN	HASH	FEMG	MGK	GF	GANDH	SER	SPITZ	DARLING	VENT	PIPE	METAL	SER	CHL	FACIES
87.80	88.00	270232	26.63	96.85	2.85	0.81	nc	0.36	nc	1.32	0.79	2.43	125.00	1.01	30.17	55.29	nc	0.35	nc
136.70	136.80	270233	28.96	31.52	2.52	0.82	nc	0.41	nc	1.69	9.71	3.24	9.30	1.45	37.33	28.43	nc	0.35	nc

BRO-02-03-01
639858mE
5518887mN
Az. 15°, -55°

15° ⟶



T1L	Tuf felsique à lapilli
T1LBX	Tuf felsique à lapilli, blocs et cristaux
V2ACBX	Brèche de coulée andésitique
V2AMAS	Andésite massif
S2AK	Arénite sub-arkosique
CL	Chlorite
EP	Épidote
SI	Silice
MG	Magnétite
PO	Pyrrhotite
PY	Pyrite
SP	Sphalérite

320

639276 Analyse lithogéochimie
Analyse métaux

Projection UTM, Nad 27, Zone 17

SECTION REGARDANT 285° / BRO-02-03-01
PROPRIÉTÉ BROUILLAN A-02-02
RÉGION SELBAIE OUEST (32E/14)

Échelle 1:1500
0 15 30 mètres

noranda

BRO-02-03-01.WOR

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Journal de sondage

Noranda Inc.

Forage	**BRO-309-03-01**
Projet	**WEST SELBAIE**
No Projet	**554**

Sondage

Azimut:	15
Pendage:	-55
Longueur:	200,00 mètres
Débuté le:	2003-03-18
Terminé le:	2003-03-20
Rédigé le:	2003-03-06
Cointé :	Non
Type de coin:	

Tubage

Longueur:	28,8 mètres
Retiré:	Oui
Bouchon:	Non
Cimenté:	Non

Carotte

Dimension:	BQ
Entreposage:	MINE HORNE

Localisation

Canton:	BROUILLAN
Lot :	***Rang :***
No Claim :	CL5264273
SNRC :	32 E/14

Coordonnée - UTM

Est:	639143
Nord:	5518575
Elévation:	
Système de référence:	NAD27 Z17

Coordonnées - Grille

Est:	200
Nord:	-280
Elévation:	
Grille:	
Mag Decli:	

Intervenant

Compagnie:	NORANDA INC.
Contracteur:	MAJOR DOMINIK
Localisé par:	M. PLANTE
Arpenté par:	GÉOPHYSIQUE TMC
Rédigé par:	D.VERMETTE
Révisé par:	
Compilé par:	
Source:	

Cible: Anomalie Mégatem BRO-309 ***Geophysique:***

Commentaire: L'anomalie est associée à la présence de 3-5% de pyrite et de pyrrhotine disséminées dans un tuf à cendre de composition intermédiaire entre 63,5 et 64,5 m.

Test de Déviation

Distance	*Azimuth*	*Plongée*	*Type*
0,00	15,00	-55,00	C
107,00	-	-55,00	A
200,00	16,00	-54,00	T

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Description Géologique

Noranda Inc.

Forage	BRO-309-03-01
Projet	WEST SELBAIE
No Projet	554

De (m)	À (m)	Description	Numéro	De	à	Long. m	Cu %	Cu ppm	Zn %	Zn ppm	Au ppb	Ag ppm	Pb ppm
0,00	28,80	**MORT TERRAIN (MT)** **Formation :** MT											
28,80	63,50	**BASALTE MASSIF (V3BMAS)** **Formation :** Coulées massives de basalte aphanitique à finement grenu de couleur vert moyen. Amygdules de quartz et calcite. V3BMAS/AMGV											
63,50	200,00	**TUF INTERMÉDIAIRE À CRISTAUX (T2X)** **Formation :** Coulées de tuf à cendre de composition intermédiaire et de couleur vert moyen. Contient en plusieurs endroits des cristaux subautomorphe à automorphe de plagioclase et localement de quartz.. L'épaisseur des coulées varie de décimétrique à métrique. Les contacts entre les coulées sont chloritisés (63,5 à 89,5 m) et contiennent de 3 à 5% de pyrite et de pyrrhotine disséminées. L'attitude des contacts varie de 50 à 60 degré. T2X **63,50 - 89,50** L'intervalle contient de 3-5% de pyrite et pyrrhtine disséminées ou plus ou moins en disséminations concentrées. Les sulfures sont principalement associés aux contacts de coulées (zones intercoulées) qui sont également caractérisés par une faible chloritisation de couleur vert moyen (possiblement d'origine marine). PY,PO	270401	63,50	64,50	1,00	0,00	28	0,01	94	-5	-0,2	2,0
			270402	64,50	65,50	1,00	0,00	39	0,01	69	6	0,3	5,0
			270403	65,50	66,50	1,00	0,01	57	0,01	73	-5	-0,2	2,0
			270404	66,50	67,50	1,00	0,01	63	0,01	73	-5	-0,2	5,0
			270405	67,50	68,50	1,00	0,01	55	0,01	64	-5	-0,2	2,0
			270406	68,50	69,50	1,00	0,01	53	0,01	70	-5	-0,2	2,0
			270407	69,50	70,50	1,00	0,01	66	0,01	75	-5	-0,2	2,0
			270408	70,50	71,50	1,00	0,01	57	0,01	74	-5	-0,2	2,0
			270409	71,50	72,50	1,00	0,01	78	0,01	77	6	-0,2	5,0
			270410	72,50	73,50	1,00	0,01	63	0,01	75	-5	-0,2	3,0
			270411	81,50	82,50	1,00	0,00	47	0,01	58	7	-0,2	2,0
			270412	82,50	83,50	1,00	0,01	102	0,01	77	-5	-0,2	3,0
			270413	83,50	84,50	1,00	0,01	64	0,01	77	-5	-0,2	-2,0
			270414	84,50	85,50	1,00	0,01	66	0,01	71	-5	-0,2	4,0
			270415	85,50	86,50	1,00	0,01	70	0,01	85	-5	-0,2	-2,0
			270416	86,50	87,50	1,00	0,00	48	0,01	73	6	-0,2	-2,0
			270417	87,50	88,50	1,00	0,02	175	0,01	93	-5	-0,2	5,0
			270418	88,50	89,50	1,00	0,01	50	0,01	78	-5	-0,2	2,0

noranda

Lithogéochimie

Noranda Inc.

Forage	BRO-309-03-01
Projet	WEST SELBAIE
No Projet	554

Lithogéochimie -- oxyde (partie 1 de 5)

			----- Roche -----																
De	*à*	*Numéro*	*Code*	*Classe*	*SiO2* (%)	*TiO2* (%)	*Al2O3* (%)	*Total Fe2O3* (%)	*Fe2O3* (%)	*FeO* (%)	*Total FeO* (%)	*T_C Fe0*	*MnO* (%)	*MgO* (%)	*CaO* (%)	*Na2O* (%)	*K2O* (%)	*P2O5* (%)	*LOI* (%)	*T_C LOI*	*Total* (%)
45.80	46.00	270229	V3BMAS		59.52	0.42	12.69		11.29				0.18	2.12	4.74	1.15	1.60	0.19	5.99		99.90
76.80	76.90	270230	T2X		52.26	0.79	15.80		6.12				0.14	3.40	7.59	0.90	3.74	0.14	8.38		99.35
149.30	149.50	270231	T2X		49.48	0.79	15.45		8.25				0.15	4.72	7.75	1.25	2.56	0.13	8.70		99.30

Lithogéochimie -- élement trace (partie 2 de 5)

			----- Roche -----		Ba	Sr	Rb	Zr	Y	Nb	Cu	Zn	La	Ce	Pr	Nd	Pm	Sm	Eu	Gd	Tb
De	à	Numéro	Code	Classe	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
45.80	46.00	270229	V3BMAS		130	100	41	201	32	9	43	138									
76.80	76.90	270230	T2X		790	70	90	114	17	6	66	64									
149.30	149.50	270231	T2X		610	79	60	106	18	6	75	80									

Lithogéochimie -- terre rare (partie 3 de 5)

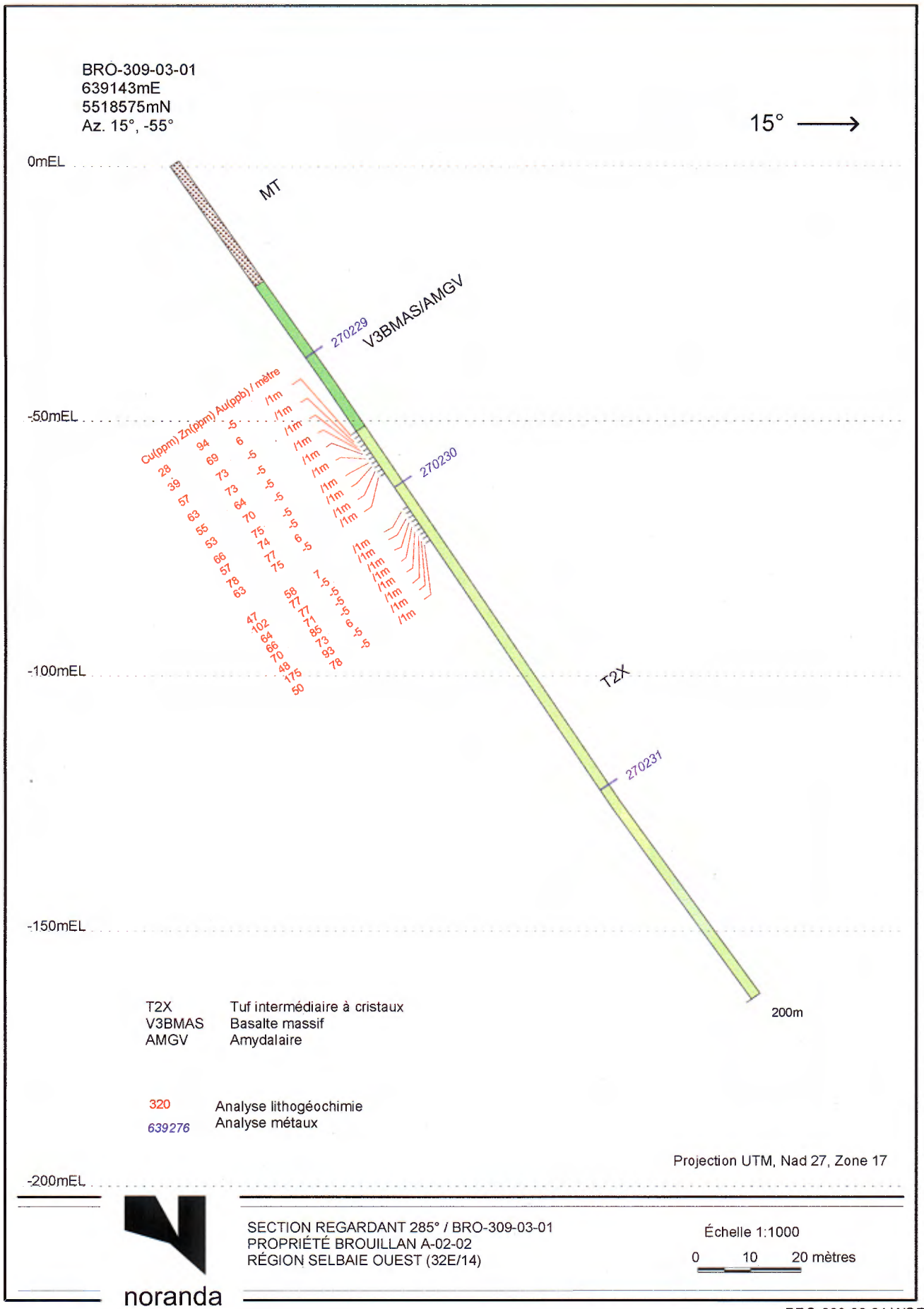
		----- Roche -----		
De	***à***	***Numéro***	***Code***	***Classe***
45.80	46.00	270229	V3BMAS	
76.80	76.90	270230	T2X	
149.30	149.50	270231	T2X	

Lithogéochimie -- indice pétrologique (partie 4 de 5)

De	*à*	*Numéro*	*Roche Code*	*Al_Ti*	*Ti_Zr*	*Si_Ti*	*Zr_Y*
45.80	46.00	270229	V3BMAS	30.21	12.54		6.28
76.80	76.90	270230	T2X	20.00	41.58		6.71
149.30	149.50	270231	T2X	19.56	44.72		5.89

Lithogéochimie -- indice d'altération (partie 5 de 5)

De	à	Numéro	ISHI	CUZN	ZN	HASH	FEMG	MGK	GF	GANDH	SER	SPITZ	DARLING	VENT	PIPE	METAL	SER	CHL	FACIES
45.80	46.00	270229	38.71	46.57	3.57	1.56		0.63		4.88	58.18	11.03	0.72	12.00	64.83	23.76		0.53	
76.80	76.90	270230	45.68	67.40	1.40	0.85		0.84		2.05	80.60	17.56	0.24	7.11	79.07	50.77		0.36	
149.30	149.50	270231	44.72	76.79	1.79	0.95		0.81		3.40	67.19	12.36	0.49	6.40	79.06	48.39		0.42	



BRO-309-03-01.WOR

noranda

Journal de sondage

Noranda Inc.

Forage	**BRO-101-03-01**
Projet	**WEST SELBAIE**
No Projet	**554**

Sondage

Azimut:	20
Pendage:	-55
Longueur:	275,00 mètres
Débuté le:	2003-03-05
Terminé le:	2003-03-08
Rédigé le:	2003-03-06
Cointé :	Non
Type de coin:	

Tubage

Longueur:	51 mètres
Retiré:	Oui
Bouchon:	Non
Cimenté:	Non

Carotte

Dimension:	BQ
Entreposage:	MINE HORNE

Localisation

Canton:	BROUILLAN
Lot :	
Rang :	
No Claim :	CL5264060
SNRC :	32 E/14

Coordonnée - UTM

Est:	641968
Nord:	5517800
Elévation:	0
Système de référence:	NAD27 Z17

Coordonnées - Grille

Est:	200
Nord:	-280
Elévation:	0
Grille:	
Mag Decli:	

Intervenant

Compagnie:	NORANDA INC.
Contracteur:	MAJOR DOMINIK
Localisé par:	M. PLANTE
Arpenté par:	GÉOPHYSIQUE TMC
Rédigé par:	D.VERMETTE
Révisé par:	
Compilé par:	
Source:	

Cible: Anomalie Mégatem BRO-101

Geophysique:

Commentaire: L'anomalie serait associée à la présence de sulfures (pyrite et pyrrhotine) se présentant sous formes disséminées à massif. Ces sulfures sont localisés dans un niveau de tuf felsique à lapillis et cristaux.

Test de Déviation

Distance	*Azimuth*	*Plongée*	*Type*
0,00	20,00	-55,00	C
137,00	20,00	-47,00	A
247,00	357,00	-54,00	T

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Description Géologique

Noranda Inc.

Forage	BRO-101-03-01
Projet	WEST SELBAIE
No Projet	554

De (m)	À (m)	Description	Numéro	De	à	Long. m	Cu %	Cu ppm	Zn %	Zn ppm	Au ppb	Ag ppm	Pb ppm
0,00	51,00	**MORT-TERRAIN (M.T.)** **Formation :** M.T.											
51,00	107,40	**ANDÉSITE MASSIVE (V2AMAS)** **Formation :** Coulées massives d'andésite aphanitique de couleur vert moyen. On note localement la présence de petits niveaux de tuf de composition intermédiaire contenant des lapillis de composition felsique. Ces niveaux sont observés entre les intervalles suivants: 70,3 à 71,5 m; 82,7 à 83,3 m et 84,9 à 86,7 m. V2AMAS											
107,40	114,60	**BASALTE MASSIF (V3BMAS)** **Formation :** Coulée massive de basalte aphanitique de couleur vert fonçé. Contact avec l'andésite AC=70 degré. Bréchification avec injection de veines de quartz entre 113,7 à 114,6 m. V3BMAS	270027	113,90	114,60	0,70	0,01	114	0,02	172	-5	0,3	10,0
114,60	120,70	**TUF À LAPILLI (T2L)** **Formation :** Tuf intermédiaire contenant des lapillis de composition felsique de couleur gris pâle, vésiculaire. Faible chloritisation de la matrice, couleur vert moyen. Le tuf est injecté par plus de 40% de veines de quartz blanc laiteux. Le tuf contient de 2-3% de pyrite (subautomorphe à automorphe) et de pyrrhotine disséminées ou associées aux veines de quartz. T2L/VEIH/QZ/CL/PY,PO	270028	114,60	115,60	1,00	0,01	52	0,01	64	-5	0,3	4,0
			270029	115,60	116,60	1,00	0,00	33	0,00	48	-5	0,2	3,0
			270030	116,60	117,60	1,00	0,01	50	0,01	102	-5	-0,2	3,0
			270031	117,60	118,60	1,00	0,00	16	0,01	54	-5	0,2	4,0
			270032	118,60	119,60	1,00	0,00	27	0,00	36	-5	-0,2	10,0
			270033	119,60	120,70	1,10	0,00	3	0,00	32	-5	-0,2	-2,0
120,70	125,30	**TUF À BLOCS ET LAPILLI (T1BL)** **Formation :** Unité correspondant probablement à un tuf à lapillis et blocs. Les lapillis et blocs sont de composition felsique (?), fracturés et de couleur gris fonçé. Ils	270034	120,70	121,70	1,00	0,00	23	0,01	60	-5	-0,2	6,0
			270035	121,70	122,70	1,00	0,00	39	0,01	92	-5	-0,2	3,0
			270036	122,70	123,70	1,00	0,00	20	0,01	55	-5	-0,2	4,0

De (m)	À (m)	Description	Numéro	De	à	Long. m	Cu %	Cu ppm	Zn %	Zn ppm	Au ppb	Ag ppm	Pb ppm
		baignent dans une matrice fortement chloritisée de couleur vert moyen à fonçé. Contient 3-5% de pyrite et de pyrrhotine disséminées ou en petits filons. Contact avec l'unité inférieure AC=70 degré. T1BL/FRAC/CL/PY,PO	270037	123,70	124,70	1,00	0,00	14	0,01	85	-5	0,3	-2,0
			270038	124,70	125,30	0,60	0,00	3	0,00	36	-5	-0,2	-2,0
125,30	127,40	**BASALTE MASSIF (V3BMAS)**	270055	125,30	126,30	1,00	0,01	56	0,01	65	-5	0,2	-2,0
		Formation : Coulée massive de basalte de couleur vert moyen. Non-minéralisée. V3BMAS	270056	126,30	127,40	1,10	0,01	74	0,01	69	-5	-0,2	2,0
127,40	137,00	**TUF FELSIQUE À LAPILLI (T1L)**	270039	127,40	128,40	1,00	0,00	36	0,00	30	-5	-0,2	2,0
		Formation : Unité de tuf felsique à lapillis. Lapillis de composition felsique contenant des cristaux xénomorphes de quartz baignant dans une matrice faiblement chloritisée. Faible séricitisation reconnue localement. Contient de 2-3% de pyrite et de pyrrhotine disséminées. T1L/CL,SR/PY,PO	270040	128,40	129,40	1,00	0,00	29	0,01	56	-5	-0,2	2,0
			270041	129,40	130,40	1,00	0,00	8	0,00	47	-5	-0,2	2,0
			270042	130,40	131,40	1,00	0,00	9	0,00	49	6	-0,2	2,0
			270043	131,40	132,40	1,00	0,00	7	0,00	40	-5	-0,2	3,0
			270044	132,40	133,40	1,00	0,00	11	0,00	39	-5	-0,2	2,0
			270045	133,40	134,40	1,00	0,00	11	0,00	37	-5	-0,2	4,0
			270046	134,40	135,40	1,00	0,00	13	0,00	26	-5	-0,2	-2,0
			270047	135,40	136,40	1,00	0,00	20	0,00	30	-5	-0,2	-2,0
			270048	136,40	137,00	0,60	0,00	21	0,01	92	-5	-0,2	-2,0
137,00	138,60	**TUF FELSIQUE À LAPILLIS ET CRISTAUX (T1LX)**	270049	137,00	137,70	0,70	0,01	82	0,01	107	-5	0,3	9,0
		Formation : Unité de tuf felsique à lapillis de composition felsique avec cristaux de quartz xénomorphes. Faible séricitisation et silicification du tuf. Contient 50% de sulfures (sur l'ensemble de l'intervalle) composés principalement de pyrite et parfois de pyrrhotine se présentant sous formes disséminées (ou de remplacement) et massifs. Contact de la zone de sulfures: AC=70 degré. T1LX/SR,SI/50% PY,PO	270050	137,70	138,60	0,90	0,01	68	0,01	58	35	0,6	28,0
138,60	140,20	**TUF FELSIQUE À LAPILLIS ET CRISTAUX (T1LX)**	270051	138,60	139,60	1,00	0,00	19	0,00	42	-5	-0,2	-2,0
		Formation :	270052	139,60	140,20	0,60	0,00	16	0,01	54	-5	-0,2	-2,0

De (m)	À (m)	Description	Numéro	De	à	Long. m	Cu %	Cu ppm	Zn %	Zn ppm	Au ppb	Ag ppm	Pb ppm
		Unité de tuf felsique à lapillis de composition felsique contenant des cristaux de quartz dans la matrice ainsi que dans les lapillis. Matrice faiblement séricitisée. Contient de 1-2% de pyrite et pyrrhotine disséminées. T1LX/SR/PY,PO											
140,20	141,00	**TUF FELSIQUE À LAPILLIS ET CRISTAUX (T1LX)** **Formation :** Idem à 137,0 à 138,6 m. Contient de 25-30% de pyrite et pyrrhotine dans l'intervalle se présentant sous formes disséminée à massive. T1LX/30% PY,PO	270053	140,20	141,00	0,80	0,01	76	0,01	76	19	0,5	20,0
141,00	141,80	**TUF FELSIQUE À LAPILLI ET CRISTAUX (T1LX)** **Formation :** Idem à 138,6 à 140,2 m, non-minéralisée. Contact avec l'unité inférieure: AC=80 degré. T1LX	270054	141,00	141,80	0,80	0,00	19	0,00	36	-5	-0,2	-2,0
141,80	151,10	**BASALTE MASSIF (V3BMAS)** **Formation :** Coulées massives de basalte aphanitique de couleur vert fonçé. Contient un niveau de tuf felsique à cristaux de quartz et à lapillis de composition felsique (contenant de cristaux de quartz et plagioclase). Faible séricitisation. V3BMAS											
151,10	159,00	**TUF FELSIQUE À LAPILLI ET CRISTAUX (T1LX)** **Formation :** Tuf felsique à lapillis de composition felsique et à cristaux de quartz. Contact avec l'unité supérieure AC=75 degré. Contient des traces de pyrite automorphe et disséminée. T1LX	270057 270058	155,40 156,40	156,40 157,40	1,00 1,00	0,01 0,00	83 30	0,00 0,00	45 35	-5 -5	-0,2 -0,2	4,0 5,0

De (m)	À (m)	Description	Numéro	De	à	Long. m	Cu %	Cu ppm	Zn %	Zn ppm	Au ppb	Ag ppm	Pb ppm
159,00	170,30	**BASALTE MASSIF (V3BMAS)** **Formation :** Coulées massive de basalte aphanitique à finement grenu de couleur vert moyen. Contact avec l'unité supérieure AC=60 degré. V3BMAS											
170,30	175,90	**(TILX)** **Formation :** Idem à de 151,1 à 159,0 m. TILX											
175,90	201,90	**MASSIF BASALTE (V3BMAS)** **Formation :** Idem à de 159,0 à 170,3 m. Contact avec l'unité inférieure AC=70 degré. De 191,0 à 193,7 m: contient 40% de veine de quartz non-minéralisée. V3BMAS											
201,90	275,00	**TUF FELSIQUE À LAPILLI CRISTAUX (T1LX)** **Formation :** Idem à de 151,1 à 159,0 m. Lapillis composés de fragments de rhyolite aphanitique de couleur gris et de rhyolite à cristaux de quartz et/ou plagioclase. La matrice est de composition felsique et contient 10-15% de cristaux de quartz. T1LX											

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Lithogéochimie

Noranda Inc.

Forage	BRO-101-03-01
Projet	WEST SELBAIE
No Projet	554

Lithogéochimie -- oxyde (partie 1 de 5)

De	à	Numéro	----- Roche ----- Code	Classe	SiO2 (%)	TiO2 (%)	Al2O3 (%)	Total Fe2O3 (%)	Fe2O3 (%)	FeO (%)	Total FeO (%)	T_C Fe0	MnO (%)	MgO (%)	CaO (%)	Na2O (%)	K2O (%)	P2O5 (%)	LOI (%)	T_C LOI	Total (%)
77.20	77.40	270215	V2AMAS	ANDÉSITE	52.81	1.31	14.82	-	11.69	-	-	-	0.20	5.40	6.82	2.79	0.41	0.26	2.61	-	99.17
109.40	109.60	270216	V3BMAS	BASALTE	59.66	0.78	15.73	-	9.46	-	-	-	0.14	1.65	2.56	4.18	1.64	0.33	3.46	-	99.64
144.60	144.80	270217	V3BMAS	BASALTE	59.40	0.78	15.67	-	9.17	-	-	-	0.19	2.02	1.81	4.37	1.82	0.33	3.39	-	98.99

Lithogéochimie -- élement trace (partie 2 de 5)

			----- Roche -----		Ba	Sr	Rb	Zr	Y	Nb	Cu	Zn	La	Ce	Pr	Nd	Pm	Sm	Eu	Gd	Tb
De	à	Numéro	Code	Classe	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
77.20	77.40	270215	V2AMAS	NDÉSIT	190	260	6	153	30	8	62	101	-	-	-	-	-	-	-	-	-
109.40	109.60	270216	V3BMAS	¡ASALTI	410	145	38	245	42	11	37	127	-	-	-	-	-	-	-	-	-
144.60	144.80	270217	V3BMAS	¡ASALTI	360	80	53	238	39	10	43	135	-	-	-	-	-	-	-	-	-

Lithogéochimie -- terre rare (partie 3 de 5)

			----- Roche -----	
De	***à***	***Numéro***	***Code***	***Classe***
77.20	77.40	270215	V2AMAS	NDÉSIT
109.40	109.60	270216	V3BMAS	¡ASALTI
144.60	144.80	270217	V3BMAS	¡ASALTI

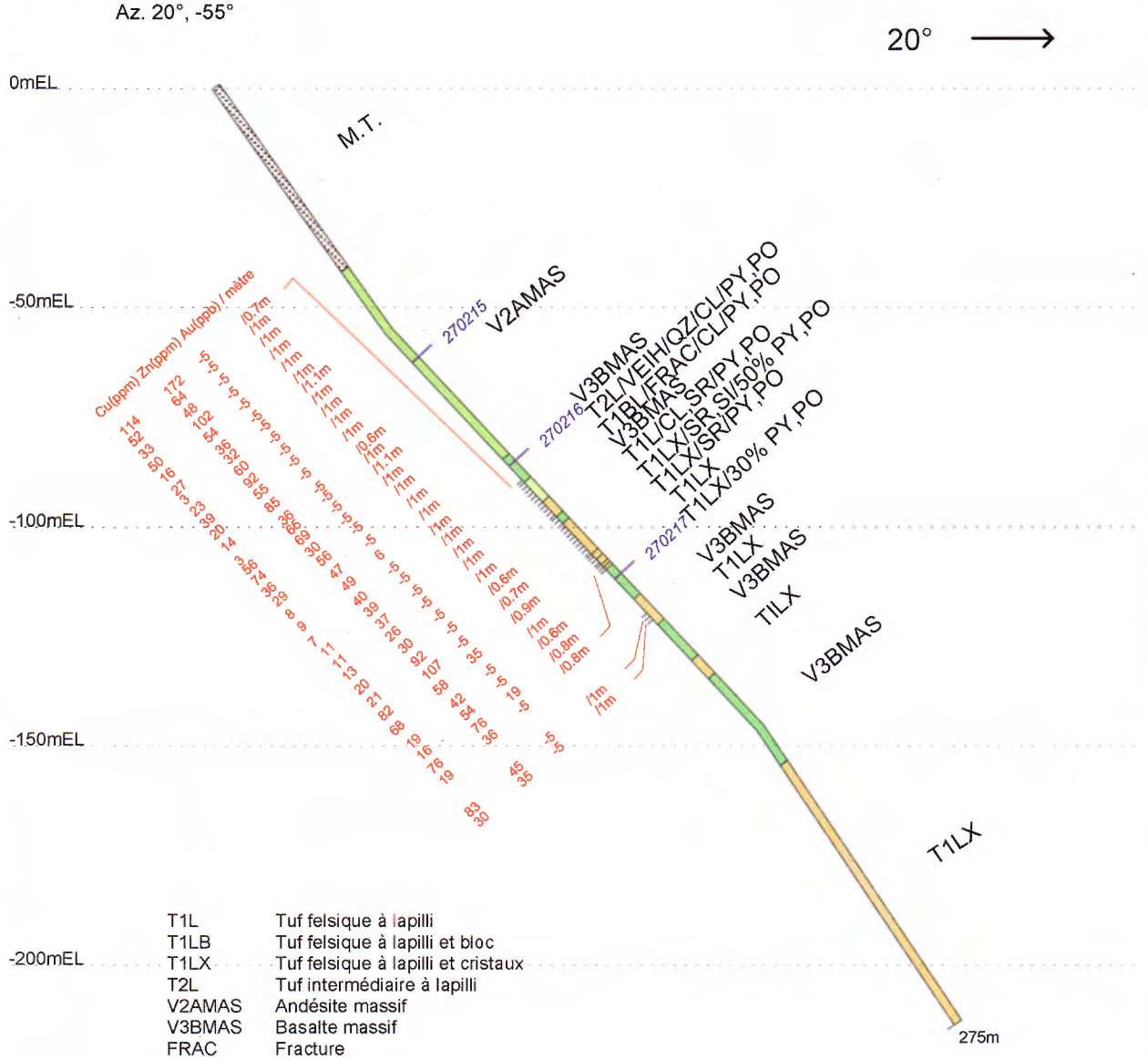
Lithogéochimie -- indice pétrologique (partie 4 de 5)

De	à	Numéro	Roche Code	Al_Ti	Ti_Zr	Si_Ti	Zr_Y
77.20	77.40	270215	V2AMAS	11.31	51.37	nc	5.10
109.40	109.60	270216	V3BMAS	20.17	19.10	nc	5.83
144.60	144.80	270217	V3BMAS	20.09	19.66	nc	6.10

Lithogéochimie -- indice d'altération (partie 5 de 5)

De	à	Numéro	ISHI	CUZN	ZN	HASH	FEMG	MGK	GF	GANDH	SER	SPITZ	DARLING	VENT	PIPE	METAL	SER	CHL	FACIES
77.20	77.40	270215	37.68	64.68	2.68	1.13	nc	0.60	nc	5.34	12.81	5.31	6.80	3.62	65.93	38.04	nc	0.47	nc
109.40	109.60	270216	32.80	40.87	3.87	1.27	nc	0.49	nc	1.91	28.18	3.76	2.55	3.04	28.30	22.56	nc	0.45	nc
144.60	144.80	270217	38.32	46.52	3.52	1.30	nc	0.62	nc	1.81	29.40	3.59	2.40	3.09	31.61	24.16	nc	0.48	nc

BRO-101-03-01
641968mE
5517800mN
Az. 20°, -55°



T1L	Tuf felsique à lapilli
T1LB	Tuf felsique à lapilli et bloc
T1LX	Tuf felsique à lapilli et cristaux
T2L	Tuf intermédiaire à lapilli
V2AMAS	Andésite massif
V3BMAS	Basalte massif
FRAC	Fracture
VEIH	Veine
CL	Chlorite
QZ	Quartz
SI	Silice
SR	Séricite
PO	Pyrrhotite
PY	Pyrite

320 Analyse lithogéochimie
639276 Analyse métaux

Projection UTM, Nad 27, Zone 17

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SECTION REGARDANT 290° / BRO-101-03-01
PROPRIÉTÉ BROUILLAN A-02-02
RÉGION SELBAIE OUEST (32E/14)

Échelle 1:1500
0 15 30 mètres

BRO-101-03-01.WOR

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Journal de sondage

Noranda Inc.

Forage	**CAR-03-03-01**
Projet	**WEST SELBAIE**
No Projet	**554**

Sondage

Azimut:	350
Pendage:	-55
Longueur:	275,00 mètres
Débuté le:	2003-03-14
Terminé le:	2003-03-18
Rédigé le:	2003-03-06
Cointé :	Non
Type de coin:	

Tubage

Longueur:	62 mètres
Retiré:	Oui
Bouchon:	Non
Cimenté:	Non

Carotte

Dimension:	BQ
Entreposage:	HORNE

Localisation

Canton:	CARHEIL
Lot :	*Rang :*
No Claim :	CL5264091
SNRC :	32 E/14

Coordonnée - UTM

Est:	634688
Nord:	5518157
Elévation:	
Système de référence:	NAD27 Z17

Coordonnées - Grille

Est:	200
Nord:	-270
Elévation:	
Grille:	
Mag Decli:	

Intervenant

Compagnie:	NORANDA INC.
Contracteur:	MAJOR DOMINIK
Localisé par:	M. PLANTE
Arpenté par:	
Rédigé par:	M. DESSUREAULT
Révisé par:	
Compilé par:	
Source:	

Cible: MEGATEM ANOMALY CAR-03

Geophysique:

Commentaire: The megaTEM anomaly can be explained by the presence of a semi-massive chloritic sulfide horizon at 136,1-138,5 m. The pyrite and pyrrhotite form large (0,5-1,0 cm) laminated nodules surrounded by calcite in a dark chloritic rock. This horizon is located at the interface between a thick fragmentary felsic unit and an intermediate to felsic flow.

Test de Déviation

Distance	*Azimuth*	*Plongée*	*Type*
0,00	350,00	-55,00	C
120,00	-	-52,00	A
275,00	-	-52,00	

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Description Géologique

Noranda Inc.

Forage	CAR-03-03-01
Projet	WEST SELBAIE
No Projet	554

De (m)	À (m)	Description	Numéro	De	à	Long. m	Cu %	Cu ppm	Zn %	Zn ppm	Au ppb	Ag ppm	Pb ppm
0,00	62,00	**MORT-TERRAIN** **Formation :**											
62,00	66,70	**TUF À BLOCS (T2B)** **Formation :** Roche gris pâle légèrement verdâtre, fragmentaire, contenant de nombreuses amygdules. Ces amygdules, < 1mm, sont remplies de feldspath, de quartz ou de calcite, elles comptent pour 10-15% de la roche. Plusieurs amydules , probablement de calcite, sont ici vide, dissoutes par une altération de surface. Le contact inférieur est net, pénétratif et montre une concentration de micro amygdules dissoutes. T2B											
66,70	136,05	**ANDÉSITE (V2A)** **Formation :** Roche volcanique gris pâle à moyen, plutôt massive mais présentant à interval assez régulier des zones d'autobréchification diffuses et des zones de trempe à amygdules. Dureté moyenne à élevée, granulométrie fine, toutes les texture et structure observables sont plutôt diffuses et peu contrastées. La roche est de composition intermédiaire, andésitique. 110,0-116,0 m veines de quartz-feldspath-calcite et (chlorite) sub-parallèle à a/c. À peu près aucun sulfure n'est visible dans cette unité. V2A											
136,05	138,50	**SULPHURE SEMI-MASSIF (SSM)** **Formation :** Roche aphanitique, vert foncé, contenant 30-40% de sulfures formant des amas semi-massif de nodules de Py-Po à fines lamines concentriques (sorte de texture botryoïdale) entourées d'une fine couronne de calcite. La roche hôte est une pâte de chlorite vert foncé, aphanitique, sans structure visible sauf un faible litage près des sulfures à 70-75 deg. 136,15-136,30 (15 cm) SSM, fin nodules 1-2 mm, 70% Py , 10% Po, 15% calcite, 5% chlorite 136,6 -137,2 (60 cm) SSM, nodules de 1-10 mm, 40% Po, 15% Py , 25% chlorite, 20% calcite	270061	136,05	137,00	0,95	0,01	70	0,01	136	17	-0,2	4,0
			270062	137,00	138,00	1,00	0,00	47	0,01	84	7	-0,2	-2,0
			270063	138,00	138,50	0,50	0,00	35	0,00	45	21	-0,2	8,0

De (m)	À (m)	Description	Numéro	De	à	Long. m	Cu %	Cu ppm	Zn %	Zn ppm	Au ppb	Ag ppm	Pb ppm
		137,6 -138,25 (65 cm) SSM, nodules de 5-15 mm, 45% Py , 5% Po, 30% chlorite, 20% calcite SSM/30% PY, 15%PO											
138,50	141,00	**BRÈCHE (T3BX)** **Formation :** Zone transitionnelle fragmentaire chloriteuse, couleur gris-vert foncé, fragments chloriteux diffus, fragments de sulfures massifs (surtout pyrite, un peu de Po). 5% de Py-Po. T3BX/5% PY-PO	270064	138,50	139,50	1,00	0,00	27	0,01	65	-5	-0,2	-2,0
			270065	139,50	140,50	1,00	0,00	44	0,01	53	-5	-0,2	-2,0
			270066	140,50	141,00	0,50	0,00	47	0,01	78	-5	-0,2	-2,0
141,00	143,10	**BRÈCHE (T2BX)** **Formation :** Brèche intermédiaire à gros fragments d'origine variée, angulaires et sub-arrondis. Plusieurs fragments angulaires sont vert foncé, chloriteux, d'autres arrondis sont pâles et amydulaires, la matrice est surtout gris pâle aphanitique et siliceuse. T2BX											
143,10	275,00	**BRÈCHE DE COULÉE (T2BXC)** **Formation :** Épaisse séquence assez homogène d'une roche fragmentaire et porphyrique de composition intermédiaire. La roche est gris pâle à moyen, les fragments sont en général assez gros, 2 à >10 cm et ils sont d'au moins trois origines. Il y a les gris pâle porphyriques, 40% des fragments, (>20% de phénoX de feldspath blanc 1-3 mm), les gris pâle aphanitiques à amygdules de quartz et chlorite, 20% des fragments, et les gris foncé porphyriques, 40% des fragments, (>20% de pnénoX de feldspath blanc 1-3 mm). La matrice est gris pâle aphanitique avec plus ou moins de phénoX de felpdpath blanc. Quelques rares petites fractures remplies de quartz et calcite. Zone un peu tectonisée, chloriteuse entre 250 et 260 m, veine cisaillée de 10 cm, à calcite et chlorite à 259 m. Sulfures à peu près totalement absents. Litage impossible à établir. T2BXC/PORP											

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Description Géologique

Noranda Inc.

Forage	CAR-03-03-01
Projet	WEST SELBAIE
No Projet	554

De (m)	À (m)	Description	Numéro	De	à	Long. m	Cu %	Cu ppm	Zn %	Zn ppm	Au ppb	Ag ppm	Pb ppm

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Lithogéochimie

Noranda Inc.

Forage	CAR-03-03-01
Projet	WEST SELBAIE
No Projet	554

Lithogéochimie -- oxyde (partie 1 de 5)

De	à	Numéro	----- Roche ----- Code	Classe	SiO2 (%)	TiO2 (%)	Al2O3 (%)	Total Fe2O3 (%)	Fe2O3 (%)	FeO (%)	Total FeO (%)	T_C Fe0	MnO (%)	MgO (%)	CaO (%)	Na2O (%)	K2O (%)	P2O5 (%)	LOI (%)	T_C LOI	Total (%)
77.00	77.20	270218	V2A		61.69	0.62	16.80	-	5.96	-	-	-	0.09	1.81	6.45	2.50	1.41	0.12	2.33	-	99.84
97.80	98.00	270219	V2A		63.83	0.64	16.76	-	3.95	-	-	-	0.07	1.82	5.47	3.83	1.04	0.12	2.15	-	99.73
121.80	122.00	270220	V2A		64.23	0.64	15.65	-	4.61	-	-	-	0.08	2.01	4.47	3.68	1.09	0.11	2.77	-	99.39
133.80	134.00	270221	V2A		59.25	0.59	14.75	-	4.57	-	-	-	0.14	2.16	6.26	0.82	2.97	0.11	7.19	-	98.84
138.50	138.70	270222	T3BX		42.88	0.48	11.85	-	24.66	-	-	-	0.84	3.56	5.91	0.01	0.02	0.08	7.82	-	98.13
145.80	146.00	270223	T2BXC		59.40	0.68	17.20	-	6.33	-	-	-	0.10	2.22	7.73	3.32	0.24	0.11	2.50	-	99.88
170.00	170.10	270224	T2BXC		54.20	0.64	18.35	-	6.64	-	-	-	0.11	2.36	12.37	1.50	0.27	0.11	3.20	-	99.80
194.00	194.20	270225	T2BXC		57.95	0.65	15.85	-	6.74	-	-	-	0.12	3.03	8.25	2.76	0.16	0.10	4.01	-	99.66
217.90	218.00	270226	T2BXC		63.36	0.77	16.23	-	5.55	-	-	-	0.08	2.74	3.98	3.25	0.93	0.11	2.21	-	99.28
238.90	239.00	270227	T2BXC		56.36	0.86	17.56	-	7.79	-	-	-	0.11	3.79	5.63	3.66	0.17	0.13	3.06	-	99.16
266.00	266.10	270228	T2BXC		57.80	1.51	16.34	-	5.64	-	-	-	0.12	1.81	6.68	4.14	0.86	0.40	4.16	-	99.50

Lithogéochimie -- élement trace (partie 2 de 5)

			----- Roche -----																
De	*à*	*Numéro*	*Code*	*Classe*	*Ba (ppm)*	*Sr (ppm)*	*Rb (ppm)*	*Zr (ppm)*	*Y (ppm)*	*Nb (ppm)*	*Cu (ppm)*	*Zn (ppm)*	*La (ppm)*	*Ce (ppm)*	*Pr (ppm)*	*Nd (ppm)*	*Pm (ppm)*	*Sm (ppm)*	*Eu (ppm)*	*Gd (ppm)*	*Tb (ppm)*
77.00	77.20	270218	V2A		290	231	29	146	14	6	48	70	-	-	-	-	-	-	-	-	-
97.80	98.00	270219	V2A		200	138	21	148	14	6	56	86	-	-	-	-	-	-	-	-	-
121.80	122.00	270220	V2A		220	151	25	141	13	6	42	75	-	-	-	-	-	-	-	-	-
133.80	134.00	270221	V2A		240	54	72	136	12	8	63	183	-	-	-	-	-	-	-	-	-
138.50	138.70	270222	T3BX		50	24	-2	79	10	4	19	94	-	-	-	-	-	-	-	-	-
145.80	146.00	270223	T2BXC		110	307	5	123	15	5	47	67	-	-	-	-	-	-	-	-	-
170.00	170.10	270224	T2BXC		130	284	6	122	15	6	45	55	-	-	-	-	-	-	-	-	-
194.00	194.20	270225	T2BXC		90	127	4	121	15	5	55	86	-	-	-	-	-	-	-	-	-
217.90	218.00	270226	T2BXC		370	112	26	130	15	6	56	65	-	-	-	-	-	-	-	-	-
238.90	239.00	270227	T2BXC		120	143	5	138	19	5	34	92	-	-	-	-	-	-	-	-	-
266.00	266.10	270228	T2BXC		220	207	22	223	27	16	7	89	-	-	-	-	-	-	-	-	-

Lithogéochimie -- terre rare (partie 3 de 5)

			----- Roche -----	
De	***à***	***Numéro***	***Code***	***Classe***
77.00	77.20	270218	V2A	
97.80	98.00	270219	V2A	
121.80	122.00	270220	V2A	
133.80	134.00	270221	V2A	
138.50	138.70	270222	T3BX	
145.80	146.00	270223	T2BXC	
170.00	170.10	270224	T2BXC	
194.00	194.20	270225	T2BXC	
217.90	218.00	270226	T2BXC	
238.90	239.00	270227	T2BXC	
266.00	266.10	270228	T2BXC	

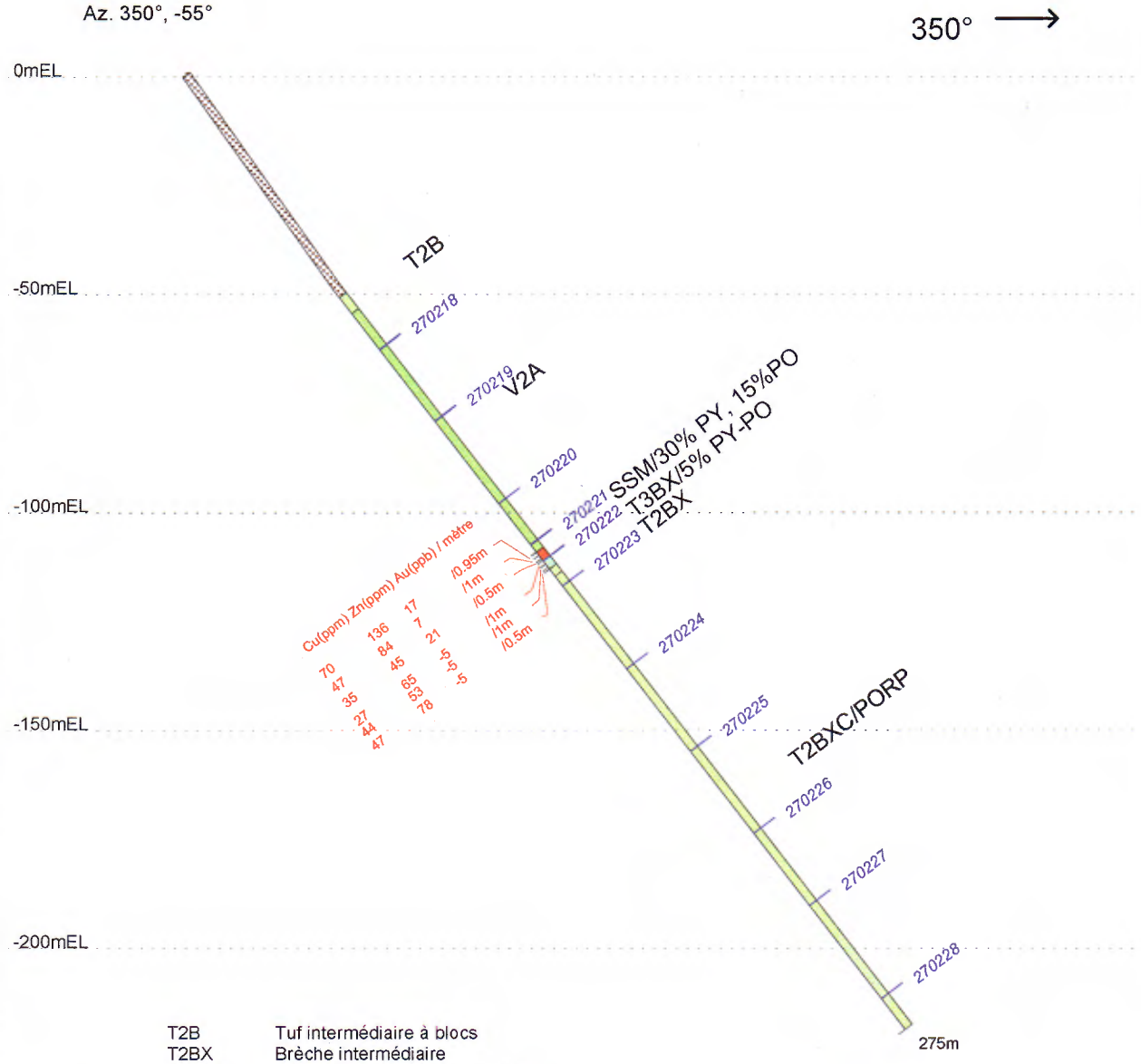
Lithogéochimie -- indice pétrologique (partie 4 de 5)

De	à	Numéro	Roche Code	Al_Ti	Ti_Zr	Si_Ti	Zr_Y
77.00	77.20	270218	V2A	27.10	25.48	nc	10.43
97.80	98.00	270219	V2A	26.19	25.95	nc	10.57
121.80	122.00	270220	V2A	24.45	27.23	nc	10.85
133.80	134.00	270221	V2A	25.00	26.03	nc	11.33
138.50	138.70	270222	T3BX	24.69	36.46	nc	7.90
145.80	146.00	270223	T2BXC	25.29	33.17	nc	8.20
170.00	170.10	270224	T2BXC	28.67	31.48	nc	8.13
194.00	194.20	270225	T2BXC	24.38	32.23	nc	8.07
217.90	218.00	270226	T2BXC	21.08	35.54	nc	8.67
238.90	239.00	270227	T2BXC	20.42	37.39	nc	7.26
266.00	266.10	270228	T2BXC	10.82	40.63	nc	8.26

Lithogéochimie -- indice d'altération (partie 5 de 5)

De	à	Numéro	ISHI	CUZN	ZN	HASH	FEMG	MGK	GF	GANDH	SER	SPITZ	DARLING	VENT	PIPE	METAL	SER	CHL	FACIES
77.00	77.20	270218	26.46	50.65	2.65	0.75	nc	0.36	nc	1.99	36.06	6.72	1.77	2.80	42.00	40.68	nc	0.30	nc
97.80	98.00	270219	23.52	59.66	3.66	0.56	nc	0.31	nc	1.18	21.36	4.38	3.68	2.25	32.21	39.44	nc	0.24	nc
121.80	122.00	270220	27.56	44.72	2.72	0.69	nc	0.38	nc	1.39	22.85	4.25	3.38	2.04	35.33	35.90	nc	0.29	nc
133.80	134.00	270221	42.01	67.36	4.36	0.79	nc	0.72	nc	1.78	78.36	17.99	0.28	22.32	72.48	25.61	nc	0.32	nc
138.50	138.70	270222	37.70	21.49	2.49	2.97	nc	0.61	nc	1128.80	80.00	2370.00	0.25	1880.00	99.86	16.81	nc	0.70	nc
145.80	146.00	270223	18.21	50.68	3.68	0.65	nc	0.22	nc	2.40	6.74	5.18	13.83	2.02	40.07	41.23	nc	0.28	nc
170.00	170.10	270224	15.94	48.45	3.45	0.56	nc	0.19	nc	5.08	15.25	12.23	5.56	3.67	61.14	45.00	nc	0.24	nc
194.00	194.20	270225	22.46	58.83	3.83	0.70	nc	0.29	nc	3.35	5.48	5.74	17.25	3.12	52.33	39.01	nc	0.31	nc
217.90	218.00	270226	33.67	57.93	1.93	0.85	nc	0.51	nc	1.98	22.25	4.99	3.49	2.00	45.74	46.28	nc	0.36	nc
238.90	239.00	270227	29.89	37.08	3.08	0.89	nc	0.43	nc	3.02	4.44	4.80	21.53	2.51	50.87	26.98	nc	0.38	nc
266.00	266.10	270228	19.79	11.50	4.50	0.62	nc	0.25	nc	1.49	17.20	3.95	4.81	2.15	30.42	7.29	nc	0.26	nc

CAR-03-03-01
634688mE
5518157mN
Az. 350°, -55°



T2B	Tuf intermédiaire à blocs
T2BX	Brèche intermédiaire
T2BXC	Brèche de coulée intermédiaire
T3BXC	Brèche mafique
V2A	Andésite
SSM	Sulfure semi-massif
PORP	Porphyrique
PO	Pyrrhotite
PY	Pyrite

320 Analyse lithogéochimie
639276 Analyse métaux

Projection UTM, Nad 27, Zone 17

noranda

SECTION REGARDANT 260° / CAR-03-03-01
PROPRIÉTÉ CARHEIL A-02-03
RÉGION SELBAIE OUEST (32E/14)

Échelle 1:1500
0 15 30 mètres

CAR-03-03-01.WOR

ANNEXE 4

Résultats d'analyses – Roches entières

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Rapport Lab Geochimie
Geochemical Lab Report

RAPPORT: C03-61473.0 (COMPLET) RÉFÉRENCE:

CLIENT: MINES ET EXPLORATION NORANDA INC. SOUMIS PAR: D. VERMETTE

PROJET: 554 DATE RECU: 02-APR-03 DATE DE L'IMPRESSION: 14-AVR-03

DATE APPROUVÉ	COMMANDE	ÉLÉMENT		NOMBRE D'ANALYSES	LIMITE INFÉRIEURE DE DETECTION	EXTRACTION	MÉTHODE
030414	1	Cu	Cu - GA01	19	1 PPM	HCL:HNO3 (3:1)	ABSORPTION ATOMIQUE
030414	2	Zn	Zn - GA01	19	1 PPM	HCL:HNO3 (3:1)	ABSORPTION ATOMIQUE
030414	3	SiO2	SiO2 - XR80	19	0.01 PCT	FUSION BORATE	FLUORESCENCE X
030414	4	Al2O3	Al2O3 - XR80	19	0.01 PCT	FUSION BORATE	FLUORESCENCE X
030414	5	Fe2O3	Fe2O3 - XR80	19	0.01 PCT	FUSION BORATE	FLUORESCENCE X
030414	6	MgO	MgO - XR80	19	0.01 PCT	FUSION BORATE	FLUORESCENCE X
030414	7	CaO	CaO - XR80	19	0.01 PCT	FUSION BORATE	FLUORESCENCE X
030414	8	Na2O	Na2O - XR80	19	0.01 PCT	FUSION BORATE	FLUORESCENCE X
030414	9	K2O	K2O - XR80	19	0.01 PCT	FUSION BORATE	FLUORESCENCE X
030414	10	TiO2	TiO2 - XR80	19	0.01 PCT	FUSION BORATE	FLUORESCENCE X
030414	11	P2O5	P2O5 - XR80	19	0.01 PCT	FUSION BORATE	FLUORESCENCE X
030414	12	MnO	MnO - XR80	19	0.01 PCT	FUSION BORATE	FLUORESCENCE X
030414	13	Ba	Ba - XR80A	19	50 PPM	FUSION BORATE	FLUORESCENCE X
030414	14	Cr2O3	Cr2O3 - XR80	19	0.01 PCT	FUSION BORATE	FLUORESCENCE X
030414	15	Sr	Sr - XR01/A	19	1 PPM	Poudre presse	FLUORESCENCE X
030414	16	LOI	LOI - XR80	19	-2.00 PCT	Perte au feu 1000 C	GRAVIMETRIE
030414	17	Total	Whole Rock Tot.-XR80	19	0.01 PCT		
030414	18	Zr	Zr - XR01/A	19	1 PPM	Poudre presse	FLUORESCENCE X
030414	19	Y	Y - XR01/A	19	1 PPM	Poudre presse	FLUORESCENCE X
030414	20	Nb	Nb - XR01/A	19	2 PPM	Poudre presse	FLUORESCENCE X
030414	21	Rb	Rb - XR01/A	19	2 PPM	Poudre presse	FLUORESCENCE X

TYPES D'ÉCHANTILLONS	NOMBRE	FRACTION UTILISÉE	NOMBRE	PRÉP. DE L'ÉCHAN.	NOMBRE
CAROTTE DE FORAGE	19	-200	19	CONCASSER, PULVERISE	19
				CONCASSER 95% -10 M.	19

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Hélène Lapierre
Chimiste à l'extraction

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Rapport Lab Geochimie
Geochemical Lab Report

CLIENT : MINES ET EXPLORATION NORANDA INC. PROJET: 554
RAPPORT: C03-61473.0 (COMPLET) DATE RECU : 02-APR-03 DATE DE L'IMPRESSION: 14-AVR-03 PAGE 1 DE 3

NUMÉRO DE L'ÉCHANTILLON	ÉLÉMENT UNITÉS	Cu PPM	Zn PPM	SiO2 PCT	Al2O3 PCT	Fe2O3 PCT	MgO PCT	CaO PCT	Na2O PCT	K2O PCT	TiO2 PCT	P2O5 PCT	MnO PCT	Ba PPM	Cr2O3 PCT	Sr PPM	LOI PCT	Total PCT	Zr PPM	Y PPM	Nb PPM	Rb PPM
270215		62	101	52.81	14.82	11.69	5.40	6.82	2.79	0.41	1.31	0.26	0.20	190	0.03	260	2.61	99.17	153	30	8	6
270216		37	127	59.66	15.73	9.46	1.65	2.56	4.18	1.64	0.78	0.33	0.14	410	0.01	145	3.46	99.64	245	42	11	38
270217		43	135	59.40	15.67	9.17	2.02	1.81	4.37	1.82	0.78	0.33	0.19	360	<0.01	80	3.39	98.99	238	39	10	53
270218		48	70	61.69	16.80	5.96	1.81	6.45	2.50	1.41	0.62	0.12	0.09	290	0.03	231	2.33	99.84	146	14	6	29
270219		56	86	63.83	16.76	3.95	1.82	5.47	3.83	1.04	0.64	0.12	0.07	200	0.03	138	2.15	99.73	148	14	6	21
270220		42	75	64.23	15.65	4.61	2.01	4.47	3.68	1.09	0.64	0.11	0.08	220	0.03	151	2.77	99.39	141	13	6	25
270221		63	183	59.25	14.75	4.57	2.16	6.26	0.82	2.97	0.59	0.11	0.14	240	0.01	54	7.19	98.84	136	12	8	72
270222		19	94	42.88	11.85	24.66	3.56	5.91	<.01	0.02	0.48	0.08	0.84	50	0.02	24	7.82	98.13	79	10	4	<2
270223		47	67	59.40	17.20	6.33	2.22	7.73	3.32	0.24	0.68	0.11	0.10	110	0.04	307	2.50	99.88	123	15	5	5
270224		45	55	54.20	18.35	6.64	2.36	12.37	1.50	0.27	0.64	0.11	0.11	130	0.04	284	3.20	99.80	122	15	6	6
270225		55	86	57.95	15.85	6.74	3.03	8.25	2.76	0.16	0.65	0.10	0.12	90	0.03	127	4.01	99.66	121	15	5	4
270226		56	65	63.36	16.23	5.55	2.74	3.98	3.25	0.93	0.77	0.11	0.08	370	0.03	112	2.21	99.28	130	15	6	26
270227		34	92	56.36	17.56	7.79	3.79	5.63	3.66	0.17	0.86	0.13	0.11	120	0.03	143	3.06	99.16	138	19	5	5
270228		7	89	57.80	16.34	5.64	1.81	6.68	4.14	0.86	1.51	0.40	0.12	220	0.02	207	4.16	99.50	223	27	16	22
270229		43	138	59.52	12.69	11.29	2.12	4.74	1.15	1.60	0.42	0.19	0.18	130	<0.01	100	5.99	99.90	201	32	9	41
270230		66	64	52.26	15.80	6.12	3.40	7.59	0.90	3.74	0.79	0.14	0.14	790	0.01	70	8.38	99.35	114	17	6	90
270231		75	80	49.48	15.45	8.25	4.72	7.75	1.25	2.56	0.79	0.13	0.15	610	0.01	79	8.70	99.30	106	18	6	60
270232		94	76	58.67	18.23	6.71	3.24	1.59	7.50	0.06	0.74	0.15	0.10	90	0.01	172	2.65	99.66	174	18	7	2
270233		29	73	60.46	16.28	6.42	2.99	3.64	5.02	0.54	0.69	0.14	0.09	210	0.02	192	2.94	99.25	159	18	6	11

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Rapport Lab Geochimie
Geochemical Lab Report

CLIENT : MINES ET EXPLORATION NORANDA INC. PROJET: 554
RAPPORT: C03-61473.0 (COMPLET) DATE RECU : 02-APR-03 DATE DE L'IMPRESSION: 14-AVR-03 PAGE 2 DE 3

# MESURE	ÉLÉMENT	Cu	Zn	SiO2	Al2O3	Fe2O3	MgO	CaO	Na2O	K2O	TiO2	P2O5	MnO	Ba	Cr2O3	Sr	LOI	Total	Zr	Y	Nb	Rb
STANDARD	UNITÉS	PPM	PPM	PCT	PCT	PCT	PCT	PCT	PCT	PCT	PCT	PCT	PCT	PPM	PCT	PPM	PCT	PCT	PPM	PPM	PPM	PPM
GS91-2		144	151	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nombre d'analyses		1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Valeur de moyenne		144	151	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Écart-type		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Valeur acceptee		148	148	-	-	-	-	-	-	-	-	-	-	-	-	130	-	-	-	-	7	50
BLANC		<1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nombre d'analyses		1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Valeur de moyenne		<1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Écart-type		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Valeur acceptee		<1	<1	<0.01	<0.01	<0.01	<.01	<0.01	<.01	<.01	<.01	<.01	<.01	<1	<0.01	<1	<.01	<0.01	<1	<1	<1	<1

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Rapport Lab Geochimie
Geochemical Lab Report

CLIENT : MINES ET EXPLORATION NORANDA INC. PROJET: 554
RAPPORT: C03-61473.0 (COMPLET) DATE RECU : 02-APR-03 DATE DE L'IMPRESSION: 14-AVR-03 PAGE 3 DE 3

NUMÉRO DE L'ÉCHANTILLON	ÉLÉMENT UNITÉS	Cu PPM	Zn PPM	SiO2 PCT	Al2O3 PCT	Fe2O3 PCT	MgO PCT	CaO PCT	Na2O PCT	K2O PCT	TiO2 PCT	P2O5 PCT	MnO PCT	Ba PPM	Cr2O3 PCT	Sr PPM	LOI PCT	Total PCT	Zr PPM	Y PPM	Nb PPM	Rb PPM
270218		48	70	61.69	16.80	5.96	1.81	6.45	2.50	1.41	0.62	0.12	0.09	290	0.03	231	2.33	99.84	146	14	6	29
Duplicata		47	71																			

ANNEXE 5

Résultats d'analyses – Économiques

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Rapport Lab Geochimie
Geochemical Lab Report

RAPPORT: C03-61162.0 (COMPLET) RÉFÉRENCE: 179067

CLIENT: MINES ET EXPLORATION NORANDA INC. SOUMIS PAR: D. VERMETTE

PROJET: AUCUN DATE RECU: 14-MAR-03 DATE DE L'IMPRESSION: 31-MAR-03

DATE APPROUVÉ	COMMANDE	ÉLÉMENT	NOMBRE D'ANALYSES	LIMITE INFÉRIEURE DE DETECTION	EXTRACTION	MÉTHODE
030320	1 Au30	Or	33	5 PPB	Pyro Analyse de 30g	30g Pyroanalyse - A
030320	2 Ag	Ag - IC01	34	0.2 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
030320	3 Cu	Cu - IC01	34	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
030320	4 Pb	Pb - IC01	34	2 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
030320	5 Zn	Zn - IC01	34	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
030320	6 Mo	Mo - IC01	34	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
030320	7 Ni	Ni - IC01	34	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
030320	8 Co	Co - IC01	34	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
030320	9 Cd	Cd - IC01	34	0.2 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
030320	10 Bi	Bi - IC01	34	5 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
030320	11 As	As - IC01	34	5 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
030320	12 Sb	Sb - IC01	34	5 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
030320	13 Fe	Fe - IC01	34	0.01 PCT	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
030320	14 Mn	Mn - IC01	34	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
030320	15 Te	Te - IC01	34	10 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
030320	16 Ba	Ba - IC01	34	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
030320	17 Cr	Cr - IC01	34	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
030320	18 V	V - IC01	34	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
030320	19 Sn	Sn - IC01	34	20 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
030320	20 W	W - IC01	34	20 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
030320	21 La	La - IC01	34	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
030320	22 Al	Al - IC01	34	0.01 PCT	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
030320	23 Mg	Mg - IC01	34	0.01 PCT	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
030320	24 Ca	Ca - IC01	34	0.01 PCT	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
030320	25 Na	Na - IC01	34	0.01 PCT	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
030320	26 K	K - IC01	34	0.01 PCT	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
030320	27 Sr	Sr - IC01	34	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
030320	28 Y	Y - IC01	34	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
030320	29 Ga	Ga - IC01	34	2 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
030320	30 Li	Li - IC01	34	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
030320	31 Nb	Nb - IC01	34	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
030320	32 Sc	Sc - IC01	34	5 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
030320	33 Ta	Ta - IC01	34	10 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
030320	34 Ti	Ti - IC01	34	0.010 PCT	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
030320	35 Zr	Zr - IC01	34	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
030320	36 S	S - IC01	34	0.01 PCT	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA

TYPES D'ÉCHANTILLONS	NOMBRE	FRACTION UTILISÉE	NOMBRE
CAROTTE DE FORAGE	34	-200	34

PRÉP. DE L'ÉCHAN.	NOMBRE
CONCASSER, PULVERISE	33
TEL QUE RECU	1
CONCASSER 95% -10 M.	33

REMARQUES: EI indique un Echantillon Insuffisant

COPIES DU RAPPORT À: MICHEL DESSUREAULT FACTURE À: MICHEL DESSUREAULT

Hélène Dupéré
Chimiste à l'analyse

ALS Chemex
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Rapport Lab Geochimie
Geochemical Lab Report

CLIENT : MINES ET EXPLORATION NORANDA INC. PROJET: AUCUN
RAPPORT: C03-61162.0 (COMPLET) DATE RECU : 14-MAR-03 DATE DE L'IMPRESSION: 31-MAR-03 PAGE 1 DE 3

NUMÉRO DE L'ÉCHANTILLON	ÉLÉMENT UNITÉS	Au30 PPB	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Mo PPM	Ni PPM	Co PPM	Cd PPM	Bi PPM	As PPM	Sb PPM	Fe PCT	Mn PPM	Te PPM	Ba PPM	Cr PPM	V PPM	Sn PPM	W PPM	La PPM	Al PCT	Mg PCT	Ca PCT	Na PCT	K PCT	Sr PPM	Y PPM	Ga PPM	Li PPM	Nb PPM	Sc PPM	Ta PPM	Ti PCT	Zr PPM	S PCT
270027		<5	0.3	114	10	172	2	55	23	0.6	<5	5	<5	6.46	959	<10	38	78	29	<20	<20	6	3.03	1.82	2.19	<.01	0.17	50	3	11	17	5	<5	<10	0.010	7	1.11
270028		<5	0.3	52	4	64	2	90	23	0.5	<5	13	<5	5.32	1250	<10	32	116	38	<20	<20	<1	2.46	2.87	2.31	0.02	0.11	46	2	12	22	6	<5	<10	<.010	6	1.91
270029		<5	0.2	33	3	48	2	58	15	0.5	<5	<5	<5	3.29	1145	<10	37	99	21	<20	<20	1	1.72	1.50	3.00	0.01	0.10	60	3	8	13	4	<5	<10	<.010	5	0.56
270030		<5	<.2	50	3	102	3	38	10	1.2	<5	6	<5	7.32	1540	<10	39	106	13	<20	<20	3	3.01	1.38	2.47	<.01	0.13	49	3	10	15	4	<5	<10	0.010	10	1.49
270031		<5	0.2	16	4	54	2	31	8	0.4	<5	<5	<5	4.83	1085	<10	30	81	12	<20	<20	5	2.27	1.20	1.63	<.01	0.13	24	3	7	13	5	<5	<10	0.010	12	0.28
270032		<5	<.2	27	10	36	2	18	8	0.2	<5	<5	<5	5.13	2070	<10	19	112	12	<20	<20	2	1.81	0.83	3.15	<.01	0.08	36	3	6	8	3	<5	<10	0.010	8	1.12
270033		<5	<.2	3	<2	32	2	5	1	<.2	<5	<5	<5	4.52	766	<10	8	163	2	<20	<20	7	1.66	0.60	0.34	<.01	0.03	9	2	3	5	1	<5	<10	0.010	8	0.01
270034		<5	<.2	23	6	60	3	7	5	3.4	<5	<5	<5	>15.00	8790	10	10	48	11	<20	<20	<1	2.25	1.58	5.32	0.06	0.20	90	4	20	2	3	<5	10	0.010	14	1.96
270035		<5	<.2	39	3	92	1	10	9	4.0	<5	<5	<5	>15.00	7280	10	17	30	14	<20	<20	<1	3.88	2.22	5.57	0.02	0.08	77	6	23	3	5	<5	10	0.010	23	3.58
270036		<5	<.2	20	4	55	2	6	5	1.2	<5	<5	<5	10.00	6430	<10	6	56	6	<20	<20	1	1.86	1.58	6.75	<.01	0.01	63	5	15	2	4	<5	10	0.010	15	1.86
270037		<5	0.3	14	<2	85	2	15	6	1.4	<5	<5	<5	11.95	4670	<10	4	76	22	<20	<20	<1	3.01	1.83	3.64	0.02	0.08	56	4	14	3	5	<5	<10	0.010	17	1.20
270038		<5	<.2	3	<2	36	1	6	3	0.3	<5	<5	<5	5.50	2130	<10	2	100	5	<20	<20	2	2.10	1.39	2.19	<.01	<.01	24	3	9	7	4	<5	<10	0.010	9	0.03
270039		<5	<.2	36	2	30	<1	19	11	1.1	<5	<5	<5	7.95	4810	<10	3	47	7	<20	<20	2	2.01	0.42	11.10	<.01	0.01	132	9	9	4	5	<5	<10	0.010	10	1.53
270040		<5	<.2	29	2	56	1	38	12	0.9	<5	<5	<5	9.53	2300	<10	3	140	43	<20	<20	1	3.48	0.74	5.07	<.01	0.02	61	5	11	9	5	6	<10	0.020	8	0.69
270041		<5	<.2	8	2	47	2	4	4	0.7	<5	<5	<5	9.19	2810	<10	4	60	6	<20	<20	8	3.13	0.53	3.18	<.01	0.02	41	6	10	4	3	<5	<10	0.010	14	0.70
270042		6	<.2	9	2	49	2	4	4	1.1	<5	<5	<5	8.96	3410	<10	15	68	6	<20	<20	14	3.14	0.56	3.72	<.01	0.09	46	8	12	7	3	<5	<10	0.010	16	0.92
270043		<5	<.2	7	3	40	2	4	3	0.8	<5	<5	<5	9.31	4720	<10	3	69	6	<20	<20	9	2.91	0.52	4.56	<.01	0.01	57	7	11	4	3	<5	<10	0.010	12	1.01
270044		<5	<.2	11	2	39	1	3	2	1.0	<5	<5	<5	6.86	2630	<10	6	108	4	<20	<20	5	2.19	0.43	3.57	<.01	0.06	43	5	7	4	3	<5	<10	0.010	11	0.93
270045		<5	<.2	11	4	37	2	3	2	<.2	<5	<5	<5	4.04	946	<10	11	108	2	<20	<20	8	1.36	0.32	1.40	<.01	0.16	18	4	2	4	2	<5	<10	0.010	20	0.61
270046		<5	<.2	13	<2	26	2	4	2	<.2	<5	<5	<5	2.68	825	<10	12	136	1	<20	<20	10	0.76	0.18	1.46	<.01	0.19	14	4	<2	3	1	<5	<10	<.010	18	0.72
270047		<5	<.2	20	<2	30	1	4	3	0.7	<5	<5	<5	8.33	4860	10	6	71	5	<20	<20	3	1.42	0.56	3.95	<.01	0.07	25	5	8	3	3	<5	<10	0.010	12	1.16
270048		<5	<.2	21	<2	92	1	5	7	<.2	<5	<5	<5	7.65	1190	<10	12	51	11	<20	<20	8	3.36	1.00	3.43	<.01	0.14	27	5	10	13	3	<5	<10	0.020	11	0.29
270049		<5	0.3	82	9	107	6	51	15	3.0	<5	21	<5	>15.00	1665	10	17	103	5	<20	<20	<1	0.66	0.74	2.81	<.01	0.12	40	4	5	3	1	<5	10	<.010	11	9.55
270050		35	0.6	68	28	58	4	47	35	4.6	<5	126	<5	>15.00	2180	20	13	79	10	<20	<20	<1	1.28	0.79	1.43	<.01	0.15	48	3	7	4	1	<5	10	<.010	18	>10.00
270051		<5	<.2	19	<2	42	3	6	4	<.2	<5	<5	<5	3.57	747	<10	28	75	2	<20	<20	7	0.75	0.45	0.89	<.01	0.24	15	4	<2	3	2	<5	<10	<.010	24	1.40
270052		<5	<.2	16	<2	54	1	4	3	0.9	<5	<5	<5	1.98	1250	<10	33	86	1	<20	<20	10	0.28	0.36	2.05	<.01	0.27	23	4	<2	2	1	<5	<10	<.010	22	0.62
270053		19	0.5	76	20	76	3	46	24	4.3	<5	106	<5	>15.00	2340	20	16	77	11	<20	<20	<1	2.13	1.15	1.22	<.01	0.13	47	3	14	5	3	<5	10	<.010	24	>10.00
270054		<5	<.2	19	<2	36	3	5	3	0.3	<5	<5	<5	1.72	1020	<10	47	108	2	<20	<20	9	0.31	0.28	1.46	0.01	0.30	29	4	<2	2	1	<5	<10	<.010	20	0.63
270055		<5	0.2	56	<2	65	1	102	27	0.3	<5	<5	<5	6.00	3110	<10	21	100	39	<20	<20	<1	3.12	3.57	3.78	<.01	0.16	40	3	14	24	7	<5	<10	<.010	4	0.02
270056		<5	<.2	74	2	69	<1	126	29	0.3	<5	<5	<5	6.23	3280	<10	30	102	38	<20	<20	2	3.07	1.30	7.76	<.01	0.24	94	6	12	17	5	<5	<10	0.010	5	0.02

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Hélène Dupéré
Chimiste à l'entrainement

ALS Chemex
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Rapport Lab Geochimie
Geochemical Lab Report

CLIENT : MINES ET EXPLORATION NORANDA INC. PROJET: AUCUN
RAPPORT: C03-61162.0 (COMPLET) DATE RECU : 14-MAR-03 DATE DE L'IMPRESSION: 31-MAR-03 PAGE 2 DE 3

NUMÉRO DE L'ÉCHANTILLON	ÉLÉMENT UNITÉS	Au30 PPB	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Mo PPM	Ni PPM	Co PPM	Cd PPM	Bi PPM	As PPM	Sb PPM	Fe PCT	Mn PPM	Te PPM	Ba PPM	Cr PPM	V PPM	Sn PPM	W PPM	La PPM	Al PCT	Mg PCT	Ca PCT	Na PCT	K PCT	Sr PPM	Y PPM	Ga PPM	Li PPM	Nb PPM	Sc PPM	Ta PPM	Ti PCT	Zr PPM	S PCT
270057		<5	<.2	83	4	45	7	5	3	<.2	<5	<5	<5	2.25	236	<10	51	127	13	<20	<20	28	0.88	0.39	0.38	0.05	0.35	13	12	3	5	1	<5	<10	0.070	36	0.36
270058		<5	<.2	30	5	35	6	5	3	<.2	<5	<5	<5	2.14	182	<10	44	104	7	<20	<20	25	0.60	0.23	0.37	0.04	0.24	12	11	<2	3	2	<5	<10	0.050	32	0.64
270059		EI	2.5	7820	<2	117	5	70	180	1.2	<5	131	<5	9.21	1595	10	3	21	50	<20	<20	1	3.14	1.70	3.36	0.03	0.03	17	2	11	7	4	<5	<10	0.020	2	2.56
270060		17	0.2	39	<2	35	5	4	8	<.2	<5	<5	<5	3.51	221	<10	20	97	7	<20	<20	8	1.95	0.92	0.50	0.03	0.07	9	4	8	15	2	<5	<10	<.010	7	0.19

ALS Chemex - Chimitec, 1322-B Harricana, Val-d'Or, Québec, J9P 3X6, Tel: (819) 825-0178, Fax: (819) 825-0256

Hélène Lapierre
Minimatic à l'enregistrement

ALS Chemex
Chimitec

Rapport Lab Geochimie
Geochemical Lab Report

CLIENT : MINES ET EXPLORATION NORANDA INC. PROJET: AUCUN
RAPPORT: C03-61162.0 (COMPLET) DATE RECU : 14-MAR-03 DATE DE L'IMPRESSION: 31-MAR-03 PAGE 3 DE 3

# MESURE	ÉLÉMENT	Au30	Ag	Cu	Pb	Zn	Mo	Ni	Co	Cd	Bi	As	Sb	Fe	Mn	Te	Ba	Cr	V	Sn	W	La	Al	Mg	Ca	Na	K	Sr	Y	Ga	Li	Nb	Sc	Ta	Ti	Zr	S
STANDARD	UNITÉS	PPB	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PCT	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PCT	PCT	PCT	PCT	PCT	PPM	PPM	PPM	PPM	PPM	PPM	PCT	PPM	PCT
BLANC		<5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BLANC		<5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nombre d'analyses		2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Valeur de moyenne		3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Écart-type		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Valeur acceptee		5	0.2	1	2	1	1	1	1	1.0	2	5	5	0.05	1	<1	<1	1	1	<1	<1	<1	<.01	<.01	<0.01	<.01	<.01	<1	<1	<1	<1	<1	<1	<1	<.001	<1	<0.01
OXK18		3566	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nombre d'analyses		1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Valeur de moyenne		3566	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Écart-type		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Valeur acceptee		3463	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
OXE20		548	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nombre d'analyses		1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Valeur de moyenne		548	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Écart-type		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Valeur acceptee		548	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Rapport Lab Geochimie
Geochemical Lab Report

RAPPORT: C03-61472.0 (COMPLET) RÉFÉRENCE:

CLIENT: MINES ET EXPLORATION NORANDA INC. SOUMIS PAR: D. VERMETTE

PROJET: 554 DATE RECU: 02-APR-03 DATE DE L'IMPRESSION: 15-AVR-03

DATE APPROUVÉ	COMMANDE	ÉLÉMENT	NOMBRE D'ANALYSES	LIMITE INFÉRIEURE DE DETECTION	EXTRACTION	MÉTHODE
030409	1 Au30	Or	50	5 PPB	Pyro Analyse de 30g 30g Pyroanalyse - A	
030409	2 Ag	Ag - ICO1	51	0.2 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
030409	3 Cu	Cu - ICO1	51	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
030409	4 Pb	Pb - ICO1	51	2 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
030409	5 Zn	Zn - ICO1	51	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
030409	6 Mo	Mo - ICO1	51	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
030409	7 Ni	Ni - ICO1	51	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
030409	8 Co	Co - ICO1	51	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
030409	9 Cd	Cd - ICO1	51	0.2 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
030409	10 Bi	Bi - ICO1	51	5 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
030409	11 As	As - ICO1	51	5 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
030409	12 Sb	Sb - ICO1	51	5 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
030409	13 Fe	Fe - ICO1	51	0.01 PCT	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
030409	14 Mn	Mn - ICO1	51	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
030409	15 Te	Te - ICO1	51	10 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
030409	16 Ba	Ba - ICO1	51	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
030409	17 Cr	Cr - ICO1	51	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
030409	18 V	V - ICO1	51	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
030409	19 Sn	Sn - ICO1	51	20 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
030409	20 W	W - ICO1	51	20 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
030409	21 La	La - ICO1	51	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
030409	22 Al	Al - ICO1	51	0.01 PCT	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
030409	23 Mg	Mg - ICO1	51	0.01 PCT	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
030409	24 Ca	Ca - ICO1	51	0.01 PCT	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
030409	25 Na	Na - ICO1	51	0.01 PCT	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
030409	26 K	K - ICO1	51	0.01 PCT	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
030409	27 Sr	Sr - ICO1	51	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
030409	28 Y	Y - ICO1	51	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
030409	29 Ga	Ga - ICO1	51	2 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
030409	30 Li	Li - ICO1	51	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
030409	31 Nb	Nb - ICO1	51	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
030409	32 Sc	Sc - ICO1	51	5 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
030409	33 Ta	Ta - ICO1	51	10 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
030409	34 Ti	Ti - ICO1	51	0.010 PCT	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
030409	35 Zr	Zr - ICO1	51	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
030409	36 S	S - ICO1	51	0.01 PCT	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA

TYPES D'ÉCHANTILLONS	NOMBRE	FRACTION UTILISÉE	NOMBRE	PRÉP. DE L'ÉCHAN.	NOMBRE
CAROTTE DE FORAGE	51	-200	51	CONCASSER, PULVERISE	50
				TEL QUE RECU	1

REMARQUES: EI indique un Echantillon Insuffisant

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Rapport Lab Geochimie
Geochemical Lab Report

CLIENT : MINES ET EXPLORATION NORANDA INC. PROJET: 554
RAPPORT: C03-61472.0 (COMPLET) DATE RECU : 02-APR-03 DATE DE L'IMPRESSION: 15-AVR-03 PAGE 1 DE 3

NUMÉRO DE L'ÉCHANTILLON	ÉLÉMENT UNITÉS	Au30 PPB	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Mo PPM	Ni PPM	Co PPM	Cd PPM	Bi PPM	As PPM	Sb PPM	Fe PCT	Mn PPM	Te PPM	Ba PPM	Cr PPM	V PPM	Sn PPM	W PPM	La PPM	Al PCT	Mg PCT	Ca PCT	Na PCT	K PCT	Sr PPM	Y PPM	Ga PPM	Li PPM	Nb PPM	Sc PPM	Ta PPM	Ti PCT	Zr PPM	S PCT
270061		17	<.2	70	4	136	<1	88	52	5.8	9	85	<5	>15.00	4770	30	3	48	47	<20	<20	<1	3.31	1.02	5.93	<.01	<.01	61	3	20	1	3	<5	10	0.010	8	>10.00
270062		7	<.2	47	<2	84	<1	83	39	5.0	8	81	<5	>15.00	5130	20	3	68	52	<20	<20	<1	4.20	1.12	4.00	<.01	<.01	44	3	22	<1	3	5	<10	0.020	9	>10.00
270063		21	<.2	35	8	45	1	103	43	5.3	11	180	<5	>15.00	3390	30	3	61	45	<20	<20	<1	3.59	0.86	3.02	0.01	<.01	43	2	16	1	4	<5	10	0.020	7	>10.00
270064		<5	<.2	27	<2	65	<1	42	18	2.0	<5	11	<5	13.25	5450	10	4	54	83	<20	<20	<1	6.27	2.07	4.83	<.01	0.03	49	6	24	22	7	11	<10	0.010	4	1.60
270065		<5	<.2	44	<2	53	<1	49	24	2.2	7	31	<5	13.10	4750	10	5	61	67	<20	<20	<1	5.14	1.66	5.45	<.01	0.05	49	5	21	17	5	8	<10	0.010	4	4.21
270066		<5	<.2	47	<2	78	<1	40	19	1.9	<5	7	<5	13.75	4830	10	2	77	82	<20	<20	<1	6.62	2.16	3.85	<.01	0.02	34	4	23	20	7	9	<10	0.030	4	1.39
270067		<5	<.2	35	<2	31	2	11	6	0.3	<5	<5	<5	1.92	398	<10	17	134	17	<20	<20	3	0.84	0.38	1.45	0.02	0.05	54	3	3	7	2	<5	<10	0.040	6	0.20
270068		<5	<.2	44	<2	76	<1	30	19	0.3	<5	11	<5	5.77	1355	<10	18	41	29	<20	<20	8	3.10	1.30	4.48	<.01	0.20	152	6	10	25	5	<5	<10	0.010	8	0.03
270069		<5	<.2	24	<2	79	1	6	6	1.4	<5	<5	<5	12.00	2360	10	7	57	15	<20	<20	4	3.66	0.68	3.54	0.02	0.07	70	5	13	7	4	<5	<10	0.020	16	1.14
270070		8	<.2	24	<2	86	<1	7	7	5.2	<5	<5	<5	>15.00	>10000	20	8	34	8	<20	<20	<1	1.06	1.17	4.62	0.09	0.28	75	4	34	<1	2	<5	10	<.010	7	1.64
270071		<5	<.2	19	<2	72	<1	4	4	2.0	<5	<5	<5	12.95	7400	10	1	58	4	<20	<20	<1	1.90	0.62	3.55	0.01	0.02	77	7	17	1	1	<5	<10	0.010	14	1.35
270072		<5	<.2	16	<2	75	2	3	5	2.8	<5	<5	<5	>15.00	>10000	10	2	49	9	<20	<20	<1	2.00	0.87	3.50	<.01	<.01	94	6	28	1	3	<5	10	0.010	16	1.14
270073		<5	<.2	17	<2	55	<1	4	4	1.6	<5	<5	<5	11.70	7930	10	3	76	6	<20	<20	<1	2.07	0.52	4.04	<.01	<.01	86	7	19	1	3	<5	<10	0.010	16	1.15
270074		56	<.2	20	<2	60	<1	2	3	1.0	<5	<5	<5	9.02	1450	10	2	70	4	<20	<20	4	2.90	0.42	1.88	0.01	<.01	49	5	9	5	3	<5	<10	0.020	15	0.99
270075		<5	<.2	39	<2	24	1	4	4	<.2	<5	<5	<5	2.45	238	<10	19	131	6	<20	<20	11	1.30	0.57	0.73	0.06	0.07	10	5	5	8	2	<5	<10	<.010	9	0.05
270076		<5	<.2	14	3	45	1	3	3	0.8	<5	<5	<5	6.45	2020	<10	3	68	4	<20	<20	3	2.04	0.31	3.38	<.01	0.02	60	5	7	4	2	<5	<10	0.010	11	0.86
270077		<5	<.2	12	<2	38	<1	2	3	0.5	<5	<5	<5	5.49	1395	<10	6	91	3	<20	<20	5	1.75	0.28	2.28	<.01	0.03	34	4	6	4	3	<5	<10	0.010	12	0.69
270078		<5	<.2	13	<2	38	1	3	3	0.2	<5	<5	<5	4.94	775	<10	4	119	2	<20	<20	5	1.61	0.27	0.94	0.01	0.03	15	3	4	4	1	<5	<10	0.010	10	0.51
270079		<5	<.2	17	<2	41	1	3	3	<.2	<5	<5	<5	5.19	974	10	6	106	2	<20	<20	9	1.64	0.31	1.36	0.01	0.05	18	4	5	5	2	<5	<10	0.010	14	0.76
270080		<5	<.2	10	<2	36	1	2	2	0.2	<5	<5	<5	4.45	1220	<10	8	112	1	<20	<20	9	1.44	0.28	2.03	0.01	0.08	23	5	5	4	2	<5	<10	0.010	15	0.68
270081		<5	<.2	14	<2	32	<1	2	3	0.3	<5	<5	<5	3.77	816	<10	8	115	1	<20	<20	9	1.16	0.23	1.38	<.01	0.09	16	4	3	4	1	<5	<10	0.010	13	0.85
270082		<5	<.2	10	<2	31	<1	3	2	0.2	<5	<5	<5	2.99	560	<10	9	101	1	<20	<20	10	1.08	0.22	0.90	<.01	0.12	10	5	2	4	2	<5	<10	0.010	18	0.47
270083		<5	<.2	12	4	17	1	4	3	<.2	<5	6	<5	2.43	441	<10	8	132	1	<20	<20	7	0.66	0.12	0.89	<.01	0.09	10	4	<2	3	1	<5	<10	<.010	13	0.96
270084		<5	<.2	12	<2	25	1	3	2	<.2	<5	<5	<5	3.38	380	<10	8	118	1	<20	<20	7	1.13	0.22	0.39	<.01	0.08	6	3	2	4	1	<5	<10	0.010	16	0.63
270085		EI	2.1	8620	<2	136	1	76	200	1.6	<5	150	<5	10.45	1745	10	3	25	57	<20	<20	1	3.79	2.07	3.58	0.04	0.03	18	2	14	8	6	6	<10	0.030	2	2.57
270086		<5	<.2	10	2	34	1	3	2	<.2	<5	<5	<5	5.61	630	10	6	106	2	<20	<20	12	1.84	0.34	0.50	<.01	0.04	7	3	<2	6	1	<5	10	0.010	12	0.63
270087		<5	<.2	12	5	32	1	2	4	0.9	<5	<5	<5	9.15	4910	10	2	37	5	<20	<20	20	2.54	0.42	6.36	<.01	0.02	70	9	56	7	<1	<5	20	0.010	12	1.50
270088		<5	<.2	5	2	39	<1	3	3	1.5	<5	<5	<5	12.05	6460	10	2	52	5	<20	<20	24	3.38	0.72	3.32	0.01	0.03	32	8	77	2	1	<5	20	0.020	16	0.52
270089		<5	<.2	9	3	29	<1	2	3	1.4	<5	<5	<5	11.60	7170	10	5	69	4	<20	<20	17	2.00	0.60	3.36	0.09	0.22	36	8	84	1	1	<5	30	0.010	17	1.00
270090		<5	<.2	14	4	37	1	2	3	1.4	<5	<5	<5	11.95	7440	10	3	47	5	<20	<20	20	2.36	0.64	5.35	0.15	0.35	63	10	89	1	<1	<5	20	0.010	16	1.21

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Rapport Lab Geochimie
Geochemical Lab Report

CLIENT : MINES ET EXPLORATION NORANDA INC. PROJET: 554
RAPPORT: C03-61472.0 (COMPLET) DATE RECU : 02-APR-03 DATE DE L'IMPRESSION: 15-AVR-03 PAGE 2 DE 3

NUMÉRO DE L'ÉCHANTILLON	ÉLÉMENT UNITÉS	Au30 PPB	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Mo PPM	Ni PPM	Co PPM	Cd PPM	Bi PPM	As PPM	Sb PPM	Fe PCT	Mn PPM	Te PPM	Ba PPM	Cr PPM	V PPM	Sn PPM	W PPM	La PPM	Al PCT	Mg PCT	Ca PCT	Na PCT	K PCT	Sr PPM	Y PPM	Ga PPM	Li PPM	Nb PPM	Sc PPM	Ta PPM	Ti PCT	Zr PPM	S PCT
270091		<5	<.2	62	<2	47	<1	3	4	1.7	<5	<5	<5	13.25	4980	10	3	39	7	<20	<20	24	3.51	0.91	4.11	0.11	0.25	50	12	57	2	1	<5	20	0.020	21	0.82
270092		26	<.2	54	2	36	4	7	5	0.9	<5	<5	<5	7.20	2430	10	14	81	10	<20	<20	10	1.04	0.43	4.21	0.08	0.23	51	4	16	1	<1	<5	10	0.010	6	0.51
270093		<5	<.2	26	<2	48	<1	32	13	0.2	<5	<5	<5	4.02	850	<10	24	35	21	<20	<20	13	2.45	1.52	3.34	0.01	0.19	41	4	<2	27	1	<5	10	<.010	8	0.01
270401		<5	<.2	28	2	94	<1	5	12	0.7	<5	<5	<5	6.29	1435	<10	24	24	6	<20	<20	20	2.68	0.84	3.56	0.04	0.09	104	6	9	14	<1	6	10	0.020	10	0.08
270402		6	0.3	39	5	69	2	40	28	1.0	<5	7	<5	9.66	1435	10	2	38	69	<20	<20	18	2.83	1.00	4.17	0.03	<.01	115	6	10	9	1	12	20	0.030	7	2.35
270403		<5	<.2	57	2	73	<1	63	27	0.8	<5	12	<5	7.36	1625	10	7	48	133	<20	<20	13	3.68	2.65	3.74	0.03	0.02	78	6	13	20	3	17	10	0.030	4	1.08
270404		<5	<.2	63	5	73	<1	64	30	0.8	<5	19	<5	7.47	1830	10	5	46	126	<20	<20	14	3.86	2.95	3.49	0.03	0.02	57	6	16	25	3	15	10	0.120	5	1.38
270405		<5	<.2	55	2	64	<1	58	21	0.4	<5	10	<5	5.84	1635	10	9	48	117	<20	<20	12	3.46	2.73	3.58	0.04	0.03	56	7	13	24	3	14	10	0.180	5	0.54
270406		<5	<.2	53	2	70	<1	62	26	0.9	<5	8	<5	7.88	1770	10	10	43	118	<20	<20	14	3.93	2.59	4.08	0.03	0.04	65	7	16	22	3	14	10	0.160	5	1.04
270407		<5	<.2	66	2	75	<1	64	24	0.5	<5	15	<5	5.47	1375	10	8	53	128	<20	<20	12	3.28	2.46	3.34	0.04	0.03	49	7	7	22	2	14	10	0.200	5	0.17
270408		<5	<.2	57	2	74	<1	61	22	0.5	<5	11	<5	5.48	1385	10	10	51	110	<20	<20	12	3.29	2.41	3.97	0.04	0.04	50	7	9	21	3	12	10	0.180	5	0.13
270409		6	<.2	78	5	77	<1	63	30	0.8	<5	24	<5	6.43	1155	10	8	48	114	<20	<20	12	3.46	2.72	3.19	0.03	0.03	45	6	7	25	3	12	10	0.150	5	1.23
270410		<5	<.2	63	3	75	<1	60	26	0.7	<5	19	<5	5.36	1060	10	16	50	94	<20	<20	12	3.10	2.34	3.64	0.04	0.06	60	5	<2	22	3	8	10	0.130	5	0.60
270411		7	<.2	47	2	58	<1	53	21	0.5	<5	8	<5	5.20	1390	10	29	43	41	<20	<20	11	2.89	1.92	5.32	0.01	0.16	75	4	4	18	1	<5	10	0.080	5	0.33
270412		<5	<.2	102	3	77	<1	61	25	1.2	<5	<5	<5	8.73	1610	10	16	36	73	<20	<20	13	3.90	2.63	5.08	0.02	0.08	64	4	12	25	3	6	10	0.070	5	1.48
270413		<5	<.2	64	<2	77	<1	63	27	0.7	<5	20	<5	5.98	1310	10	24	39	69	<20	<20	11	3.54	2.49	3.63	0.03	0.13	48	5	4	23	2	5	10	0.110	7	0.14
270414		<5	<.2	66	4	71	<1	63	25	0.5	<5	11	<5	5.71	1245	10	17	44	76	<20	<20	11	3.30	2.31	4.80	0.03	0.09	55	5	3	23	2	6	10	0.100	6	0.27
270415		<5	<.2	70	<2	85	<1	63	27	0.5	<5	9	<5	6.89	1305	10	13	48	100	<20	<20	14	3.99	2.81	3.73	0.02	0.07	46	5	9	26	3	8	10	0.110	6	0.22
270416		6	<.2	48	<2	73	<1	61	22	0.6	<5	<5	<5	6.75	1255	10	10	43	102	<20	<20	13	3.61	2.51	3.97	0.03	0.05	47	5	7	23	2	9	10	0.110	5	0.38
270417		<5	<.2	175	5	93	<1	67	41	1.6	<5	8	<5	9.36	1545	10	11	37	107	<20	<20	16	4.49	3.08	4.74	0.02	0.06	51	4	12	29	3	10	10	0.080	7	1.33
270418		<5	<.2	50	2	78	<1	65	28	0.7	<5	10	<5	6.73	1290	10	10	40	102	<20	<20	13	3.71	2.63	4.49	0.03	0.06	49	4	7	24	2	9	10	0.100	6	0.28

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CLIENT : MINES ET EXPLORATION NORANDA INC. PROJET: 554
RAPPORT: C03-61472.0 (COMPLET) DATE RECU : 02-APR-03 DATE DE L'IMPRESSION: 15-AVR-03 PAGE 3 DE 3

# MESURE / STANDARD	ÉLÉMENT / UNITÉS	Au30 PPB	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Mo PPM	Ni PPM	Co PPM	Cd PPM	Bi PPM	As PPM	Sb PPM	Fe PCT	Mn PPM	Te PPM	Ba PPM	Cr PPM	V PPM	Sn PPM	W PPM	La PPM	Al PCT	Mg PCT	Ca PCT	Na PCT	K PCT	Sr PPM	Y PPM	Ga PPM	Li PPM	Nb PPM	Sc PPM	Ta PPM	Ti PCT	Zr PPM	S PCT
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Valeur de moyenne		3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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OXH19		1315	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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Valeur de moyenne		1312	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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Valeur de moyenne		548	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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Valeur acceptee		548	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Rapport Lab Geochimie
Geochemical Lab Report

RAPPORT: C03-61673.0 (COMPLET) RÉFÉRENCE:

CLIENT: MINES ET EXPLORATION NORANDA INC. SOUMIS PAR: D. VERMETTE

PROJET: 554 DATE RECU: 16-APR-03 DATE DE L'IMPRESSION: 28-AVR-03

DATE APPROUVÉ	COMMANDE	ÉLÉMENT	NOMBRE D'ANALYSES	LIMITE INFÉRIEURE DE DETECTION	EXTRACTION	MÉTHODE
030422	1 Au30	Or	7	5 PPB	Pyro Analyse de 30g	30g Pyroanalyse - A
030422	2 Ag	Ag - IC01	7	0.2 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
030422	3 Cu	Cu - IC01	7	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
030422	4 Pb	Pb - IC01	7	2 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
030422	5 Zn	Zn - IC01	7	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
030422	6 Mo	Mo - IC01	7	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
030422	7 Ni	Ni - IC01	7	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
030422	8 Co	Co - IC01	7	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
030422	9 Cd	Cd - IC01	7	0.2 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
030422	10 Bi	Bi - IC01	7	5 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
030422	11 As	As - IC01	7	5 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
030422	12 Sb	Sb - IC01	7	5 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
030422	13 Fe	Fe - IC01	7	0.01 PCT	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
030422	14 Mn	Mn - IC01	7	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
030422	15 Te	Te - IC01	7	10 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
030422	16 Ba	Ba - IC01	7	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
030422	17 Cr	Cr - IC01	7	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
030422	18 V	V - IC01	7	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
030422	19 Sn	Sn - IC01	7	20 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
030422	20 W	W - IC01	7	20 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
030422	21 La	La - IC01	7	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
030422	22 Al	Al - IC01	7	0.01 PCT	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
030422	23 Mg	Mg - IC01	7	0.01 PCT	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
030422	24 Ca	Ca - IC01	7	0.01 PCT	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
030422	25 Na	Na - IC01	7	0.01 PCT	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
030422	26 K	K - IC01	7	0.01 PCT	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
030422	27 Sr	Sr - IC01	7	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
030422	28 Y	Y - IC01	7	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
030422	29 Ga	Ga - IC01	7	2 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
030422	30 Li	Li - IC01	7	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
030422	31 Nb	Nb - IC01	7	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
030422	32 Sc	Sc - IC01	7	5 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
030422	33 Ta	Ta - IC01	7	10 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
030422	34 Ti	Ti - IC01	7	0.010 PCT	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
030422	35 Zr	Zr - IC01	7	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
030422	36 S	S - IC01	7	0.01 PCT	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA

TYPES D'ÉCHANTILLONS	NOMBRE	FRACTION UTILISÉE	NOMBRE	PRÉP. DE L'ÉCHAN.	NOMBRE
CAROTTE DE FORAGE	7	-200	7	CONCASSER, PULVERISE	7
				CONCASSER 95% -10 M.	7

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****

Ce rapport ne doit être reproduit que dans sa totalité. Les données présentées dans ce rapport sont exprimées sur base sèche sauf indication contraire et ne concernent que les échantillons reçus, identifiés par le numéro d'échantillon.

