

# OUTER-RIM EXPLORATION SERVICES

ABN 88 104 028 417

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Geophysical Contracting Services

100% Australian Owned

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## Volume 1 of 1

**Client** : Bass Metals Ltd

**Prospect** : Hellyer

**Area** : Rosebery, Tas.

**Survey** : Borehole PEM Survey

**Survey Period** : 25<sup>th</sup> to 31<sup>st</sup> January, 2008

**Operator** : Muhamad Humam

**DAILY LOG: Bass Metals Ltd - January, 2008**

DATE	COMMENTS	CHARGES
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**Operator:** Muhamad Humam

**Field Assistant:** Jayson

22-01-08	We drove from Kalgoorlie to WA-SA border village.	1 Mob. day \$1150.00
23-01-08	We drove from the border village to Adelaide, starting at 6.00am and arriving at 9.00pm.	1½ Mob. day \$1725.00
24-01-08	We drove from Adelaide to Melbourne, then crossed to Tasmania via the Spirit Tasmania Ferry.	1 Mob. day \$1150.00
25-01-08	We left Devonport at 8.00am, drove to Rosebery, arriving at 10.30am and checked in to the Nancy Guest house. We then drove to the Hellyer mine and undertook an induction while Jayson laid out the first loop for HED-015. We then drove back to Rosebery, arriving at 5.30pm.	½ Mob. day \$ 575.00 ½ Survey day \$1075.00 ½ Field Assist. day \$ 150.00
26-01-08	We drove to Hellyer at 7.00am, finished laying the first loop, set up and read the Z and X-Y components for HED-015, while Jayson and a Bass Metals field assistant laid out half of the second loop. We then packed up and drove back to Rosebery, arriving at 6.00pm.	

**SURVEY PARAMETERS**

**Loop HED15-1** :600 x 300m

6200E, 9000N; 6250E, 8750N;  
6200E, 8600N; 6225E, 8450N;  
6600E, 8450N; 6650E, 8600N;  
6600E, 9000N.

Current :20 Amps

Time Base :20 ms

Ramp Time :1ms

Sync :Cable

**Hole No.** :HED-015

6553E, 8667N

Depth :600m

Channels :21

Components :Z,X,Y

1 Survey day \$2150.00  
1 Field Assist. day \$ 300.00

27-01-08 We drove out to site at 7.00am, finished laying out the second loop, set up, completed the Z component and read the X-Y to 450m while Jayson laid out the next loop for HED-014. We then packed up and returned to Rosebery at 5.00pm.

**SURVEY PARAMETERS**

**Loop HED15-2** :600 x 300m

6600E, 9000N; 6650E, 8600N;  
6600E, 8450N; 7000E, 8450N;  
7000E, 9000N.

Current :20 Amps

Time Base :20 ms

Ramp Time :1ms

Sync :Cable

**Hole No. :HED-015**

6553E, 8667N

Depth :600m (X-Y to 450m)

Channels :21

Components :Z,X,Y

1 Survey day \$2150.00

1 Field Assist. day \$ 300.00

28-01-08 We left Rosebery at 7.00am, drove to site and completed the X-Y for HED-015, loop 2. We then moved to HED-014, dummied it and read the Z and X-Y components. We then packed up and returned to Rosebery at 5.00pm.

**SURVEY PARAMETERS**

**Loop HED15-2** :600 x 300m

6600E, 9000N; 6650E, 8600N;  
6600E, 8450N; 7000E, 8450N;  
7000E, 9000N.

Current :20 Amps

Time Base :20 ms

Ramp Time :1ms

Sync :Cable

**Hole No. :HED-015**

6553E, 8667N

Depth :600m

Channels :21

Components :X-Y

**Loop HED14** :350 x 325m

3500E, 7850N; 3500E, 7500N;  
3600E, 7500N; 3825E, 7525N;  
3825E, 7850N.

Current :20 Amps

Time Base :20 ms  
Ramp Time :1ms  
Sync :Cable

**Hole No. :HED-014**  
3820E, 7698N  
Depth :300m  
Channels :21  
Components :Z,X,Y

1 Survey day \$2150.00  
1 Field Assist. day \$ 300.00

29-01-08 We drove to the Bass Metals office at 7.35am, spoke to Jovan and Travis, then drove to site. We recovered loop HED14, packed up, moved to HLD-958, dummied it and laid out the 300 x 300m, double turn loop. We started the Z component survey at midday and, while Jayson laid out the next loop, I read the axial component for HLD-958 and HLD-960. We then packed up, moved back to HLD-958, dropped the gear off and drove back to Rosebery, arriving at 7.20pm.

#### SURVEY PARAMETERS

**Loop HLD9** :375 x 300m  
5200E, 10300N; 5200E, 10000N;  
5475E, 10000N; 5525E, 10150N;  
5550E, 10300N.

Current :40 Amps  
Time Base :20 ms  
Ramp Time :1ms  
Sync :Cable

**Hole No. :HLD-958**  
5653E, 10149N  
Depth :280m  
Channels :21  
Components :Z

**Hole No. :HLD-960**  
5690E, 10200N  
Depth :300m  
Channels :21  
Components :Z

1¼ Survey day \$2687.50  
1¼ Field Assist. day \$ 375.00

30-01-08 We drove out to Hellyer at 7.00am, spoke to Jovan and Travis about the job planning, then drove to site. We read the X-Y components for HLD-958, while Jayson and a Bass Metals field assistant moved the second loop for HED-015 - it had been laid out in the wrong

place a couple of days previously. We packed up, moved back to HED-015 and read the Z component. We then packed up and drove back to Rosebery, arriving at 7.00pm.

# **SURVEY PARAMETERS**

**Loop HLD9** :375 x 300m

5200E, 10300N; 5200E, 10000N;  
5475E, 10000N; 5525E, 10150N;  
5550E, 10300N.

Current :40 Amps

Time Base :20 ms

Ramp Time :1ms

Sync :Cable

**Hole No.** :HLD-958

5653E, 10149N

Depth :280m

Channels :21

Components :Z

**Loop HED15-2** :600 x 300m

6600E, 9000N; 6650E, 8600N;  
6600E, 8450N; 7000E, 8450N;  
7000E, 9000N.

Current :20 Amps

Time Base :20 ms

Ramp Time :1ms

Sync :Cable

**Hole No.** :HED-015

6553E, 8667N

Depth :600m

Channels :21

Components :Z

1¼ Survey day \$2687.50

1¼ Field Assist. day \$ 375.00

31-01-08 We drove out to site at 7.00am, recovered the double turn loop for HLD-958 and HLD-960 and the loop for HED-015. It was very difficult area and took quite a long time. We then packed up all the gear and drove back to Rosebery, arriving at 4.10pm.

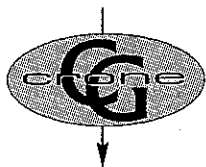
1 Survey day \$2150.00

1 Field Assist. day \$ 300.00

11-02-08 Mobilised back to the mainland and onto the next job. (Total mobilisation prorated).

2 Mob. day \$2300.00

# Appendix



# CRONE GEOPHYSICS & EXPLORATION LTD.

3607 WOLFEDALE ROAD, MISSISSAUGA, ONTARIO, CANADA, L5C 1V8  
Phone: (905) 270-0096 Fax: (905) 270-3472 www.cronegeophysics.com

## 3-D PULSE EM - SYSTEM DESCRIPTION

**Name of System:** Crone Pulse EM (PEM).

**Method Employed:** TDEM (Time-domain electromagnetics) or TEM (Transient EM).

**Survey Types:**

- **Surface** - DEEPEM, Large In-Loop, Moving Loop, Moving Coil - 3 components.
- **Borehole** - 3D Borehole PEM - 3 components are measured and oriented.
- **Underground** - 3D Borehole PEM - including flat or up-dipping holes.

**Measured Quantity:** Rate of change of magnetic field in nanoTesla/second (same as nV/m<sup>2</sup>).

**Receiver:** Fully digital (input is digitized before stacking) with 24 bit dynamic range.

**Channels (Gates):**

- Typically 20 logarithmic channels in off-time and 1 during ramp (PP).
- Operator can select from several built-in tables including:
  - 10, 20, or 30 channel system (single, double, triple density)
  - 45 channels 4.5 usec wide covering the end of ramp and start of off-time.
  - 42 channels and PP for 150 msec time base.
  - full sampling of ramp and off-time (8 on ramp and full off-time starting at 0 usec).
- Programmable channel positions in the field.

**Stacking:** 512 to 65536 stacks with spike rejection.

**Gain Control:** Automatic software control (no selection or correction required).

**Rx Operation:** Menu-driven software. Large 16x40 character LCD. Full alphanumeric keyboard.

**Display:** 256 x 128 pixel scrollable graphic LCD for decay curves and profiles in the field.

**Data Handling:** Solid state storage; multiple files; all files can be appended at any time. Plot, list, sort, delete data. RS232 transmission of all data or only certain files.

**Synchronization:** Radio, cable, or crystal clock

**Current Waveform:** Bipolar on-off square waveform with exponential turn-on and ramp off.

**Time Base:** Off-time plus ramp time.

- 8.33, 16.66, 50, 100 and 150 msec for 60 Hz noise rejection (equivalent base frequencies of 30, 15, 5, 2.5, 1.67 Hz.)
- 10.0, 20.0, 50.0, 100.0 and 150 msec for 50 Hz noise rejection (equivalent base frequencies of 25, 12.5, 5, 2.5, 1.67 Hz.)

**Ramp Time:** The time required for the current to turn off.

- 500, 1000, or 1500 usec selections for precisely controlled linear turn-off ramps.
- "fast ramp" option turns current off as quickly as possible for a given loop size and current (2 usec or less to a few hundred usec).

**Transmit Loop:**

- Single turn loop of any dimension (less than 100m x 100m to greater than 2km x 2km).
- Multi-turn 14m diameter loop for near-surface Moving Coil surveys.

**Tx Output Current:**

- 30 Amps maximum at 160 Volts for 4.8 kWatt system.
- 20 Amps maximum at 120 Volts for 2.4 kWatt system.

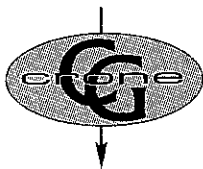
**Tx Output Voltage:**

- 48 to 240 Volts continuously adjustable for 4.8 kWatt system.
- 24 to 120 Volts continuously adjustable for 2.4 kWatt system.

**Tx Safety features:** Transmitter automatically shuts off when loop is opened. Also shuts off with high instrument temperature and overload. Fuse and circuit breaker overload protection.

**Borehole Probes:** 32 mm diameter.  
Pressure-tested for depths of 2500m or more.

**Operating Temperature:** -40°C to 50°C



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## 3-D PULSE EM - SPECIAL FEATURES

**High Power:** A new 4.8 kWatt transmitter allows very large loops to be used while maintaining a high current.

**Precise Current Ramps:** Precisely- controlled linear ramps of fixed duration allow for proper comparisons to be made between data from different loop sizes, and also allows for the step response transformation.

**Long Time Base (Low Frequency):** A new long time base of 150 msec (1.67 Hz) ensures that very long time constant conductors can be seen in complicated environments.

**Step Response:** A new step response transformation allows even longer time-constant conductors to be seen by reproducing the response that would be seen in a direct measurement of the step response. Our controlled linear ramps and our standard Primary Pulse (PP) measurement on the ramp are necessary for this calculation.

**Fast Ramp Option:** A new "fast ramp" option duplicates the response seen from other pulse-type systems, but this does not allow for the step response calculation. We do not recommend fast ramps because they are not as linear as our controlled ramps, they drift in duration as the loop warms up, and there is no advantage in terms of power put into the ground since the area under the dB/dt pulse produced by the ramp is the same.

**Calculation of Impulse Response:** The "fast ramp" response can be calculated (as well as the true impulse response) from our standard linear ramp data.

**True Digital Receiver:** The Crone receiver is a true digital receiver in that the input is immediately digitized before stacking and binning. This produces the following feature (programmable gate positions).

**Programmable Gate Positions:** There is complete freedom of channel (or gate) positions and widths,

which can be programmed in the field. There are also numerous built-in tables.

**Full Sampling:** The entire ramp and off-time can be sampled with contiguous channels if desired.

**Current Ramp always Sampled:** A Primary Pulse (PP) measurement is always made on the current ramp, which is of great help to ensure proper polarities, and also is crucial for the step response transformation.

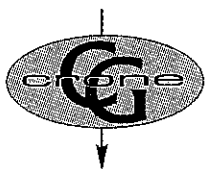
**High Quality LCD Display:** The 256 x 128 pixel LCD on the receiver allows for accurate plots of decay curves and line or borehole profiles on the receiver, and is of great assistance to the operator to monitor noise and anomaly build-up.

**No Data Reduction:** There is no data reduction for surface surveys and Z-component borehole surveys, so that what is seen on the receiver is what will be seen in the final plots. For 3-D borehole surveys, there is only the correction applied to the direction of the X and Y components to aid interpretation. Gain controls are automatic, so that the output is always in nanoTeslas/sec (= nV/m<sup>2</sup>).

**Slim-line Probes:** A 32 mm probe diameter ensures that virtually all holes can be surveyed with 3-component measurements.

**Oriented X and Y Components:** X-Y orientation tools accurately orient the X and Y components. This helps tremendously with giving direction to off-hole conductors and to the centre of in-hole conductors.

**Reliable, Durable and Portable Equipment:** The PEM system has been in use since the early 1970's under temperature extremes of -40°C to +50°C, in desert, jungle, arctic, mountainous, and underground mining conditions.



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### **3-D PULSE EM - APPLICATIONS**

- **Base metals**   ⇒ direct detection of:
  - ◊ volcanogenic massive sulphide (VMS) deposits
  - ◊ magmatic sulphide deposits
  - ◊ sedex massive sulphide deposits
  - ◊ higher grade ore within disseminated zones⇒ indirect detection of :
  - ◊ sphalerite and other non-conductors
  - ◊ galena and other poorly connected mineralsthrough detection of associated well-connected conductors.  
⇒ detection of conductive marker zones related to deposits
- **Gold**           ⇒ detection of associated conductors - e.g. pyrite/pyrrhotite  
                      ⇒ detection of the host - e.g. banded iron formations
- **Uranium**       ⇒ detection of associated graphitic basement conductors  
                      ⇒ detection of associated conductive alteration zones
- **Diamonds**     ⇒ detection and definition of clay-rich layer overlying kimberlites  
                      ⇒ locating kimberlites under locally thinned conductive cover

In the ore definition, delineation and production stages of a mining operation, Pulse EM can still be highly effective to:

- Define the boundaries of conductive ore
- Determine the size of intersected conductors and thereby determine whether they are connected to main ore zones.
- Reduce the number of necessary drillholes by exploring between holes.
- Survey underground drillholes - even flat or inclined holes.