****

Hélène Dupéré
Chimiste à l'extraction

ALS Chemex
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Rapport Lab Geochimie
Geochemical Lab Report

CLIENT : MINES ET EXPLORATION NORANDA INC. PROJET: 554

RAPPORT: C03-61673.0 (COMPLET) DATE RECU : 16-APR-03 DATE DE L'IMPRESSION: 28-AVR-03 PAGE 1 DE 2

NUMÉRO DE L'ÉCHANTILLON	ÉLÉMENT UNITÉS	Au30 PPB	Ag PPM	Cu PPM	Pb PPM	Zn PPM	Mo PPM	Ni PPM	Co PPM	Cd PPM	Bi PPM	As PPM	Sb PPM	Fe PCT	Mn PPM	Te PPM	Ba PPM	Cr PPM	V PPM	Sn PPM	W PPM	La PPM	Al PCT	Mg PCT	Ca PCT	Na PCT	K PCT	Sr PPM	Y PPM	Ga PPM	Li PPM	Nb PPM	Sc PPM	Ta PPM	Ti PCT	Zr PPM	S PCT
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Rapport Lab Geochimie
Geochemical Lab Report

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# MESURE	ÉLÉMENT	Au30	Ag	Cu	Pb	Zn	Mo	Ni	Co	Cd	Bi	As	Sb	Fe	Mn	Te	Ba	Cr	V	Sn	W	La	Al	Mg	Ca	Na	K	Sr	Y	Ga	Li	Nb	Sc	Ta	Ti	Zr	S
STANDARD	UNITÉS	PPB	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PCT	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PCT	PCT	PCT	PCT	PCT	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PCT	PPM	PCT
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Valeur de moyenne		3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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OXE20		568	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nombre d'analyses		1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Valeur de moyenne		568	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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Valeur acceptee		548	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

ANNEXE 6

Géophysique – Levés magnétiques

Specifications:

Performance

Sensitivity:	< 0.015 nT / √Hz
Resolution:	0.01 nT
Absolute Accuracy:	+/- 0.1 nT
Dynamic Range:	10,000 to 120,000 nT
Gradient Tolerance:	> 10,000 nT/m
Sampling Rate:	60, 3, 2, 1, 0.5, 0.2 sec
Operating Temperature:	-40C to +55C

Operating Modes

Manual:	Coordinates, time, date and reading stored automatically at minimum 3 second interval.
Base Station:	Time, date and reading stored at 3 to 60 second intervals.
Remote Control:	Optional remote control using RS-232 interface.
Input / Output:	RS-232 or analog (optional) output using 6-pin weatherproof connector

Storage - 4Mbytes (# of Readings)

Mobile:	209,715
Base Station:	699,050
Gradiometer:	174,762
Walking Magnetometer:	299,593

Dimensions

Console:	223 x 69 x 240 mm
Sensor:	175 x 75mm diameter cylinder

Weights

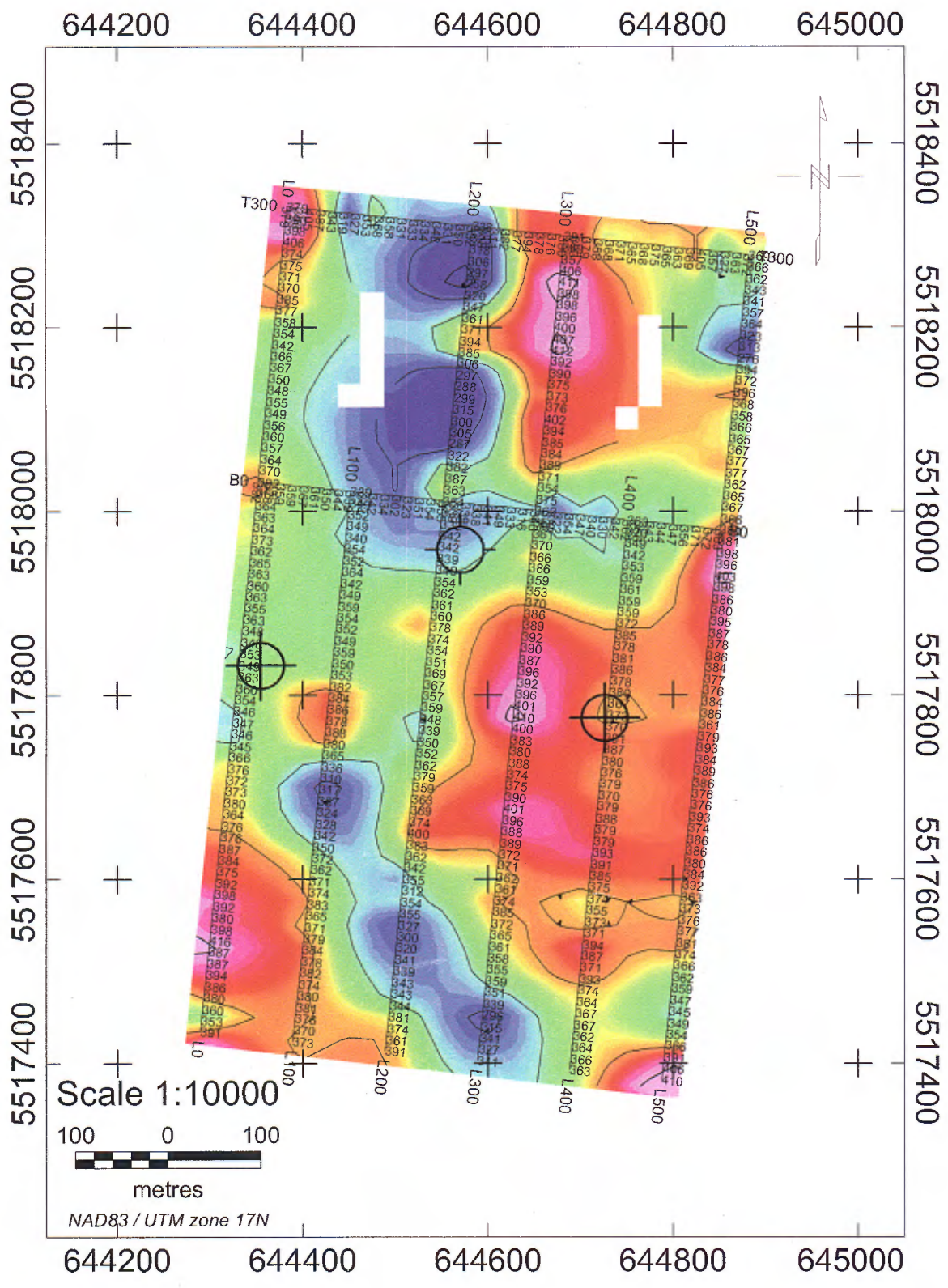
Console:	2.1 kg
Sensor and Staff Assembly:	1.0 kg

Standard Components

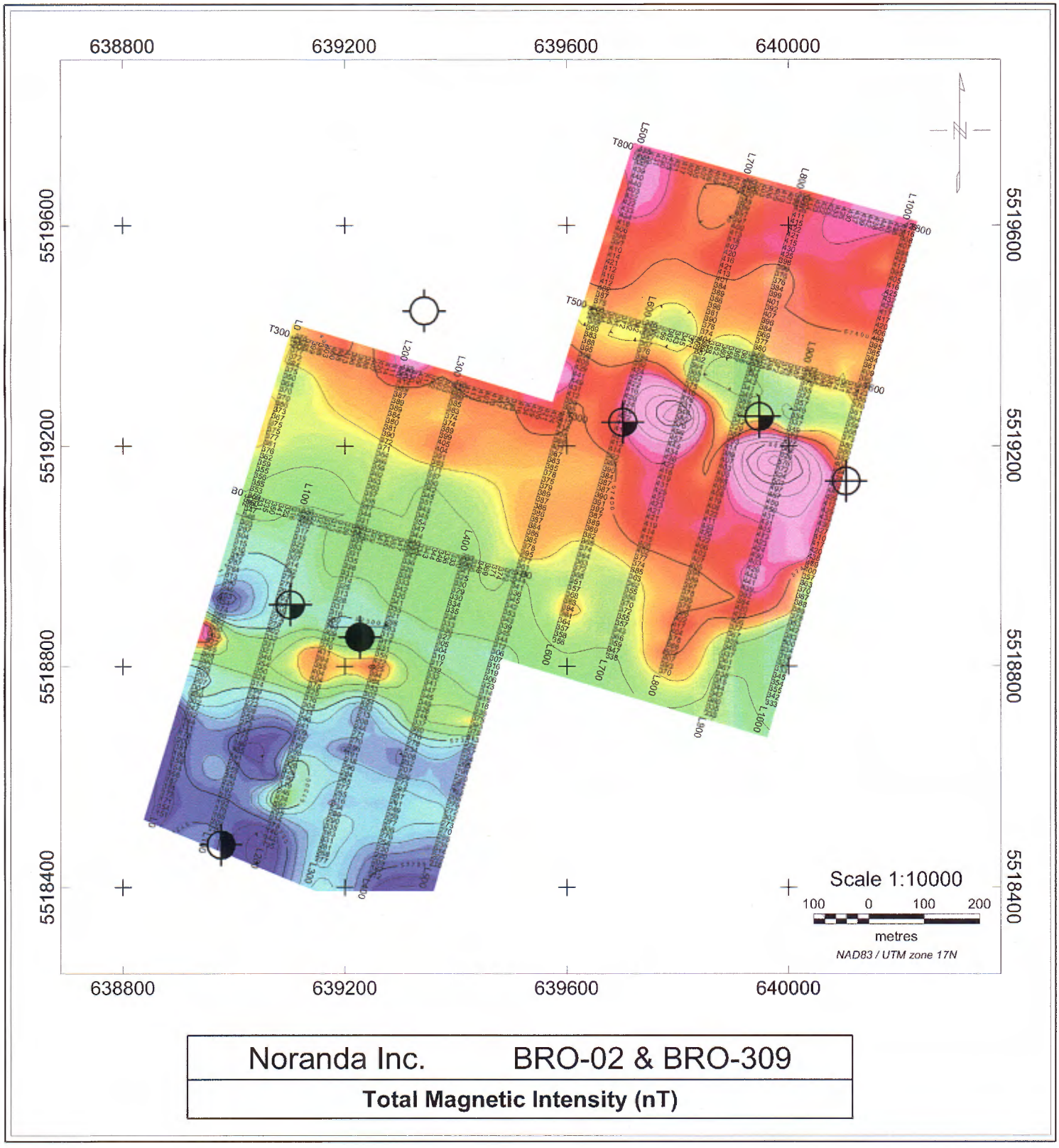
GSM-19 console, GEMLinkW software, batteries, harness, charger, sensor with cable, RS-232 cable, staff, instruction manual and shipping case.

Optional VLF

Frequency Range:	Up to 3 stations between 15 to 30.0 kHz
Parameters:	Vertical in-phase and out-ofphase components as % of total field. 2 relative components of the horizontal field.
Resolution:	0.1% of toal field

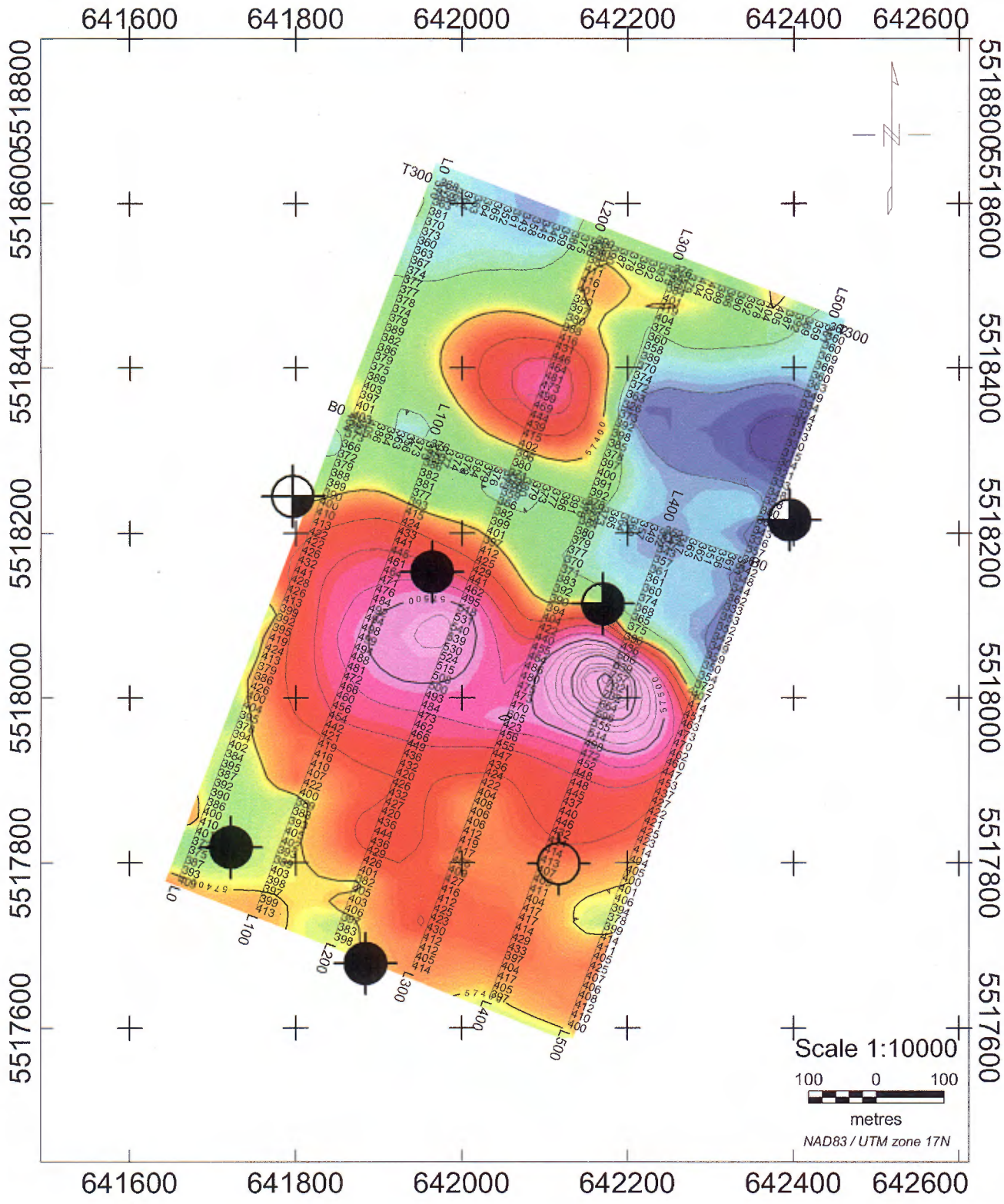


Noranda Inc.	BRO-306
Total Magnetic Intensity (nT)	



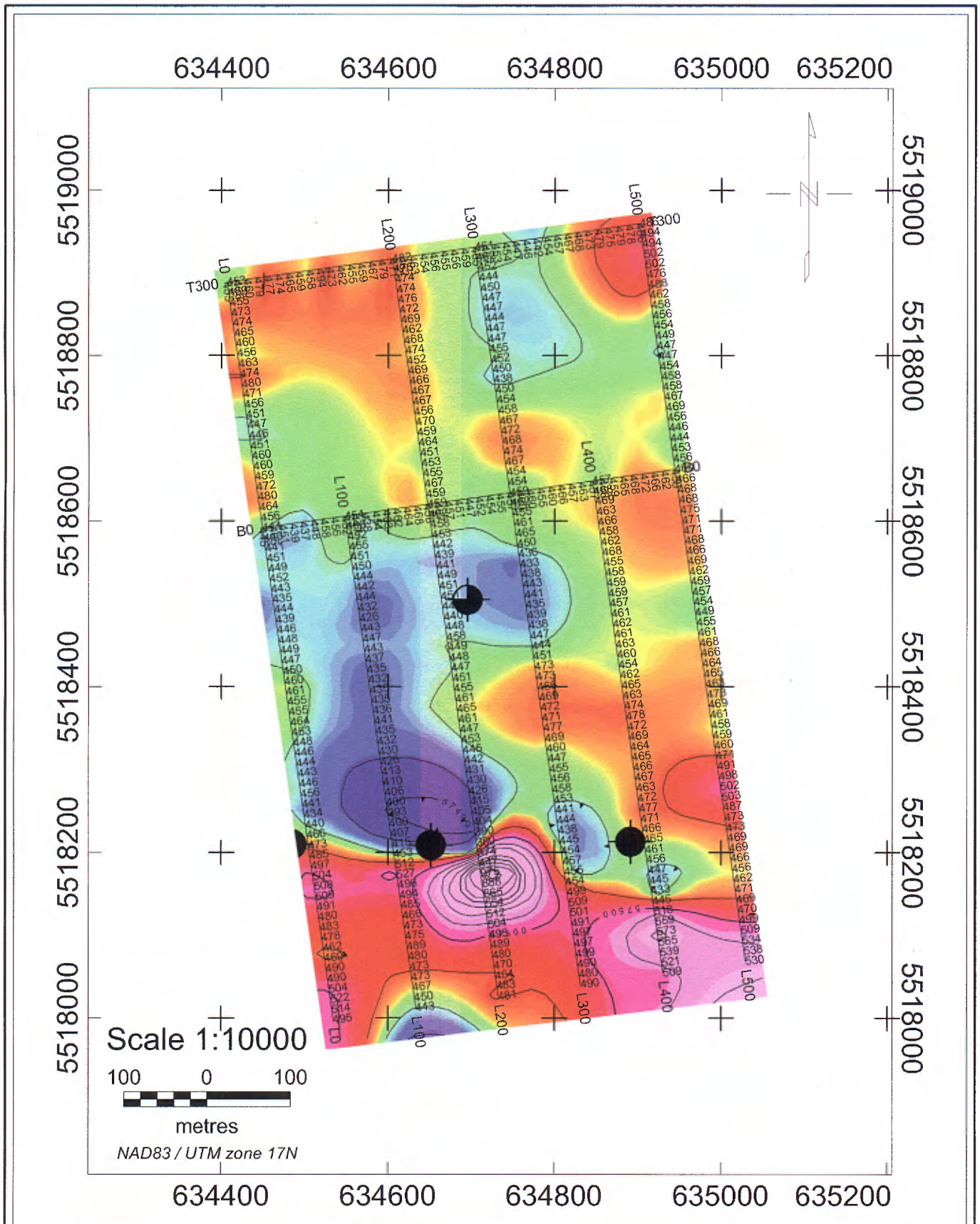
Noranda Inc. BRO-02 & BRO-309

Total Magnetic Intensity (nT)

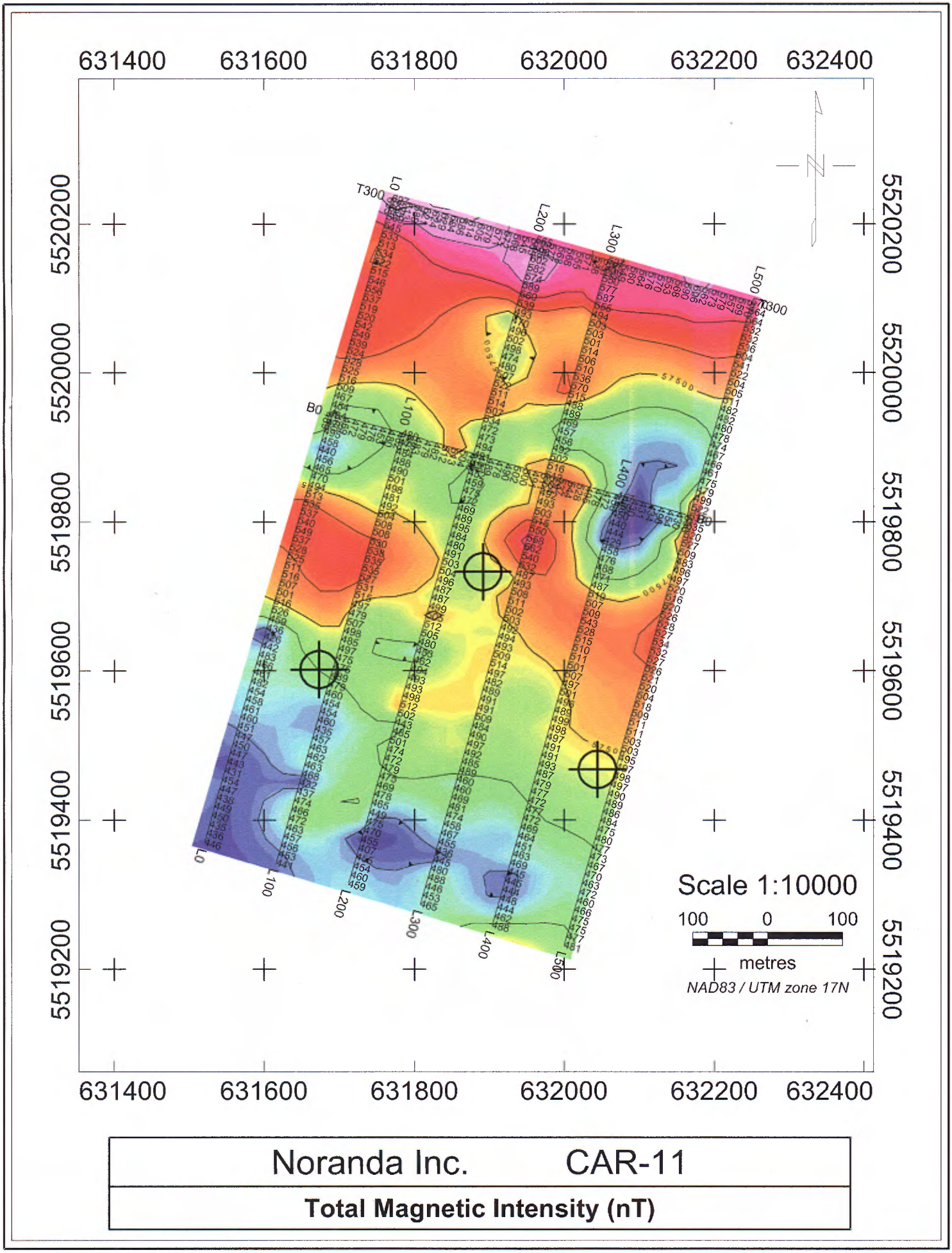


Noranda Inc. BRO-101

Total Magnetic Intensity (nT)

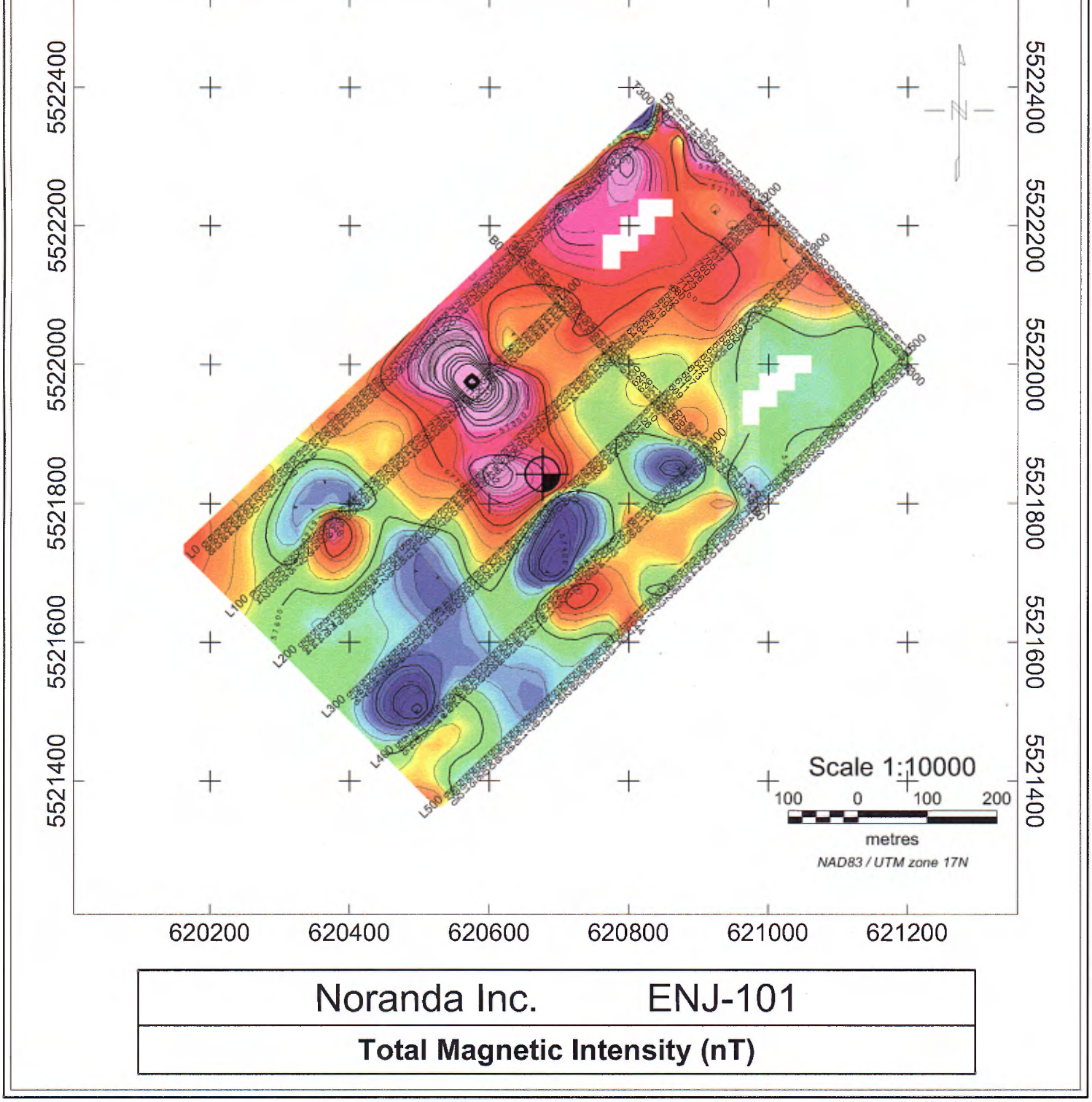


Noranda Inc.	CAR-03
Total Magnetic Intensity (nT)	



Noranda Inc. CAR-11

Total Magnetic Intensity (nT)



Noranda Inc. ENJ-101

Total Magnetic Intensity (nT)

ANNEXE 7

Géophysique – Levés électromagnétiques dans le domaine du temps à grande boucle

APPENDIX B

THEORETICAL BASIS AND SURVEY PROCEDURES

TEM SURFACE PROFILING

TEM profiling is conducted on lines either adjacent to (Off-Loop mode) or surrounded by (In-Loop mode) a large fixed rectangular transmit loop. Current is passed through the loop which following the Turn-Off, produces a primary magnetic field (H) both inside and outside (Figure B1). This primary field induces a vortex current pattern, which energizes conductors and which in turn create their own secondary magnetic field (Bs). The rate of change of the decaying secondary magnetic flux (dBs/dt) is measured as the vertical (**Hz**), in-line horizontal (**Hx**) and/or cross line horizontal (**Hy**) vector components on surface using an air-core sensor coil. These measurements of the TEM decay (20 log-time slices) are taken during the "Off-Time", using a 30 cycle/sec, base repetition rate.

In keeping with the industry standard, the primary field is always considered positive up inside the loop and negative down outside. Similarly, for secondary EM fields, the receiver coil is oriented positive vertical up for the **Hz** component. The convention for In-Loop surveys, has the in-line component, **Hx** oriented either positive east (for grid EW lines) or north (for grid NS lines). The Off-Loop survey convention differs, with the receiver coil orientation for **Hx** pointing positive away from the transmit loop (for EW or NS lines). Finally, the sign convention in all cases, has the **Hy** component pointing positive orthogonal to the left of the **Hx**, according to the right-hand-rule.

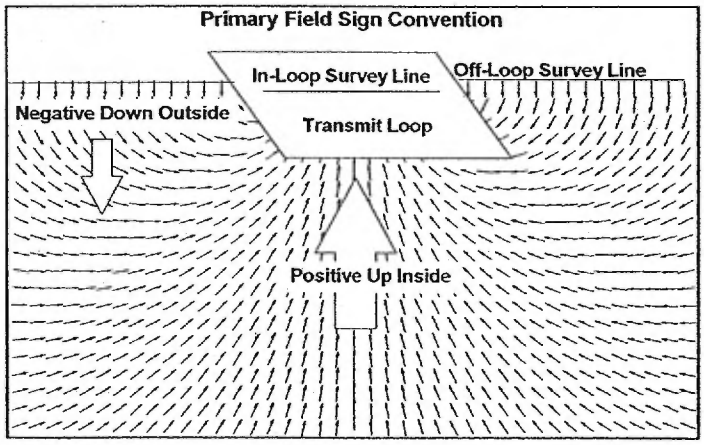


Figure B1: Primary field sign convention for TEM surveys.

At the end of each survey day, the stored data are transferred to a microcomputer where they corrected for the turn-off time, loop area, system gain and current, and converted from milliVolts to nanoVolts per ampere meter squared or nanoVolts per meter squared. The data are then transferred to disk for storage and processing. Report quality field plots are generated on site, using a 24-pin printer in order to monitor the data characteristics and to provide a preliminary interpretation capability.

The following equations govern the transient EM response for buried plate-like conductive bodies[1]

[1] From Geonics Limited, EM-37 TEM System Design Parameter, Mississauga, Ont., 1982.

Target Response to Transmitter Current Waveform:

$$emf = \frac{1}{\tau} e^{-t/\tau}$$

where: t = *fixed time*

e = *exponential decay*

τ = *time constant of conductor*

Equation 1: Conductor Response to the Transient EM Waveform

The time constant of the response is alternatively defined as the slope of the lin-log decay curve (Geonics) or, more exactly, as the time channel where the amplitude of the decay collapses to 37% (1/e) of its maximum value. Both τ and the analogous decay strength (i.e., the number of anomalous channels above background), are commonly used as indicators of conductor quality. This relationship between decay-strength and the conductivity-thickness can easily be demonstrated in the following equation for a vertically dipping conductive sheet:

$$\tau = \frac{\sigma \mu t h}{\pi^2} \quad \textit{for a thin plate}$$

where σ = *conductivity of target*

μ = *magnetic susceptibility*

t = *thickness of plate*

h = *vertical extension of plate*

Equation 2: Transient EM Decay Time Constant

thereby giving, for an infinite vertical sheet:

$$\sigma t = \frac{\pi^2}{\mu h} \tau \approx \tau / 0.31 \quad \textit{mhos / metre (siemens)}$$

Equation 3: Conductivity Thickness

From these equations and relationships, it therefore becomes obvious of the common use of the anomaly strength of decay as a simple, rule-of thumb indicator of the relative conductivity-thickness product for TEM surveys.

In addition, the total secondary field is calculated using the three components (Hx, Hy and Hz) in the following formula

$$Htot = \sqrt{Hx^2 + Hy^2 + Hz^2}\ nanoVolt / Am^2.$$

Equation 4: Transient EM Total Secondary Field

APPENDIX D

INSTRUMENT SPECIFICATIONS

Geonics Digital Protem Receiver System
Technical Specifications

Receiver

Measured Quantity: Time rate of decay of magnetic flux along 3 axes

Sensors:

1. (L.F.): Air-cored coil of bandwidth 60 kHz; 100 cm diameter
2. (H.F.): Air-cored coil of bandwidth 850 kHz; 100 cm diameter
3. (3D-3): Three orthogonal component sensor; simultaneous operation
4. (3D-1): Three orthogonal component sensor; sequential operation

Time channels: 20 geometrically spaced time gates for each base frequency gives range from 6 μ sec to 800 msec.

Repetition Rate: 0.3 Hz, 0.75, 3, 7.4, 30, 75 or 285 Hz for 60 Hz power-line networks (Base Frequency)

Synchronization: 1) reference cable.
2) high stability (oven controlled) quartz crystals. (Switch selectable

Integration time: 2, 4, 8, 15, 30, 60, 120, 240 sec.

Calibration: Internal self calibration
External Q coil calibration (optional)

Keyboards: Two 3 x 4 matrix sealed key pads with positive tactile feedback

Gain: Automatic or manual control

Dynamic Range: 23 bits (132 dB)

Display Quantity:

(1) Table of time rate of decay of magnetic flux (dB/dt)
(2) Curve of rate of decay of magnetic flux (dB/dt)
(3) Table of apparent resistivity (ρ_a)
(4) Curve of apparent resistivity (ρ_a)
(5) Profile of dB/dt
(6) Real time noise monitor
(7) Calibration curve
(8) Data acquisition statistics (real time)

Storage: Solid state memory with capacity for over 3000 data sets

Display: 8 lines by 40 character (240 x 64 dot) graphic LCD

Data Transfer: Standard RS-232 communications port.

Processor: CMOS 68HC000 8 MHz CPU

Receiver Battery: 12 volts rechargeable battery for 8 hours continuous operation. 6 hours in XTAL mode

Receiver Size: 34 x 38 x 27 cm

Receiver Weight: 15 kg

Operating Temp.: -40°C to +50°C

Transmitters: (1) Geonics TEM47
(2) Geonics TEM57
(3) Geonics TEM37

	30/25Hz			7.5/6.25Hz			3/2.5Hz			
30 gate mode	start	center	width	start	center	width	start	center	width	20 gate mode
1	5.800	6.800	2.000	32.00	36.00	8.000	80.00	90.00	20.00	
2	7.800	9.110	2.625	40.00	45.25	10.50	100.0	113.1	26.25	
3	10.40	12.00	3.250	50.50	57.00	13.00	126.3	142.5	32.50	
4	13.70	15.90	4.375	63.50	72.25	17.50	158.8	180.6	43.75	
5	18.00	20.80	5.500	81.00	92.00	22.00	202.5	230.0	55.00	
6	23.50	27.00	7.000	103.0	117.0	28.00	257.5	292.5	70.00	
7	30.50	34.80	8.500	131.0	148.0	34.00	327.5	370.0	85.00	
8	39.00	44.40	10.75	165.0	186.5	43.00	412.5	466.3	107.5	
9	49.80	56.30	13.00	208.0	234.0	52.00	520.0	585.0	130.0	
10	62.80	70.30	15.00	260.0	290.0	60.00	650.0	725.0	150.0	
11	77.80	85.90	16.25	320.0	352.5	65.00	800.0	881.3	162.5	1
12	94.10	104.7	21.25	385.0	427.5	85.00	963.0	1069	212.5	2
13	115.3	129.1	27.50	470.0	525.0	110.0	1175	1313	275.0	3
14	142.8	159.7	33.75	580.0	647.5	135.0	1450	1619	337.5	4
15	176.6	198.4	43.75	715.0	802.5	175.0	1788	2006	437.5	5
16	220.3	248.6	56.25	890.0	1002.5	225.0	2225	2506	562.5	6
17	276.6	312.3	71.25	1115	1257.5	285.0	2790	3144	712.5	7
18	347.8	393.5	91.25	1400	1582.5	365.0	3500	3957	912.5	8
19	439.0	497.1	116.2	1765	1997.5	465.0	4413	4994	1162	9
20	555.3	629.0	147.5	2230	2525.0	590.0	5575	6313	1475	10
21	702.8	797.3	188.7	2820	3197.5	755.0	7050	7994	1887	11
22	891.5	1012	240.0	3575	4055.0	960.0	8940	10138	2400	12
23	1131	1285	306.2	4535	5147.5	1225	11338	12870	3062	13
24	1438	1634	391.2	5760	6542.5	1565	14400	16350	3913	14
25	1829	2079	498.7	7325	8322.5	1995	18310	20806	4987	15
26	2328	2645	636.2	9320	10592	2545	23300	26475	6363	16
27	2964	3370	812.5	11865	13490	3250	29663	33725	8125	17
28	3776	4295	1036	15115	17187	4145	37800	42975	10362	18
29	4813	5473	1321	19260	21902	5285	48150	54750	13212	19
30	6134	6978	1685	24545	27915	6740	61360	69800	16850	20
	7819			31285			78200			

Note: All times in microseconds

Table D1: Digital Protem Gate Locations

* End of Gate 20

** A Gap of 9.7 μsec exists between Gate 13 and Gate 14 in the micro-frequency range/

This Table applies to both synchronization modes regardless of which of TEM37, TEM47 and TEM57 transmitters is used, provided that correct Tx model is selected in Header (2.4).

Note: 7.5/6.25 and 0.75/0.625 Hz proportional to 75/62.5 Hz
3/2.5 and 0.3/0.25 Hz proportional to 30/25 Hz

Geonics EM-37 Transmitter
Technical Specifications

Current Wave form: Bipolar square wave.

Repetition Rate: 3Hz, 7.5Hz or 30Hz in countries using 60Hz power line frequency; 2.5Hz, 6.25Hz or 25Hz in countries using 50Hz power line frequency; all six base frequencies are switch selectable.

Turn-off Time(t): Fast linear turn-off maximum of 450 μsec. at 30 amps into a 300x600 meter loop. Decreases proportionally with current and the root of the loop area to a maximum of 20 μsec. Actual value of t read on front panel meter.

Transmitter Loop: Any dimensions from 40x40 meters to 300x600 meters maximum at 30 amps. Larger dimensions at reduced current. Transmitter output voltage switch adjustable for smaller loops. Value of loop resistance read from front panel meter; resistance must be greater than 1 ohm on lowest setting to prevent overload.

Protection: Circuit breaker protection against input over voltage; instantaneous solid state protection against output short circuit; automatically resets on removal of short circuit. Input voltage output voltage and current indicated on front panel meter.

Output voltage: 24 to 160 volts (zero to peak) maximum

Output power: 2800 watt maximum

Motor generator: 5 HP Honda gasoline engine coupled to a 120 volt, three phase, 400 Hz alternator. Approximately 8 hours continuous operation from built-in fuel tank.

Component Dimensions and Weights

Transmitter Console: 20 by 42 by 32 cm, 20 kg

GPU: 44 by 32 by 21 cm, 65 kg

NORANDA INC.

QG 268 MEGATEM FOLLOW UP PROFILES

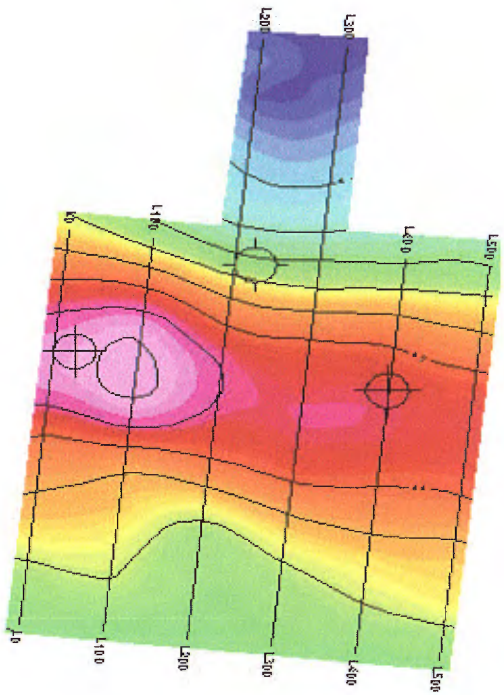
WEST SELBAIE AREA

BRO 306

Quantec

GEOPHYSICS WORLDWIDE

BRO-306 Levé électromagnétique dans le domaine du temps à grande boucle ('TDEM')



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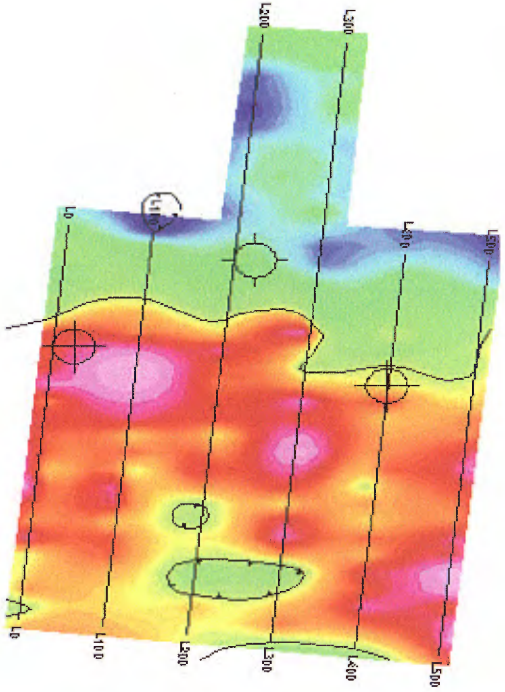

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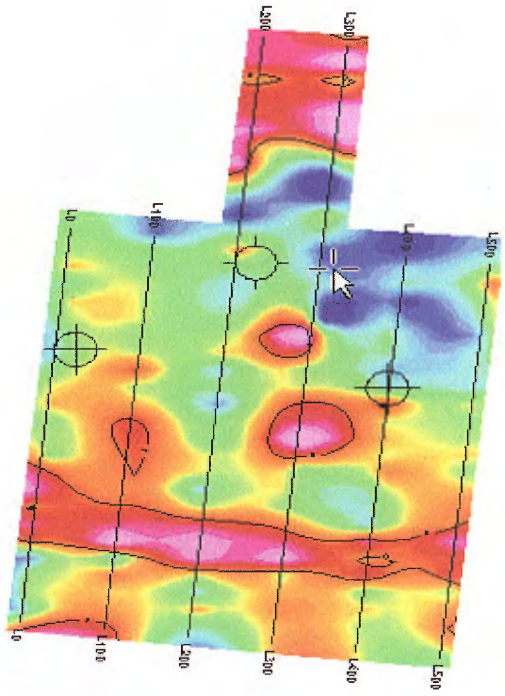

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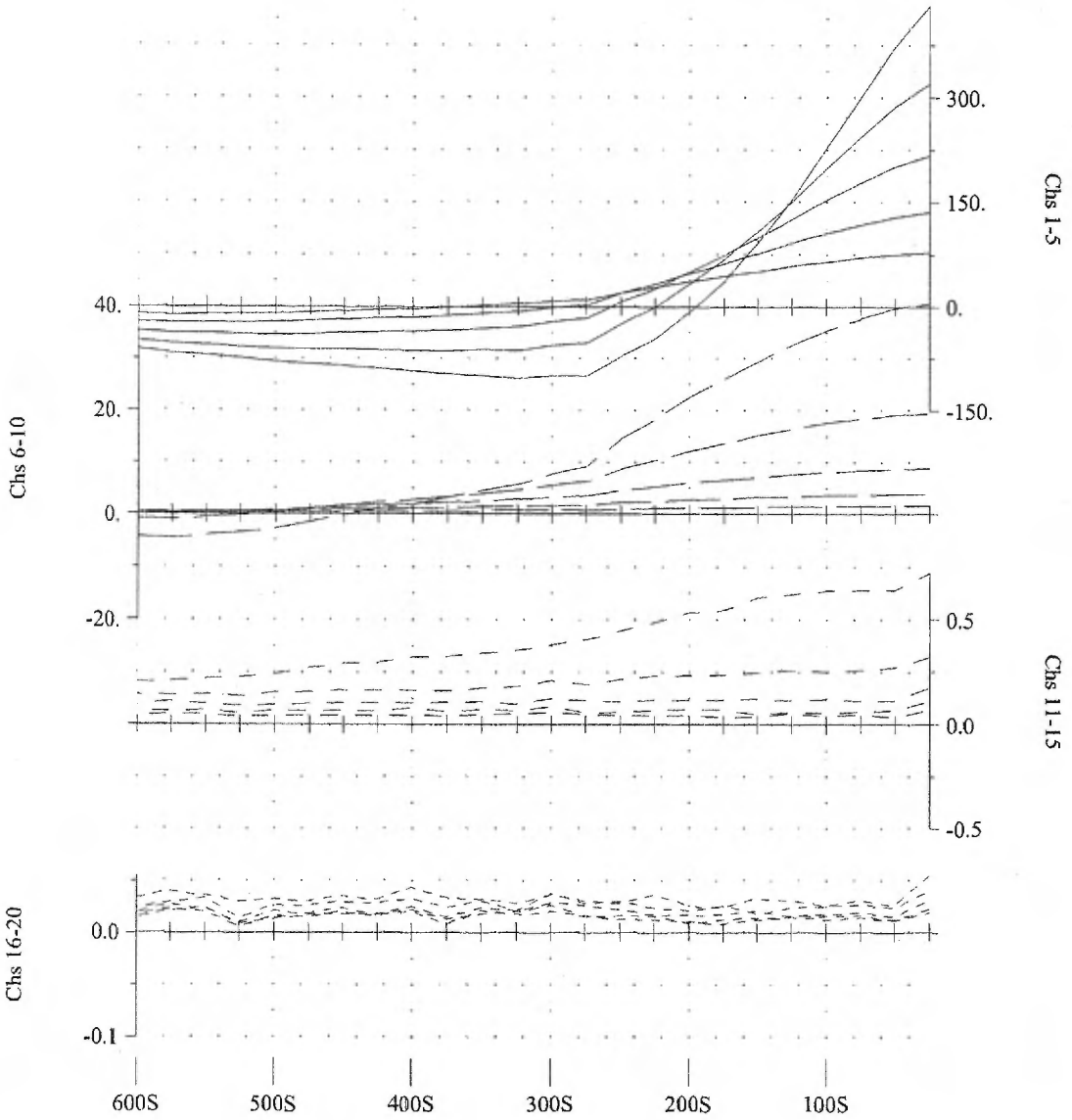


Line 0 E - Z Component

NORANDA INC.

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM BRO-306

SELBAIE AREA, nts 32 E/15, QC

LPTEM FIXED-LOOP PROFILING SURVEY

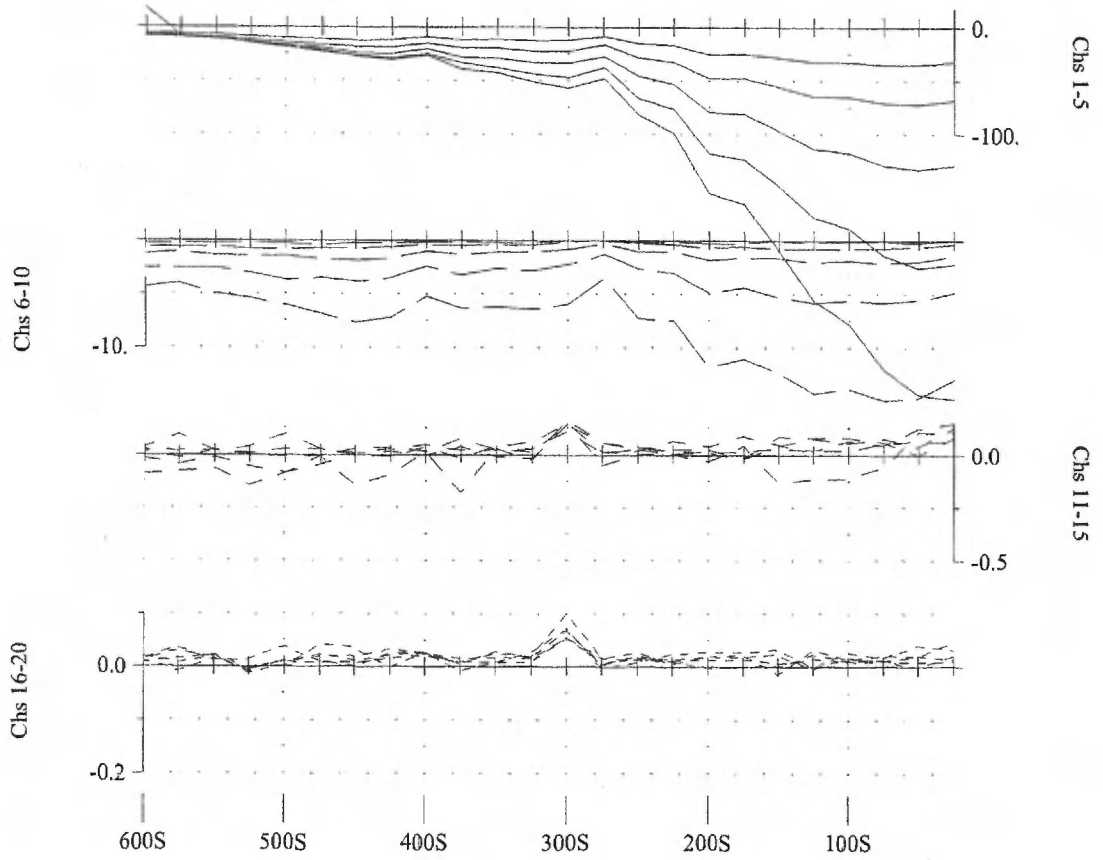
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L 0E, L 500E, 0N, 300N
Transmitter Current:	19.0 Amps
Transmitter Turn-Off Time:	264 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up
	Hx - positive south
	Hy - positive east
Survey Date:	30/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels)
	& Geonics 3D Coil (3x200m^2)
	Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG 26[illegible] 4AXIS-Z-0 E



Line 0 E - Y Component

NORANDA INC.

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM BRO-306

SELBAIE AREA, nts 32 E/15, QC

LPTEM FIXED-LOOP PROFILING SURVEY

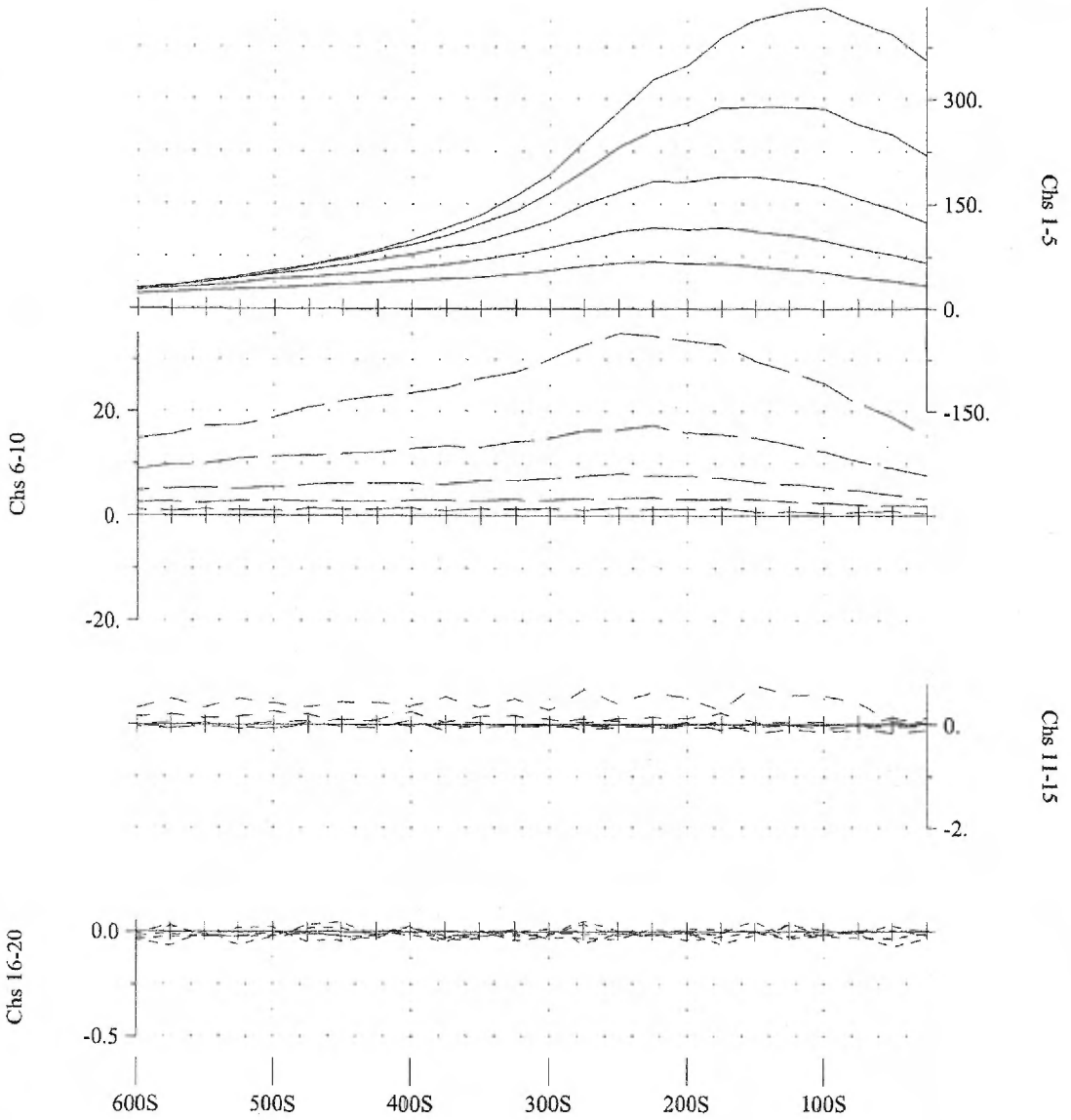
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L 0E, L 500E, 0N, 300N
Transmitter Current:	19.0 Amps
Transmitter Turn-Off Time:	264 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up
	Hx - positive south
	Hy - positive east
Survey Date:	30/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels)
	& Geonics 3D Coil (3x200m^2)
	Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG NO. QG-268-4AXIS-Y-0 F



Line 0 E - X Component

NORANDA INC.

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM BRO-306

SELBAIE AREA, nts 32 E/15, QC

LPTEM FIXED-LOOP PROFILING SURVEY

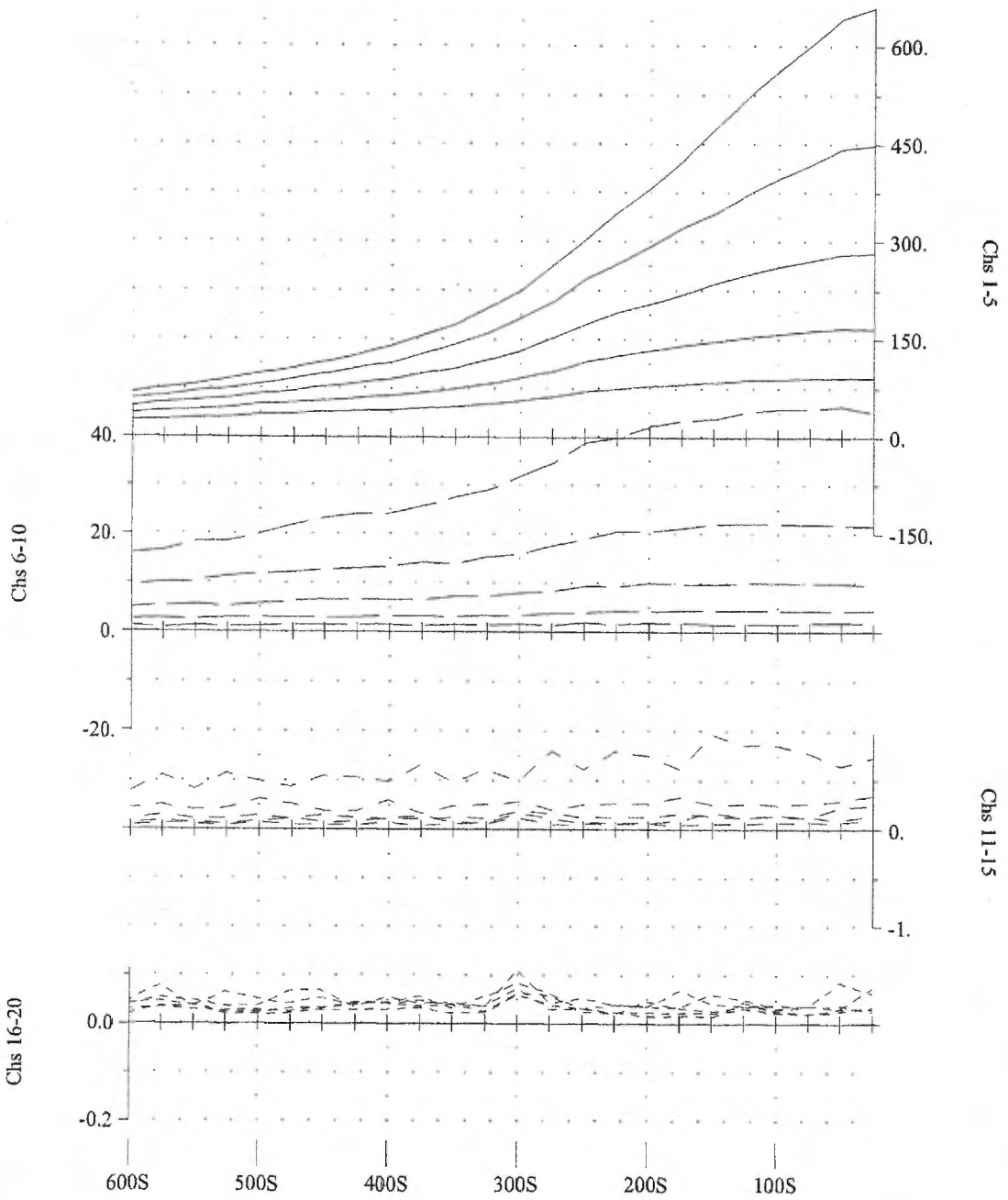
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L 0E, L 500E, 0N, 300N
Transmitter Current:	19.0 Amps
Transmitter Turn-Off Time:	264 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up
	Hx - positive south
	Hy - positive east
Survey Date:	30/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels)
	& Geonics 3D Coil (3x200m^2)
	Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-X-0 E



Line 0 E - Total Field

NORANDA INC.

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM BRO-306

SELBAIE AREA, nts 32 E/15, QC

LPTEM FIXED-LOOP PROFILING SURVEY

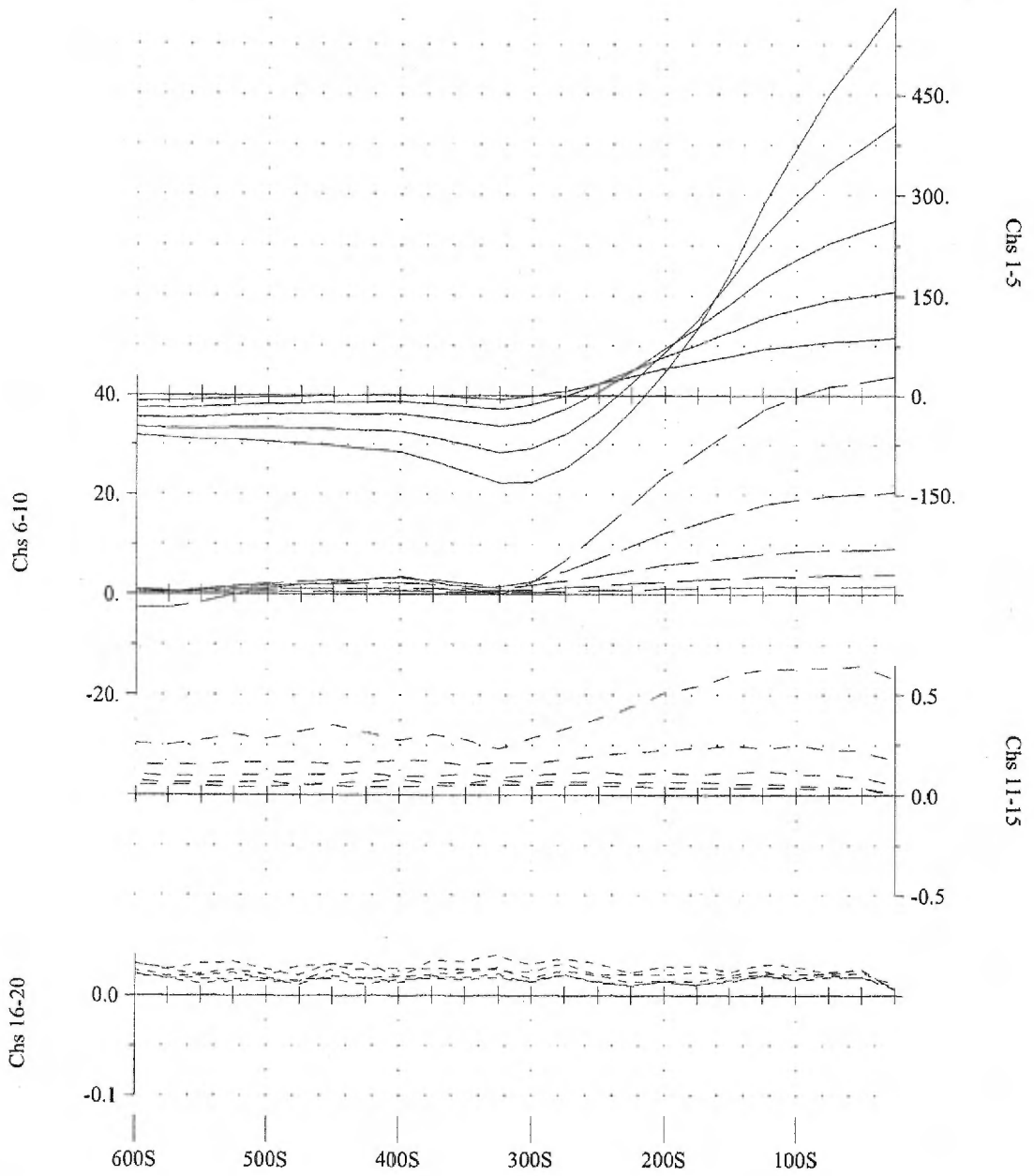
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L 0E, L 500E, 0N, 300N
Transmitter Current:	19.0 Amps
Transmitter Turn-Off Time:	264 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up
	Hx - positive south
	Hy - positive east
Survey Date:	30/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels)
	& Geonics 3D Coil (3x200m^2)
	Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-TF-0 E



Line 100 E - Z Component

NORANDA INC.

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM BRO-306

SELBAIE AREA, nts 32 E/15, QC

LPTEM FIXED-LOOP PROFILING SURVEY

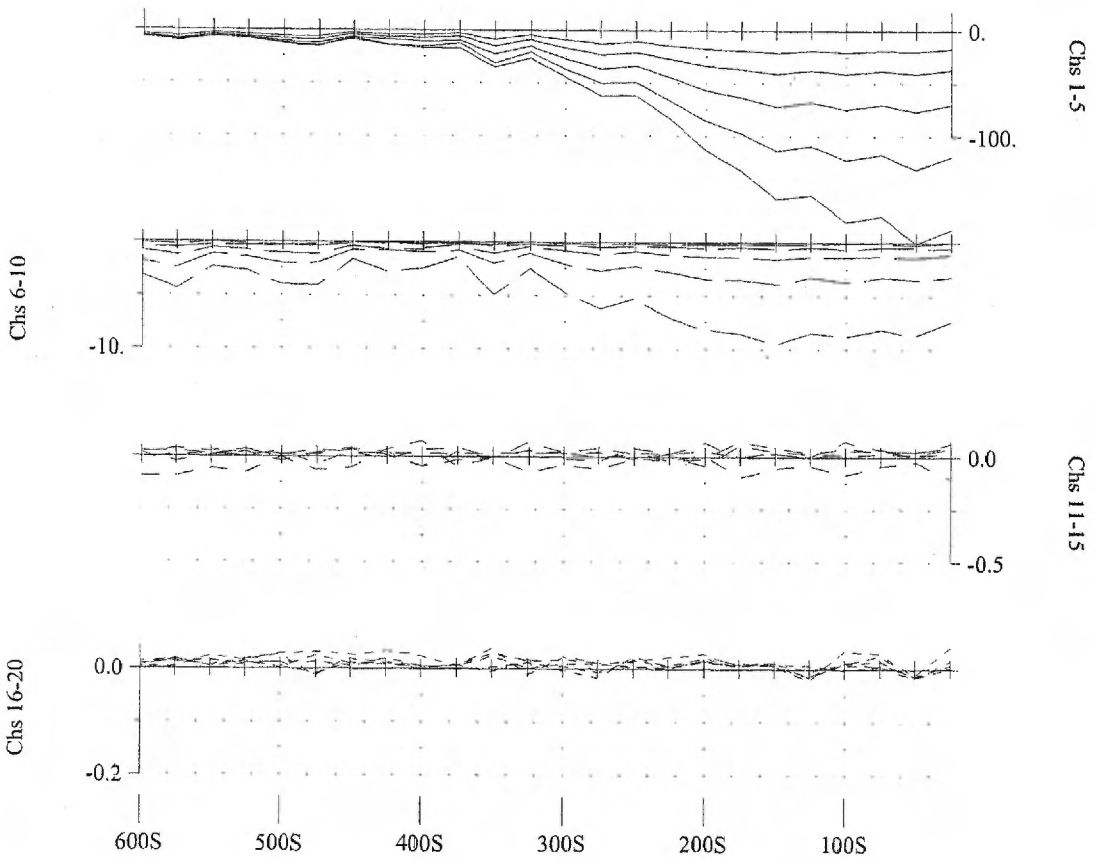
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L 0E, L 500E, 0N, 300N
Transmitter Current:	19.0 Amps
Transmitter Turn-Off Time:	264 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up
	Hx - positive south
	Hy - positive east
Survey Date:	30/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels)
	& Geonics 3D Coil (3x200m^2)
	Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-Z-100 E



Line 100 E - Y Component

NORANDA INC.

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM BRO-306

SELBAIE AREA, nts 32 E/15, QC

LPTEM FIXED-LOOP PROFILING SURVEY

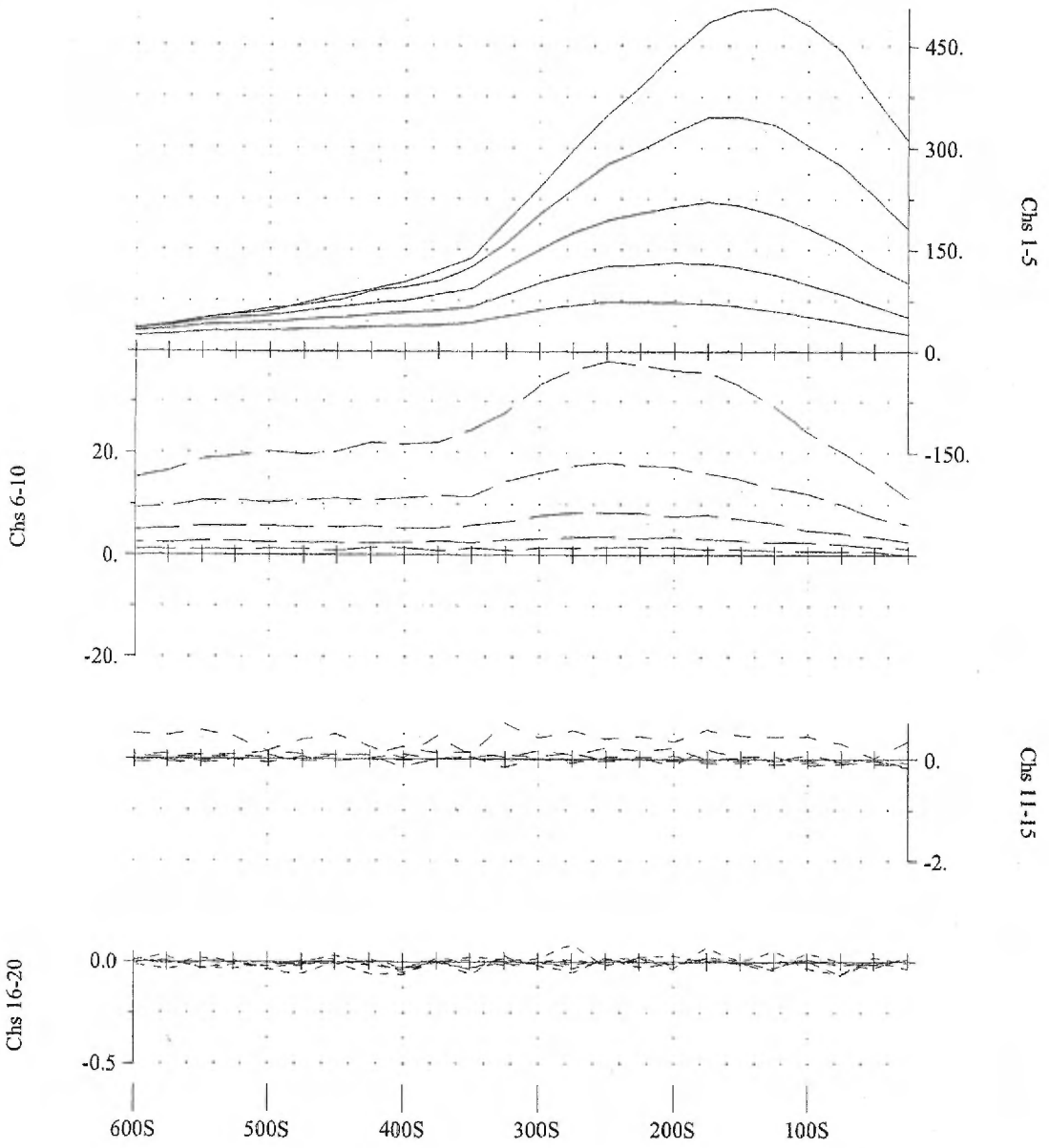
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L 0E, L 500E, 0N, 300N
Transmitter Current:	19.0 Amps
Transmitter Turn-Off Time:	264 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up
	Hx - positive south
	Hy - positive east
Survey Date:	30/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels)
	& Geonics 3D Coil (3x200m^2)
	Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-Y-100 E



Line 100 E - X Component

NORANDA INC.

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM BRO-306

SELBAIE AREA, nts 32 E/15, QC

LPTEM FIXED-LOOP PROFILING SURVEY

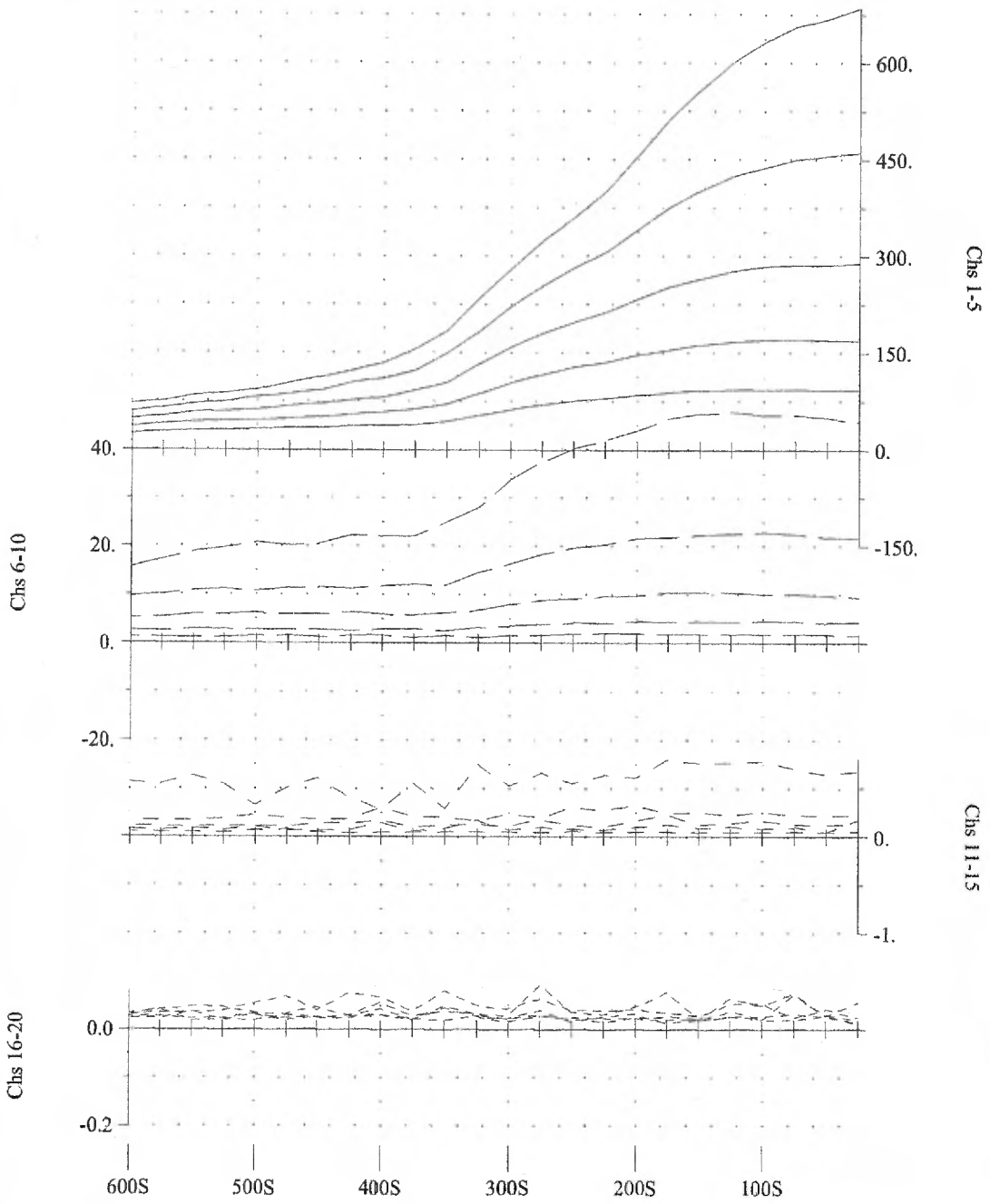
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L 0E, L 500E, 0N, 300N
Transmitter Current:	19.0 Amps
Transmitter Turn-Off Time:	264 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up
	Hx - positive south
	Hy - positive east
Survey Date:	30/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels)
	& Geonics 3D Coil (3x200m^2)
	Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-X-100 E



Line 100 E - Total Field

NORANDA INC.

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM BRO-306

SELBAIE AREA, nts 32 E/15, QC

LPTEM FIXED-LOOP PROFILING SURVEY

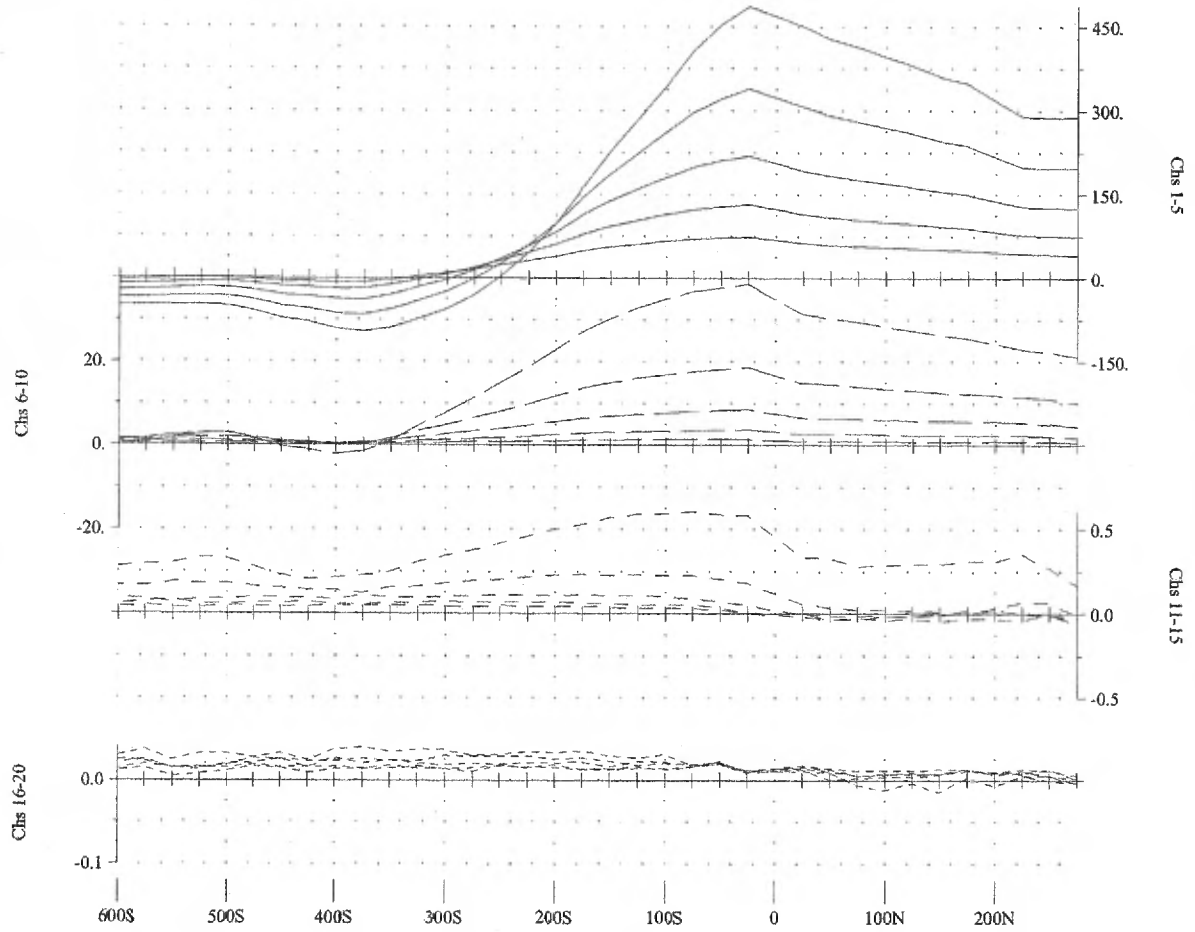
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L 0E, L 500E, 0N, 300N
Transmitter Current:	19.0 Amps
Transmitter Turn-Off Time:	264 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up
	Hx - positive south
	Hy - positive east
Survey Date:	30/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels)
	& Geonics 3D Coil (3x200m^2)
	Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-TF-100 E



Line 200 E - Z Component

BRO-306

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM BRO-306

SELBAIE AREA, nts 32 E/15, QC

LPTEM FIXED-LOOP PROFILING SURVEY

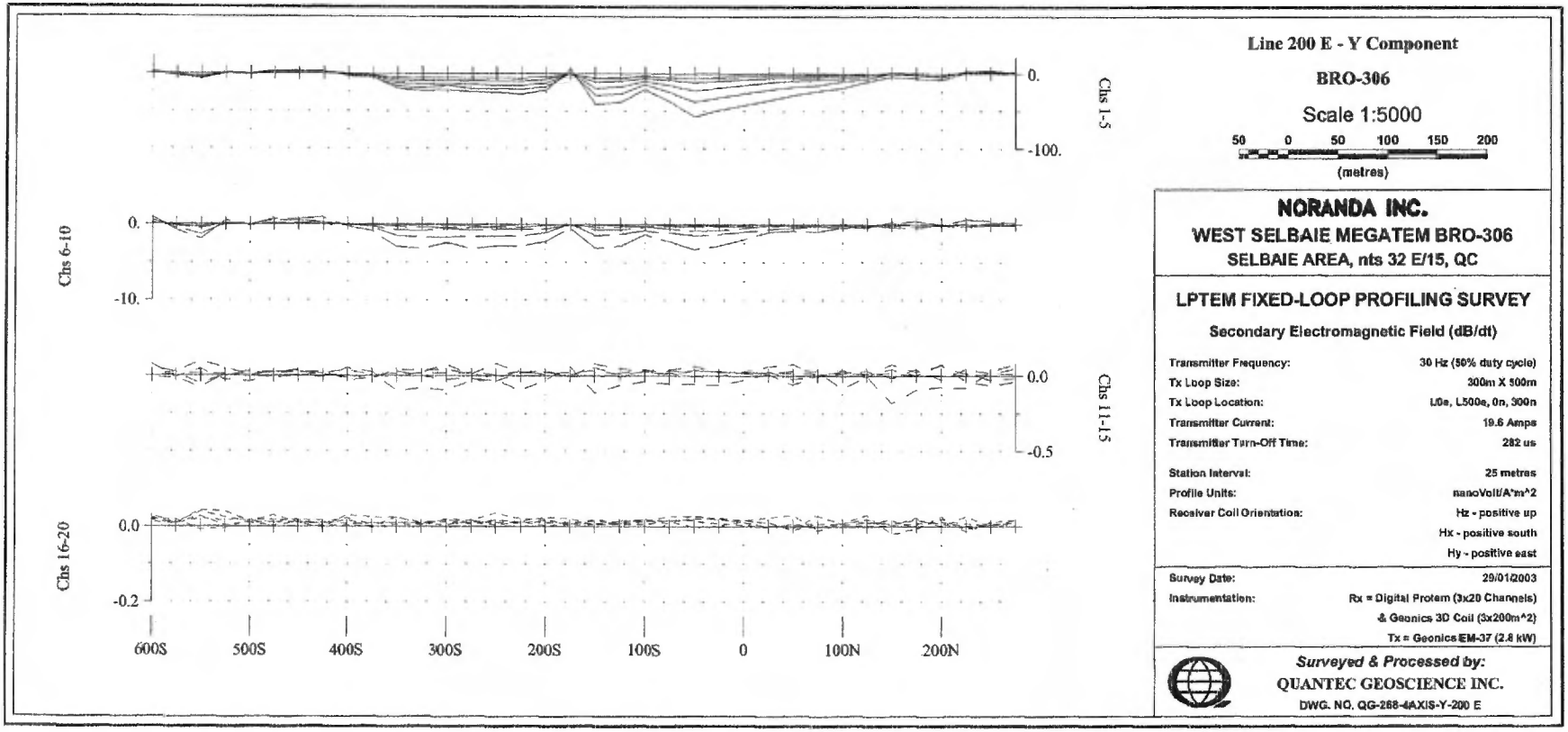
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L500e, 0n, 300n
Transmitter Current:	19.6 Amps
Transmitter Turn-Off Time:	282 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up
	Hx - positive south
	Hy - positive east
Survey Date:	29/01/2003
Instrumentation:	Rx = Digital Profem (3x20 Channels)
	& Geonics 3D Coil (3x200m^2)
	Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-288-4AXIS-Z-200 E



Line 200 E - Y Component

BRO-306

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM BRO-306

SELBAIE AREA, nts 32 E/15, QC

LPTEM FIXED-LOOP PROFILING SURVEY

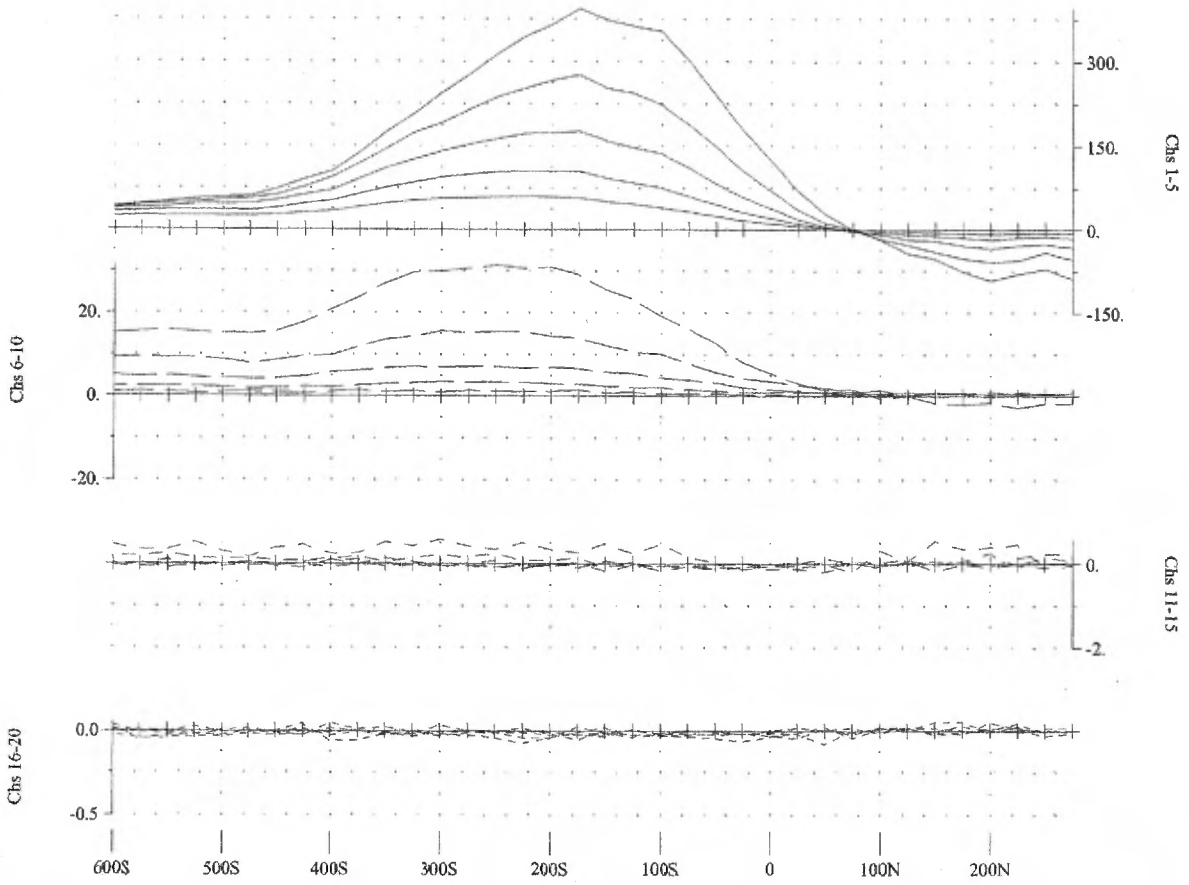
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L500e, 0n, 300n
Transmitter Current:	19.6 Amps
Transmitter Turn-Off Time:	282 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up
	Hx - positive south
	Hy - positive east
Survey Date:	29/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels)
	& Geonics 3D Coil (3x200m^2)
	Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-Y-200 E



Line 200 E - X Component

BRO-306

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM BRO-306

SELBAIE AREA, nts 32 E/15, QC

LPTEM FIXED-LOOP PROFILING SURVEY

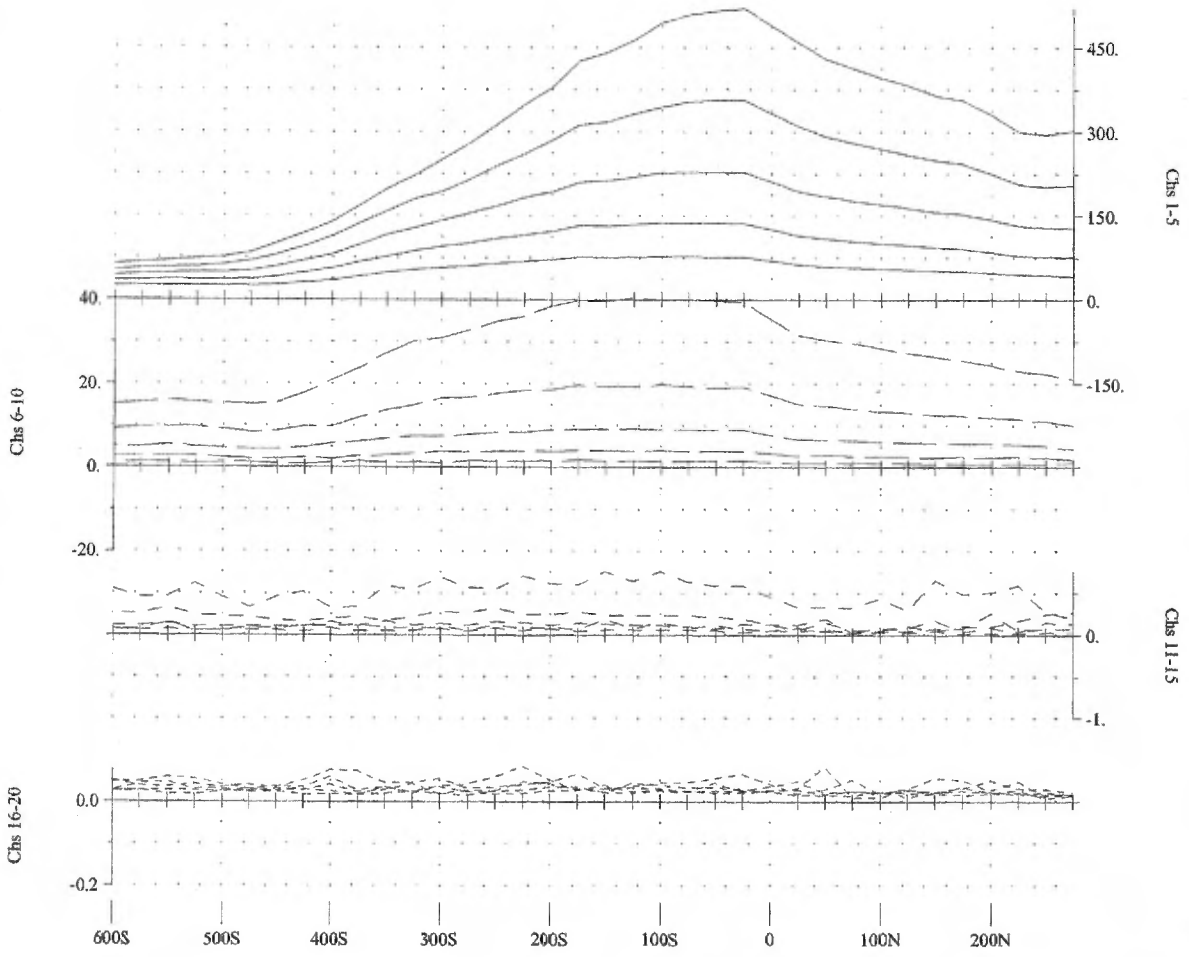
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L500e, 0n, 300n
Transmitter Current:	19.6 Amps
Transmitter Turn-Off Time:	282 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up Hx - positive south Hy - positive east
Survey Date:	29/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2), Tx = Geonics EM-37 (2.6 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-X-200 E



Line 200 E - Total Field

BRO-306

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM BRO-306

SELBAIE AREA, nts 32 E/15, QC

LPTEM FIXED-LOOP PROFILING SURVEY

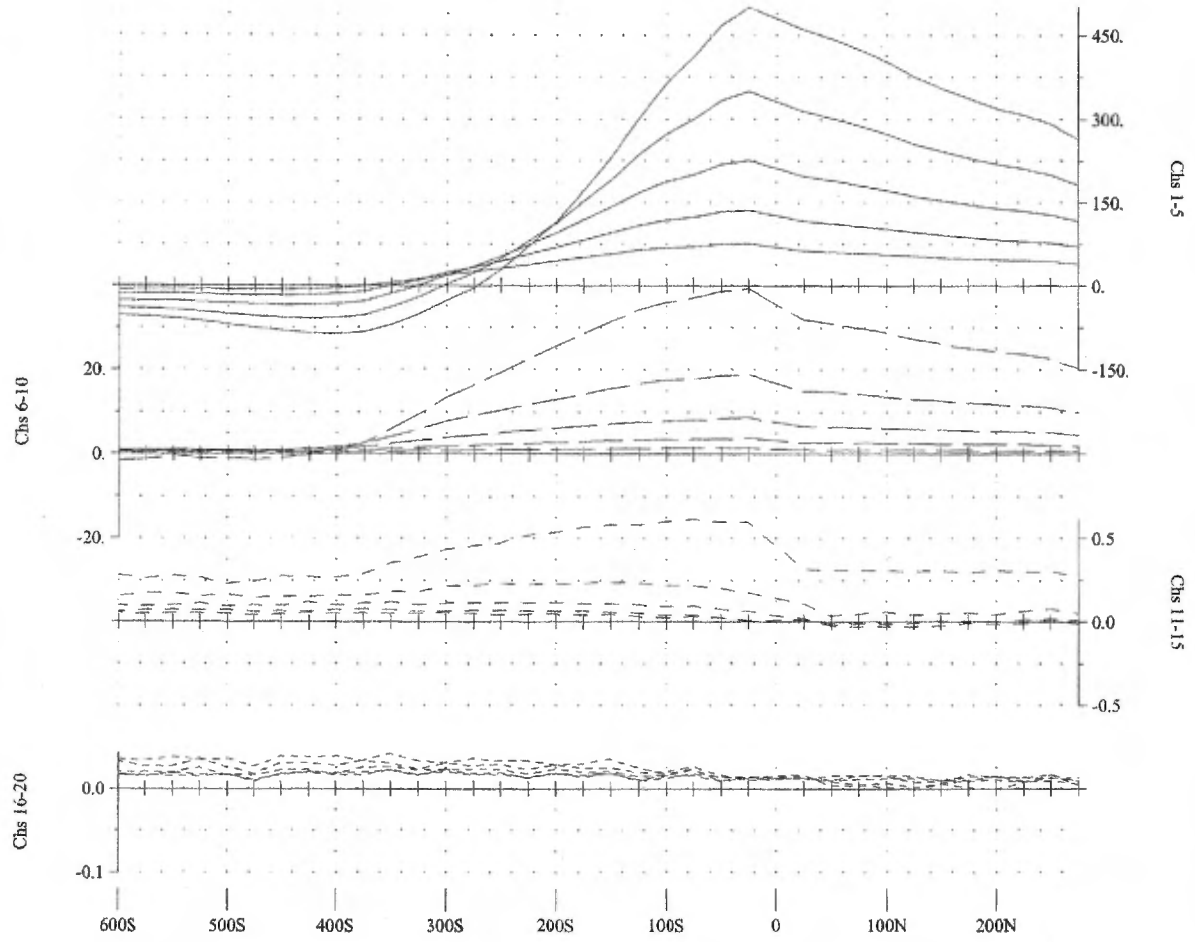
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L500e, 0n, 300n
Transmitter Current:	19.6 Amps
Transmitter Turn-Off Time:	282 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up
	Hx - positive south
	Hy - positive east
Survey Date:	29/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels)
	& Geonics 3D Coil (3x200m^2)
	Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-TF-200 E



Line 300 E - Z Component

BRO-306

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM BRO-306

SELBAIE AREA, nts 32 E/15, QC

LPTEM FIXED-LOOP PROFILING SURVEY

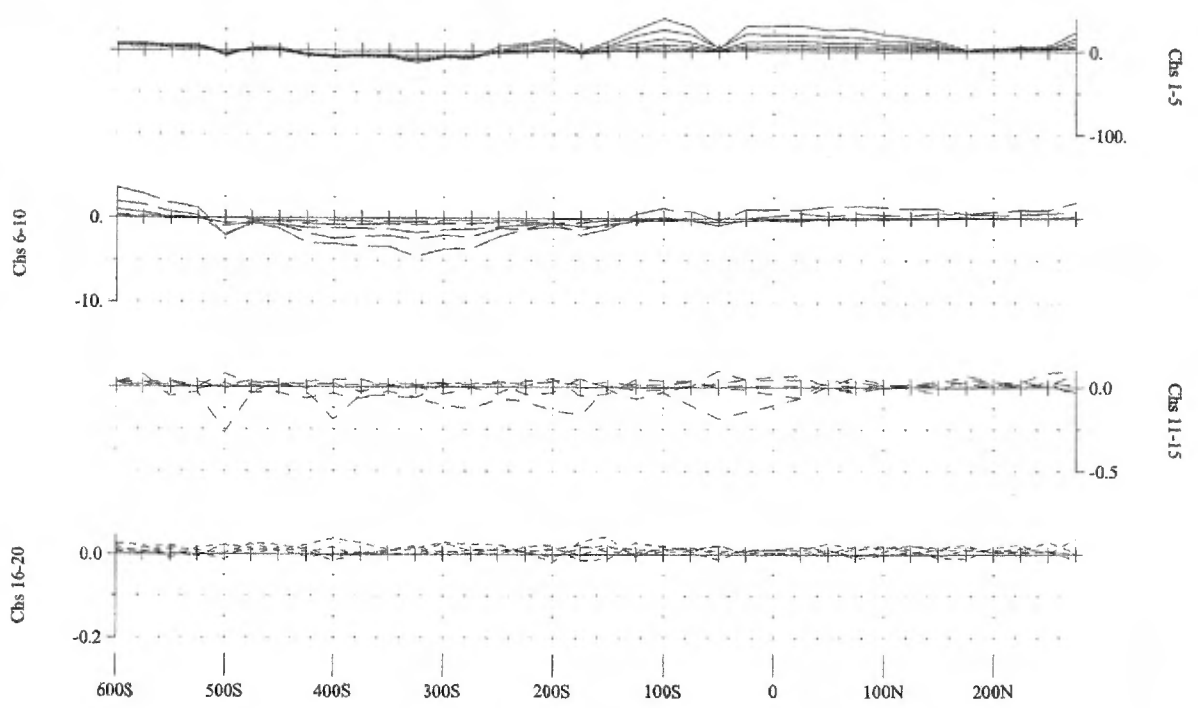
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L500e, 0n, 300n
Transmitter Current:	19.6 Amps
Transmitter Turn-Off Time:	282 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up
	Hx - positive south
	Hy - positive east
Survey Date:	29/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels)
	& Geonics 3D Coil (3x200m^2)
	Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-Z-300 E



Line 300 E - Y Component

BRO-306

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM BRO-306

SELBAIE AREA, nts 32 E/15, QC

LPTEM FIXED-LOOP PROFILING SURVEY

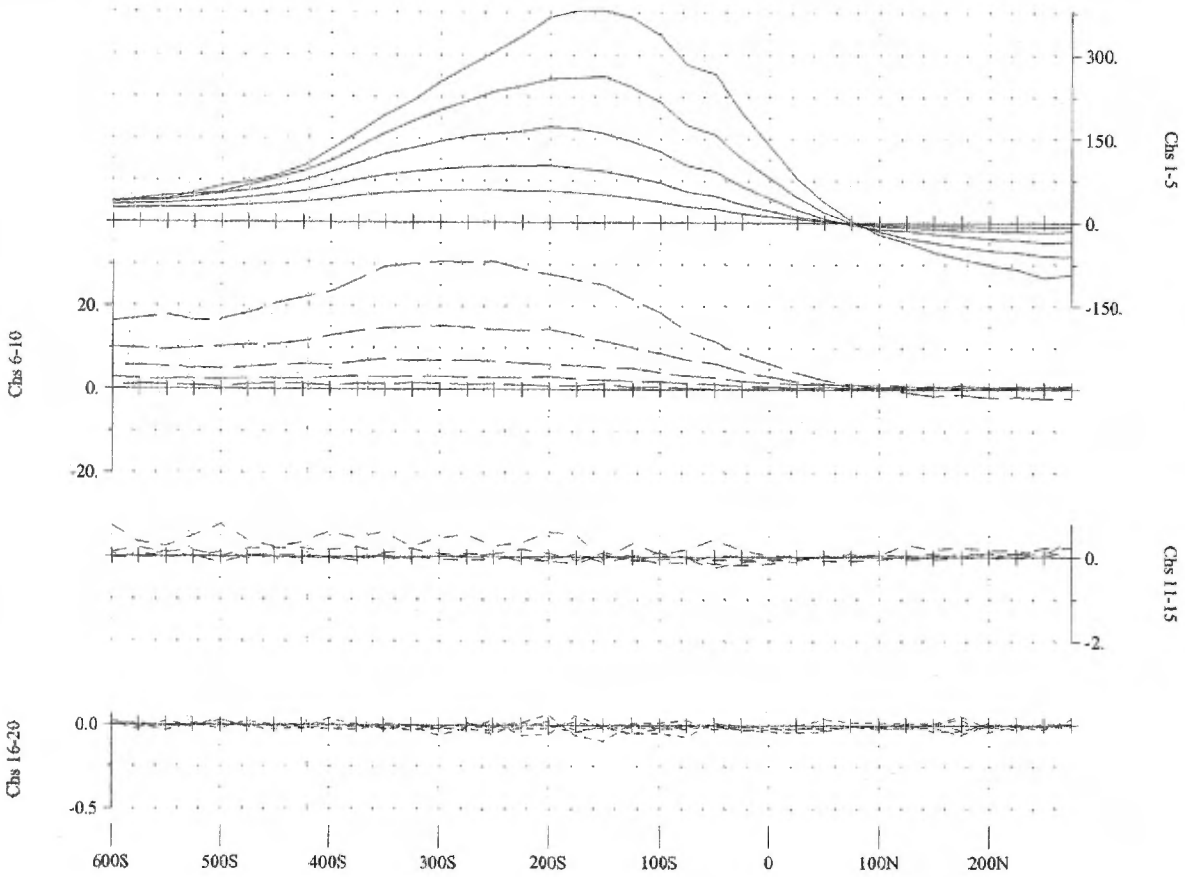
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L500e, 0n, 300n
Transmitter Current:	19.6 Amps
Transmitter Turn-Off Time:	282 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up Hx - positive south Hy - positive east
Survey Date:	29/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-Y-300 E



Line 300 E - X Component

BRO-306

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM BRO-306

SELBAIE AREA, nts 32 E/15, QC

LPTEM FIXED-LOOP PROFILING SURVEY

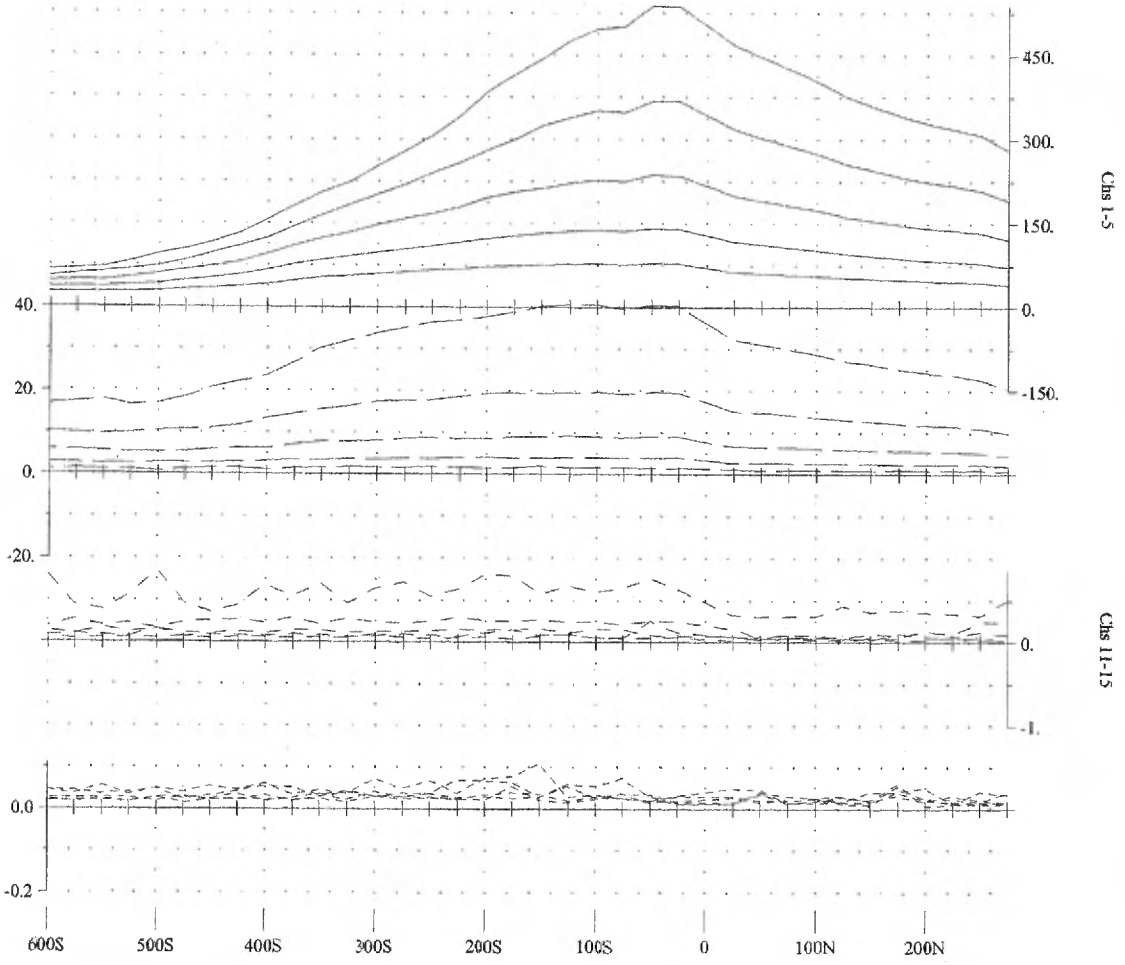
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L500e, 0n, 300n
Transmitter Current:	19.6 Amps
Transmitter Turn-Off Time:	282 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up
	Hx - positive south
	Hy - positive east
Survey Date:	29/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels)
	& Geonics 3D Coil (3x200m^2)
	Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-X-300 E



Line 300 E - Total Field

BRO-306

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM BRO-306

SELBAIE AREA, nts 32 E/15, QC

LPTEM FIXED-LOOP PROFILING SURVEY

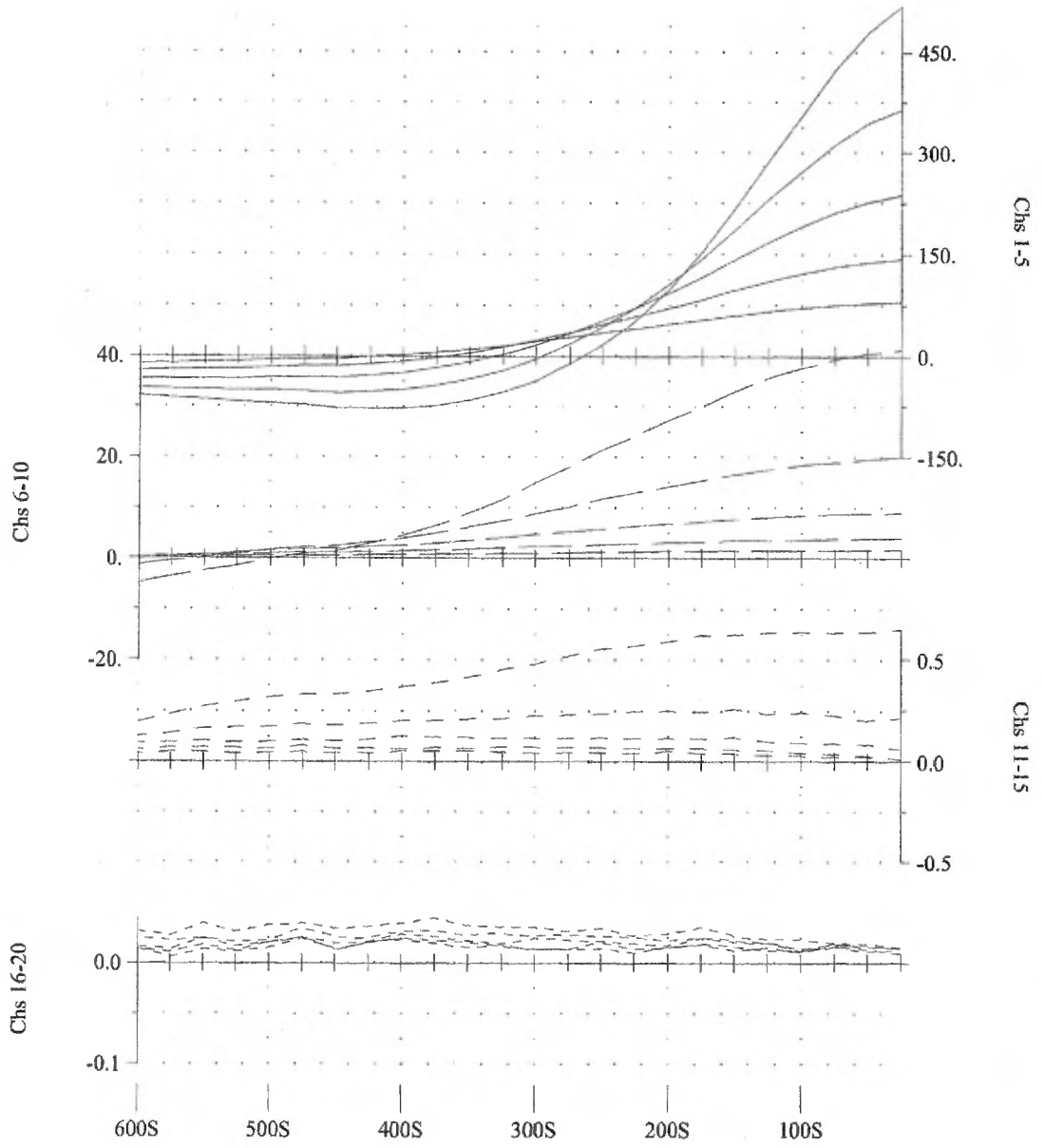
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L500e, 0n, 300n
Transmitter Current:	19.6 Amps
Transmitter Turn-Off Time:	282 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up Hx - positive south Hy - positive east
Survey Date:	29/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-TF-300 E



Line 400 E - Z Component

BRO-306

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM BRO-306

SELBAIE AREA, nts 32 E/15, QC

LPTEM FIXED-LOOP PROFILING SURVEY

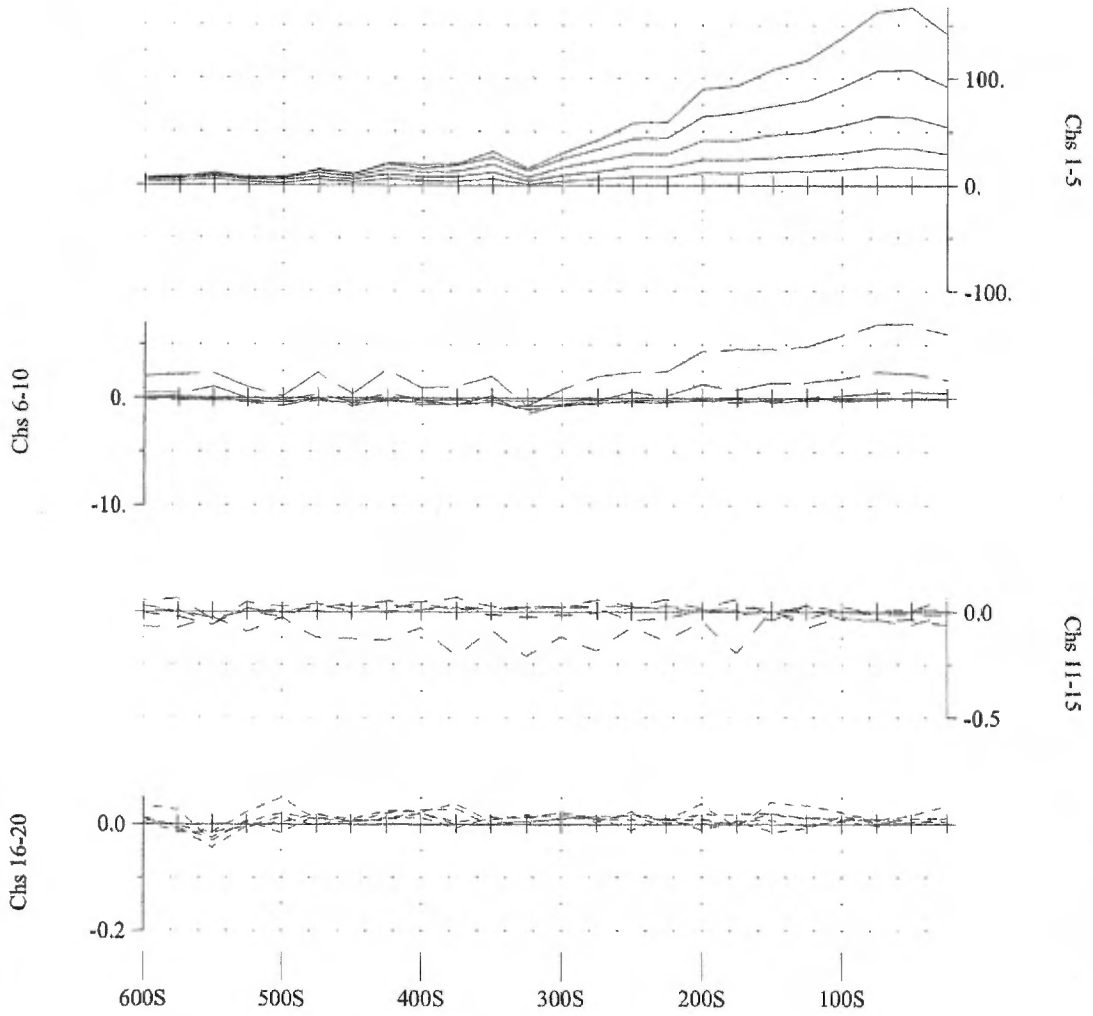
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L500e, 0n, 300n
Transmitter Current:	19.6 Amps
Transmitter Turn-Off Time:	282 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up
	Hx - positive south
	Hy - positive east
Survey Date:	29/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels)
	& Geonics 3D Coil (3x200m^2)
	Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-Z-400 E



Line 400 E - Y Component

BRO-306

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM BRO-306

SELBAIE AREA, nts 32 E/15, QC

LPTEM FIXED-LOOP PROFILING SURVEY

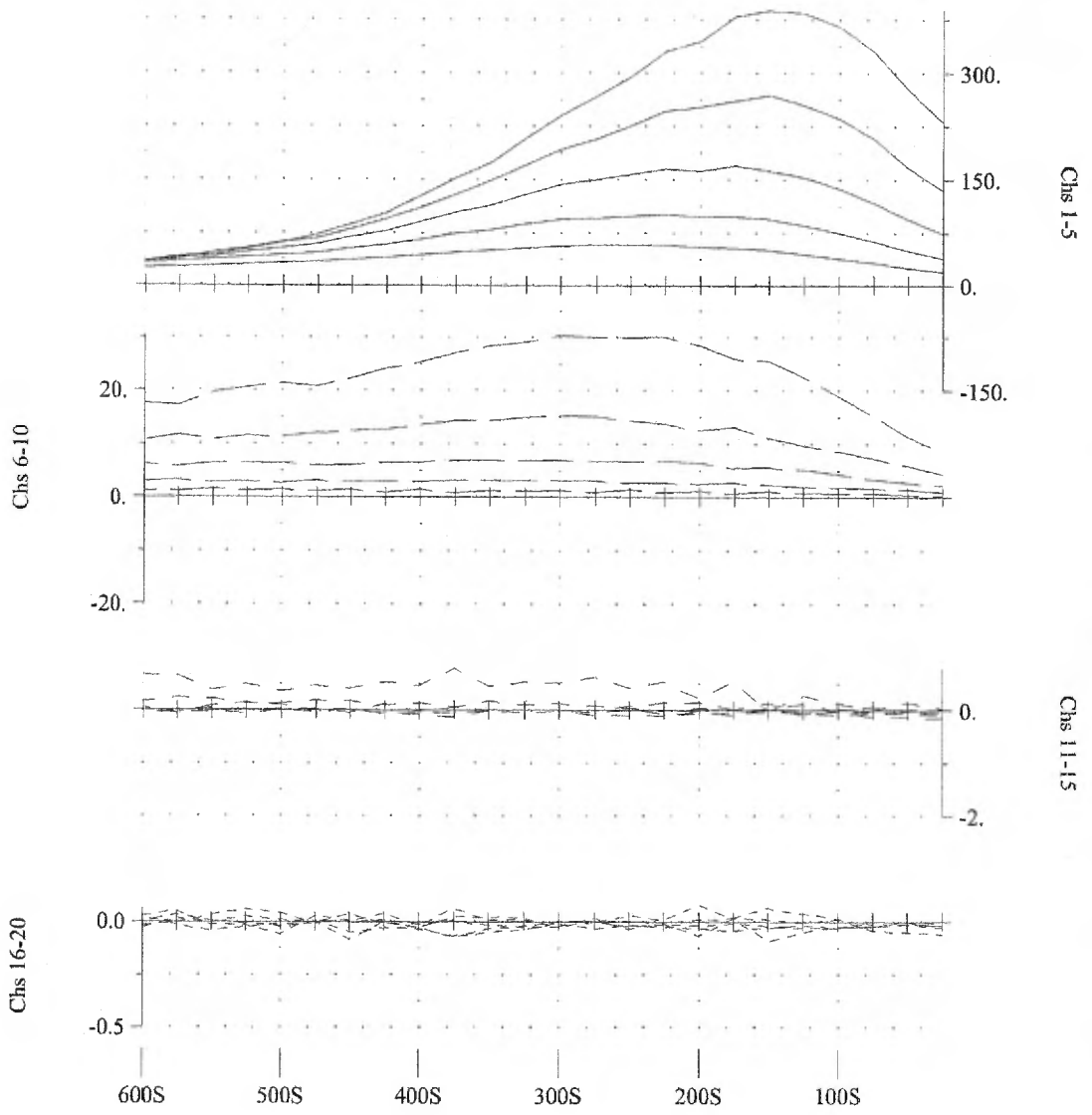
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L500e, 0n, 300n
Transmitter Current:	19.6 Amps
Transmitter Turn-Off Time:	282 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up
	Hx - positive south
	Hy - positive east
Survey Date:	29/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels)
	& Geonics 3D Coil (3x200m^2)
	Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-Y-400 E



Line 400 E - X Component

BRO-306

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM BRO-306

SELBAIE AREA, nts 32 E/15, QC

LPTEM FIXED-LOOP PROFILING SURVEY

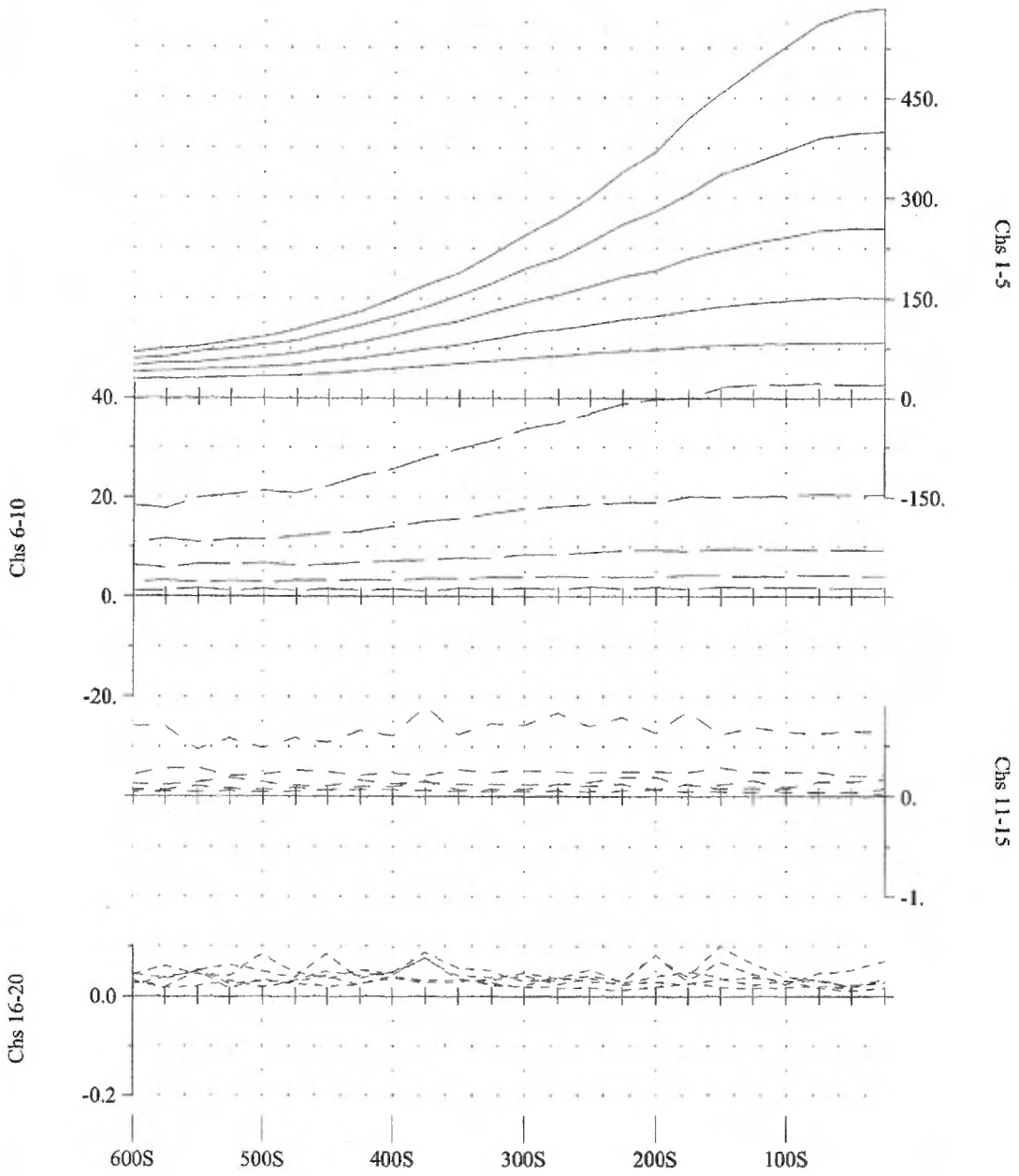
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L500e, 0n, 300n
Transmitter Current:	19.6 Amps
Transmitter Turn-Off Time:	282 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up
	Hx - positive south
	Hy - positive east
Survey Date:	29/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels)
	& Geonics 3D Coil (3x200m^2)
	Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-X-400 E



Line 400 E - Total Field

BRO-306

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM BRO-306

SELBAIE AREA, nts 32 E/15, QC

LPTEM FIXED-LOOP PROFILING SURVEY

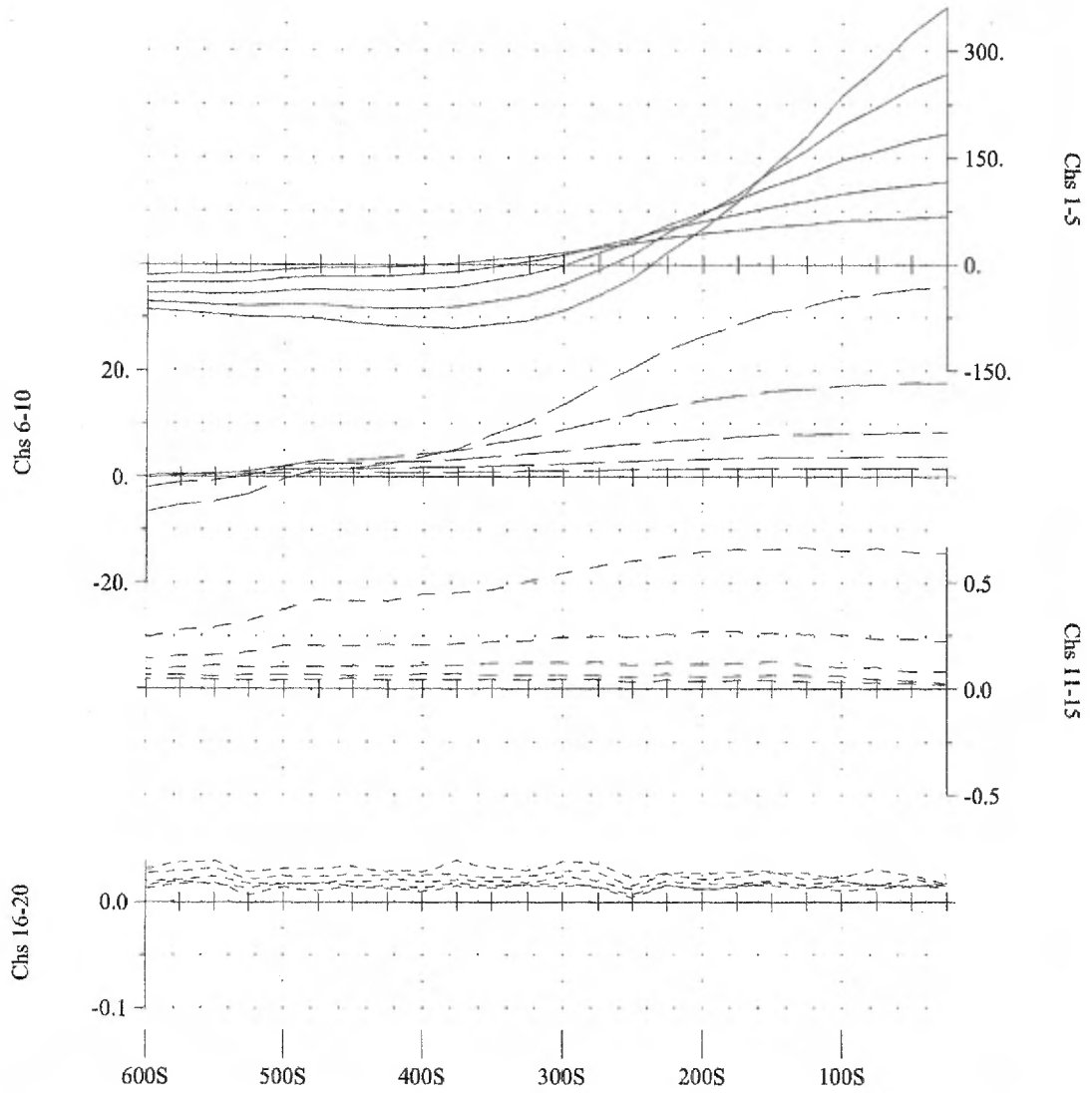
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L500e, 0n, 300n
Transmitter Current:	19.6 Amps
Transmitter Turn-Off Time:	282 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up
	Hx - positive south
	Hy - positive east
Survey Date:	29/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels)
	& Geonics 3D Coil (3x200m^2)
	Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-TF-400 E



Line 500 E - Z Component

BRO-306

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM BRO-306

SELBAIE AREA, nts 32 E/15, QC

LPTEM FIXED-LOOP PROFILING SURVEY

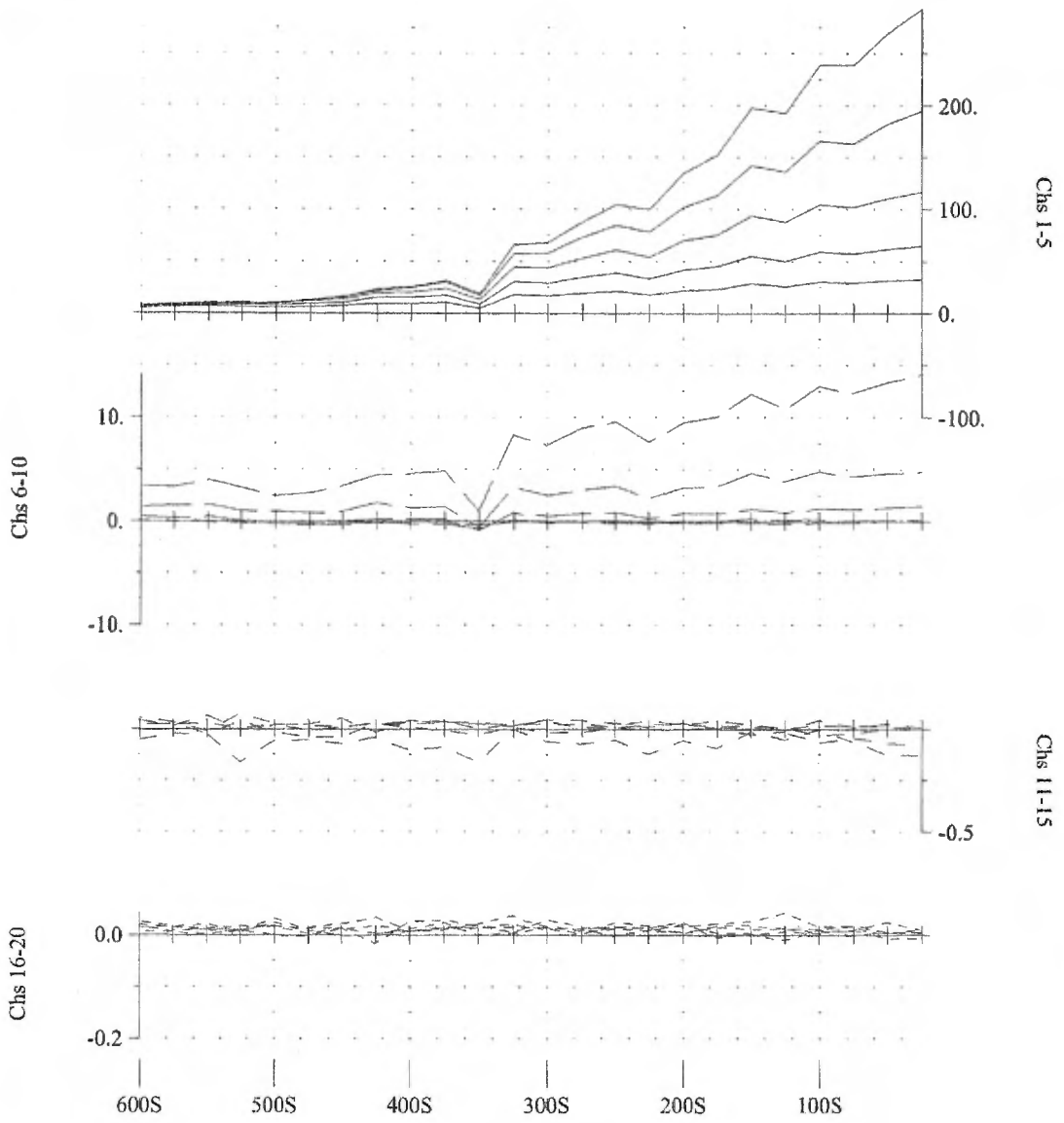
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L500e, 0n, 300n
Transmitter Current:	19.6 Amps
Transmitter Turn-Off Time:	282 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up
	Hx - positive south
	Hy - positive east
Survey Date:	29/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels)
	& Geonics 3D Coil (3x200m^2)
	Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-Z-500 E



Line 500 E - Y Component

BRO-306

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM BRO-306

SELBAIE AREA, nts 32 E/15, QC

LPTEM FIXED-LOOP PROFILING SURVEY

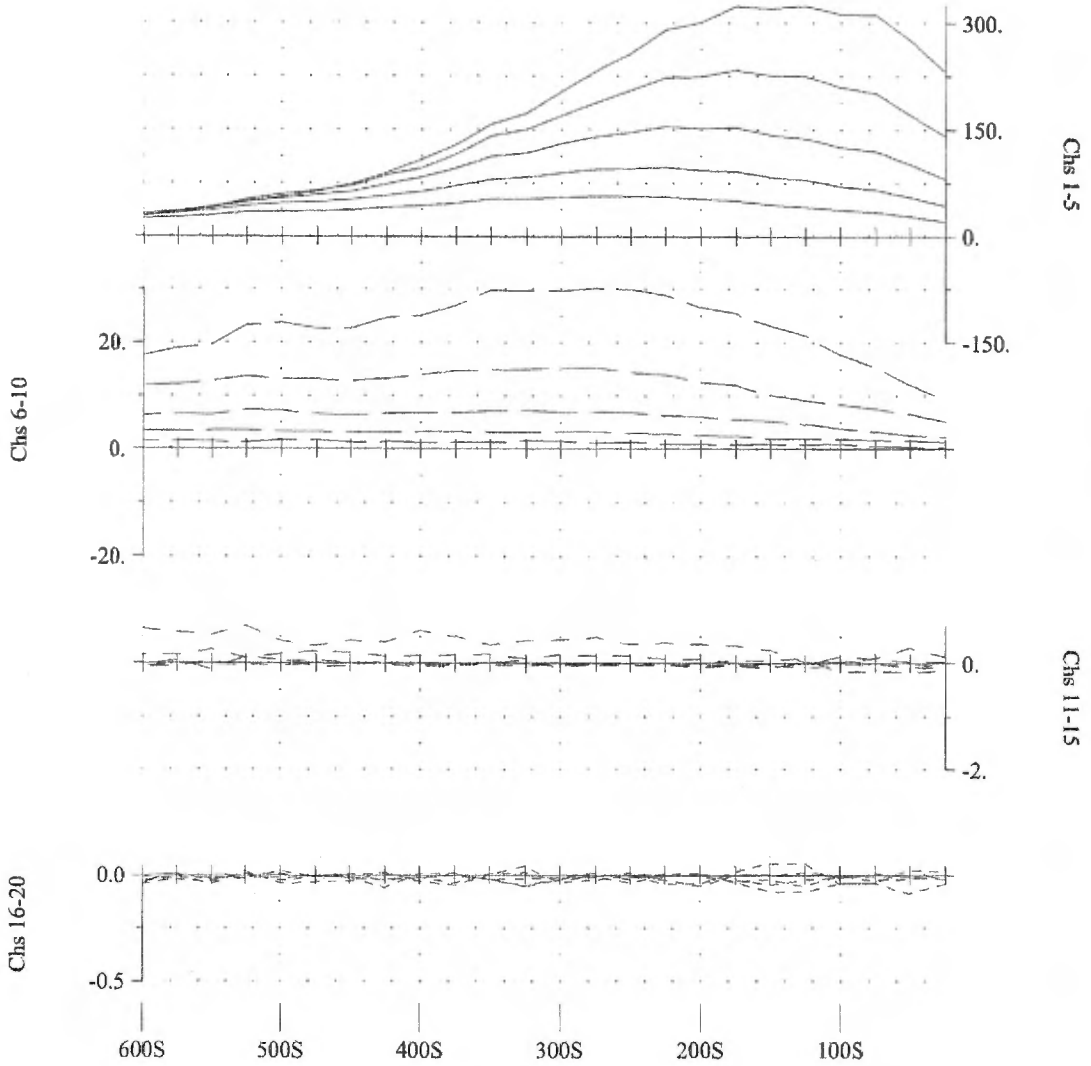
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L500e, 0n, 300n
Transmitter Current:	19.6 Amps
Transmitter Turn-Off Time:	282 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up Hx - positive south Hy - positive east
Survey Date:	29/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-Y-500 E



Line 500 E - X Component

BRO-306

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM BRO-306

SELBAIE AREA, nts 32 E/15, QC

LPTEM FIXED-LOOP PROFILING SURVEY

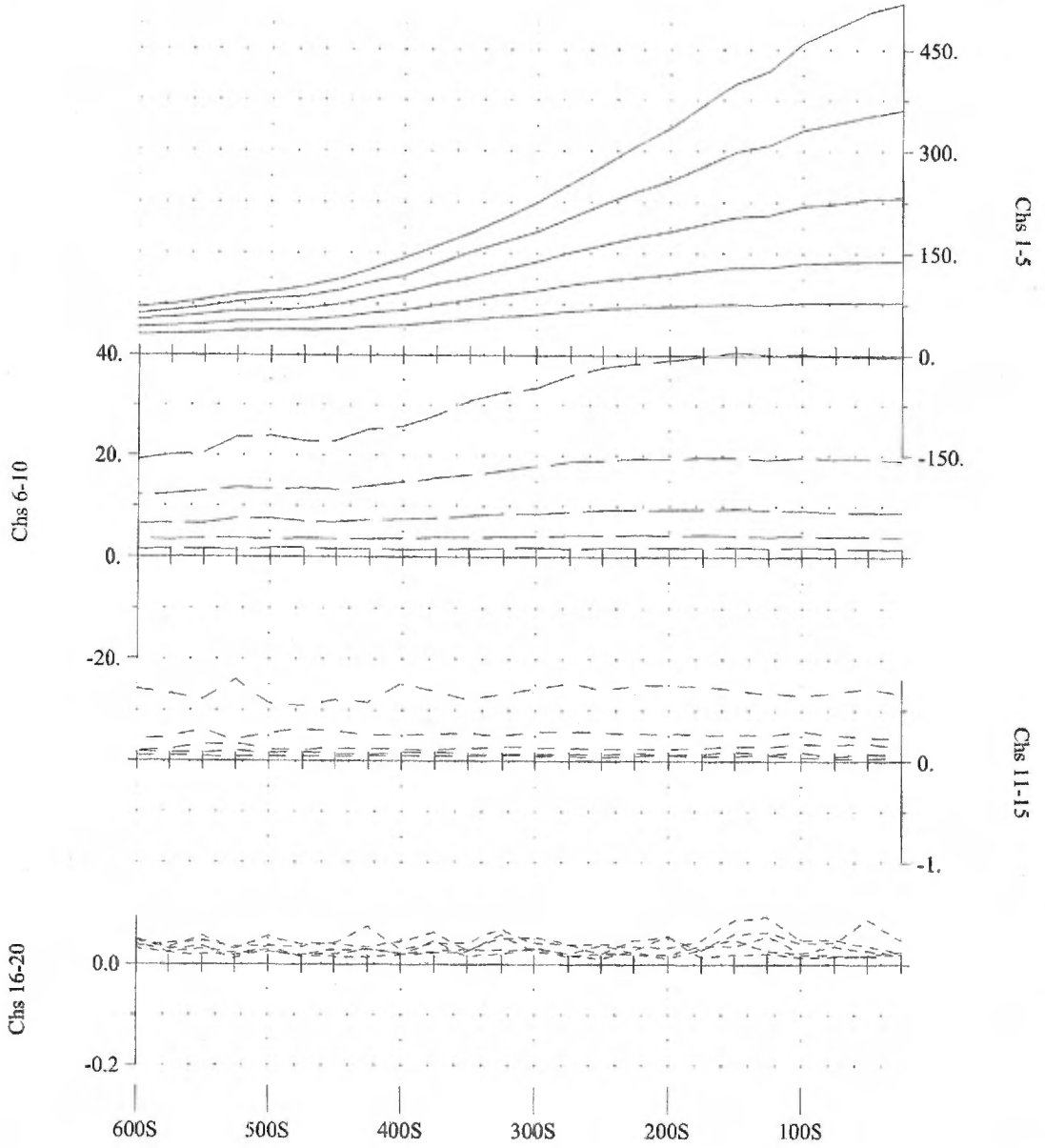
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L500e, 0n, 300n
Transmitter Current:	19.6 Amps
Transmitter Turn-Off Time:	282 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up
	Hx - positive south
	Hy - positive east
Survey Date:	29/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels)
	& Geonics 3D Coil (3x200m^2)
	Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-X-500 E



Line 500 E - Total Field

BRO-306

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM BRO-306

SELBAIE AREA, nts 32 E/15, QC

LPTEM FIXED-LOOP PROFILING SURVEY

Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L500e, 0n, 300n
Transmitter Current:	19.6 Amps
Transmitter Turn-Off Time:	282 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up
	Hx - positive south
	Hy - positive east
Survey Date:	29/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels)
	& Geonics 3D Coil (3x200m^2)
	Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-TF-500 E

NORANDA INC.

QG 268 MEGATEM FOLLOW UP PROFILES

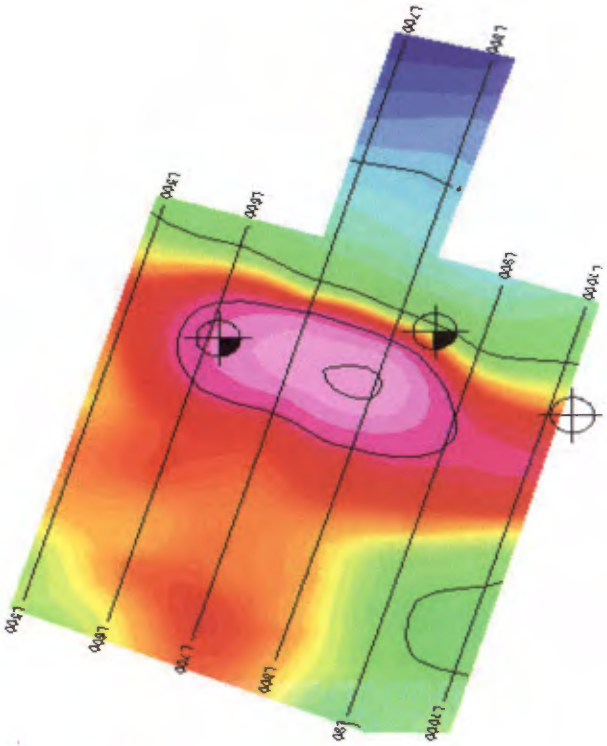
WEST SELBAIE AREA

BRO 02

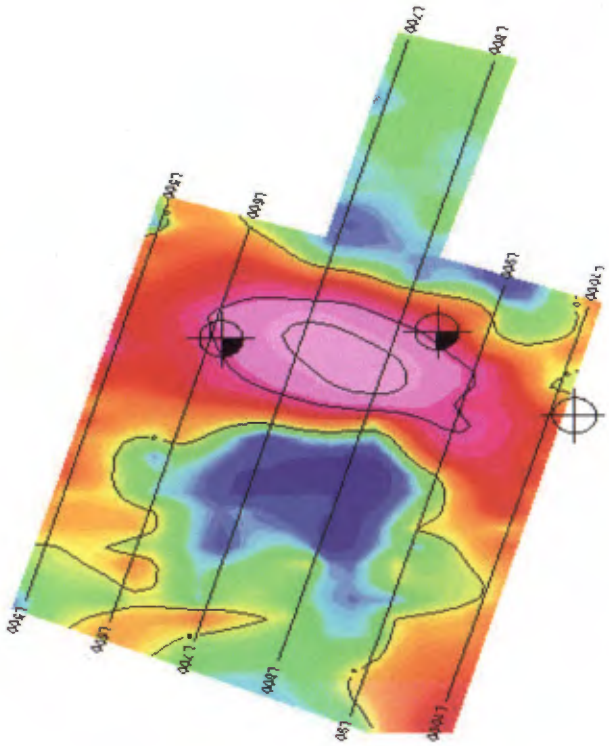
Quantec

GEOPHYSICS WORLDWIDE

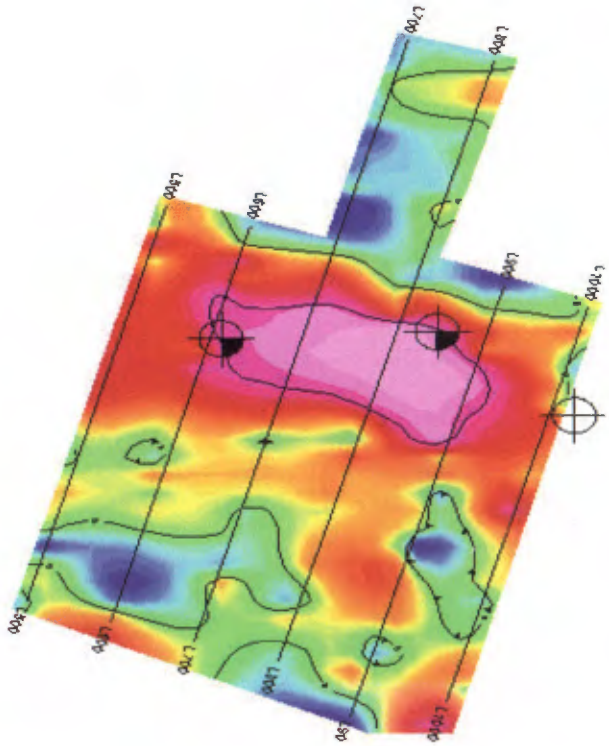
BRO-02 Levé électromagnétique dans le domaine du temps à grande boucle ('TDEM')



xch5



xch10



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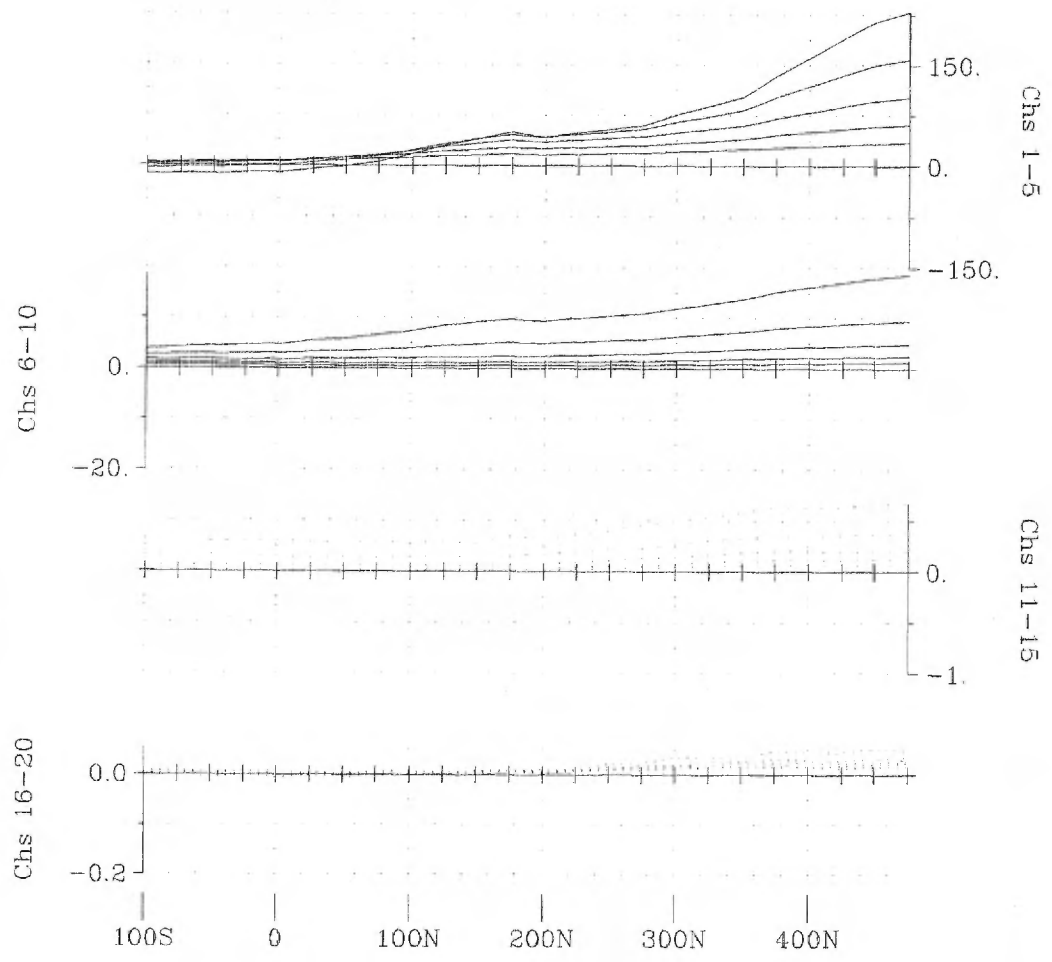


Line 500 E – Z Component

BRO-02

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM BRO-02

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

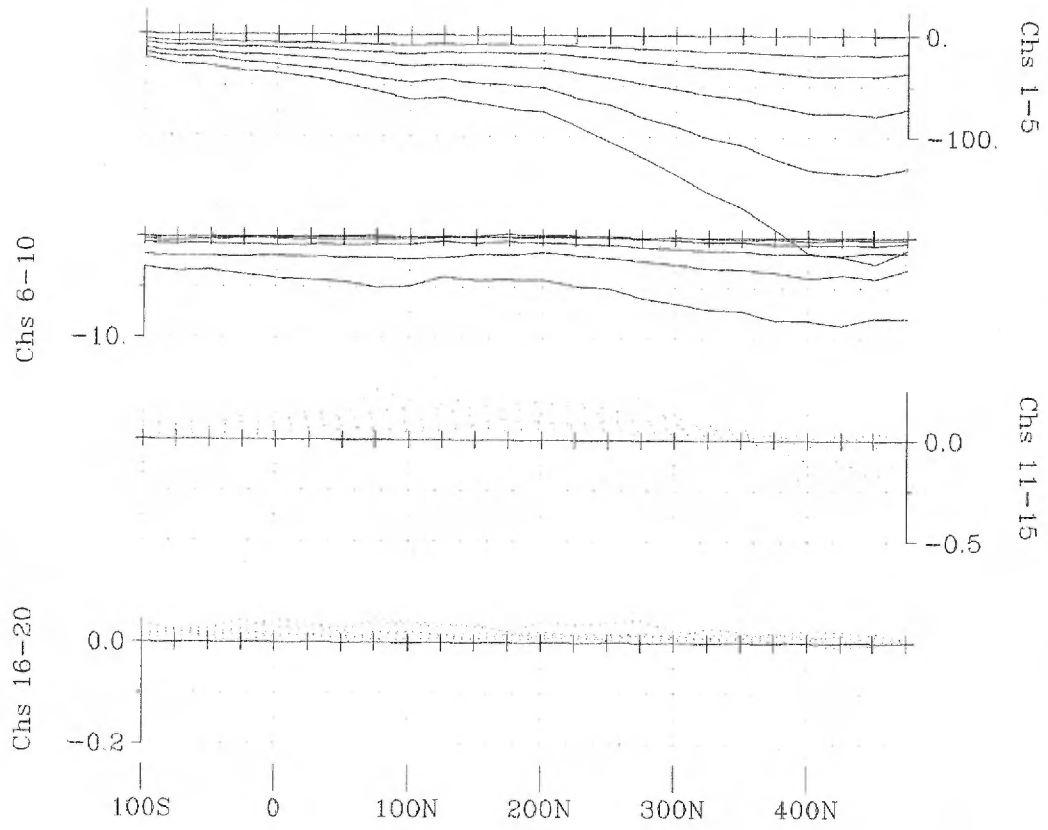
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L500e, L1000e, 500n,800n
Transmitter Current:	20.1 Amps
Transmitter Turn-Off Time:	286 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up Hx - positive south Hy - positive east
Survey Date:	26/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-Z-500 E



Line 500 E – Y Component

BRO-02

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM BRO-02

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

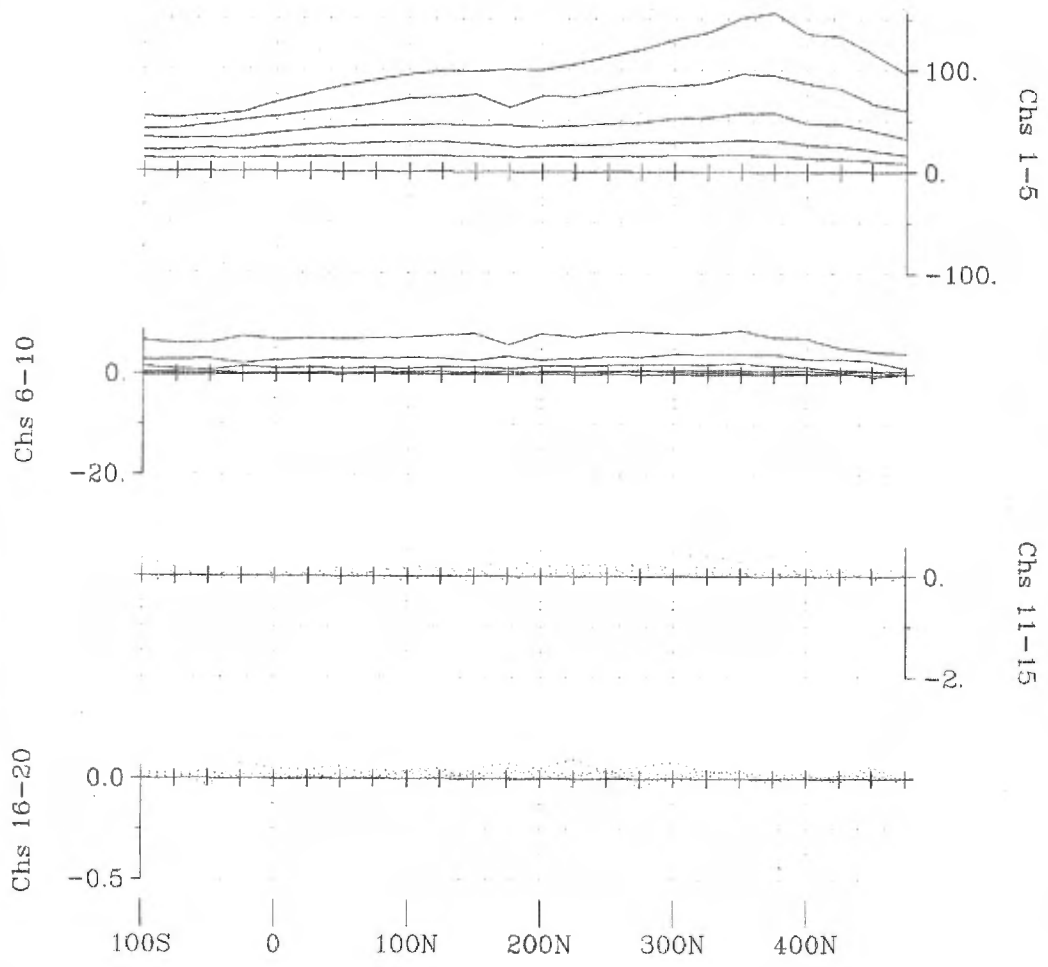
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L500e, L1000e, 500n, 800n
Transmitter Current:	20.1 Amps
Transmitter Turn-Off Time:	286 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz – positive up Hx – positive south Hy – positive east
Survey Date:	26/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-Y-500 E



Line 500 E – X Component

BRO-02

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM BRO-02

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

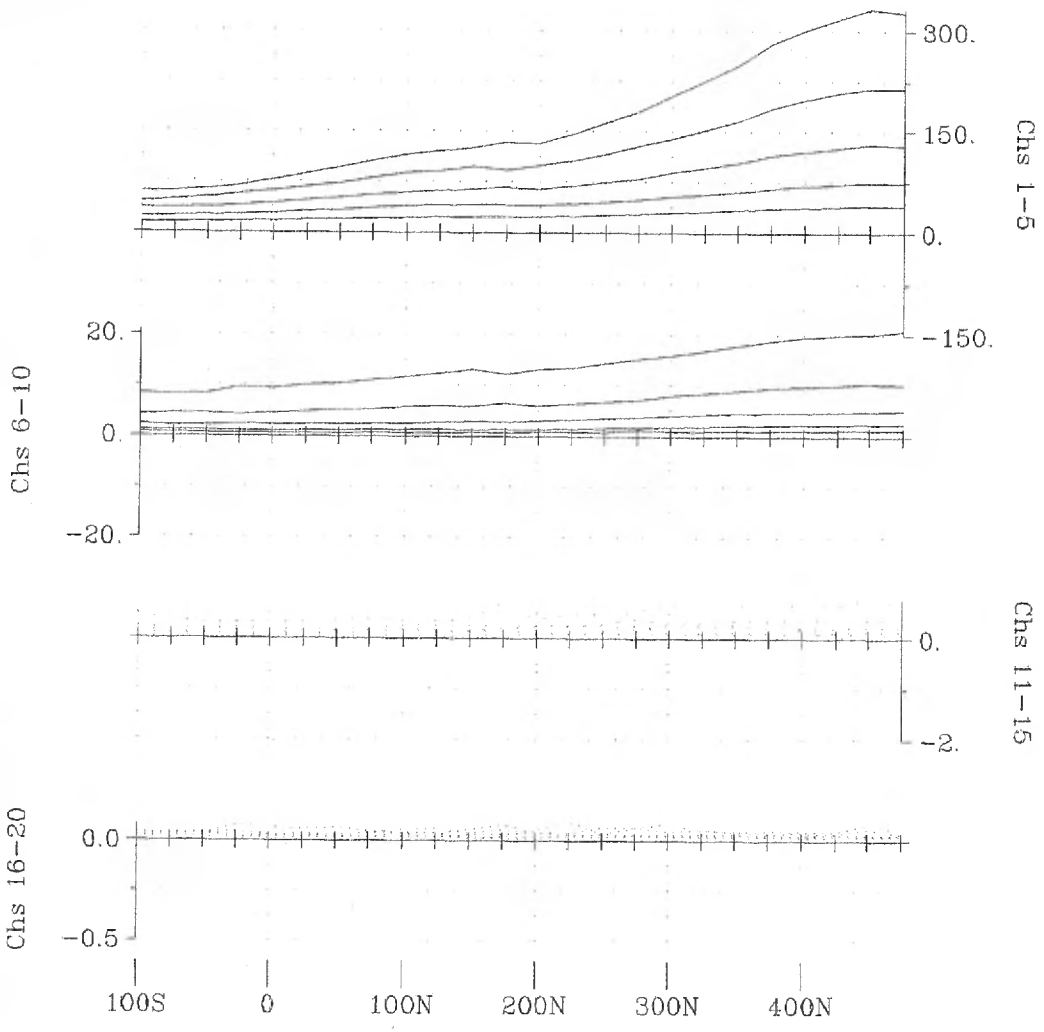
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L500e, L1000e, 500n, 800n
Transmitter Current:	20.1 Amps
Transmitter Turn-Off Time:	286 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz – positive up
	Hx – positive south
	Hy – positive east
Survey Date:	26/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels)
	& Geonics 3D Coil (3x200m^2)
	Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-X-500 E



Line 500 E – Total Field

BRO-02

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM BRO-02

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

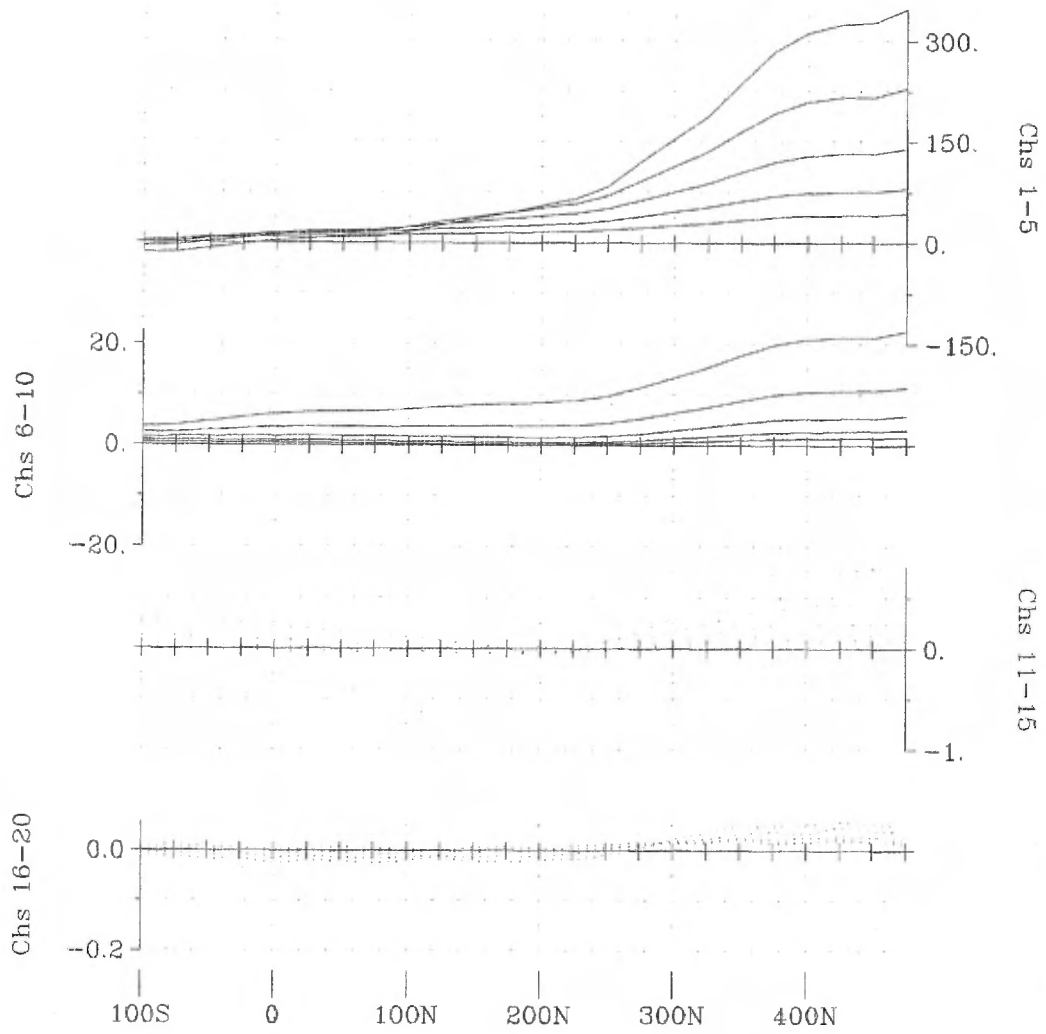
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L500e, L1000e, 500n, 800n
Transmitter Current:	20.1 Amps
Transmitter Turn-Off Time:	286 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz – positive up Hx – positive south Hy – positive east
Survey Date:	26/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-TF-500 E



Line 600 E – Z Component

BRO-02

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM BRO-02

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

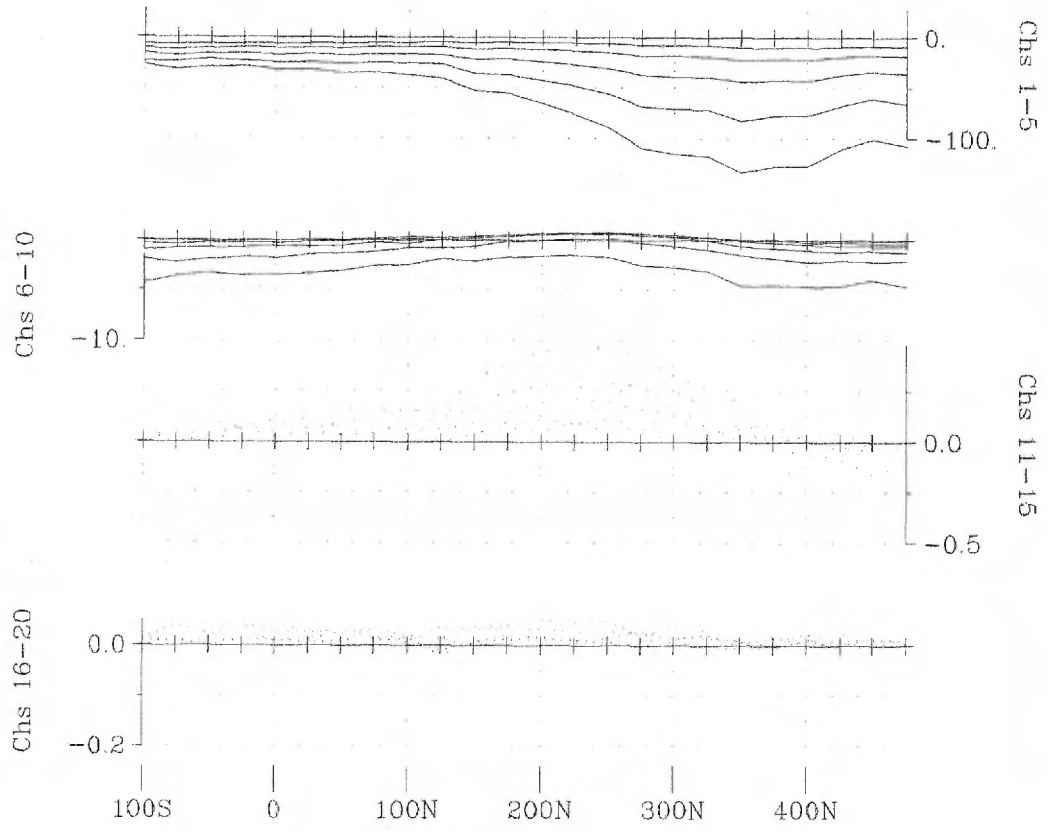
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L500e, L1000e, 500n, 800n
Transmitter Current:	20.1 Amps
Transmitter Turn-Off Time:	286 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz – positive up Hx – positive south Hy – positive east
Survey Date:	26/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-Z-600 E



Line 600 E – Y Component

BRO-02

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM BRO-02

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

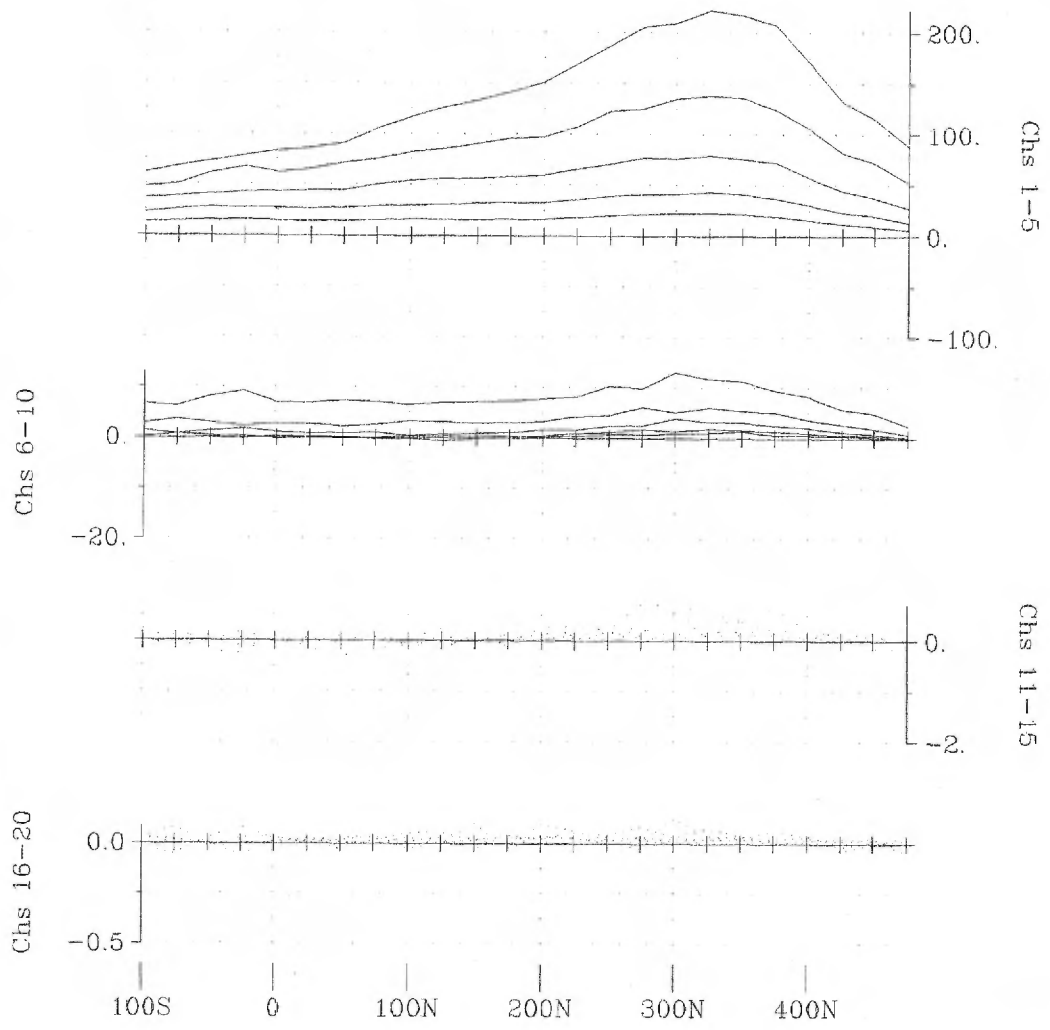
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L500e, L1000e, 500n, 800n
Transmitter Current:	20.1 Amps
Transmitter Turn-Off Time:	286 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz – positive up Hx – positive south Hy – positive east
Survey Date:	26/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-Y-600 E



Line 600 E – X Component

BRO-02

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM BRO-02

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

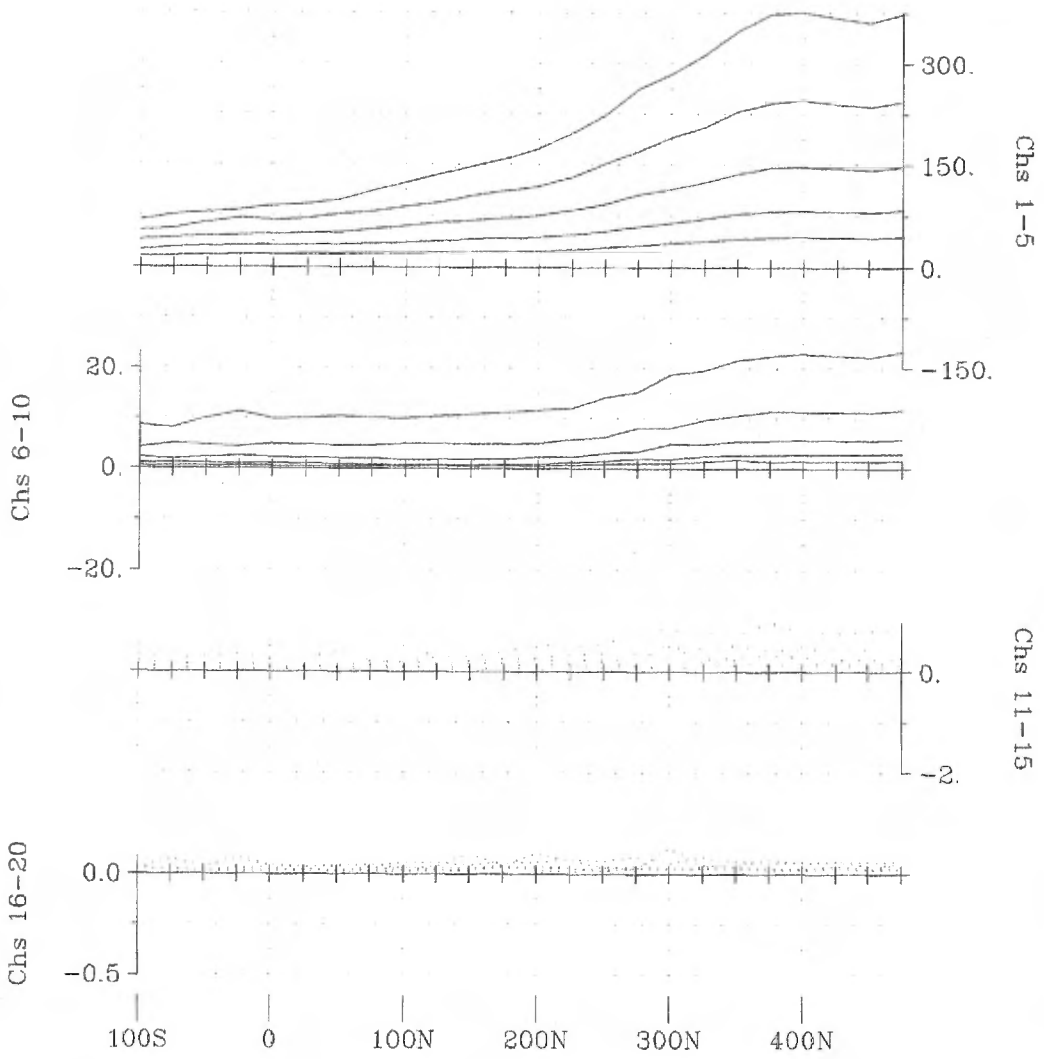
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L500e, L1000e, 500n,800n
Transmitter Current:	20.1 Amps
Transmitter Turn-Off Time:	286 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz – positive up Hx – positive south Hy – positive east
Survey Date:	26/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-X-600 E



Line 600 E – Total Field

BRO-02

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM BRO-02

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

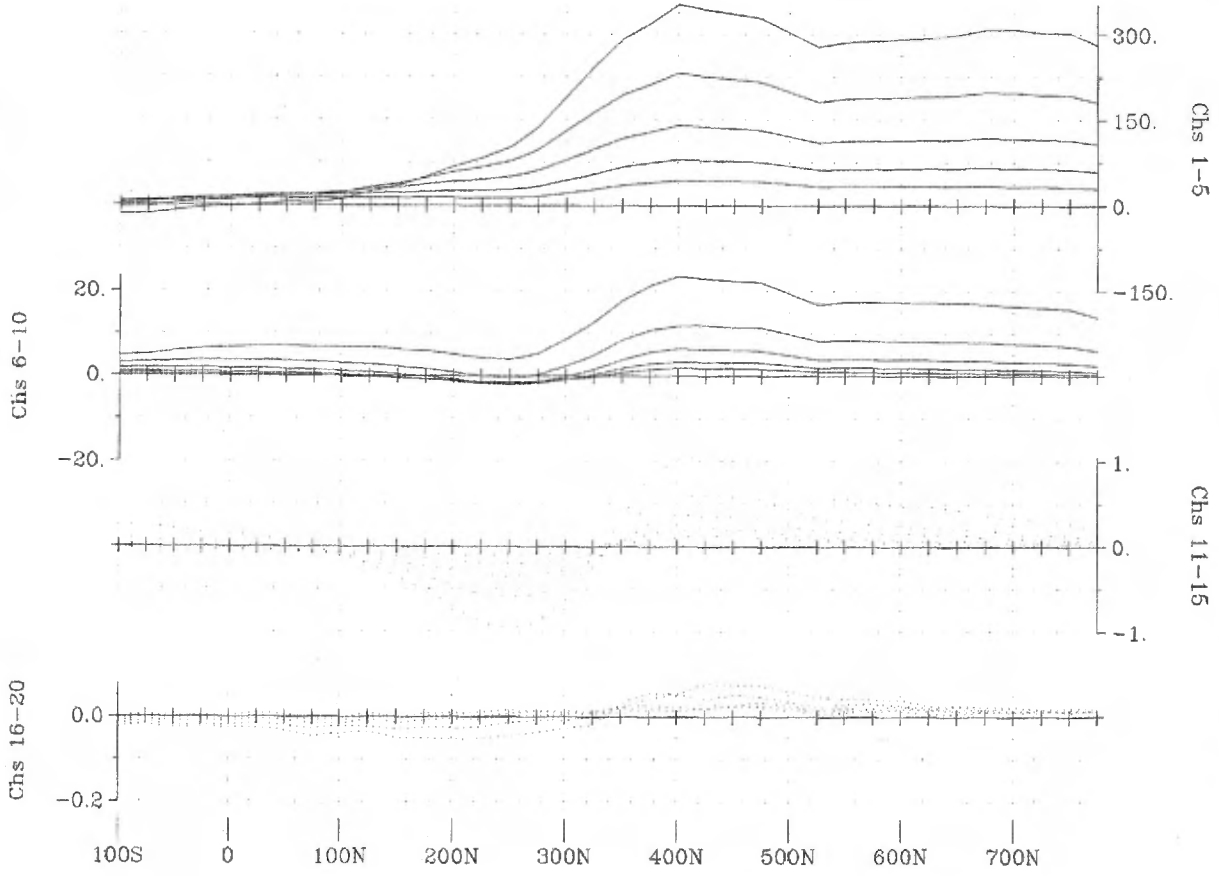
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L500e, L1000e, 500n, 800n
Transmitter Current:	20.1 Amps
Transmitter Turn-Off Time:	286 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up Hx - positive south Hy - positive east
Survey Date:	26/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-TF-600 E



Line 700 E - Z Component

BRO-02

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM BRO-02

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

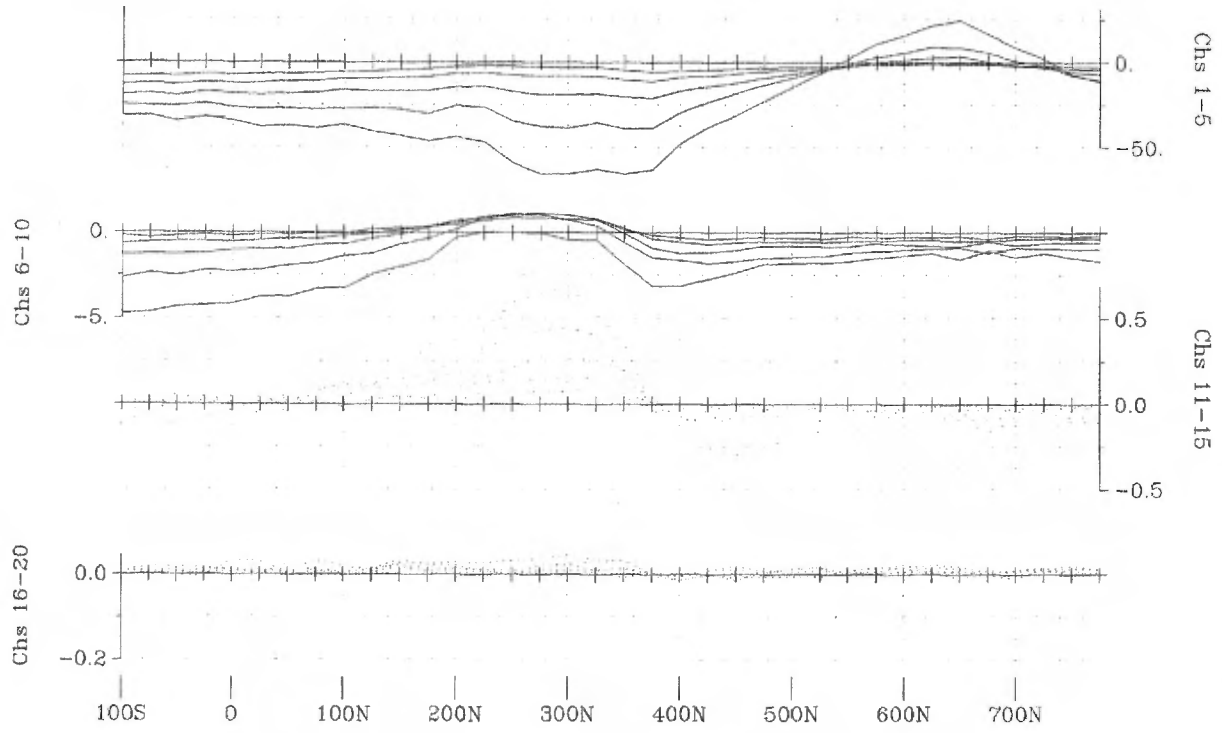
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L500e, L1000e, 500n,800n
Transmitter Current:	20.1 Amps
Transmitter Turn-Off Time:	286 us
Station Interval:	25 metres
Profile Units:	nanoVolt/Asm^2
Receiver Coil Orientation:	Hz - positive up Hx - positive south Hy - positive east
Survey Date:	27/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-Z-700 E



Line 700 E - Y Component

BRO-02

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM BRO-02

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

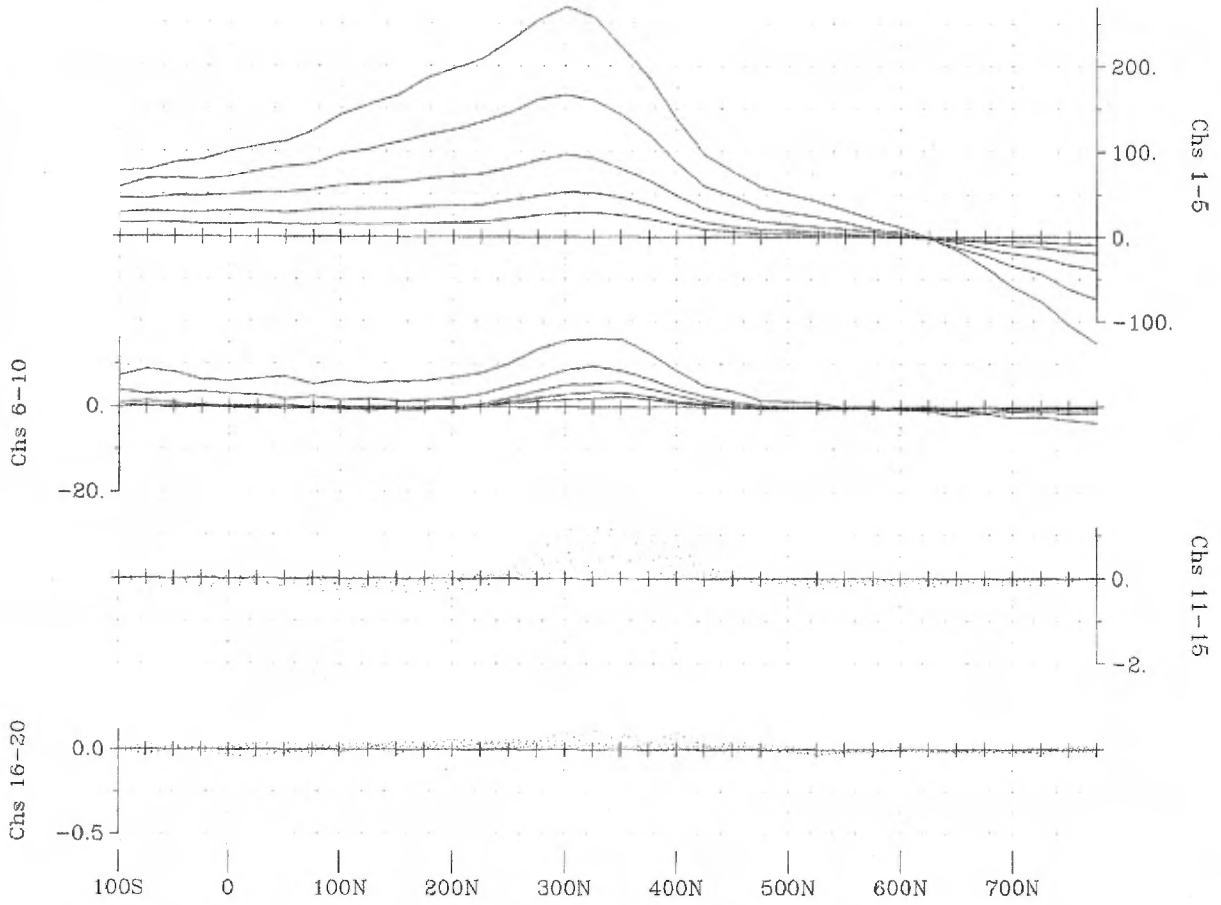
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L500e, L1000e, 500n,800n
Transmitter Current:	20.1 Amps
Transmitter Turn-Off Time:	286 us
Station Interval:	25 metres
Profile Units:	nanoVolt/Aem^2
Receiver Coil Orientation:	Hz - positive up
	Hx - positive south
	Hy - positive east
Survey Date:	27/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels)
	& Geonics 3D Coil (3x200m^2)
	Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-Y-700 E



Line 700 E – X Component

BRO-02

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM BRO-02

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

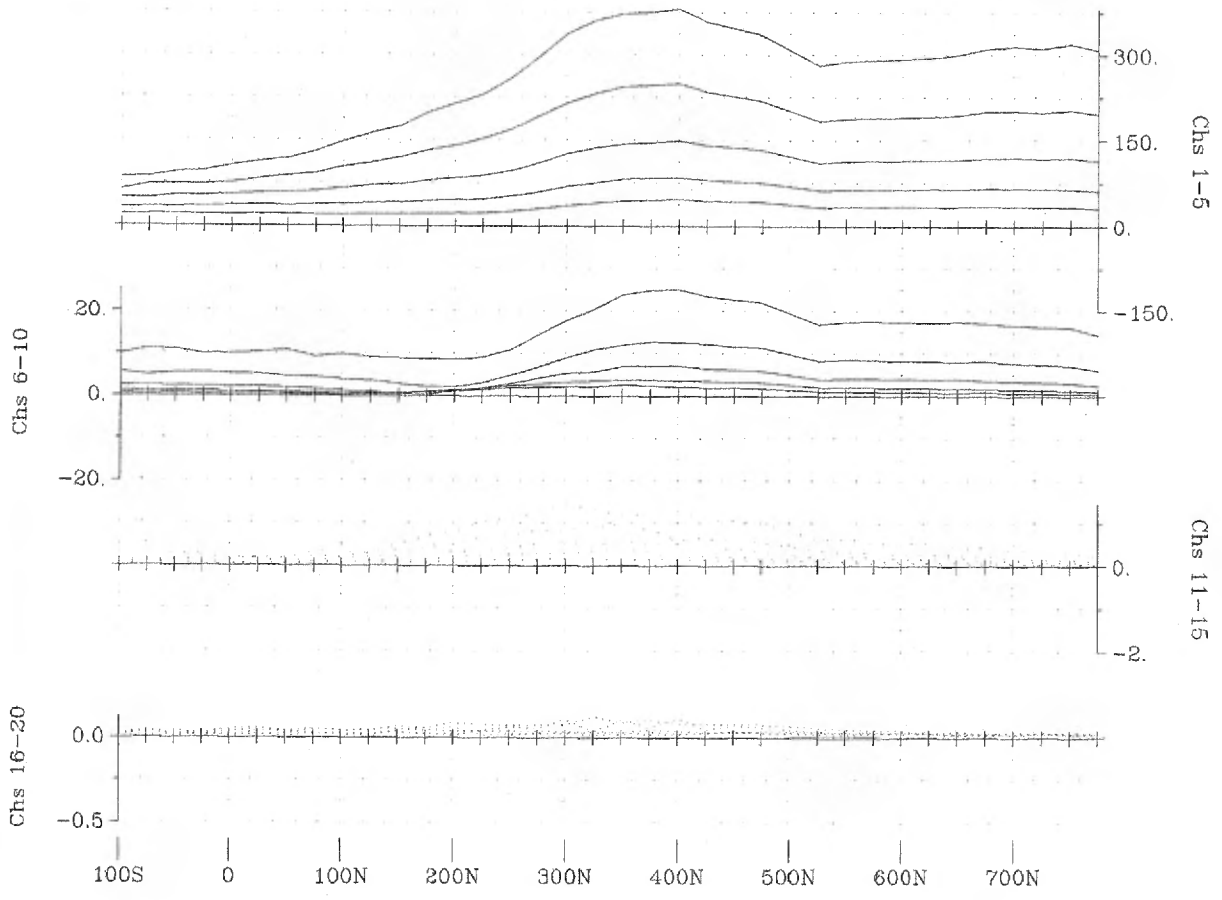
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L500e, L1000e, 500n,800n
Transmitter Current:	20.1 Amps
Transmitter Turn-Off Time:	286 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up Hx - positive south Hy - positive east
Survey Date:	27/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-X-700 E



Line 700 E - Total Field

BRO-02

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM BRO-02

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

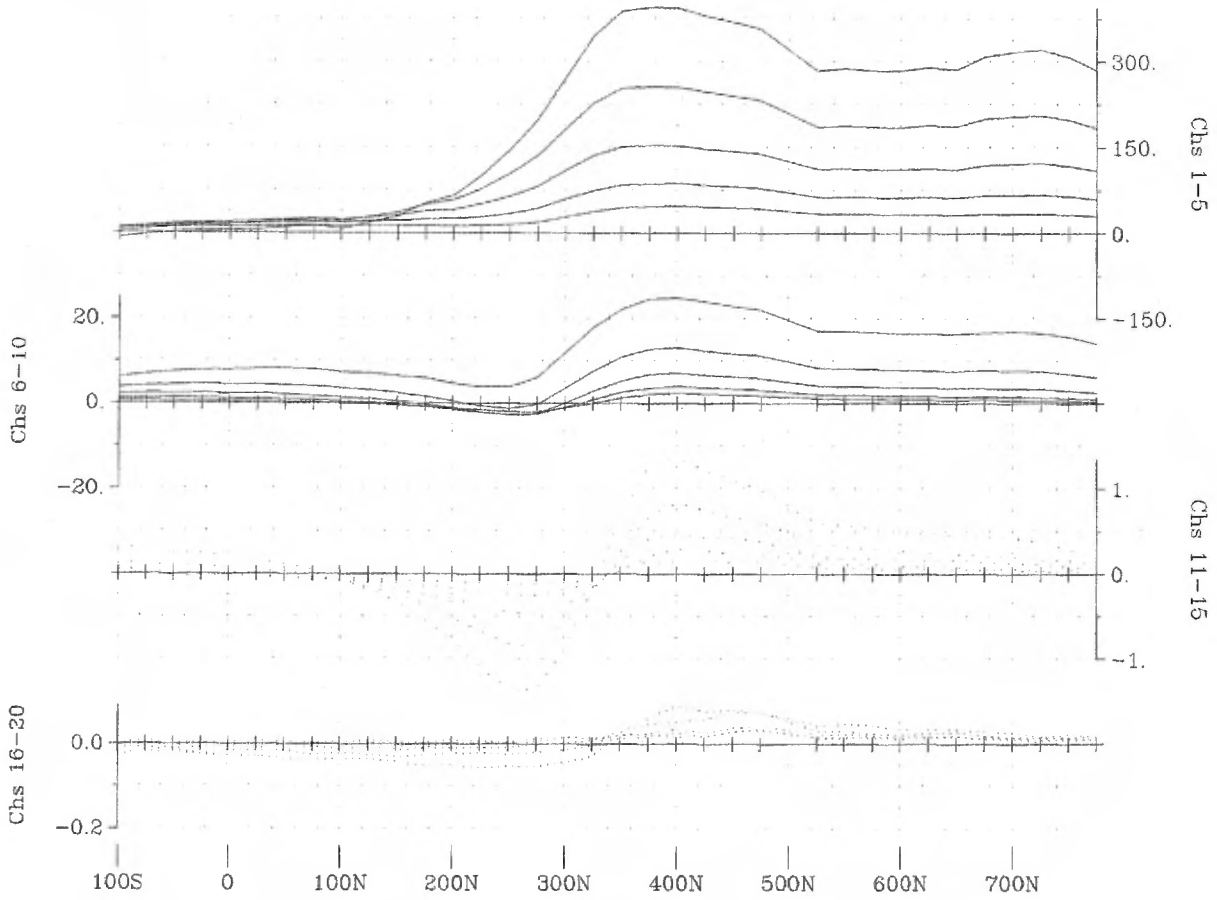
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L500e, L1000e, 500n,800n
Transmitter Current:	20.1 Amps
Transmitter Turn-Off Time:	286 us
Station Interval:	25 metres
Profile Units:	nanoVolt/Aem^2
Receiver Coil Orientation:	Hz - positive up Hx - positive south Hy - positive east
Survey Date:	27/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-TF-700 E



Line 800 E - Z Component

BRO-02

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM BRO-02

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

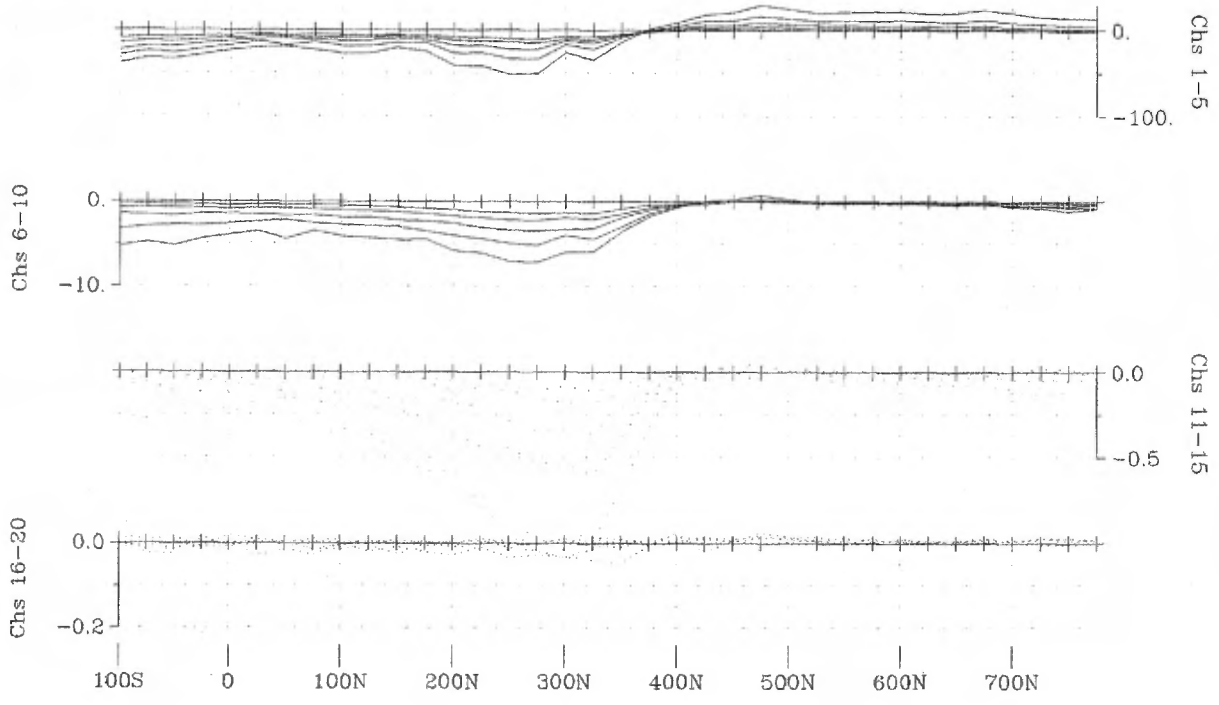
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L500e, L1000e, 500n,800n
Transmitter Current:	20.1 Amps
Transmitter Turn-Off Time:	286 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up
	Hx - positive south
	Hy - positive east
Survey Date:	27/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels)
	& Geonics 3D Coil (3x200m^2)
	Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-Z-800 E



Line 800 E – Y Component

BRO-02

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM BRO-02

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

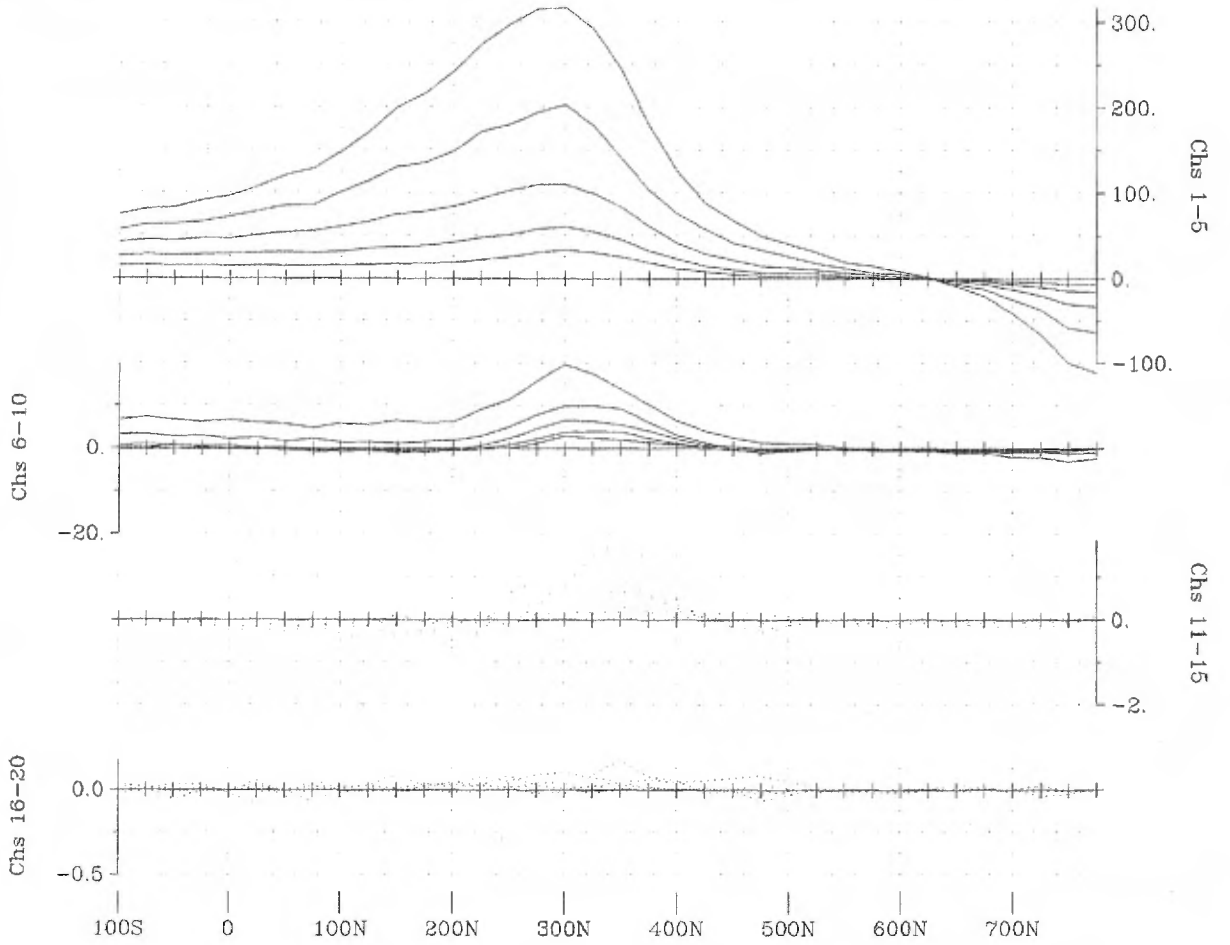
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L500e, L1000e, 500n,800n
Transmitter Current:	20.1 Amps
Transmitter Turn-Off Time:	286 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up
	Hx - positive south
	Hy - positive east
Survey Date:	27/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels)
	& Geonics 3D Coil (3x200m^2)
	Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-Y-800 E



Line 800 E - X Component

BRO-02

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM BRO-02

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

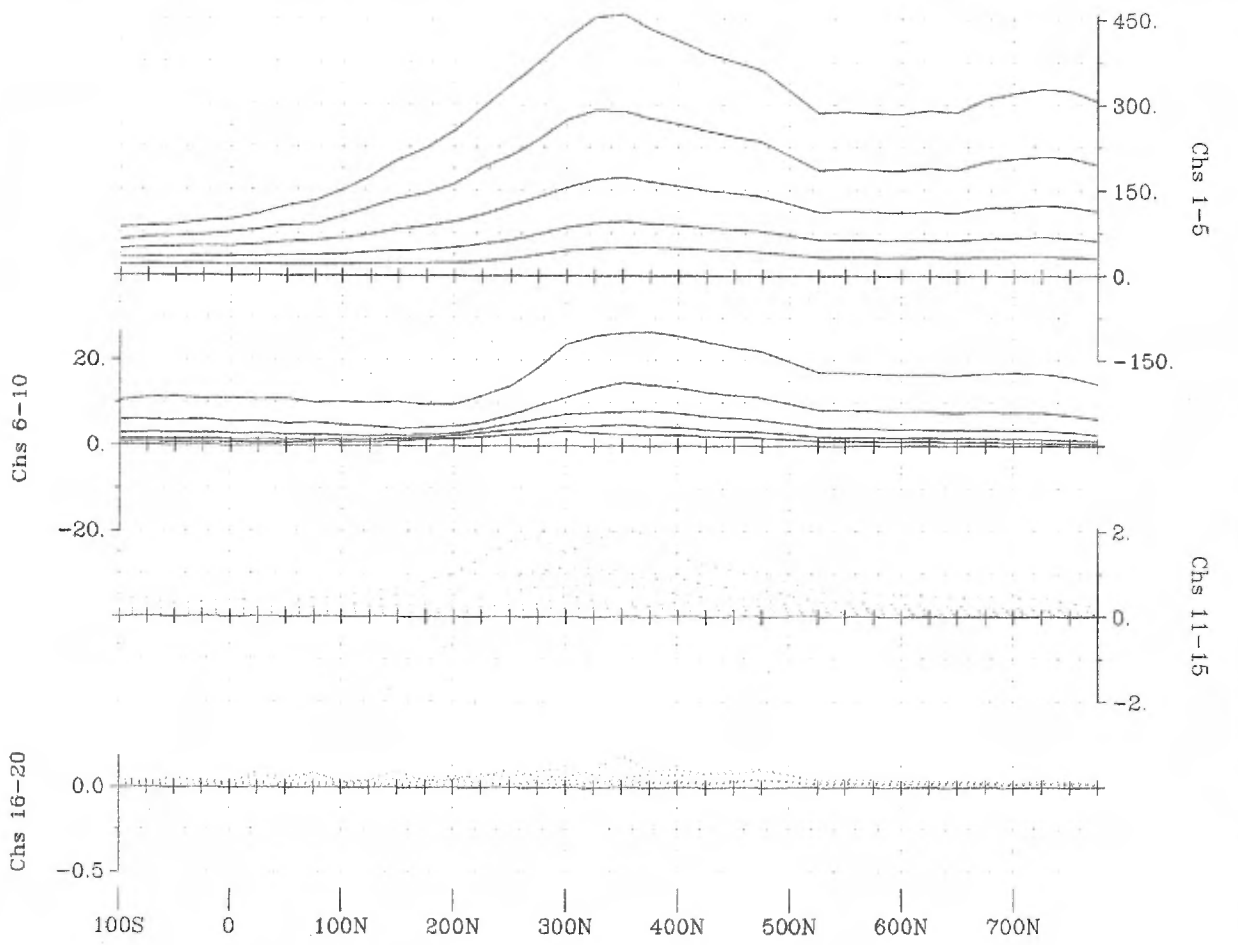
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L500e, L1000e, 500n, 800n
Transmitter Current:	20.1 Amps
Transmitter Turn-Off Time:	286 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A•m^2
Receiver Coil Orientation:	Hz - positive up
	Hx - positive south
	Hy - positive east
Survey Date:	27/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels)
	& Geonics 3D Coil (3x200m^2)
	Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-X-800 E