Pulse EM can also be used for:

- General geological mapping of conductive structures
  - ⇒ shears, fractures, lineaments
  - ⇒ hydrothermal alteration
  - ⇒ graphite-rich rocks, including graphitic schist, shale, slate, and argillite
  - ⇒ clay alteration and zeolites
  - ⇒ differential and clay weathering
  - ⇒ conductive weathered layer at surface
- Groundwater exploration
- Mapping groundwater contamination plumes and freshwater-saltwater interface
- Geothermal exploration
- Mapping depth and thickness of horizontal strata
- Mapping permafrost thickness

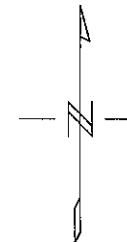
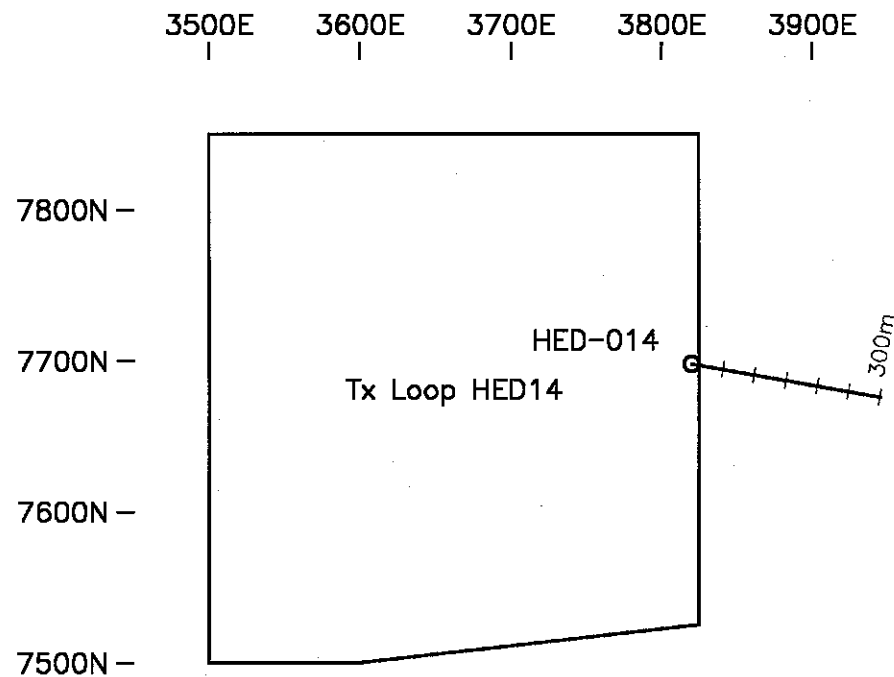
# PLOTS

# CONTENTS

Plan No.	Plan Type	ID.	Description	Scale
1	Plan	HED-014	Drillhole Location plan	1:5000
2	Section		Primary Field plot	1:5000
3	Header	HED-014	Header information	N/A
4	Profile	(HED14)	Z - Log plot	1:2000
5			- Linear, Ch1-10, 1:1000	1:2000
6			- Linear, Ch10-15, 1:10	1:2000
7			- Linear, Ch15-21, 1:2	1:2000
8			X - Log plot	1:2000
9			- Linear, Ch1-10, 1:3000	1:2000
10			- Linear, Ch10-15, 1:20	1:2000
11			- Linear, Ch15-21, 1:2	1:2000
12			Y - Log plot	1:2000
13			- Linear, Ch1-10, 1:3000	1:2000
14			- Linear, Ch10-15, 1:20	1:2000
15			- Linear, Ch15-21, 1:2	1:2000
16			Total Field plot	1:2000
17		HED-015	Drillhole Location plan	1:5000
18			Primary Field plot	1:10000
19			Primary Field plot	1:10000
20	Header	HED-015	Header information	N/A
21	Profile	(HED15-1)	Z - Log plot	1:4000
22			- Linear, Ch1-10, 1:1500	1:4000
23			- Linear, Ch10-15, 1:10	1:4000
24			- Linear, Ch15-21, 1:2	1:4000
25			X - Log plot	1:4000
26			- Linear, Ch1-10, 1:1500	1:4000
27			- Linear, Ch10-15, 1:10	1:4000
28			- Linear, Ch15-21, 1:2	1:4000
29			Y - Log plot	1:4000
30			- Linear, Ch1-10, 1:1500	1:4000
31			- Linear, Ch10-15, 1:10	1:4000
32			- Linear, Ch15-21, 1:2	1:4000
33			Total Field plot	1:4000
34	Header	HED-015	Header information	N/A
35	Profile	(HED15-2)	Z - Log plot	1:4000
36			- Linear, Ch1-10, 1:500	1:4000
37			- Linear, Ch10-15, 1:5	1:4000
38			- Linear, Ch15-21, 1:2	1:4000
39			X - Log plot	1:4000
40			- Linear, Ch1-10, 1:1000	1:4000
41			- Linear, Ch10-15, 1:5	1:4000
42			- Linear, Ch15-21, 1:2	1:4000
43			Y - Log plot	1:4000
44			- Linear, Ch1-10, 1:1000	1:4000
45			- Linear, Ch10-15, 1:5	1:4000

# CONTENTS

Plan No.	Plan Type	ID.	Description	Scale
46	Profile	HED-015	Y - Linear, Ch15-21, 1:2	1:4000
47			Total Field plot	1:4000
48	Header	HED-015	Header information	N/A
49	Profile	(HED15-2)	Z - Log plot	1:4000
50			- Linear, Ch1-10, 1:1000	1:4000
51			- Linear, Ch10-15, 1:5	1:4000
52			- Linear, Ch15-21, 1:2	1:4000
53	Plan	HLD958,60	Drillhole Location plan	1:5000
54	Section	HLD-958	Primary Field plot	1:5000
55		HLD-960	Primary Field plot	1:5000
56	Header	HLD-958	Header information	N/A
57	Profile	(HLD9)	Z - Log plot	1:2000
58			- Linear, Ch1-10, 1:2000	1:2000
59			- Linear, Ch10-15, 1:100	1:2000
60			- Linear, Ch15-21, 1:10	1:2000
61			X - Log plot	1:2000
62			- Linear, Ch1-10, 1:2500	1:2000
63			- Linear, Ch10-15, 1:25	1:2000
64			- Linear, Ch15-21, 1:5	1:2000
65			Y - Log plot	1:2000
66			- Linear, Ch1-10, 1:2500	1:2000
67			- Linear, Ch10-15, 1:25	1:2000
68			- Linear, Ch15-21, 1:5	1:2000
69			Total Field plot	1:2000
70	Header	HLD-960	Header information	N/A
71	Profile	(HLD9)	Z - Log plot	1:2000
72			- Linear, Ch1-10, 1:4000	1:2000
73			- Linear, Ch10-15, 1:200	1:2000
74			- Linear, Ch15-21, 1:5	1:2000



Scale 1:5000

50 0 50 100

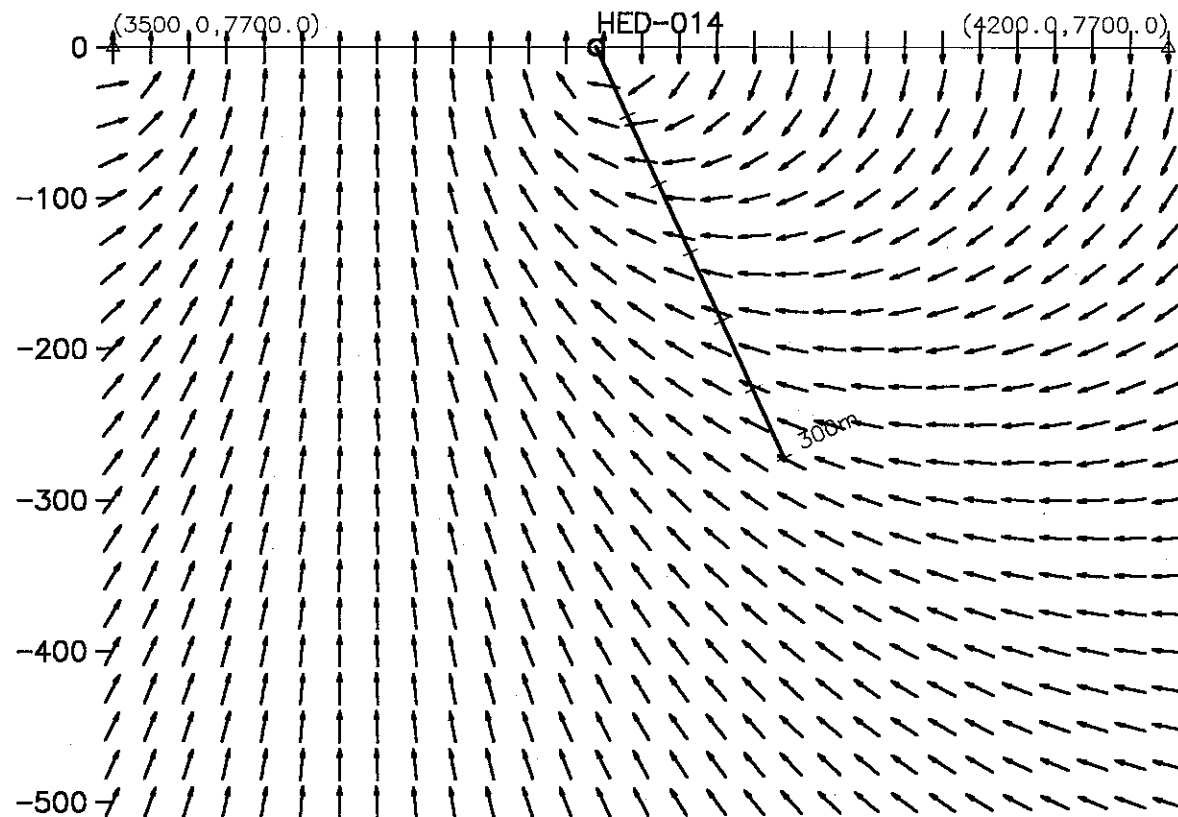
(metres)

*Bass Metals Ltd*  
Hellyer

**3-D Borehole Pulse EM Survey  
Borehole & Loop Location Map**

Hole: HED-014  
Survey Date: Jan 28, 2008

***Outer-Rim Exploration Services***



*Bass Metals Ltd*  
Hellyer

**3-D Borehole Pulse EM Survey  
Hole Section with Primary Field**

Hole: HED-014  
Survey Date: Jan 28, 2008

***Outer-Rim Exploration Services***

Client	: Bass Metals Ltd	Hole	: HED-014
Grid	: Hellyer	Tx Loop	: HED14
Date	: Jan 28, 2008	File name	: HED14Z.PEM
Time Base	: 20.00 ms	# Readings	: 12
Ramp Time	: 1.00 ms	Stn Units	: Metric
# Channels	: 21	Coil Area	: 6500 sq m
Sync Type	: Cable	Polarity	: +
Loop Size	: 350m X 350m	Receiver	: Digital #136
Current	: 20 Amps	Operator	: Humam

1. 3500m, 7850m, 0m	2. 3500m, 7500m, 0m
3. 3600m, 7500m, 0m	4. 3825m, 7525m, 0m
5. 3825m, 7850m, 0m	

1. 3820m, 7698m, 0m                      2. 100deg, 65deg, 300m

Ch	Start	End	Center	Ch	Start	End	Center	Ch	Start	End	Center
PP	-200	-100	-150	1	48	64	56	2	64	84	74
3	84	112	98	4	112	152	132	5	152	204	178
6	204	268	236	7	268	360	314	8	360	480	420
9	480	640	560	10	640	848	744	11	848	1128	988
12	1128	1496	1312	13	1496	1992	1744	14	1992	2644	2318
15	2644	3512	3078	16	3512	4664	4088	17	4664	6192	5428
18	6192	8220	7206	19	8220	10920	9570	20	10920	14400	12660
21	14400	17700	16050								

```
Hole      : HED-014
Tx Loop   : HED14
File name : HED14Z.PEM
```

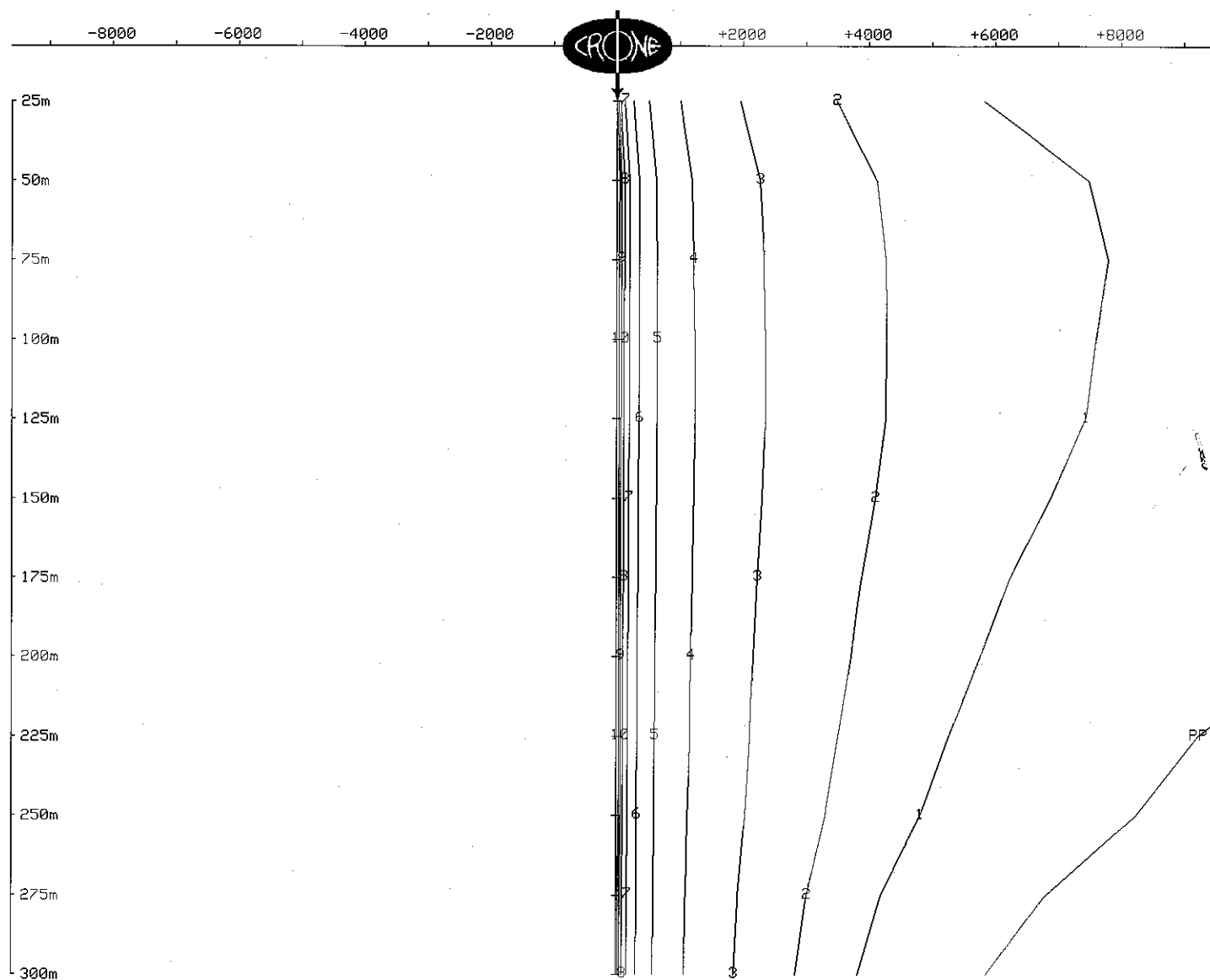
# OUTER-RIM EXPLORATION SERVICES

## Borehole Pulse EM Survey

Client : Bass Metals Ltd  
Grid : Hellyer  
Date : Jan 28, 2008

Hole : HED-014  
Tx Loop : HED14  
File name : HED14Z.PEM

Z COMPONENT dBz/dt nanoTesla/sec - 10 of 21 channels and PP  
Scale: 1:2000 Unit Scale: 1cm = 1000 nT/s



# OUTER-RIM EXPLORATION SERVICES

## Borehole Pulse EM Survey

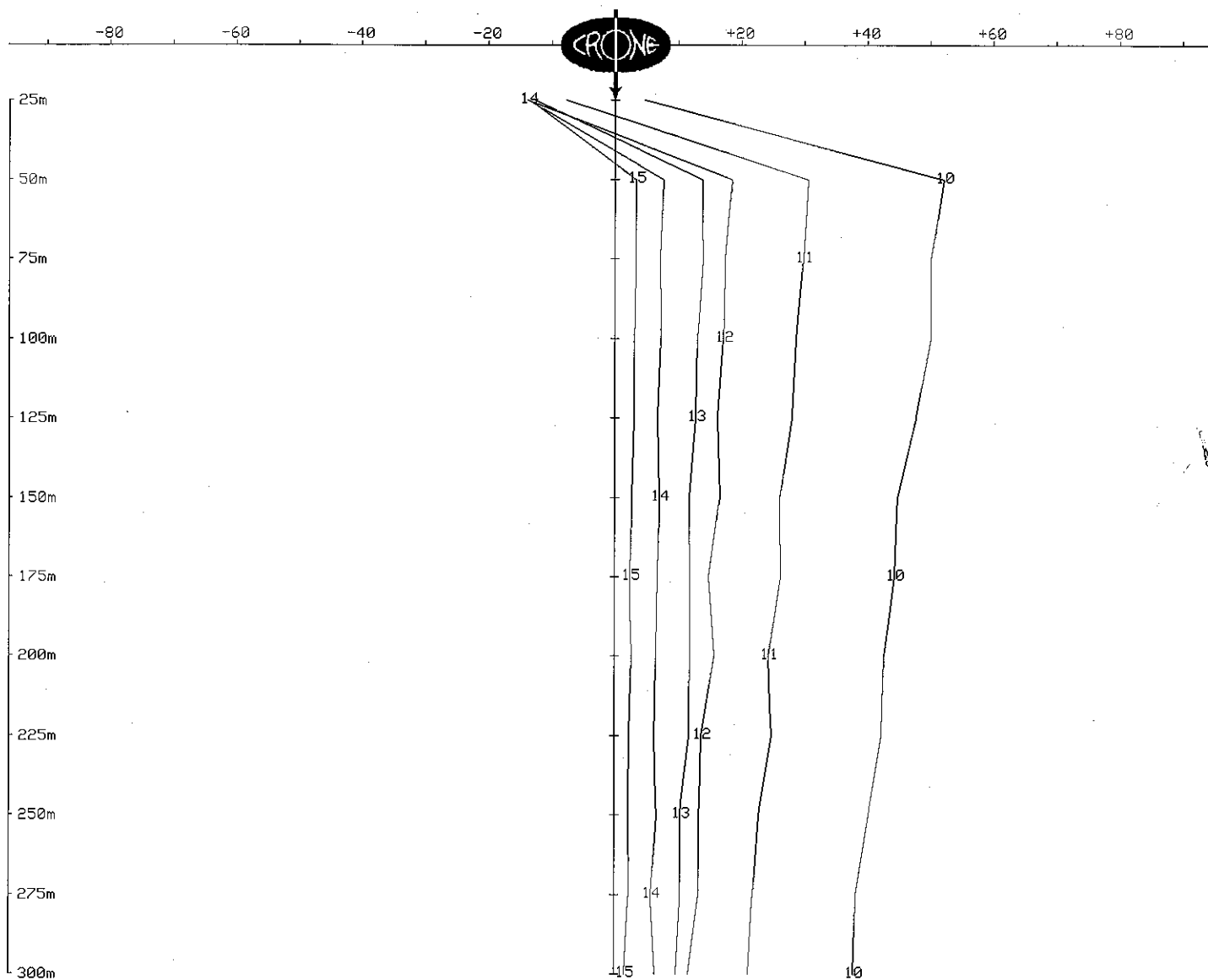
Client : Bass Metals Ltd  
Grid : Hellyer  
Date : Jan 28, 2008

Hole : HED-014  
Tx Loop : HED14  
File name : HED14Z.PEM

Z COMPONENT dBz/dt nanoTesla/sec - 6 of 21 channels

Scale: 1:2000

Unit Scale: 1cm = 10 nT/s



# OUTER-RIM EXPLORATION SERVICES

## Borehole Pulse EM Survey

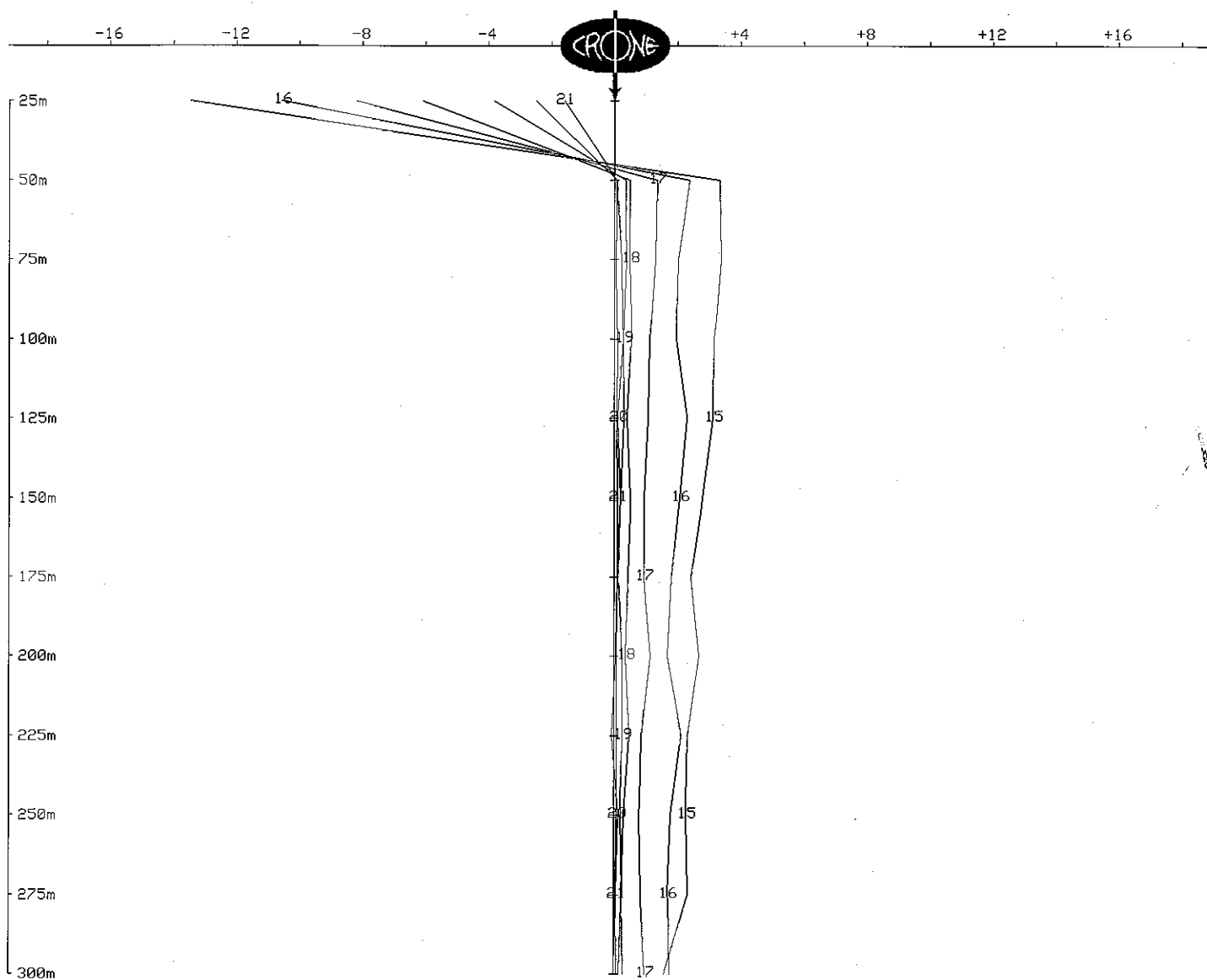
Client : Bass Metals Ltd  
Grid : Hellyer  
Date : Jan 28, 2008

Hole : HED-014  
Tx Loop : HED14  
File name : HED14Z.PEM

Z COMPONENT dBz/dt nanoTesla/sec - 7 of 21 channels

Scale: 1:2000

Unit Scale: 1cm = 2 nT/s



# OUTER-RIM EXPLORATION SERVICES

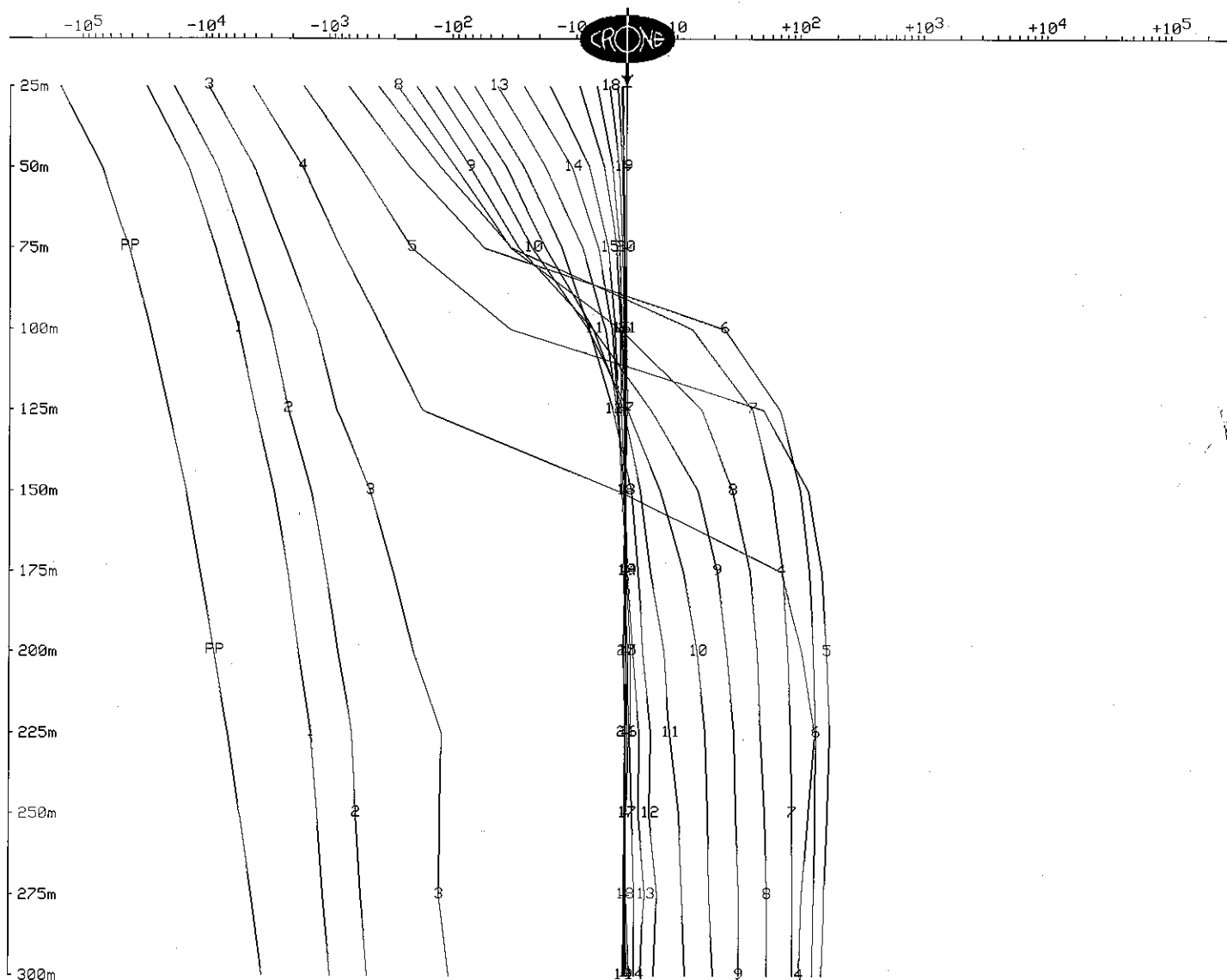
## Borehole Pulse EM Survey

Client : Bass Metals Ltd  
Grid : Hellyer  
Date : Jan 28, 2008

Hole : HED-014  
Tx Loop : HED14  
File name : HED14XY.PEM

Data Corrected for Probe Rotation using Orientation Tool #2  
X COMPONENT dBx/dt nanoTesla/sec - 21 of 21 channels and PP

Scale: 1:2000



# OUTER-RIM EXPLORATION SERVICES

## Borehole Pulse EM Survey

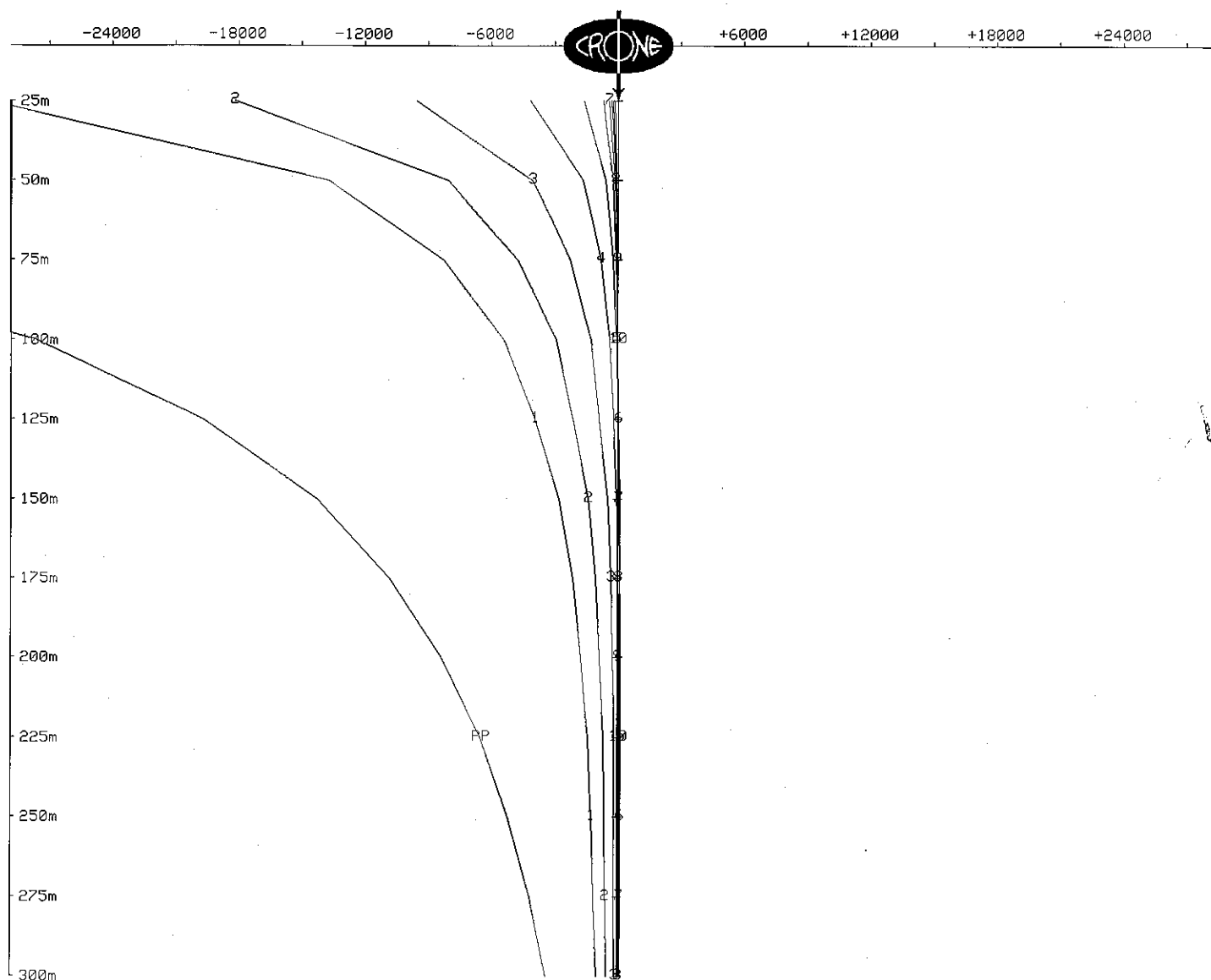
Client : Bass Metals Ltd  
Grid : Hellyer  
Date : Jan 28, 2008

Hole : HED-014  
Tx Loop : HED14  
File name : HED14XY.PEM

Data Corrected for Probe Rotation using Orientation Tool #2  
X COMPONENT dBx/dt nanoTesla/sec - 10 of 21 channels and PP

Scale: 1:2000

Unit Scale: 1cm = 3000 nT/s



# OUTER-RIM EXPLORATION SERVICES

## Borehole Pulse EM Survey

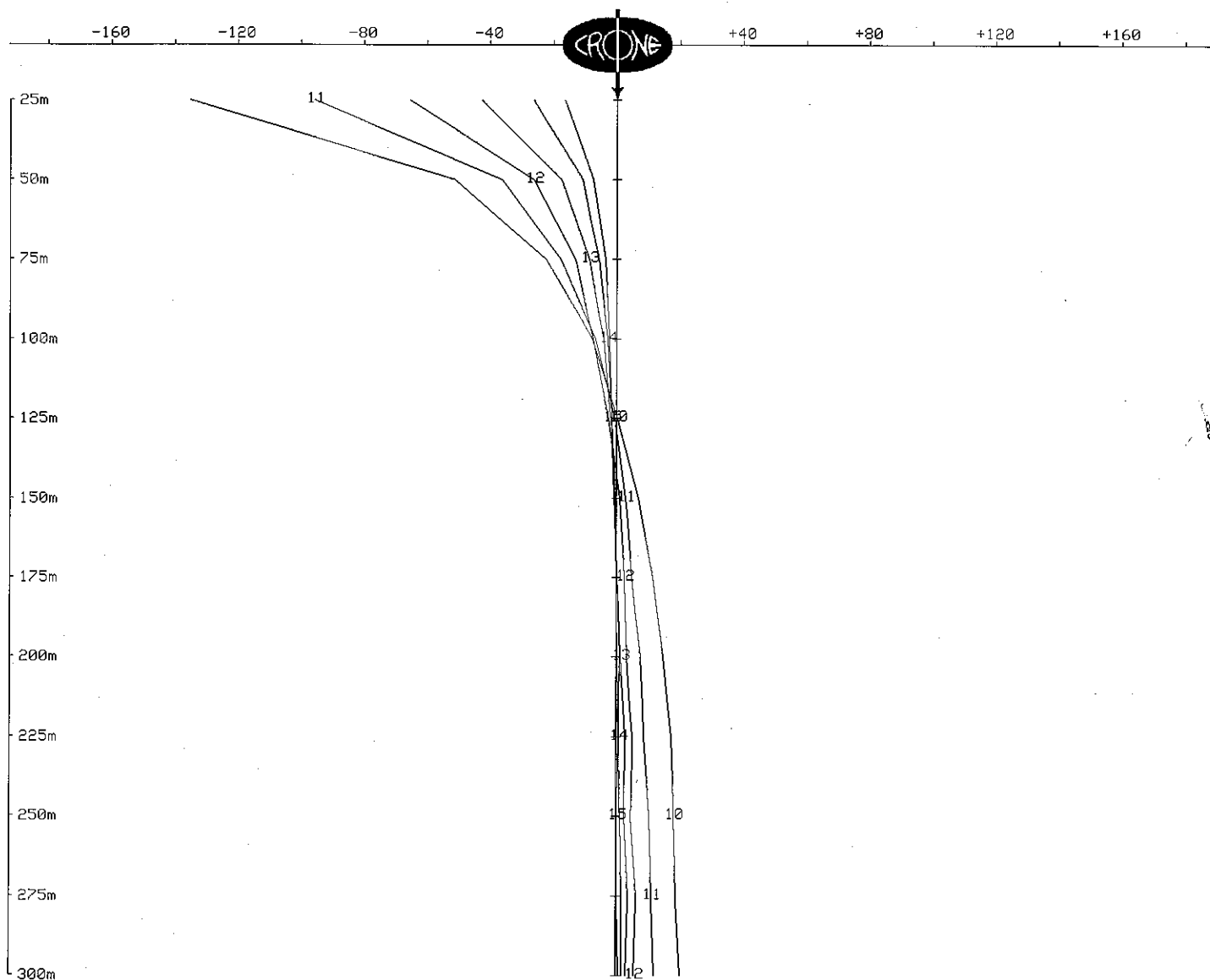
Client : Bass Metals Ltd  
Grid : Hellyer  
Date : Jan 28, 2008