Line 800 E - Total Field

BRO-02

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM BRO-02

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

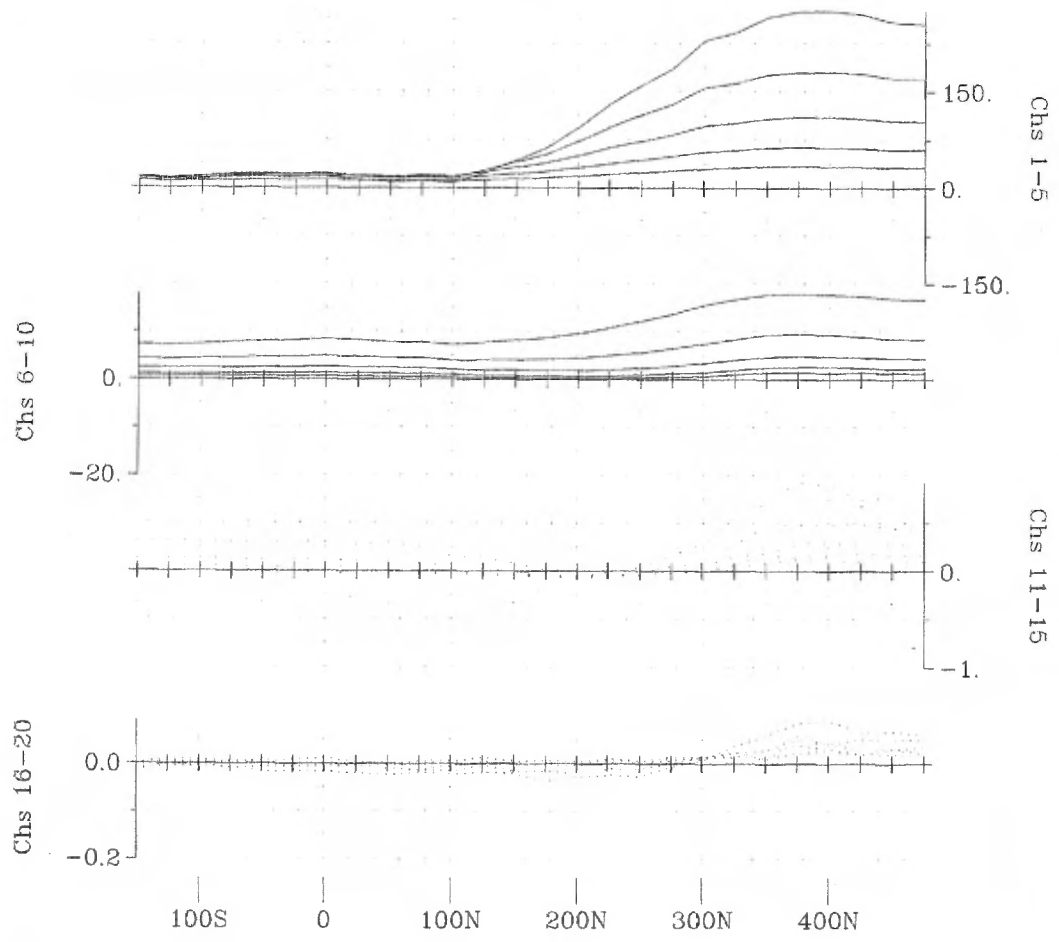
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L500e, L1000e, 500n,800n
Transmitter Current:	20.1 Amps
Transmitter Turn-Off Time:	286 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up
	Hx - positive south
	Hy - positive east
Survey Date:	27/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels)
	& Geonics 3D Coil (3x200m^2)
	Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-TF-800 E



Line 900 E – Z Component

BRO-02

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM BRO-02

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

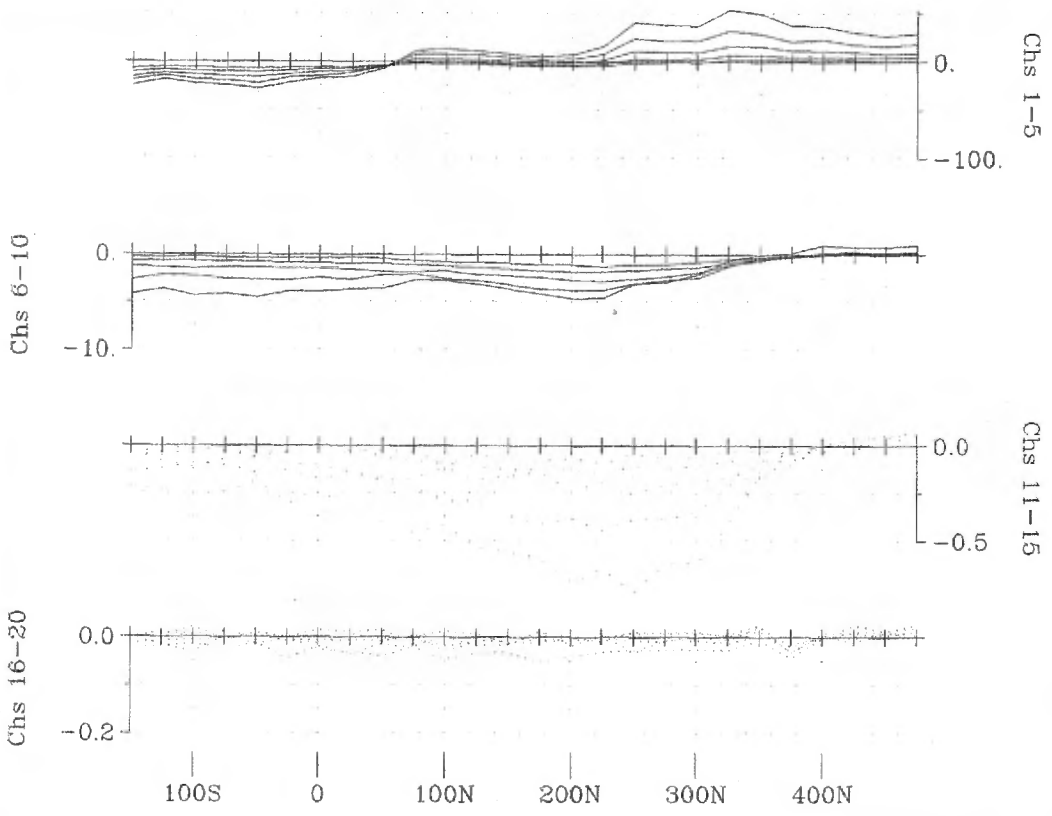
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L500e, L1000e, 500n,800n
Transmitter Current:	20.1 Amps
Transmitter Turn-Off Time:	286 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz – positive up Hx – positive south Hy – positive east
Survey Date:	26/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-Z-900 E



Line 900 E - Y Component

BRO-02

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM BRO-02

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

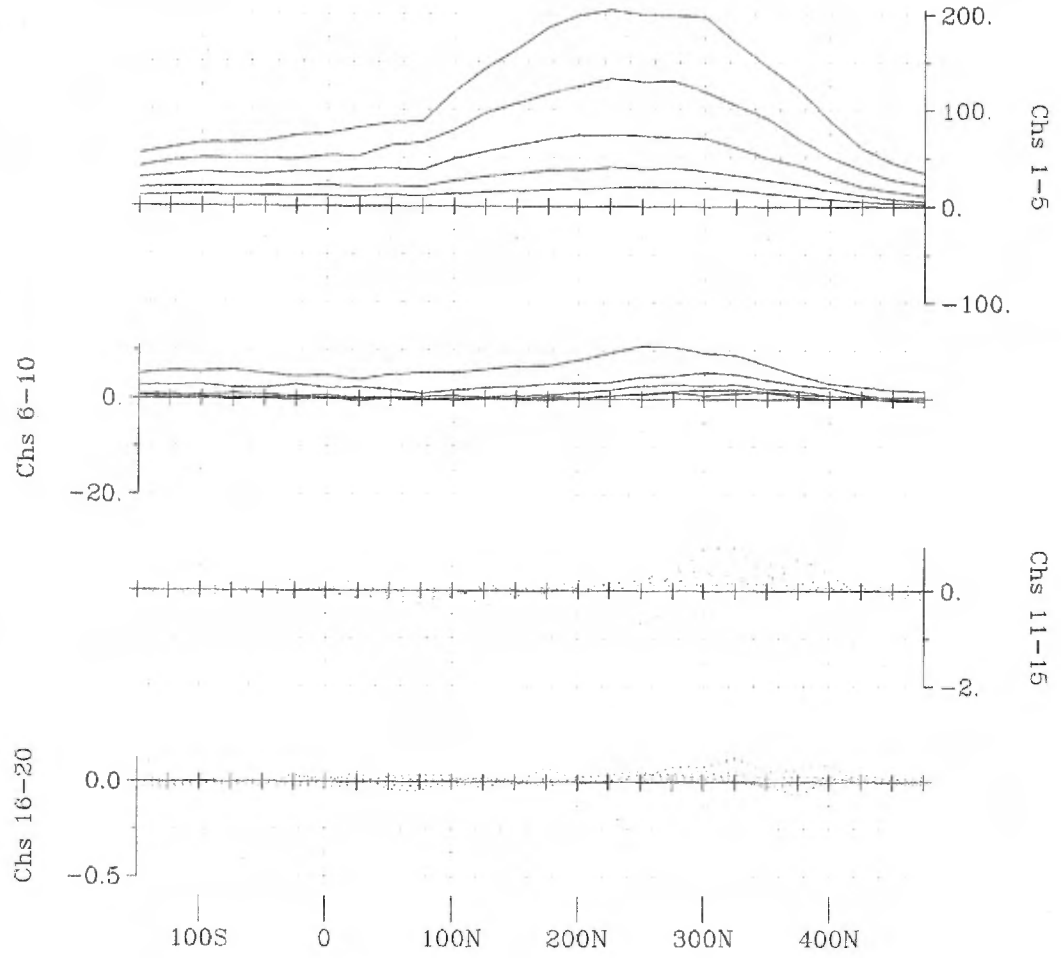
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L500e, L1000e, 500n, 800n
Transmitter Current:	20.1 Amps
Transmitter Turn-Off Time:	286 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up
	Hx - positive south
	Hy - positive east
Survey Date:	26/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels)
	& Geonics 3D Coil (3x200m^2)
	Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-Y-900 E



Line 900 E – X Component

BRO-02

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM BRO-02

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

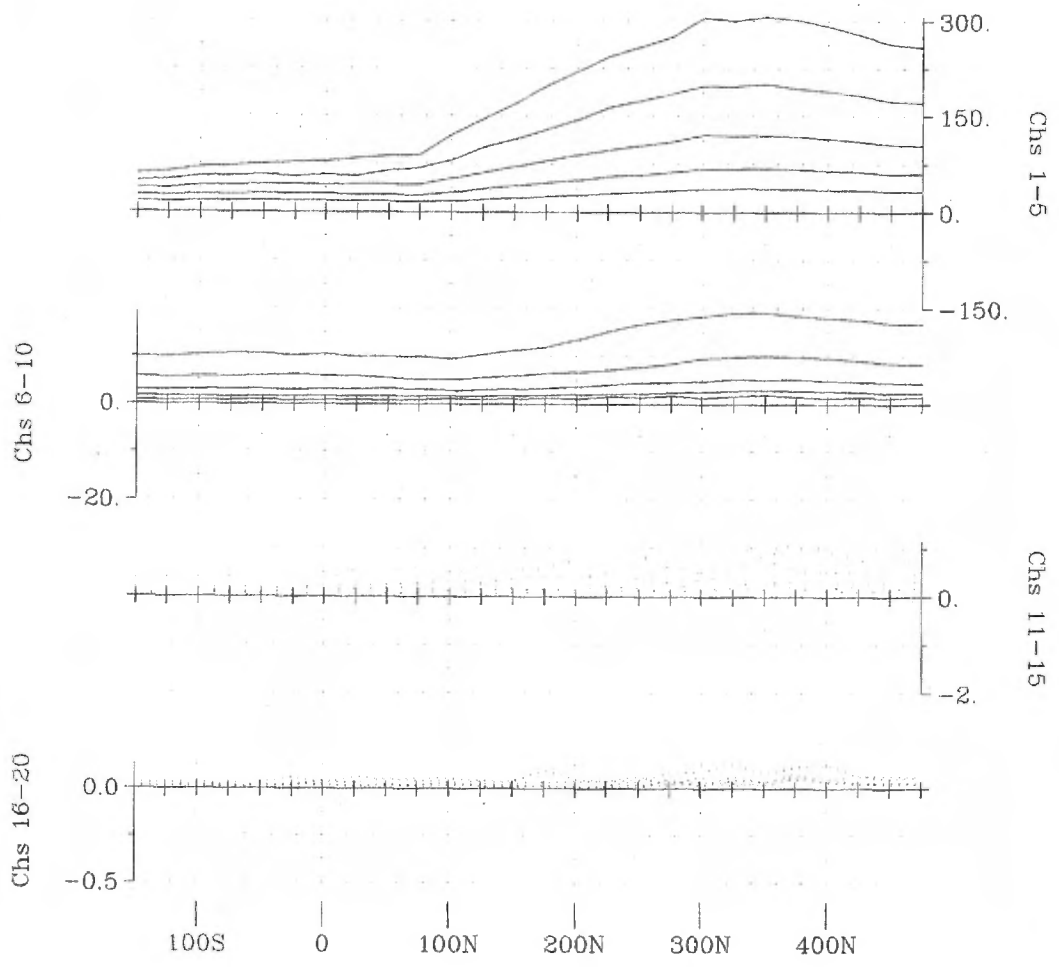
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L500e, L1000e, 500n,800n
Transmitter Current:	20.1 Amps
Transmitter Turn-Off Time:	286 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up Hx - positive south Hy - positive east
Survey Date:	26/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-X-900 E



Line 900 E – Total Field

BRO-02

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM BRO-02

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

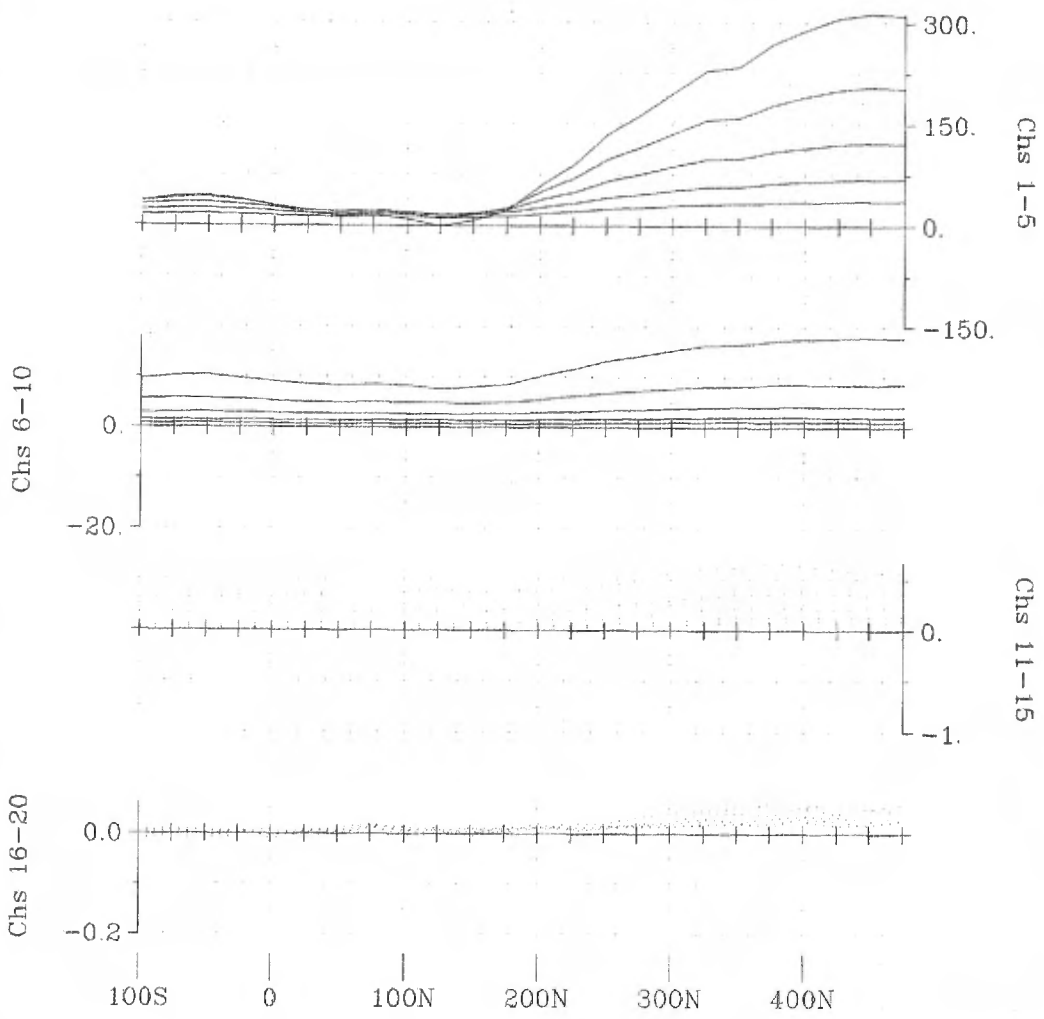
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L500e, L1000e, 500n, 800n
Transmitter Current:	20.1 Amps
Transmitter Turn-Off Time:	286 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz – positive up Hx – positive south Hy – positive east
Survey Date:	26/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-TF-900 E



Line 1000 E – Z Component

BRO-02

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM BRO-02

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

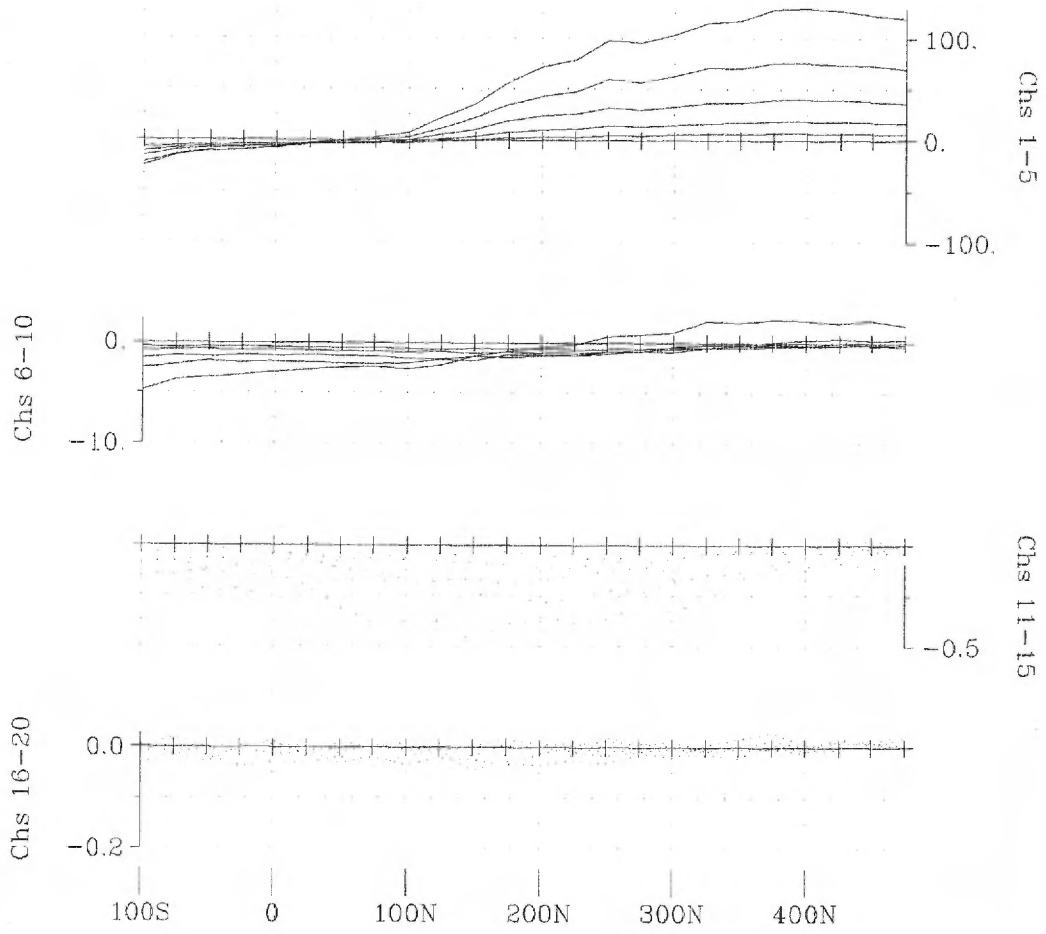
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L500e, L1000e, 500n, 800n
Transmitter Current:	20.1 Amps
Transmitter Turn-Off Time:	286 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz – positive up Hx – positive south Hy – positive east
Survey Date:	26/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-Z-1000 E



Line 1000 E – Y Component

BRO-02

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM BRO-02

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

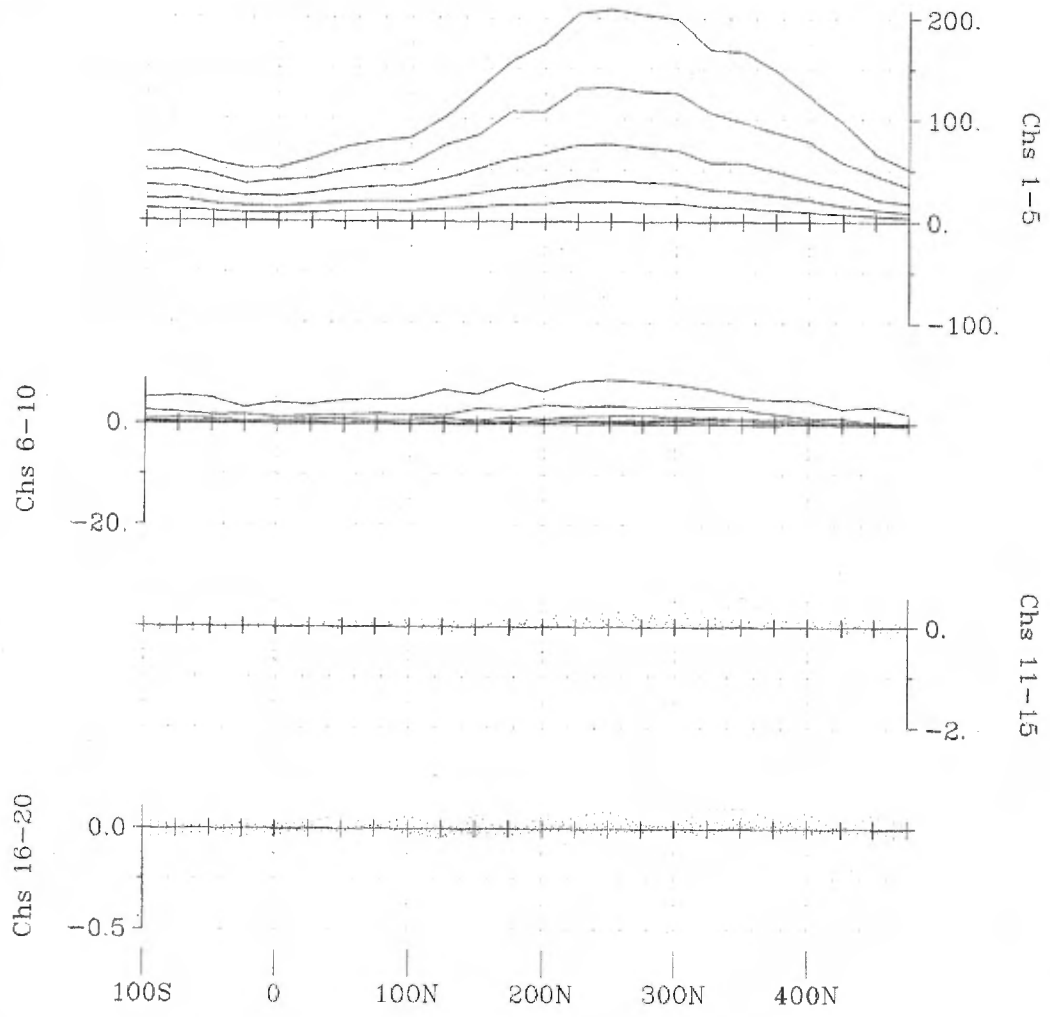
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L500e, L1000e, 500n,800n
Transmitter Current:	20.1 Amps
Transmitter Turn-Off Time:	286 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz – positive up Hx – positive south Hy – positive east
Survey Date:	26/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-Y-1000 E



Line 1000 E – X Component

BRO-02

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM BRO-02

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

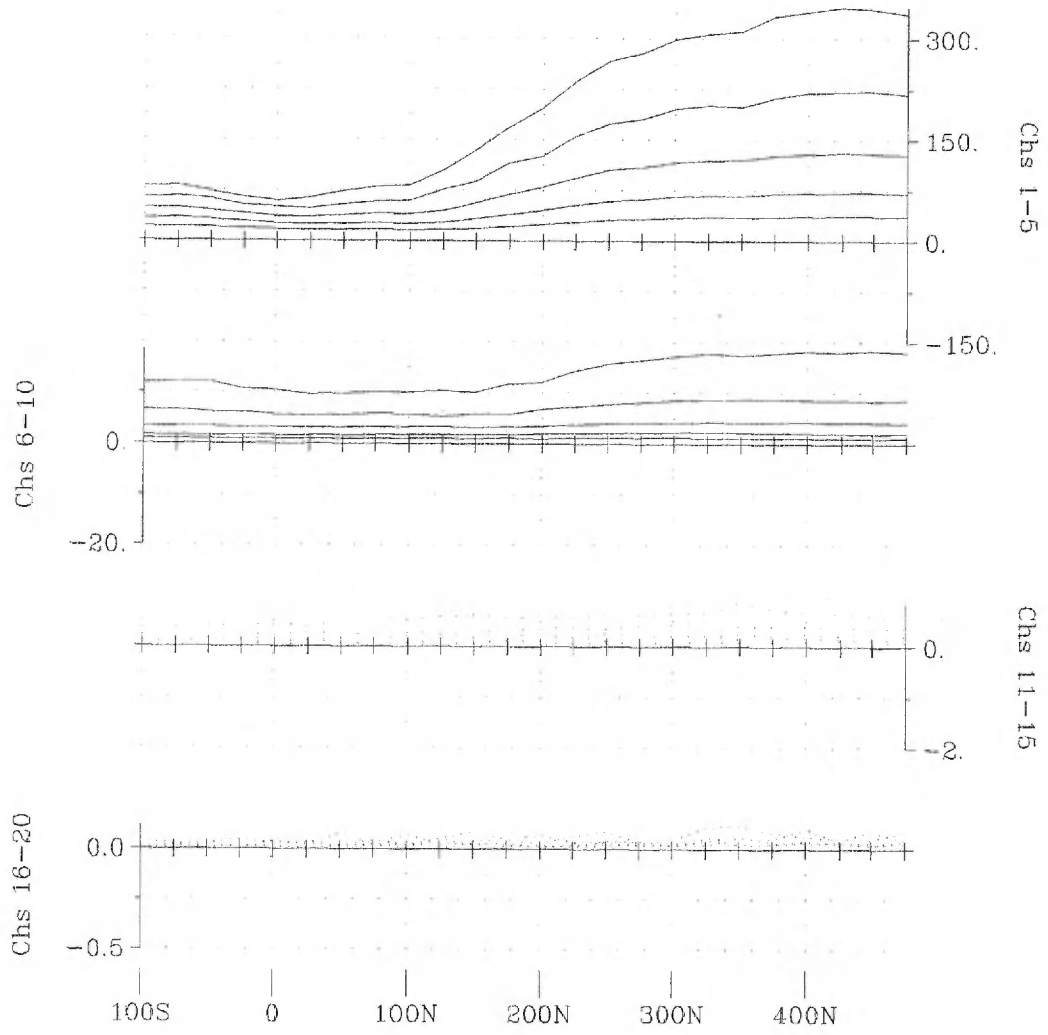
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L500e, L1000e, 500n, 800n
Transmitter Current:	20.1 Amps
Transmitter Turn-Off Time:	286 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz – positive up Hx – positive south Hy – positive east
Survey Date:	26/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-X-1000 E



Line 1000 E – Total Field

BRO-02

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM BRO-02

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L500e, L1000e, 500n, 800n
Transmitter Current:	20.1 Amps
Transmitter Turn-Off Time:	286 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz – positive up
	Hx – positive south
	Hy – positive east
Survey Date:	26/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels)
	& Geonics 3D Coil (3x200m^2)
	Tx = Geonics EM-37 (2.8 kW)

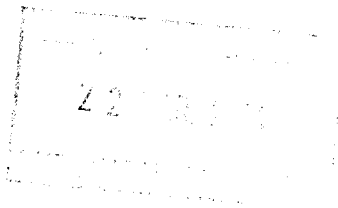
Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-TF-1000 E

RAPPORT D'EXPLORATION MINIÈRE

Projet : MEGATEM JV1, Bloc de Selbaie Ouest
Numéro de projet : 554
Abitibi
32E/14 et 32E/15
VOLUME 2



15 Mars 2004

Sylvain Lapointe
Géologue

Michel Dessureault ing.
Géologue de Projet Senior

Noranda inc.
Bureau d'exploration de Laval, QC

NORANDA INC.

QG 268 MEGATEM FOLLOW UP PROFILES

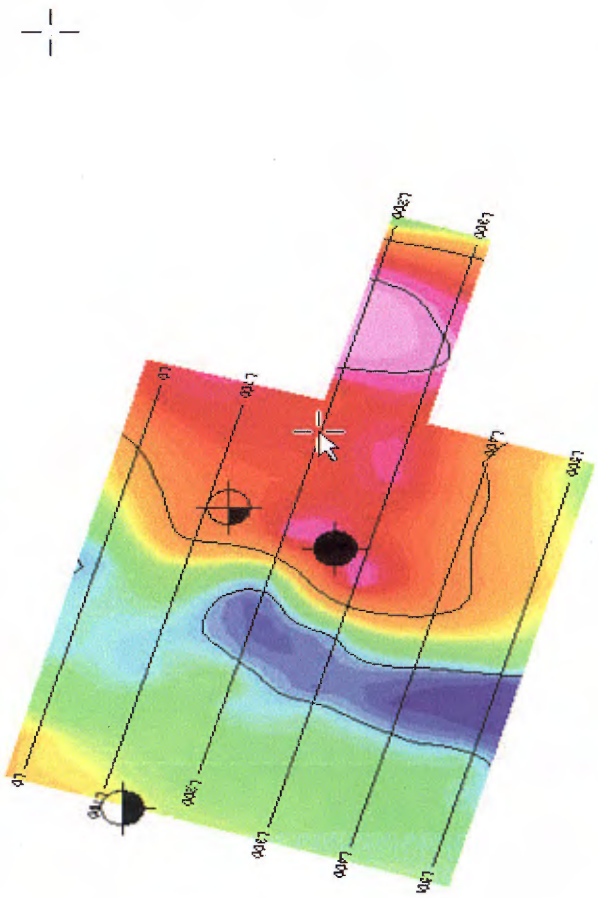
WEST SELBAIE AREA

BRO 309

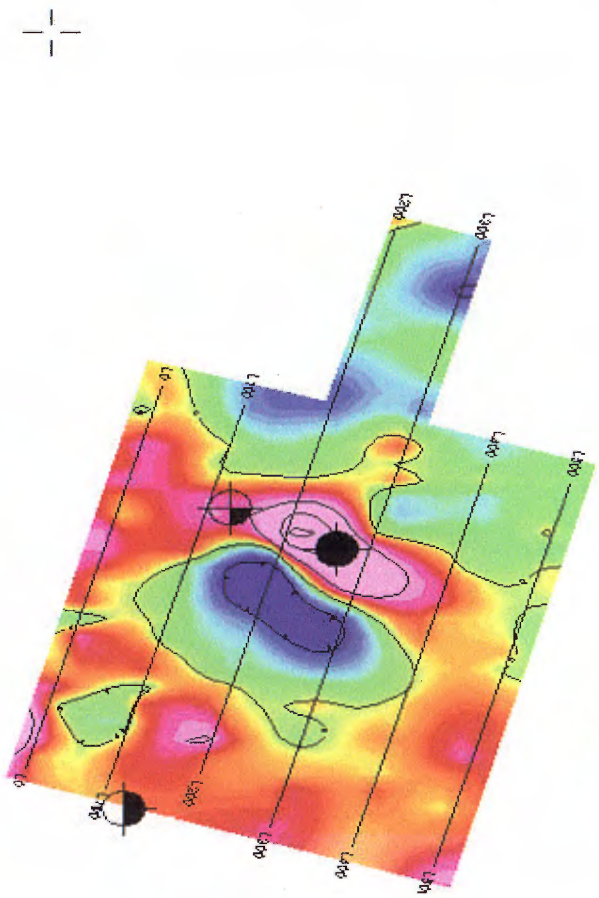
Quantec

GEOPHYSICS WORLDWIDE

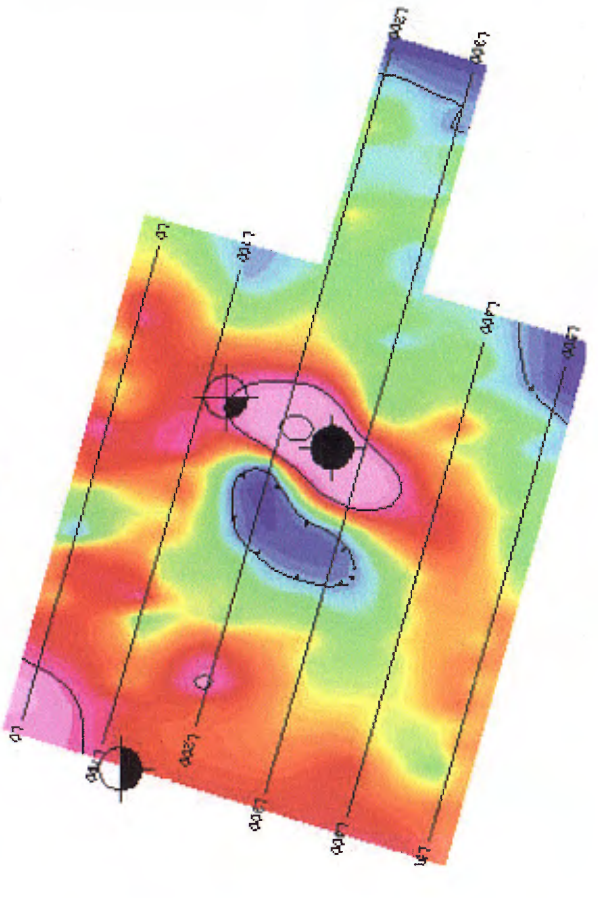
BRO-309 Levé électromagnétique dans le domaine du temps à grande boucle ('TDEM')



xch5



xch10



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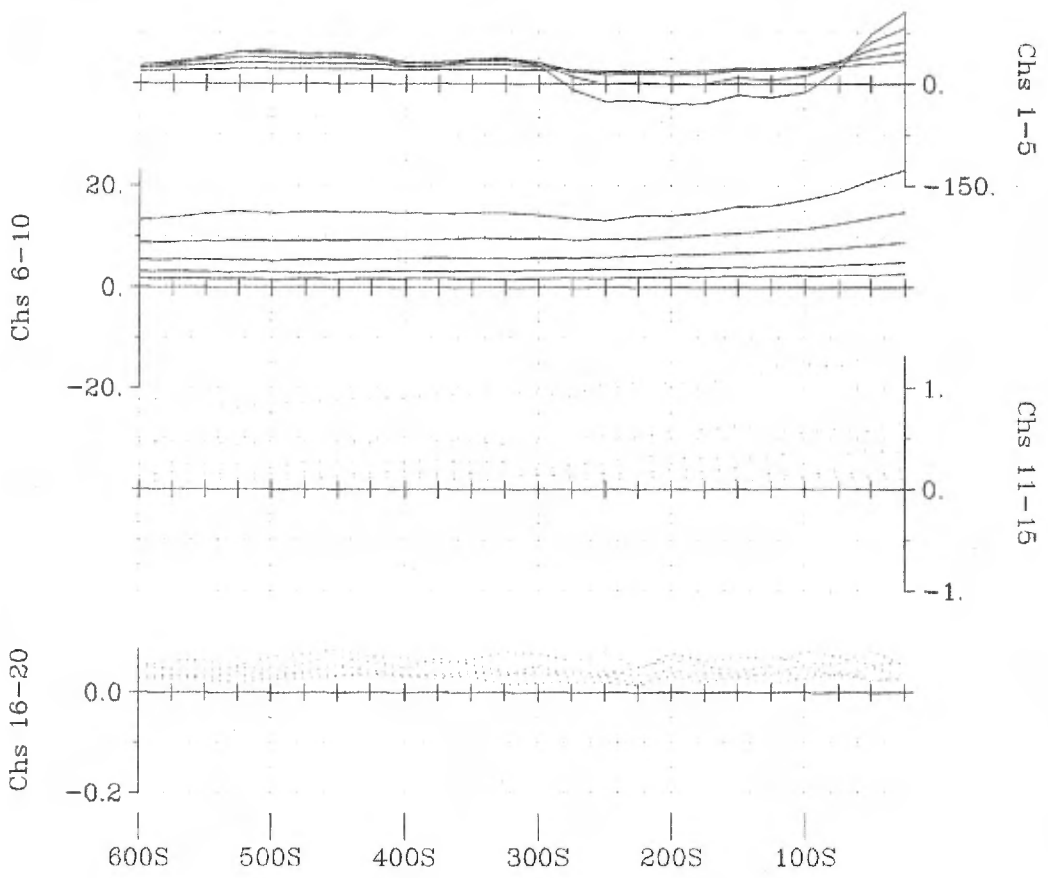


Line 0 E - Z Component

BRO-309

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM BRO-309

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

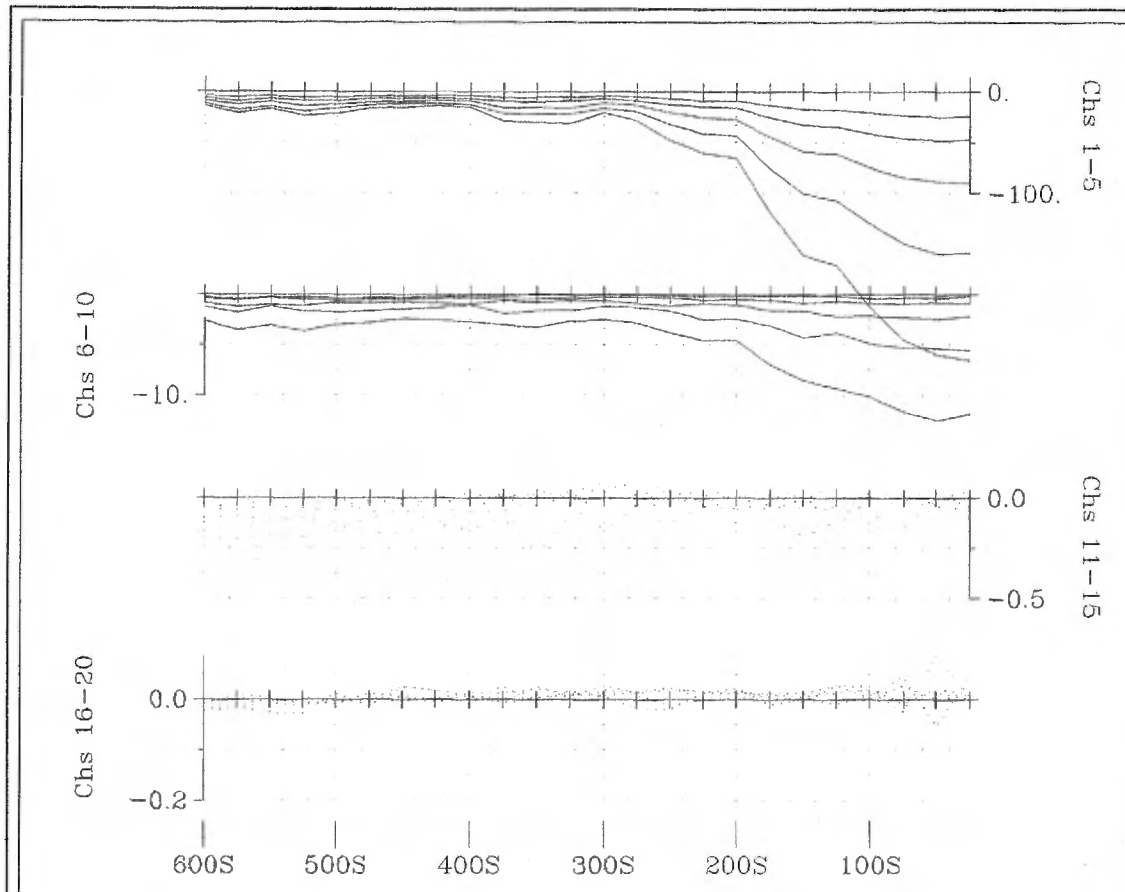
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L500e, 0n, 300n
Transmitter Current:	19.2 Amps
Transmitter Turn-Off Time:	272 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up Hx - positive south Hy - positive east
Survey Date:	24/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-Z-0 E



Line 0 E – Y Component

BRO-309

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM BRO-309

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

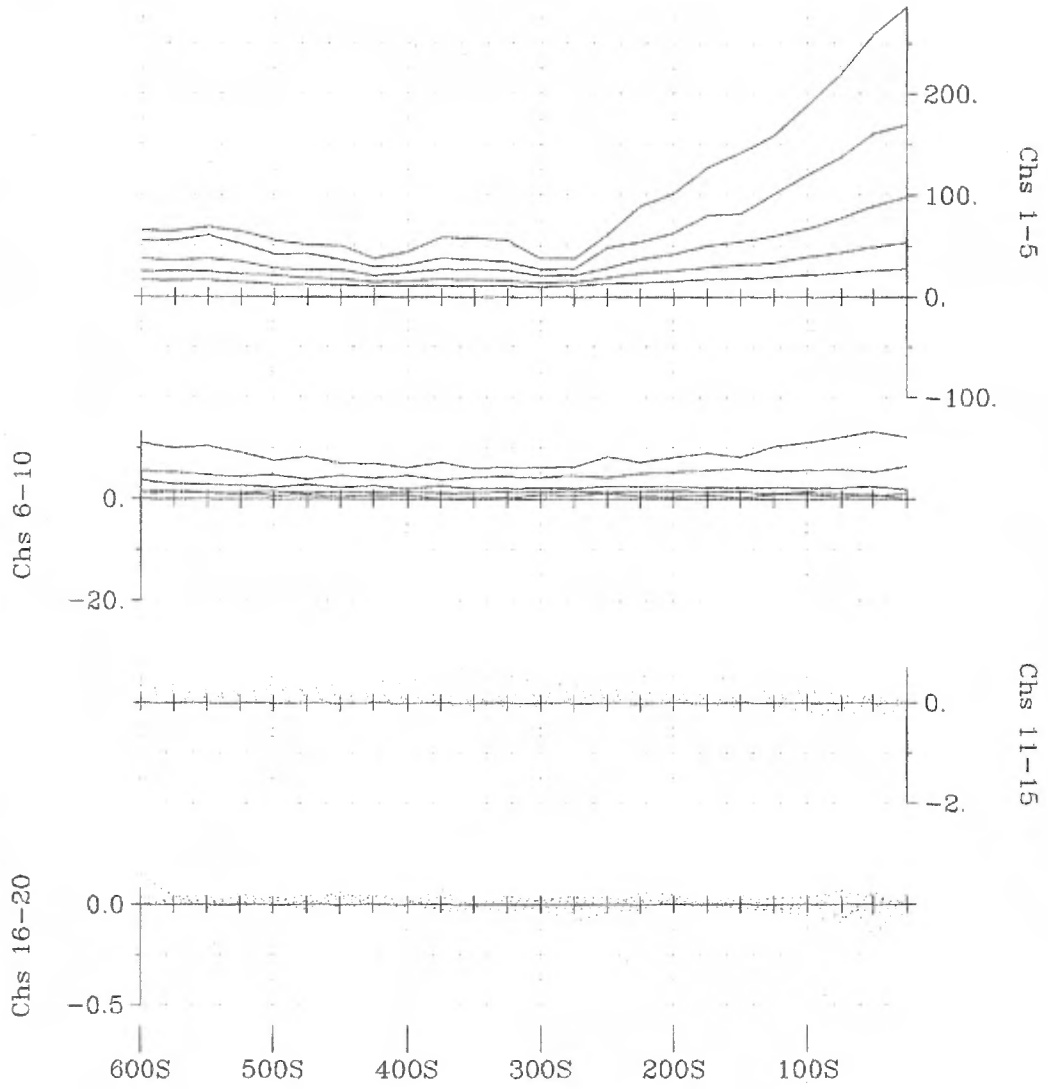
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L500e, 0n, 300n
Transmitter Current:	19.2 Amps
Transmitter Turn-Off Time:	272 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz – positive up Hx – positive south Hy – positive east
Survey Date:	24/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-Y-0 E



Line 0 E – X Component

BRO-309

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM BRO-309

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

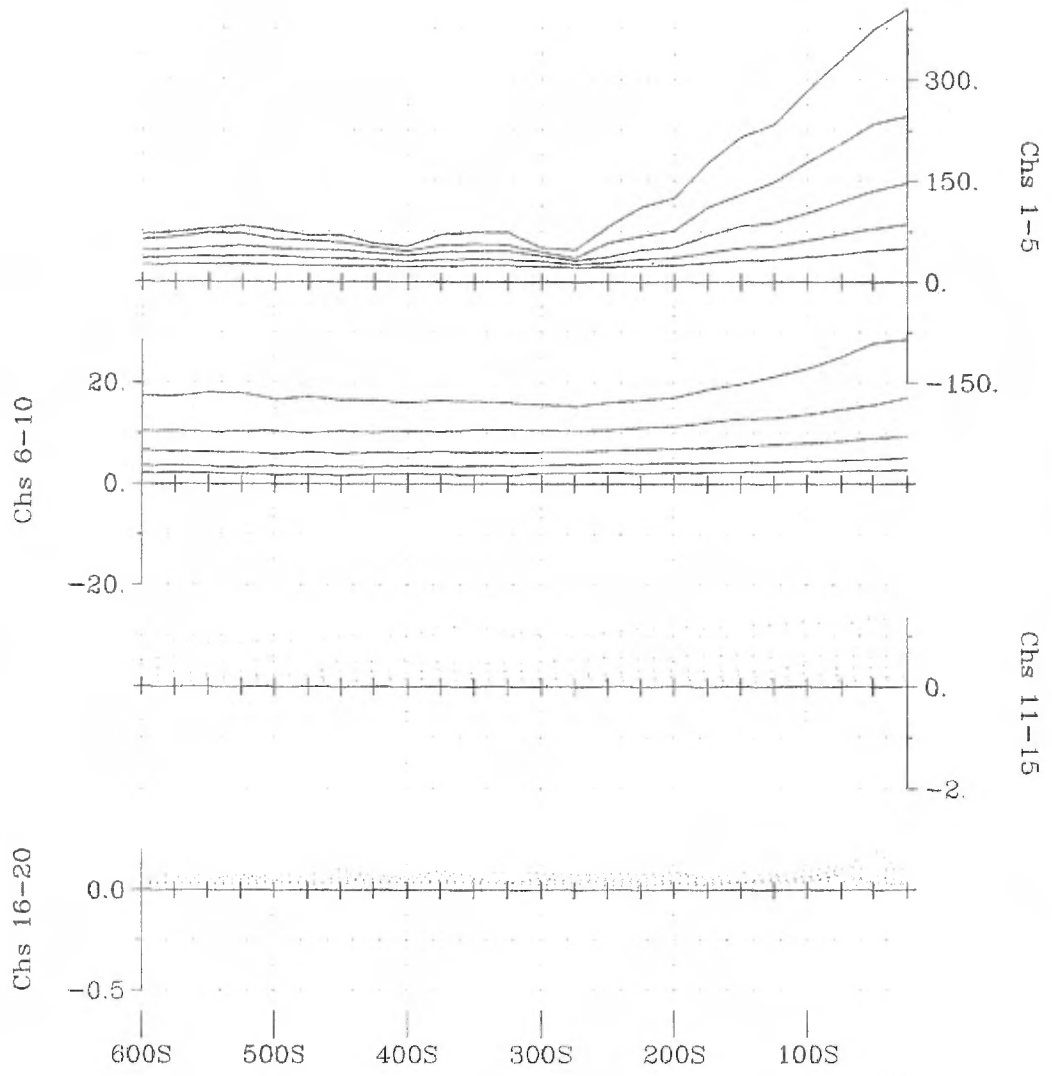
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L500e, 0n, 300n
Transmitter Current:	19.2 Amps
Transmitter Turn-Off Time:	272 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz – positive up Hx – positive south Hy – positive east
Survey Date:	24/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-X-0 E



Line 0 E – Total Field

BRO-309

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM BRO-309

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

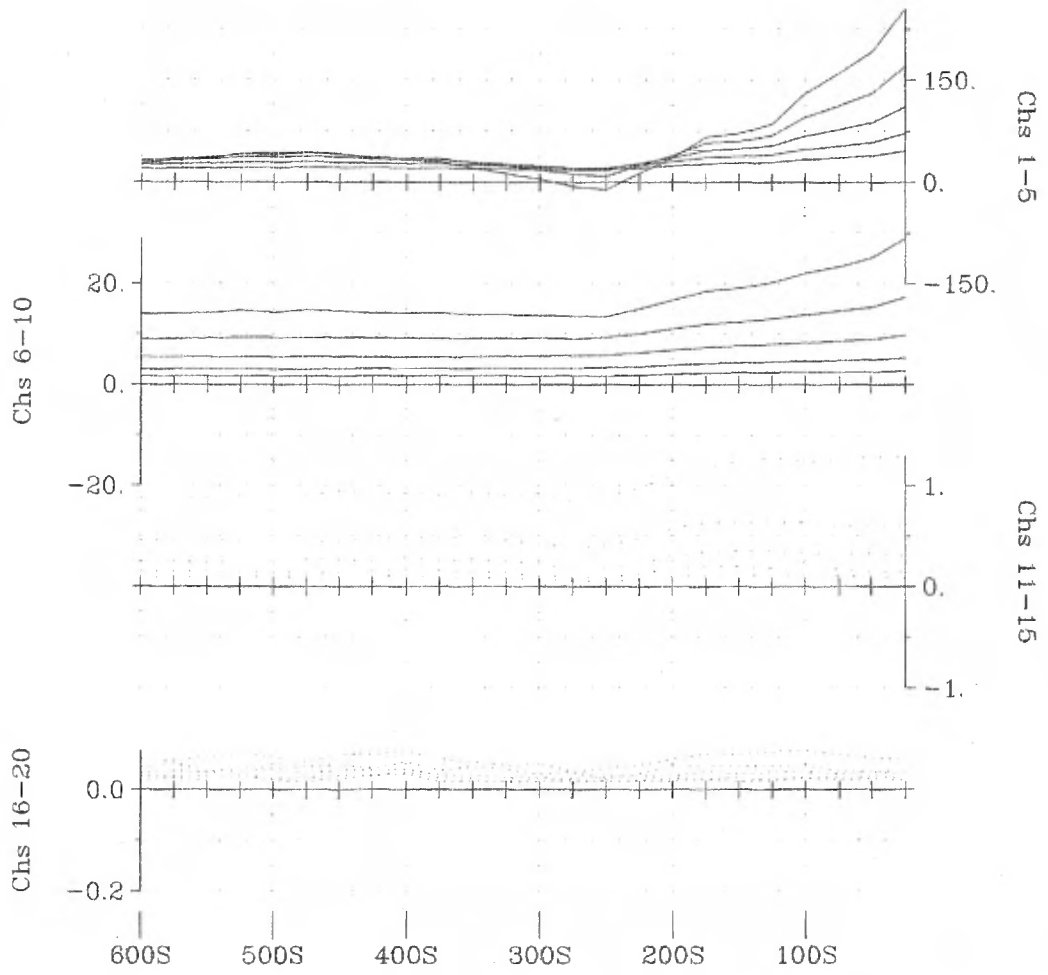
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L500e, 0n, 300n
Transmitter Current:	19.2 Amps
Transmitter Turn-Off Time:	272 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz – positive up Hx – positive south Hy – positive east
Survey Date:	24/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-TF-0 E



Line 100 E – Z Component

BRO-309

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM BRO-309

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

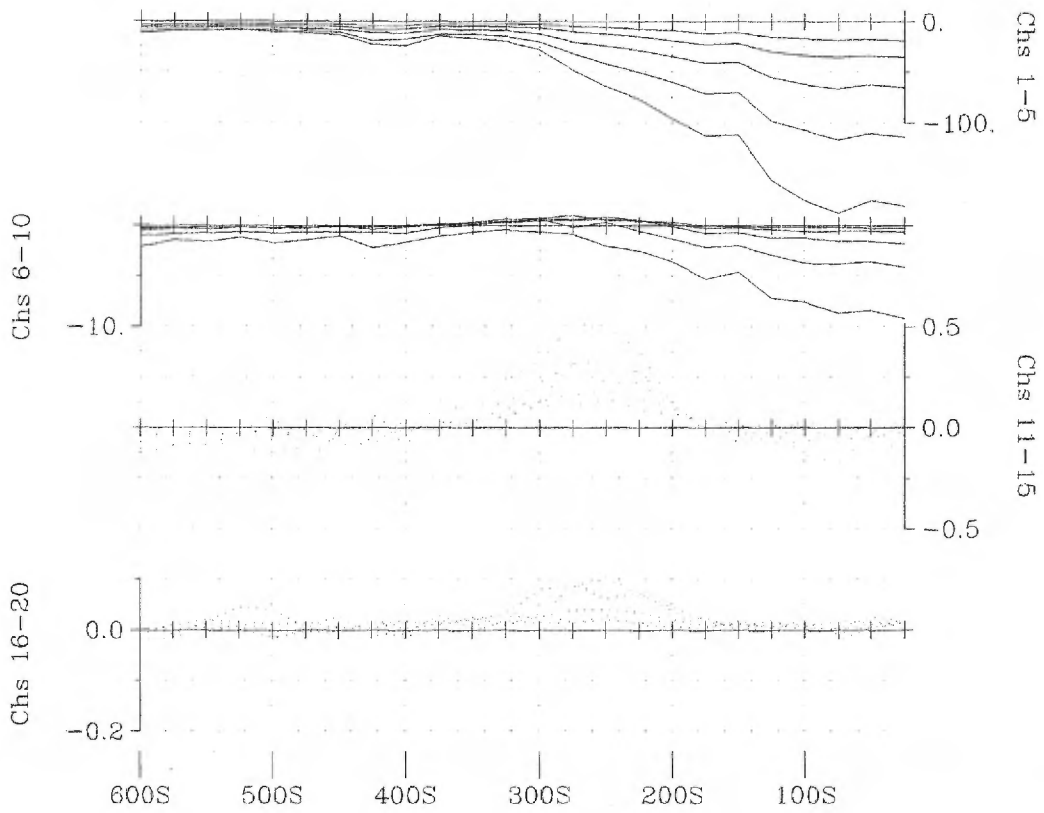
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L500e, 0n, 300n
Transmitter Current:	19.2 Amps
Transmitter Turn-Off Time:	272 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up Hx - positive south Hy - positive east
Survey Date:	24/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-Z-100 E



Line 100 E – Y Component

BRO-309

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM BRO-309

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

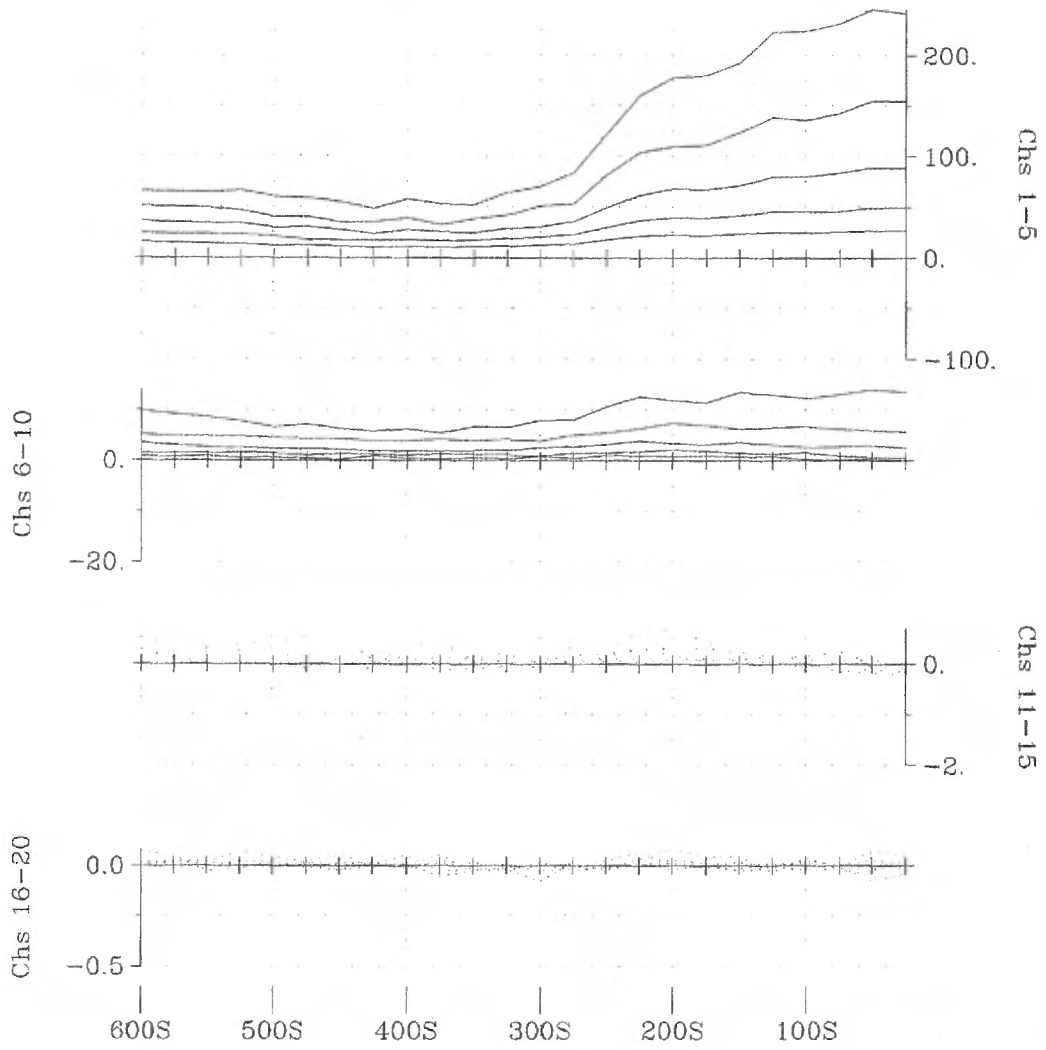
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L500e, 0n, 300n
Transmitter Current:	19.2 Amps
Transmitter Turn-Off Time:	272 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz – positive up Hx – positive south Hy – positive east
Survey Date:	24/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-Y-100 E



Line 100 E – X Component

BRO-309

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM BRO-309

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

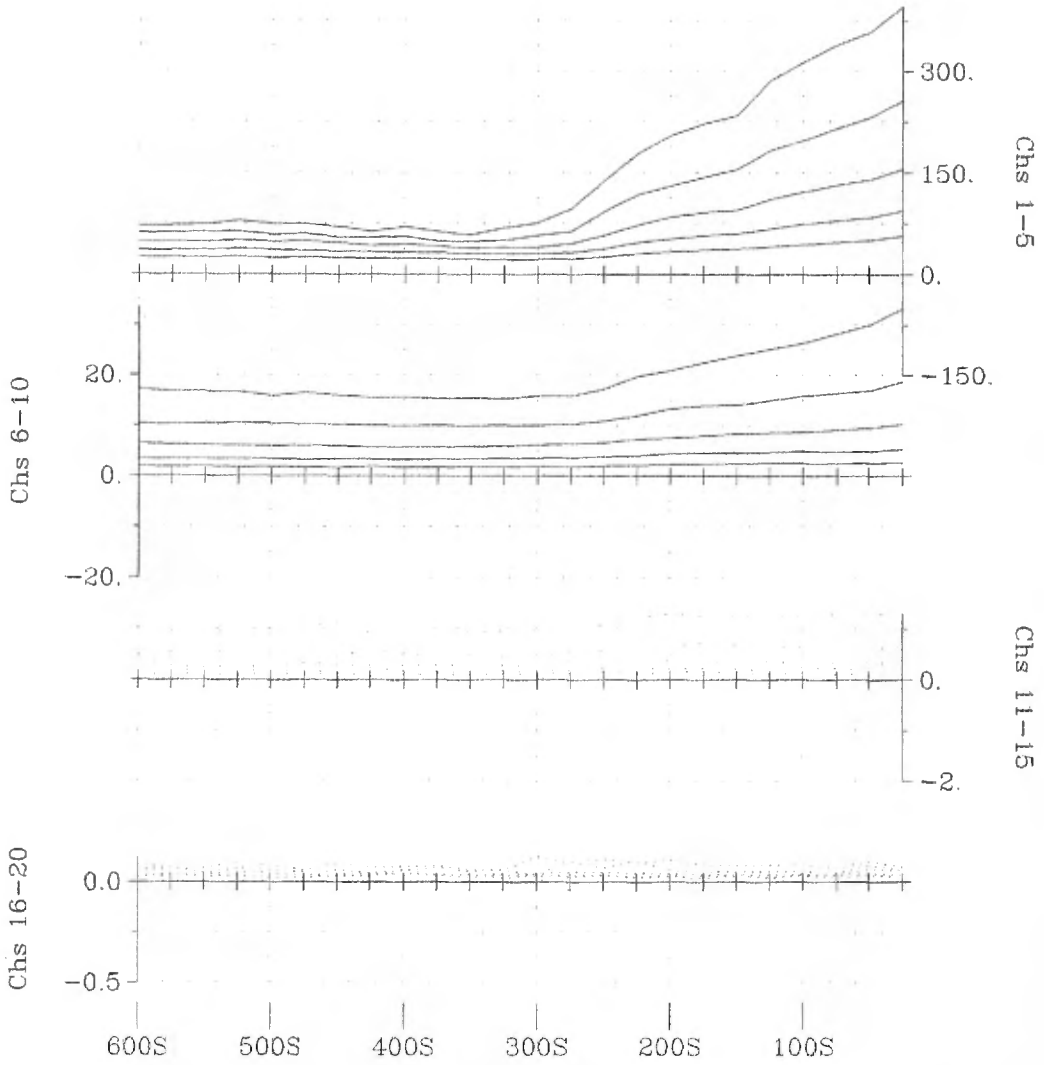
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L500e, 0n, 300n
Transmitter Current:	19.2 Amps
Transmitter Turn-Off Time:	272 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up Hx - positive south Hy - positive east
Survey Date:	24/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-26B-4AXIS-X-100 E



Line 100 E - Total Field

BRO-309

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM BRO-309

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

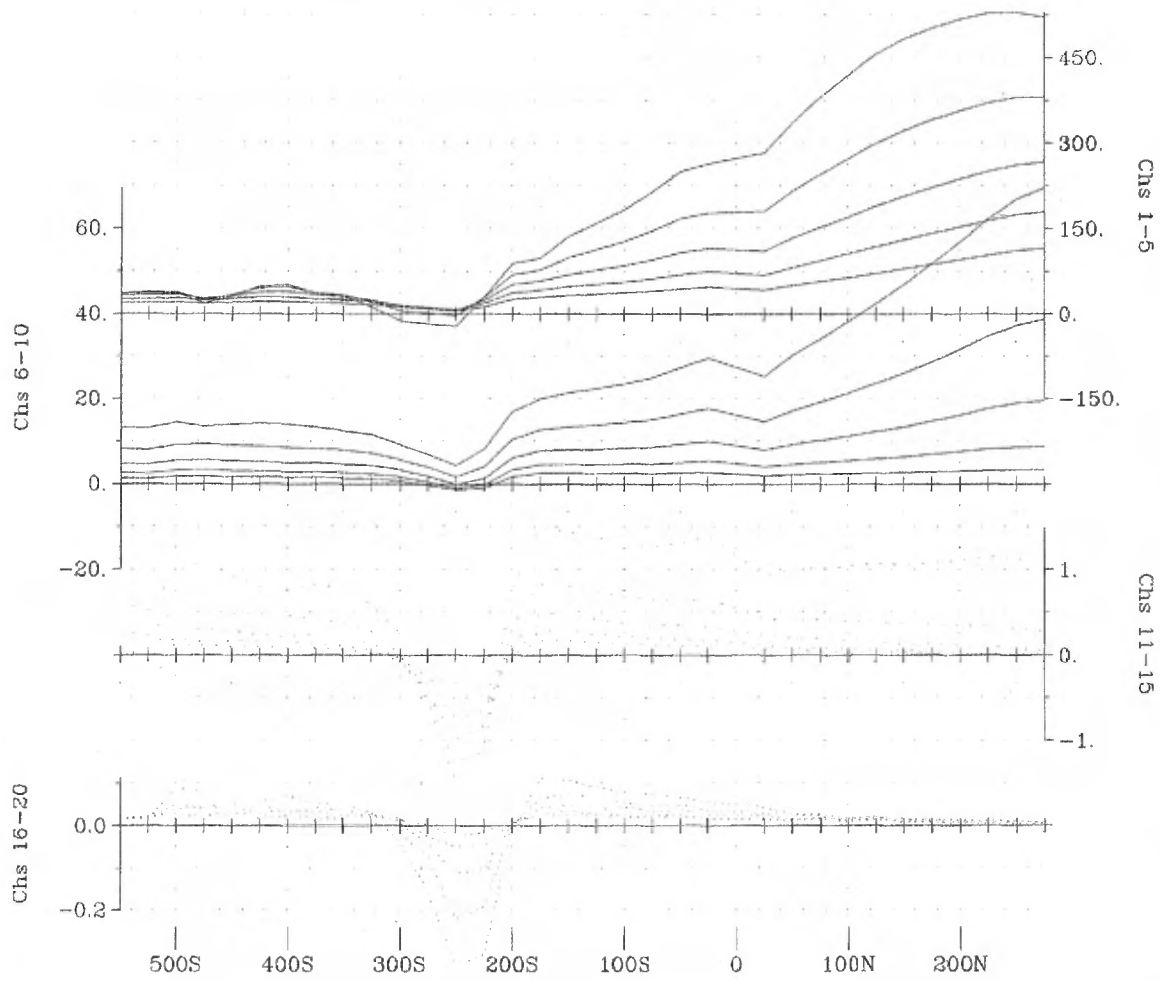
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L500e, 0n, 300n
Transmitter Current:	19.2 Amps
Transmitter Turn-Off Time:	272 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up Hx - positive south Hy - positive east
Survey Date:	24/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-TF-100 E



Line 200 E – Z Component

BRO-309

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM BRO-309

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

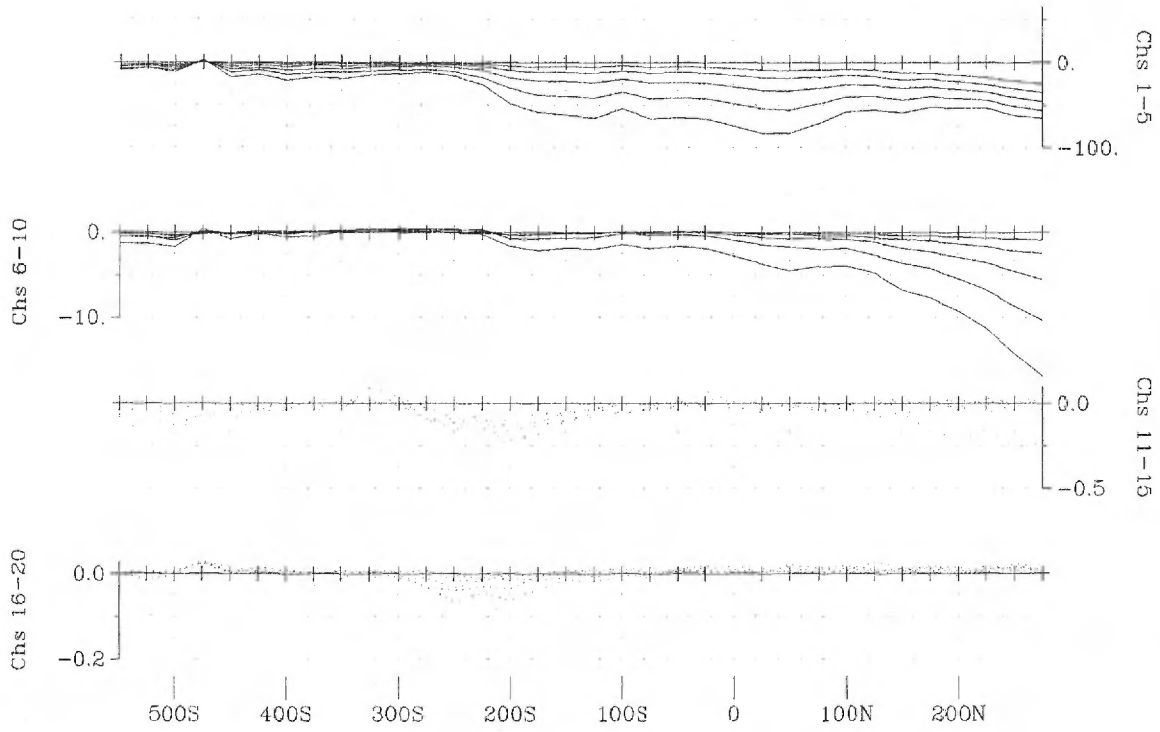
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L500e, 0n, 300n
Transmitter Current:	19.2 Amps
Transmitter Turn-Off Time:	272 us
Station Interval:	25 metres
Profile Units:	nanoVolt/Am^2
Receiver Coil Orientation:	Hz – positive up Hx – positive south Hy – positive east
Survey Date:	25/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-Z-200 E



Line 200 E – Y Component

BRO-309

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM BRO-309

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

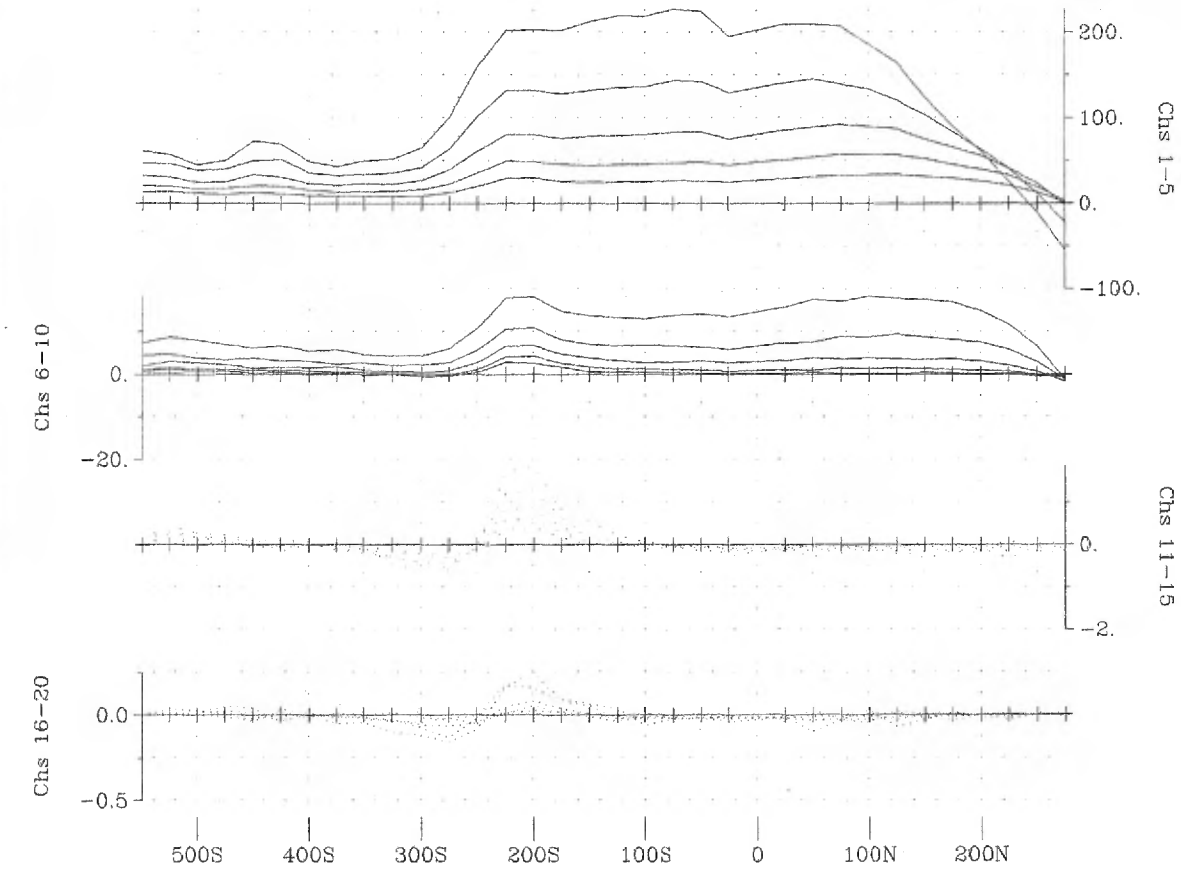
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L500e, 0n, 300n
Transmitter Current:	19.2 Amps
Transmitter Turn-Off Time:	272 us
Station Interval:	25 metres
Profile Units:	nanoVolt/Am^2
Receiver Coil Orientation:	Hz – positive up Hx – positive south Hy – positive east
Survey Date:	25/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-Y-200 E



Line 200 E - X Component

BRO-309

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM BRO-309

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

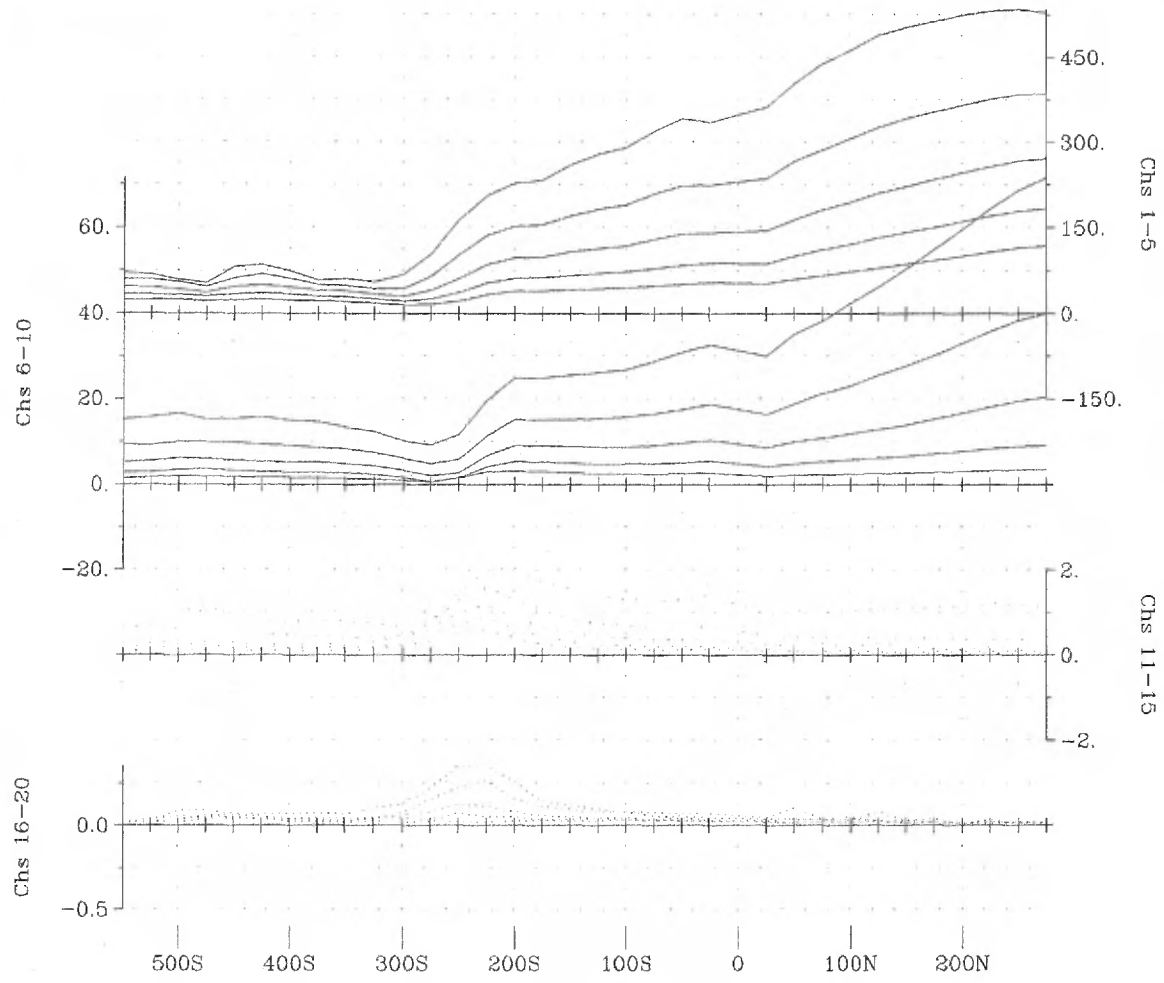
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L500e, 0n, 300n
Transmitter Current:	19.2 Amps
Transmitter Turn-Off Time:	272 us
Station Interval:	25 metres
Profile Units:	nanoVolt/Am^2
Receiver Coil Orientation:	Hz - positive up Hx - positive south Hy - positive east
Survey Date:	25/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-X-200 E



Line 200 E – Total Field

BRO-309

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM BRO-309

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

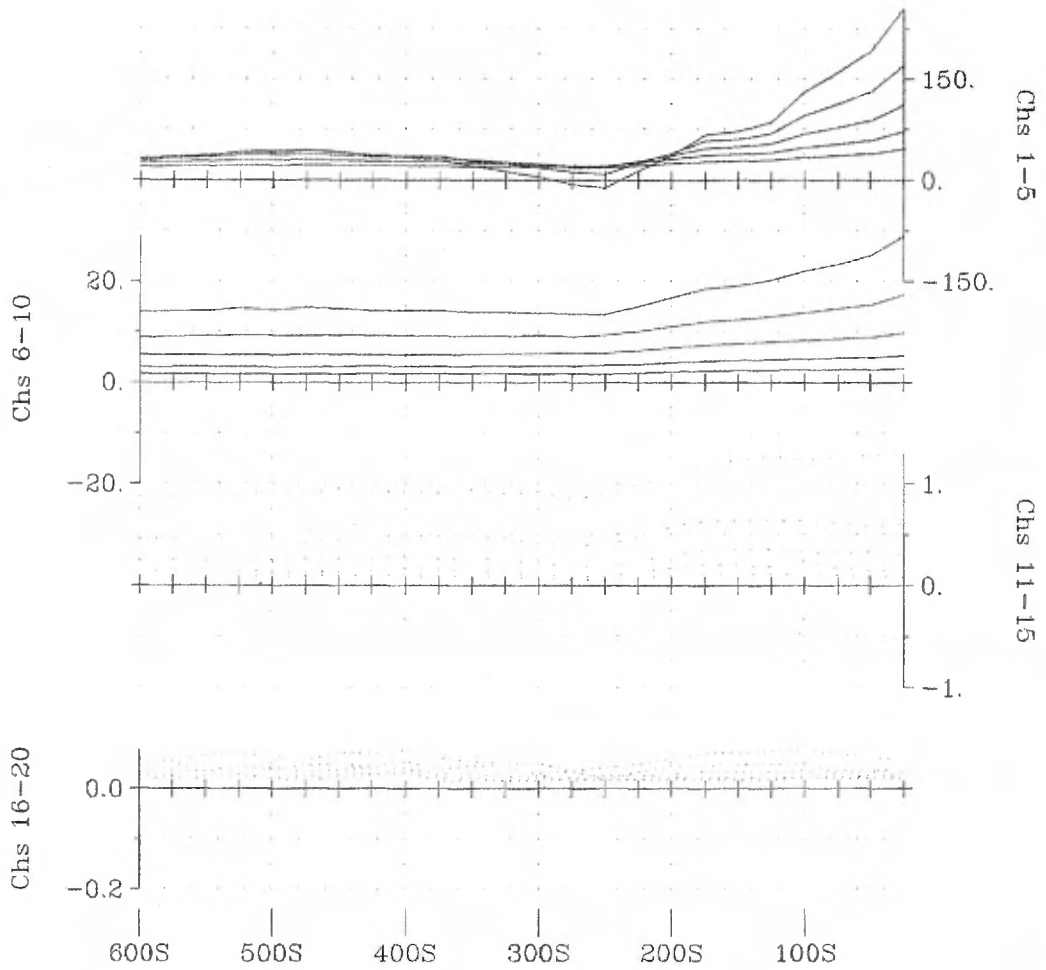
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L500e, 0n, 300n
Transmitter Current:	19.2 Amps
Transmitter Turn-Off Time:	272 us
Station Interval:	25 metres
Profile Units:	nanoVolt/Aem^2
Receiver Coil Orientation:	Hz – positive up Hx – positive south Hy – positive east
Survey Date:	25/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.6 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-TF-200 E



Line 100 E – Z Component

BRO-309

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM BRO-309

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

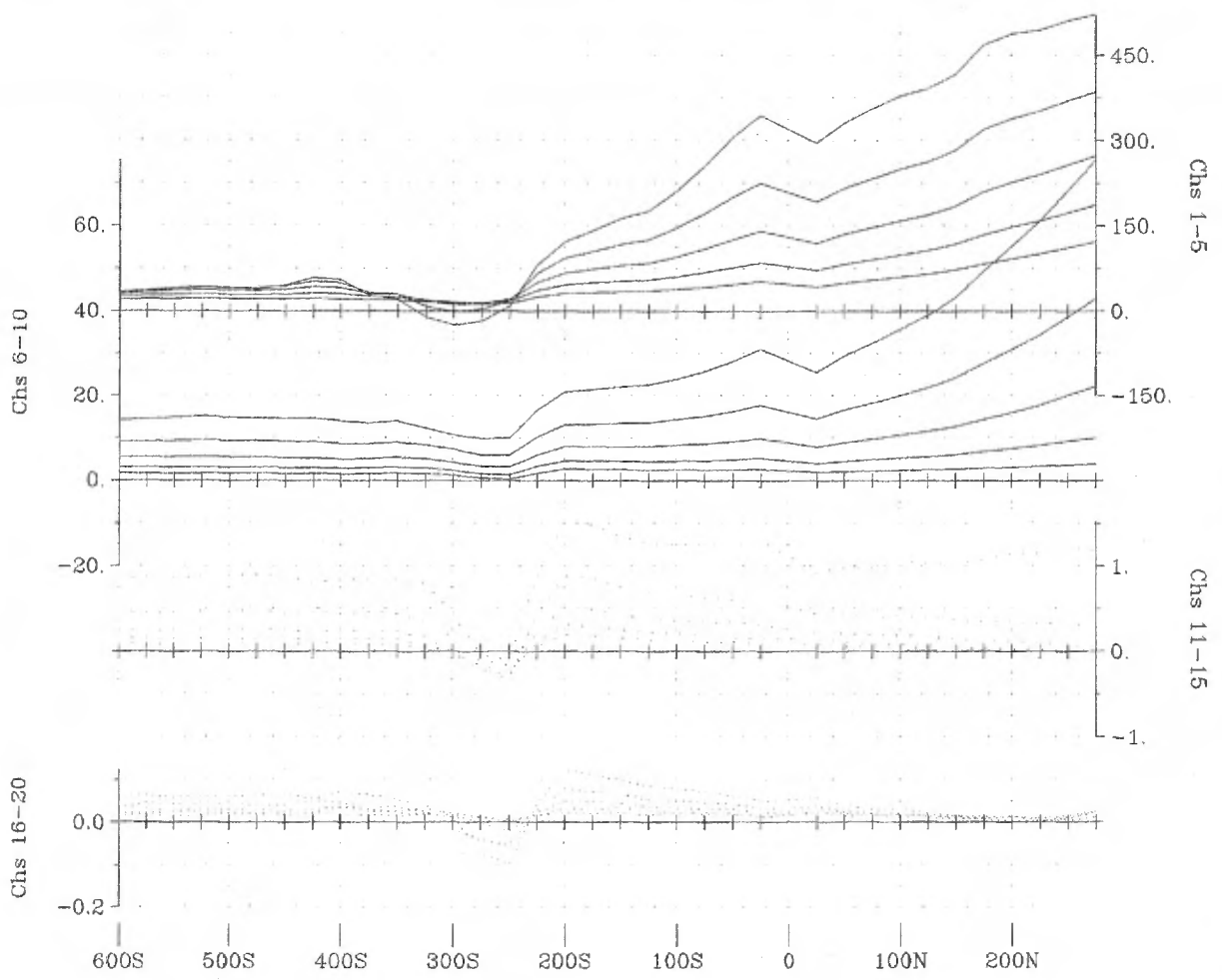
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L500e, 0n, 300n
Transmitter Current:	19.2 Amps
Transmitter Turn-Off Time:	272 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz – positive up Hx – positive south Hy – positive east
Survey Date:	24/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-Z-100 E



Line 300 E – Z Component

BRO-309

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM BRO-309

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

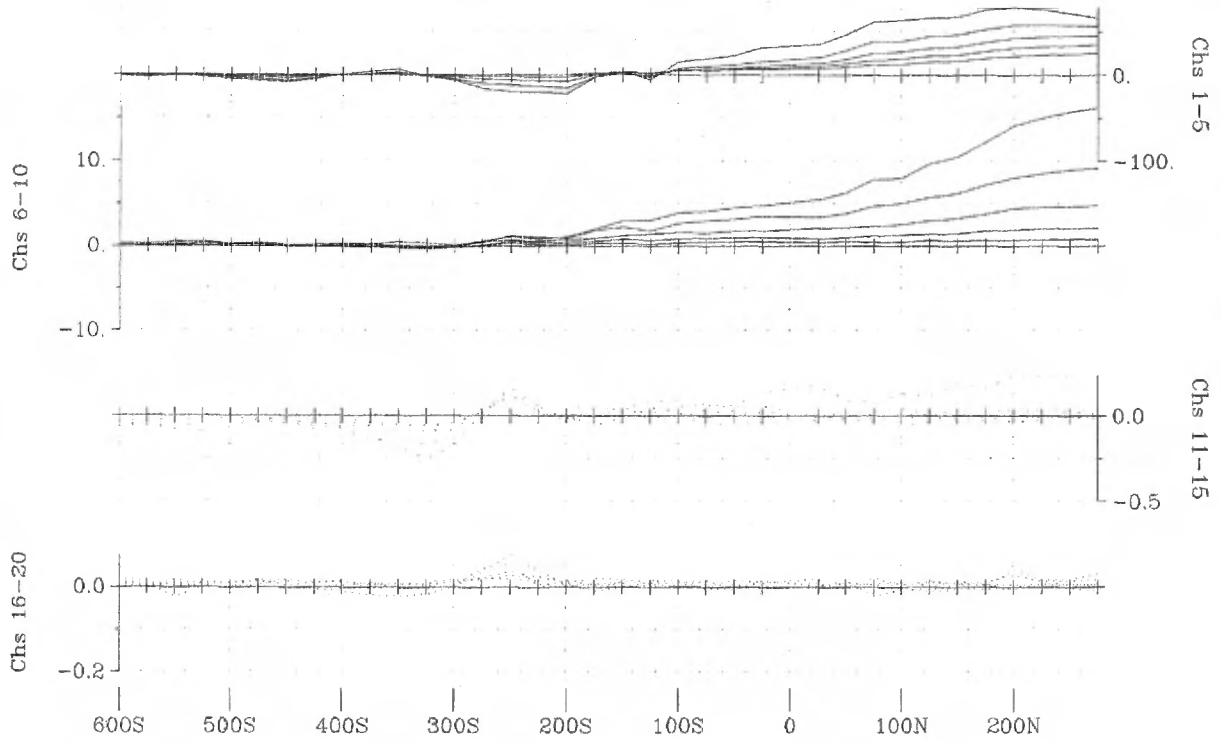
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L500e, 0n, 300n
Transmitter Current:	19.2 Amps
Transmitter Turn-Off Time:	272 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up
	Hx - positive south
	Hy - positive east
Survey Date:	25/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels)
	& Geonics 3D Coil (3x200m^2)
	Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-Z-300 E



Line 300 E – Y Component

BRO-309

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM BRO-309

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

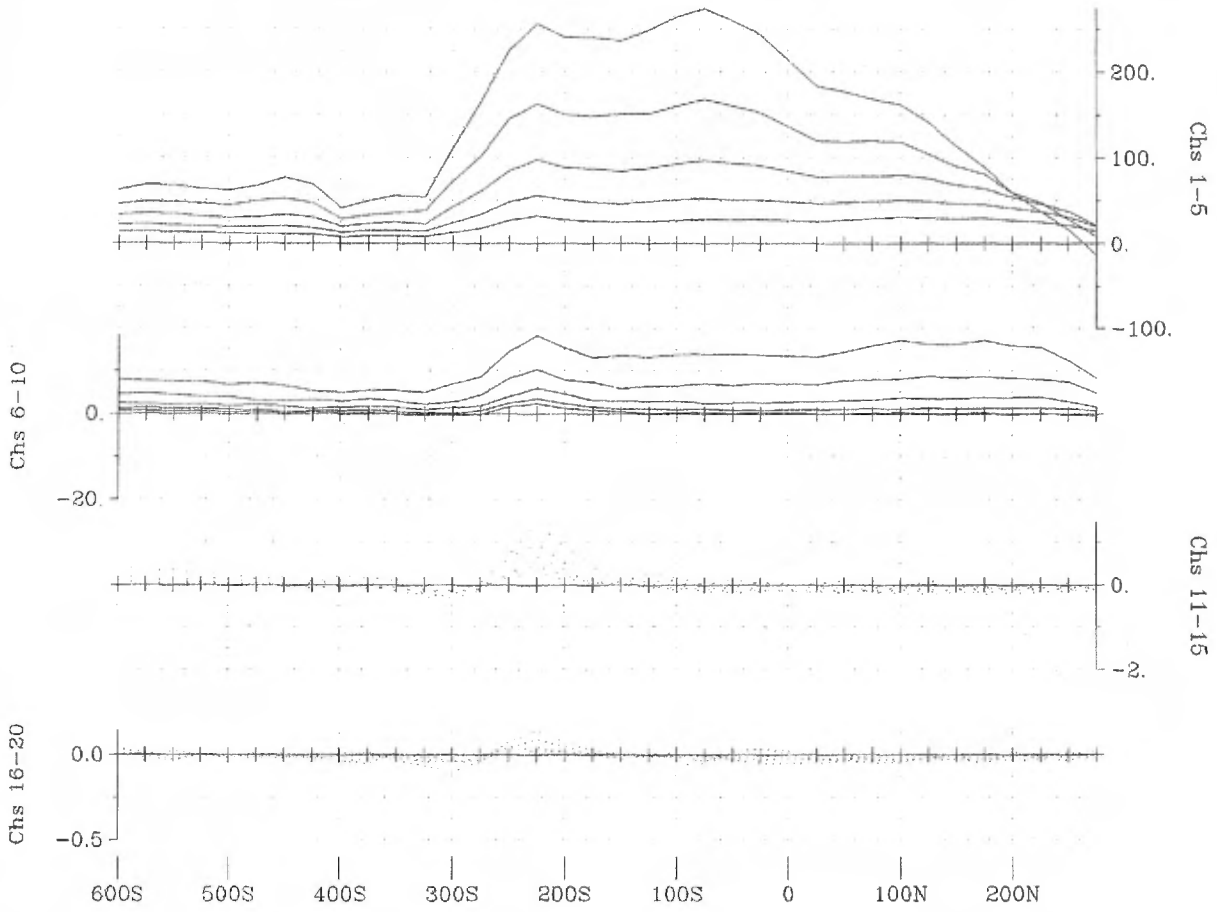
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L500e, 0n, 300n
Transmitter Current:	19.2 Amps
Transmitter Turn-Off Time:	272 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A•m^2
Receiver Coil Orientation:	Hz - positive up Hx - positive south Hy - positive east
Survey Date:	25/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-Y-300 E



Line 300 E – X Component

BRO-309

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM BRO-309

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

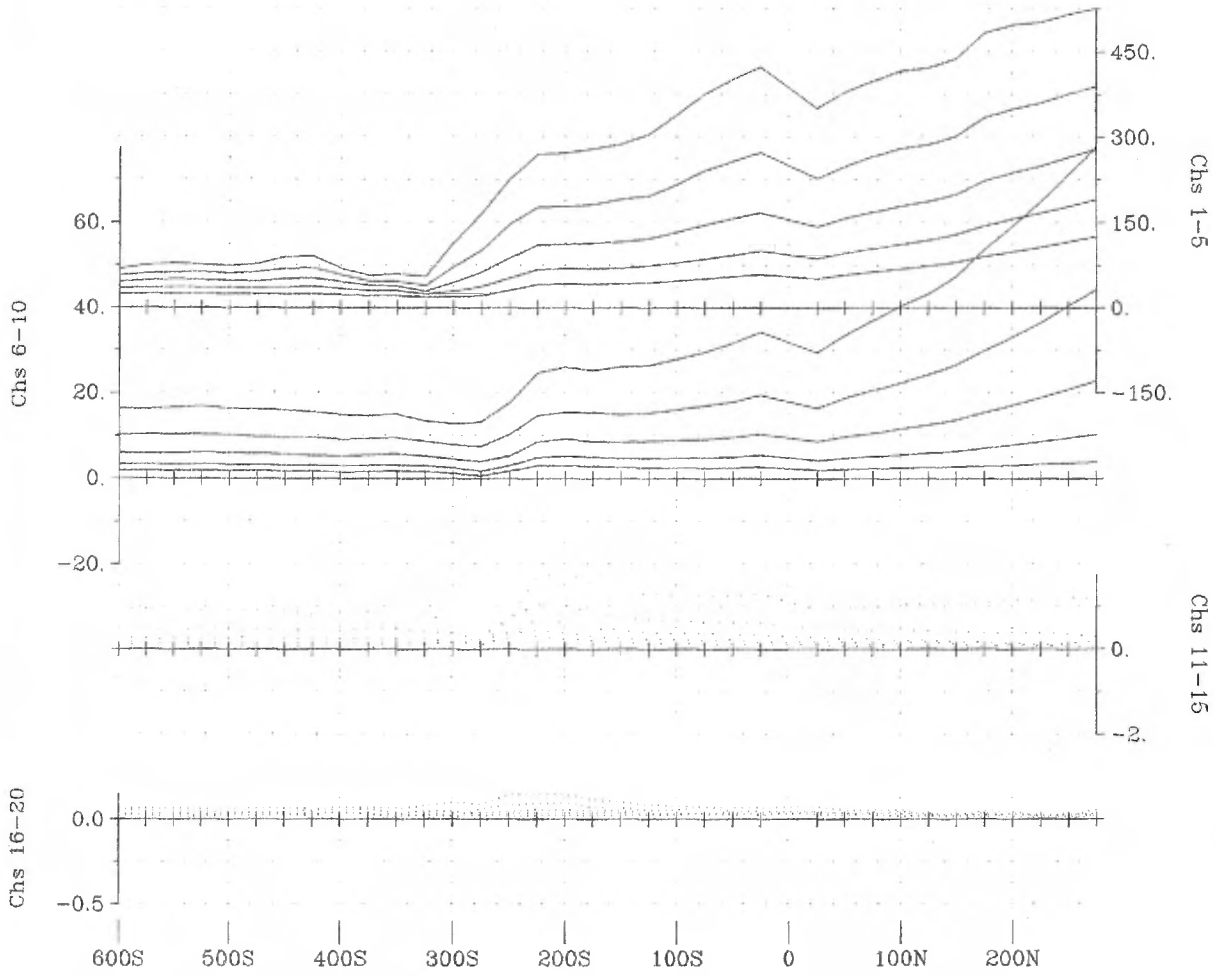
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L500e, 0n, 300n
Transmitter Current:	19.2 Amps
Transmitter Turn-Off Time:	272 us
Station Interval:	25 metres
Profile Units:	nanoVolt/Am^2
Receiver Coil Orientation:	Hz - positive up Hx - positive south Hy - positive east
Survey Date:	25/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-X-300 E



Line 300 E – Total Field

BRO-309

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM BRO-309

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

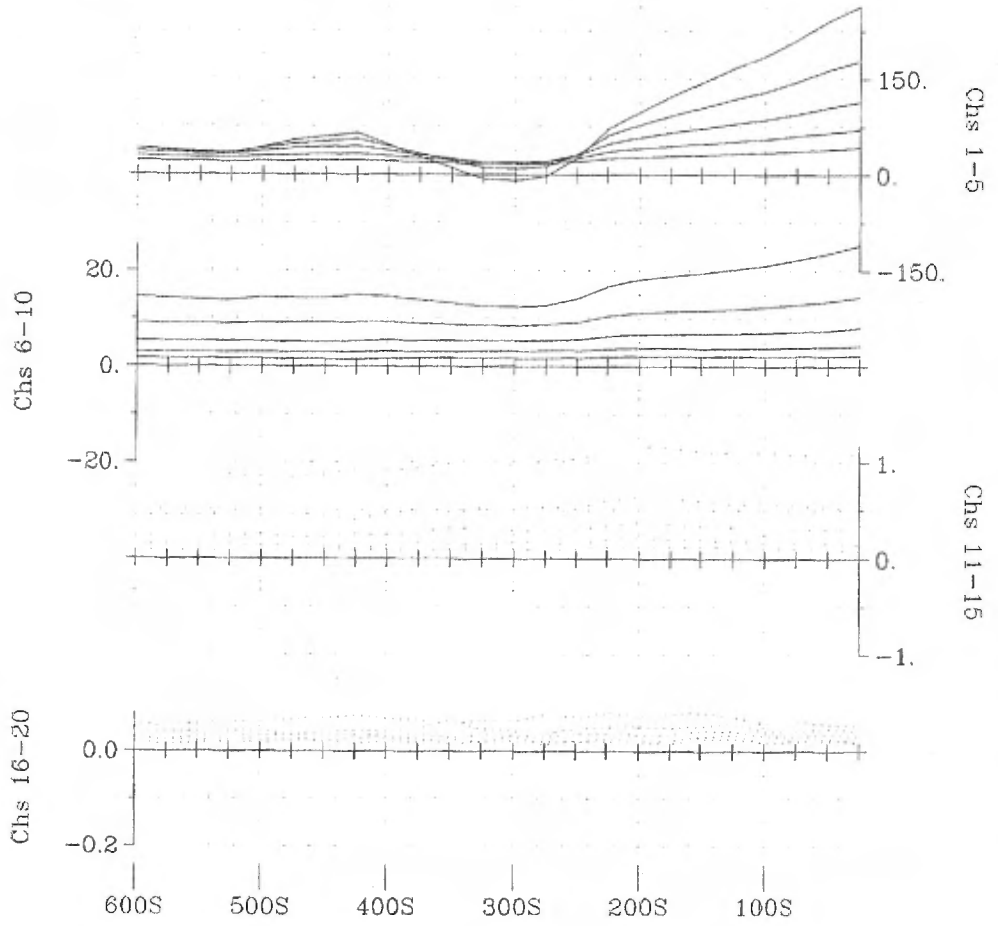
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L500e, 0n, 300n
Transmitter Current:	19.2 Amps
Transmitter Turn-Off Time:	272 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up
	Hx - positive south
	Hy - positive east
Survey Date:	25/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels)
	& Geonics 3D Coil (3x200m^2)
	Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-TF-300 E