Hole : HED-014  
Tx Loop : HED14  
File name : HED14XY.PEM

Data Corrected for Probe Rotation using Orientation Tool #2  
X COMPONENT dBx/dt nanoTesla/sec - 6 of 21 channels

Scale: 1:2000

Unit Scale: 1cm = 20 nT/s



# OUTER-RIM EXPLORATION SERVICES

## Borehole Pulse EM Survey

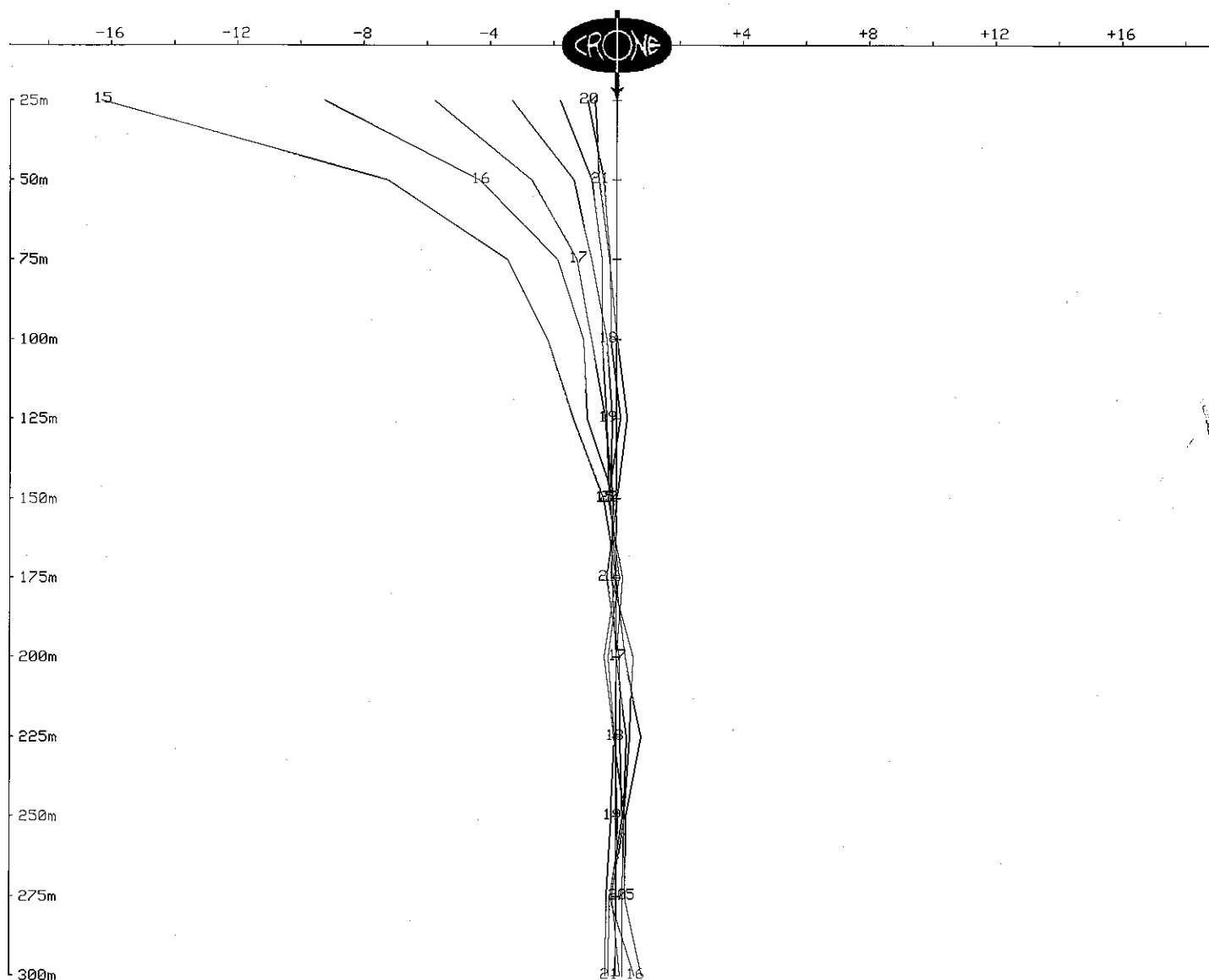
Client : Bass Metals Ltd  
Grid : Hellyer  
Date : Jan 28, 2008

Hole : HED-014  
Tx Loop : HED14  
File name : HED14XY.PEM

Data Corrected for Probe Rotation using Orientation Tool #2  
X COMPONENT dBx/dt nanoTesla/sec - 7 of 21 channels

Scale: 1:2000

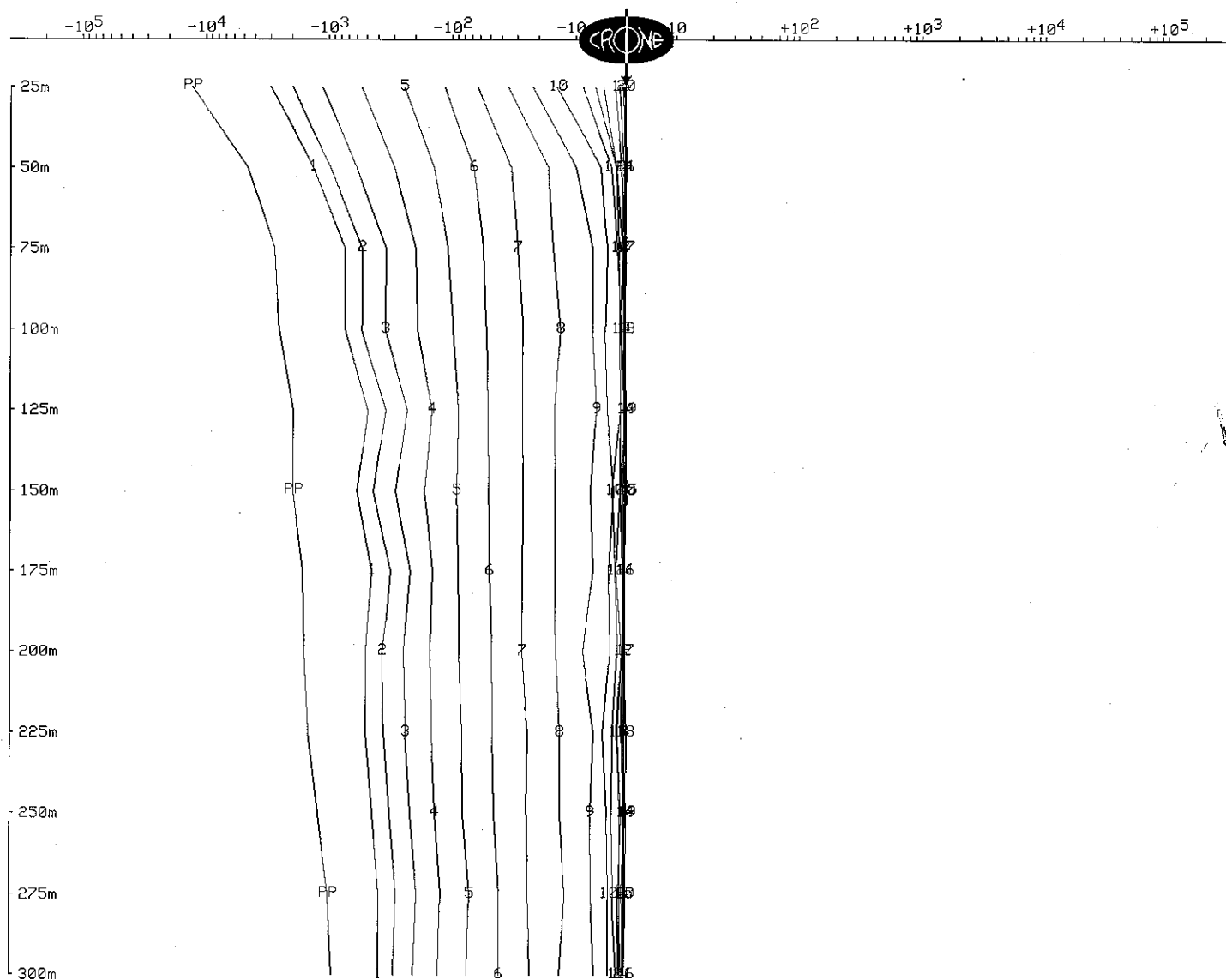
Unit Scale: 1cm = 2 nT/s



Client : Bass Metals Ltd  
Grid : Hellyer  
Date : Jan 28, 2008

```
Hole      : HED-014
Tx Loop   : HED14
File name : HED14XY.PEM
```

Scale: 1:2000



# OUTER-RIM EXPLORATION SERVICES

## Borehole Pulse EM Survey

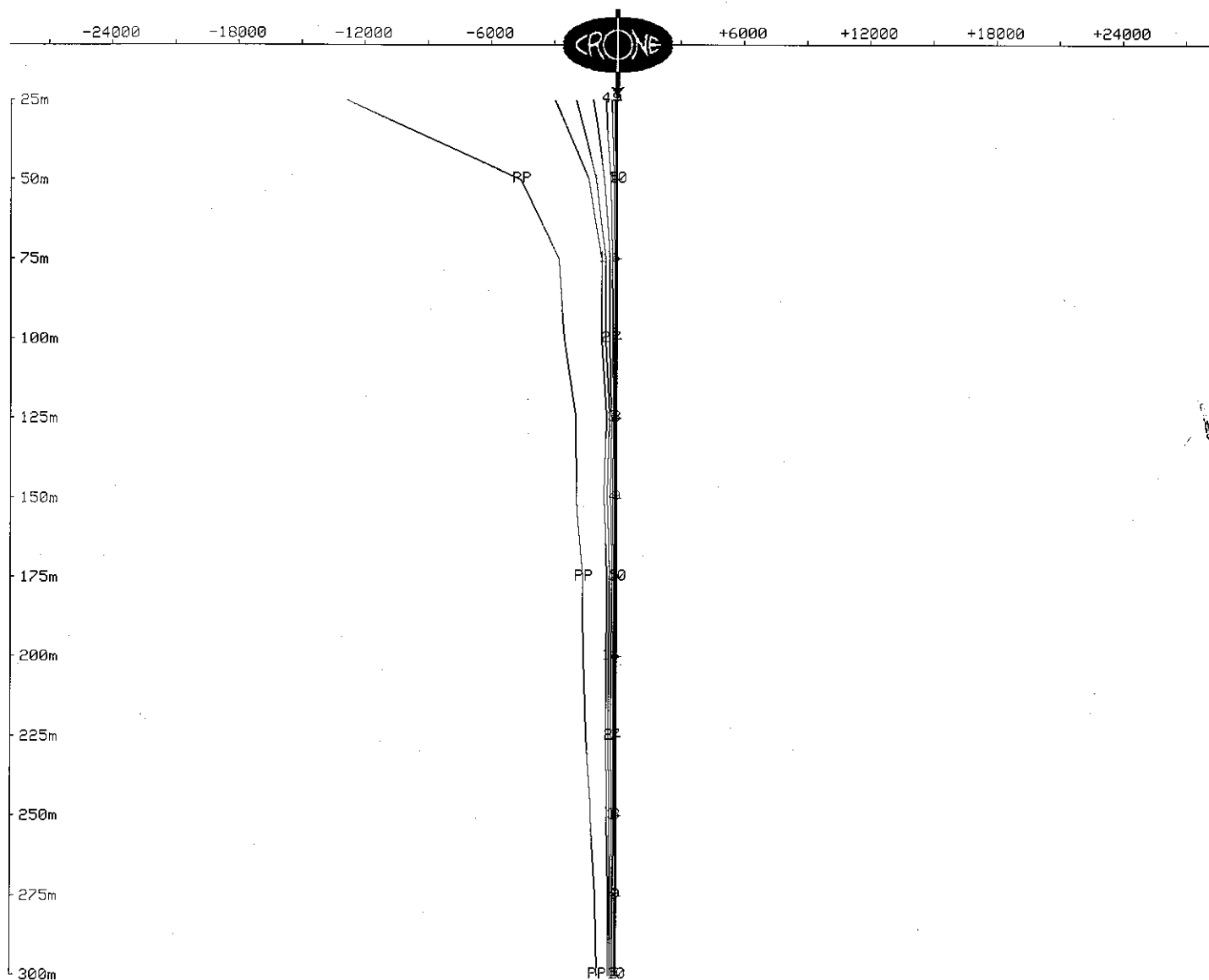
Client : Bass Metals Ltd  
Grid : Hellyer  
Date : Jan 28, 2008

Hole : HED-014  
Tx Loop : HED14  
File name : HED14XY.PEM

Data Corrected for Probe Rotation using Orientation Tool #2  
Y COMPONENT dBy/dt nanoTesla/sec - 10 of 21 channels and PP

Scale: 1:2000

Unit Scale: 1cm = 3000 nT/s



# OUTER-RIM EXPLORATION SERVICES

## Borehole Pulse EM Survey

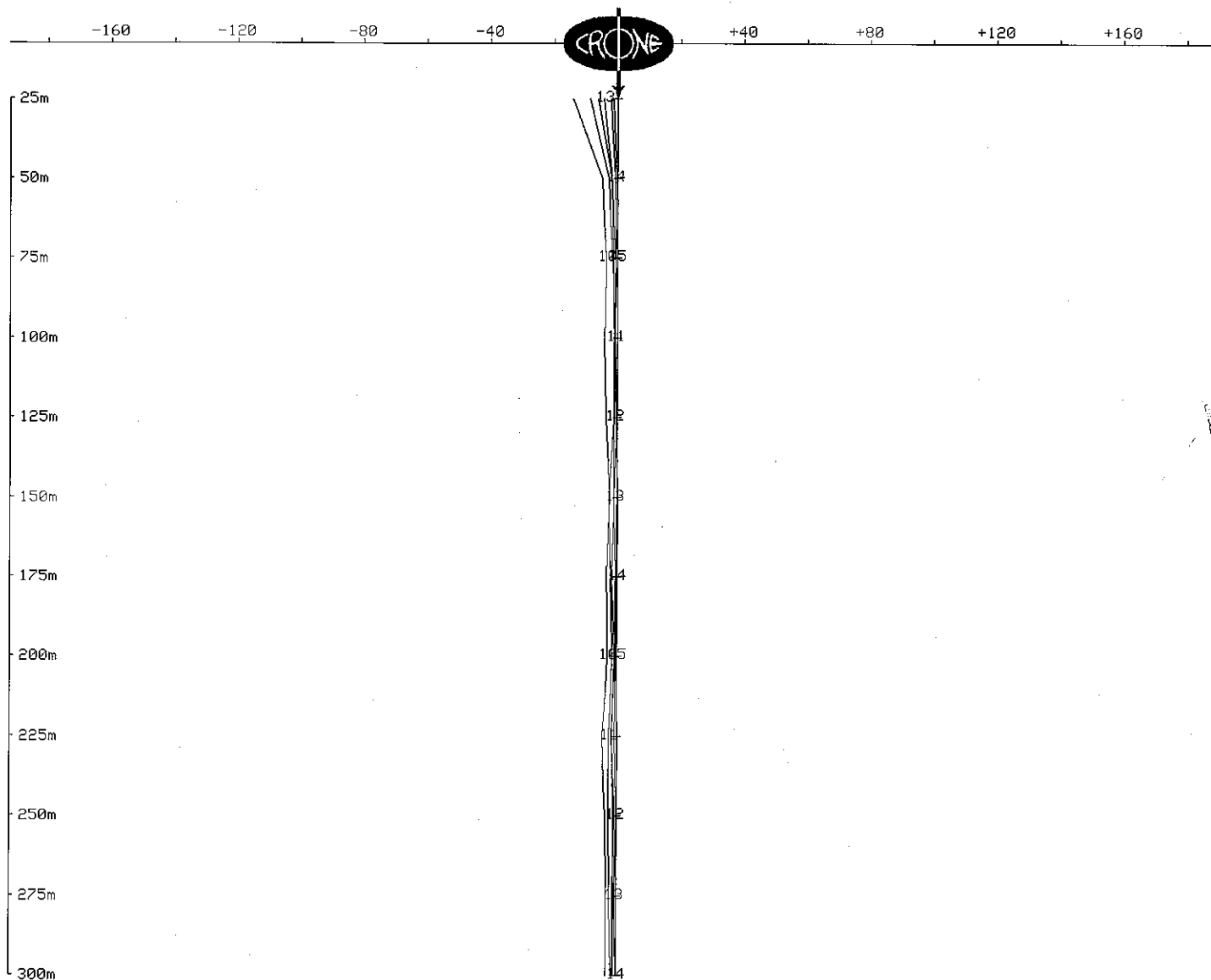
Client : Bass Metals Ltd  
Grid : Hellyer  
Date : Jan 28, 2008

Hole : HED-014  
Tx Loop : HED14  
File name : HED14XY.PEM

Data Corrected for Probe Rotation using Orientation Tool #2  
Y COMPONENT dBy/dt nanoTesla/sec - 6 of 21 channels

Scale: 1:2000

Unit Scale: 1cm = 20 nT/s



# Borehole Pulse EM Survey

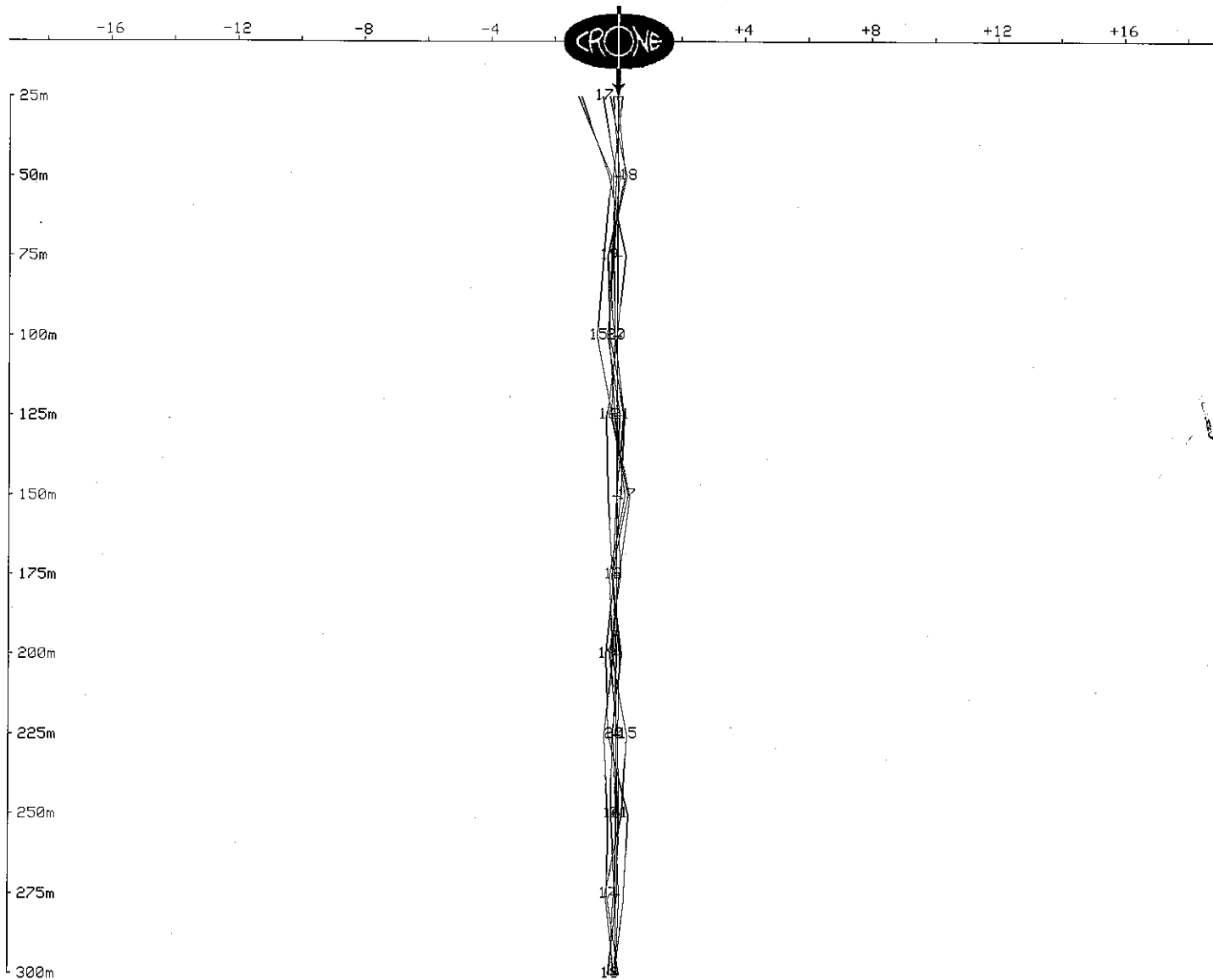
Client : Bass Metals Ltd  
Grid : Hellyer  
Date : Jan 28, 2008

```
Hole      : HED-014
Tx Loop   : HED14
File name : HED14XY.PEM
```

Data Corrected for Probe Rotation using Orientation Tool #2  
Y COMPONENT dBy/dt nanoTesla/sec - 7 of 21 channels

Scale: 1:2000

Unit Scale: 1cm = 2 nT/s



# OUTER-RIM EXPLORATION SERVICES

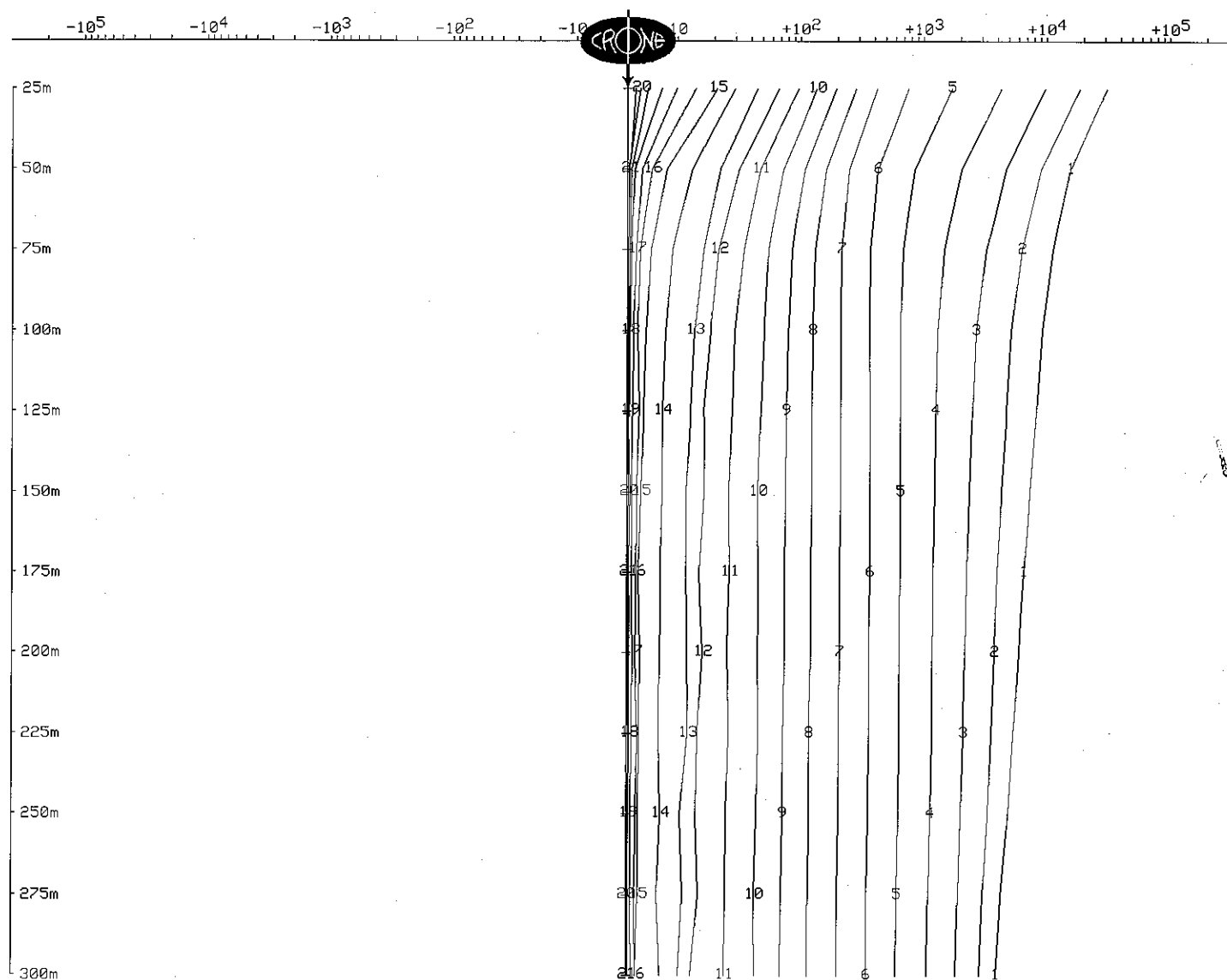
## Borehole Pulse EM Survey

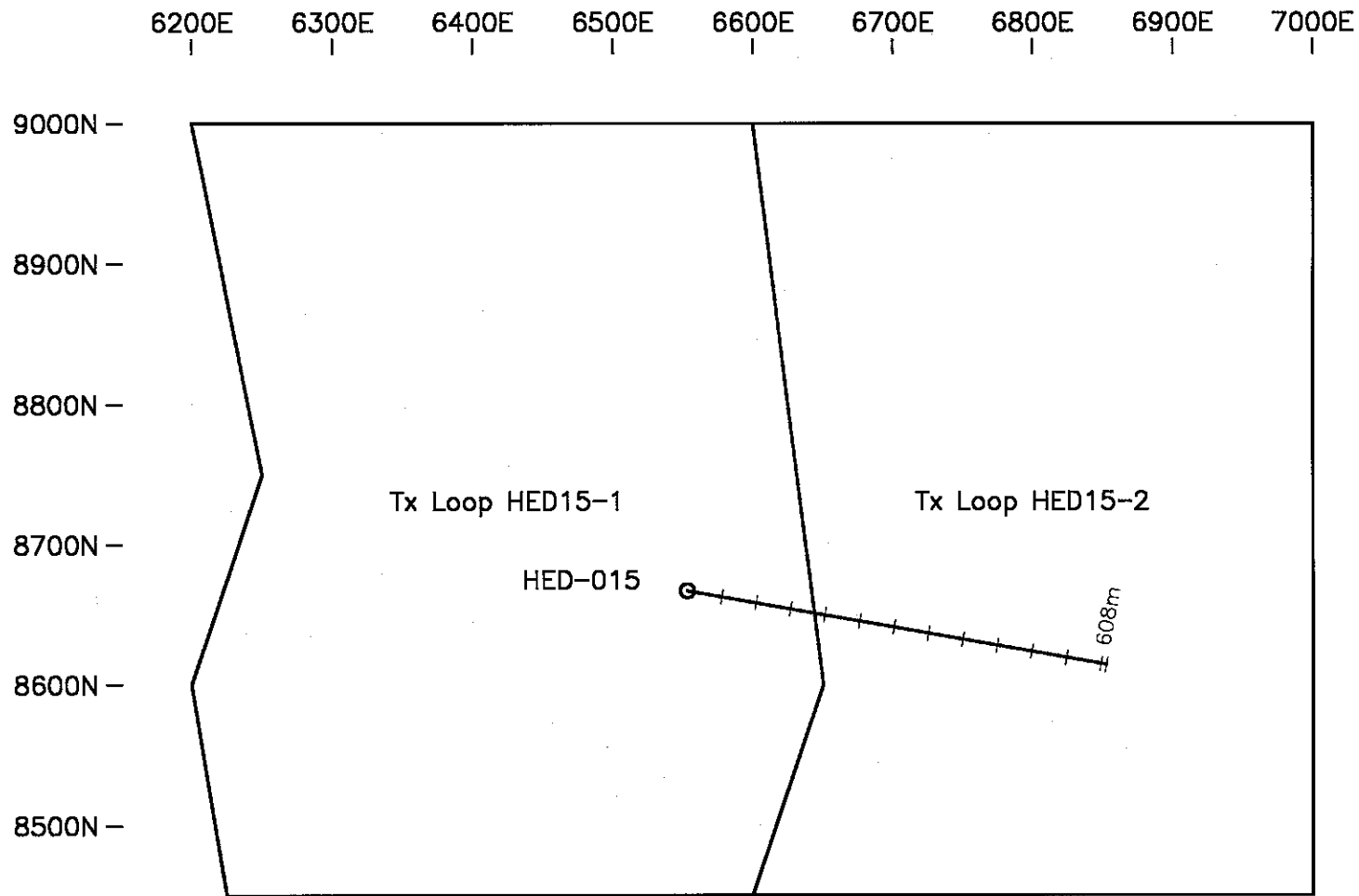
Client : Bass Metals Ltd  
Grid : Hellyer  
Date : Jan 28, 2008

Hole : HED-014  
Tx Loop : HED14  
File name : HED14XYZ.PEM

TOTAL FIELD dBxyz/dt nanoTesla/sec - 21 of 21 channels

Scale: 1:2000





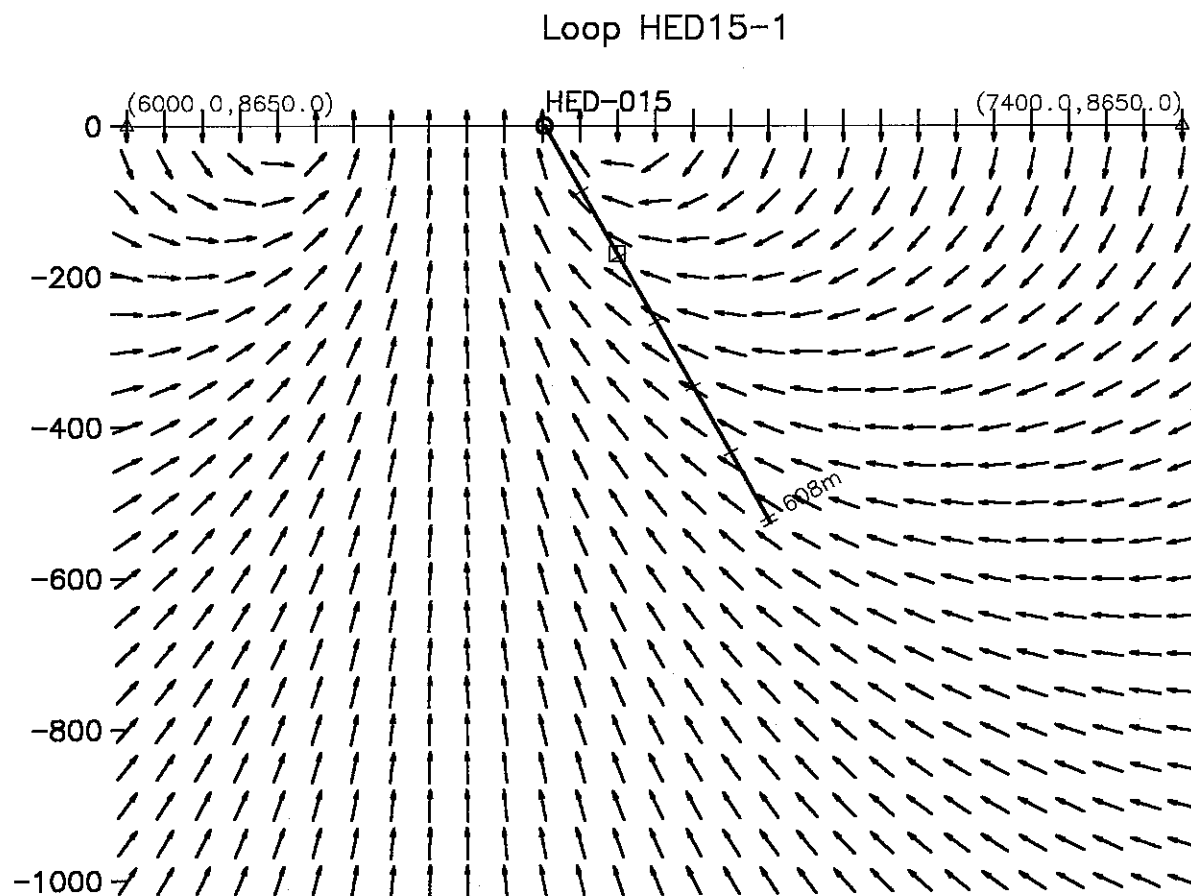
Scale 1:5000  
50 0 50 100  
(metres)