Line 400 E – Z Component

BRO-309

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM BRO-309

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

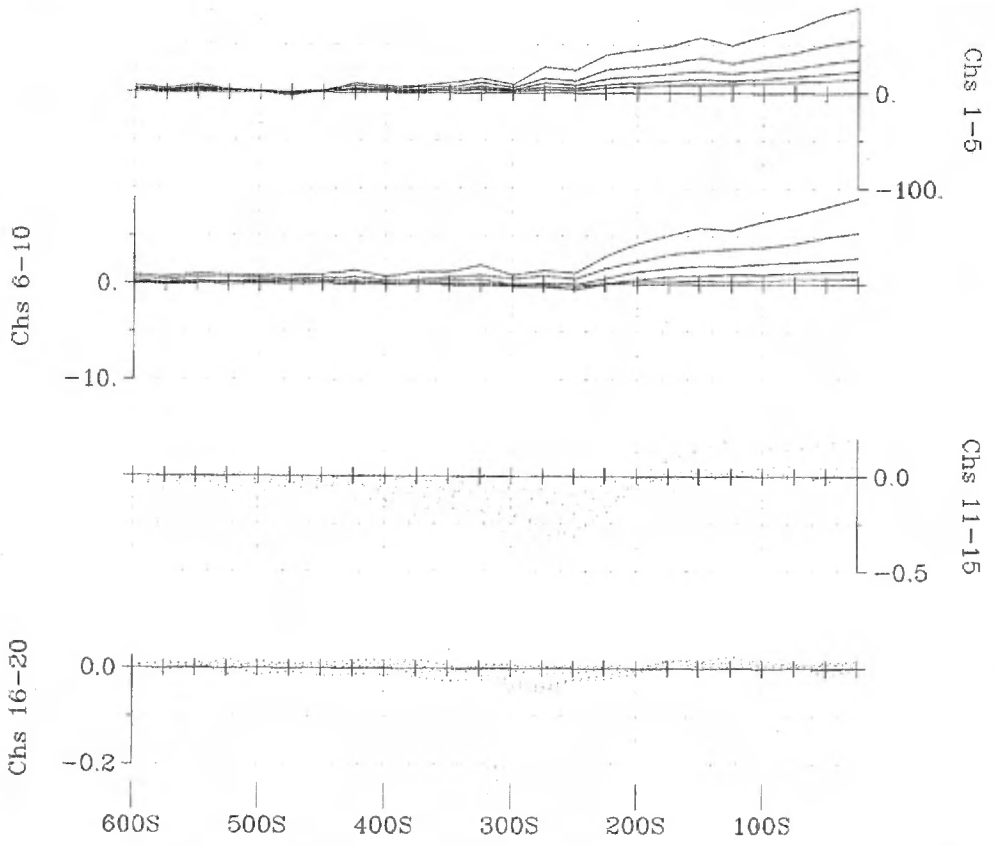
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L500e, 0n, 300n
Transmitter Current:	19.2 Amps
Transmitter Turn-Off Time:	272 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up
	Hx - positive south
	Hy - positive east
Survey Date:	25/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels)
	& Geonics 3D Coil (3x200m^2)
	Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-Z-400 E



Line 400 E – Y Component

BRO-309

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM BRO-309

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

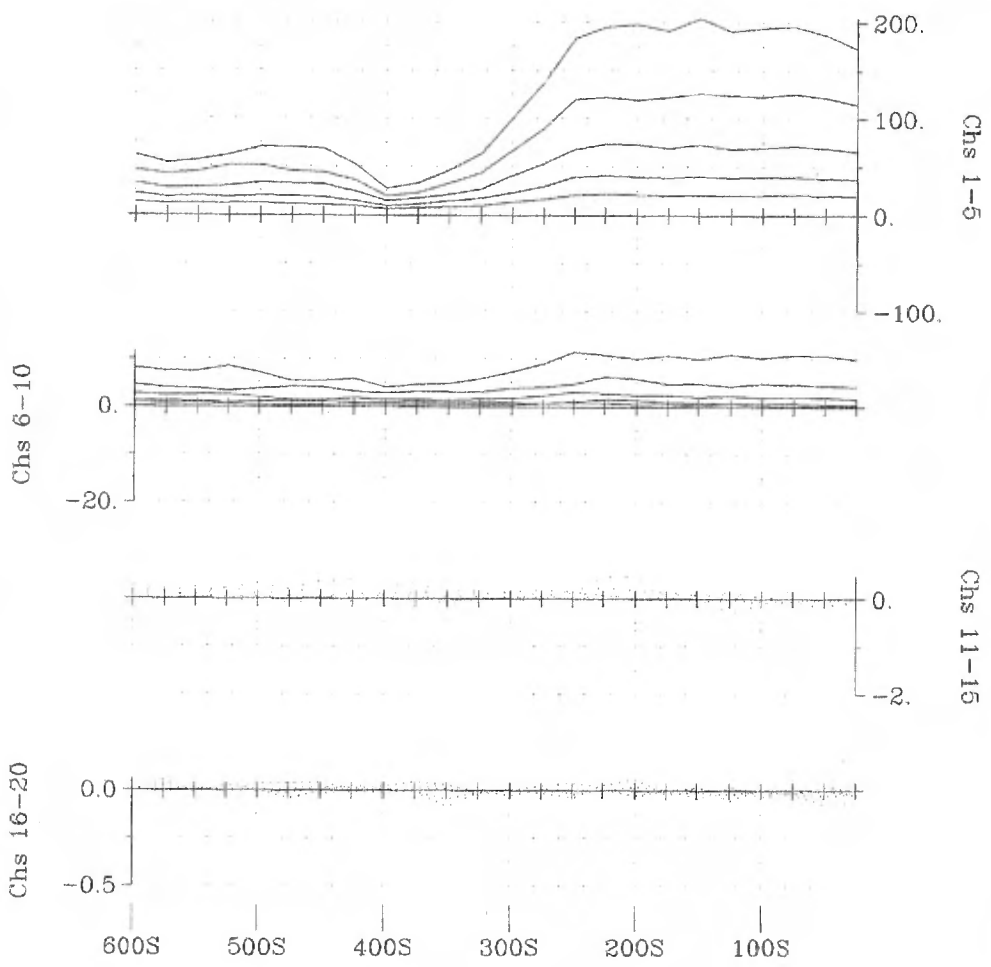
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L500e, 0n, 300n
Transmitter Current:	19.2 Amps
Transmitter Turn-Off Time:	272 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up Hx - positive south Hy - positive east
Survey Date:	25/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-Y-400 E



Line 400 E – X Component

BRO-309

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM BRO-309

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

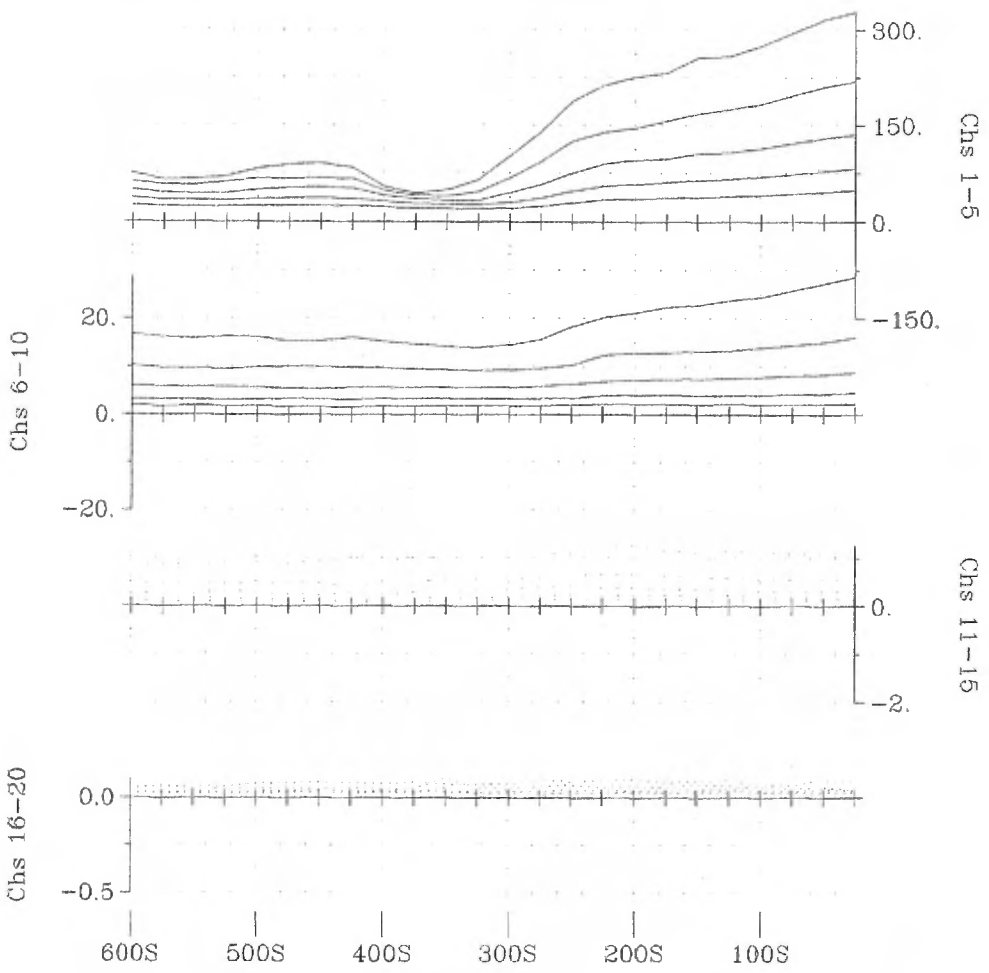
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L500e, 0n, 300n
Transmitter Current:	19.2 Amps
Transmitter Turn-Off Time:	272 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up Hx - positive south Hy - positive east
Survey Date:	25/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-X-400 E



Line 400 E – Total Field

BRO-309

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM BRO-309

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

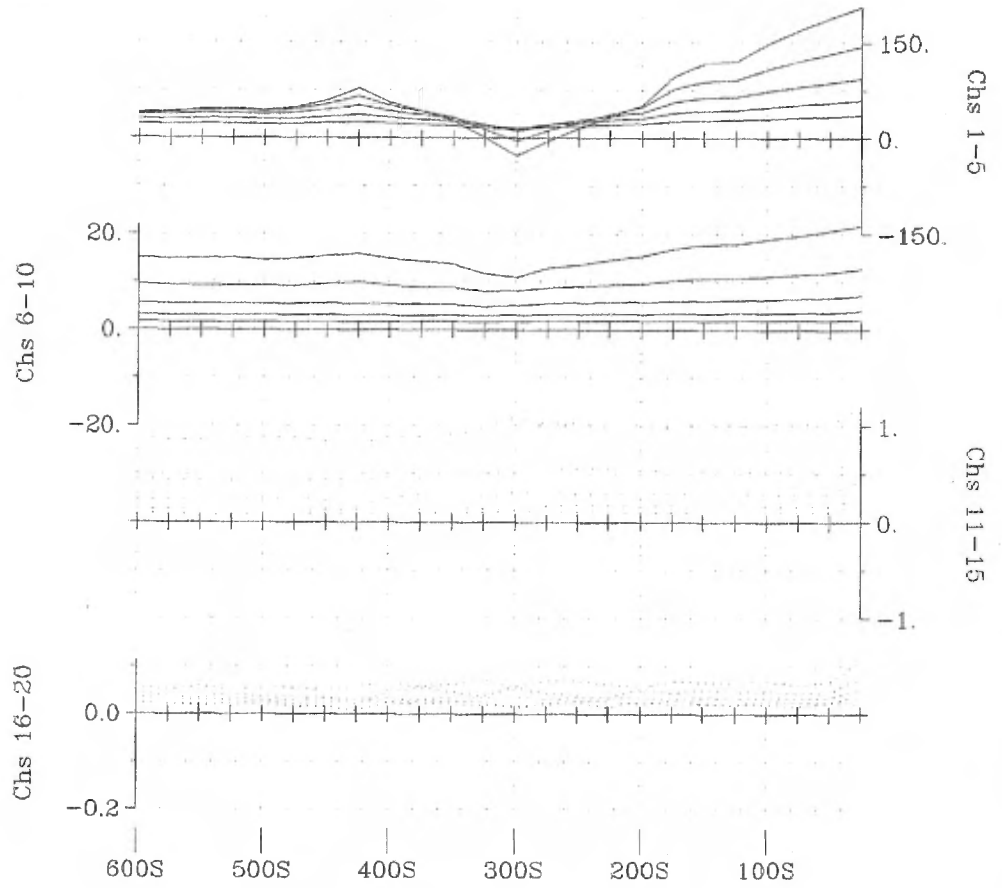
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L500e, 0n, 300n
Transmitter Current:	19.2 Amps
Transmitter Turn-Off Time:	272 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up Hx - positive south Hy - positive east
Survey Date:	25/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-TF-400 E



Line 500 E – Z Component

BRO-309

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM BRO-309

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

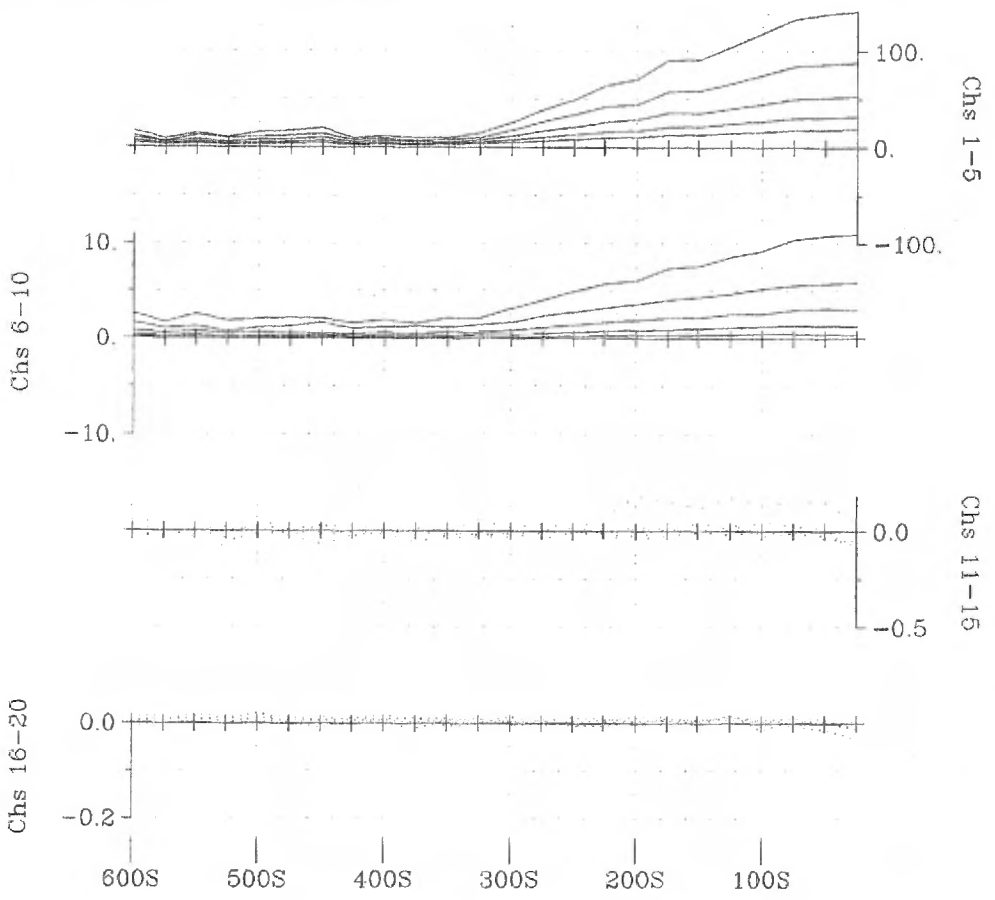
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L500e, 0n, 300n
Transmitter Current:	19.2 Amps
Transmitter Turn-Off Time:	272 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up Hx - positive south Hy - positive east
Survey Date:	25/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-Z-500 E



Line 500 E – Y Component

BRO-309

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM BRO-309

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

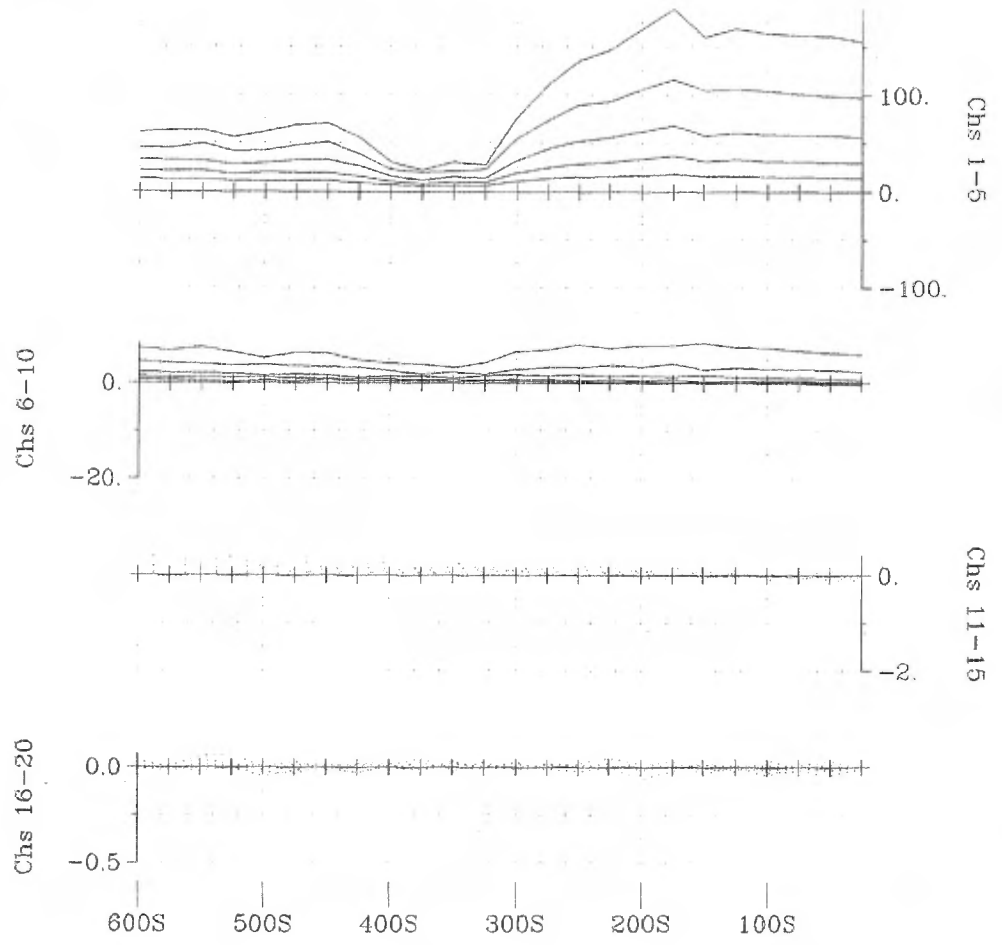
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L500e, 0n, 300n
Transmitter Current:	19.2 Amps
Transmitter Turn-Off Time:	272 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up Hx - positive south Hy - positive east
Survey Date:	25/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-Y-500 E



Line 500 E - X Component

BRO-309

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM BRO-309

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

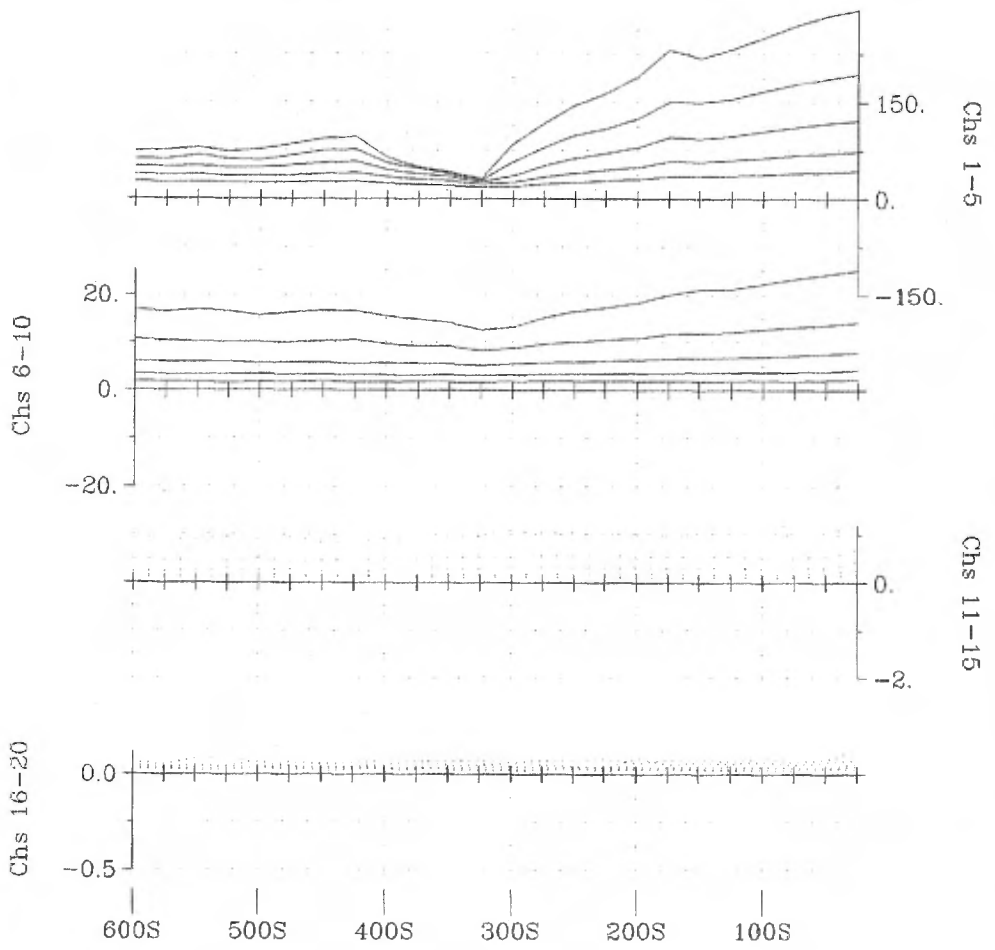
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L500e, 0n, 300n
Transmitter Current:	19.2 Amps
Transmitter Turn-Off Time:	272 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up Hx - positive south Hy - positive east
Survey Date:	25/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-X-500 E



Line 500 E – Total Field

BRO-309

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM BRO-309

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L500e, 0n, 300n
Transmitter Current:	19.2 Amps
Transmitter Turn-Off Time:	272 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up Hx - positive south Hy - positive east
Survey Date:	25/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-TF-500 E

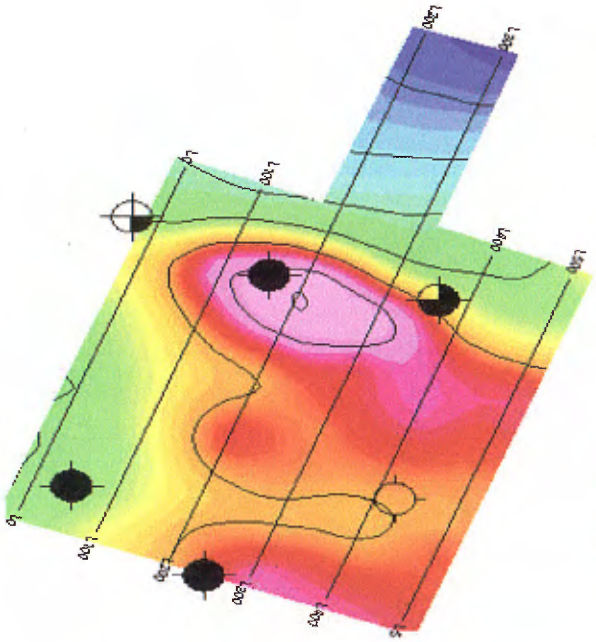
NORANDA INC.

QG 268 MEGATEM FOLLOW UP PROFILES

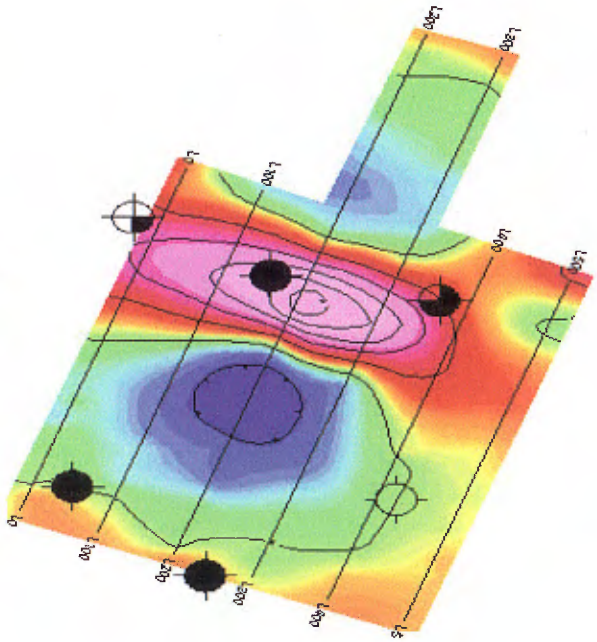
WEST SELBAIE AREA

BRO 101

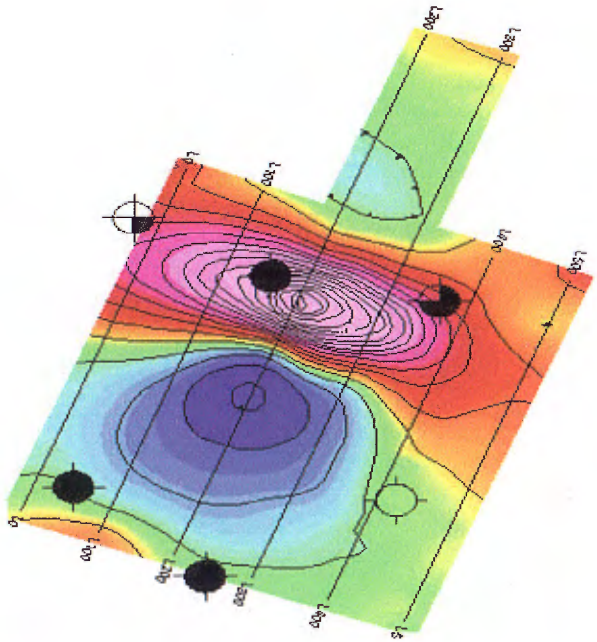
BRO-101 Levé électromagnétique dans le domaine du temps à grande boucle ('TDEM')



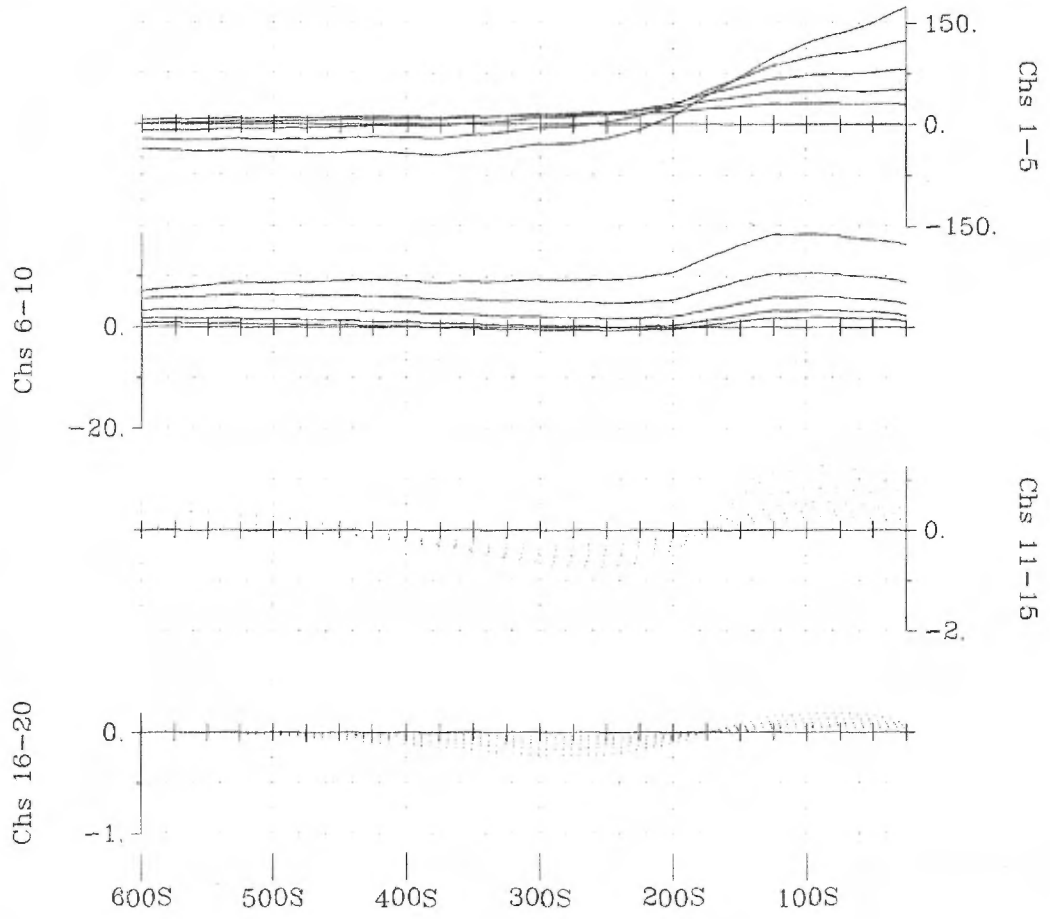
xch5



xch10



xch15



Line 0 E - Z Component

BRO-101

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM BRO-101

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

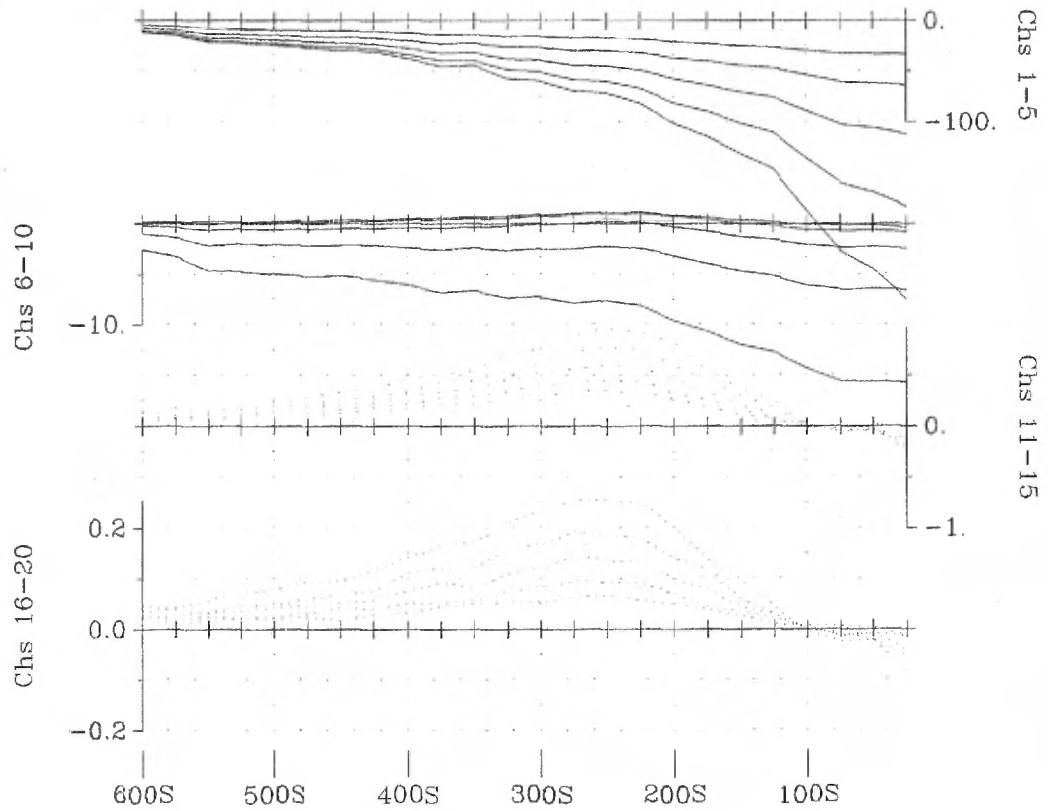
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L500s, 0n, 300n
Transmitter Current:	19.2 Amps
Transmitter Turn-Off Time:	275 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up
	Hx - positive south
	Hy - positive east
Survey Date:	28/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2)
	Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-Z-0 E



Line 0 E - Y Component

BRO-101

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM BRO-101

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

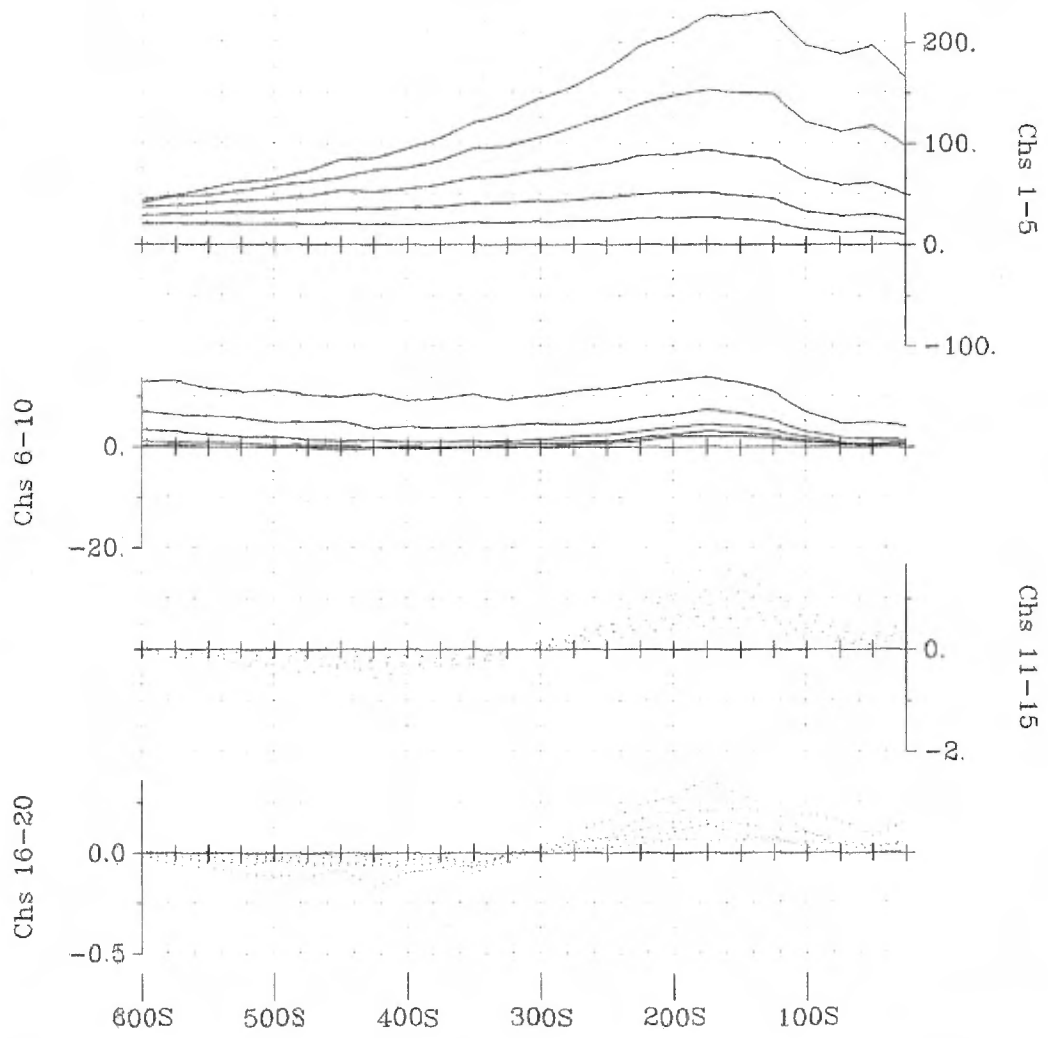
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L500e, 0n, 300n
Transmitter Current:	19.2 Amps
Transmitter Turn-Off Time:	275 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up
	Hx - positive south
	Hy - positive east
Survey Date:	28/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels)
	& Geonics 3D Coil (3x200m^2)
	Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-Y-0 E



Line 0 E – X Component

BRO-101

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM BRO-101

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

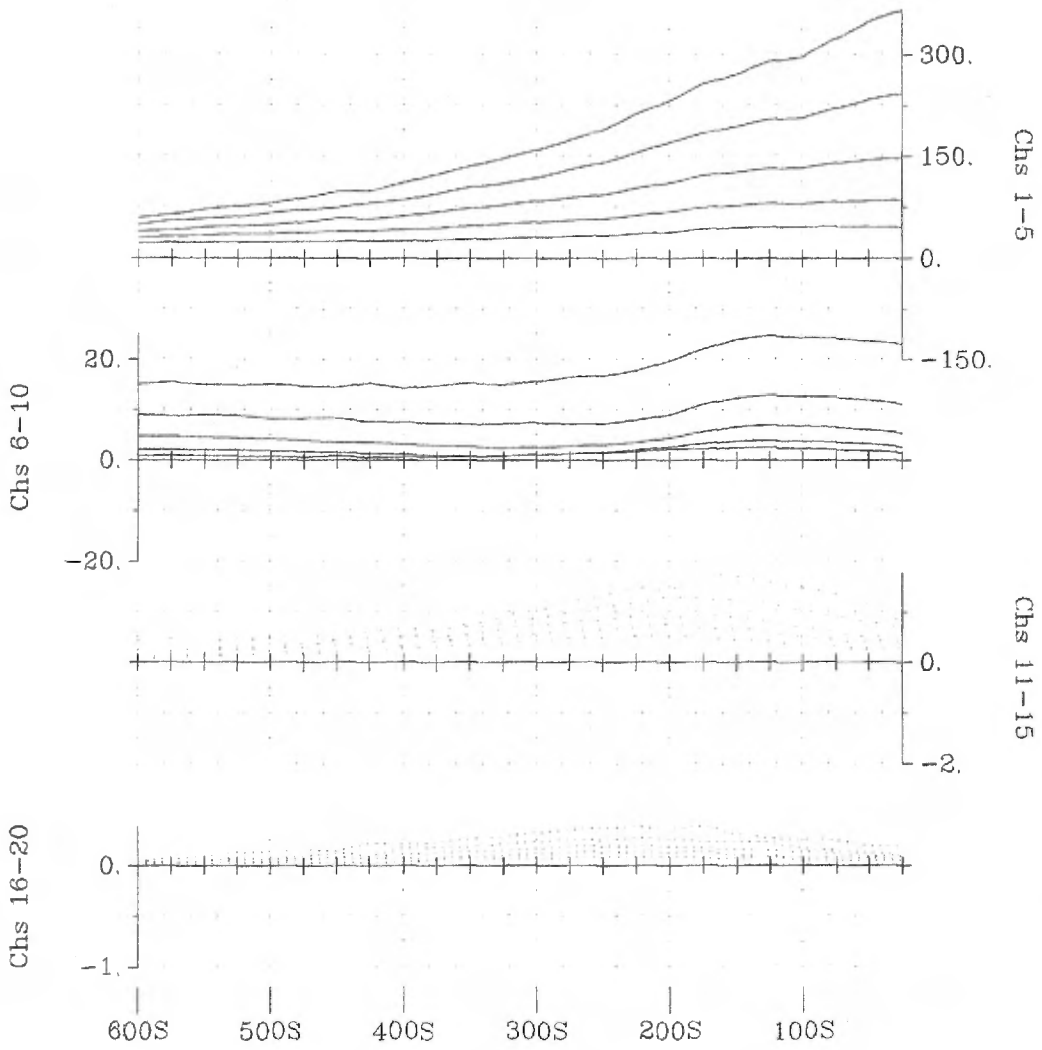
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L500e, 0n, 300n
Transmitter Current:	19.2 Amps
Transmitter Turn-Off Time:	275 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up
	Hx - positive south
	Hy - positive east
Survey Date:	28/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels)
	& Geonics 3D Coil (3x200m^2)
	Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-X-0 E



Line 0 E – Total Field

BRO-101

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM BRO-101

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

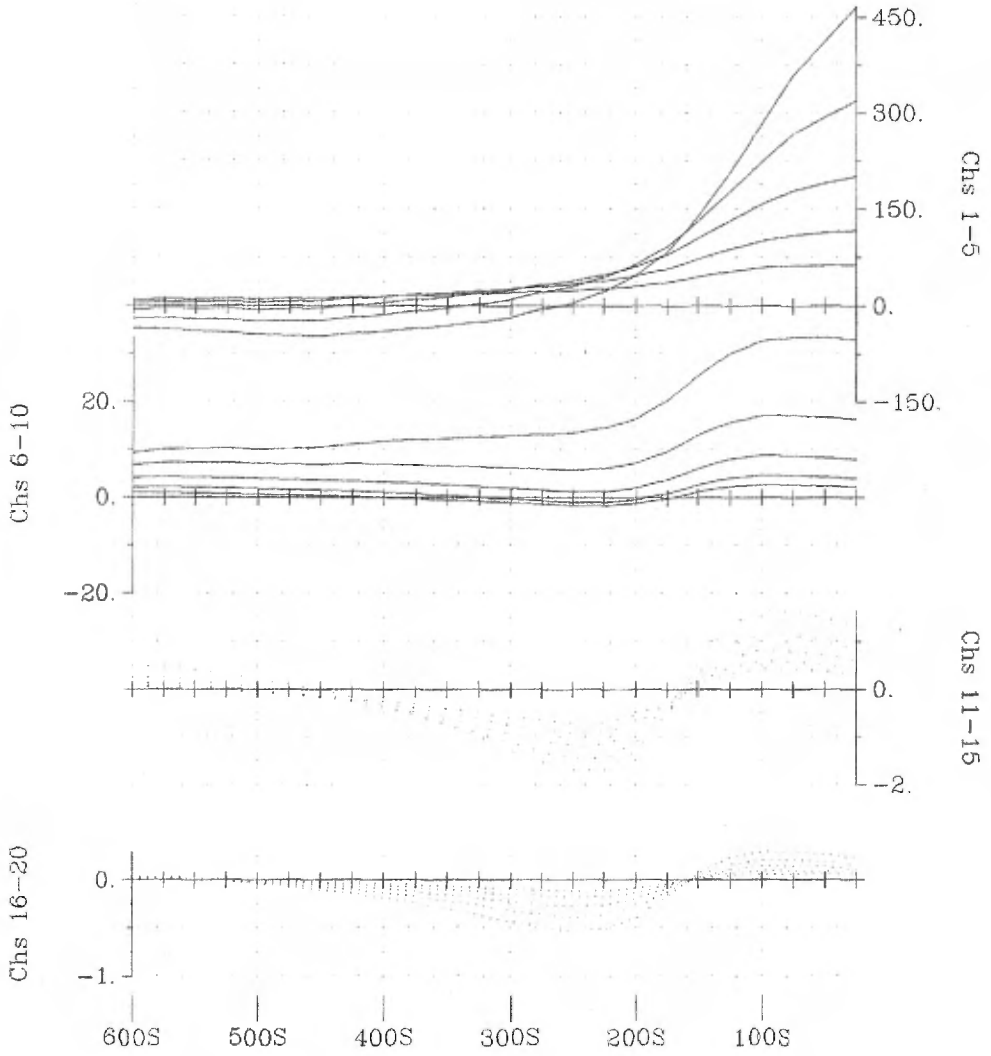
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L500e, 0n, 300n
Transmitter Current:	19.2 Amps
Transmitter Turn-Off Time:	275 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up Hx - positive south Hy - positive east
Survey Date:	28/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-TF-0 E



Line 100 E – Z Component

BRO-101

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM BRO-101

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

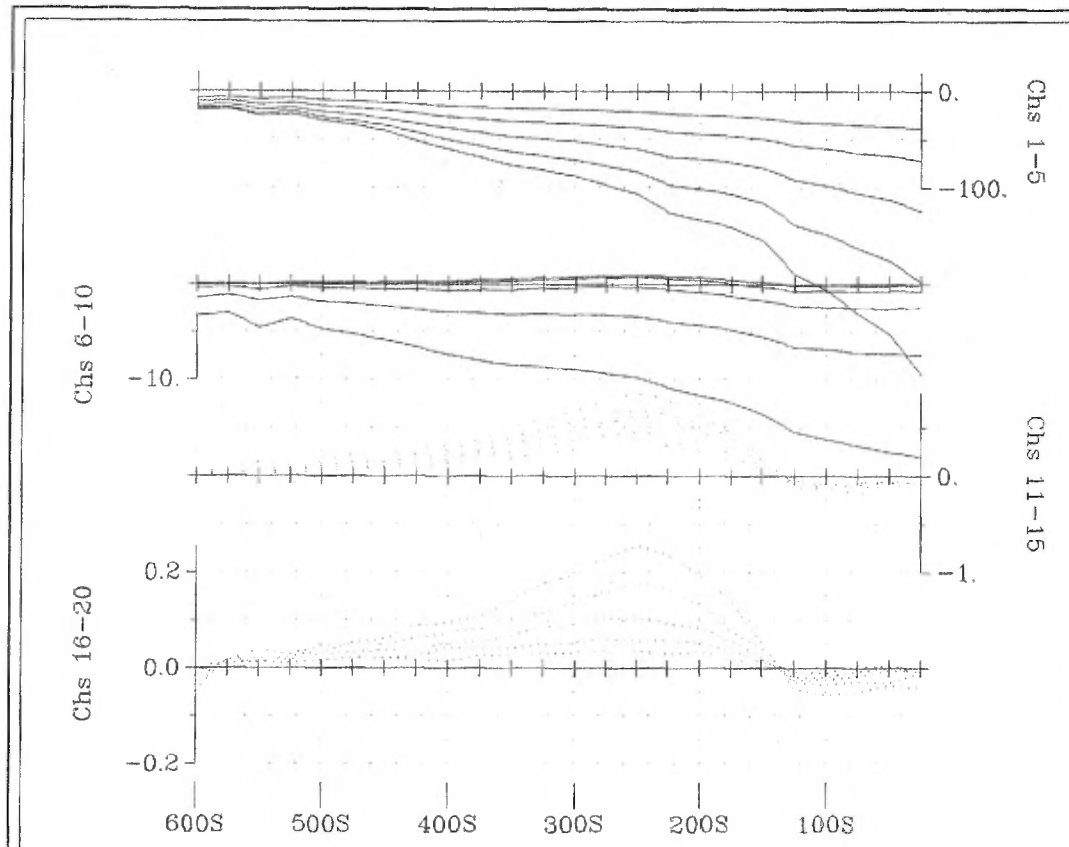
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L500e, 0n, 300n
Transmitter Current:	19.2 Amps
Transmitter Turn-Off Time:	275 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up Hx - positive south Hy - positive east
Survey Date:	28/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-Z-100 E



Line 100 E – Y Component

BRO-101

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM BRO-101

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

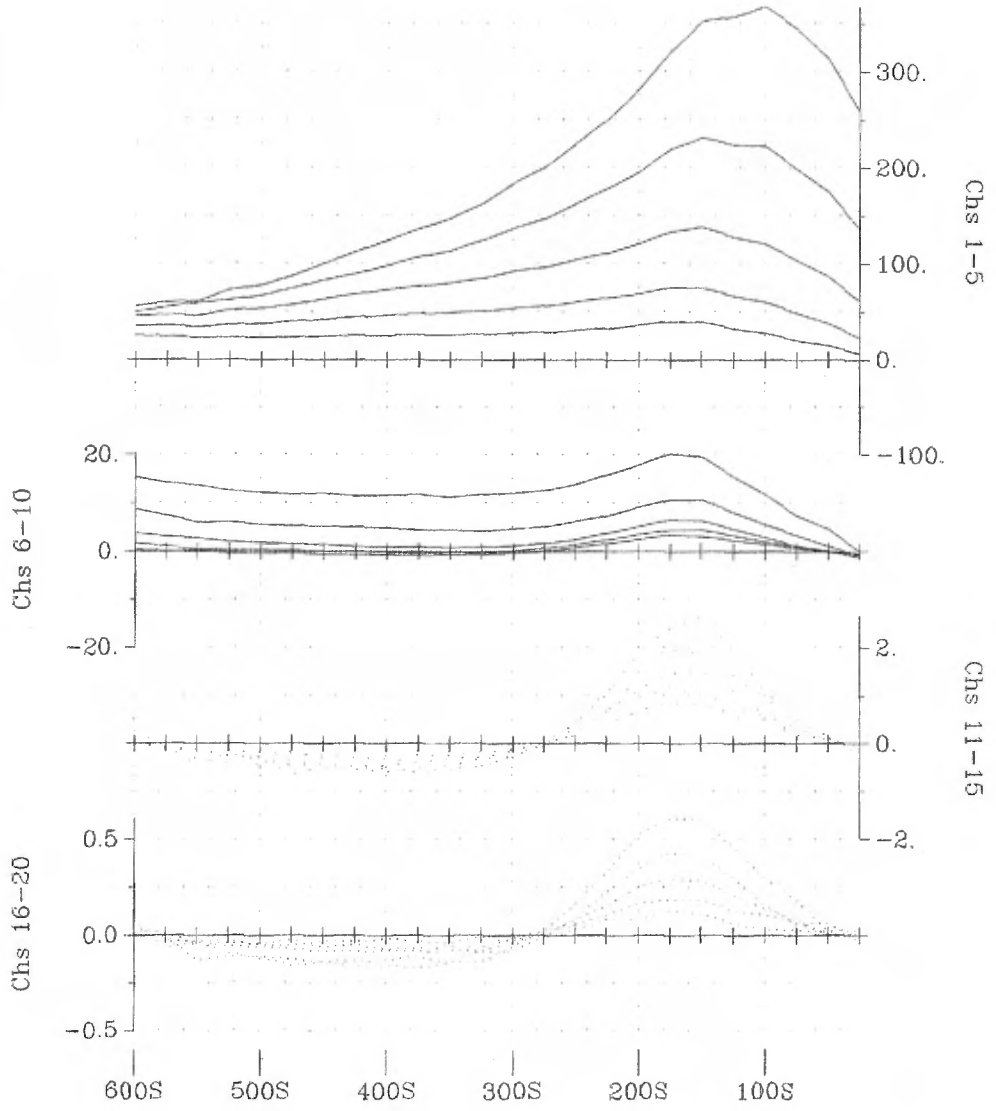
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L500e, 0n, 300n
Transmitter Current:	19.2 Amps
Transmitter Turn-Off Time:	275 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up Hx - positive south Hy - positive east
Survey Date:	28/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-Y-100 E



Line 100 E - X Component

BRO-101

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM BRO-101

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

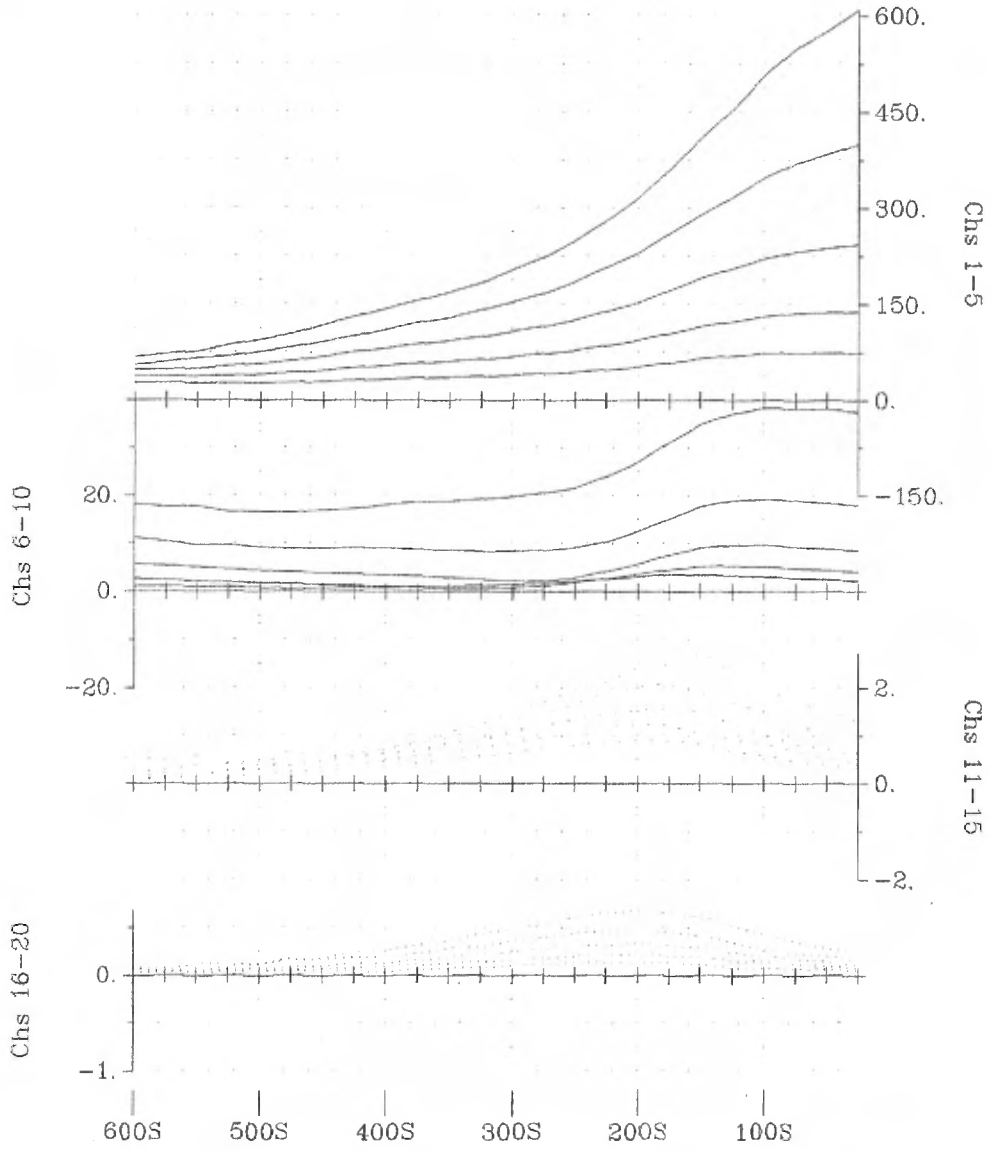
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L500e, 0n, 300n
Transmitter Current:	19.2 Amps
Transmitter Turn-Off Time:	275 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up Hx - positive south Hy - positive east
Survey Date:	28/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-X-100 E



Line 100 E – Total Field

BRO-101

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM BRO-101

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

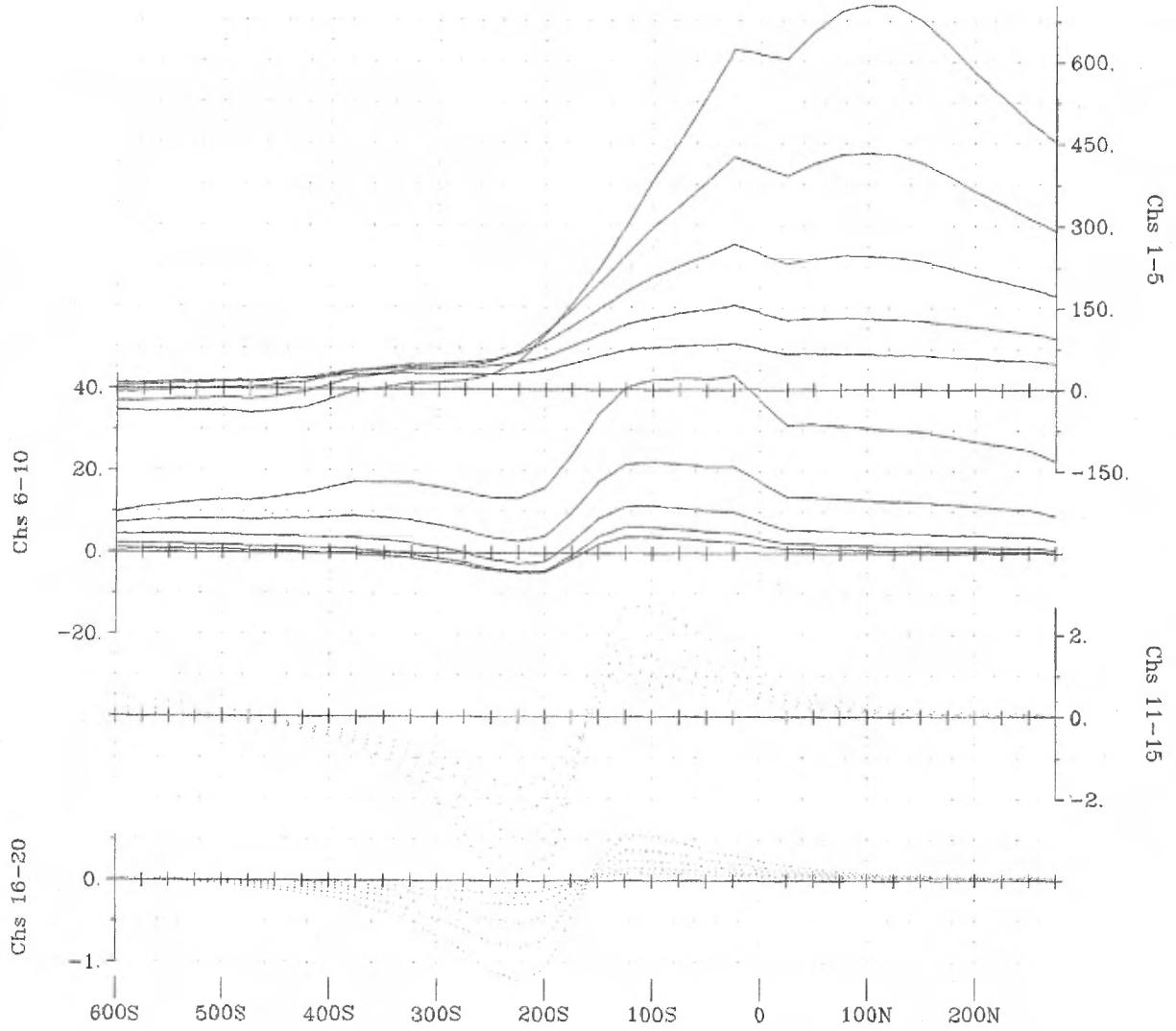
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L500e, 0n, 300n
Transmitter Current:	19.2 Amps
Transmitter Turn-Off Time:	275 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up Hx - positive south Hy - positive east
Survey Date:	28/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-TF-100 E



Line 200 E - Z Component

BRO-101

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM BRO-101

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

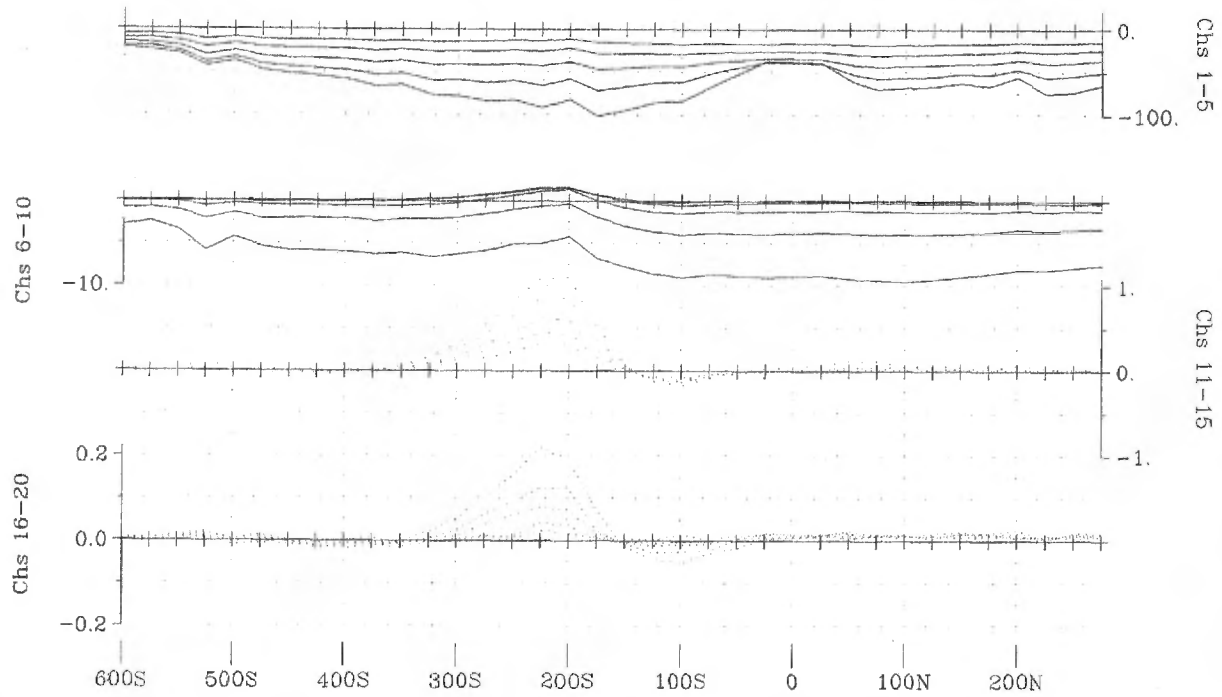
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L500e, 0n, 300n
Transmitter Current:	19.2 Amps
Transmitter Turn-Off Time:	275 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A•m^2
Receiver Coil Orientation:	Hz - positive up Hx - positive south Hy - positive east
Survey Date:	28/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-Z-200 E



Line 200 E – Y Component

BRO-101

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM BRO-101

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

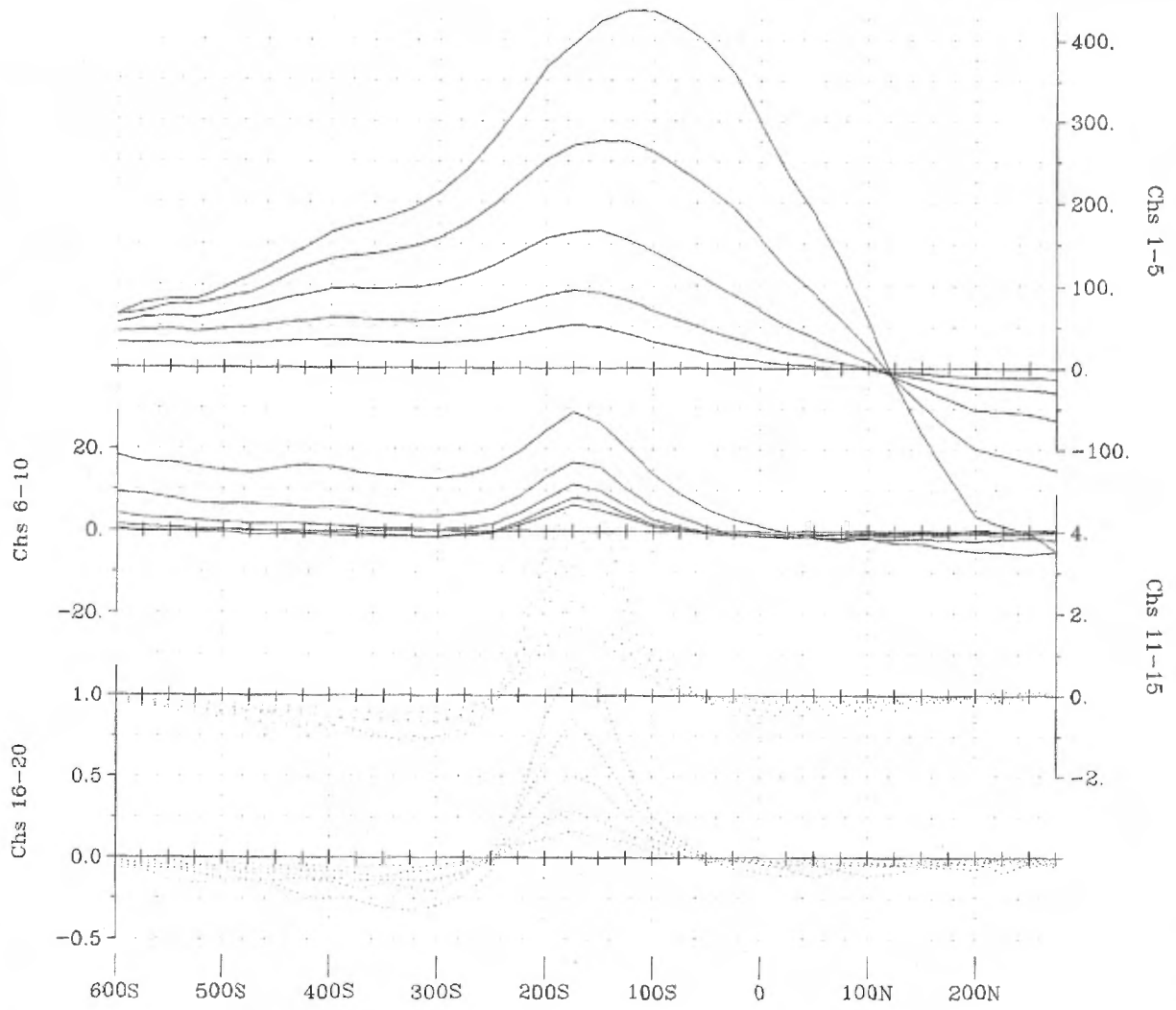
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L500e, 0n, 300n
Transmitter Current:	19.2 Amps
Transmitter Turn-Off Time:	275 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A•m^2
Receiver Coil Orientation:	Hz - positive up Hx - positive south Hy - positive east
Survey Date:	28/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-Y-200 E



Line 200 E – X Component

BRO-101

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM BRO-101

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

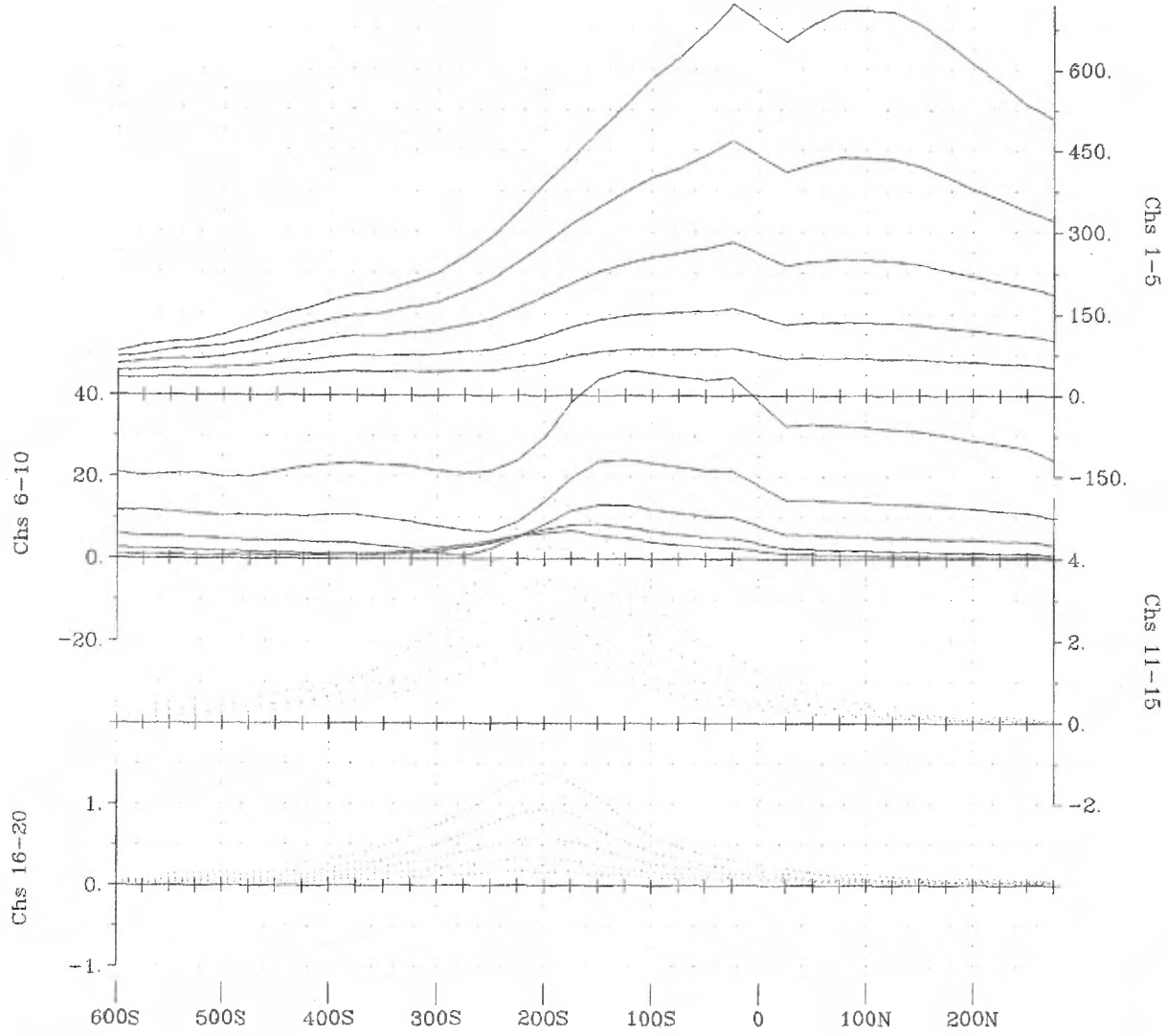
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L500e, 0n, 300n
Transmitter Current:	19.2 Amps
Transmitter Turn-Off Time:	275 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A•m^2
Receiver Coil Orientation:	Hz - positive up Hx - positive south Hy - positive east
Survey Date:	28/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-X-200 E



Line 200 E - Total Field

BRO-101

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM BRO-101

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

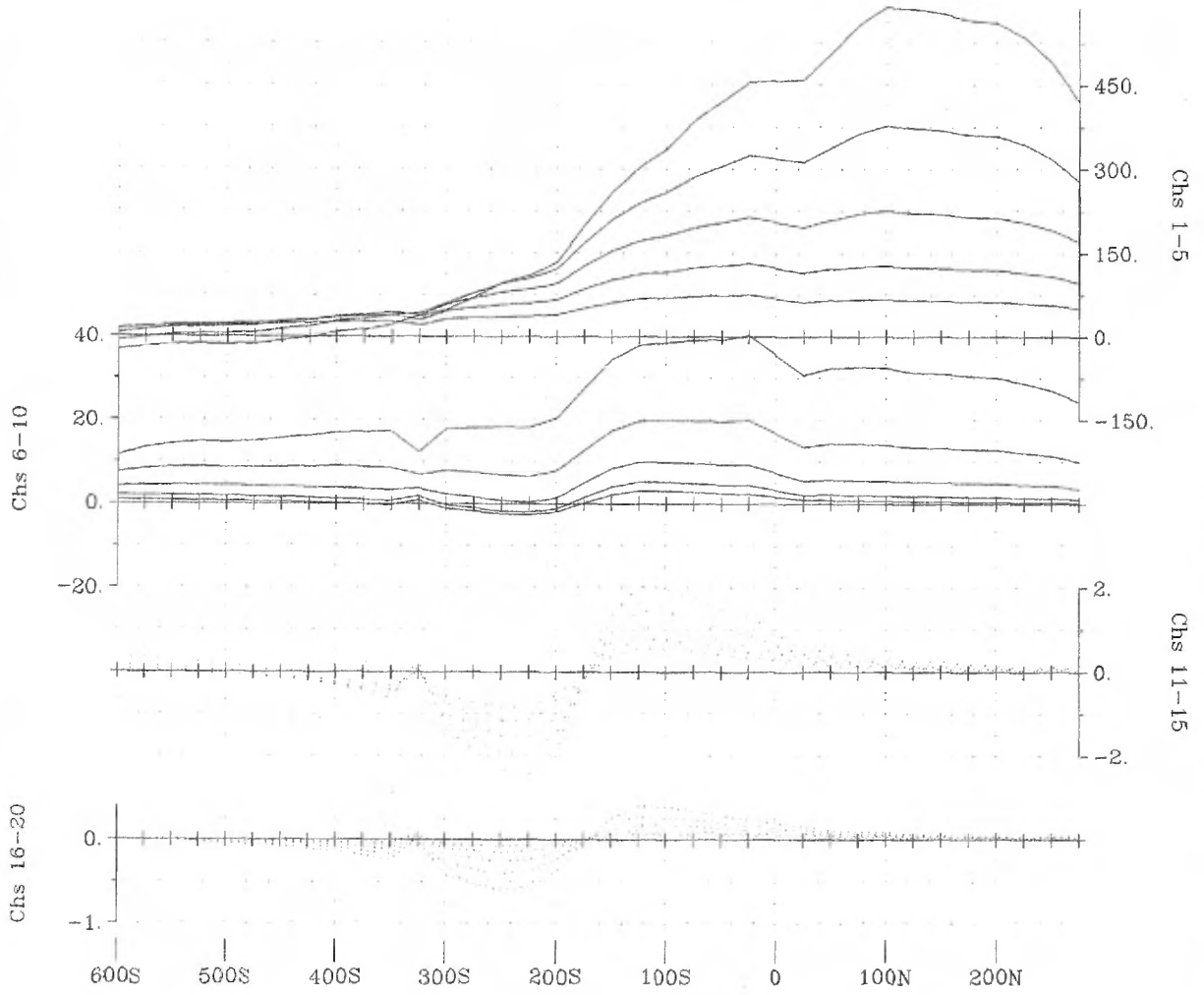
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L500e, 0n, 300n
Transmitter Current:	19.2 Amps
Transmitter Turn-Off Time:	275 us
Station Interval:	25 metres
Profile Units:	nanoVolt/Asrm^2
Receiver Coil Orientation:	Hz - positive up Hx - positive south Hy - positive east
Survey Date:	28/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-TF-200 E



Line 300 E – Z Component

BRO-101

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM BRO-101

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

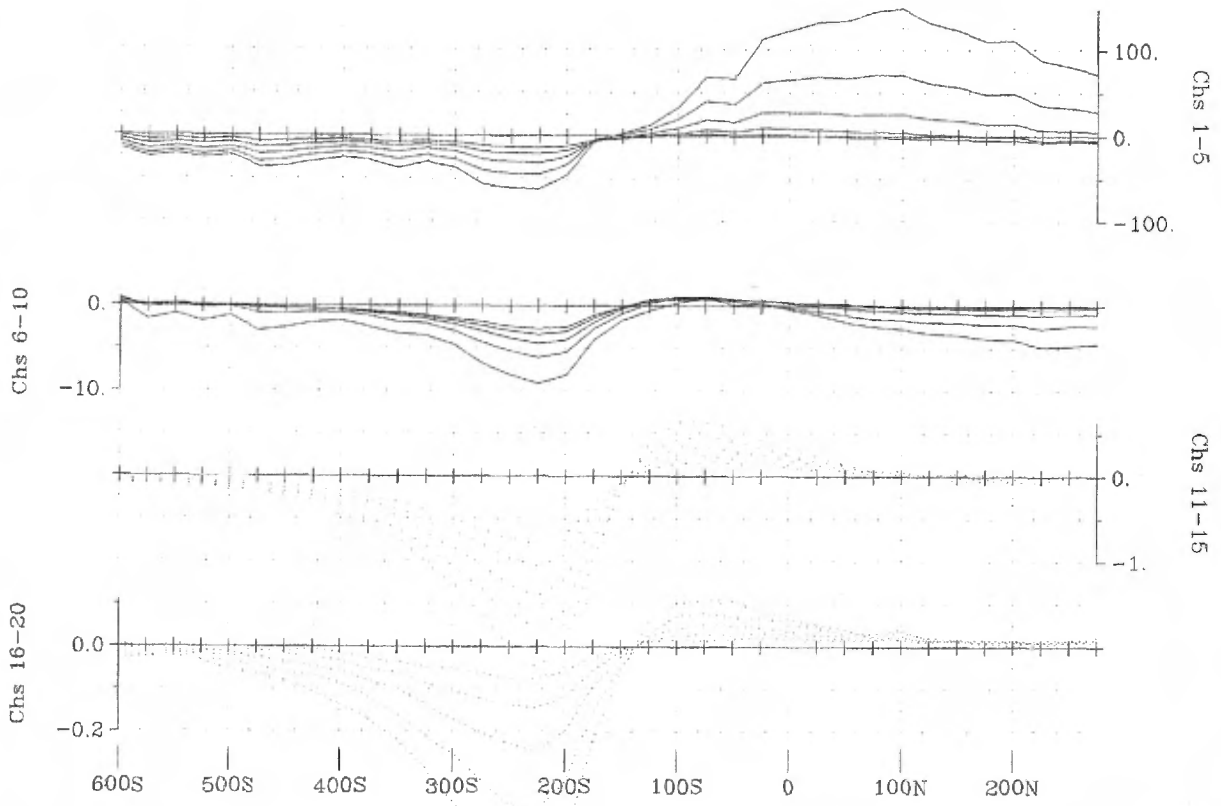
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L500e, 0n, 300n
Transmitter Current:	19.2 Amps
Transmitter Turn-Off Time:	275 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A•m^2
Receiver Coil Orientation:	Hz - positive up Hx - positive south Hy - positive east
Survey Date:	28/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-Z-300 E



Line 300 E – Y Component

BRO-101

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM BRO-101

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

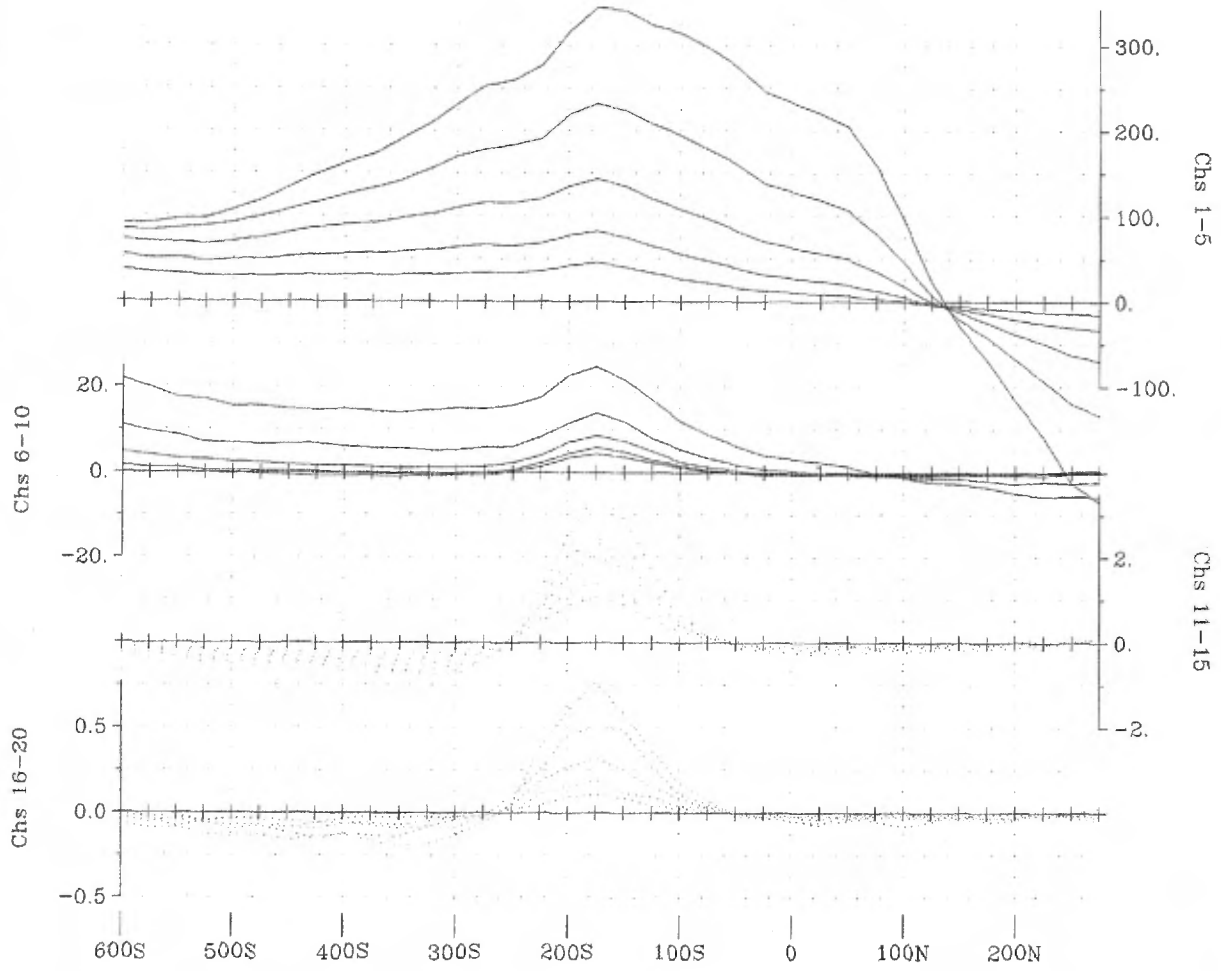
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L500e, 0n, 300n
Transmitter Current:	19.2 Amps
Transmitter Turn-Off Time:	275 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up Hx - positive south Hy - positive east
Survey Date:	28/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-Y-300 E



Line 300 E – X Component

BRO-101

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM BRO-101

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

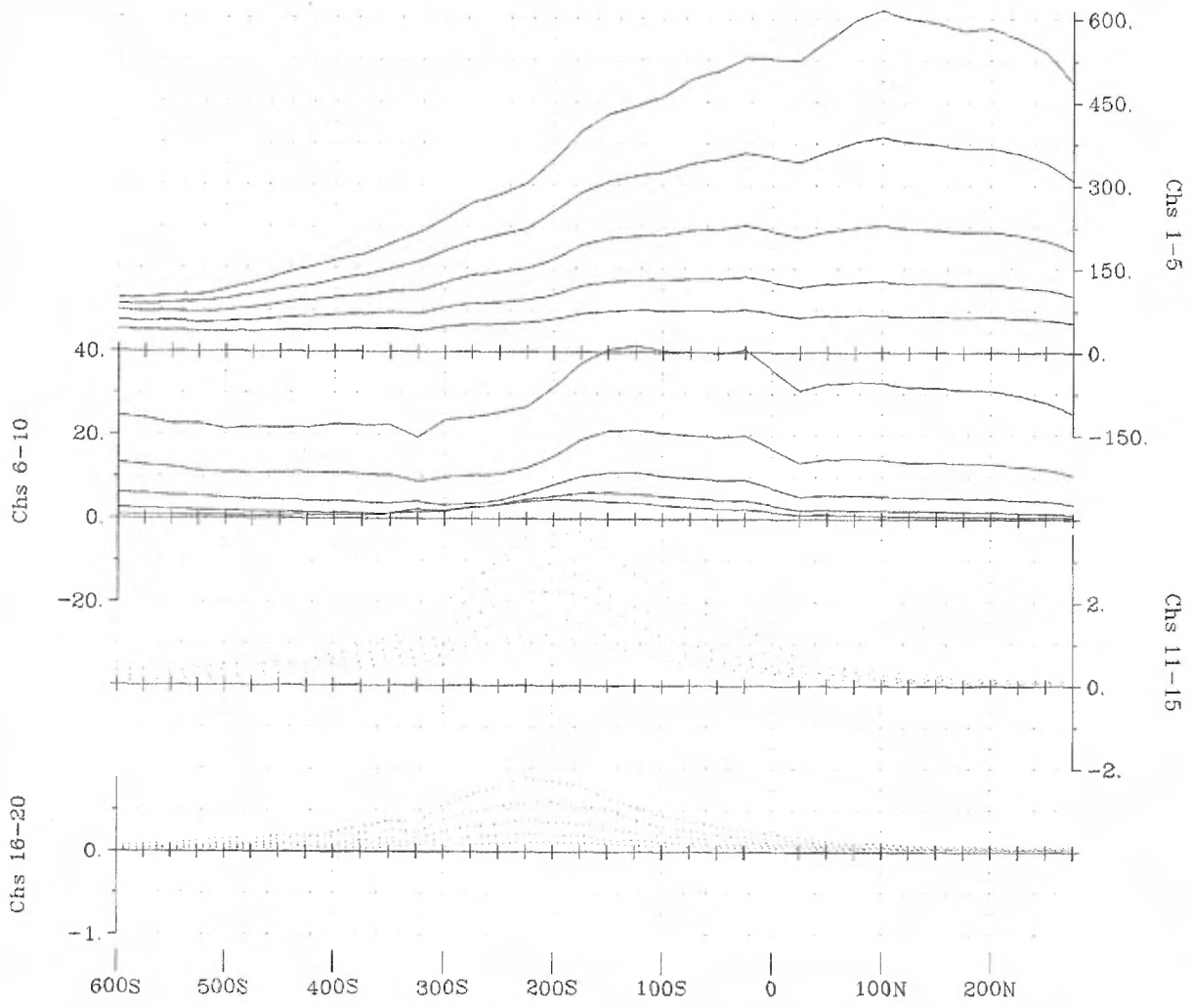
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L500e, 0n, 300n
Transmitter Current:	19.2 Amps
Transmitter Turn-Off Time:	275 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up
	Hx - positive south
	Hy - positive east
Survey Date:	28/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels)
	& Geonics 3D Coil (3x200m^2)
	Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-X-300 E



Line 300 E - Total Field

BRO-101

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM BRO-101

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

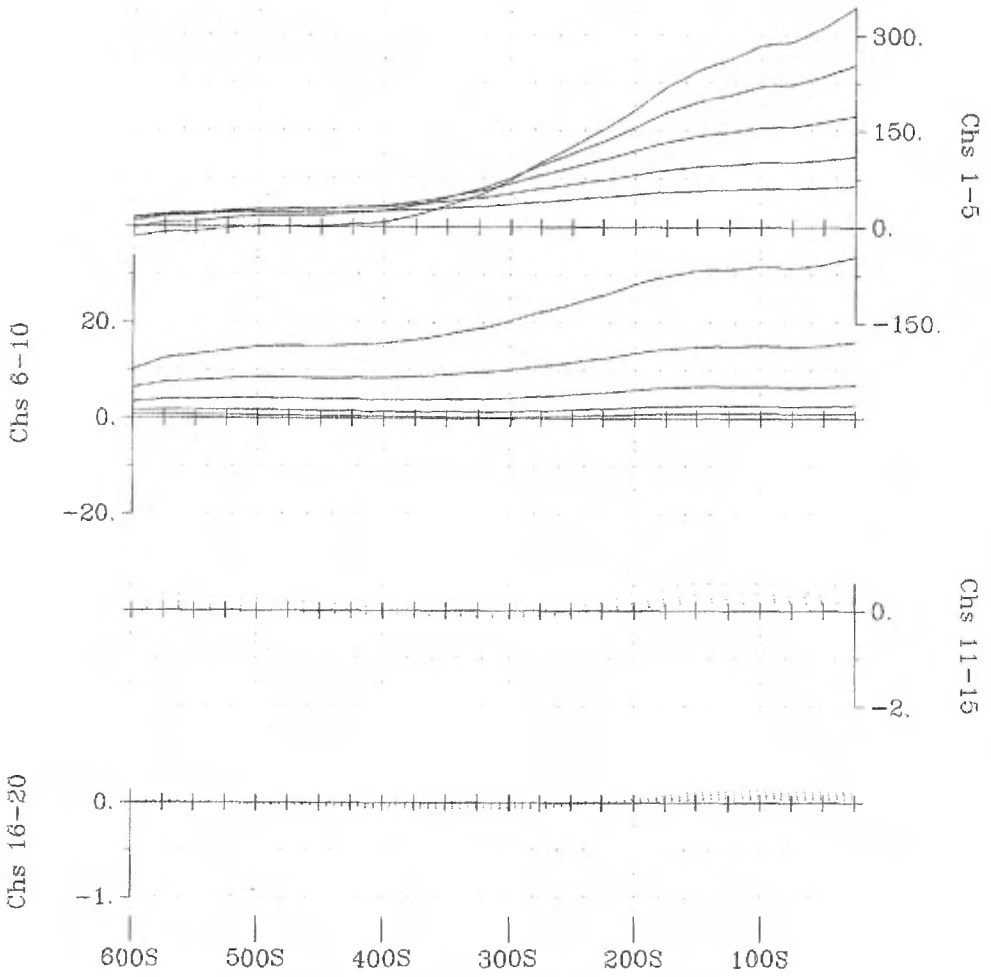
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L500e, 0n, 300n
Transmitter Current:	19.2 Amps
Transmitter Turn-Off Time:	275 us
Station Interval:	25 metres
Profile Units:	nanoVolt/Asm^2
Receiver Coil Orientation:	Hz - positive up Hx - positive south Hy - positive east
Survey Date:	28/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-TF-300 E



Line 400 E - Z Component

BRO-101

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM BRO-101

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

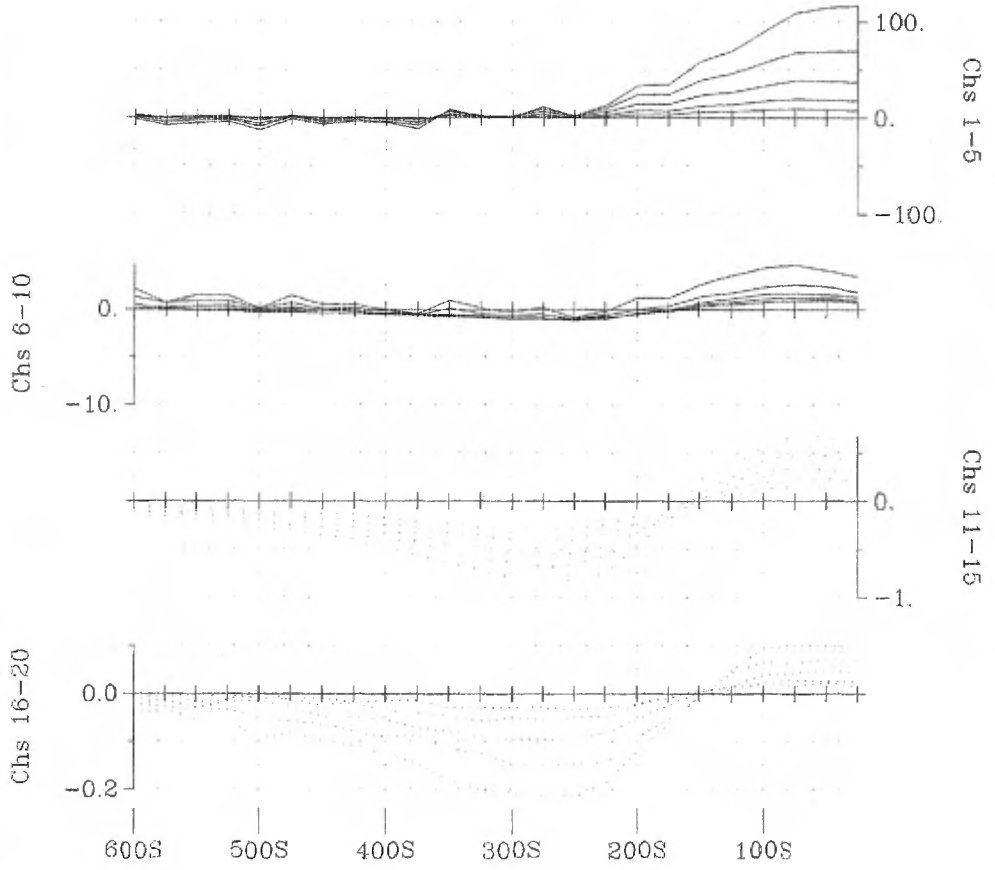
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L500e, 0n, 300n
Transmitter Current:	19.8 Amps
Transmitter Turn-Off Time:	283 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up Hx - positive south Hy - positive east
Survey Date:	27/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-Z-400 E



Line 400 E – Y Component

BRO-101

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM BRO-101

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

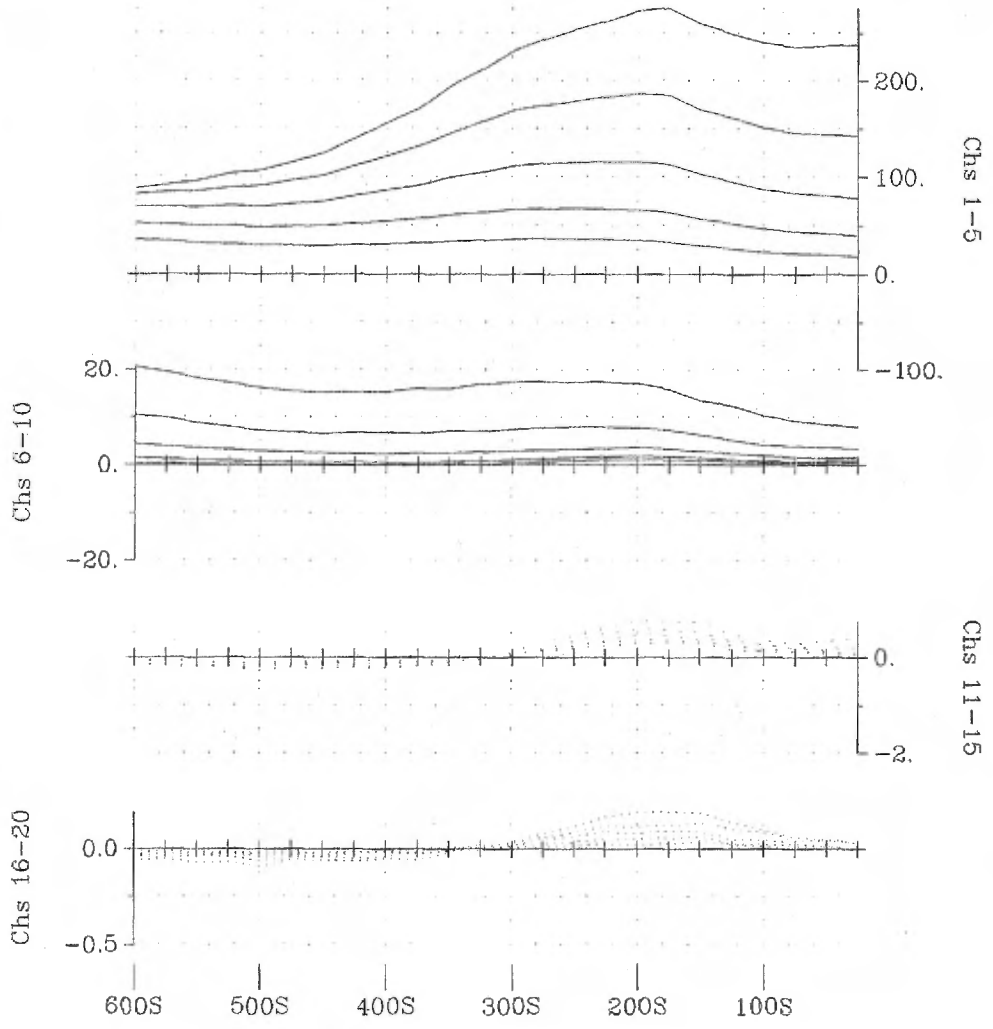
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L500e, 0n, 300n
Transmitter Current:	19.8 Amps
Transmitter Turn-Off Time:	283 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up Hx - positive south Hy - positive east
Survey Date:	27/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-Y-400 E



Line 400 E - X Component

BRO-101

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM BRO-101

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

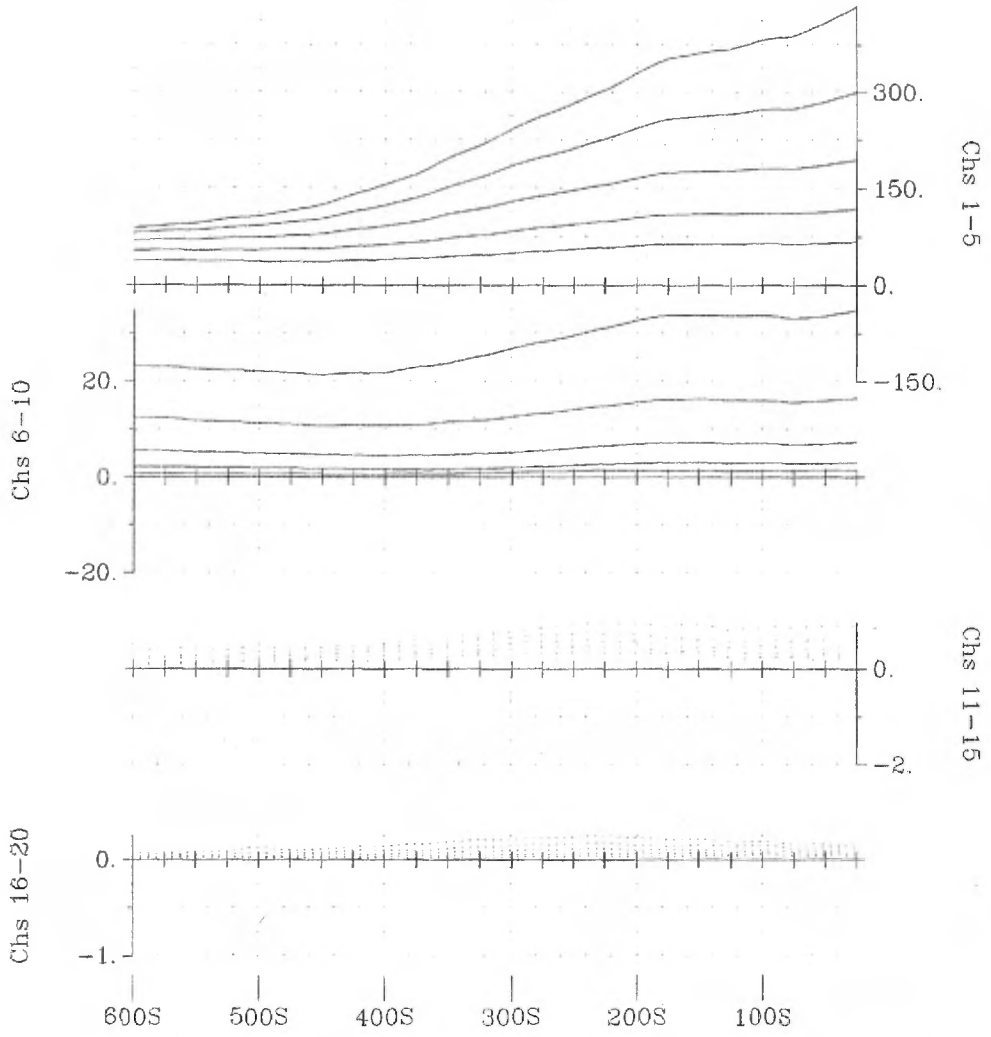
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L500e, 0n, 300n
Transmitter Current:	19.8 Amps
Transmitter Turn-Off Time:	283 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up Hx - positive south Hy - positive east
Survey Date:	27/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-X-400 E



Line 400 E - Total Field

BRO-101

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM BRO-101

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

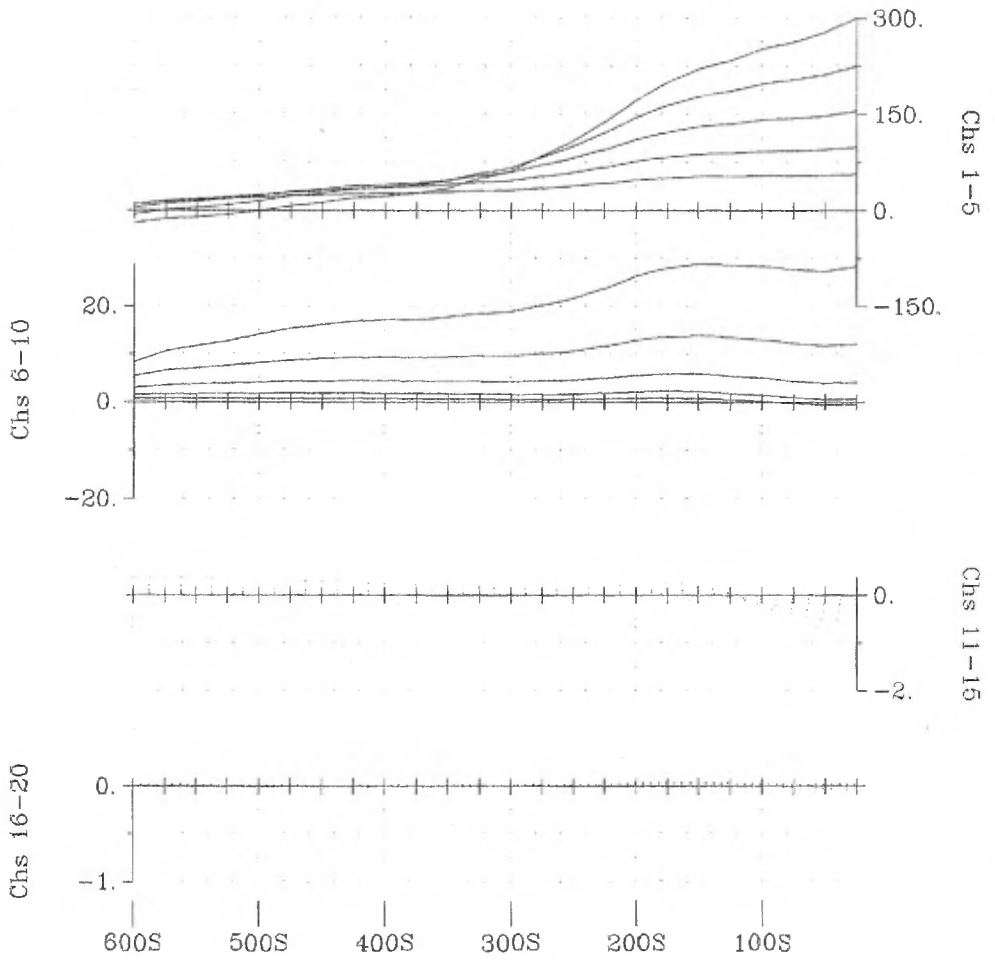
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L500e, 0n, 300n
Transmitter Current:	19.8 Amps
Transmitter Turn-Off Time:	283 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up
	Hx - positive south
	Hy - positive east
Survey Date:	27/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels)
	& Geonics 3D Coil (3x200m^2)
	Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-TF-400 E



Line 500 E – Z Component

BRO-101

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM BRO-101

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

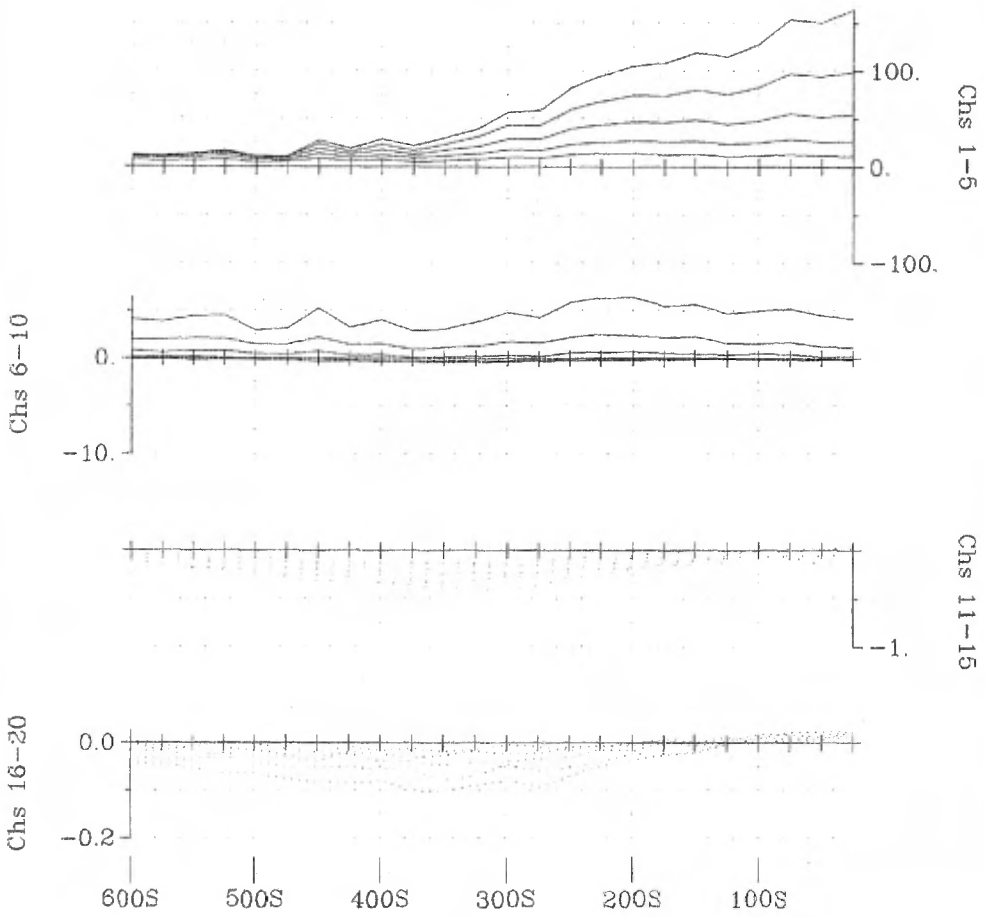
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L500e, 0n, 300n
Transmitter Current:	19.8 Amps
Transmitter Turn-Off Time:	283 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up Hx - positive south Hy - positive east
Survey Date:	27/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-Z-500 E



Line 500 E - Y Component

BRO-101

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM BRO-101

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

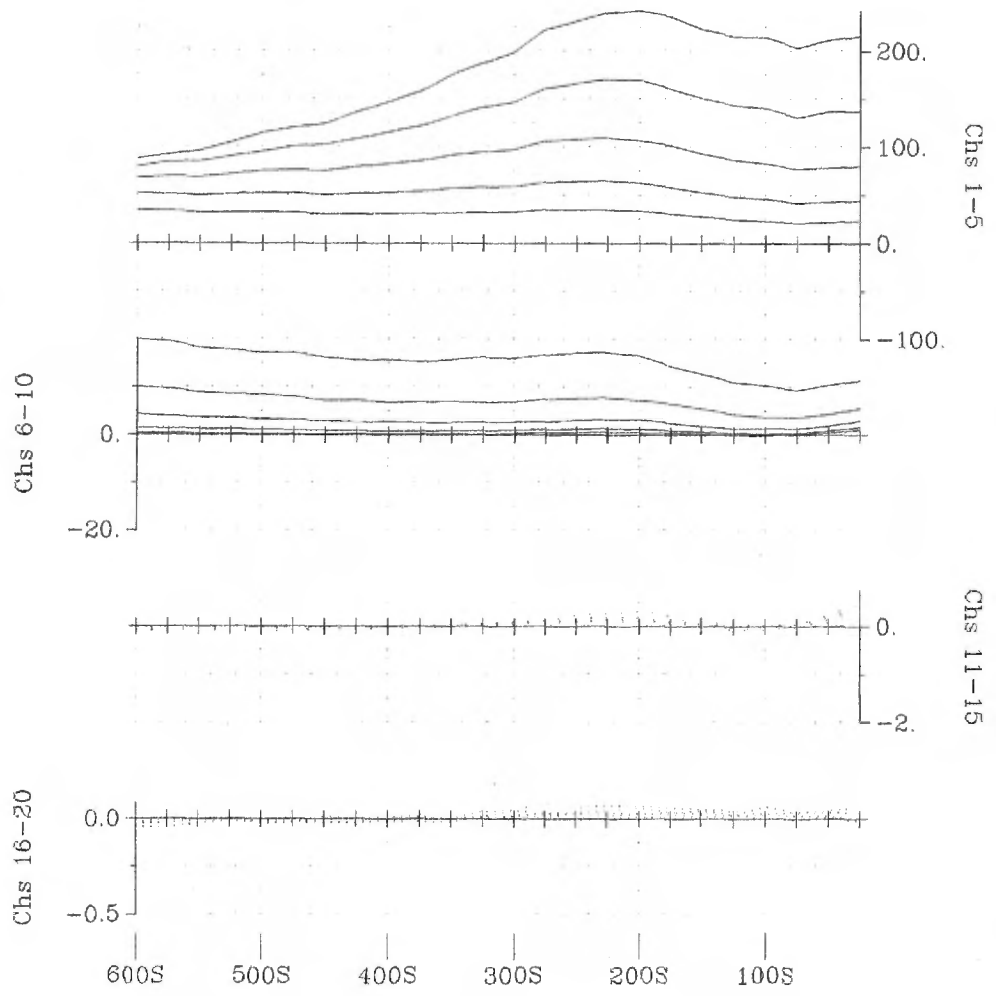
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L500e, 0n, 300n
Transmitter Current:	19.8 Amps
Transmitter Turn-Off Time:	283 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up Hx - positive south Hy - positive east
Survey Date:	27/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-Y-500 E



Line 500 E - X Component

BRO-101

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM BRO-101

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

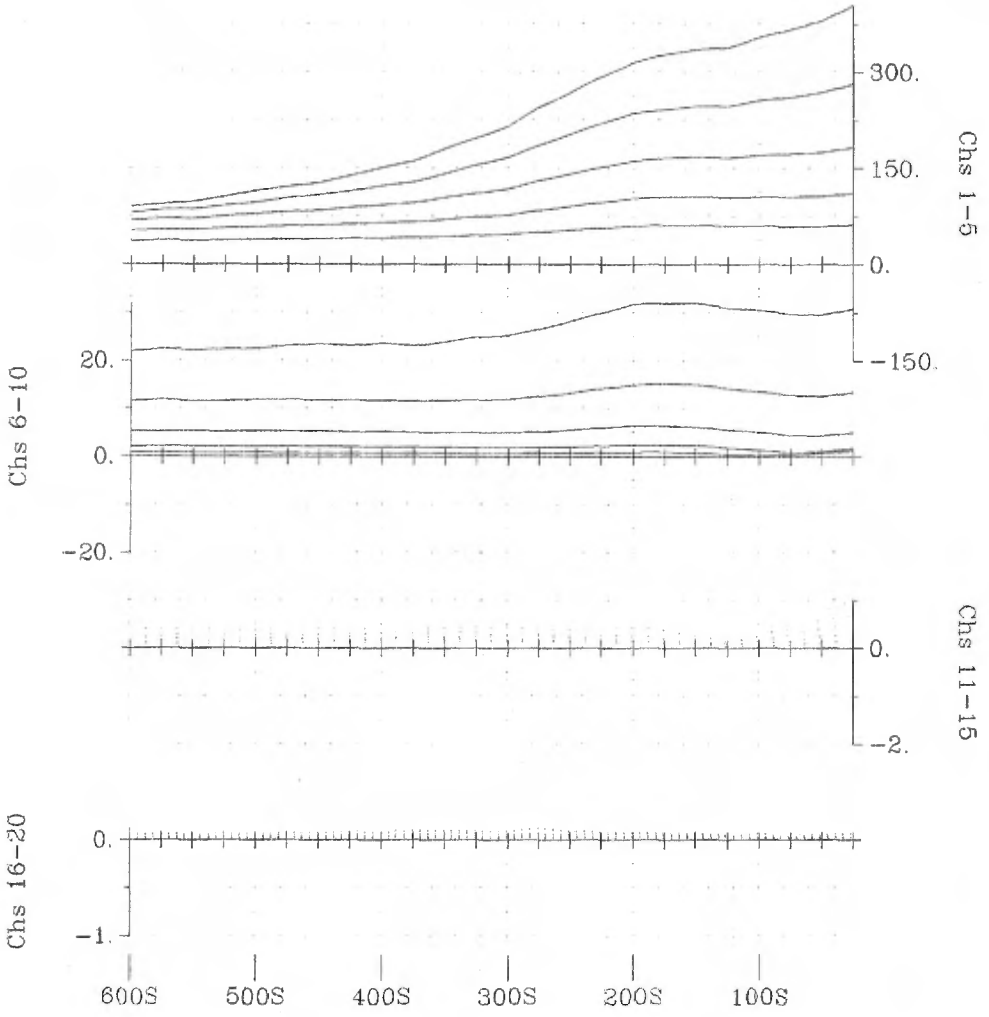
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L500e, 0n, 300n
Transmitter Current:	19.8 Amps
Transmitter Turn-Off Time:	2B3 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up Hx - positive south Hy - positive east
Survey Date:	27/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-X-500 E



Line 500 E – Total Field

BRO-101

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM BRO-101

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L500e, 0n, 300n
Transmitter Current:	19.8 Amps
Transmitter Turn-Off Time:	283 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up
	Hx - positive south
	Hy - positive east
Survey Date:	27/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels)
	& Geonics 3D Coil (3x200m^2)
	Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-TF-500 E

NORANDA INC.