*Bass Metals Ltd*  
Hellyer

**3-D Borehole Pulse EM Survey**  
**Borehole & Loop Location Map**

Hole: HED-015  
Survey Date: Jan 26/30, 2008

***Outer-Rim Exploration Services***



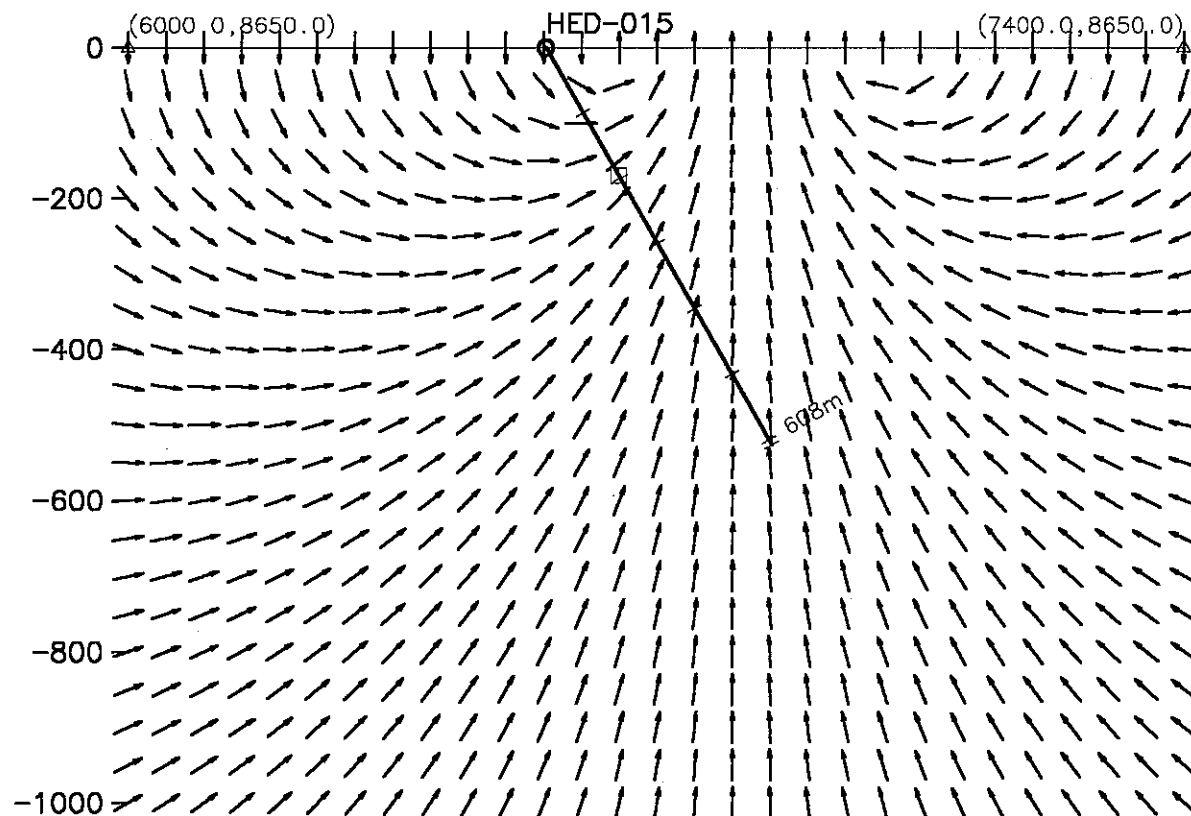
Scale 1:10000

100 0 100 200

(metres)

<i>Bass Metals Ltd</i> Hellyer
<b>3-D Borehole Pulse EM Survey</b> <b>Hole Section with Primary Field</b>
Hole: HED-015 Survey Date: Jan 26, 2008
<b><i>Outer-Rim Exploration Services</i></b>

# Loop HED15-2



Scale 1:10000  
100 0 100 200  
(metres)

*Bass Metals Ltd*  
Hellyer

**3-D Borehole Pulse EM Survey**  
**Hole Section with Primary Field**

Hole: HED-015  
Survey Date: Jan 27, 2008

***Outer-Rim Exploration Services***

# OUTER-RIM EXPLORATION SERVICES

## Borehole Pulse EM Survey

Client	: Bass Metals Ltd	Hole	: HED-015
Grid	: Hellyer	Tx Loop	: HED15-1
Date	: Jan 26, 2008	File name	: HED15Z1.PEM
Time Base	: 20.00 ms	# Readings	: 24
Ramp Time	: 1.00 ms	Stn Units	: Metric
# Channels	: 21	Coil Area	: 6500 sq m
Sync Type	: Cable	Polarity	: +
Loop Size	: 600m X 300m	Receiver	: Digital #136
Current	: 20 Amps	Operator	: Humam

### Loop Coordinates (X,Y,Z)

1. 6200m, 9000m, 0m	2. 6250m, 8750m, 0m
3. 6200m, 8600m, 0m	4. 6225m, 8450m, 0m
5. 6600m, 8450m, 0m	6. 6650m, 8600m, 0m
7. 6600m, 9000m, 0m	

### Hole Coordinates (X,Y,Z) or (Azimuth,Dip,Length)

1. 6553m, 8667m, 0m	2. 100deg, 60deg, 608m
---------------------	------------------------

### Channel Times (usec)

Ch	Start	End	Center	Ch	Start	End	Center	Ch	Start	End	Center
PP	-200	-100	-150	1	48	64	56	2	64	84	74
3	84	112	98	4	112	152	132	5	152	204	178
6	204	268	236	7	268	360	314	8	360	480	420
9	480	640	560	10	640	848	744	11	848	1128	988
12	1128	1496	1312	13	1496	1992	1744	14	1992	2644	2318
15	2644	3512	3078	16	3512	4664	4088	17	4664	6192	5428
18	6192	8220	7206	19	8220	10920	9570	20	10920	14400	12660
21	14400	17700	16050								

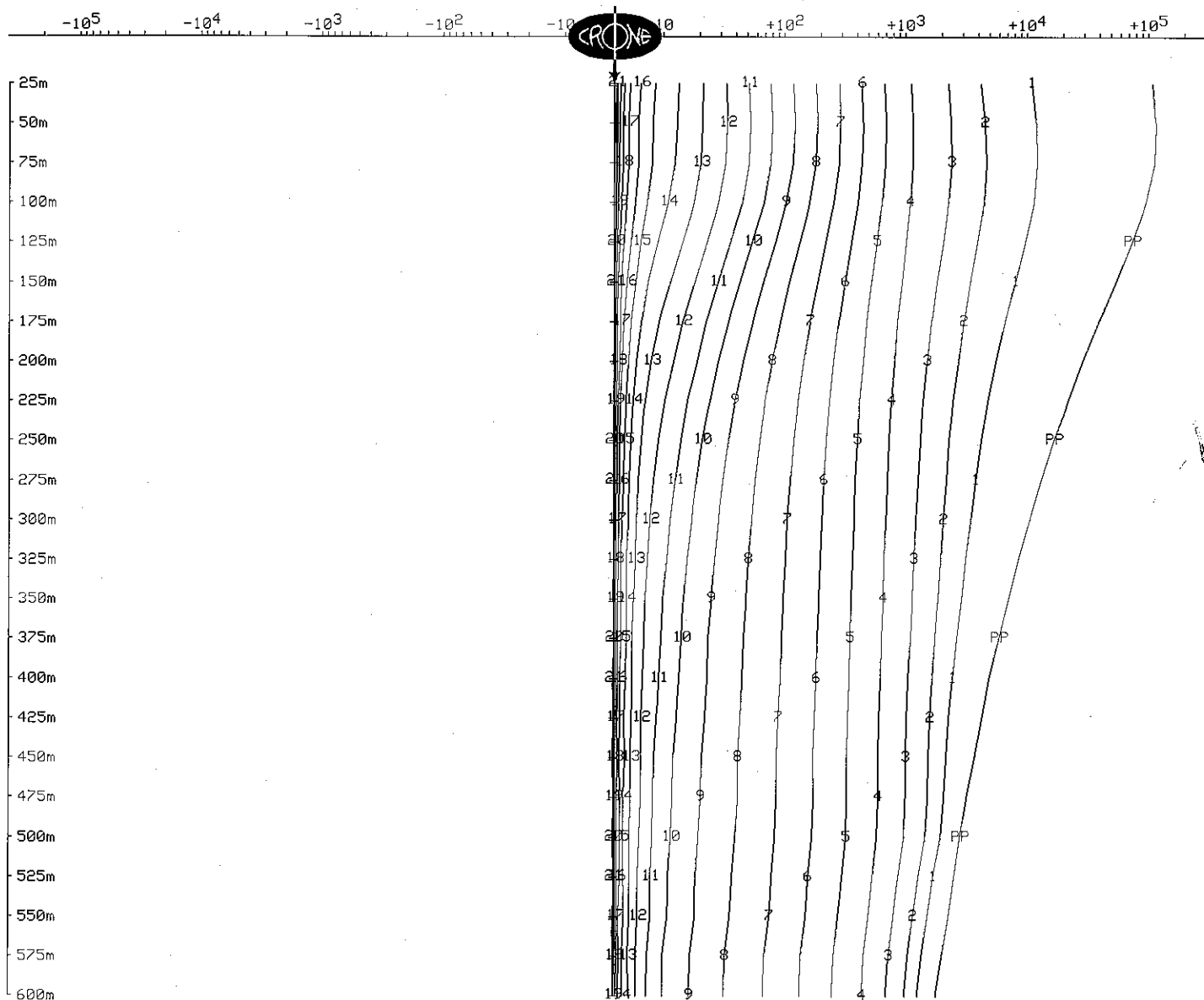
# OUTER-RIM EXPLORATION SERVICES

## Borehole Pulse EM Survey

Client : Bass Metals Ltd  
Grid : Hellyer  
Date : Jan 26, 2008

Hole : HED-015  
Tx Loop : HED15-1  
File name : HED15Z1.PEM

Z COMPONENT dBz/dt nanoTesla/sec - 21 of 21 channels and PP  
Scale: 1:4000



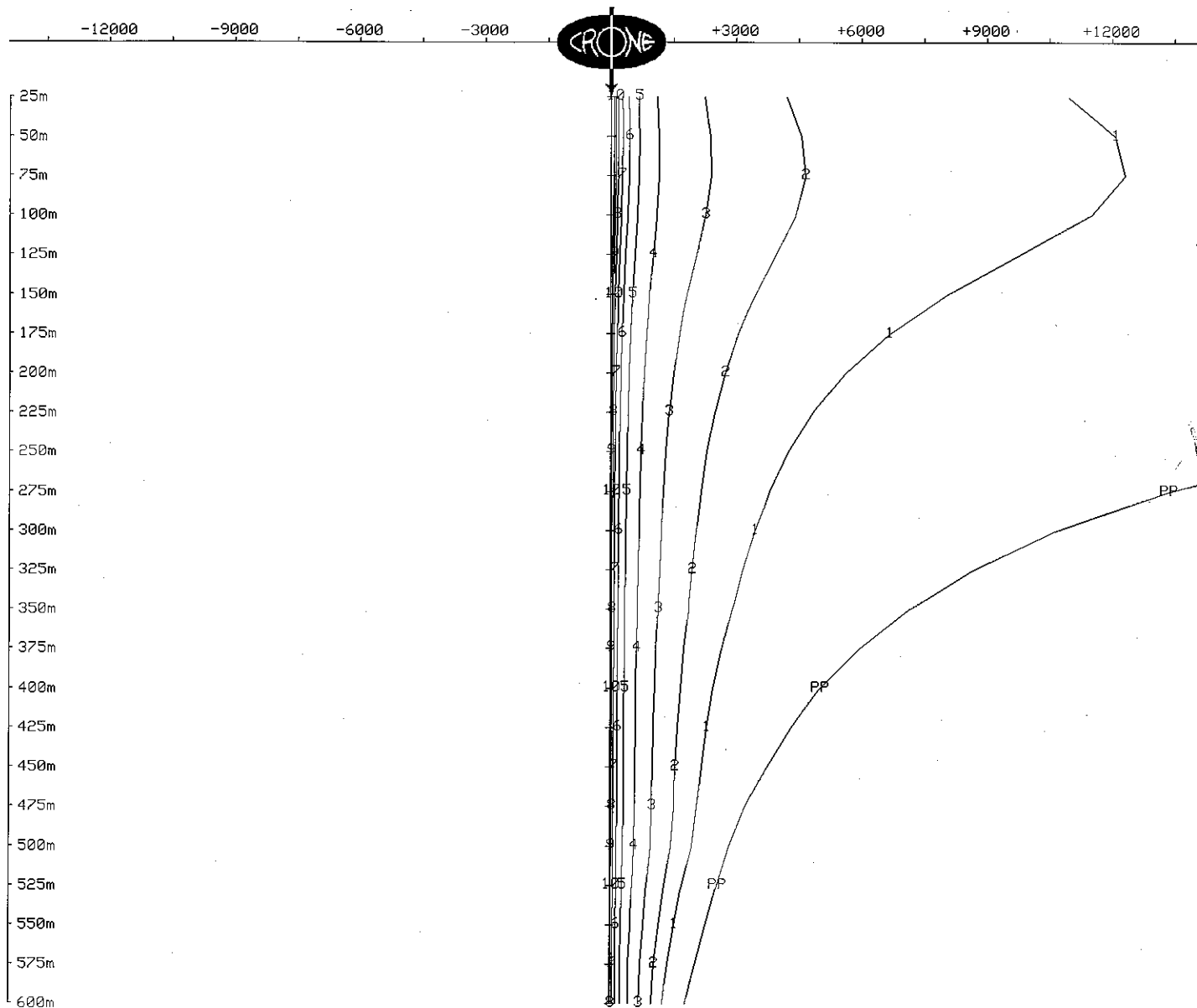
# OUTER-RIM EXPLORATION SERVICES

## Borehole Pulse EM Survey

Client : Bass Metals Ltd  
Grid : Hellyer  
Date : Jan 26, 2008

Hole : HED-015  
Tx Loop : HED15-1  
File name : HED15Z1.PEM

Z COMPONENT dBz/dt nanoTesla/sec - 10 of 21 channels and PP  
Scale: 1:4000 Unit Scale: 1cm = 1500 nT/s



# OUTER-RIM EXPLORATION SERVICES

## Borehole Pulse EM Survey

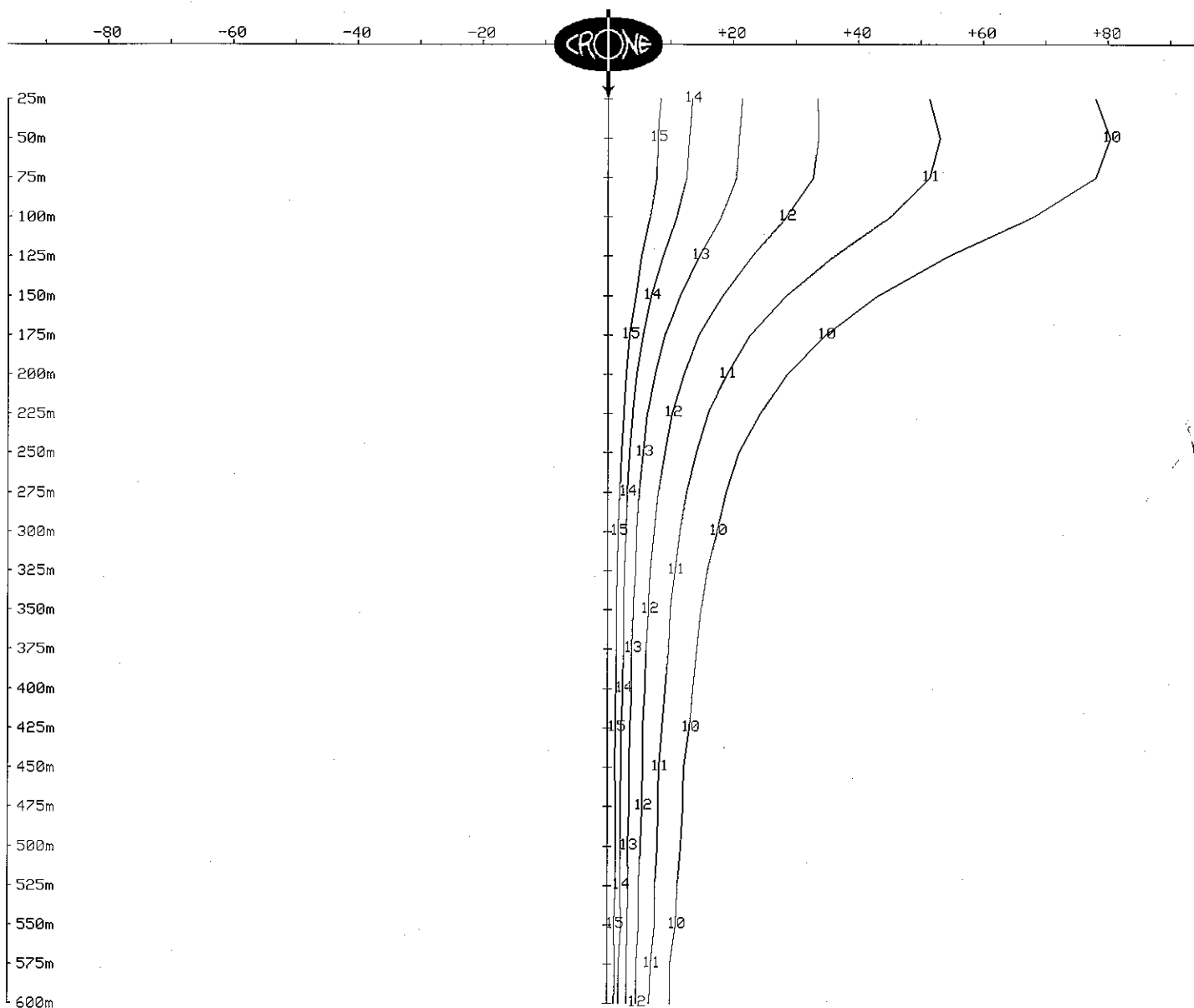
Client : Bass Metals Ltd  
Grid : Hellyer  
Date : Jan 26, 2008