QG 268 MEGATEM FOLLOW UP PROFILES

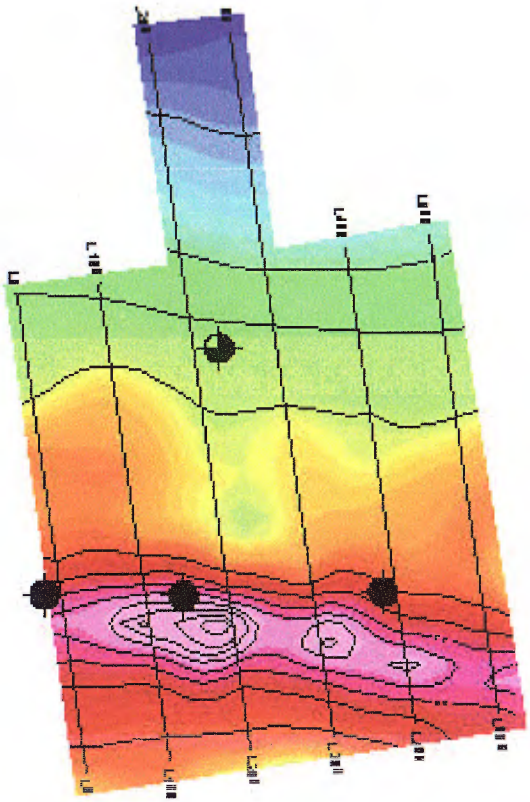
WEST SELBAIE AREA

CAR 03

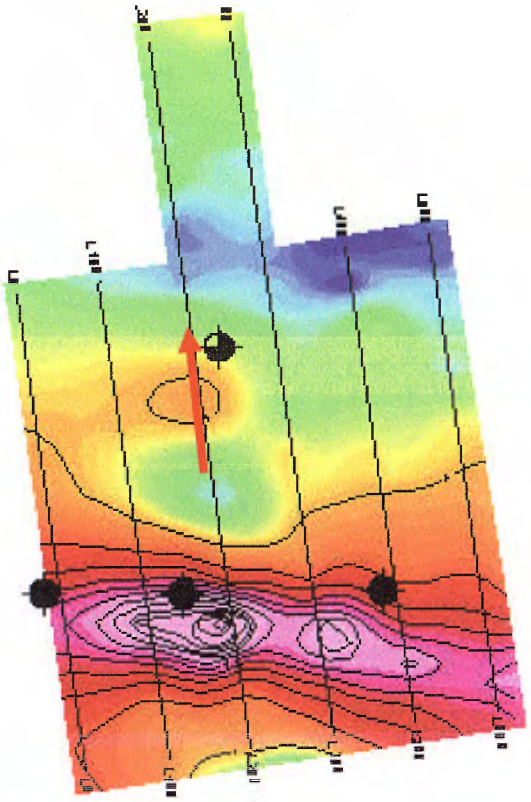
Quantec

GEOPHYSICS WORLDWIDE

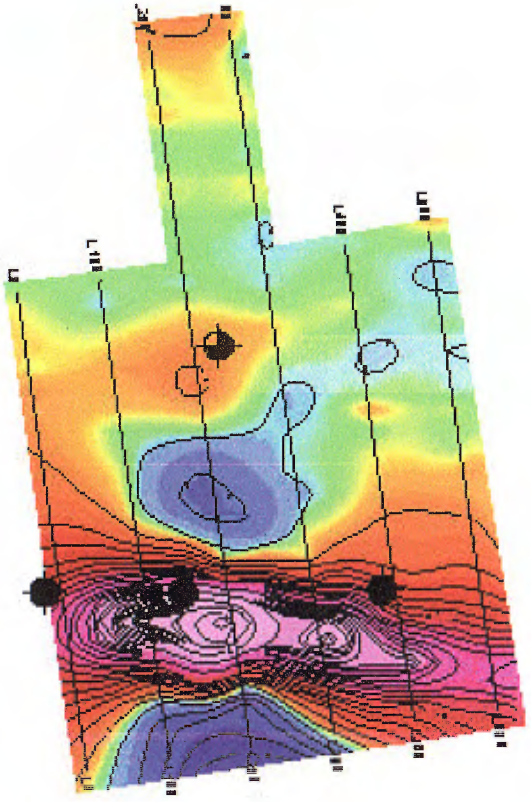
CAR-03 Levé électromagnétique dans le domaine du temps à grande boucle ('TDEM')



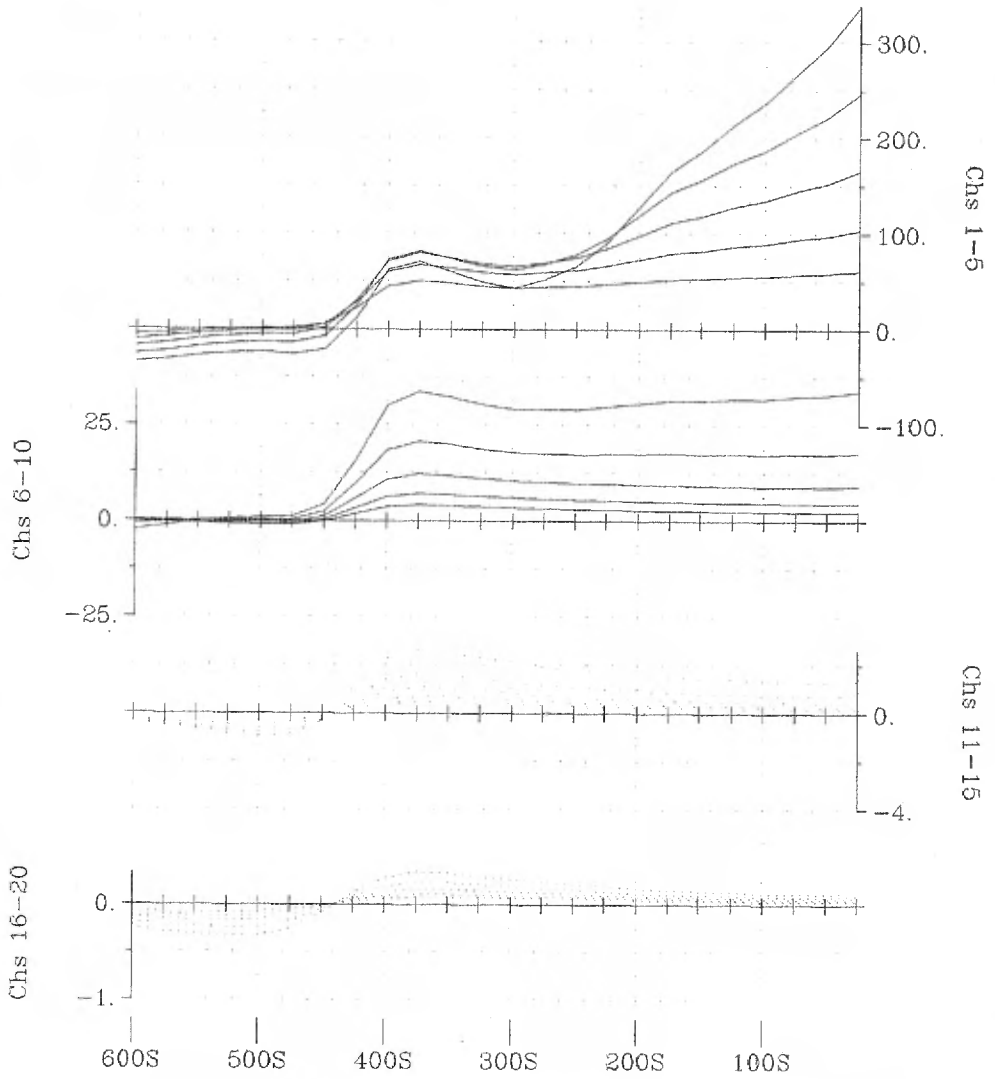
xch5



xch10



xch15



Line 0 E – Z Component

CAR-03

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM CAR-03

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

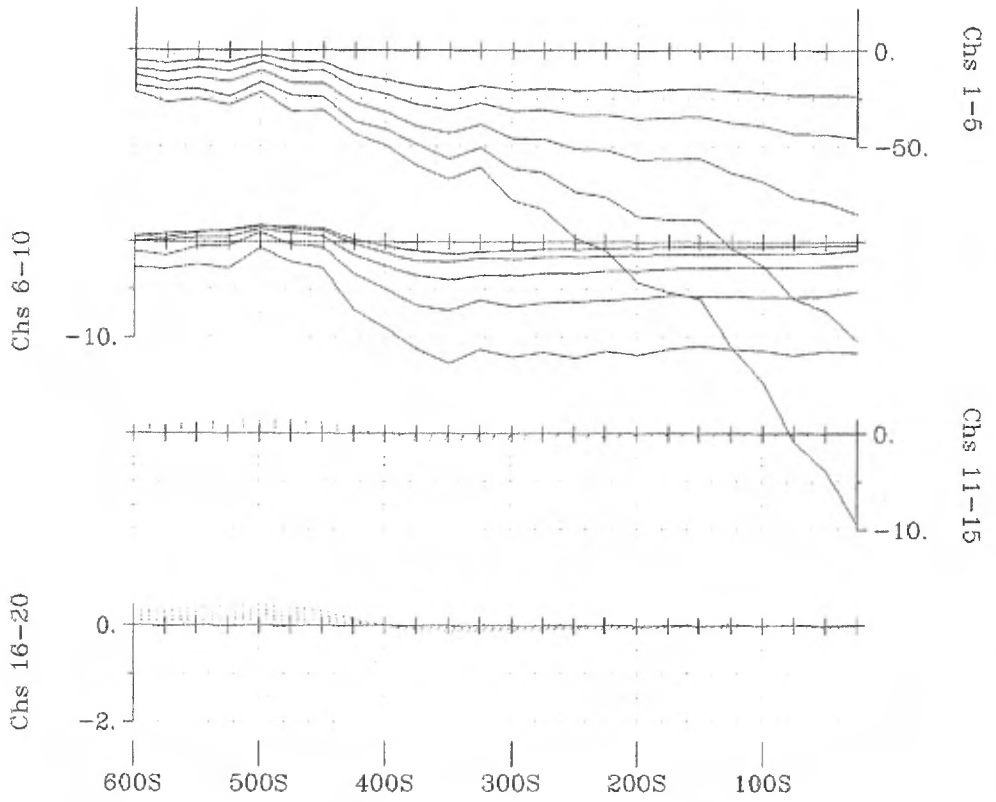
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L500e, 0n, 300n
Transmitter Current:	19.0 Amps
Transmitter Turn-Off Time:	268 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up Hx - positive south Hy - positive east
Survey Date:	24/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-Z-0 E



Line 0 E – Y Component

CAR-03

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM CAR-03

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

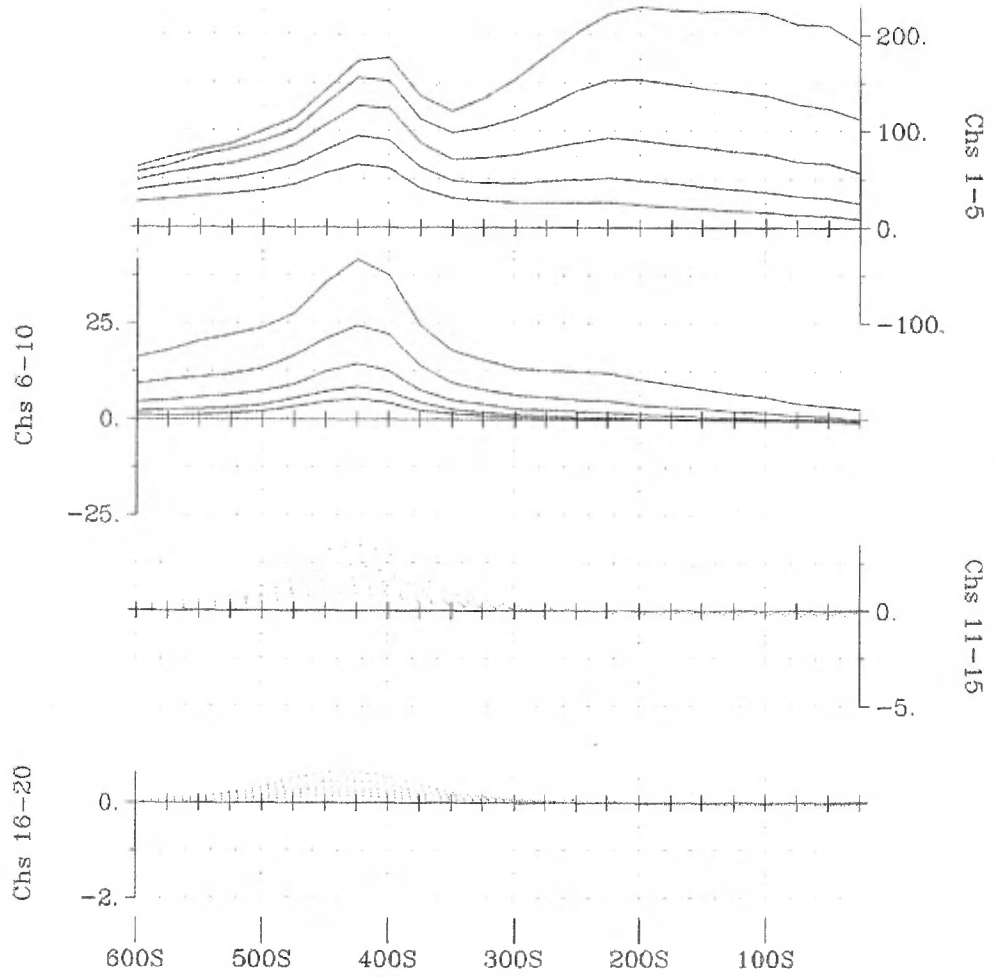
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L500e, 0n, 300n
Transmitter Current:	19.0 Amps
Transmitter Turn-Off Time:	268 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up Hx - positive south Hy - positive east
Survey Date:	24/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-Y-0 E



Line 0 E – X Component

CAR-03

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM CAR-03

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

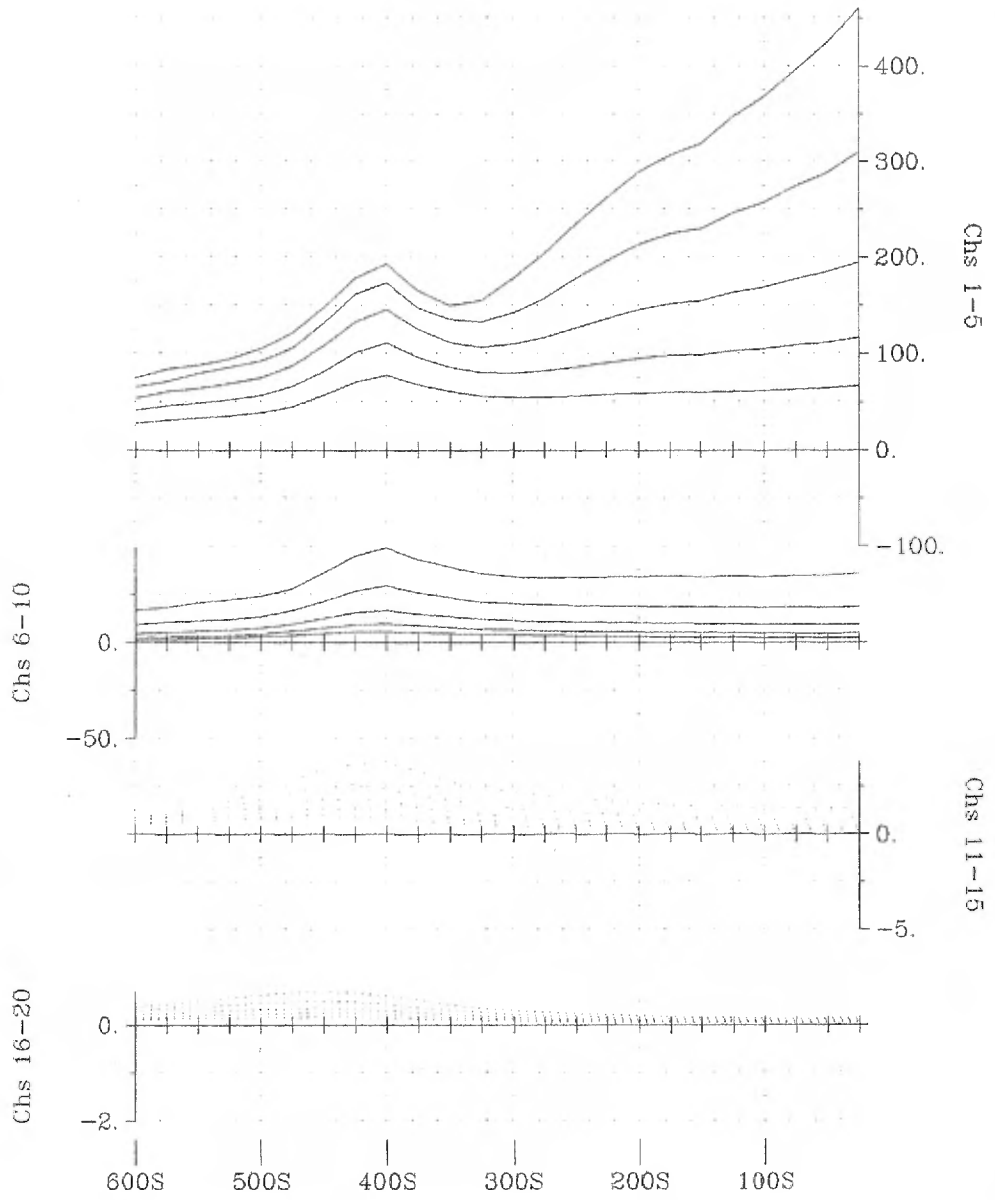
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L500e, 0n, 300n
Transmitter Current:	19.0 Amps
Transmitter Turn-Off Time:	268 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up Hx - positive south Hy - positive east
Survey Date:	24/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-X-0 E



Line 0 E - Total Field

CAR-03

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM CAR-03

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

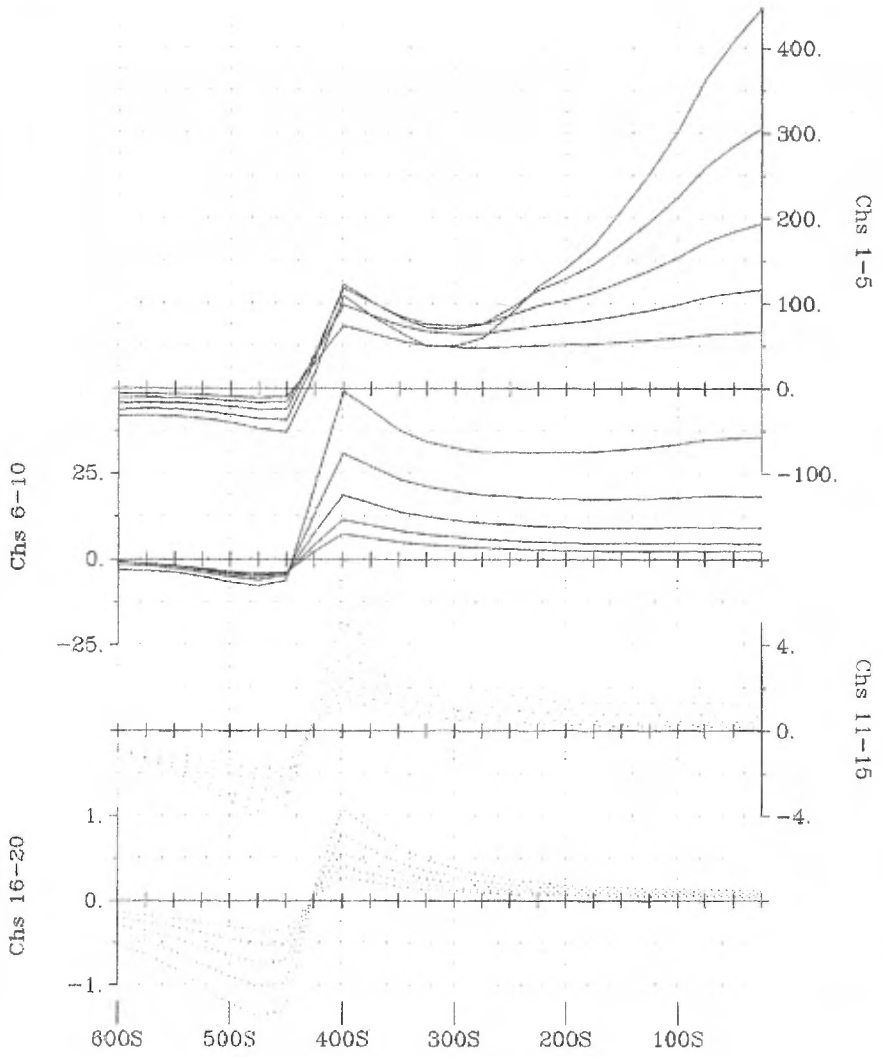
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L500e, 0n, 300n
Transmitter Current:	19.0 Amps
Transmitter Turn-Off Time:	268 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up Hx - positive south Hy - positive east
Survey Date:	24/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-TF-0 E



Line 100 E – Z Component

CAR-03

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM CAR-03

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

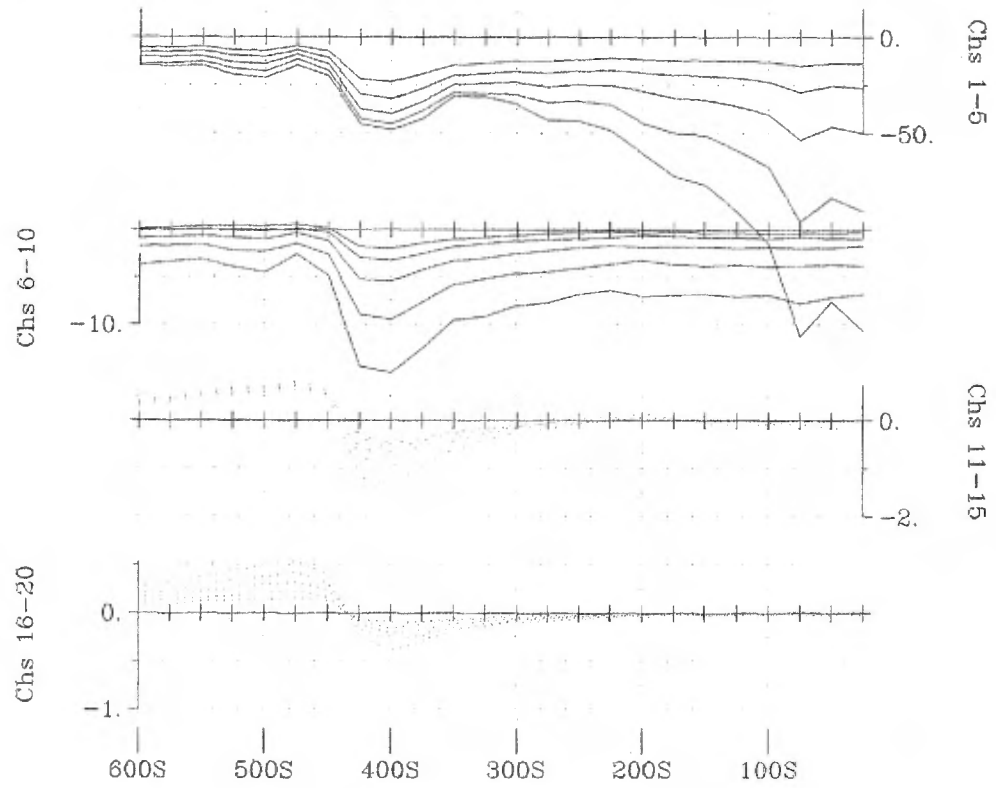
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L500e, 0n, 300n
Transmitter Current:	19.0 Amps
Transmitter Turn-Off Time:	262 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up Hx - positive south Hy - positive east
Survey Date:	23/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-Z-100 E



Line 100 E -- Y Component

CAR-03

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM CAR-03

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

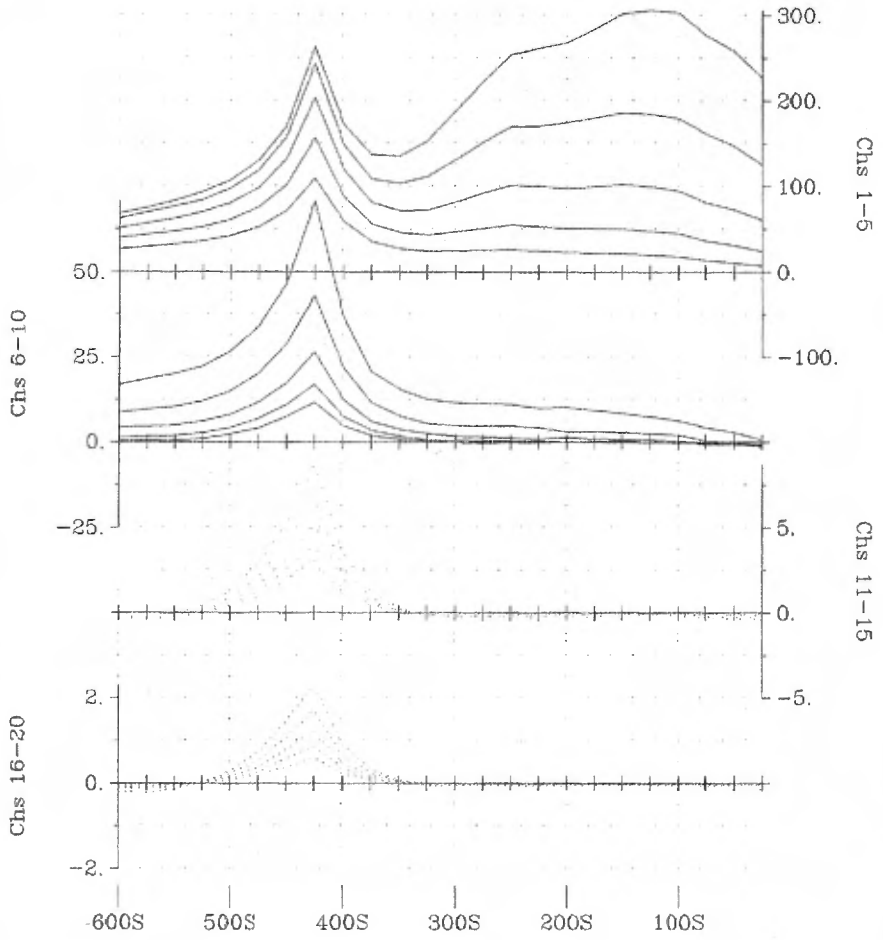
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L500e, 0n, 300n
Transmitter Current:	19.0 Amps
Transmitter Turn-Off Time:	262 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up Hx - positive south Hy - positive east
Survey Date:	23/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-Y-100 E



Line 100 E – X Component

CAR-03

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM CAR-03

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

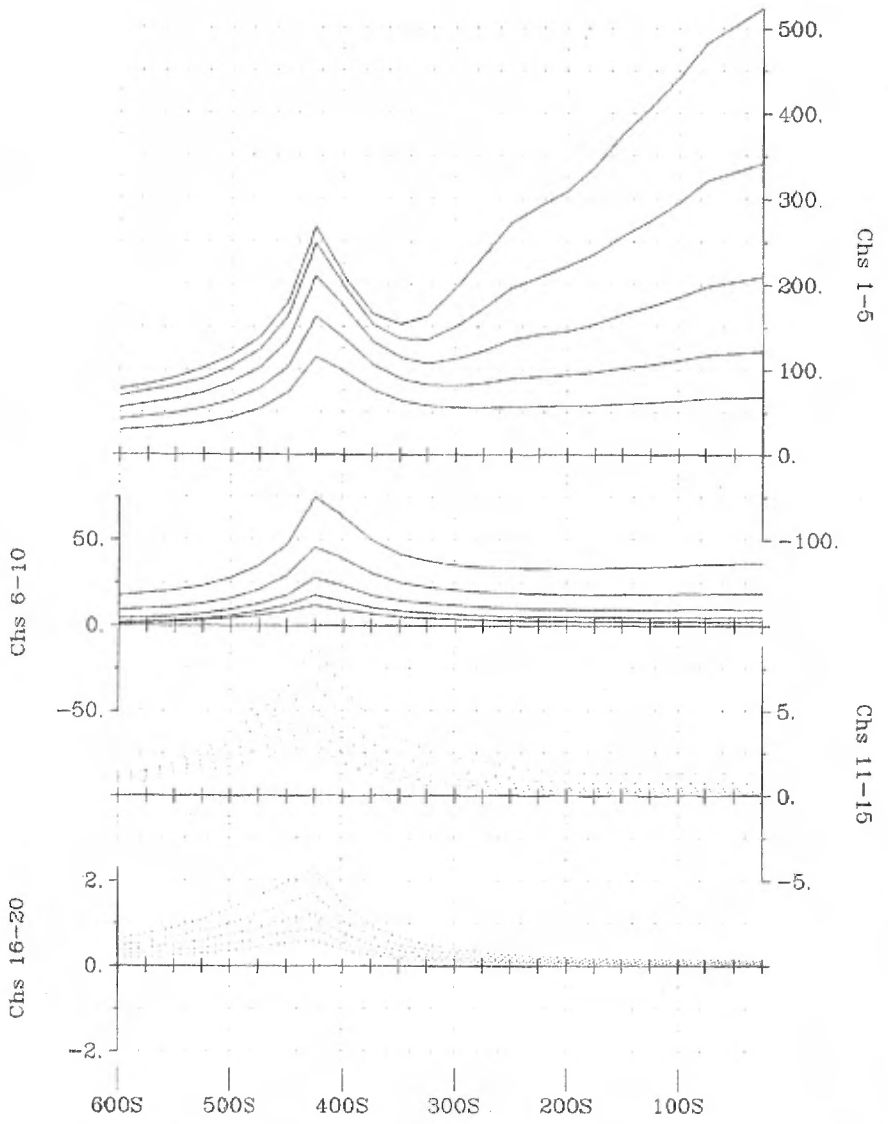
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L500e, 0n, 300n
Transmitter Current:	19.0 Amps
Transmitter Turn-Off Time:	262 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up Hx - positive south Hy - positive east
Survey Date:	23/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-X-100 E



Line 100 E - Total Field

CAR-03

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM CAR-03

CAR-03, SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

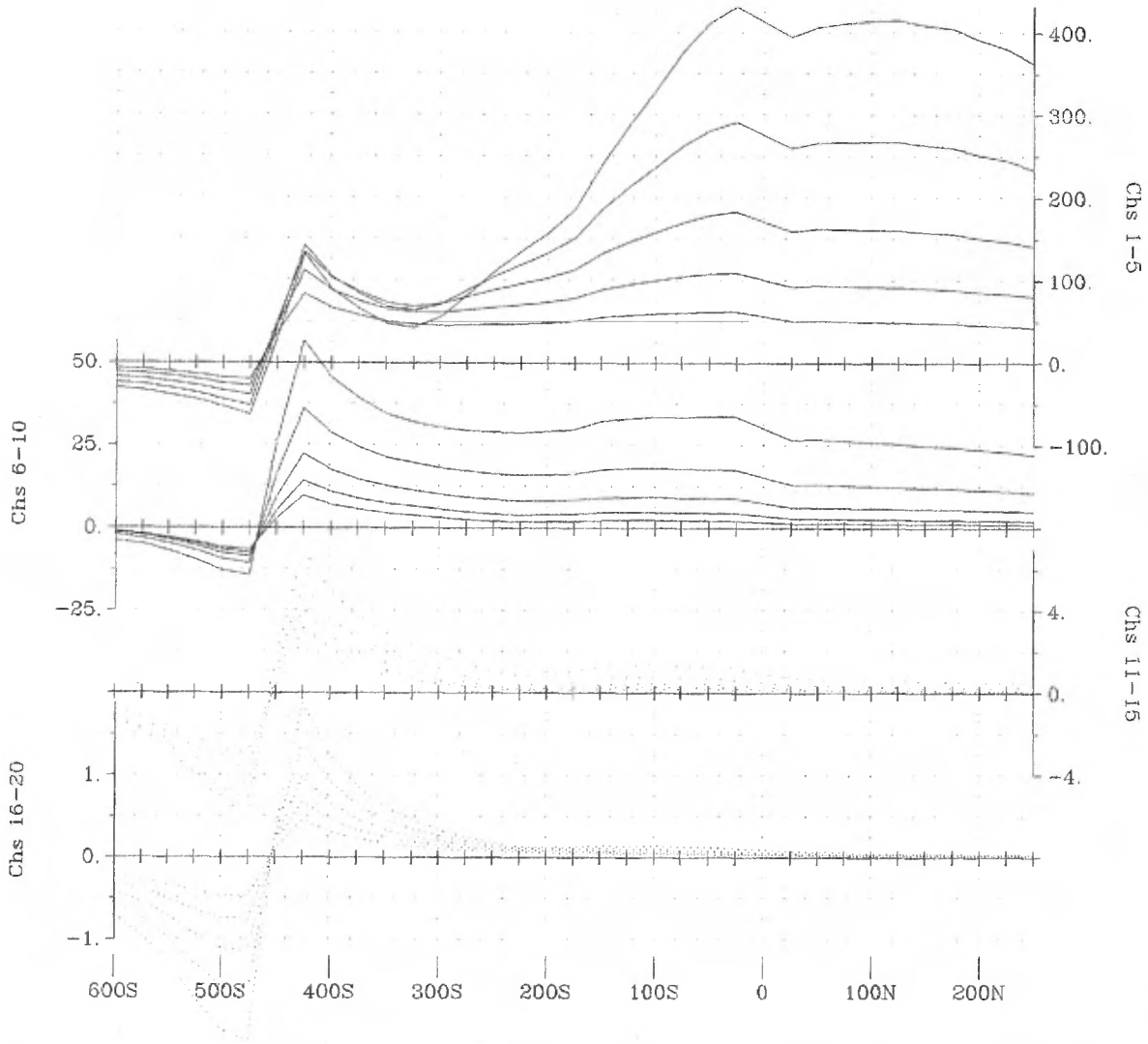
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L500e, 0n, 300n
Transmitter Current:	19.0 Amps
Transmitter Turn-Off Time:	262 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up
	Hx - positive south
	Hy - positive east
Survey Date:	23/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels)
	& Geonics 3D Coil (3x200m^2)
	Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-TF-100 E



Line 200 E – Z Component

CAR-03

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM CAR-03

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

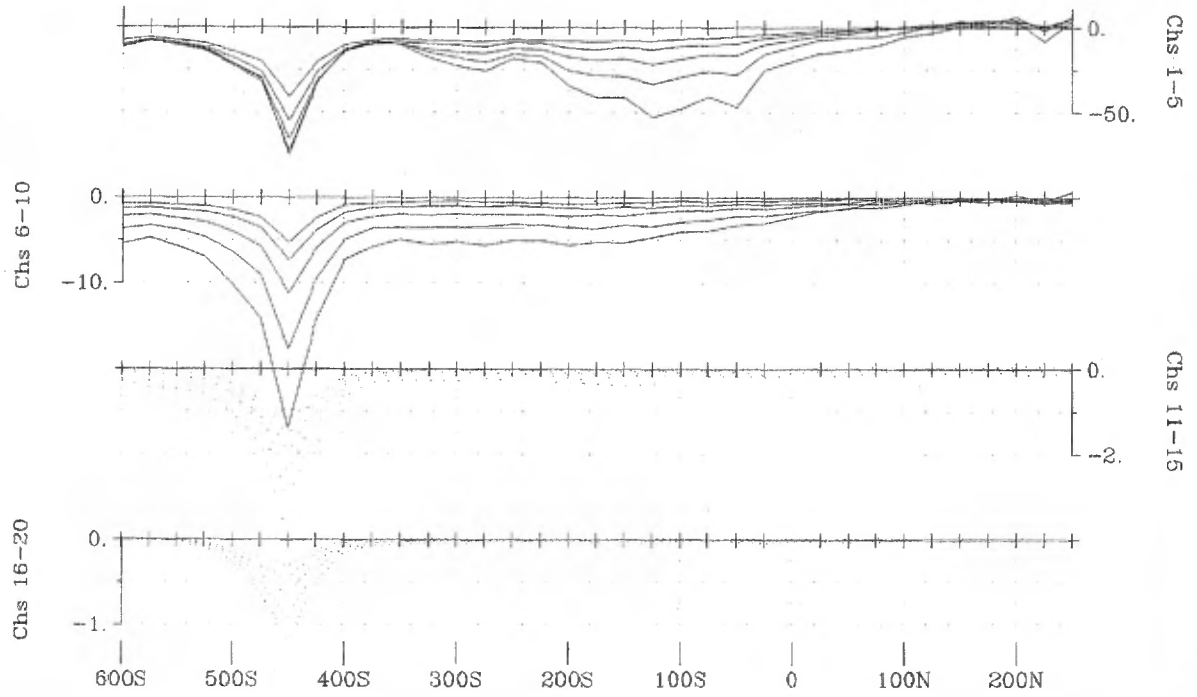
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L500e, 0n, 300n
Transmitter Current:	19.0 Amps
Transmitter Turn-Off Time:	262 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A•m^2
Receiver Coil Orientation:	Hz – positive up Hx – positive south Hy – positive east
Survey Date:	23/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-Z-200 E



Line 200 E – Y Component

CAR-03

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM CAR-03

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

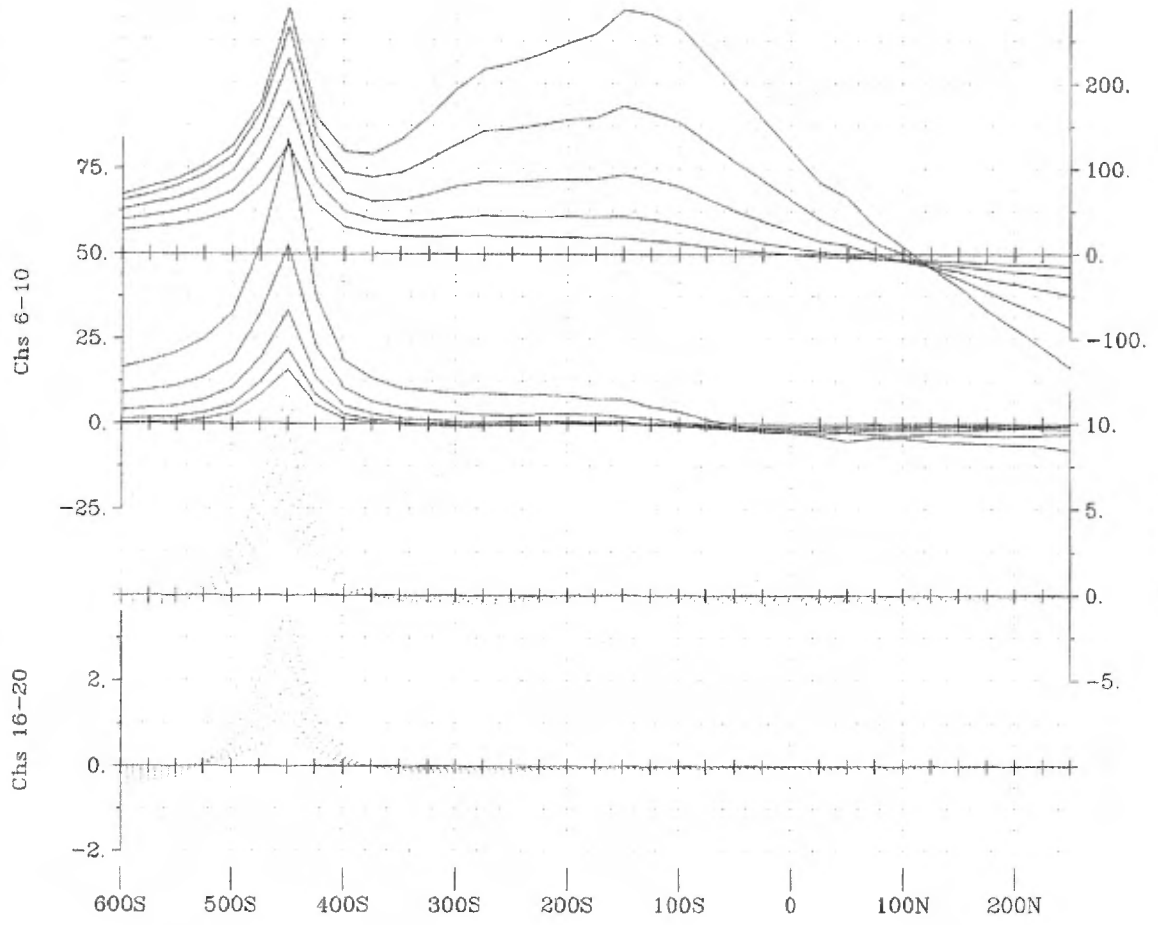
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L500s, 0n, 300n
Transmitter Current:	19.0 Amps
Transmitter Turn-Off Time:	262 us
Station Interval:	25 metres
Profile Units:	nanoVolt/Asm^2
Receiver Coil Orientation:	Hz - positive up
	Hx - positive south
	Hy - positive east
Survey Date:	23/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels)
	& Geonics 3D Coil (3x200m^2)
	Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-Y-200 E



Line 200 E – X Component

CAR-03

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM CAR-03

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

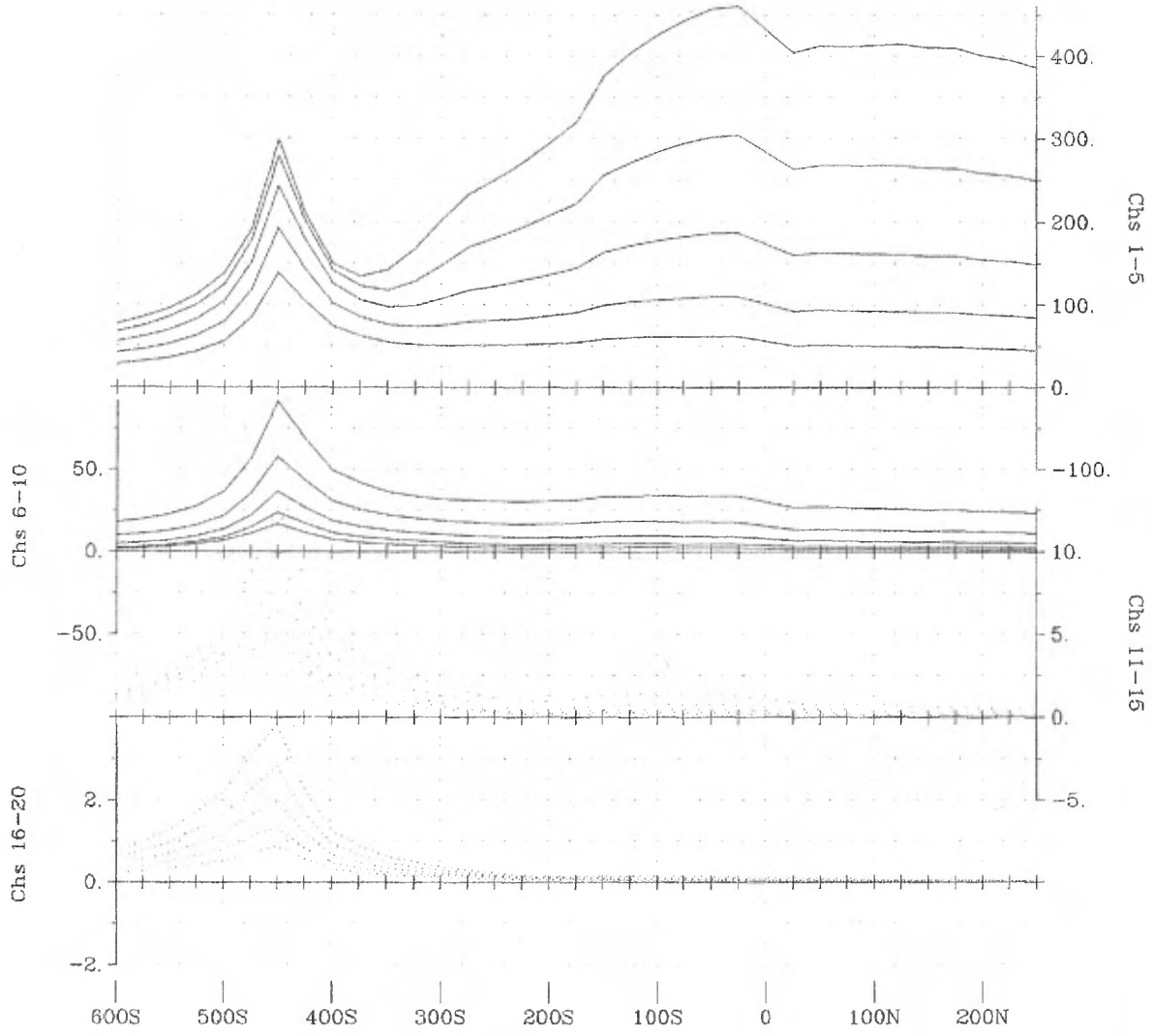
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L500e, 0n, 300n
Transmitter Current:	19.0 Amps
Transmitter Turn-Off Time:	262 us
Station Interval:	25 metres
Profile Units:	nanoVolt/Am^2
Receiver Coil Orientation:	Hz - positive up Hx - positive south Hy - positive east
Survey Date:	23/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-X-200 E



Line 200 E – Total Field

CAR-03

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM CAR-03

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

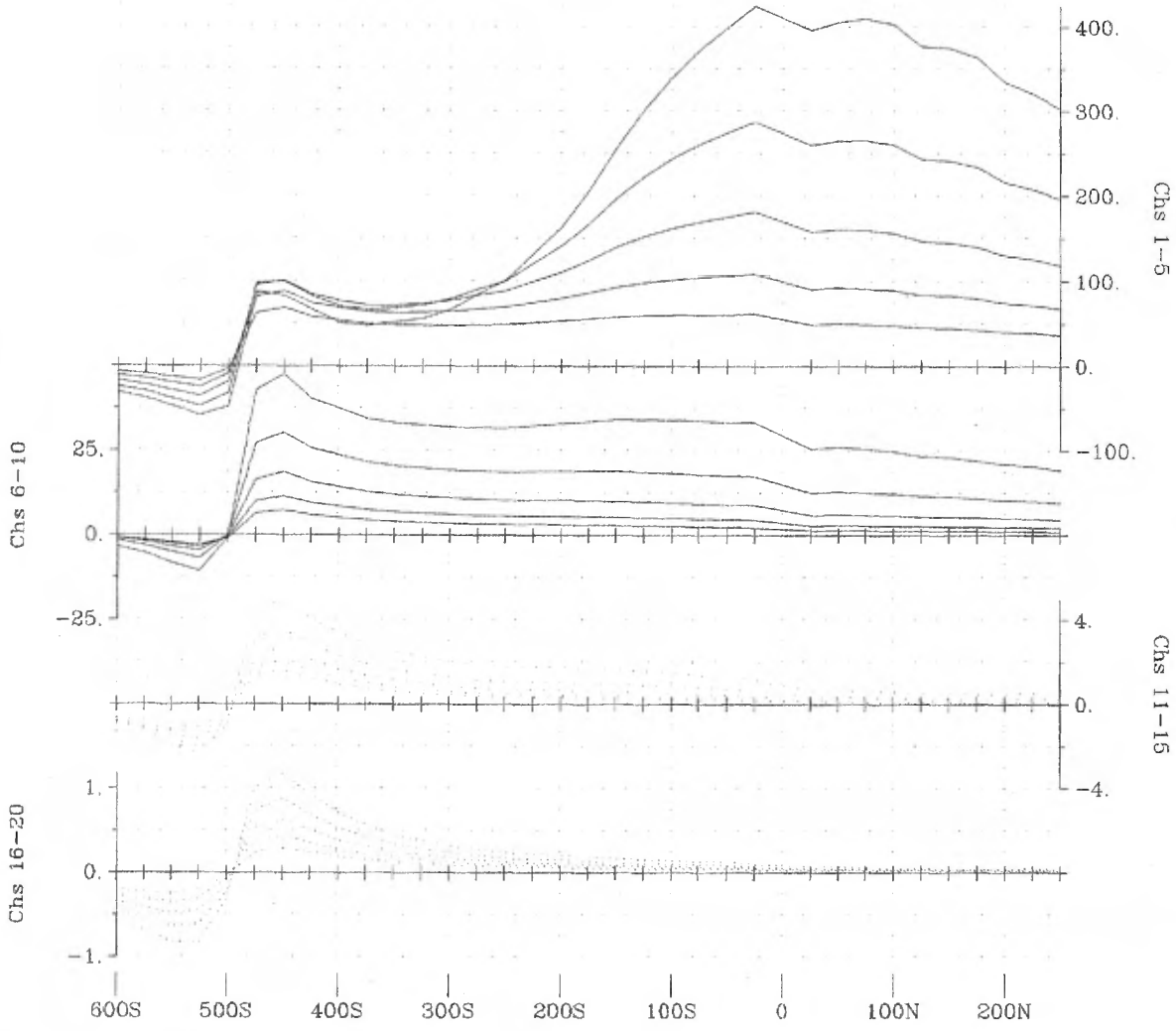
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L500e, 0n, 300n
Transmitter Current:	19.0 Amps
Transmitter Turn-Off Time:	262 us
Station Interval:	25 metres
Profile Units:	nanoVolt/Aem^2
Receiver Coil Orientation:	Hz - positive up Hx - positive south Hy - positive east
Survey Date:	23/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-TF-200 E



Line 300 E – Z Component

CAR-03

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM CAR-03

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

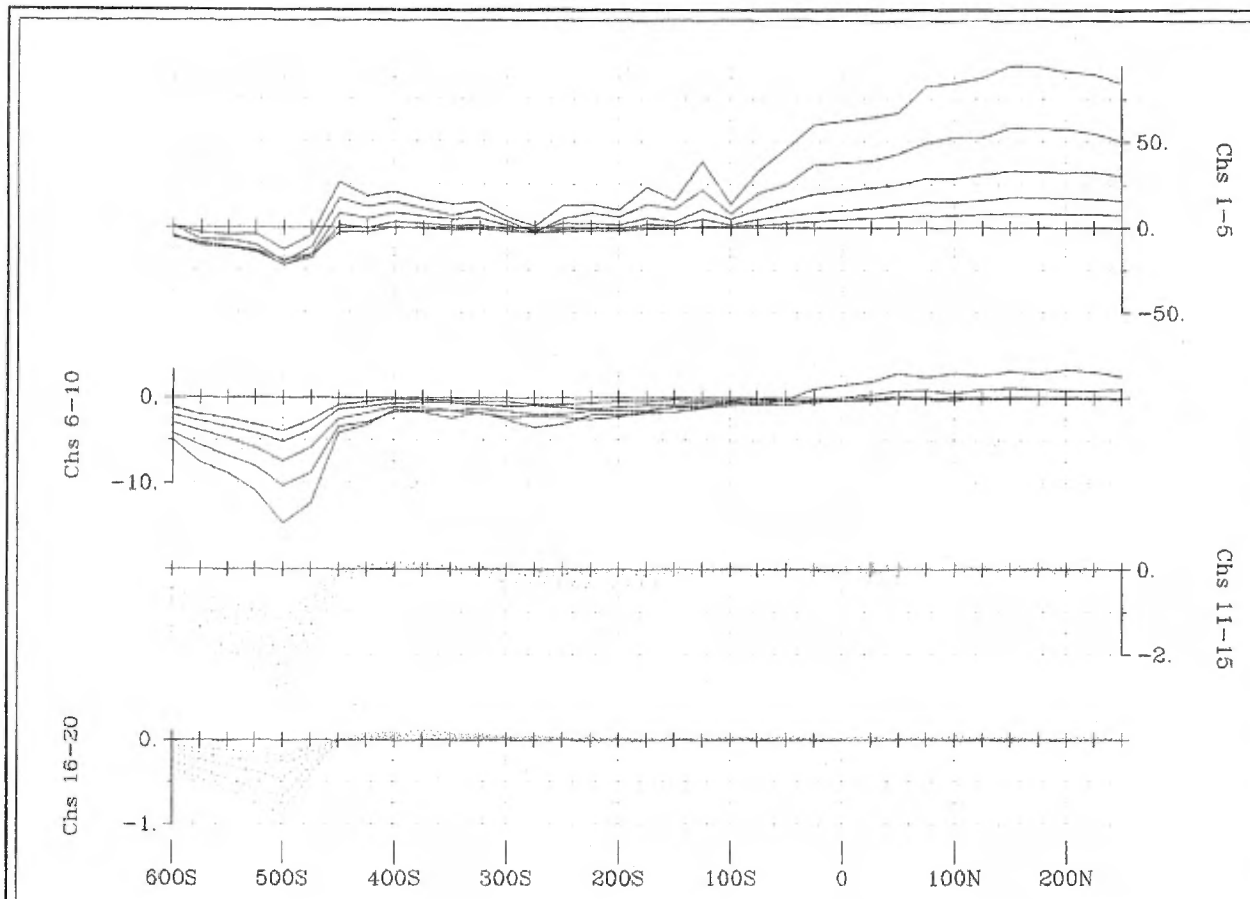
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L500e, 0n, 300n
Transmitter Current:	19.0 Amps
Transmitter Turn-Off Time:	262 us
Station Interval:	25 metres
Profile Units:	nanoVolt/Am^2
Receiver Coil Orientation:	Hz - positive up Hx - positive south Hy - positive east
Survey Date:	23/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-Z-300 E



Line 300 E – Y Component

CAR-03

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM CAR-03

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

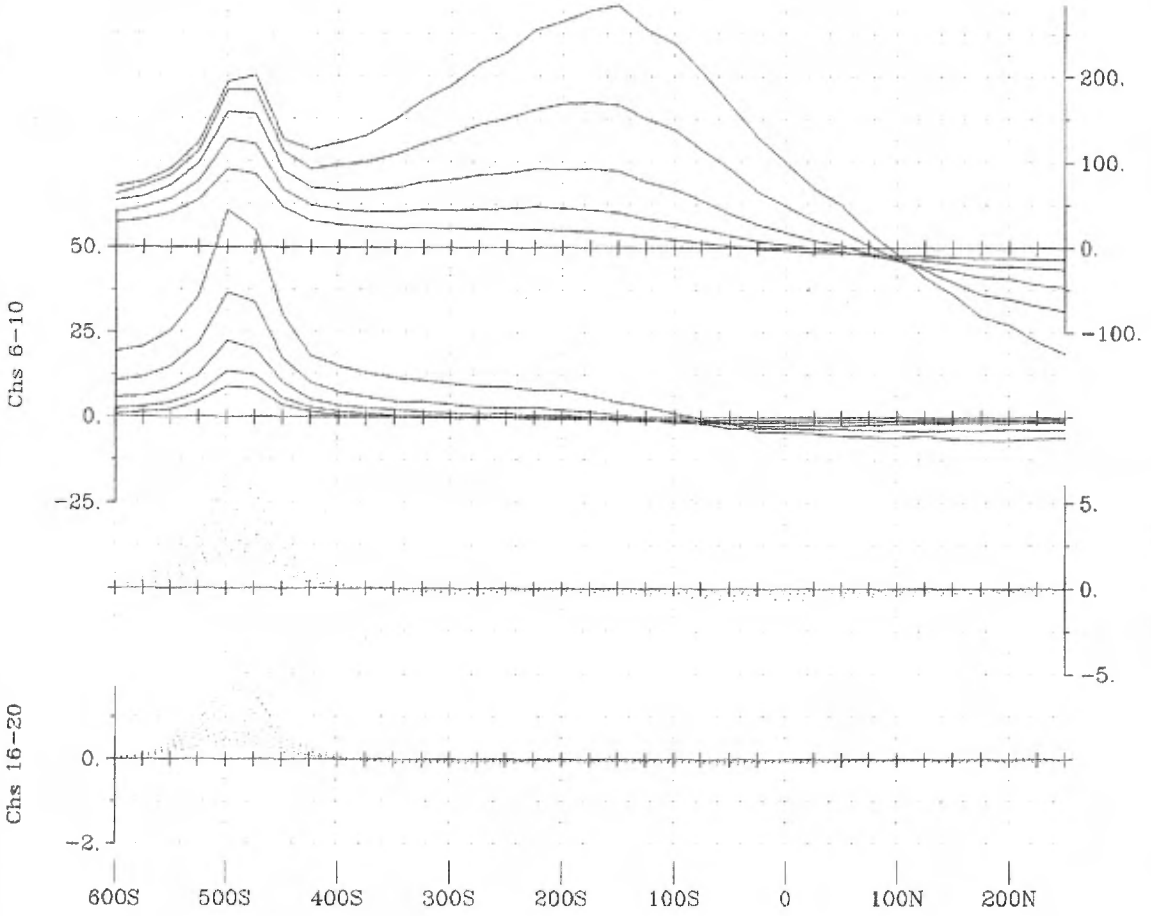
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L500e, 0n, 300n
Transmitter Current:	19.0 Amps
Transmitter Turn-Off Time:	262 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A•m^2
Receiver Coil Orientation:	Hz - positive up Hx - positive south Hy - positive east
Survey Date:	23/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-Y-300 E



Line 300 E – X Component

CAR-03

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM CAR-03

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

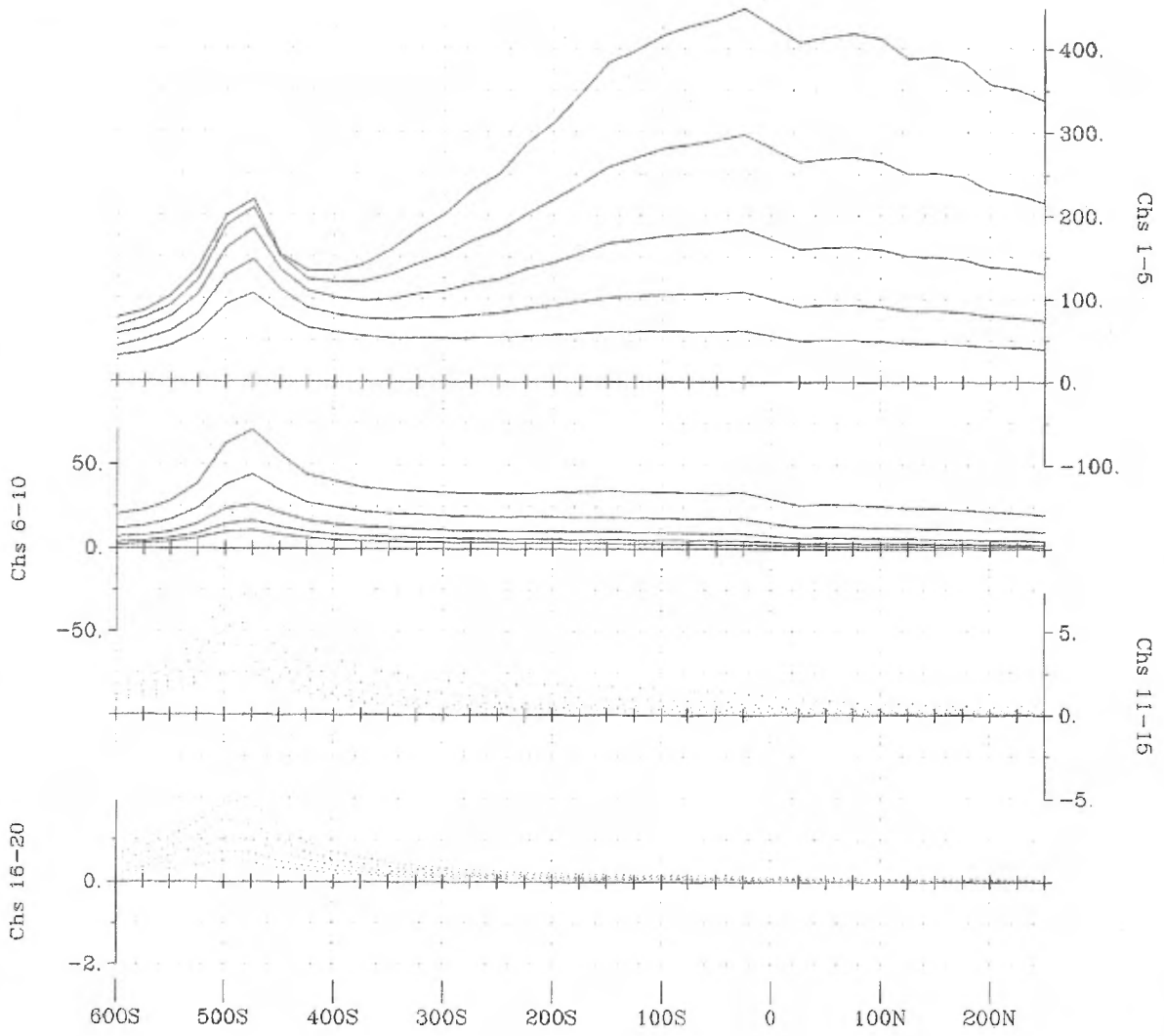
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L500s, 0n, 300n
Transmitter Current:	19.0 Amps
Transmitter Turn-Off Time:	262 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up Hx - positive south Hy - positive east
Survey Date:	23/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-X-300 E



Line 300 E – Total Field

CAR-03

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM CAR-03

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

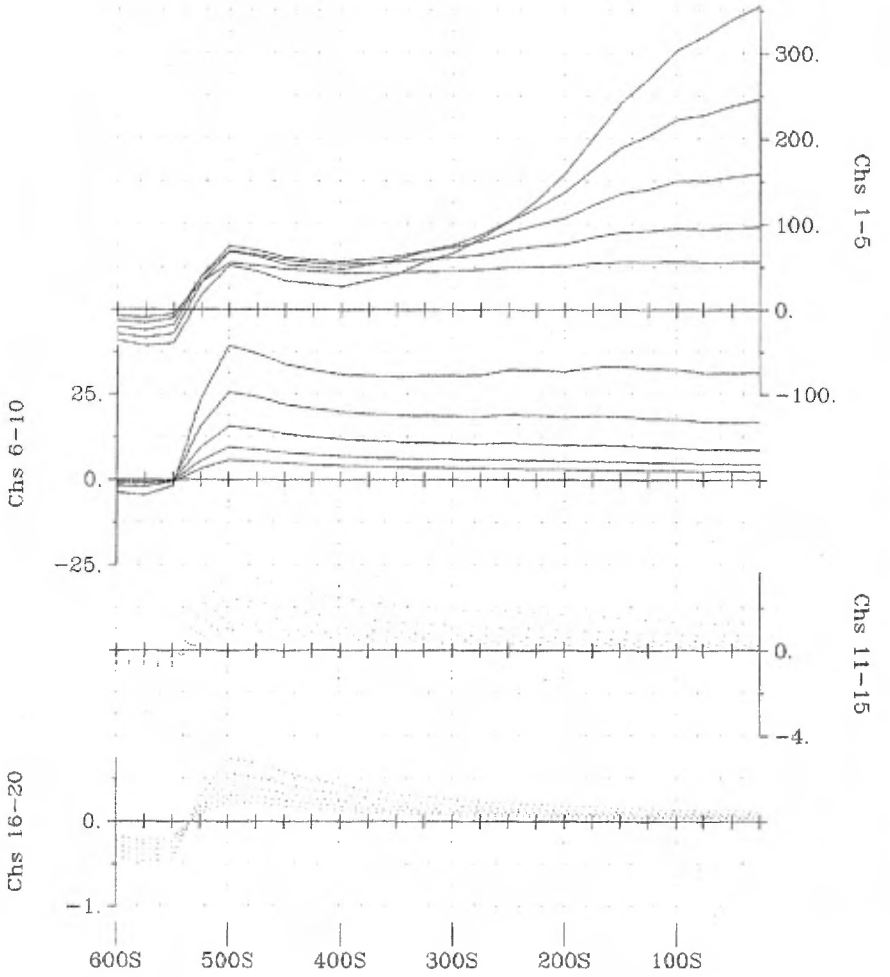
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L500e, 0n, 300n
Transmitter Current:	19.0 Amps
Transmitter Turn-Off Time:	262 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A•m^2
Receiver Coil Orientation:	Hz - positive up Hx - positive south Hy - positive east
Survey Date:	23/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-TF-300 E



Line 400 E - Z Component

CAR-03

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM CAR-03

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

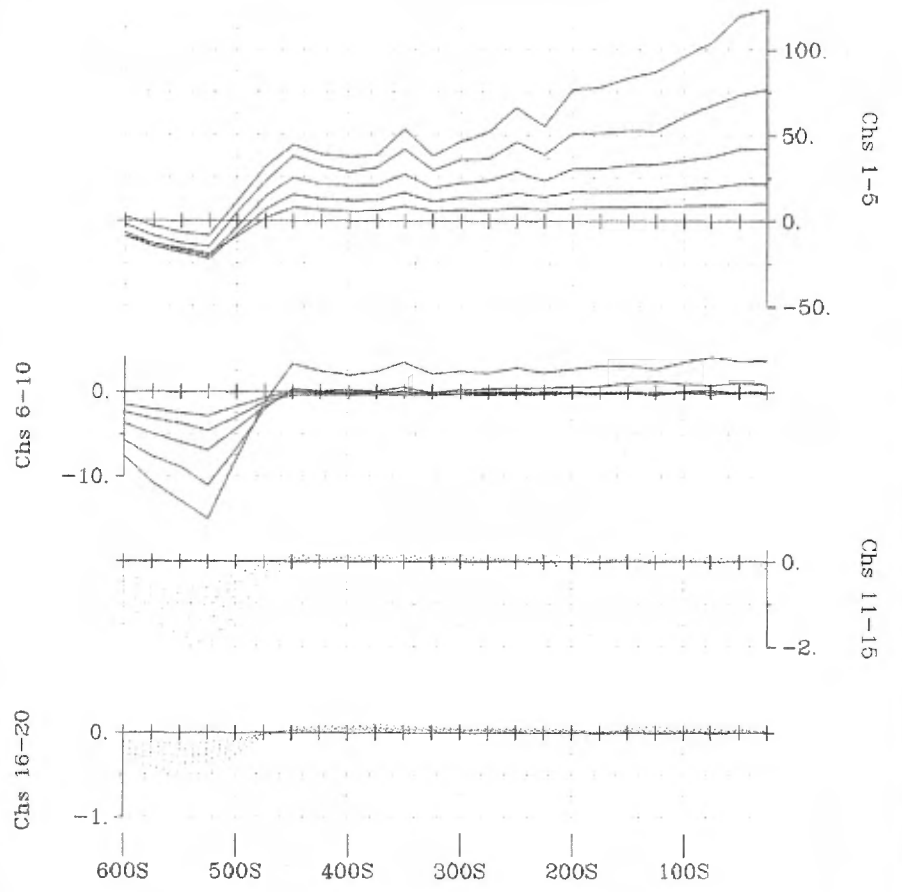
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L500e, 0n, 300n
Transmitter Current:	19.0 Amps
Transmitter Turn-Off Time:	262 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A•m^2
Receiver Coil Orientation:	Hz - positive up Hx - positive south Hy - positive east
Survey Date:	23/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-Z-400 E



Line 400 E - Y Component

CAR-03

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM CAR-03

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

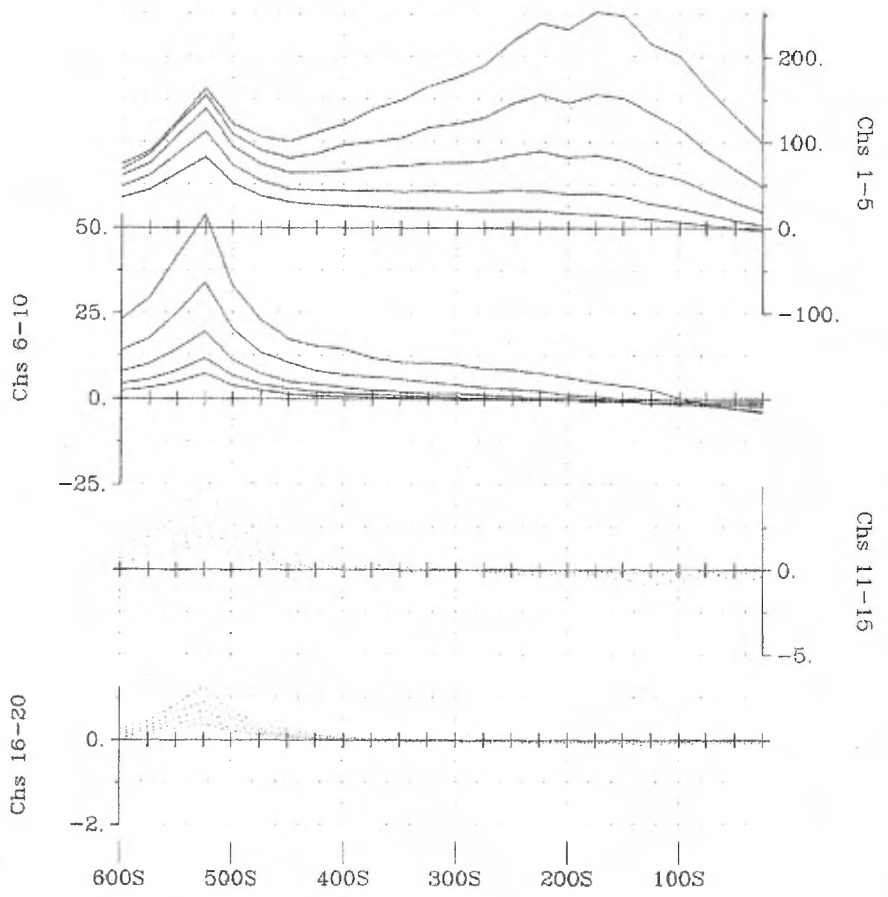
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L500e, 0n, 300n
Transmitter Current:	19.0 Amps
Transmitter Turn-Off Time:	262 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A•m^2
Receiver Coil Orientation:	Hz - positive up
	Hx - positive south
	Hy - positive east
Survey Date:	23/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels)
	& Geonics 3D Coil (3x200m^2)
	Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-Y-400 E



Line 400 E - X Component

CAR-03

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM CAR-03

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

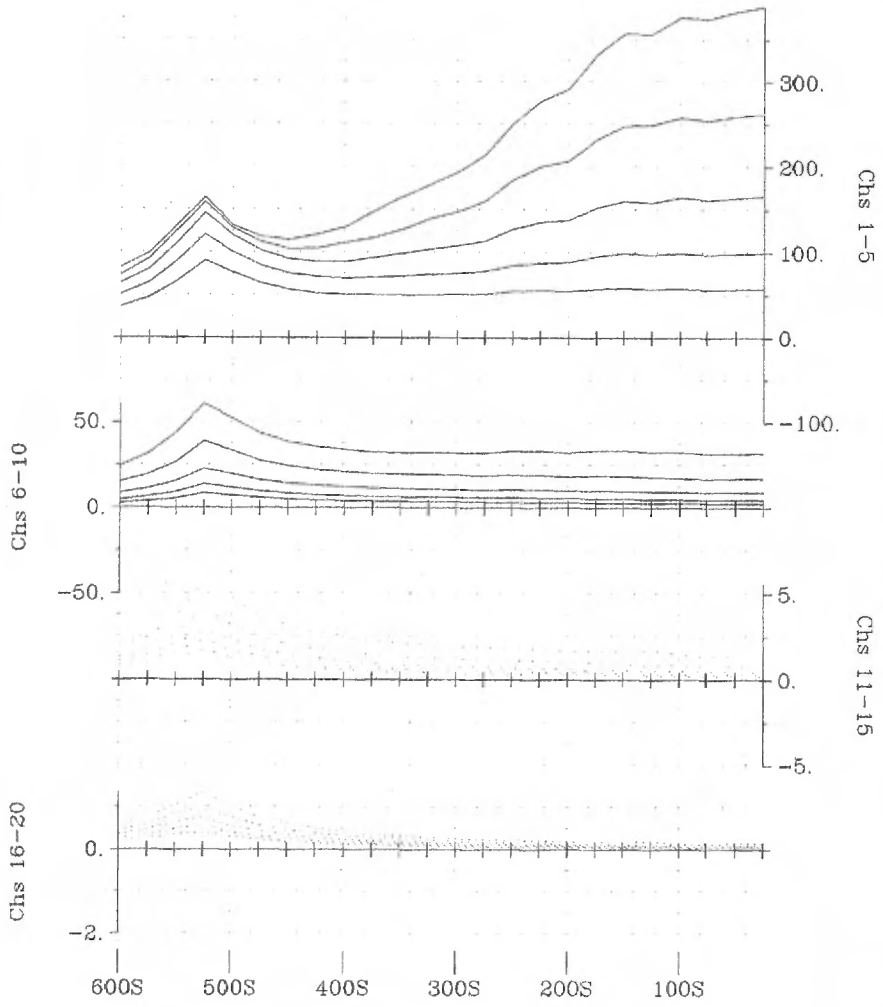
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L500e, 0n, 300n
Transmitter Current:	19.0 Amps
Transmitter Turn-Off Time:	262 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A•m^2
Receiver Coil Orientation:	Hz - positive up Hx - positive south Hy - positive east
Survey Date:	23/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-X-400 E



Line 400 E - Total Field

CAR-03

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM CAR-03

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

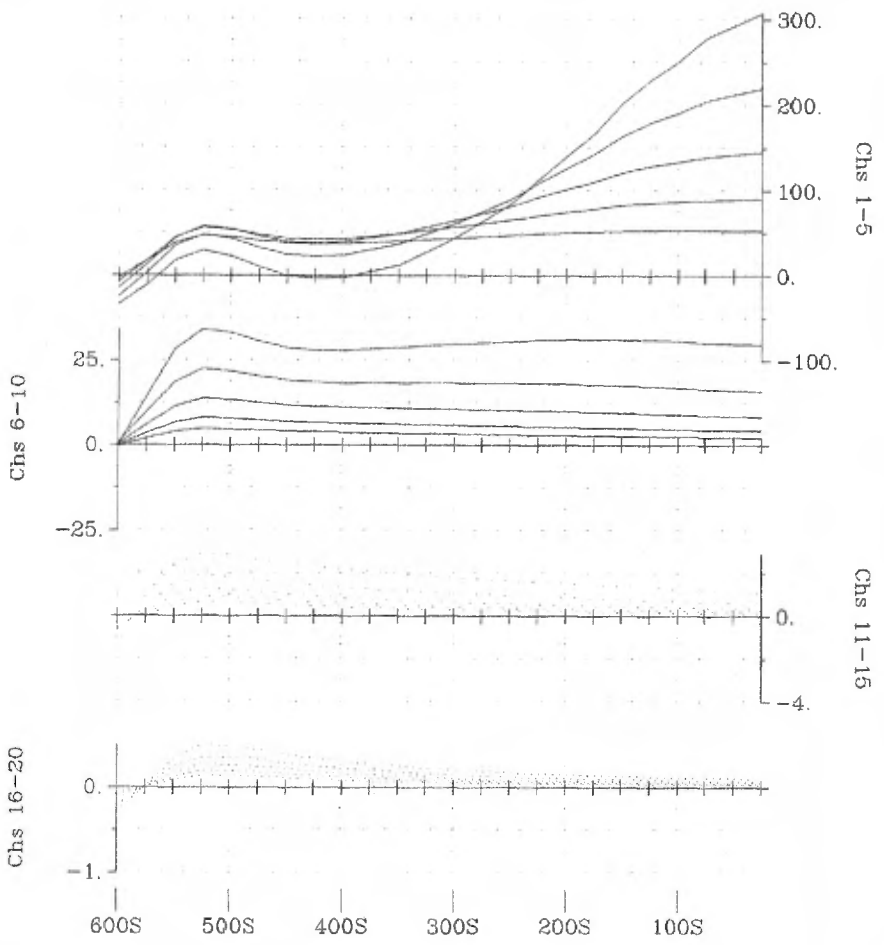
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L500e, On, 300n
Transmitter Current:	19.0 Amps
Transmitter Turn-Off Time:	262 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A•m-2
Receiver Coil Orientation:	Hz - positive up Hx - positive south Hy - positive east
Survey Date:	23/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-26B-4AXIS-TF-400 E



Line 500 E - Z Component

CAR-03

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM CAR-03

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

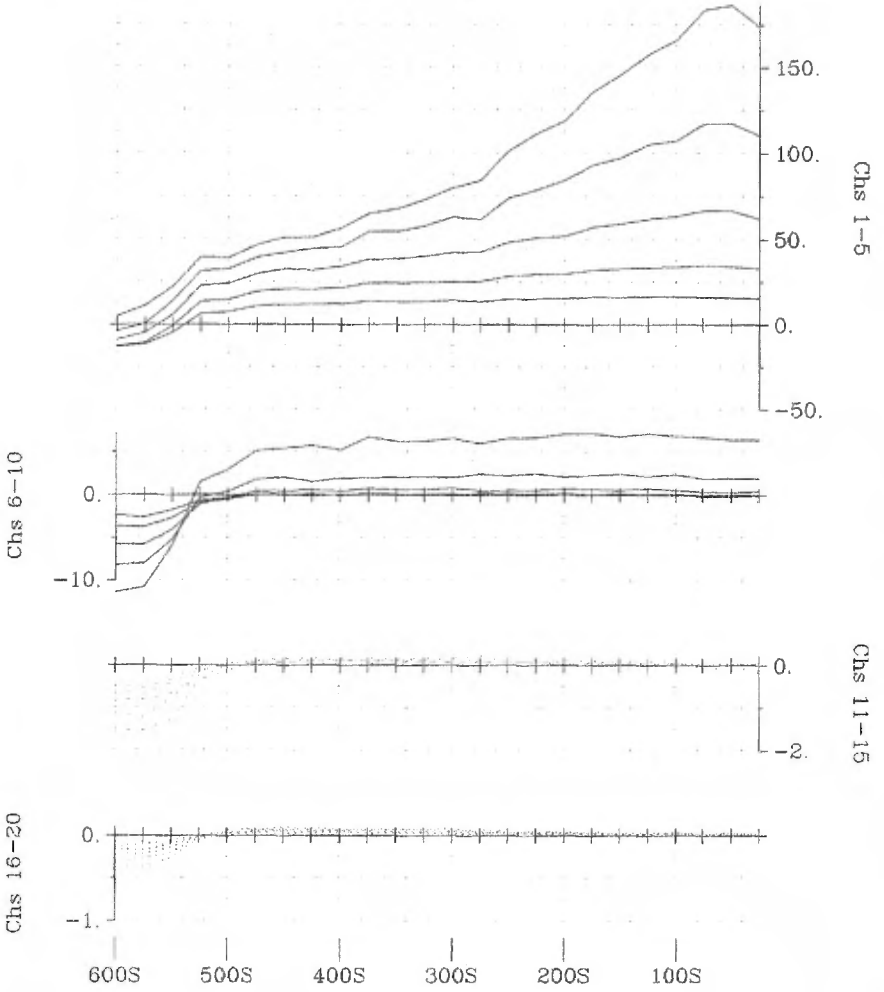
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L500e, 0n, 300n
Transmitter Current:	19.0 Amps
Transmitter Turn-Off Time:	262 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A•m^2
Receiver Coil Orientation:	Hz - positive up Hx - positive south Hy - positive east
Survey Date:	23/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-Z-500 E



Line 500 E - Y Component

CAR-03

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM CAR-03

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

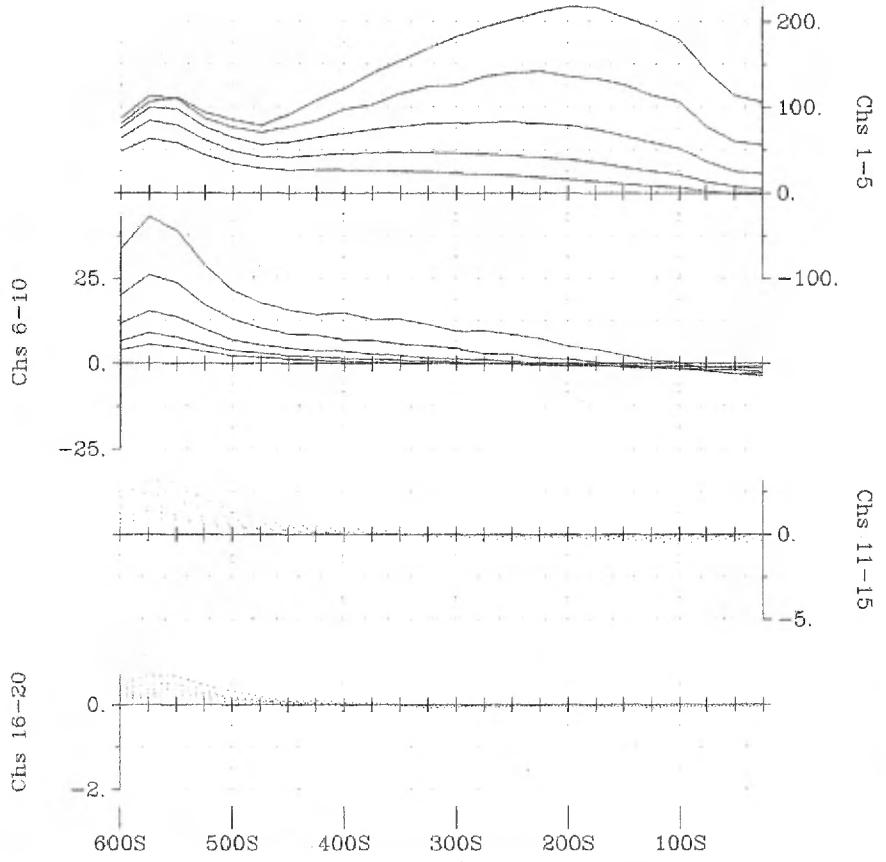
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L500e, 0n, 300n
Transmitter Current:	19.0 Amps
Transmitter Turn-Off Time:	262 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up
	Hx - positive south
	Hy - positive east
Survey Date:	23/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels)
	& Geonics 3D Coil (3x200m^2)
	Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-Y-500 E



Line 500 E - X Component

CAR-03

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM CAR-03

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

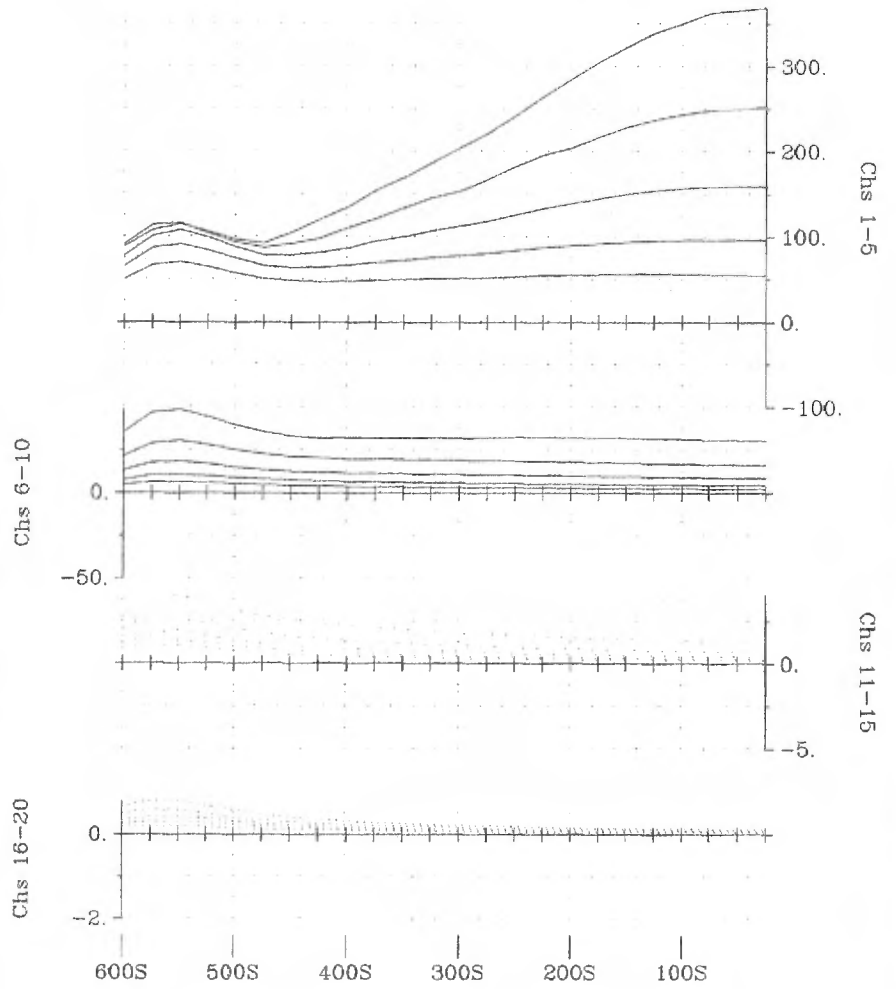
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L500e, 0n, 300n
Transmitter Current:	19.0 Amps
Transmitter Turn-Off Time:	262 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up Hx - positive south Hy - positive east
Survey Date:	23/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-X-500 E



Line 500 E – Total Field

CAR-03

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM CAR-03

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L500e, 0n, 300n
Transmitter Current:	19.0 Amps
Transmitter Turn-Off Time:	262 us
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up Hx - positive south Hy - positive east
Survey Date:	23/01/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-TF-500 E

NORANDA INC.

QG 268 MEGATEM FOLLOW UP PROFILES

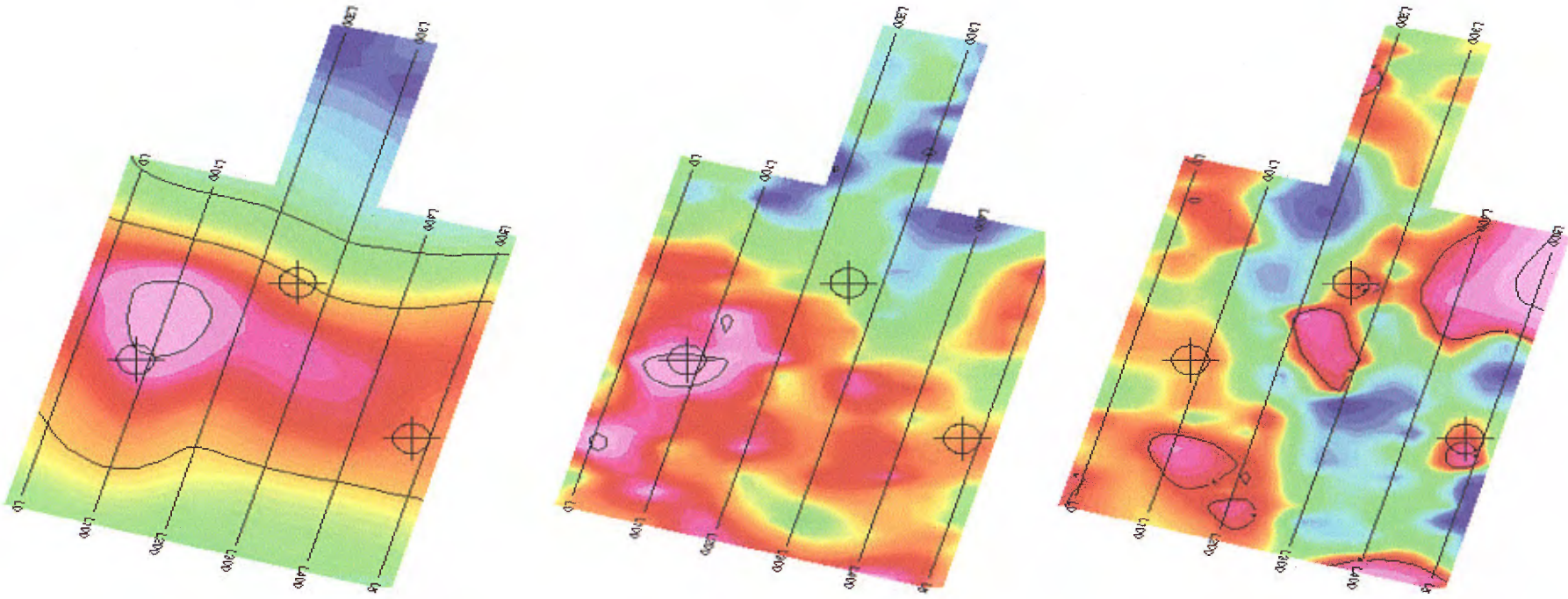
WEST SELBAIE AREA

CAR 11

Quantec

GEOPHYSICS WORLDWIDE

CAR-11 Levé électromagnétique dans le domaine du temps à grande boucle ('TDEM')



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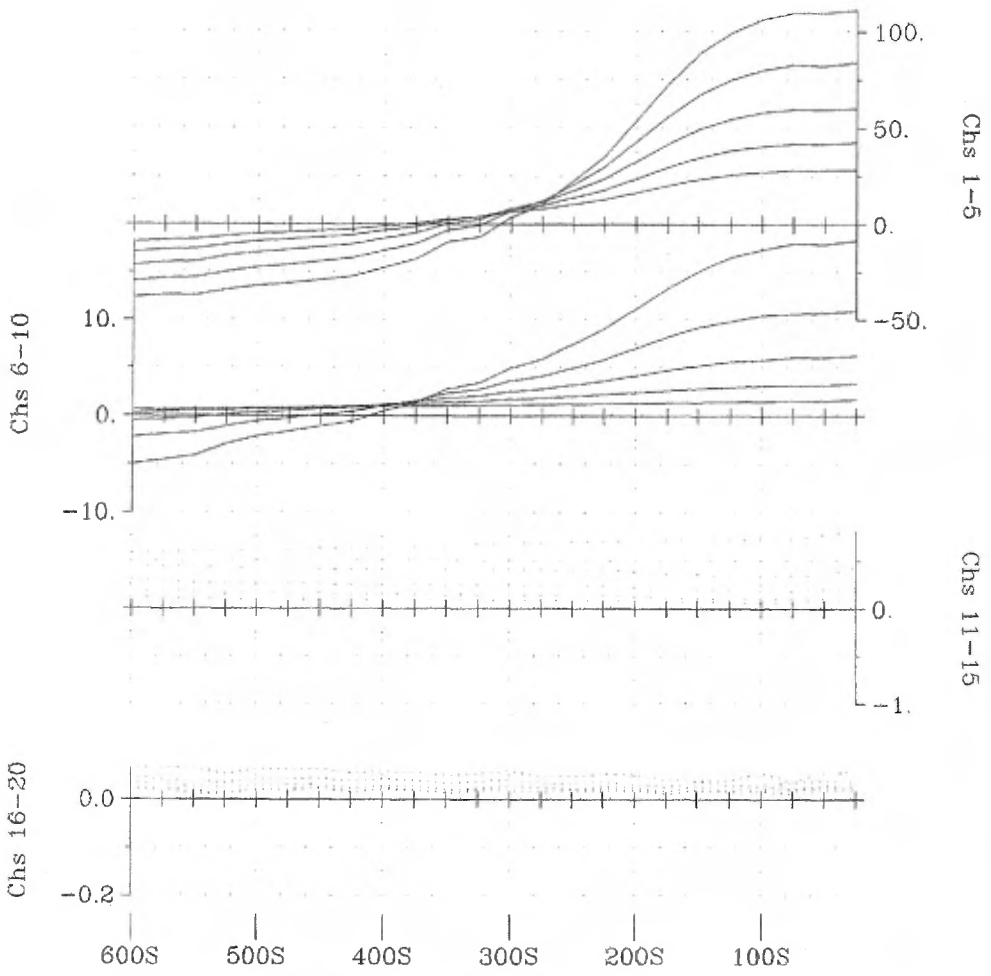


Line 0 E – Z Component

CAR-11

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

CAR-11

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

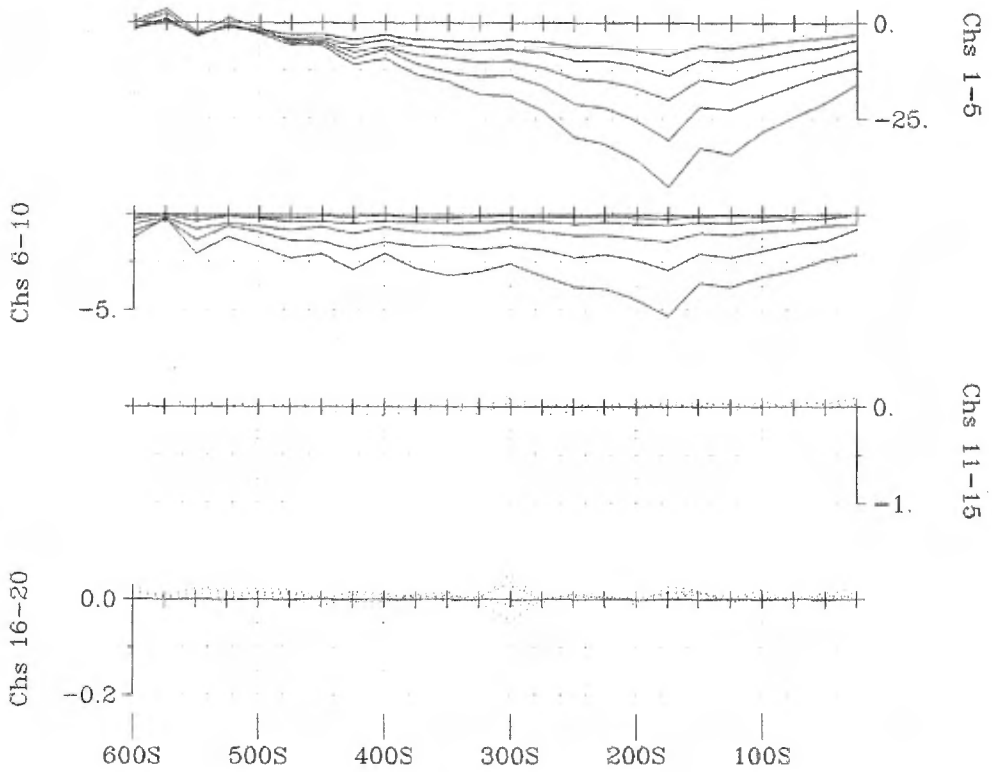
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L 500e, 0n, 300n
Transmitter Current:	19.8 Amps
Transmitter Turn-Off Time:	292 us
Station Interval:	25 meters
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up Hx - positive south Hy - positive east
Survey Date:	1/21/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-Z-0 E



Line 0 E - Y Component

CAR-11

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

CAR-11

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

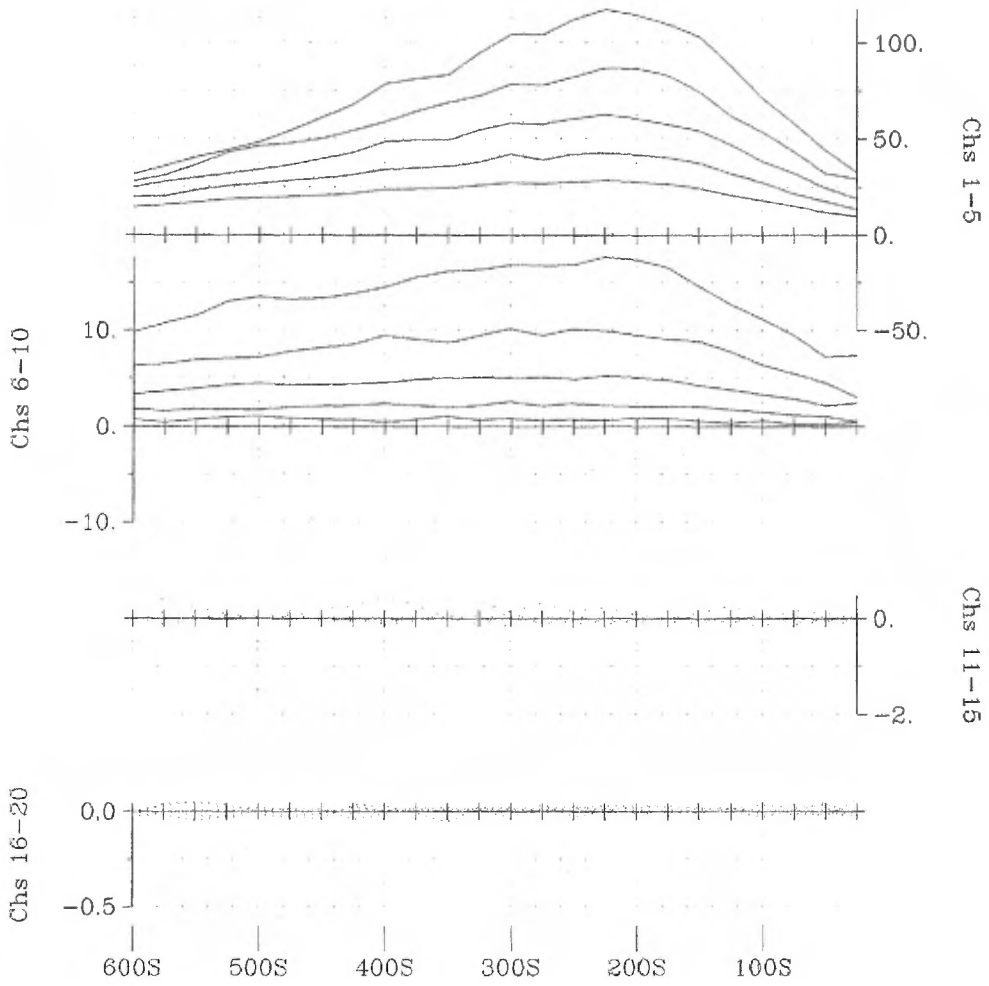
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L 500e, 0n, 300n
Transmitter Current:	19.8 Amps
Transmitter Turn-Off Time:	292 us
Station Interval:	25 meters
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up Hx - positive south Hy - positive east
Survey Date:	1/21/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-Y-0 E



Line 0 E – X Component

CAR-11

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

CAR-11

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

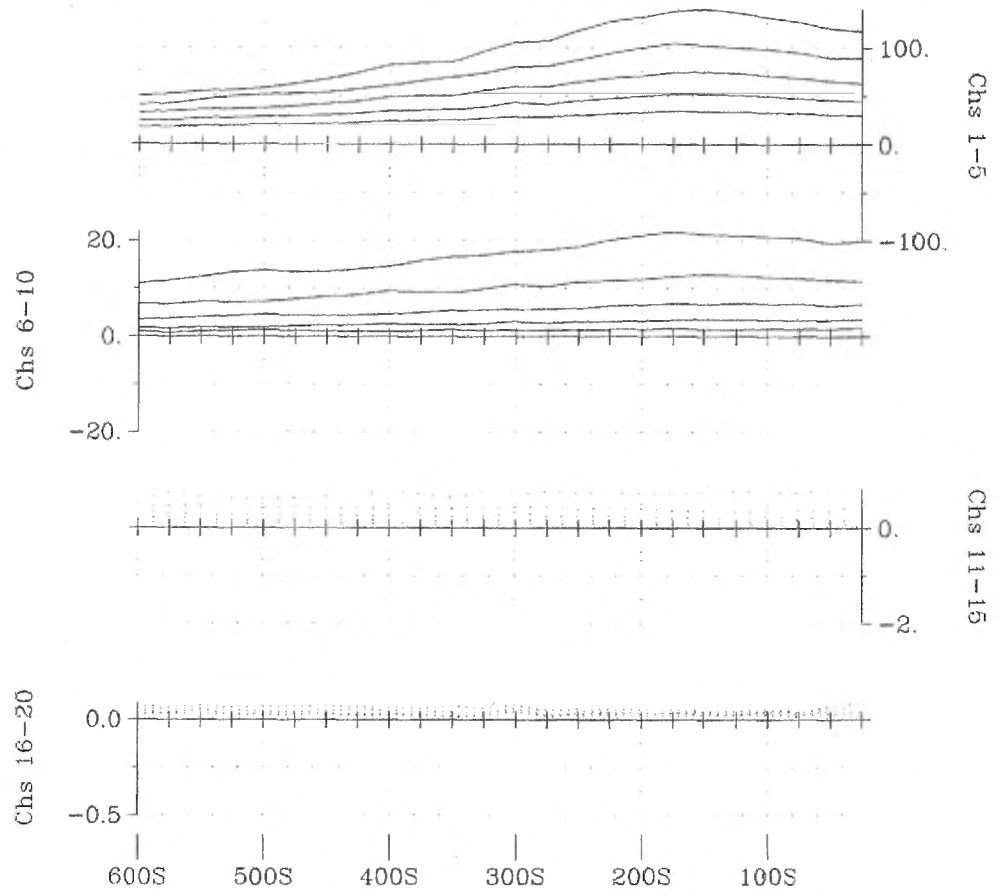
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L 500e, 0n, 300n
Transmitter Current:	19.8 Amps
Transmitter Turn-Off Time:	292 us
Station Interval:	25 meters
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up Hx - positive south Hy - positive east
Survey Date:	1/21/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-X-0 E



Line 0 E - Total Field

CAR-11

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

CAR-11

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

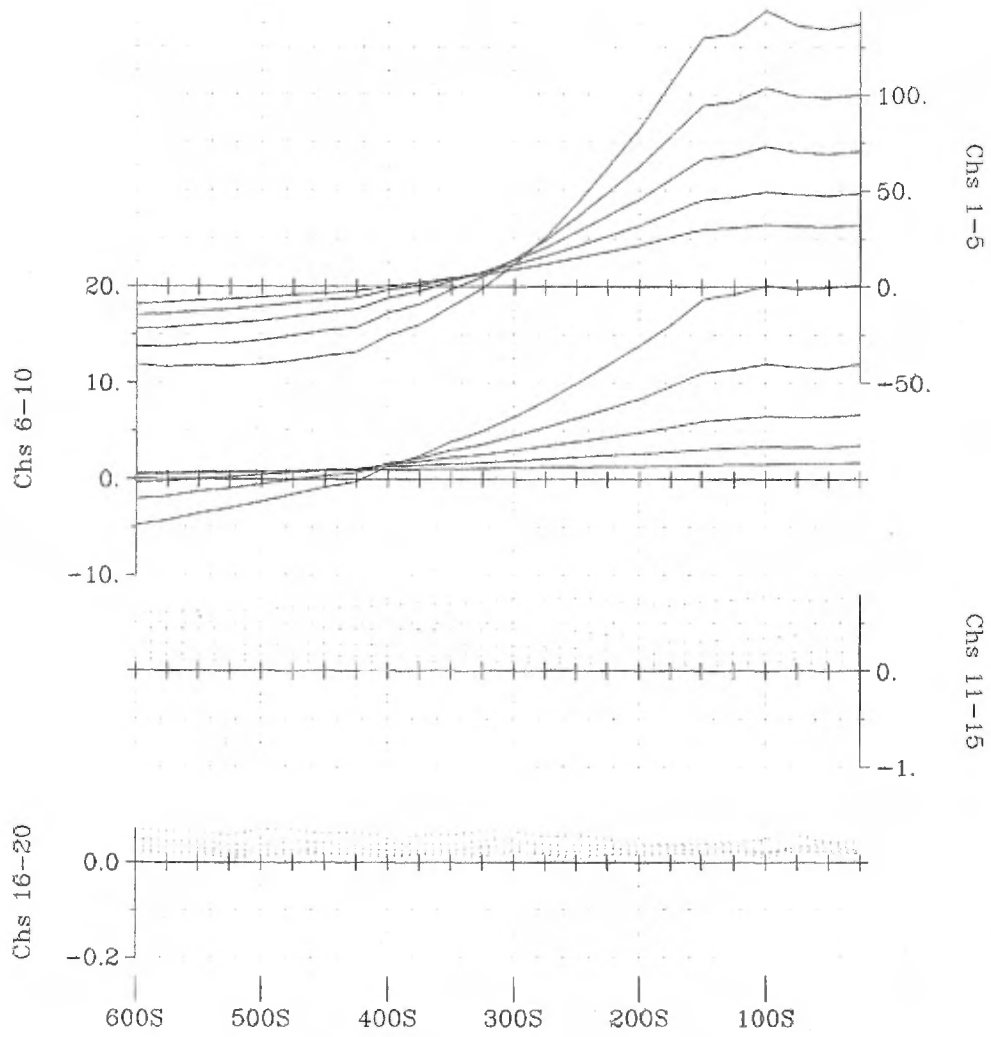
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L 500e, 0n, 300n
Transmitter Current:	19.8 Amps
Transmitter Turn-Off Time:	292 us
Station Interval:	25 meters
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up Hx - positive south Hy - positive east
Survey Date:	1/21/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-TF-0 E



Line 100 E - Z Component

CAR-11

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

CAR-11

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

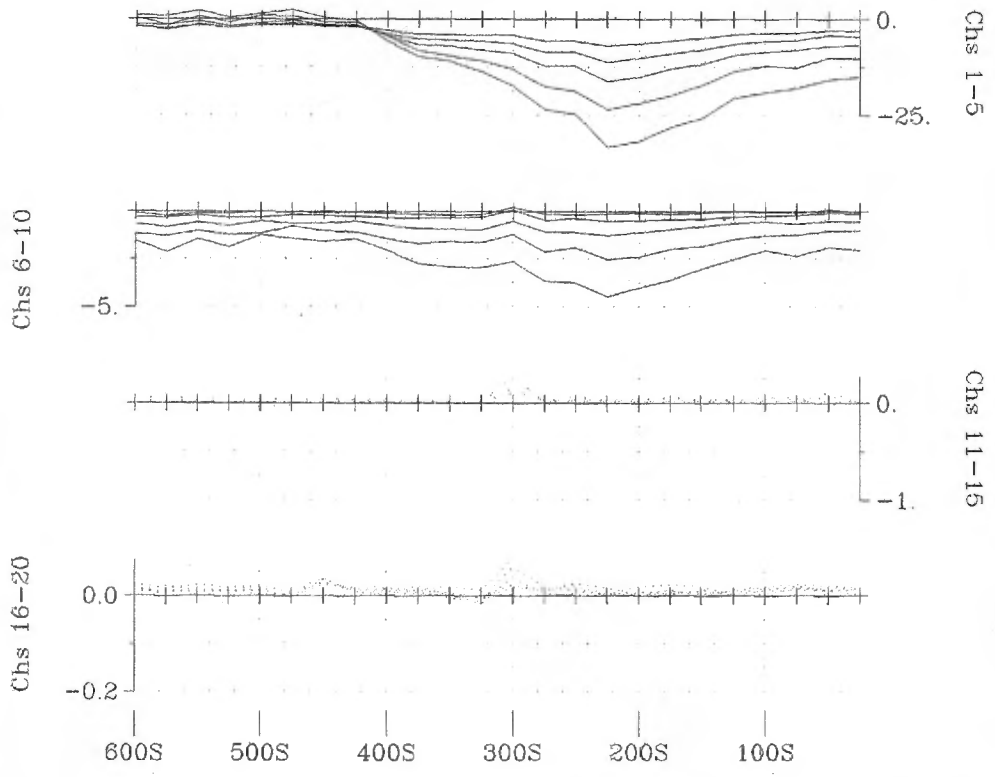
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L 500e, 0n, 300n
Transmitter Current:	19.8 Amps
Transmitter Turn-Off Time:	292 us
Station Interval:	25 meters
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up Hx - positive south Hy - positive east
Survey Date:	1/21/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-Z-100 E



Line 100 E – Y Component

CAR-11

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

CAR-11

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

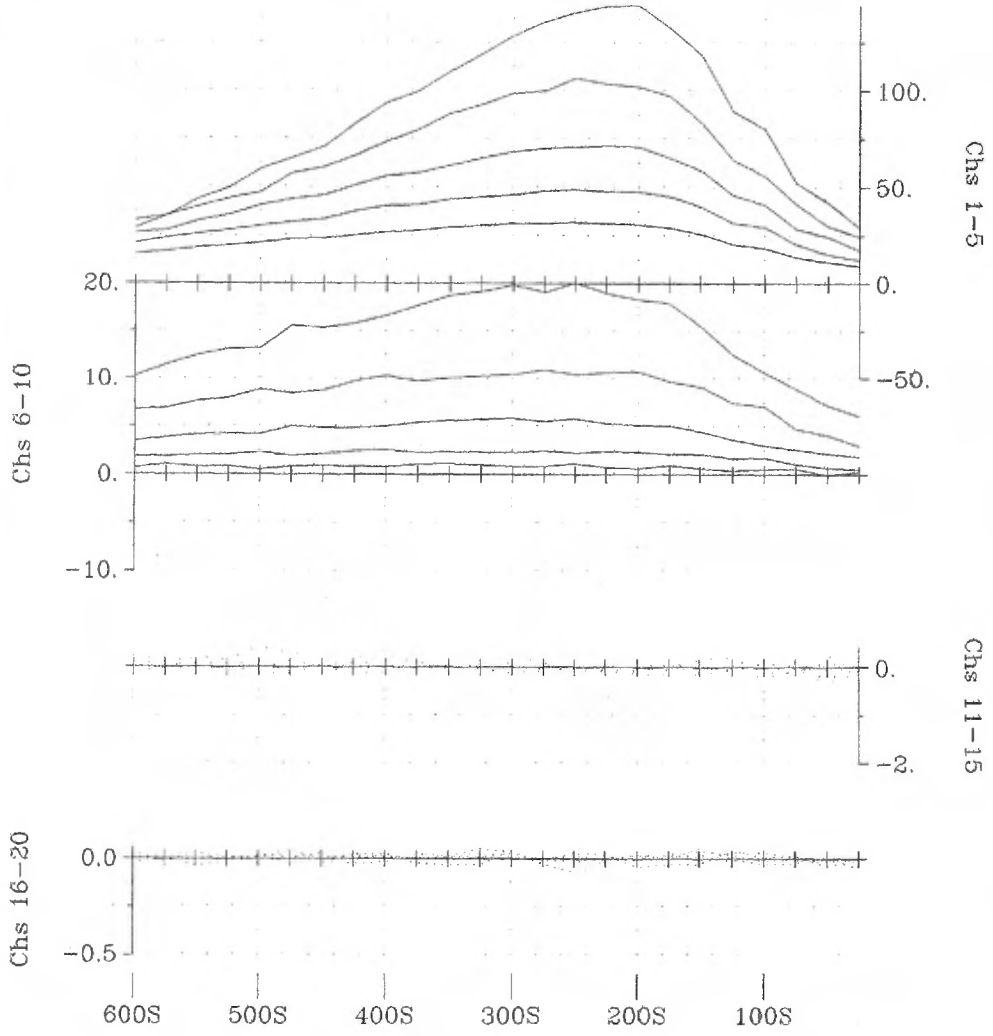
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L 500e, 0n, 300n
Transmitter Current:	19.8 Amps
Transmitter Turn-Off Time:	292 us
Station Interval:	25 meters
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up Hx - positive south Hy - positive east
Survey Date:	1/21/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-Y-100 E



Line 100 E – X Component

CAR-11

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

CAR-11

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

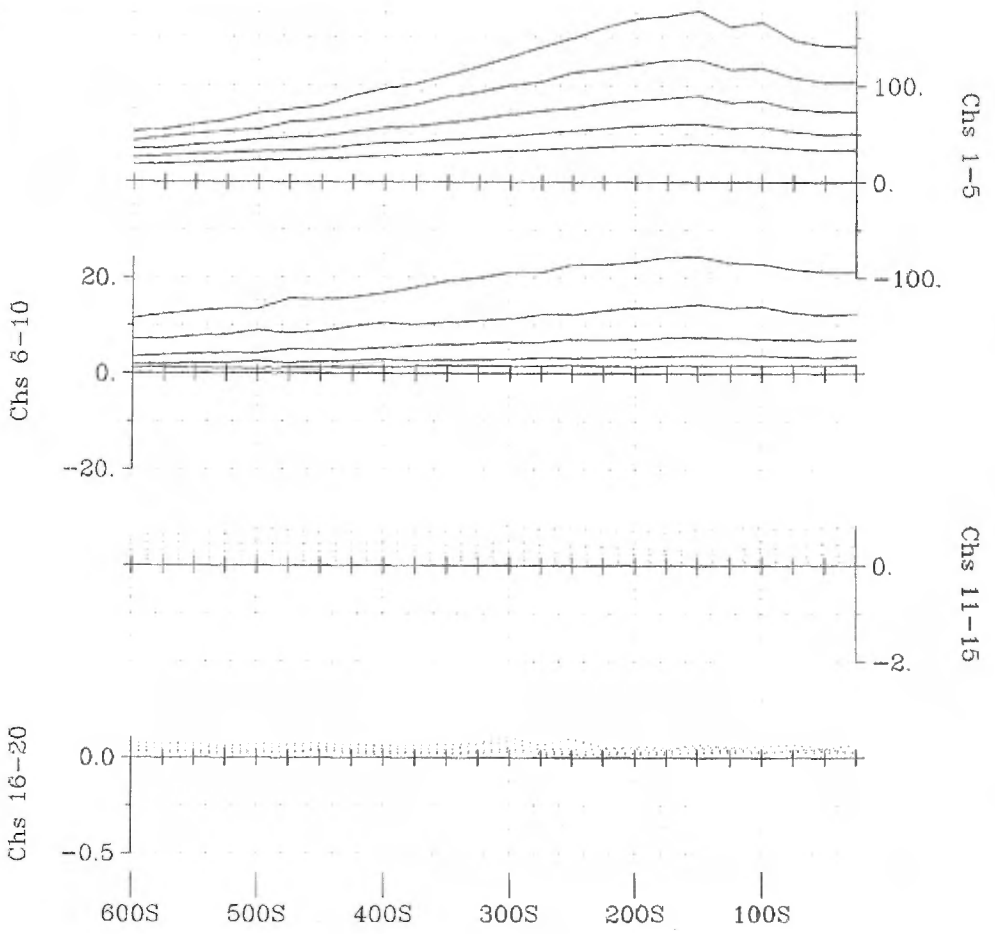
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L 500e, 0n, 300n
Transmitter Current:	19.8 Amps
Transmitter Turn-Off Time:	292 us
Station Interval:	25 meters
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up Hx - positive south Hy - positive east
Survey Date:	1/21/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-X-100 E



Line 100 E – Total Field

CAR-11

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

CAR-11

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

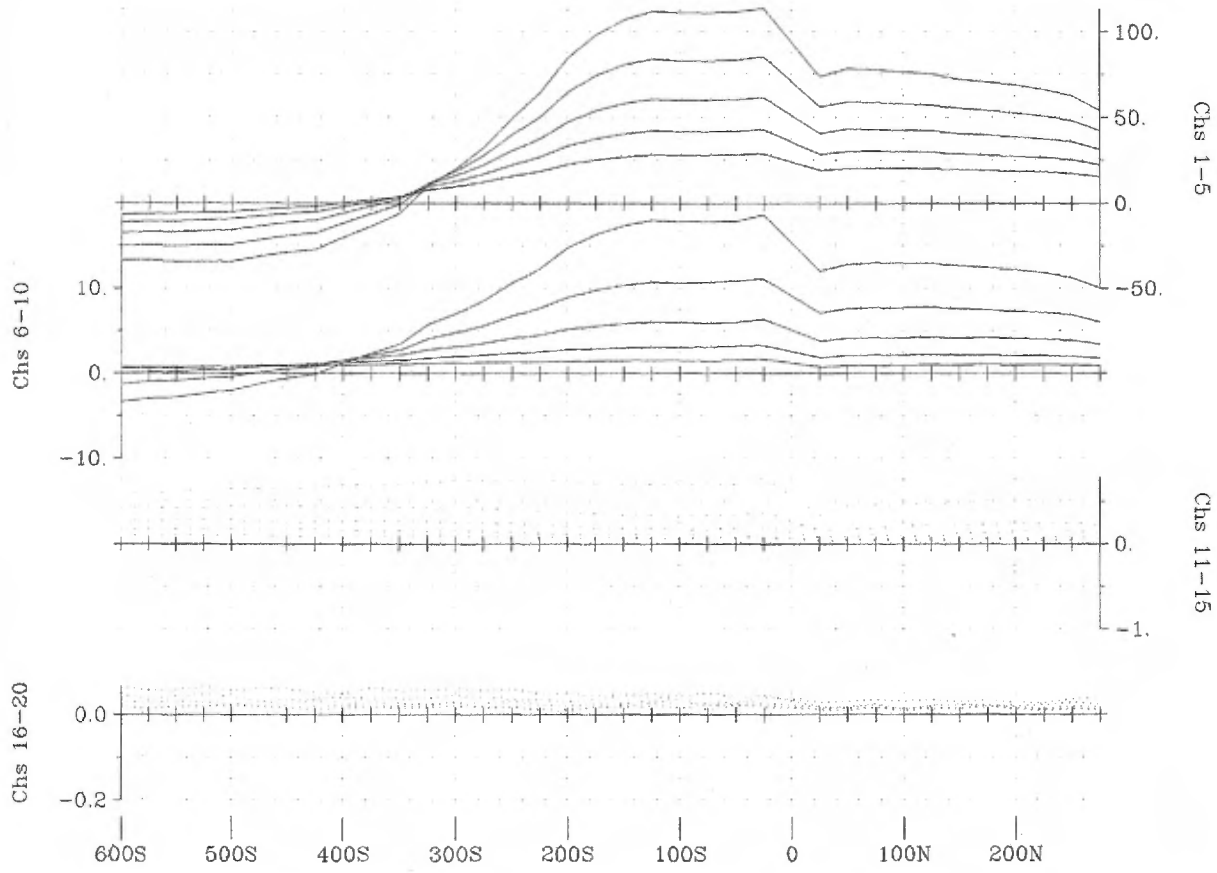
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L 500e, 0n, 300n
Transmitter Current:	19.8 Amps
Transmitter Turn-Off Time:	292 us
Station Interval:	25 meters
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up Hx - positive south Hy - positive east
Survey Date:	1/21/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-TF-100 E



Line 200 E - Z Component

CAR-11

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

CAR-11

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

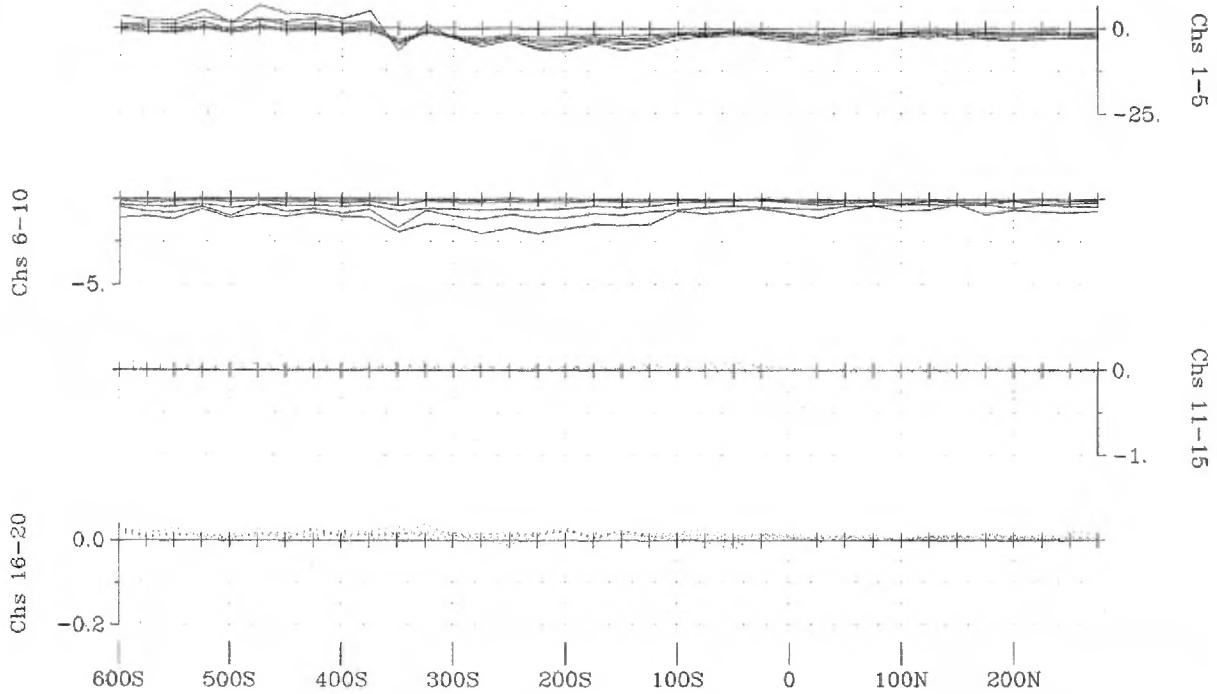
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L 500e, 0n, 300n
Transmitter Current:	19.8 Amps
Transmitter Turn-Off Time:	292 us
Station Interval:	25 meters
Profile Units:	nanoVolt/A•m^2
Receiver Coil Orientation:	Hz - positive up Hx - positive south Hy - positive east
Survey Date:	1/20/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-Z-200 E



Line 200 E – Y Component

CAR-11

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

CAR-11

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

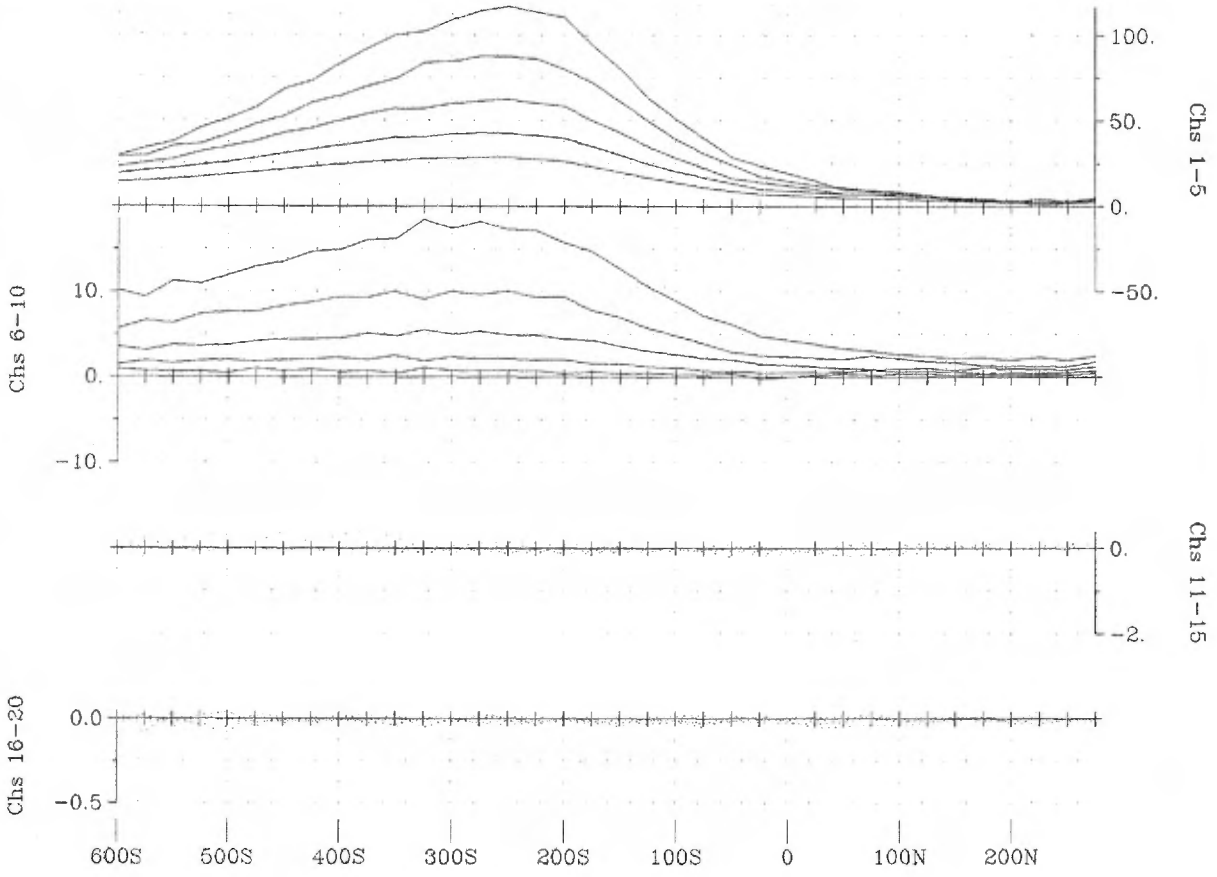
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L 500e, 0n, 300n
Transmitter Current:	19.8 Amps
Transmitter Turn-Off Time:	292 us
Station Interval:	25 meters
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up Hx - positive south Hy - positive east
Survey Date:	1/20/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.8 KW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-Y-200 E



Line 200 E – X Component

CAR-11

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

CAR-11

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

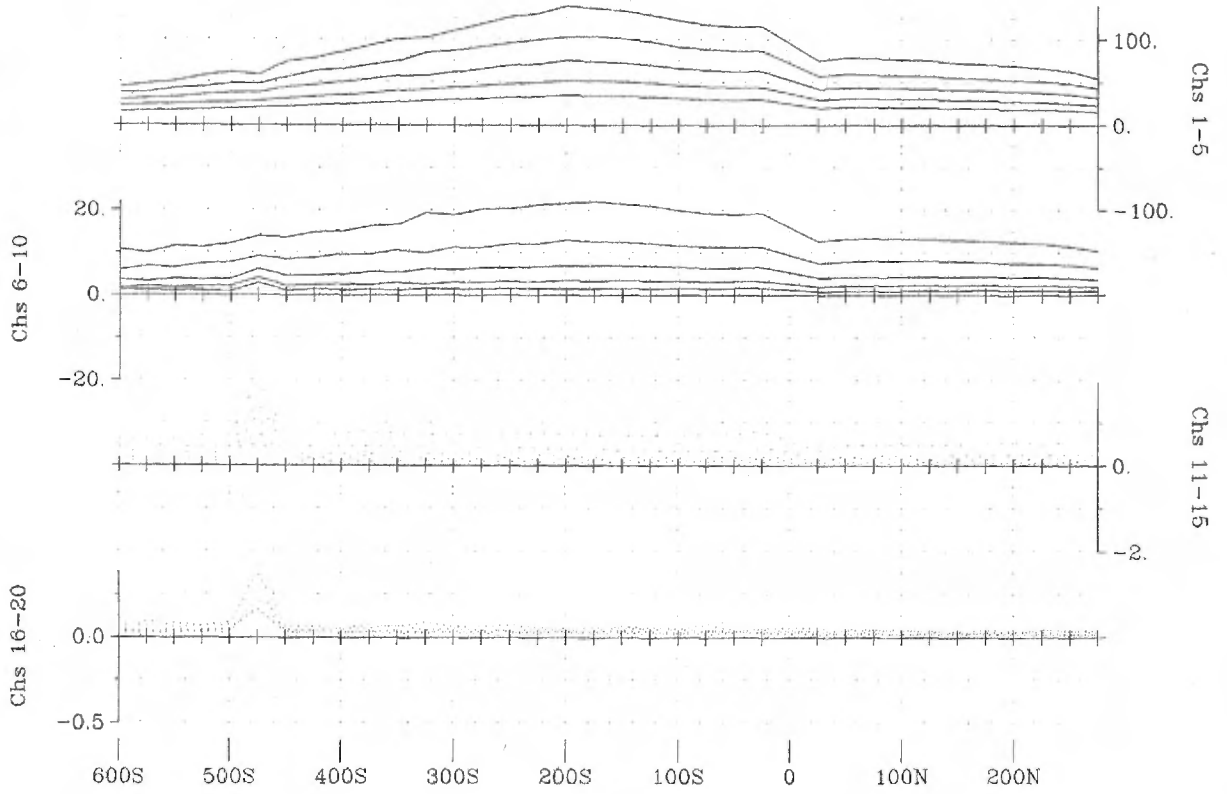
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L 500e, 0n, 300n
Transmitter Current:	19.8 Amps
Transmitter Turn-Off Time:	292 us
Station Interval:	25 meters
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up Hx - positive south Hy - positive east
Survey Date:	1/20/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-288-4AXIS-X-200 E



Line 200 E - Total Field

CAR-11

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

CAR-11

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

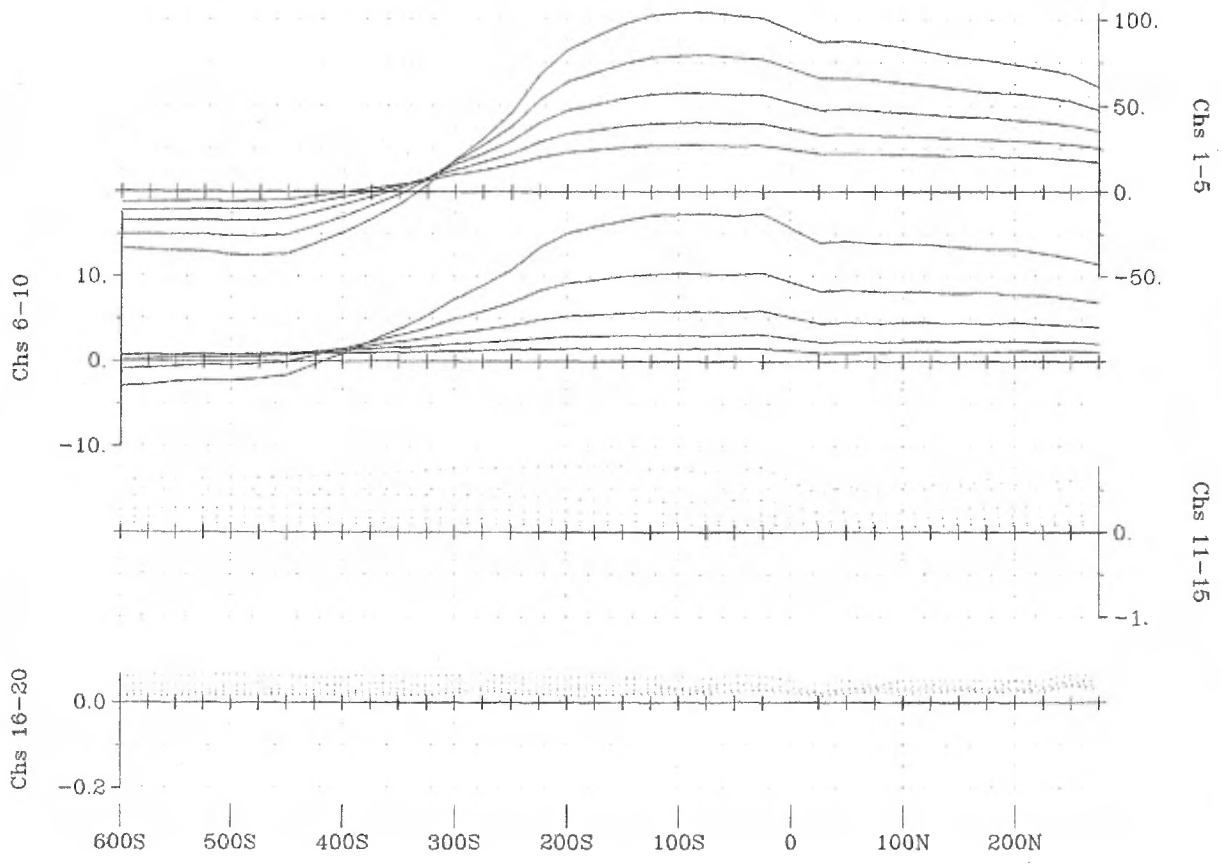
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L 500e, 0n, 300n
Transmitter Current:	19.8 Amps
Transmitter Turn-Off Time:	292 us
Station Interval:	25 meters
Profile Units:	nanoVolt/A•m^2
Receiver Coil Orientation:	Hz - positive up Hx - positive south Hy - positive east
Survey Date:	1/20/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-TF-200 E



Line 300 E - Z Component

CAR-11

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

CAR-11

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

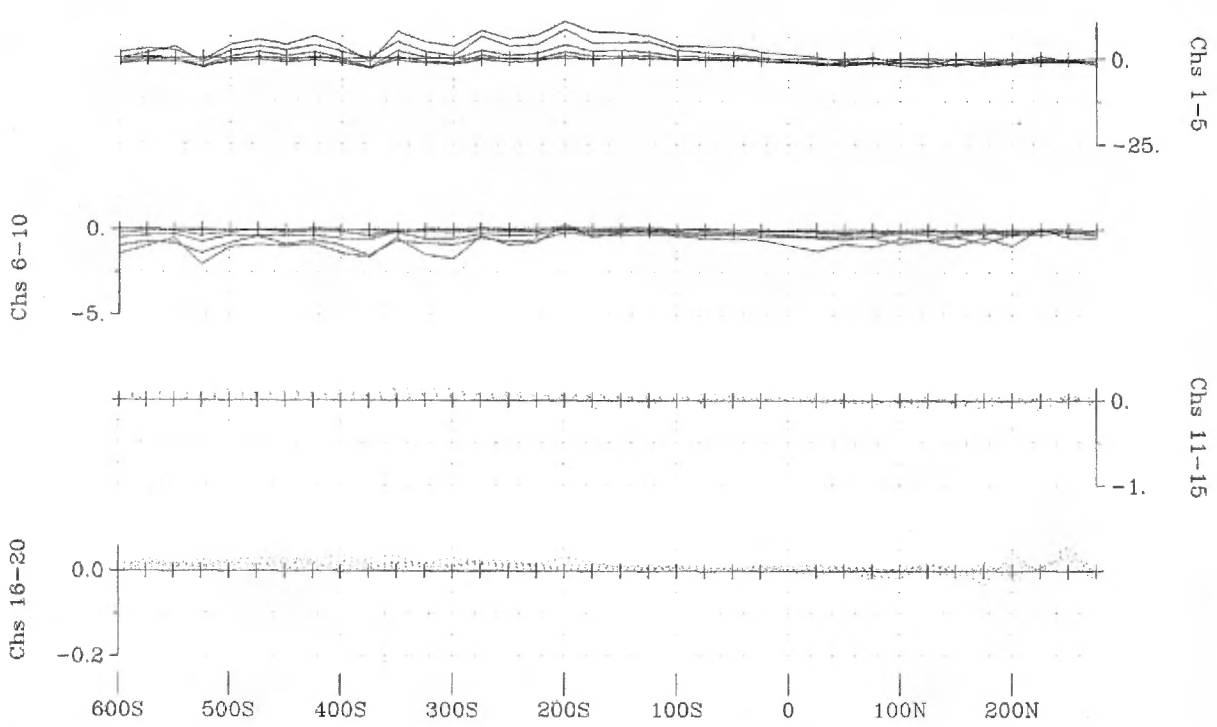
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L 500e, 0n, 300n
Transmitter Current:	19.8 Amps
Transmitter Turn-Off Time:	292 us
Station Interval:	25 meters
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up Hx - positive south Hy - positive east
Survey Date:	1/20/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QC-268-4AXIS-Z-300 E



Line 300 E – Y Component

CAR-11

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

CAR-11

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

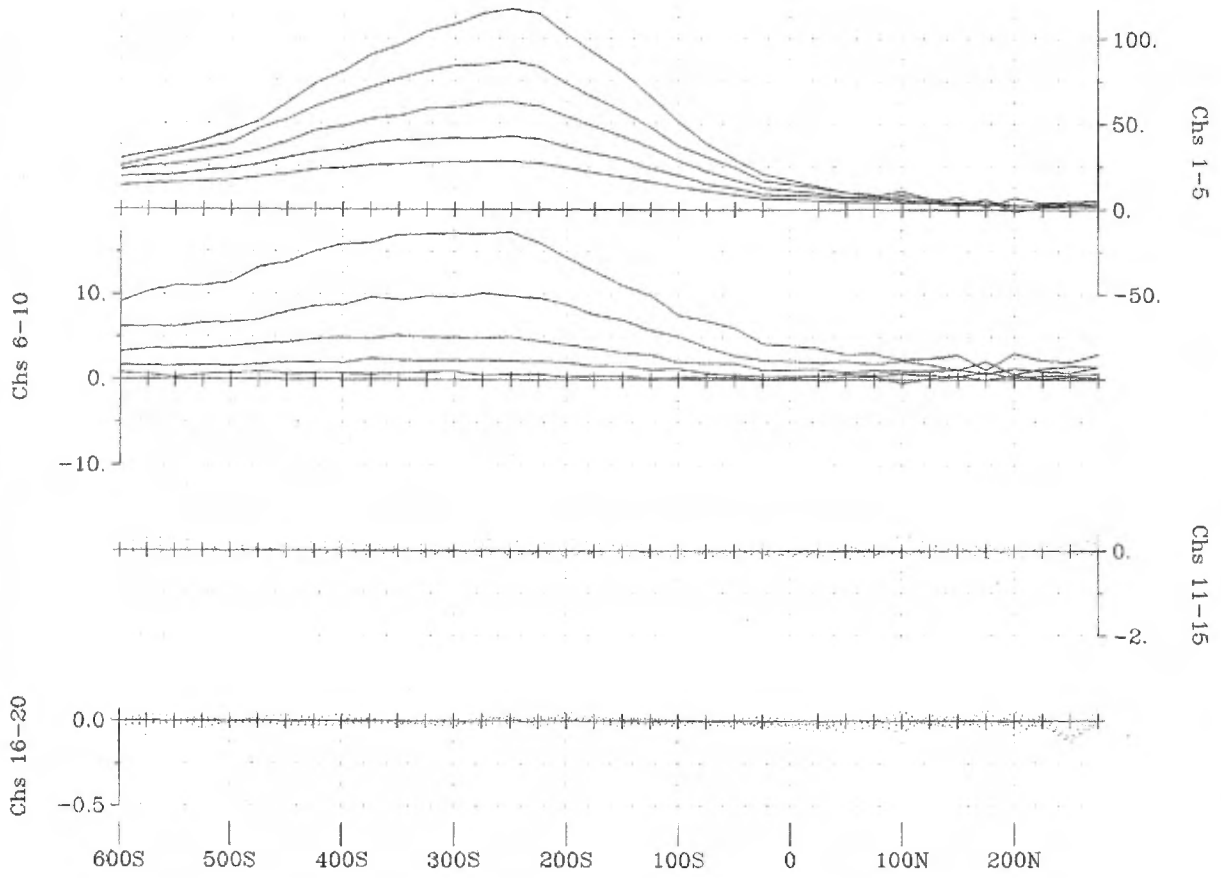
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L 500e, 0n, 300n
Transmitter Current:	19.8 Amps
Transmitter Turn-Off Time:	292 us
Station Interval:	25 meters
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up Hx - positive south Hy - positive east
Survey Date:	1/20/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-Y-300 E



Line 300 E – X Component

CAR-11

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

CAR-11

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

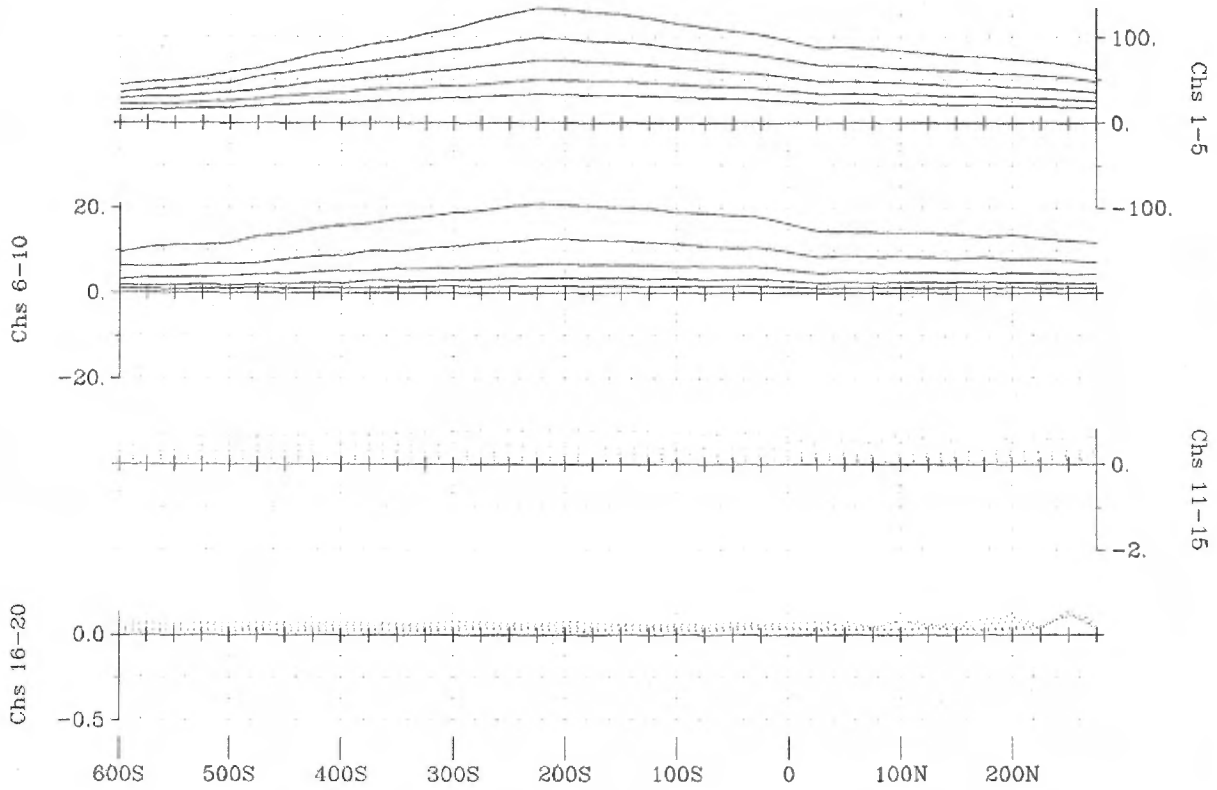
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L 500e, 0n, 300n
Transmitter Current:	19.8 Amps
Transmitter Turn-Off Time:	292 us
Station Interval:	25 meters
Profile Units:	nanoVolt/A•m^2
Receiver Coil Orientation:	Hz - positive up
	Hx - positive south
	Hy - positive east
Survey Date:	1/20/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels)
	& Geonics 3D Coil (3x200m^2)
	Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-X-300 E



Line 300 E - Total Field

CAR-11

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

CAR-11

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

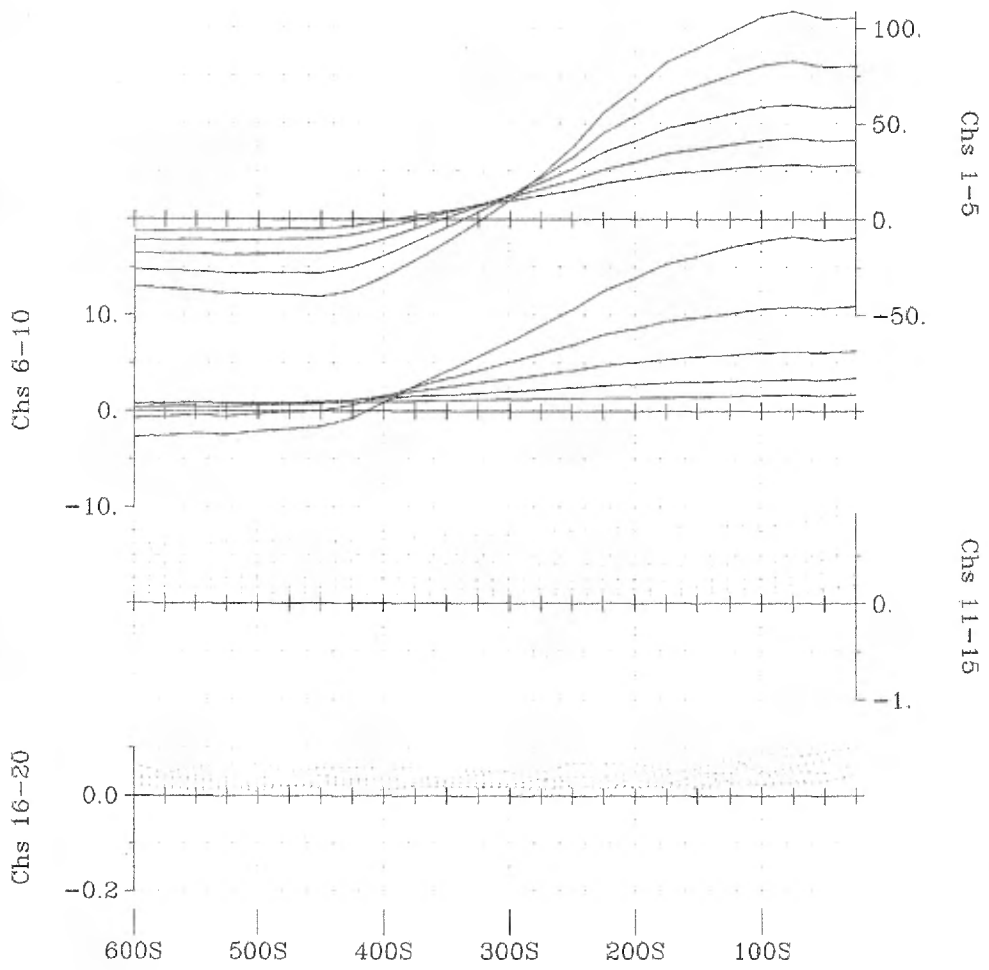
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	LOe, L 500e, On, 300n
Transmitter Current:	19.8 Amps
Transmitter Turn-Off Time:	292 us
Station Interval:	25 meters
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up Hx - positive south Hy - positive east
Survey Date:	1/20/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-TF-300 E



Line 400 E – Z Component

CAR-11

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

CAR-11

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

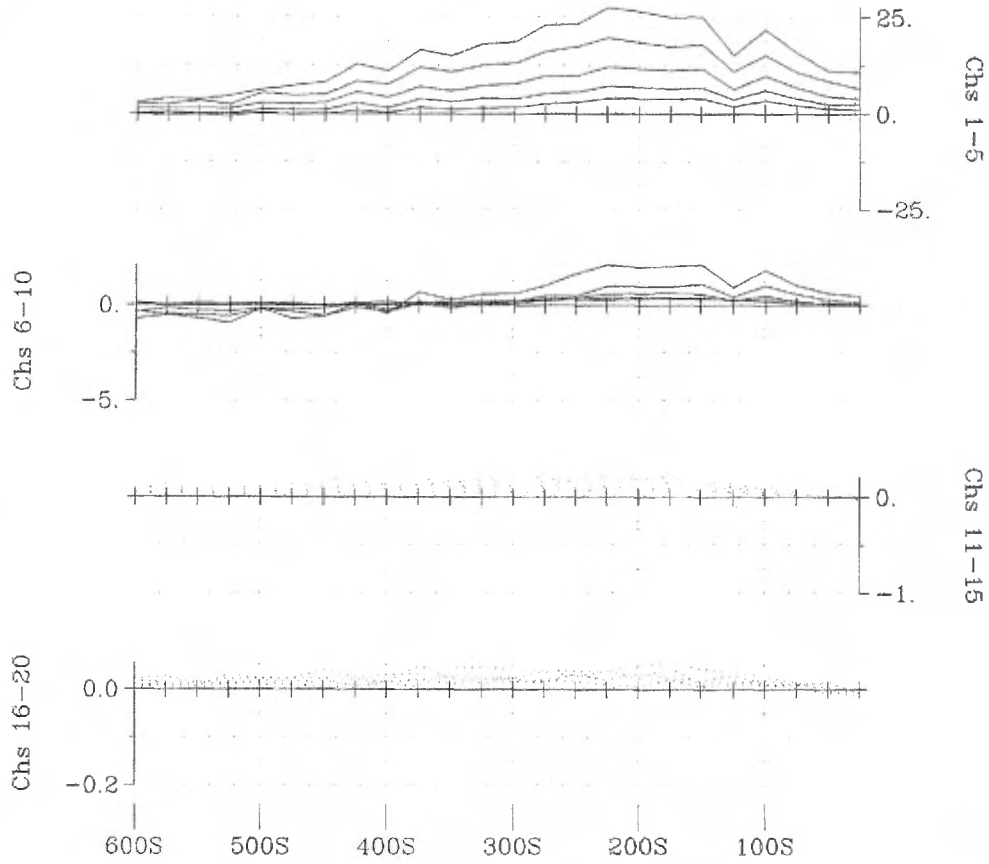
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L 500e, 0n, 300n
Transmitter Current:	19.8 Amps
Transmitter Turn-Off Time:	292 us
Station Interval:	25 meters
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz – positive up Hx – positive south Hy – positive east
Survey Date:	1/20/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-Z-400 E



Line 400 E – Y Component

CAR-11

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

CAR-11

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

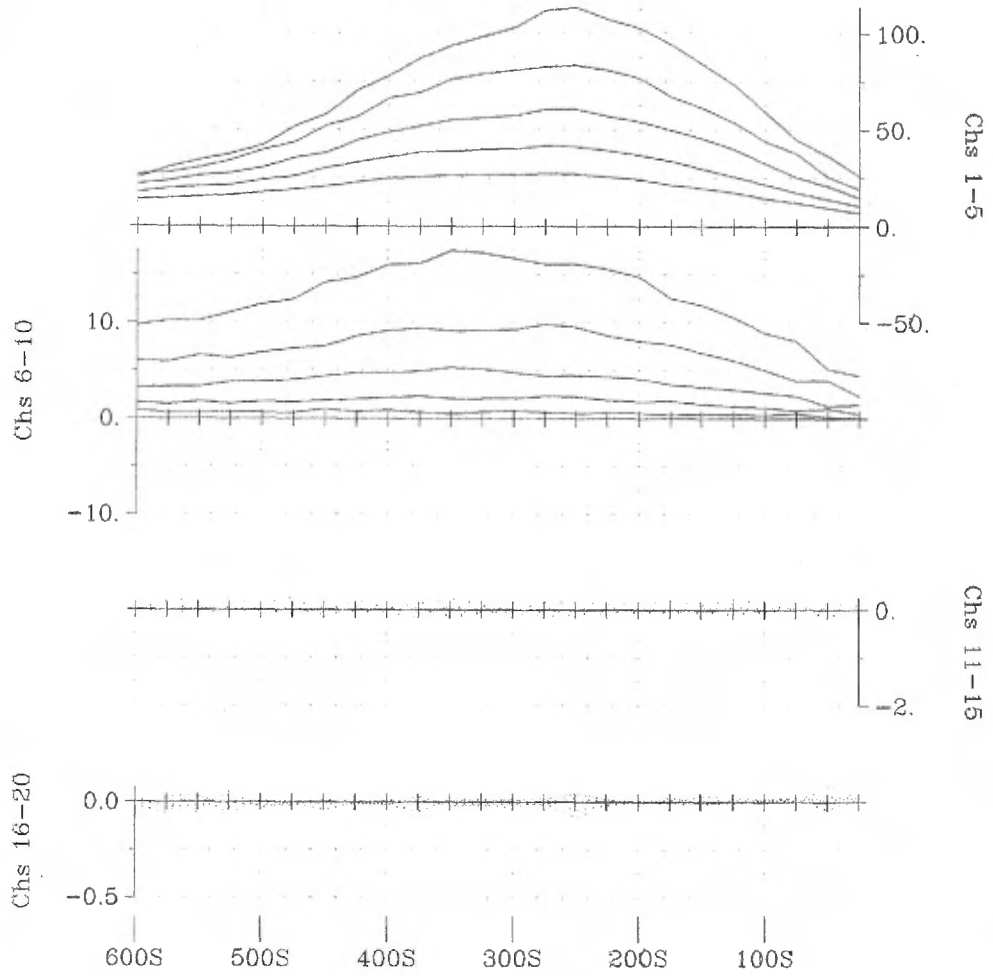
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L 500e, 0n, 300n
Transmitter Current:	19.8 Amps
Transmitter Turn-Off Time:	292 us
Station Interval:	25 meters
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up Hx - positive south Hy - positive east
Survey Date:	1/20/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-Y-400 E



Line 400 E - X Component

CAR-11

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

CAR-11

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

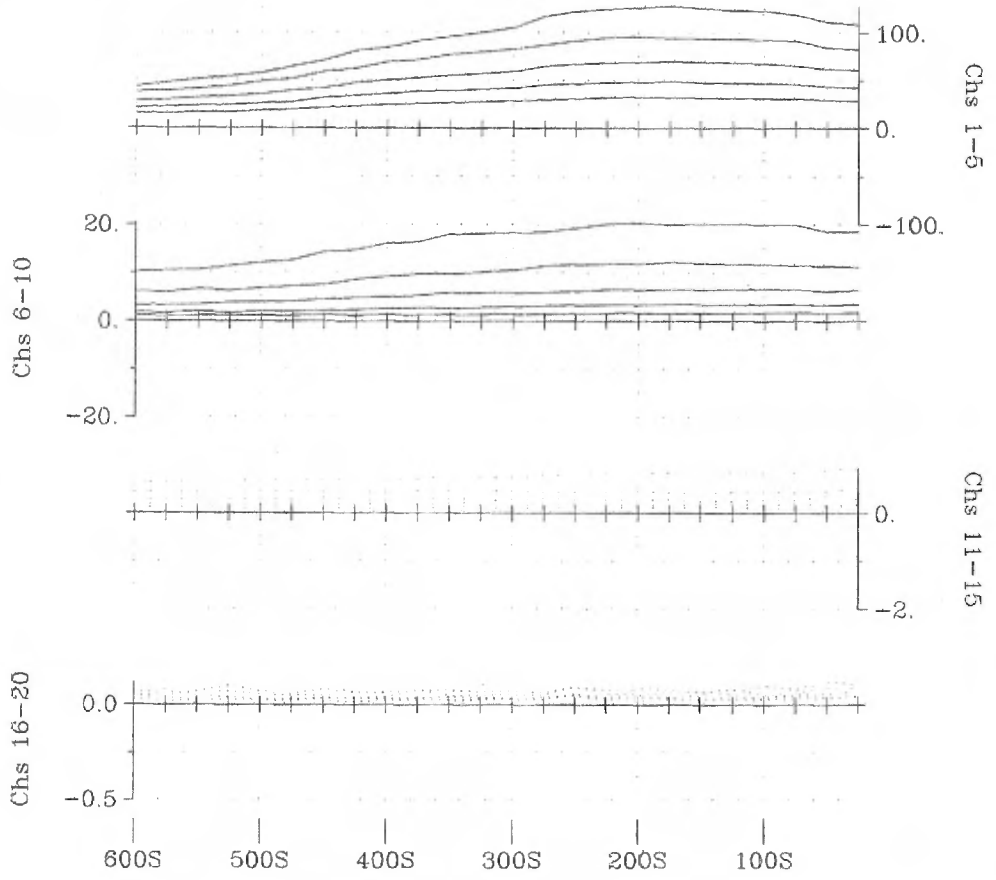
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L 500e, 0n, 300n
Transmitter Current:	19.8 Amps
Transmitter Turn-Off Time:	292 us
Station Interval:	25 meters
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up Hx - positive south Hy - positive east
Survey Date:	1/20/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-X-400 E



Line 400 E – Total Field

CAR-11

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

CAR-11

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

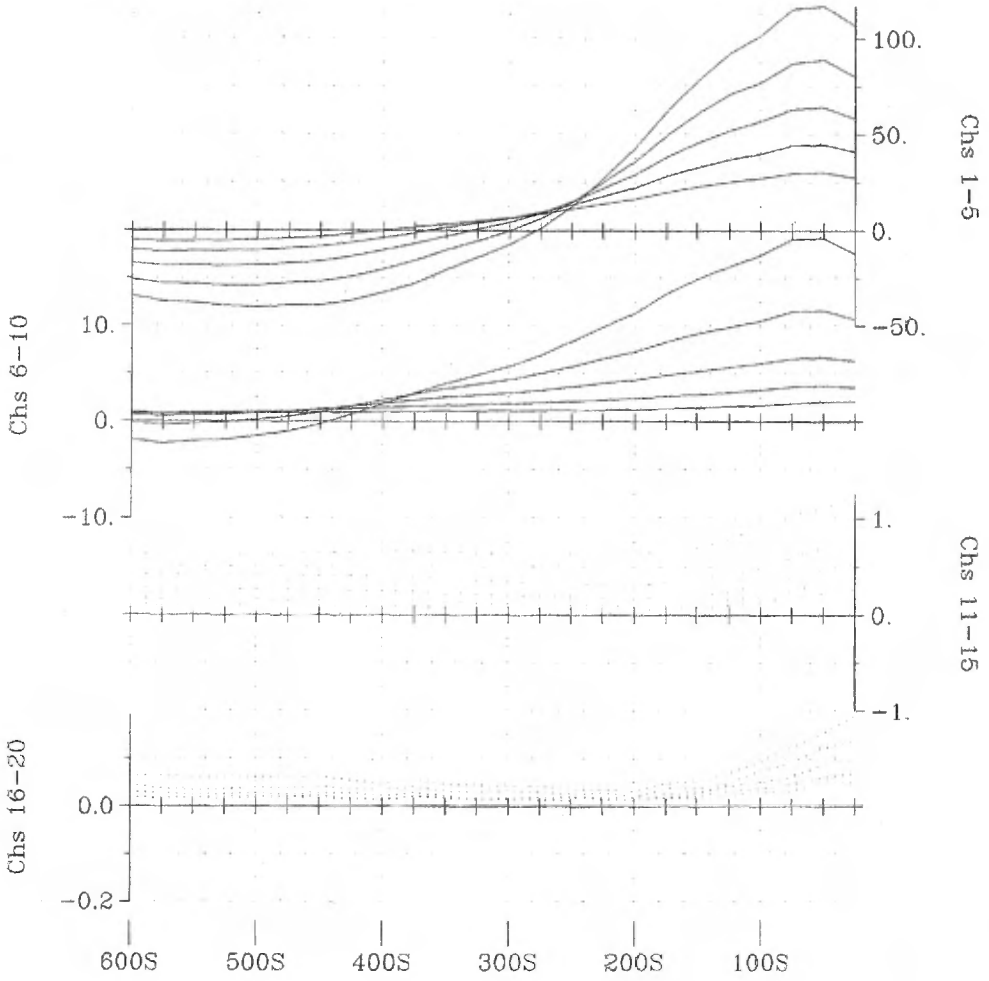
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L 500e, 0n, 300n
Transmitter Current:	19.8 Amps
Transmitter Turn-Off Time:	292 us
Station Interval:	25 meters
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up Hx - positive south Hy - positive east
Survey Date:	1/20/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-TF-400 E



Line 500 E – Z Component

CAR-11

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

CAR-11

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

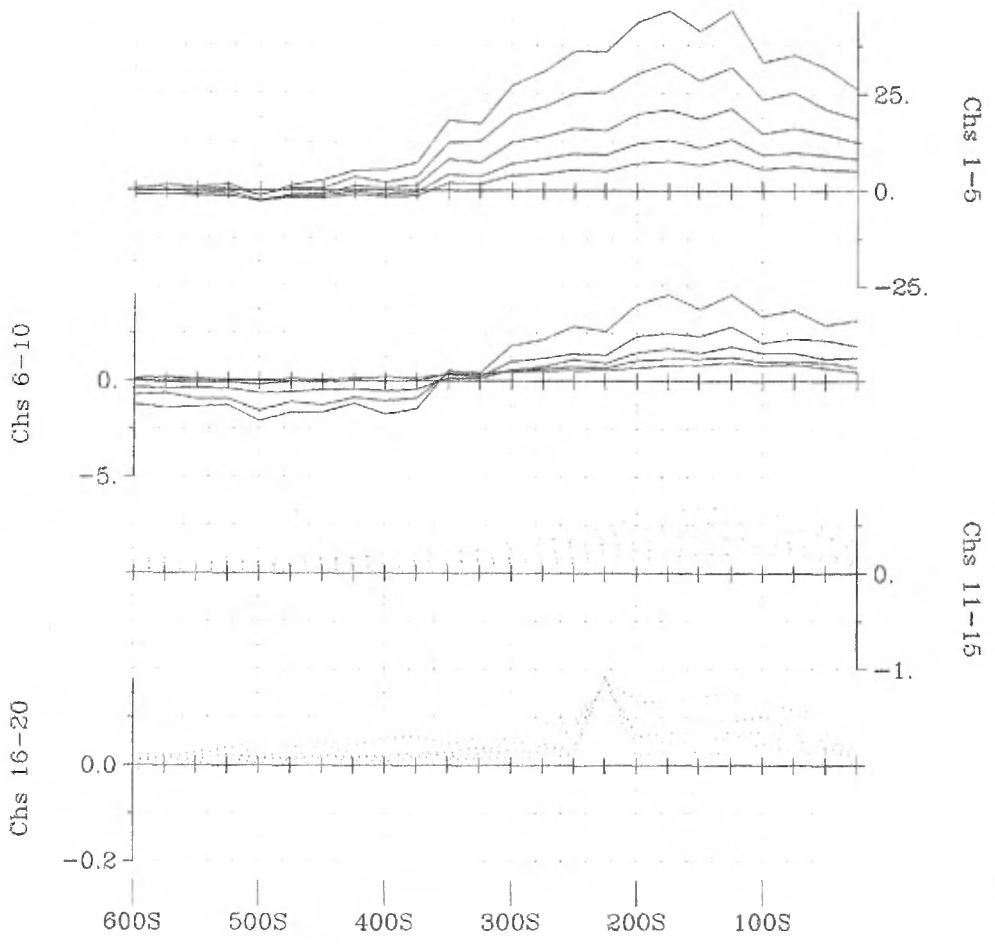
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L 500e, 0n, 300n
Transmitter Current:	19.8 Amps
Transmitter Turn-Off Time:	292 us
Station Interval:	25 meters
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up Hx - positive south Hy - positive east
Survey Date:	1/20/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-Z-500 E



Line 500 E – Y Component

CAR-11

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

CAR-11

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

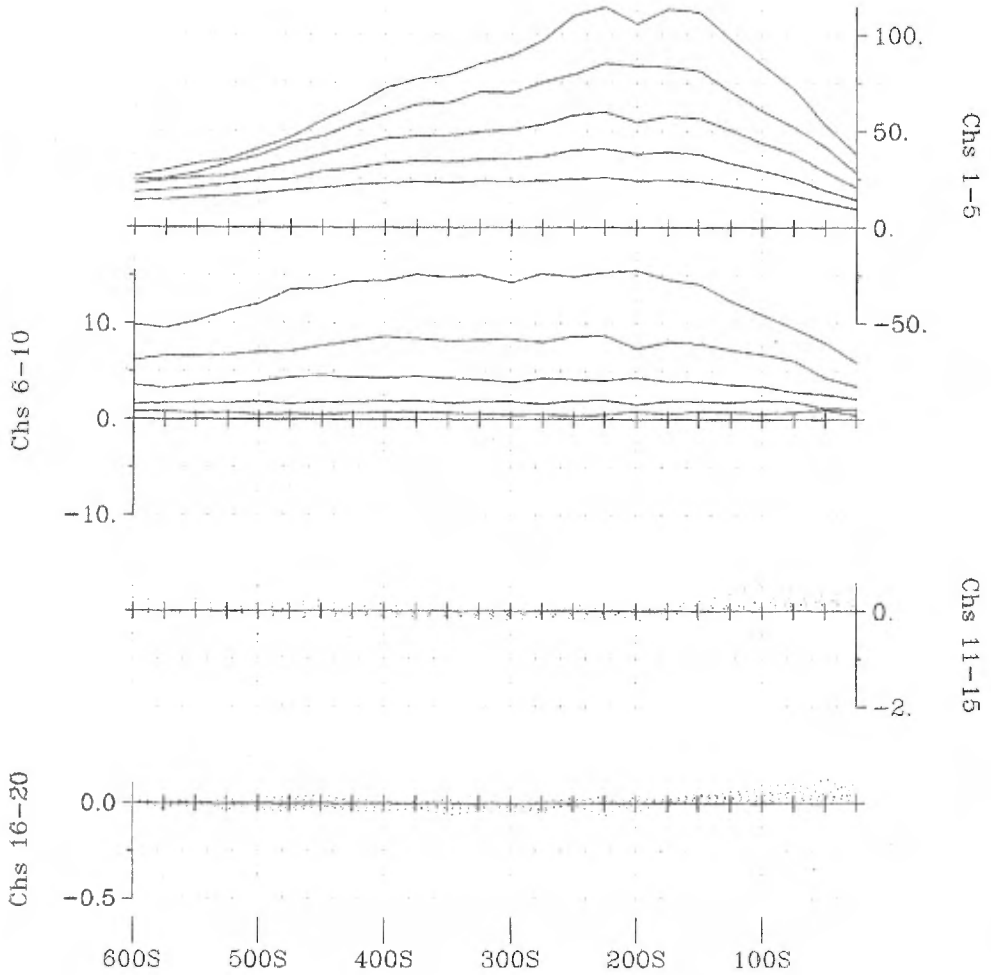
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L 500e, 0n, 300n
Transmitter Current:	19.8 Amps
Transmitter Turn-Off Time:	292 us
Station Interval:	25 meters
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up Hx - positive south Hy - positive east
Survey Date:	1/20/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-Y-500 E



Line 500 E – X Component

CAR-11

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

CAR-11

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

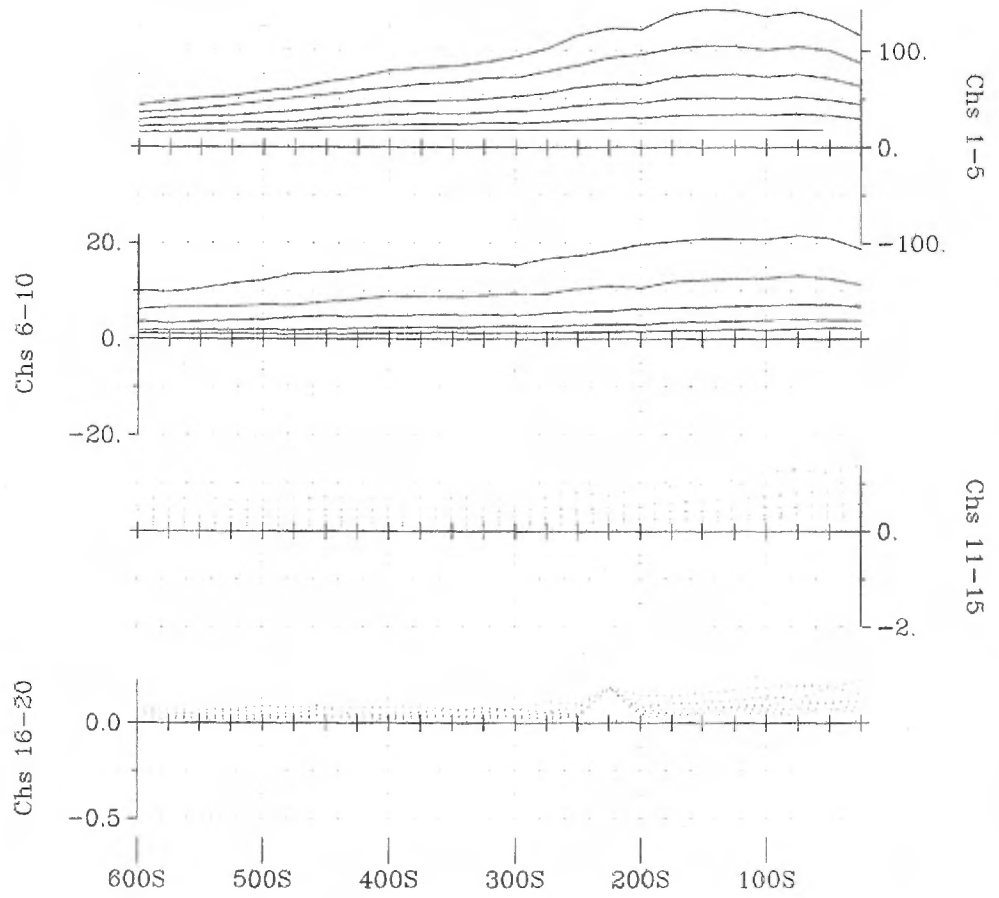
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L 500e, 0n, 300n
Transmitter Current:	19.8 Amps
Transmitter Turn-Off Time:	292 us
Station Interval:	25 meters
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up Hx - positive south Hy - positive east
Survey Date:	1/20/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-X-500 E



Line 500 E - Total Field

CAR-11

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

CAR-11

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L0e, L 500e, 0n, 300n
Transmitter Current:	19.8 Amps
Transmitter Turn-Off Time:	292 us
Station Interval:	25 meters
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up Hx - positive south Hy - positive east
Survey Date:	1/20/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-TF-500 E

NORANDA INC.

QG 268 MEGATEM FOLLOW UP PROFILES

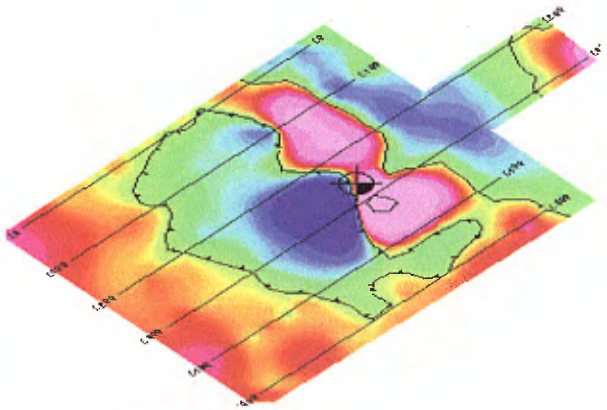
WEST SELBAIE AREA

ENJ 101

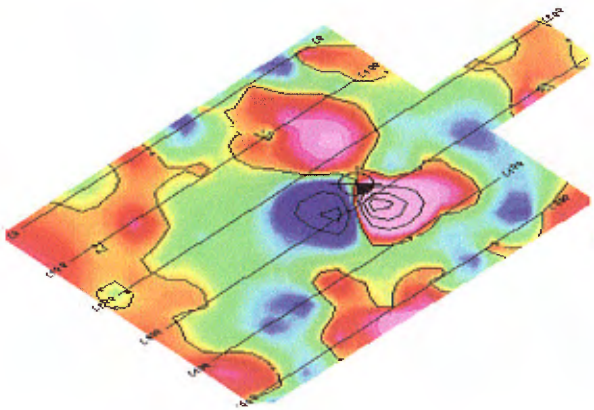
Quantec

GEOPHYSICS WORLDWIDE

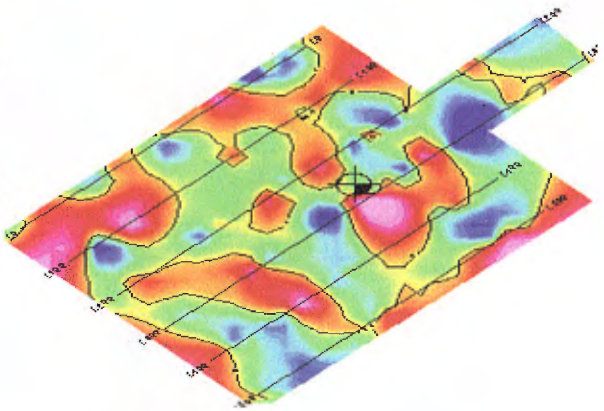
ENJ-101 Levé électromagnétique dans le domaine du temps à grande boucle ('TDEM')



xch5



xch10



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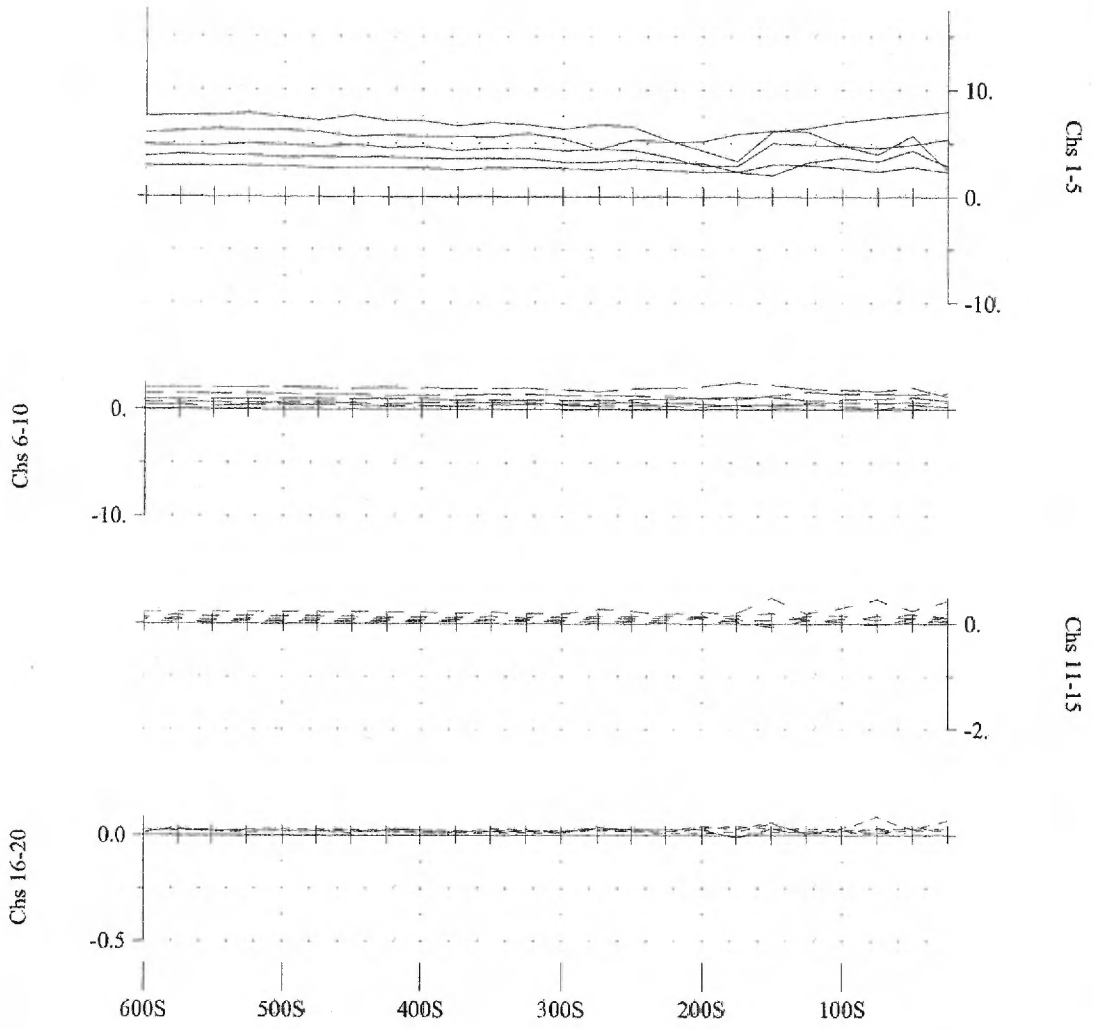


Line 0 E - Z Component

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM ENJ-101

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

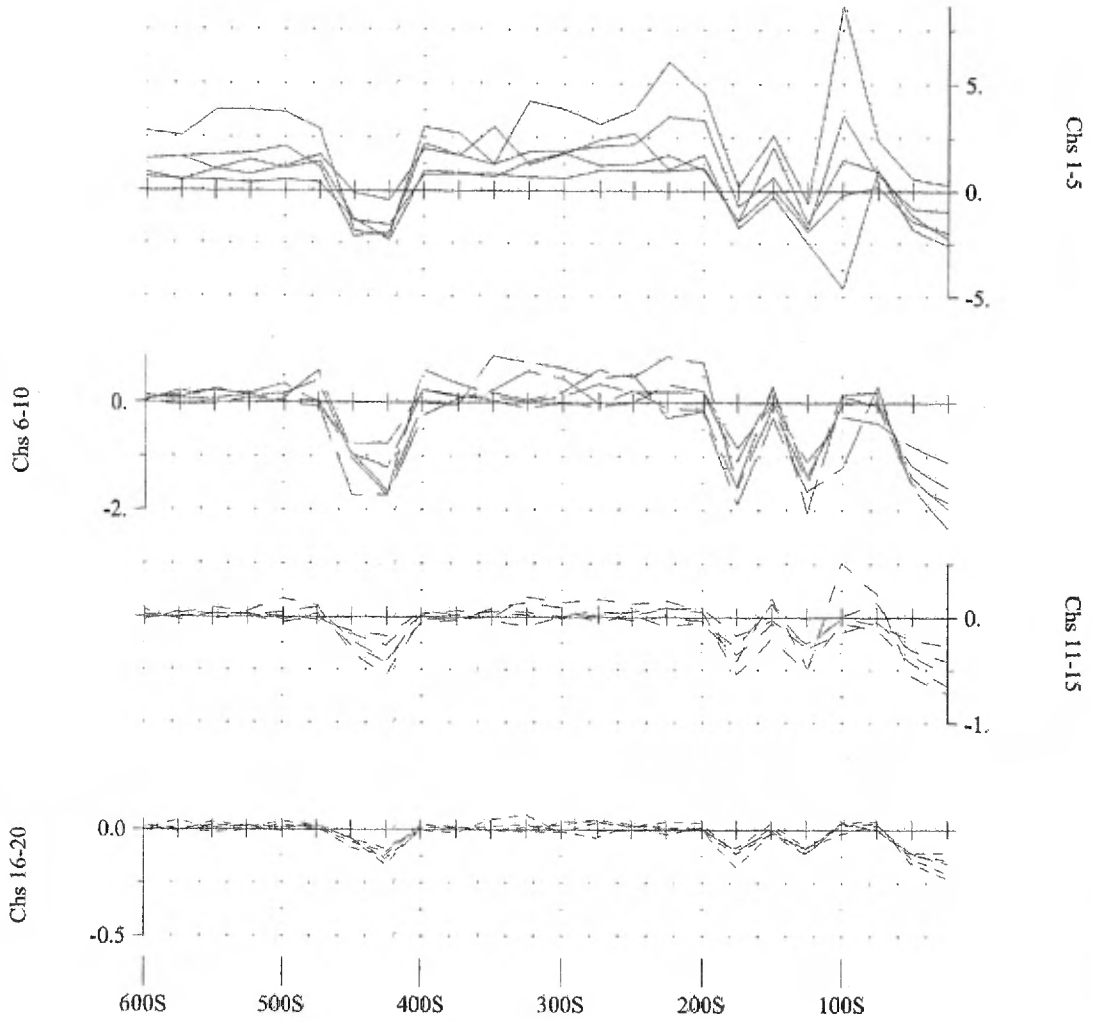
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L 0E, L500E, 0N, 300N
Transmitter Current:	19.2 Amps
Transmitter Turn-Off Time:	272 us
Line Azimuth:	46 deg.TN
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up
	Hx - positive south
	Hy - positive east
Survey Date:	Feb. 3/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels)
	& Geonics 3D Coil (3x200m^2)
	Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-Z-0 E



Line 0 E - Y Component

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM ENJ-101

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

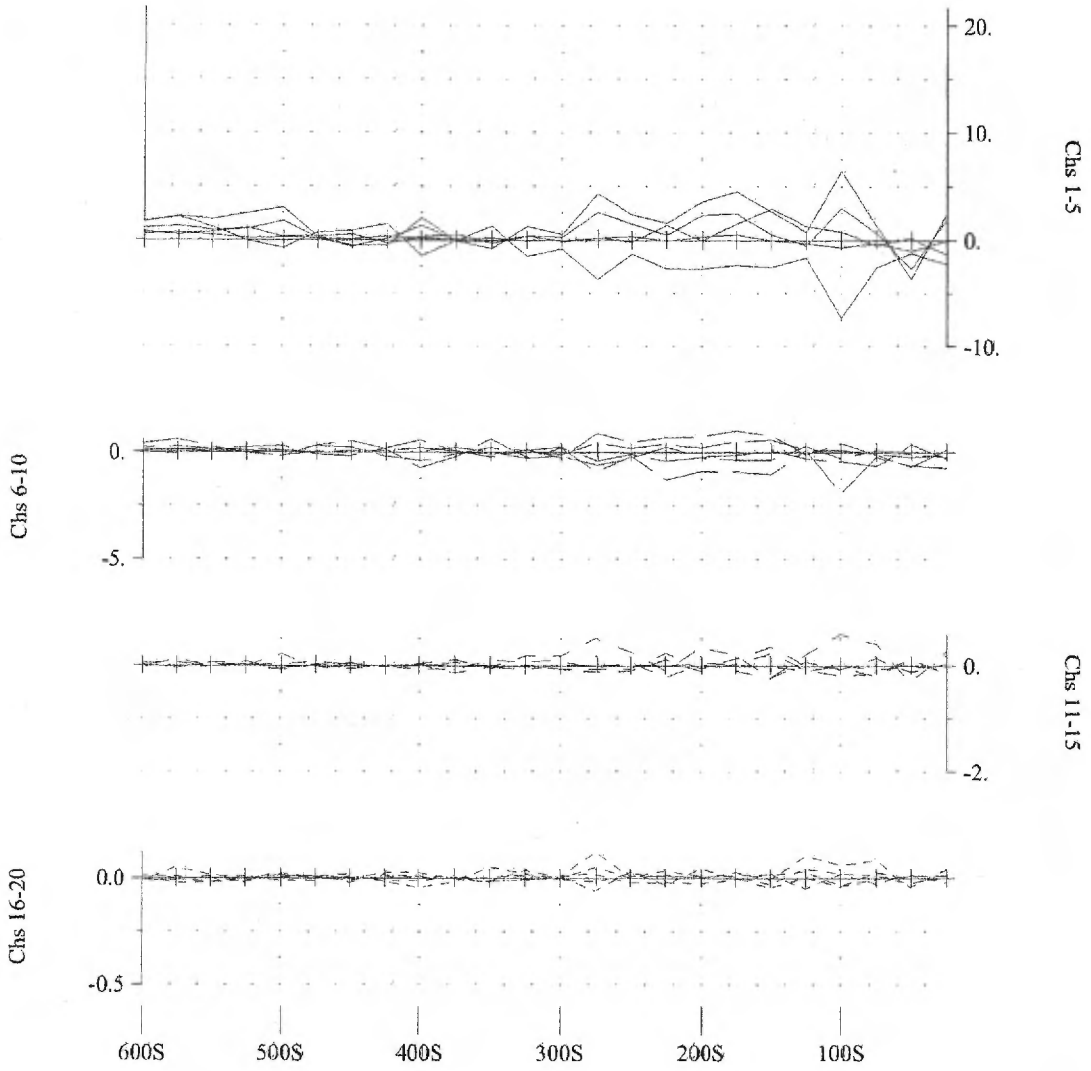
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L 0E, L 500 E, 0N, 300N
Transmitter Current:	19.2 Amps
Transmitter Turn-Off Time:	267 us
Line Azimuth:	46 deg.TN
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up
	Hx - positive south
	Hy - positive east
Survey Date:	Feb. 3/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels)
	& Geonics 3D Coil (3x200m^2)
	Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-Y-0 E



Line 0 E - X Component

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM ENJ-101

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

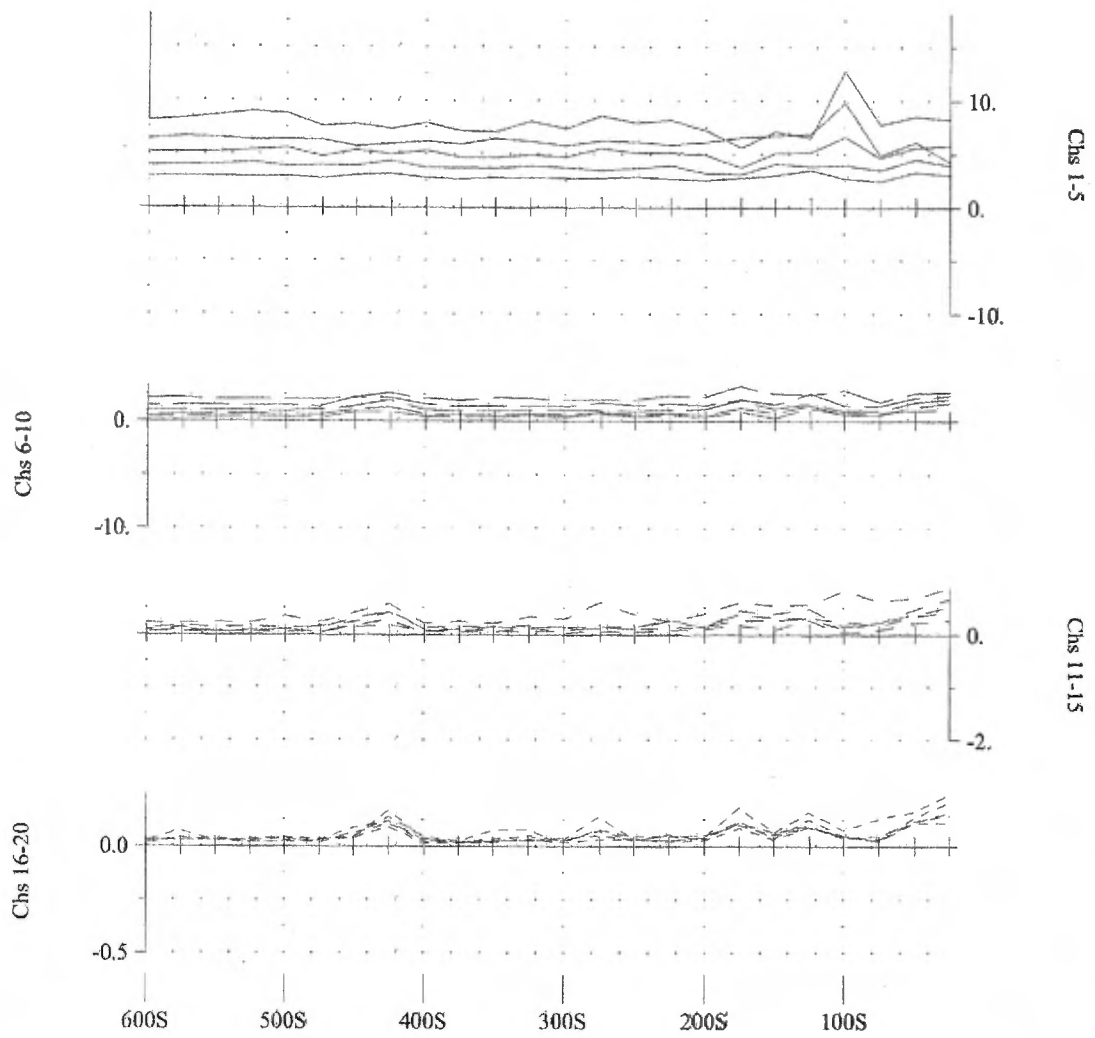
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L 0E, L 500 E, 0N, 300N
Transmitter Current:	19.2 Amps
Transmitter Turn-Off Time:	267 us
Line Azimuth:	46 deg.TN
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up
	Hx - positive south
	Hy - positive east
Survey Date:	Feb. 3/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels)
	& Geonics 3D Coil (3x200m^2)
	Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-X-0 E