Hole : HED-015  
Tx Loop : HED15-1  
File name : HED15Z1.PEM

Z COMPONENT dBz/dt nanoTesla/sec - 6 of 21 channels

Scale: 1:4000

Unit Scale: 1cm = 10 nT/s



# OUTER-RIM EXPLORATION SERVICES

## Borehole Pulse EM Survey

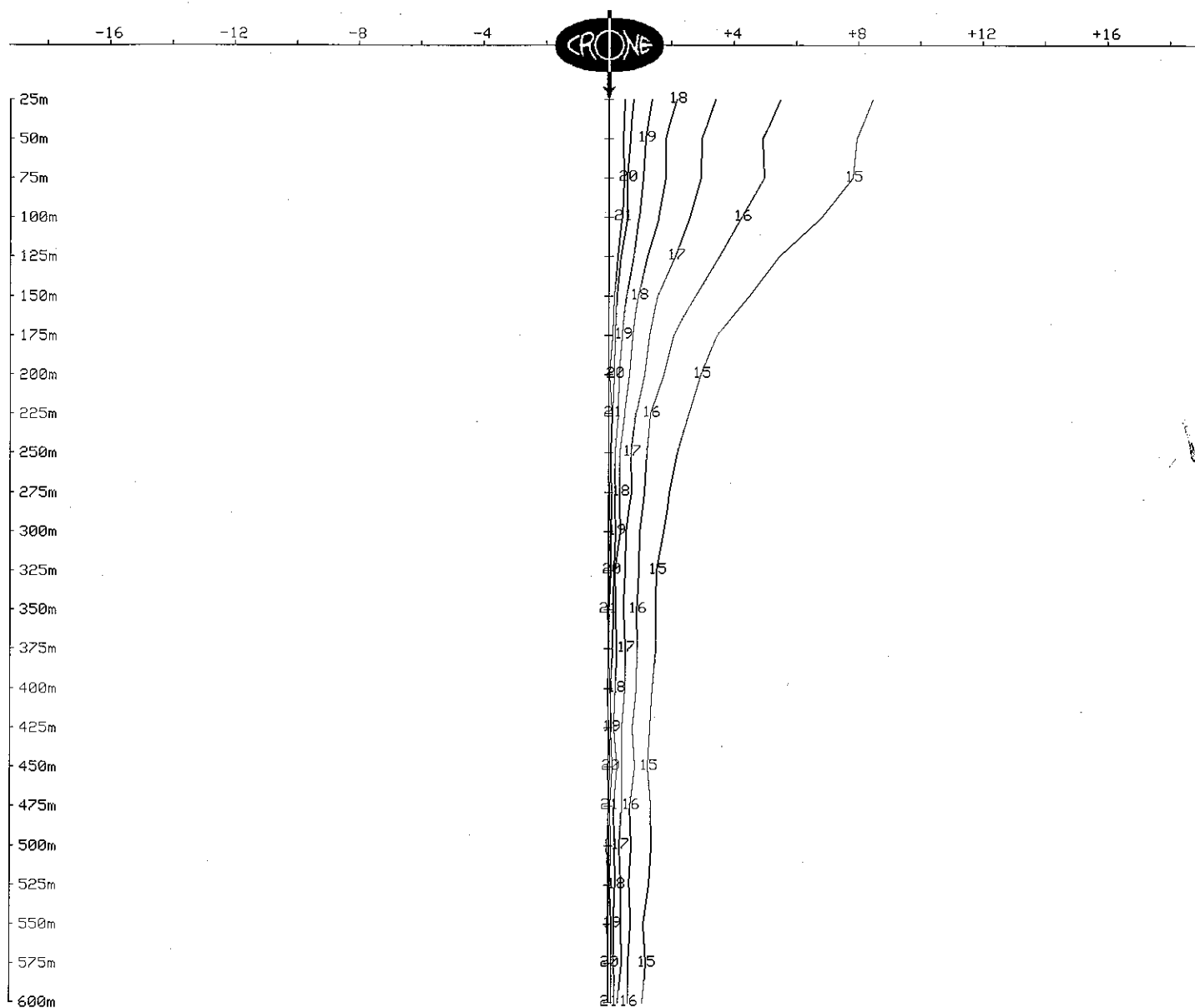
Client : Bass Metals Ltd  
Grid : Hellyer  
Date : Jan 26, 2008

Hole : HED-015  
Tx Loop : HED15-1  
File name : HED15Z1.PEM

Z COMPONENT dBz/dt nanoTesla/sec - 7 of 21 channels

Scale: 1:4000

Unit Scale: 1cm = 2 nT/s



# OUTER-RIM EXPLORATION SERVICES

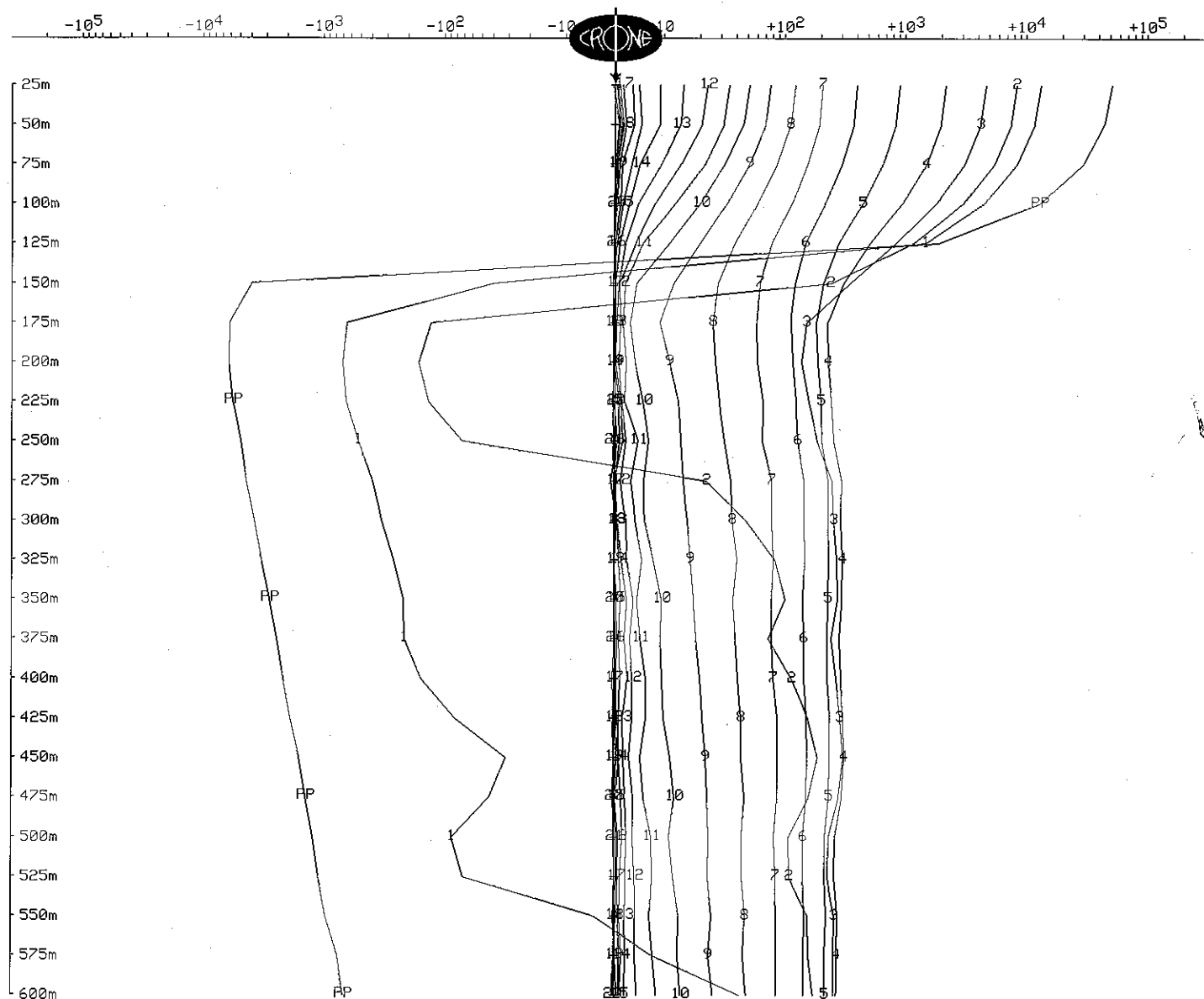
## Borehole Pulse EM Survey

Client : Bass Metals Ltd  
Grid : Hellyer  
Date : Jan 26, 2008

Hole : HED-015  
Tx Loop : HED15-1  
File name : HED15XY1.PEM

Data Corrected for Probe Rotation using Orientation Tool #2  
X COMPONENT dBx/dt nanoTesla/sec - 21 of 21 channels and PP

Scale: 1:4000



# OUTER-RIM EXPLORATION SERVICES

## Borehole Pulse EM Survey

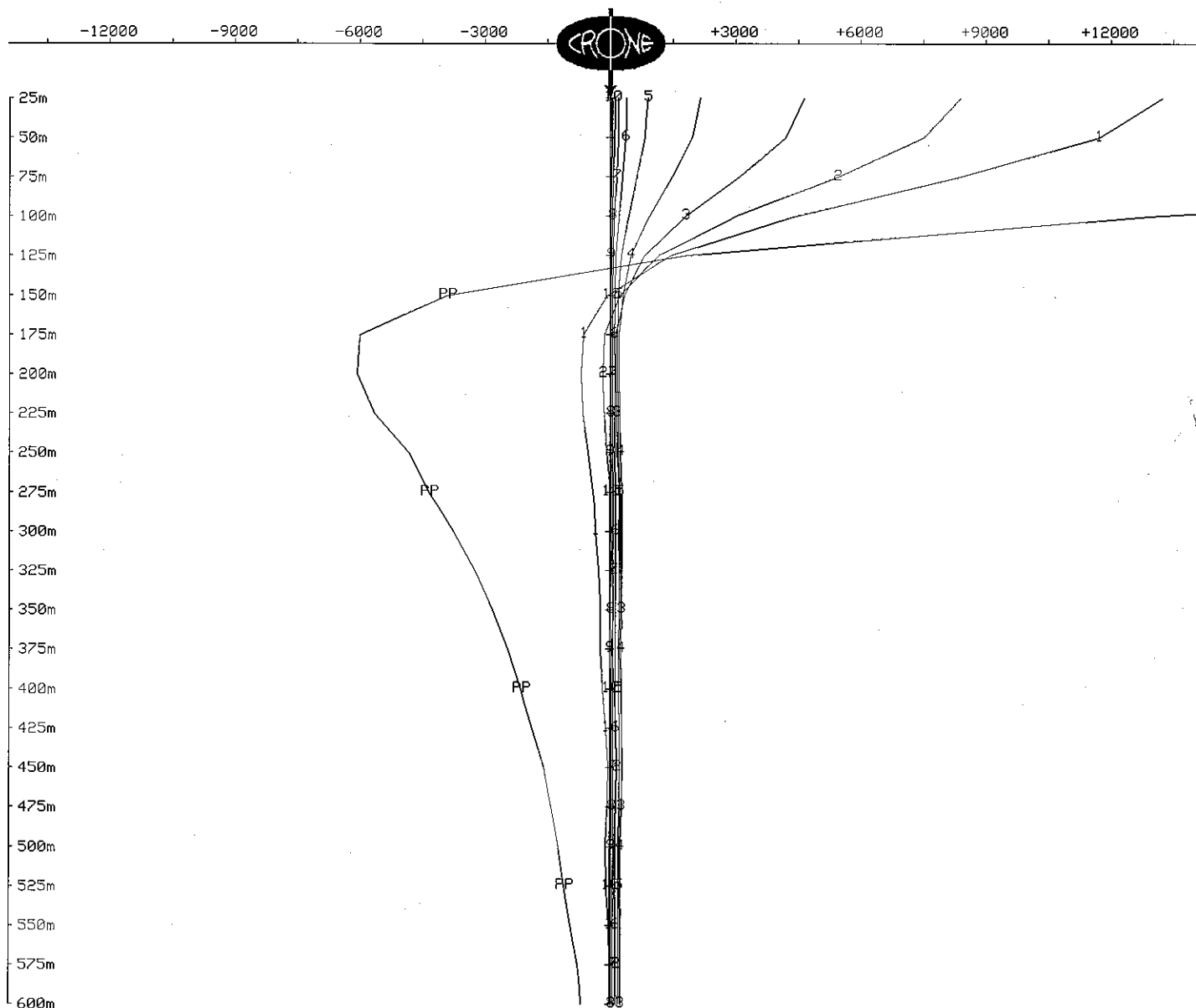
Client : Bass Metals Ltd  
Grid : Hellyer  
Date : Jan 26, 2008

Hole : HED-015  
Tx Loop : HED15-1  
File name : HED15XY1.PEM

Data Corrected for Probe Rotation using Orientation Tool #2  
X COMPONENT dBx/dt nanoTesla/sec - 10 of 21 channels and PP

Scale: 1:4000

Unit Scale: 1cm = 1500 nT/s



# OUTER-RIM EXPLORATION SERVICES

## Borehole Pulse EM Survey

Client : Bass Metals Ltd  
Grid : Hellyer  
Date : Jan 26, 2008

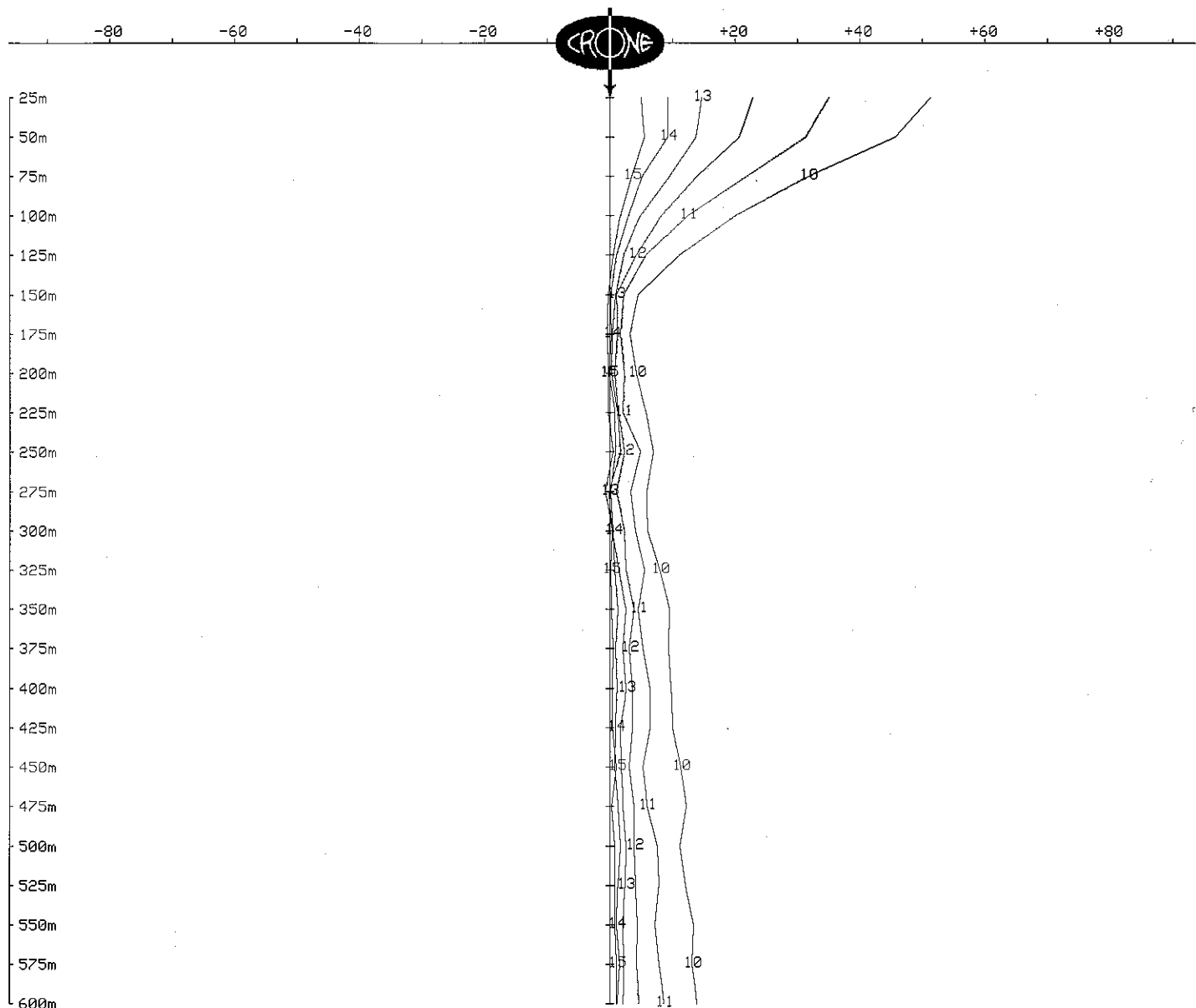
Hole : HED-015  
Tx Loop : HED15-1  
File name : HED15XY1.PEM