Line 0 E - Total Field

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM ENJ-101

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

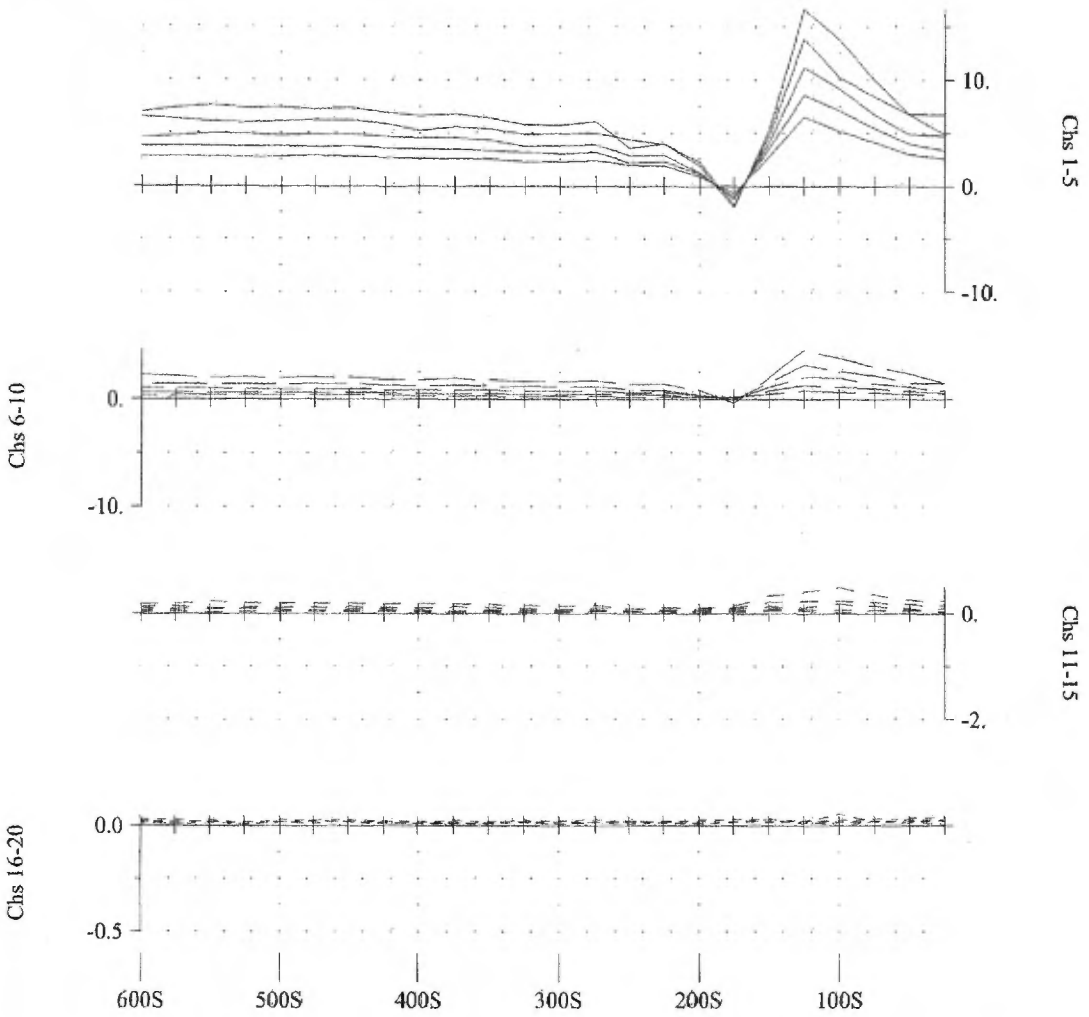
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L 0E, L 500 E, 0N, 300N
Transmitter Current:	19.2 Amps
Transmitter Turn-Off Time:	267 us
Line Azimuth:	46 deg.TN
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up
	Hx - positive south
	Hy - positive east
Survey Date:	Feb. 3/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels)
	& Geonics 3D Coil (3x200m^2)
	Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-TF-0 E



Line 100 E - Z Component

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM ENJ-101

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

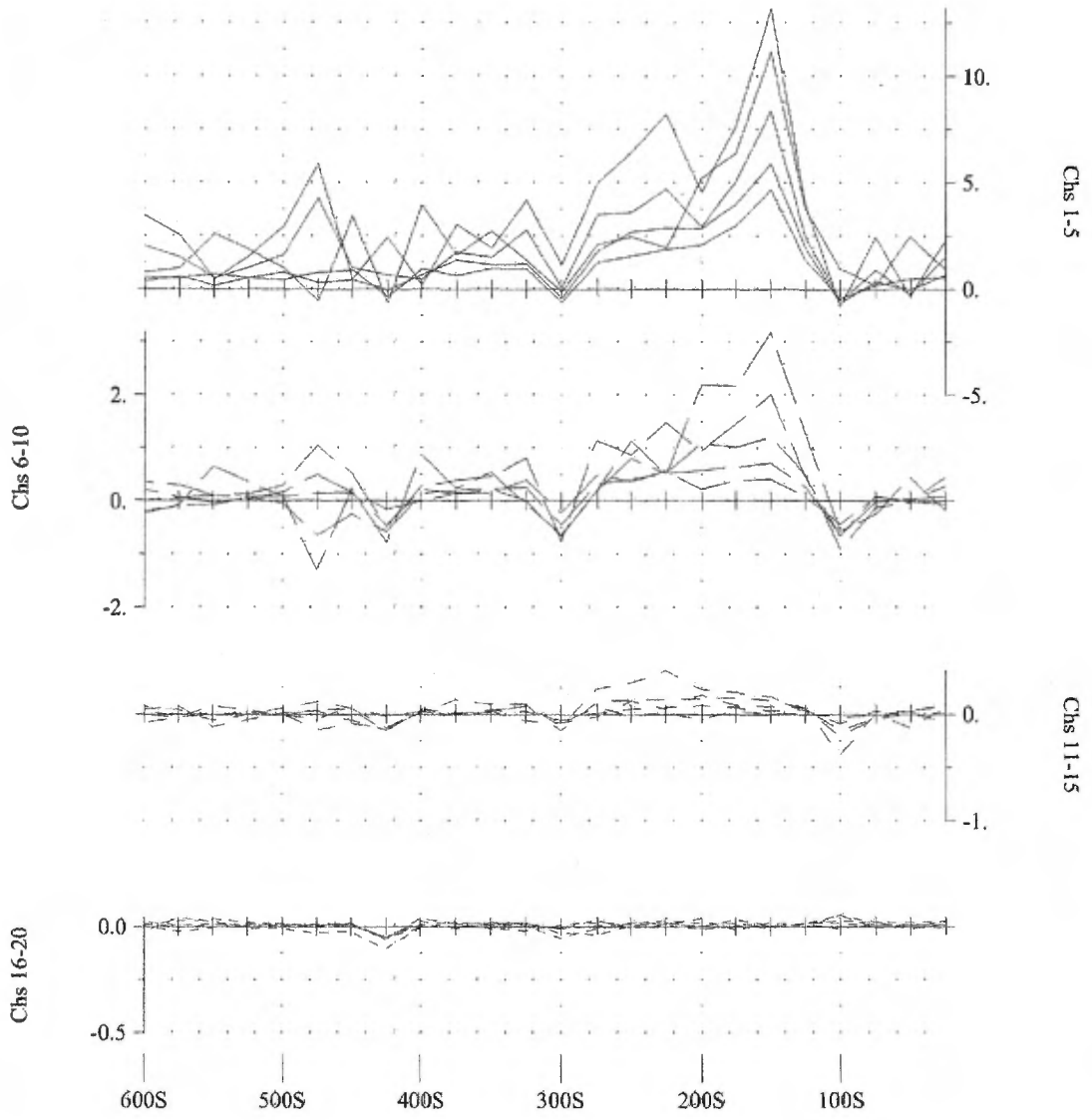
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L 0E, L500E, 0N, 300N
Transmitter Current:	19.2 Amps
Transmitter Turn-Off Time:	272 us
Line Azimuth:	46 deg.TN
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up
	Hx - positive south
	Hy - positive east
Survey Date:	Feb. 3/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels)
	& Geonics 3D Coil (3x200m^2)
	Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-Z-100 E



Line 100 E - Y Component

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM ENJ-101

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

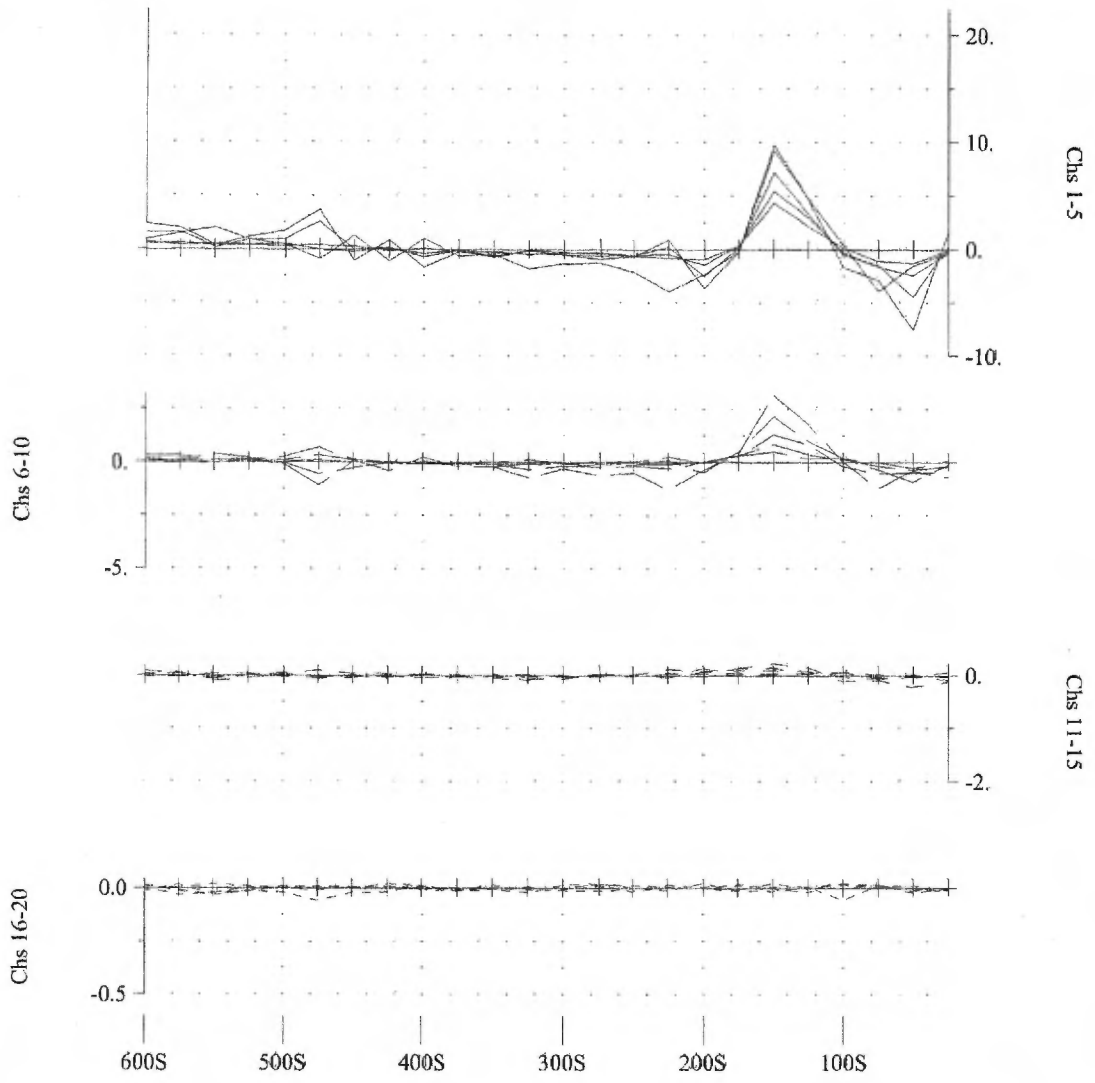
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L 0E, L 500 E, 0N, 300N
Transmitter Current:	19.2 Amps
Transmitter Turn-Off Time:	267 us
Line Azimuth:	46 deg.TN
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up
	Hx - positive south
	Hy - positive east
Survey Date:	Feb. 3/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels)
	& Geonics 3D Coil (3x200m^2)
	Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-Y-100 E



Line 100 E - X Component

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM ENJ-101

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

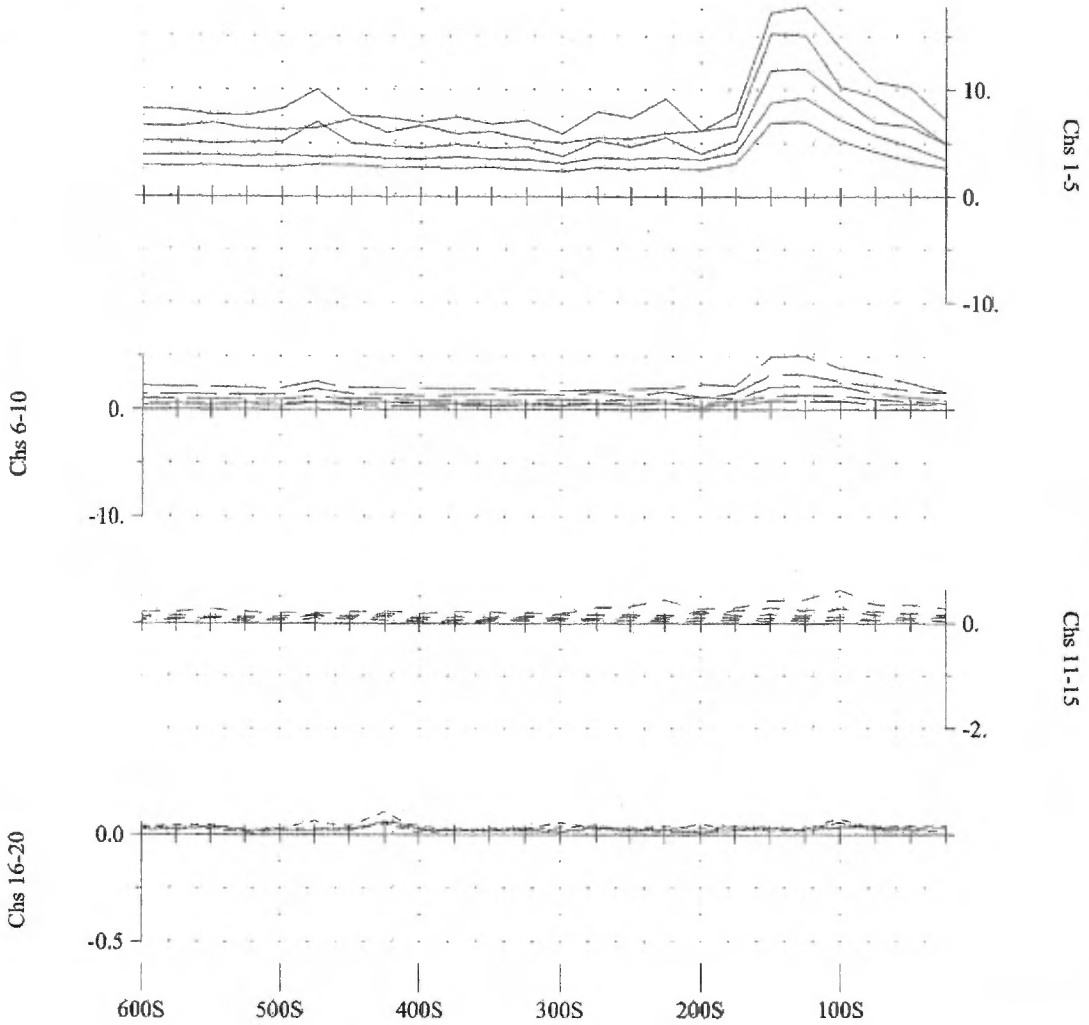
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L 0E, L 500 E, 0N, 300N
Transmitter Current:	19.2 Amps
Transmitter Turn-Off Time:	267 us
Line Azimuth:	46 deg.TN
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up
	Hx - positive south
	Hy - positive east
Survey Date:	Feb. 3/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels)
	& Geonics 3D Coil (3x200m^2)
	Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-X-100 E



Line 100 E - Total Field

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM ENJ-101

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

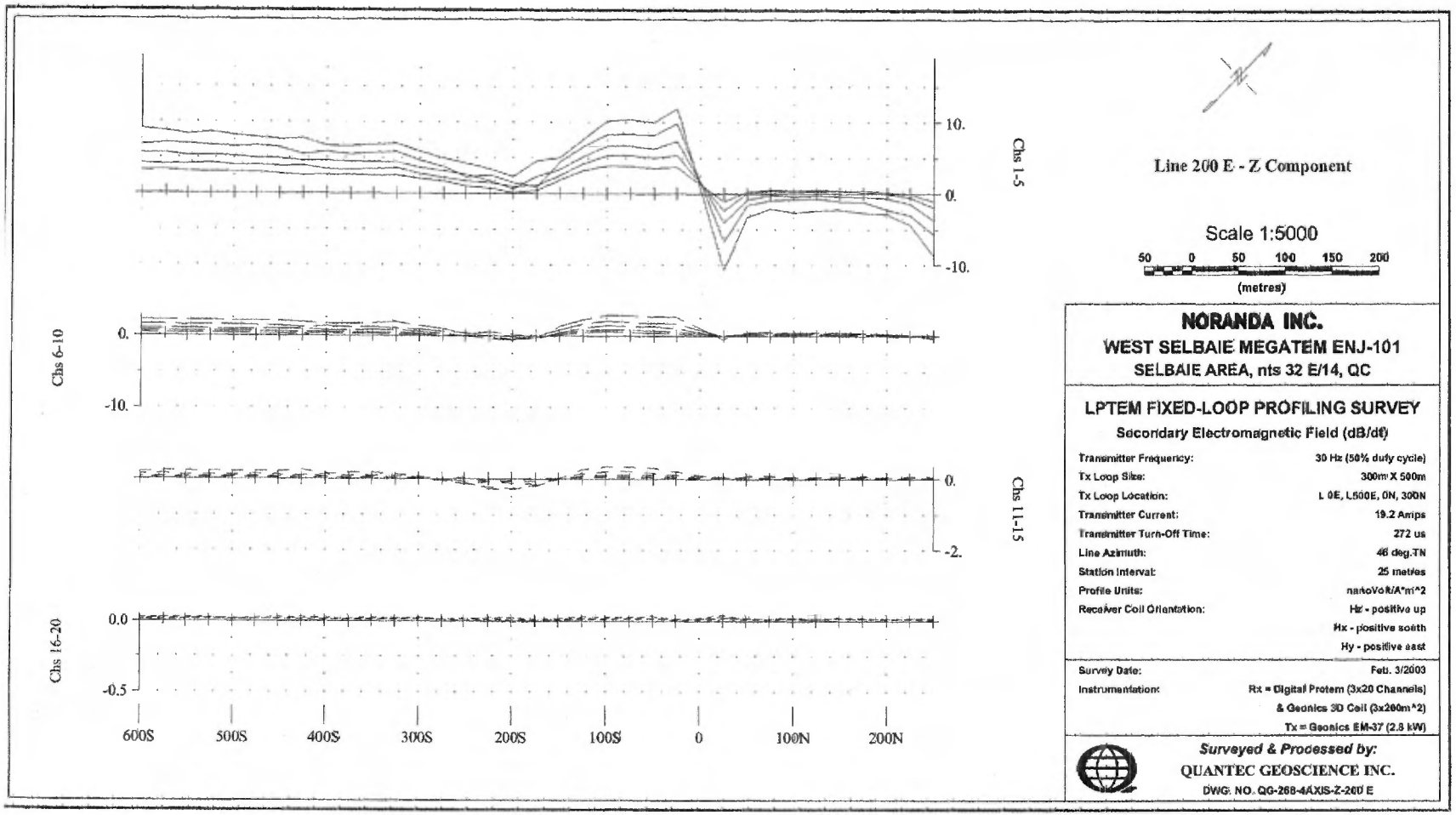
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L 0E, L 500 E, 0N, 300N
Transmitter Current:	19.2 Amps
Transmitter Turn-Off Time:	267 us
Line Azimuth:	46 deg.TN
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up
	Hx - positive south
	Hy - positive east
Survey Date:	Feb. 3/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels)
	& Geonics 3D Coil (3x200m^2)
	Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-26B-4AXIS-TF-100 E



Line 200 E - Z Component

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM ENJ-101

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

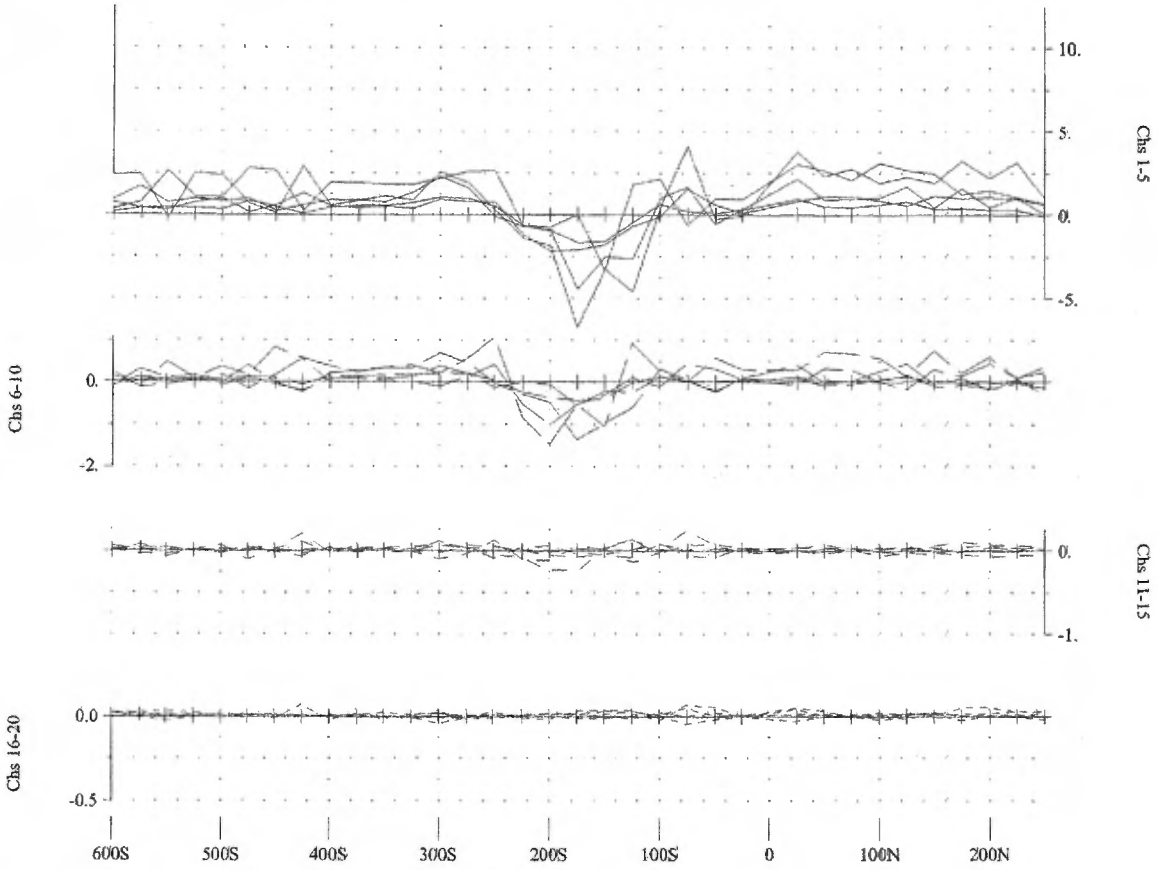
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L 0E, L500E, 0N, 300N
Transmitter Current:	19.2 Amps
Transmitter Turn-Off Time:	272 us
Line Azimuth:	46 deg.TN
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up
	Hx - positive south
	Hy - positive east
Survey Date:	Feb. 3/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels)
	& Geonics 3D Coil (3x200m^2)
	Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-Z-200 E



Line 200 E - Y Component

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM ENJ-101

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

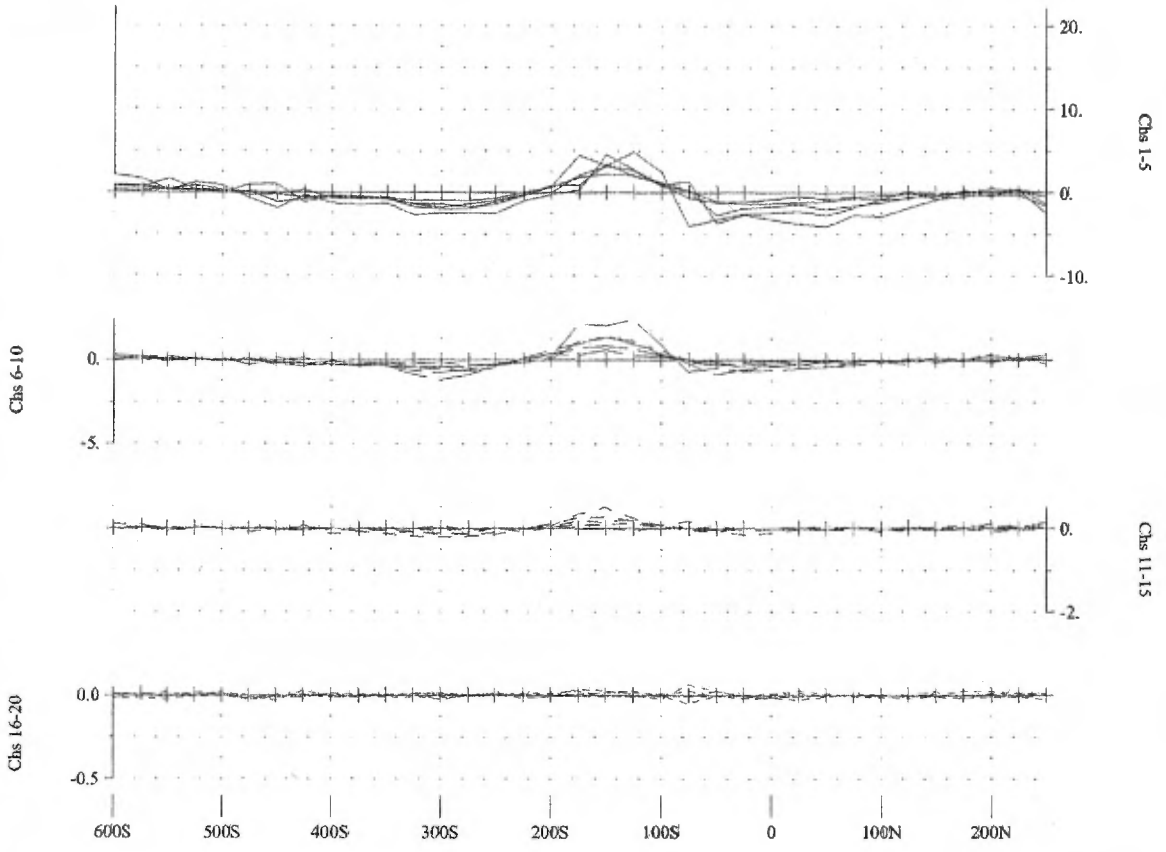
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L 0E, L 500 E, 0N, 300N
Transmitter Current:	19.2 Amps
Transmitter Turn-Off Time:	267 us
Line Azimuth:	48 deg.TN
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up
	Hx - positive south
	Hy - positive east
Survey Date:	Feb. 3/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels)
	& Geonics 3D Coil (3x200m^2)
	Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4/AXIS-Y-200 E



Line 200 E - X Component

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM ENJ-101

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

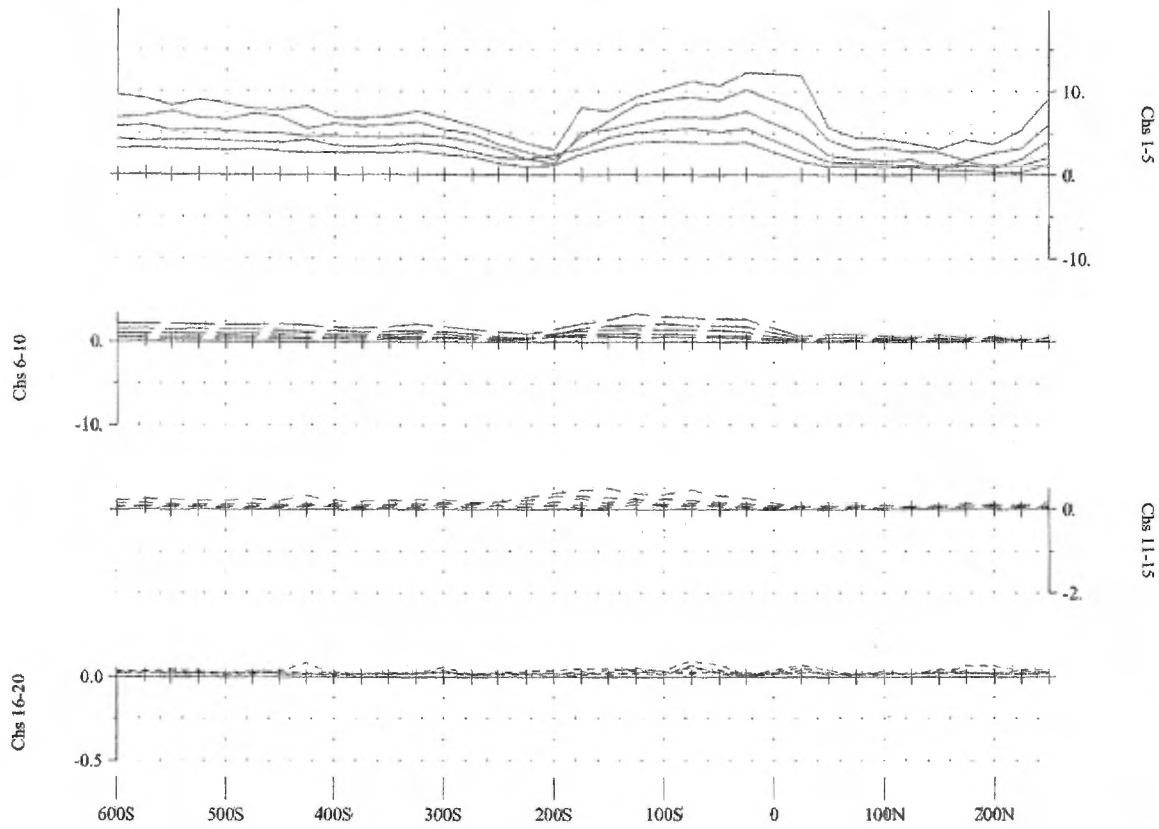
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L 0E, L 500 E, 0N, 300N
Transmitter Current:	19.2 Amps
Transmitter Turn-Off Time:	267 us
Line Azimuth:	46 deg.TN
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up
	Hx - positive south
	Hy - positive east
Survey Date:	Feb. 3/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels)
	& Geonics 3D Coil (3x200m^2)
	Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-X-200 E



Line 200 E - Total Field

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM ENJ-101

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

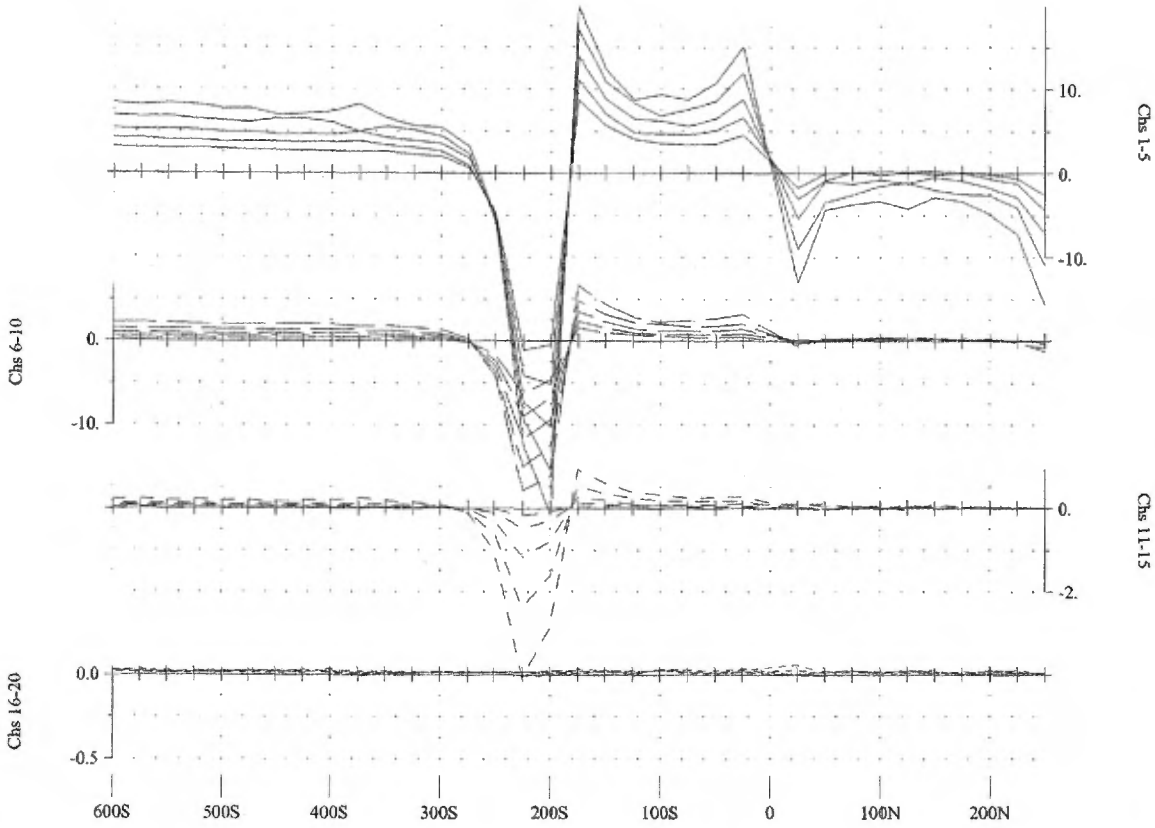
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L 0E, L 500 E, 0N, 300N
Transmitter Current:	19.2 Amps
Transmitter Turn-Off Time:	267 us
Line Azimuth:	46 deg.TN
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up
	Hx - positive south
	Hy - positive east
Survey Date:	Feb. 3/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels)
	& Geonics 3D Coil (3x200m^2)
	Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-TF-200 E



Line 300 E - Z Component

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM ENJ-101

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

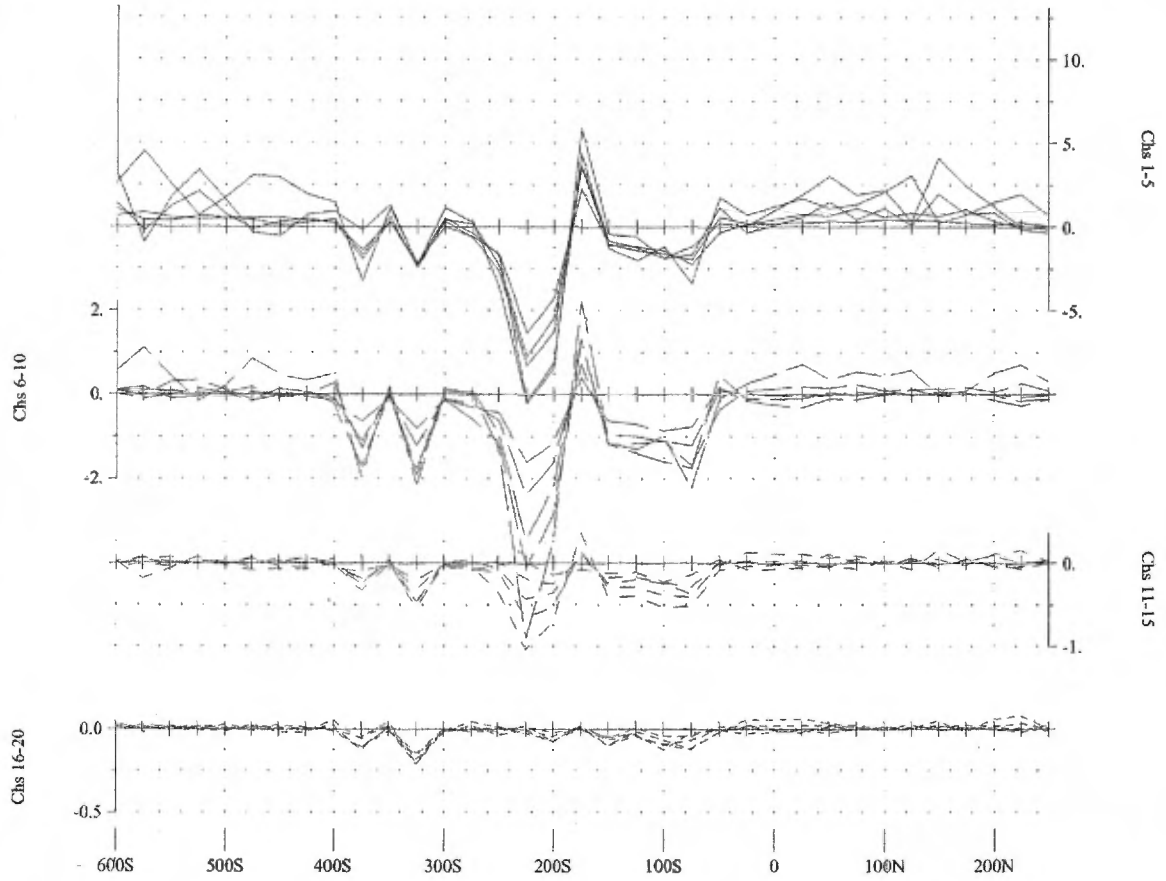
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L 0E, L500E, 0N, 300N
Transmitter Current:	19.2 Amps
Transmitter Turn-Off Time:	272 us
Line Azimuth:	46 deg.TN
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up
	Hx - positive south
	Hy - positive east
Survey Date:	Feb. 3/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels)
	& Geonics 3D Coil (3x200m^2)
	Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG: NO. QG-268-4AXIS-Z-300 E



Line 300 E - Y Component

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM ENJ-101

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

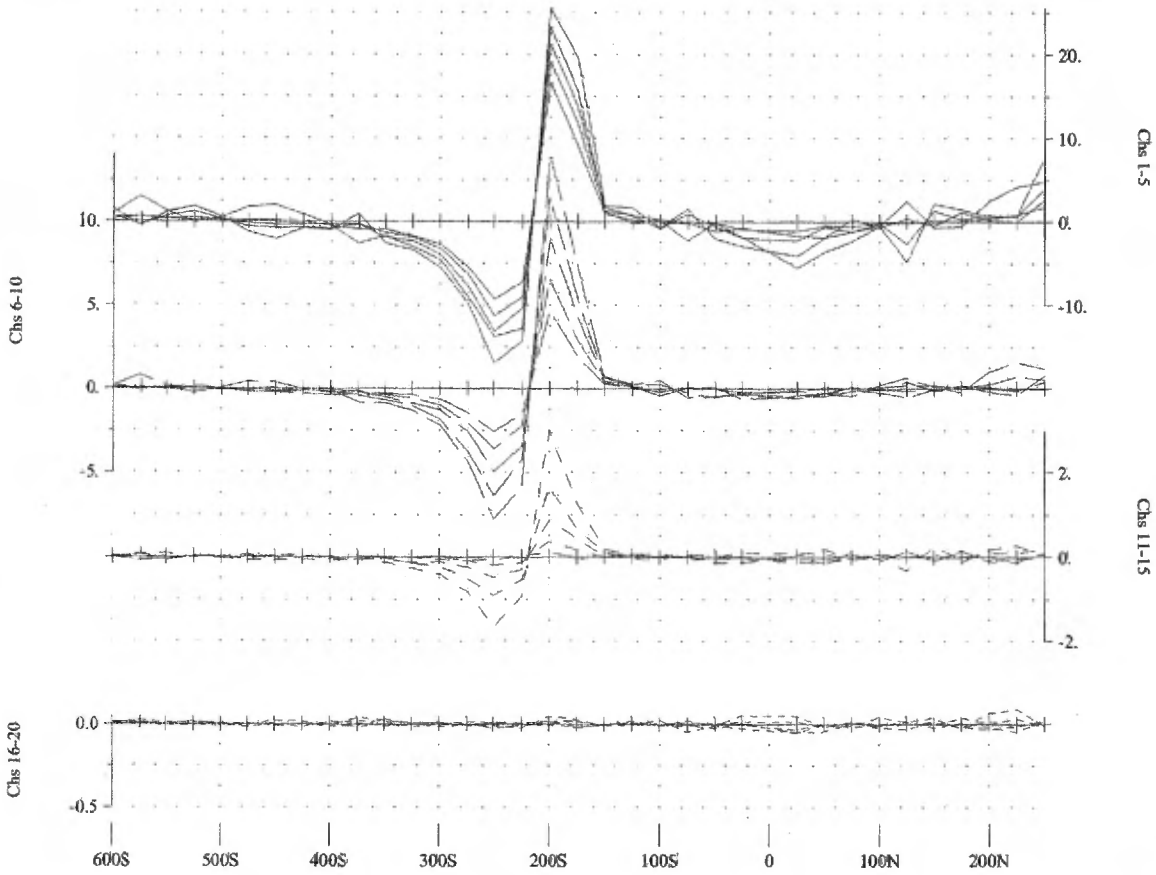
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L 0E, L 500 E, 0N, 300N
Transmitter Current:	19.2 Amps
Transmitter Turn-Off Time:	267 us
Line Azimuth:	46 deg.TN
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up Hx - positive south Hy - positive east
Survey Date:	Feb. 3/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-Y-300 E



Line 300 E - X Component

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM ENJ-101

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

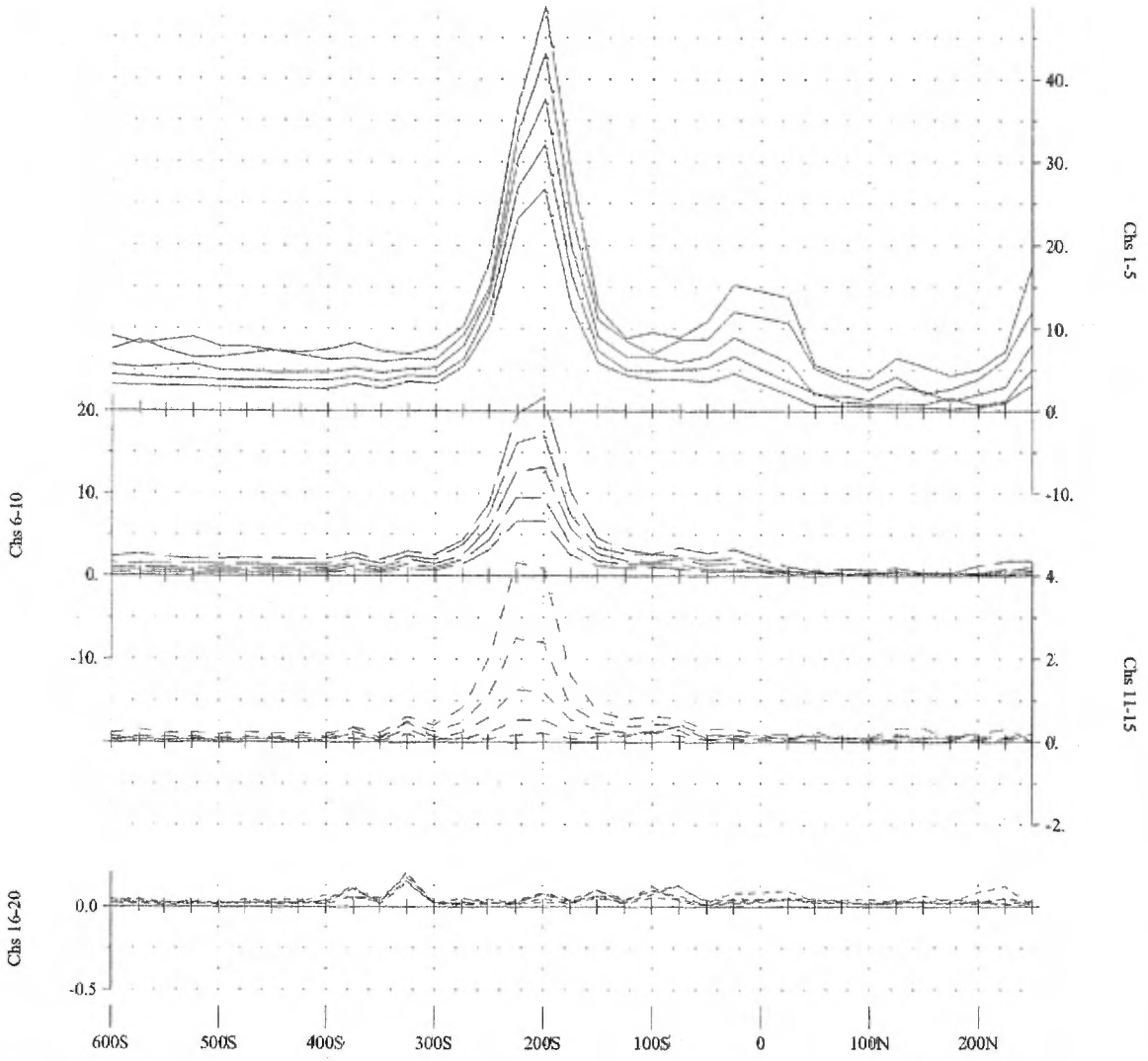
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L 0E, L 500 E, 0N, 300N
Transmitter Current:	19.2 Amps
Transmitter Turn-Off Time:	267 us
Line Azimuth:	46 deg.TN
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up Hx - positive south Hy - positive east
Survey Date:	Feb. 3/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-X-300 E



Line 300 E - Total Field

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM ENJ-101

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

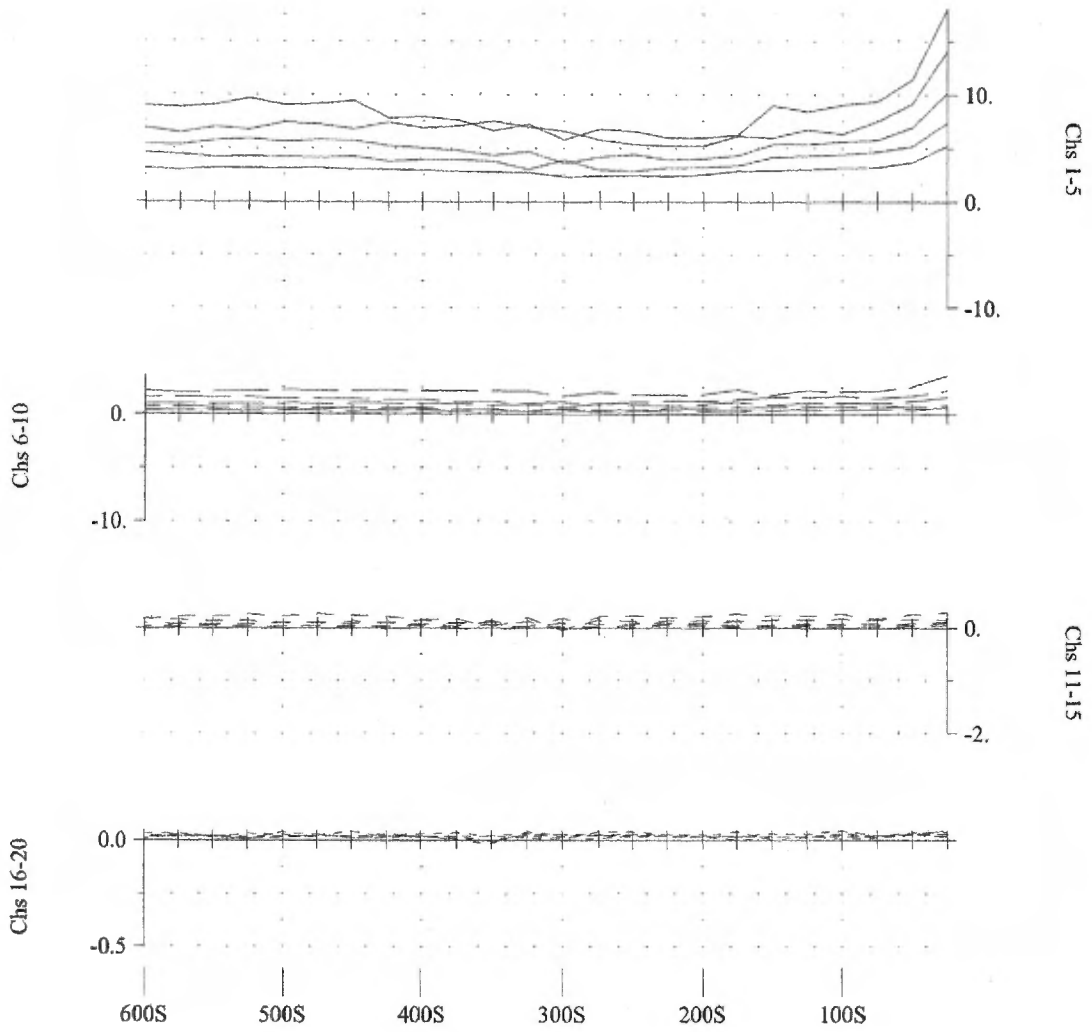
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L 0E, L 500 E, 0N, 300N
Transmitter Current:	19.2 Amps
Transmitter Turn-Off Time:	267 us
Line Azimuth:	46 deg.TN
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up Hx - positive south Hy - positive east
Survey Date:	Feb. 3/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels) & Geonics 3D Coil (3x200m^2) Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-TF-300 E



Line 400 E - Z Component

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM ENJ-101

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

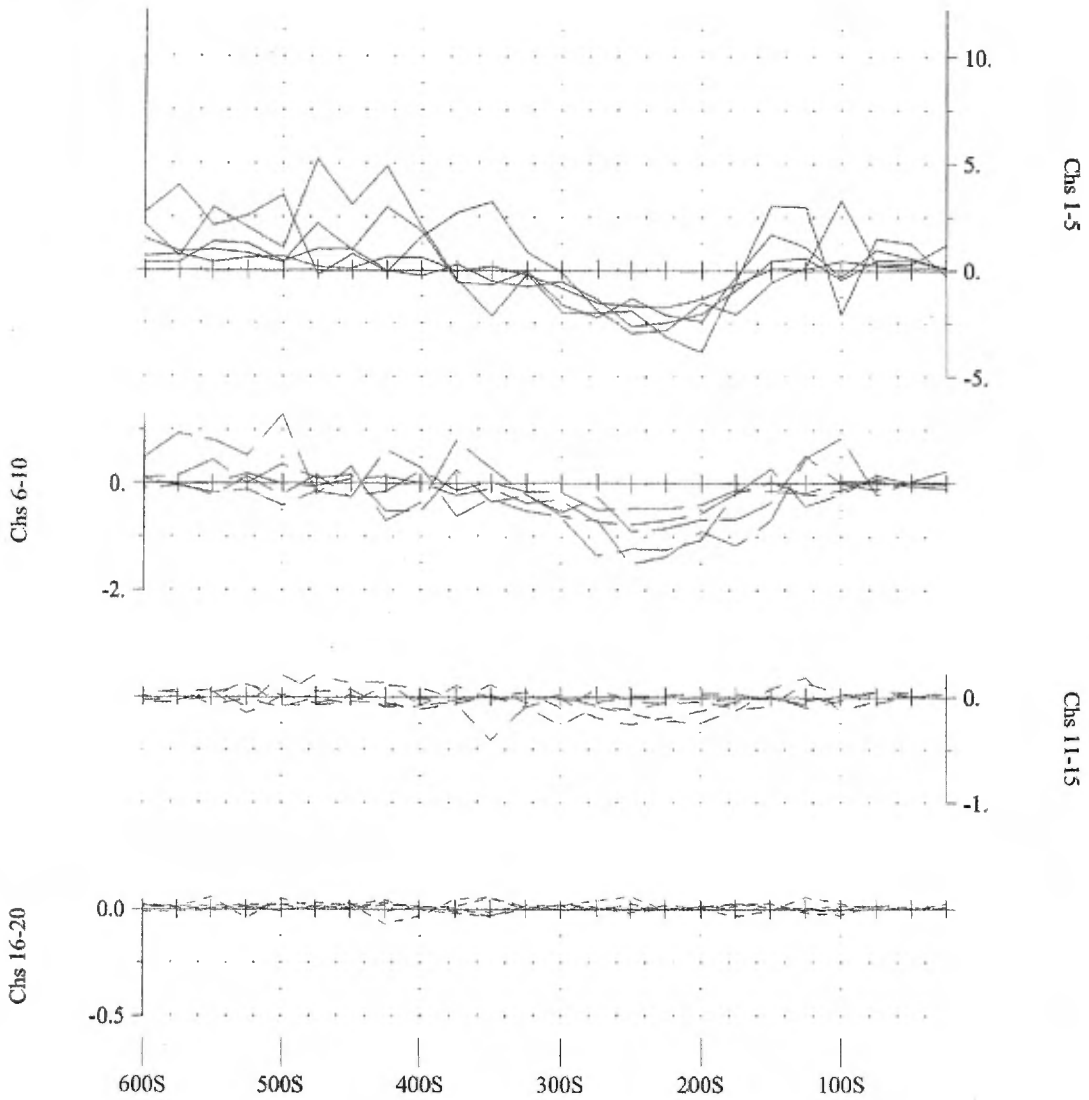
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L 0E, L500E, 0N, 300N
Transmitter Current:	19.2 Amps
Transmitter Turn-Off Time:	272 us
Line Azimuth:	46 deg.TN
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up
	Hx - positive south
	Hy - positive east
Survey Date:	Feb. 3/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels)
	& Geonics 3D Coil (3x200m^2)
	Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-Z-400 E



Line 400 E - Y Component

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM ENJ-101

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

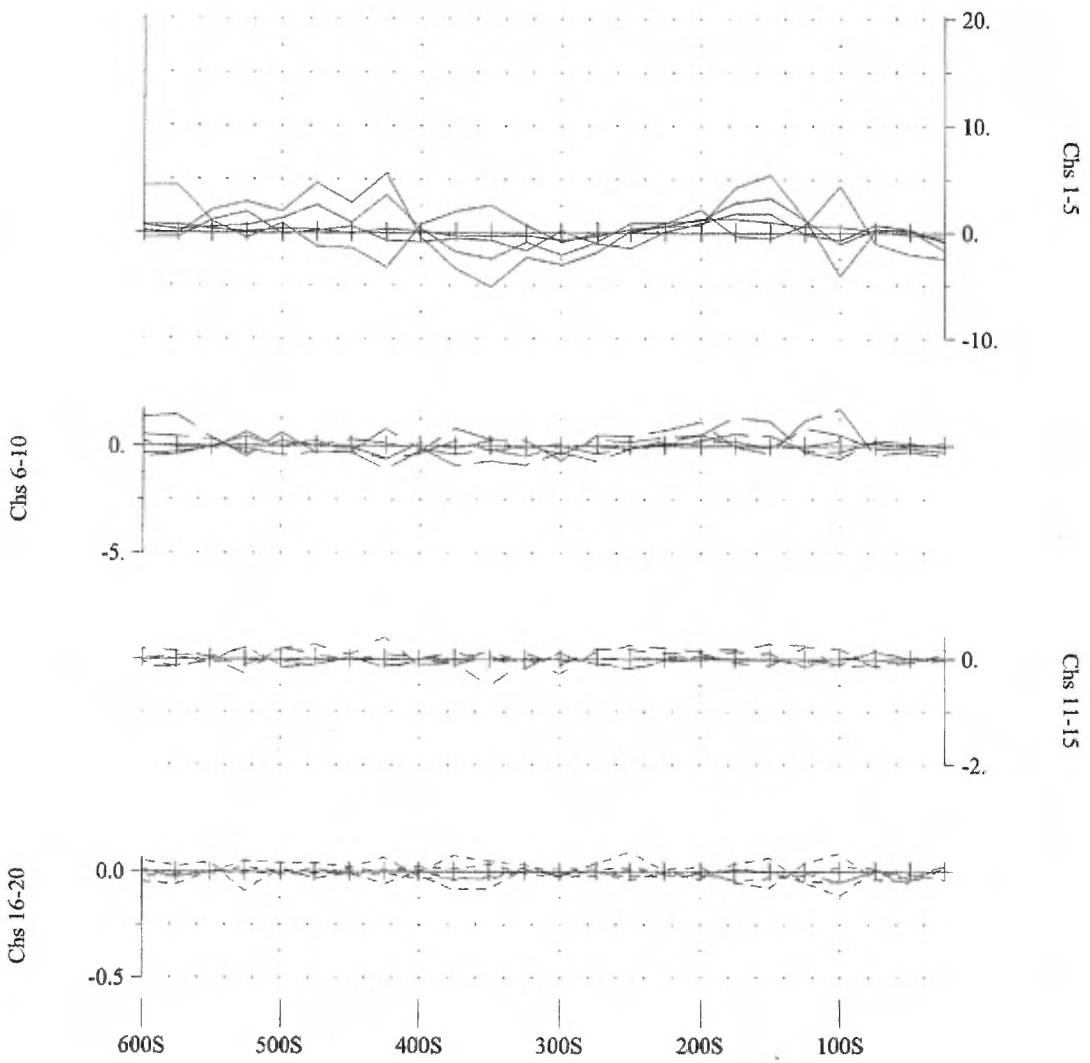
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L 0E, L 500 E, 0N, 300N
Transmitter Current:	19.2 Amps
Transmitter Turn-Off Time:	267 us
Line Azimuth:	46 deg.TN
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up
	Hx - positive south
	Hy - positive east
Survey Date:	Feb. 3/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels)
	& Geonics 3D Coil (3x200m^2)
	Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-Y-400 E



Line 400 E - X Component

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM ENJ-101

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

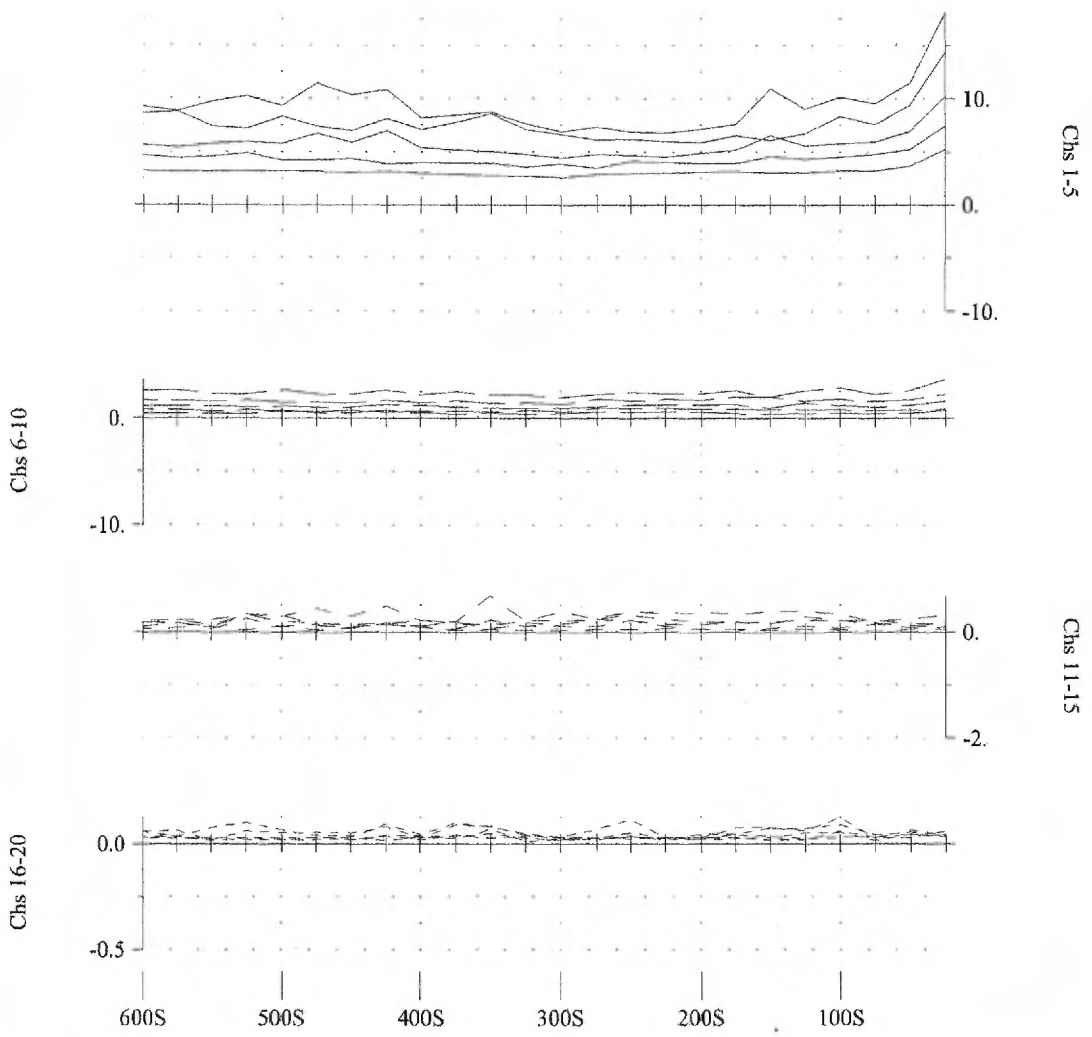
Secondary Electromagnetic Field (dB/dt)

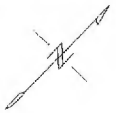
Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L 0E, L 500 E, 0N, 300N
Transmitter Current:	19.2 Amps
Transmitter Turn-Off Time:	267 us
Line Azimuth:	46 deg.TN
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up
	Hx - positive south
	Hy - positive east
Survey Date:	Feb. 3/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels)
	& Geonics 3D Coil (3x200m^2)
	Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-X-400 E





Line 400 E - Total Field

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM ENJ-101

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

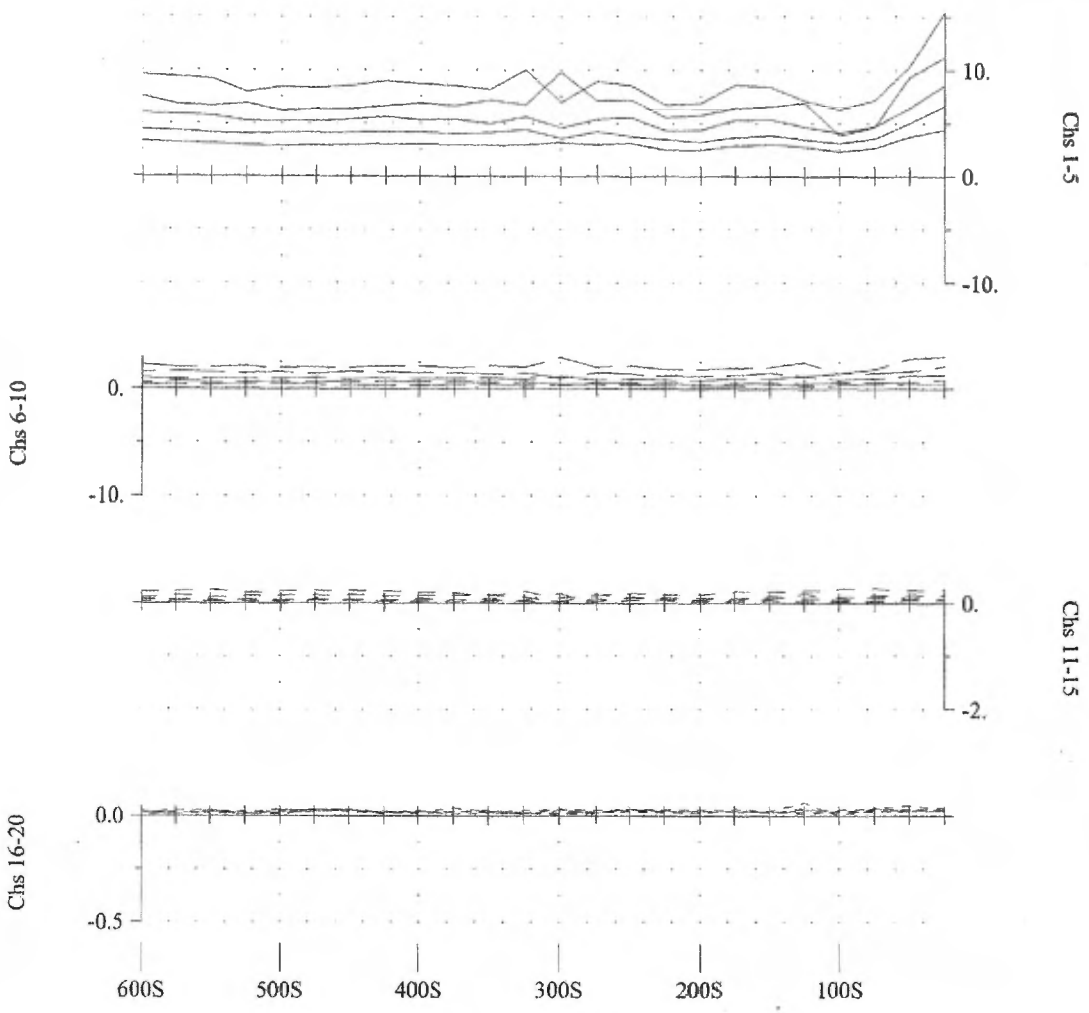
Secondary Electromagnetic Field (dB/dt)

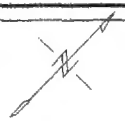
Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L 0E, L 500 E, 0N, 300N
Transmitter Current:	19.2 Amps
Transmitter Turn-Off Time:	267 us
Line Azimuth:	46 deg.TN
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up
	Hx - positive south
	Hy - positive east
Survey Date:	Feb. 3/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels)
	& Geonics 3D Coil (3x200m^2)
	Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-TF-400 E





Line 500 E - Z Component

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM ENJ-101

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

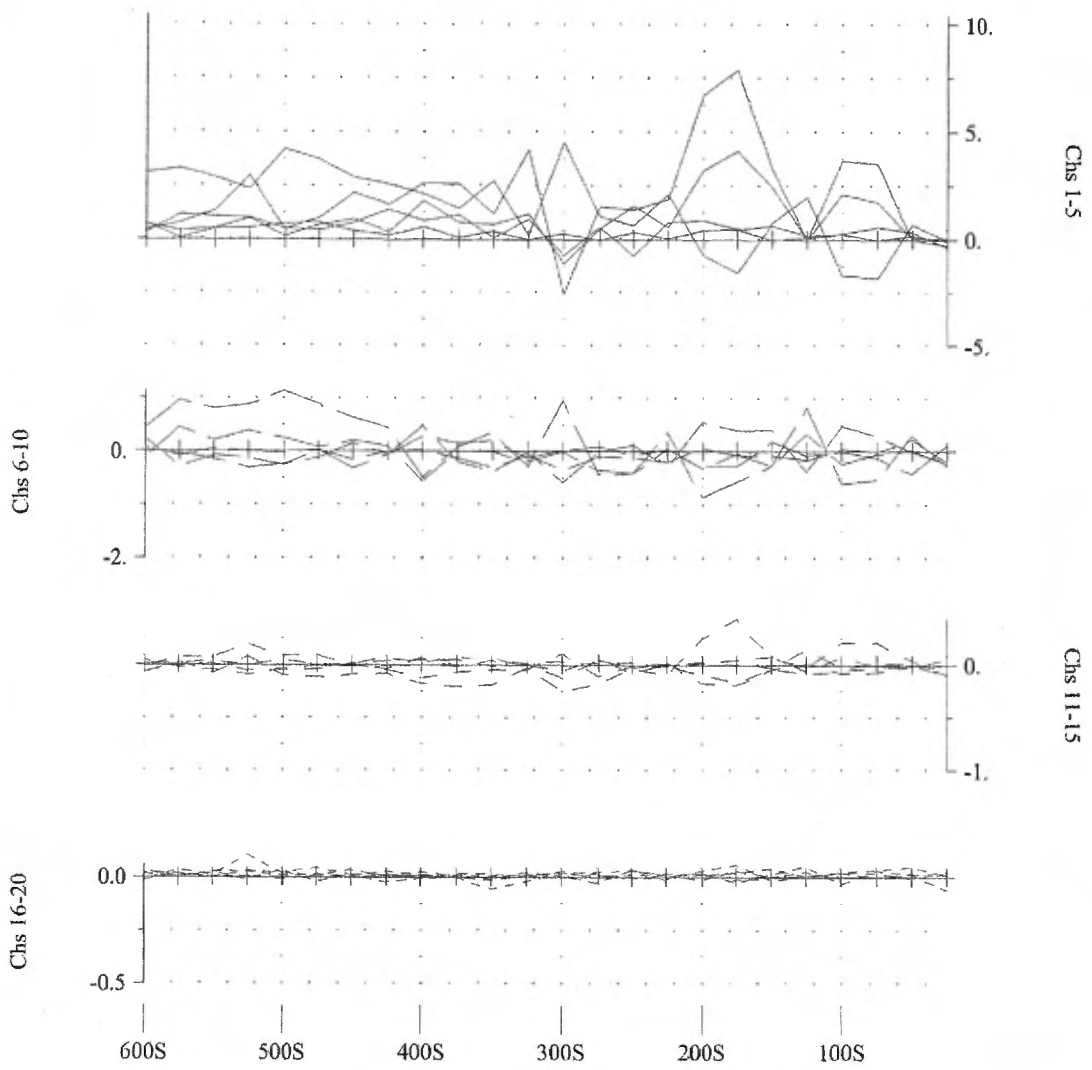
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L 0E, L500E, 0N, 300N
Transmitter Current:	19.2 Amps
Transmitter Turn-Off Time:	272 us
Line Azimuth:	46 deg.TN
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up
	Hx - positive south
	Hy - positive east
Survey Date:	Feb. 3/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels)
	& Geonics 3D Coil (3x200m^2)
	Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-Z-500 E



Line 500 E - Y Component

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM ENJ-101

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

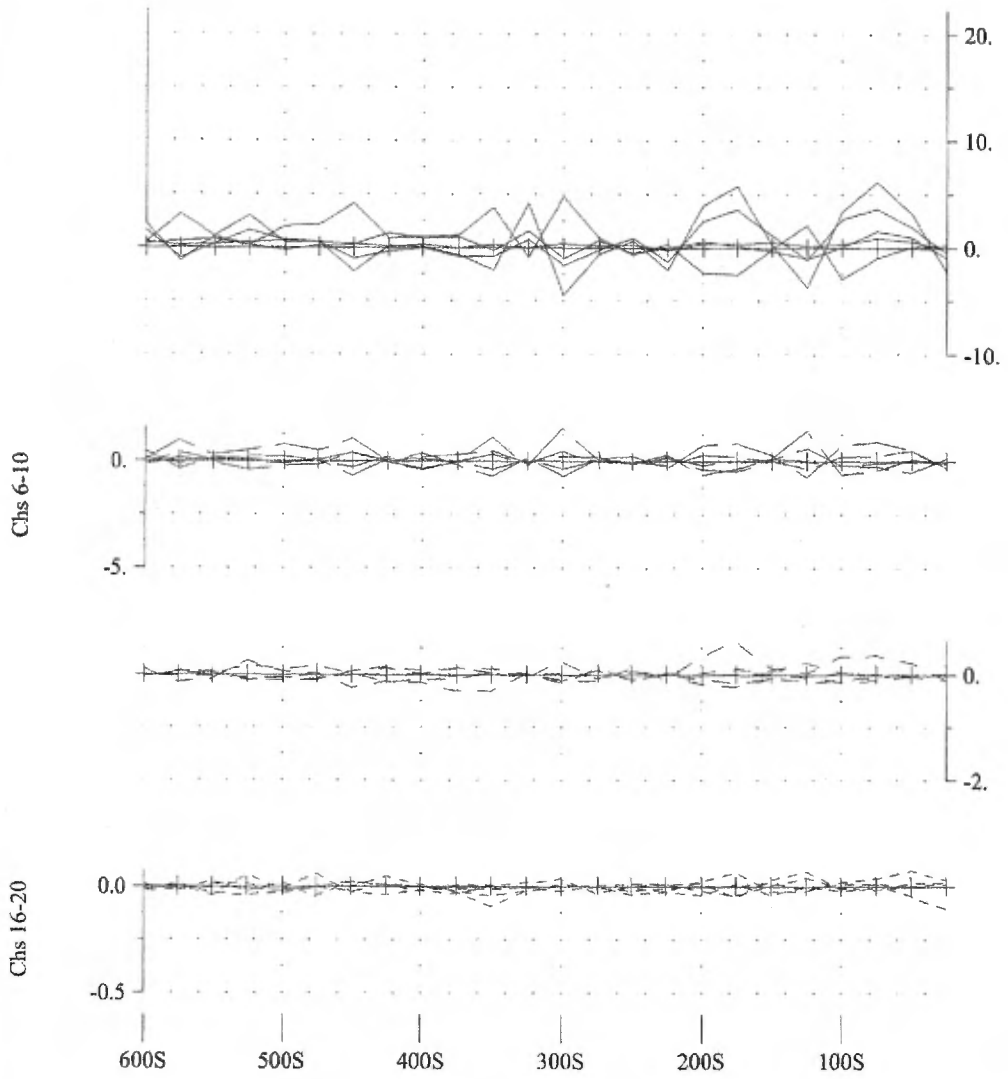
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L 0E, L 500 E, 0N, 300N
Transmitter Current:	19.2 Amps
Transmitter Turn-Off Time:	267 us
Line Azimuth:	46 deg.TN
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up
	Hx - positive south
	Hy - positive east
Survey Date:	Feb. 3/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels)
	& Geonics 3D Coil (3x200m^2)
	Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-Y-500 E



Line 500 E - X Component

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM ENJ-101

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

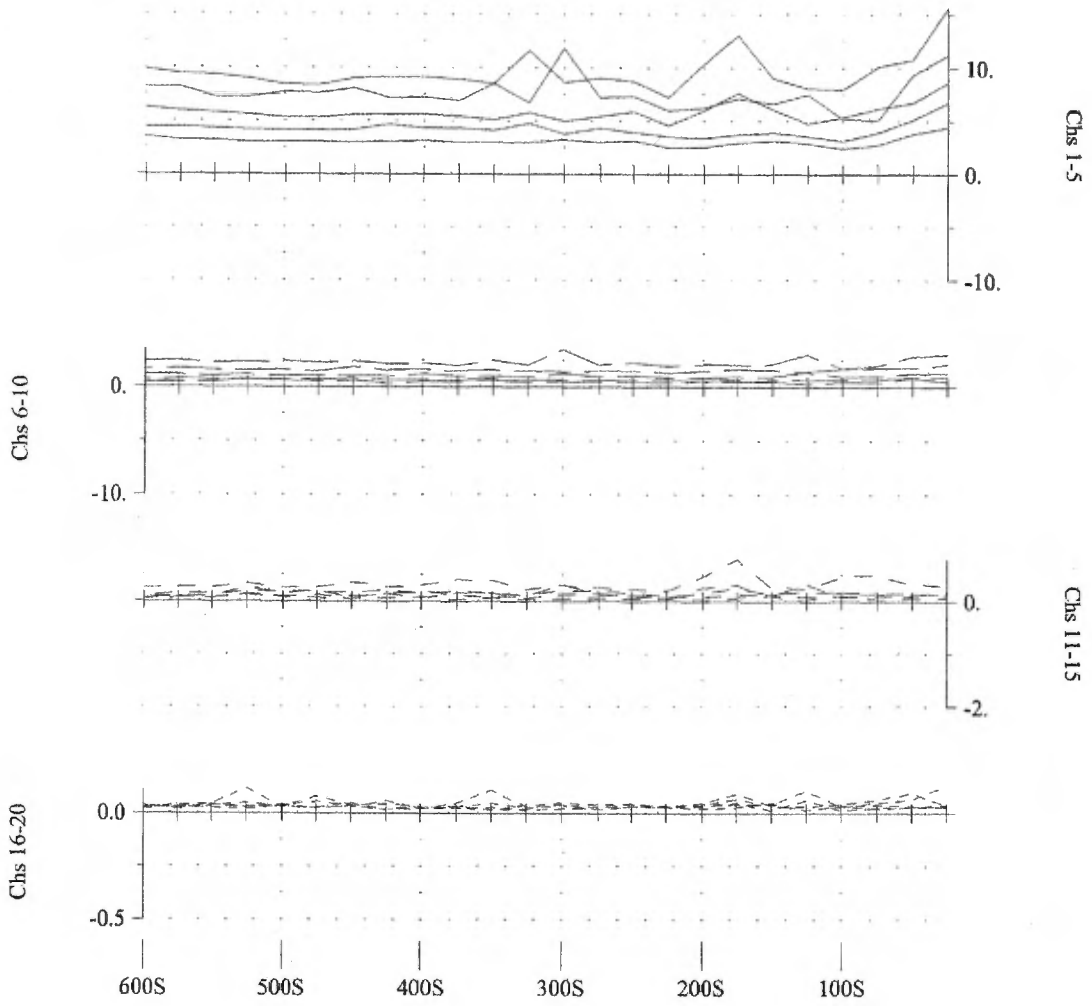
Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L 0E, L 500 E, 0N, 300N
Transmitter Current:	19.2 Amps
Transmitter Turn-Off Time:	267 us
Line Azimuth:	46 deg.TN
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up
	Hx - positive south
	Hy - positive east
Survey Date:	Feb. 3/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels)
	& Geonics 3D Coil (3x200m^2)
	Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-X-500 E



Line 500 E - Total Field

Scale 1:5000

50 0 50 100 150 200

(metres)

NORANDA INC.

WEST SELBAIE MEGATEM ENJ-101

SELBAIE AREA, nts 32 E/14, QC

LPTEM FIXED-LOOP PROFILING SURVEY

Secondary Electromagnetic Field (dB/dt)

Transmitter Frequency:	30 Hz (50% duty cycle)
Tx Loop Size:	300m X 500m
Tx Loop Location:	L 0E, L 500 E, 0N, 300N
Transmitter Current:	19.2 Amps
Transmitter Turn-Off Time:	267 us
Line Azimuth:	46 deg.TN
Station Interval:	25 metres
Profile Units:	nanoVolt/A*m^2
Receiver Coil Orientation:	Hz - positive up
	Hx - positive south
	Hy - positive east
Survey Date:	Feb. 3/2003
Instrumentation:	Rx = Digital Protem (3x20 Channels)
	& Geonics 3D Coil (3x200m^2)
	Tx = Geonics EM-37 (2.8 kW)

Surveyed & Processed by:

QUANTEC GEOSCIENCE INC.

DWG. NO. QG-268-4AXIS-TF-500 E

ANNEXE 8

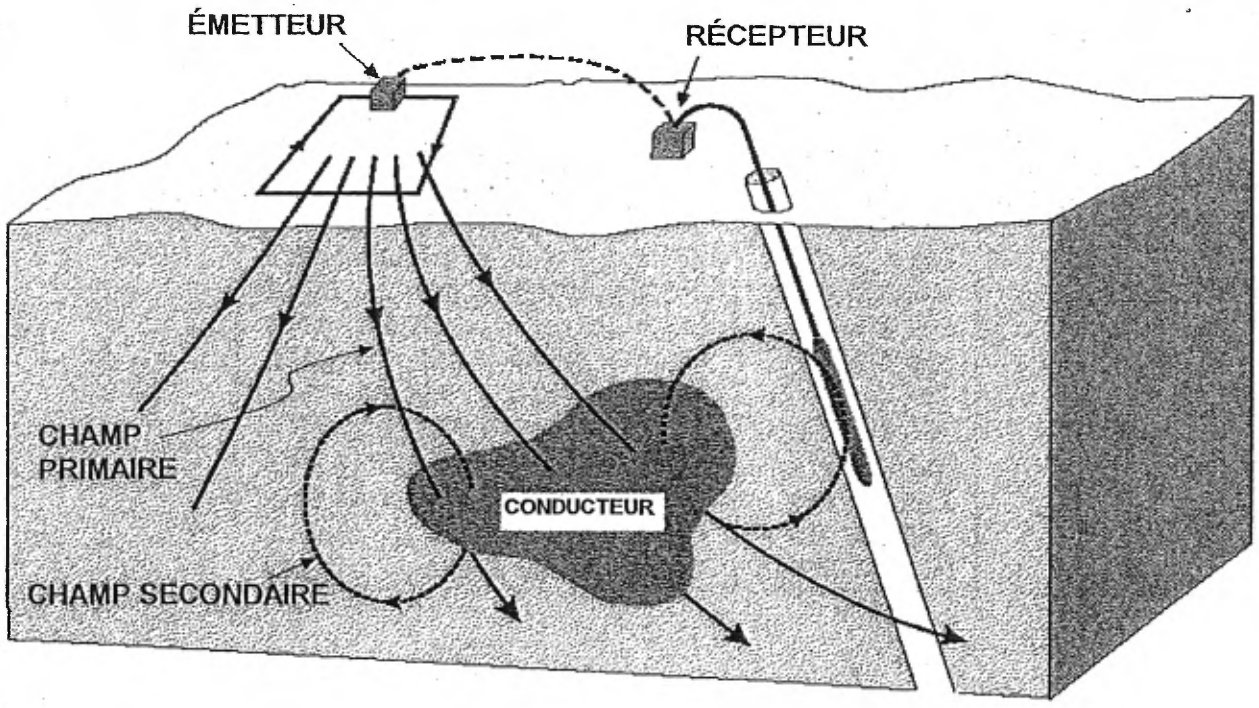
Géophysique – Levés électromagnétiques de type 'PULSE-EM' en forage

ANNEXE 1

La méthode PULSE-EM en forage est une méthode électromagnétique dans le domaine transitoire. L'appareillage utilisé est conçu et fabriqué par la société canadienne CRONE Géophysics inc. Cet appareillage comprend essentiellement un ensemble de pièces servant à l'émission du champ primaire et un autre pour la réception du champ secondaire. Les composantes servant à l'émission sont la génératrice de courant, un régulateur et un émetteur d'une puissance de 2400 kW. L'émetteur envoie un fort courant de l'ordre de 15A dans une grande boucle carrée ou rectangulaire de fils étendue sur le terrain

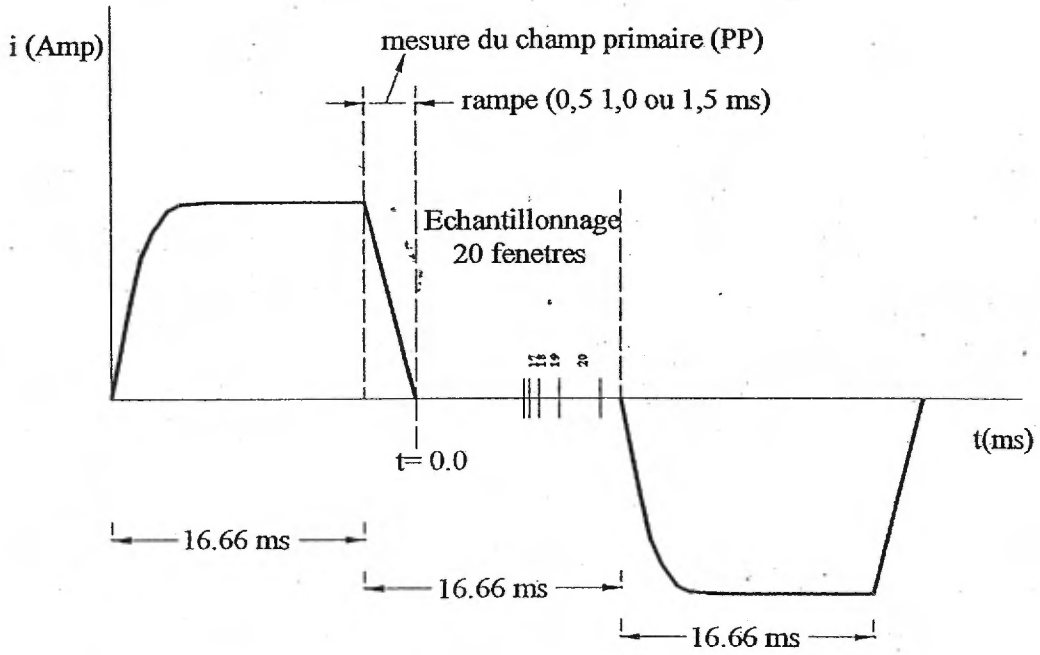
Selon les lois de Maxwell, les variations d'intensité du courant crée un champ électromagnétique dit primaire qui est proportionel à la dérivé du courant. Le champ primaire est donc nul lorsque le courant est constant (à son maximum ou à zéro) et maximum durant la rampe. En présence de zones conductrices, le champ primaire induit ou canalise des courants électriques dans ces zones qui produisent à leur tour un champ électromagnétique dit secondaire (figure 1).

Figure 1



La forme du courant dans la boucle est rectangulaire se terminant par une rampe dont la durée est soit de 1,5 ms, 1,0 ms ou 0,5 ms (figure 2) Une rampe de 1,5 ms est habituellement utilisée pour le bons conducteurs tandis que 1,0 ms et 0,5 ms permettent d'accroître le contenu en haute fréquence et donc de déceler de moins bons conducteurs.

Figure 2



Fenetre	intervalle (ms)	Fenetre	intervalle (ms)
PP	-0,1982 à -0,0990		
CH1	0,0765 à 0,1035	CH11	1 ,075 à 1 ,395
CH2	0,1035 à 0,1306	CH12	1 ,395 à 1 ,809
CH3	0,1306 à 0,1712	CH13	1 ,809 à 2 ,348
CH4	0,1712 à 0,2252	CH14	2 ,348 à 3 ,046
CH5	0,2252 à 0,2925	CH15	3 ,046 à 3 ,951
CH6	0,2925 à 0,3780	CH16	3 ,951 à 5 ,121
CH7	0,3780 à 0,4905	CH17	5 ,121 à 6 ,646
CH8	0,4905 à 0,6389	CH18	6 ,646 à 8 ,617
CH9	0,6389 à 0,8280	CH19	8 ,617 à 11,17
CH10	0,8280 à 1,075	CH29	11,17 à 14,49

Le système de réception se compose d'un récepteur numérique de 20 fenêtres de temps distribuées de façon géométrique durant le cycle de lecture qui dure 16,66 ms (incluant la rampe). Pour augmenter le raport signal/bruit, au moins une vingtaine de cycles (environ 10 secondes) sont échantillonnés. La résolution instrumentale est de 0,1 nanotesla/seconde (nT/s) et le bruit est généralement de l'ordre de 1 à 10 nT/s.

Le récepteur est couplé à une sonde que l'on descend dans le trou au moyen d'un câble monté sur un treuil. Ce système mesure la dérivé du champ magnétique secondaire (dB/dt) en l'absence du champ primaire. c'est-à-dire lorsque que le courant est interompu et que le champ primaire est nul. Dans le cas des levés 3D, deux sondes sont utilisées successivement : la sonde axiale qui mesure dBz/dt dans l'axe du trou et la sonde orthogonale qui mesure deux composantes perpendiculaires à l'axe du trou. Ces deux composantes sont ensuite rotationnées pour obtenir une composante *x* perpendiculaire à l'axe du trou mais dans la direction de l'azimuth du trou et une composante *y* dans un plan horizontale perpendiclaire au plan formé par les vecteurs directionels *z* et *x*.

La synchronisation entre le transmetteur et le récepteur est habituellement maintenue par un câble quoiqu'on puisse aussi se servir d'une horloge à cristal interne.

La dimension et la position des boucles sont choisies en fonction de la profondeur et la géométrie des sources qui peuvent se trouver à proximité des trous. La boucle doit être positionnée pour générer un champ primaire perpendiculaire au plan majeur du conducteur. Ce choix se fait en utilisant une section verticale qui montre la composante magnétique du champ électromagnétique primaire (figure 3). Si on ne possède pas d'indice sur les paramètres géométriques de la cible recherchée, on doit utiliser plusieurs boucles pour varier le couplage entre le champ primaire et ces amas de sulfures recherchés.

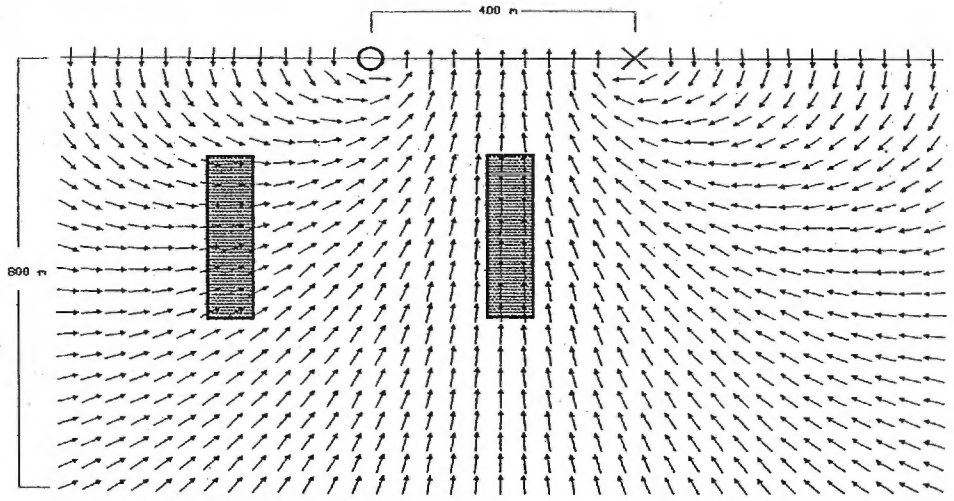


Figure 3

L'interprétation se fait soit qualitativement, en interprétant la forme des profils ou quantitativement.

Généralement, on distingue sur les profils de la composante z, les anomalies de type in-hole, edge et off-hole. On se sert des profils des composante x et y pour estimer la direction du coeur du conducteur par rapport au trou de sondage.

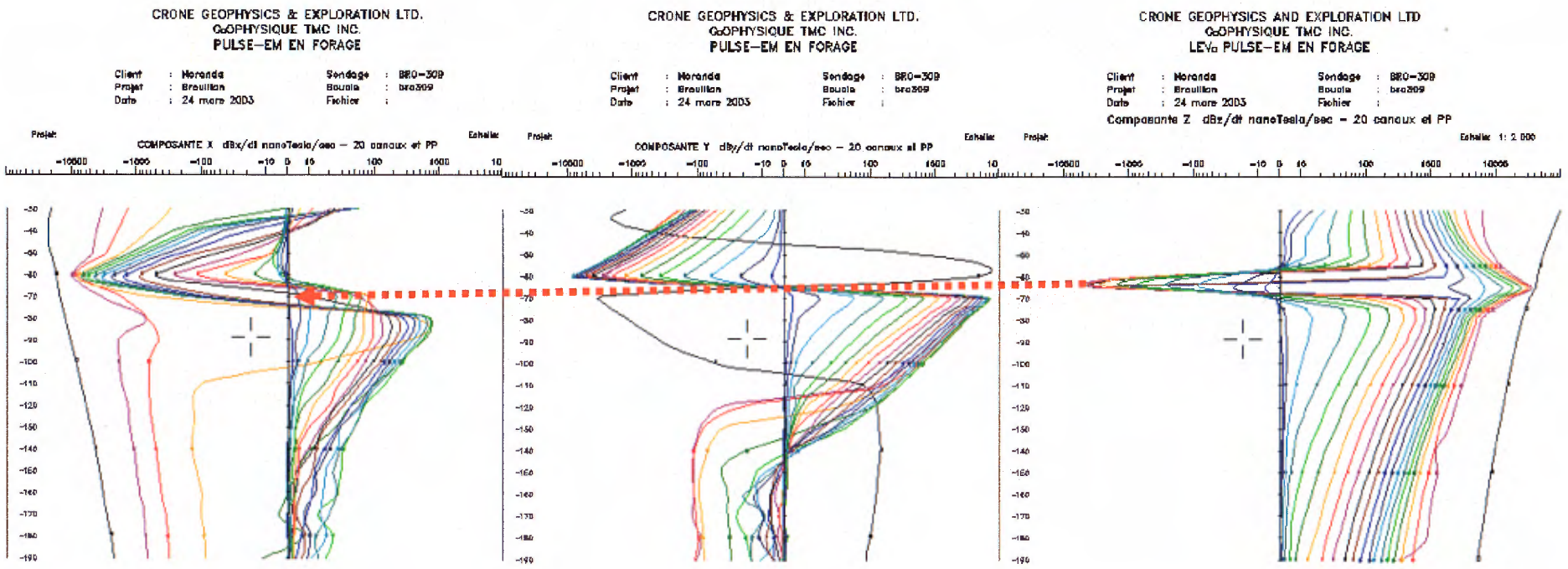
La qualité d'un conducteur s'estime par la constante de temps. La constante de temps dépend à la fois de la conductivité de la source de l'anomalie et à la fois de ses dimensions. Dans le cas d'un prisme mince, la constante de temps vaut

$$\text{cte de temps} = 0{,}1\sigma\mu Lt$$

où σ est la conductivité en siemens, μ est la perméabilité du vide ($4\pi \times 10^{-7}$), L est la dimension moyenne et t est l'épaisseur. Normalement, la constante de temps s'obtient en calculant l'inverse de la pente du graphique du log de l'amplitude en fonction du temps, c'est-à-dire le temps pris pour que l'amplitude décroisse de 36.8% (1/e). Pour tenir compte de la superposition du spectre d'exponentiels présents dans la courbe de décroiisance, nous avons opté pour 20% de l'amplitude ce qui correspond aux plus longs modes de décroissance exponentiel.

Pour mieux apprécier le sens de la constante de temps, prenons l'exemple d'un amas de sulfure (pyrite) de conductivité assez faible de 10S/m qui présenterait une constante de temps de 1 ms. Ses dimensions seraient de 100m x 10m, soit environ 250,000 tonnes.

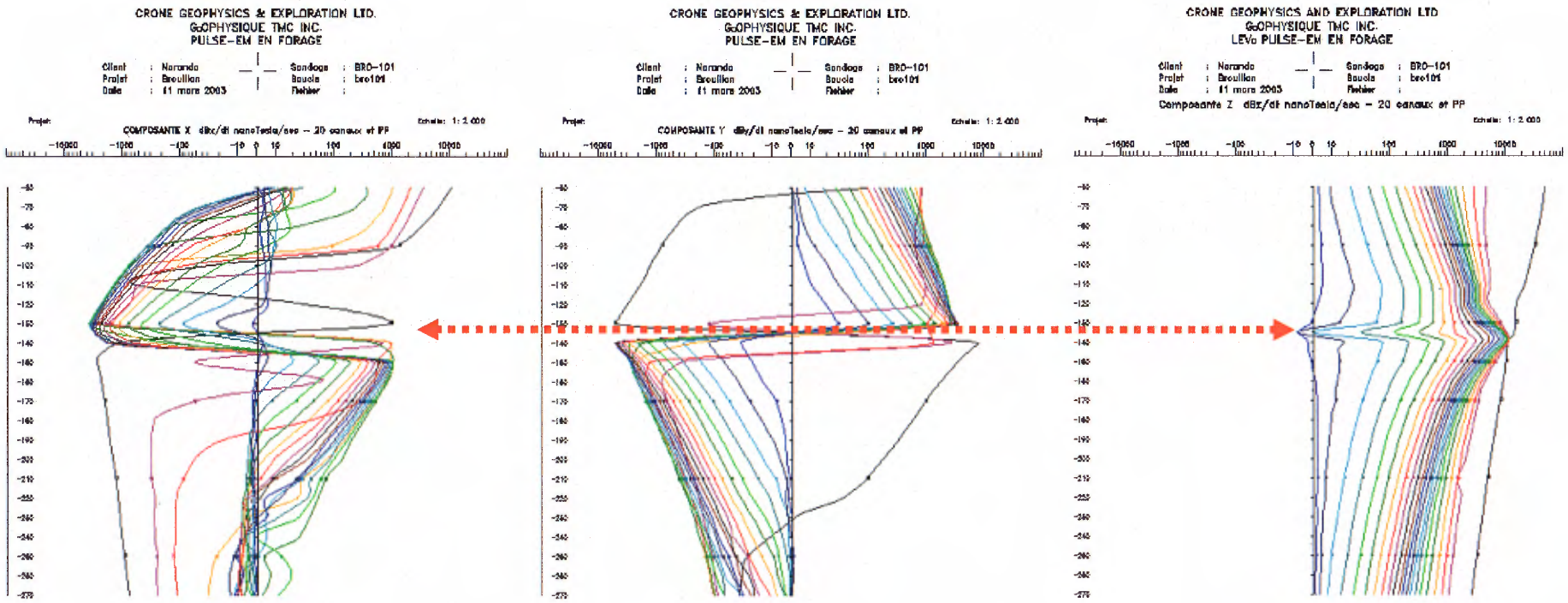
BRO-309-03-01 Levé électromagnétique de type PULSE en forage ('BHEM')



X Y Z

In-hole/edge anomaly at 60m

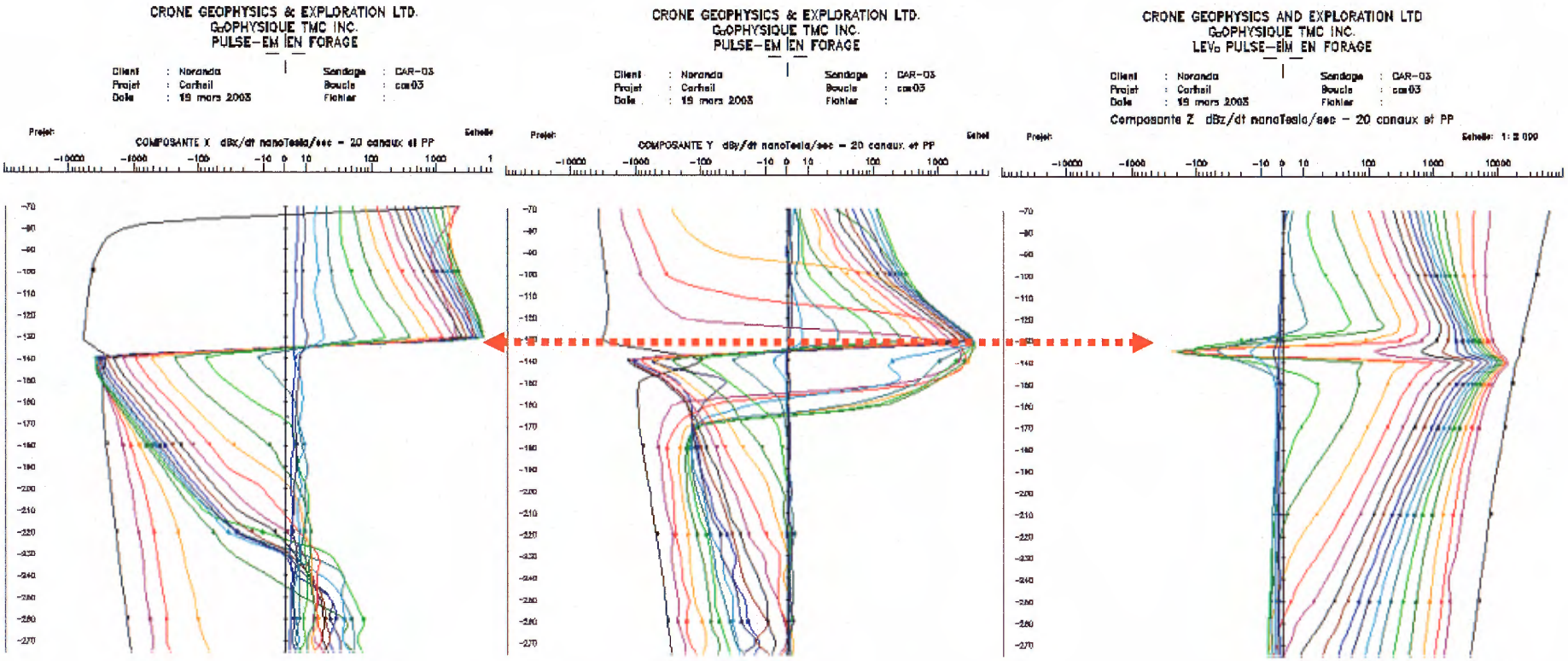
BRO-101-03-01 Levé électromagnétique de type PULSE en forage ('BHEM')



X Y Z

Clear and strong in-hole anomaly at 135m.
Conductor center to the right and up-dip

CAR-03-03-01 Levé électromagnétique de type PULSE en forage ('BHEM')



X Y Z

Strong in-hole at 130m

The conductor extends mainly below the hole and to the right (east)