Data Corrected for Probe Rotation using Orientation Tool #2

X COMPONENT dBx/dt nanoTesla/sec - 6 of 21 channels

Scale: 1:4000

Unit Scale: 1cm = 10 nT/s



# OUTER-RIM EXPLORATION SERVICES

## Borehole Pulse EM Survey

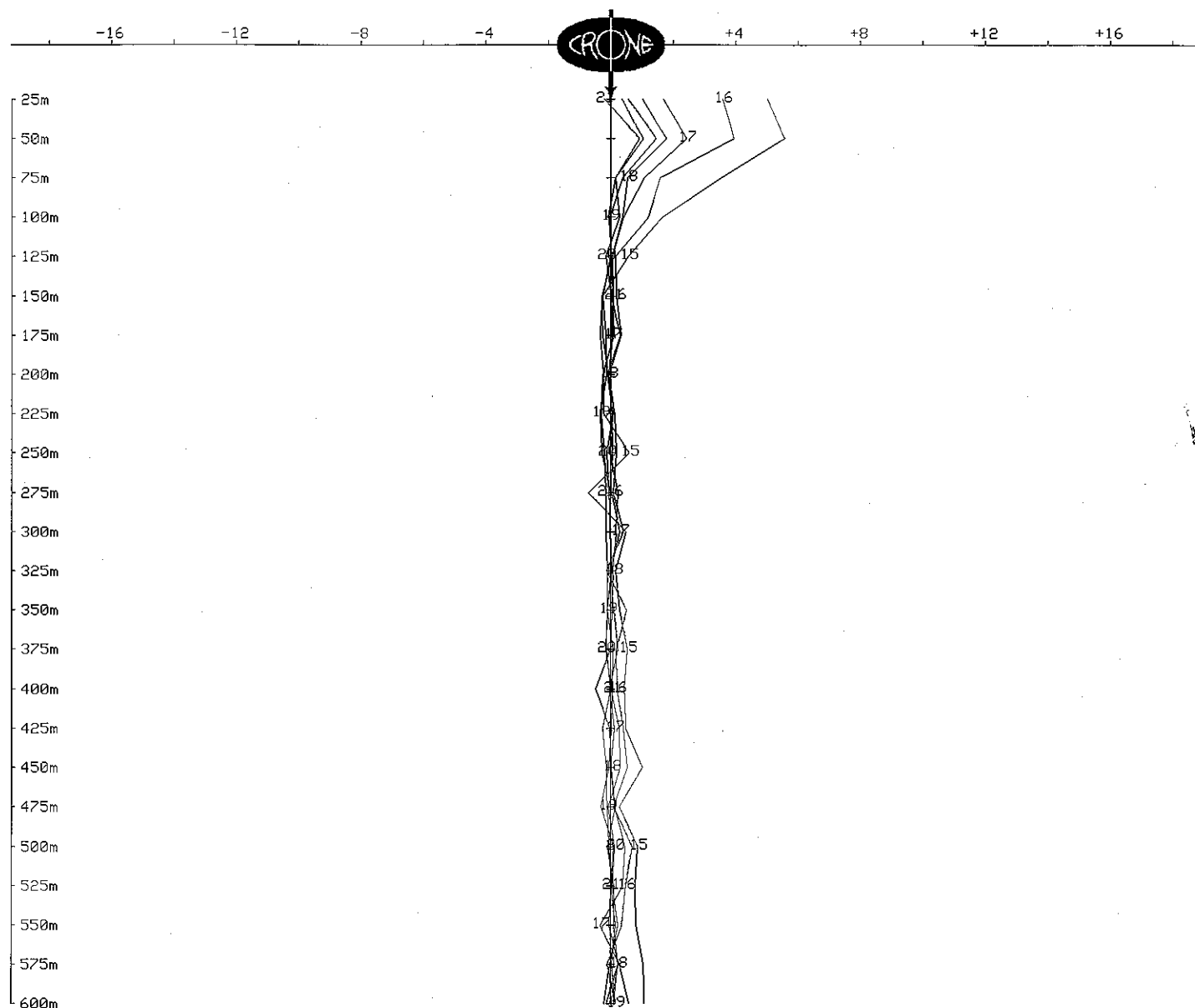
Client : Bass Metals Ltd  
Grid : Hellyer  
Date : Jan 26, 2008

Hole : HED-015  
Tx Loop : HED15-1  
File name : HED15XY1.PEM

Data Corrected for Probe Rotation using Orientation Tool #2  
X COMPONENT dBx/dt nanoTesla/sec - 7 of 21 channels

Scale: 1:4000

Unit Scale: 1cm = 2 nT/s



# OUTER-RIM EXPLORATION SERVICES

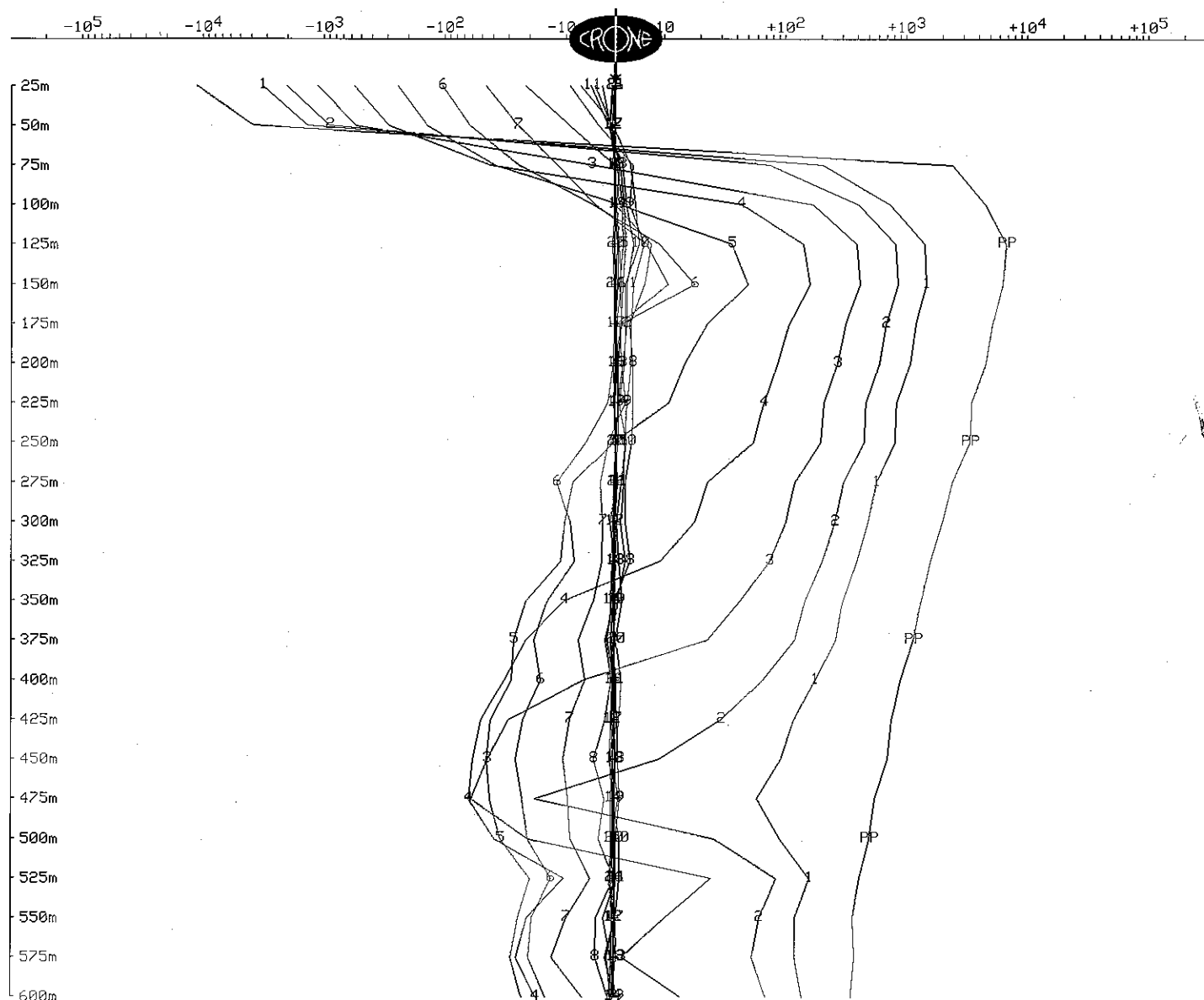
## Borehole Pulse EM Survey

Client : Bass Metals Ltd  
Grid : Hellyer  
Date : Jan 26, 2008

Hole : HED-015  
Tx Loop : HED15-1  
File name : HED15XY1.PEM

Data Corrected for Probe Rotation using Orientation Tool #2  
Y COMPONENT dBy/dt nanoTesla/sec - 21 of 21 channels and PP

Scale: 1:4000



# OUTER-RIM EXPLORATION SERVICES

## Borehole Pulse EM Survey

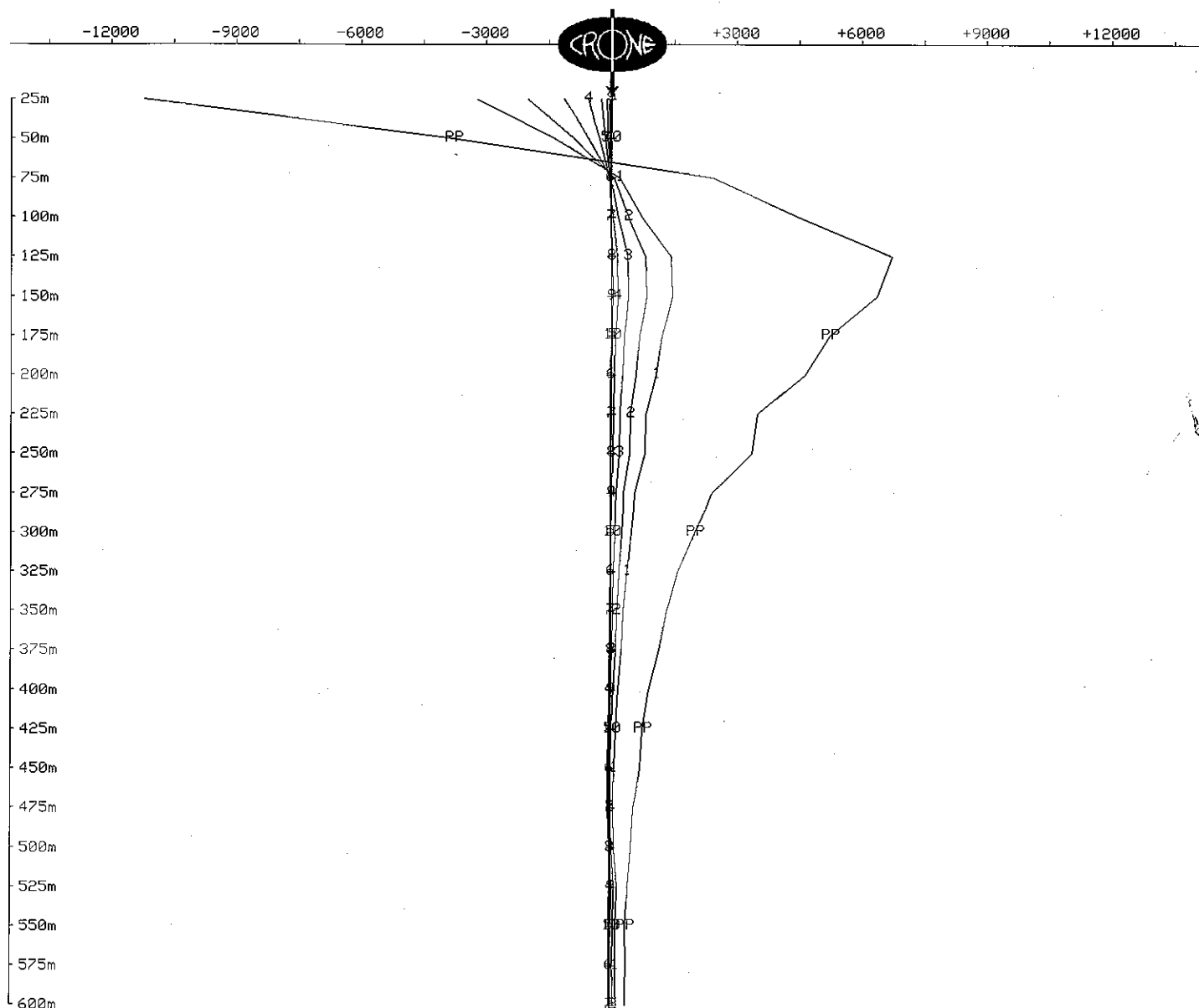
Client : Bass Metals Ltd  
Grid : Hellyer  
Date : Jan 26, 2008

Hole : HED-015  
Tx Loop : HED15-1  
File name : HED15XY1.PEM

Data Corrected for Probe Rotation using Orientation Tool #2  
Y COMPONENT dBy/dt nanoTesla/sec - 10 of 21 channels and PP

Scale: 1:4000

Unit Scale: 1cm = 1500 nT/s



# OUTER-RIM EXPLORATION SERVICES

## Borehole Pulse EM Survey

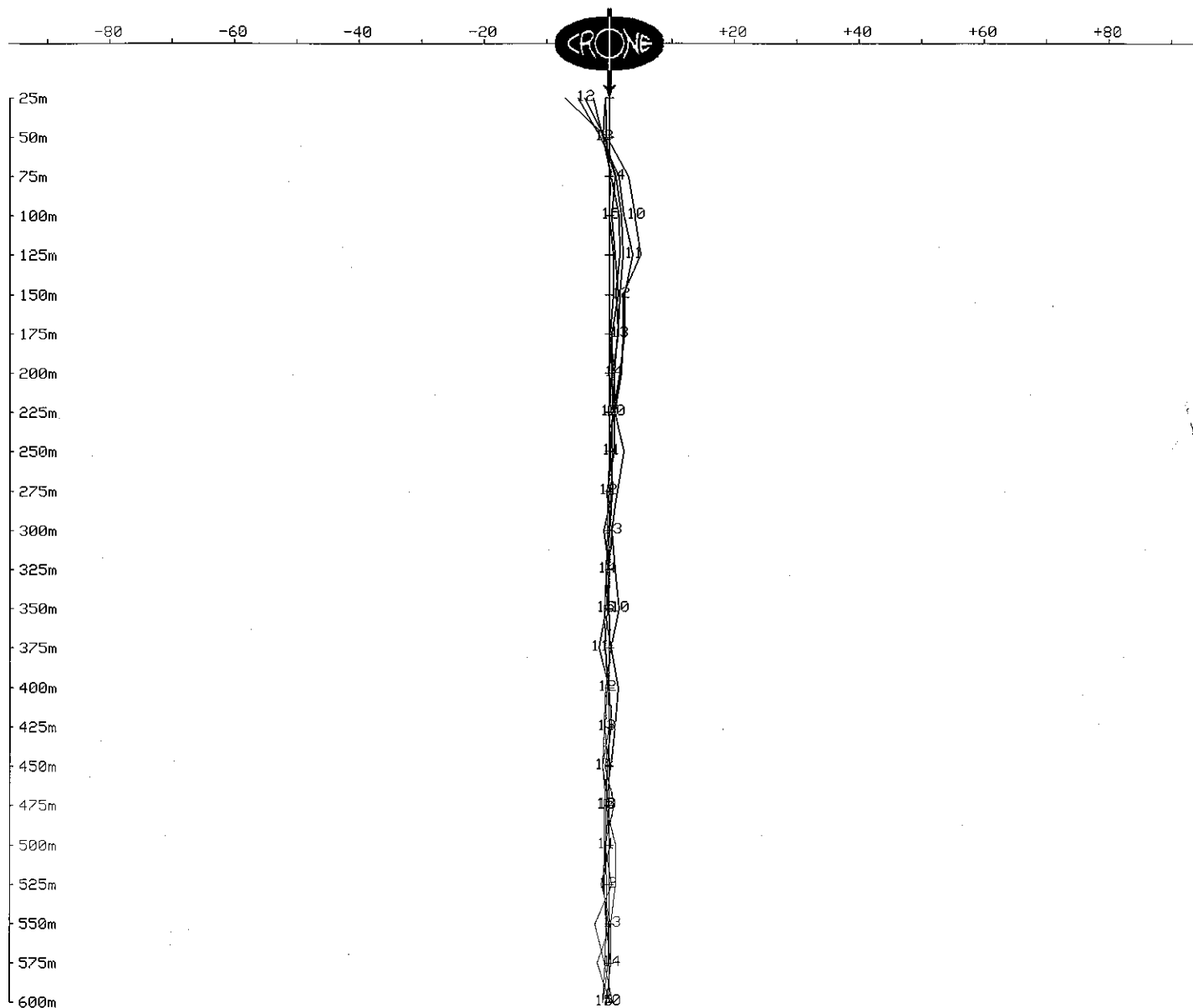
Client : Bass Metals Ltd  
Grid : Hellyer  
Date : Jan 26, 2008

Hole : HED-015  
Tx Loop : HED15-1  
File name : HED15XY1.PEM

Data Corrected for Probe Rotation using Orientation Tool #2  
Y COMPONENT dBy/dt nanoTesla/sec - 6 of 21 channels

Scale: 1:4000

Unit Scale: 1cm = 10 nT/s



# OUTER-RIM EXPLORATION SERVICES

## Borehole Pulse EM Survey

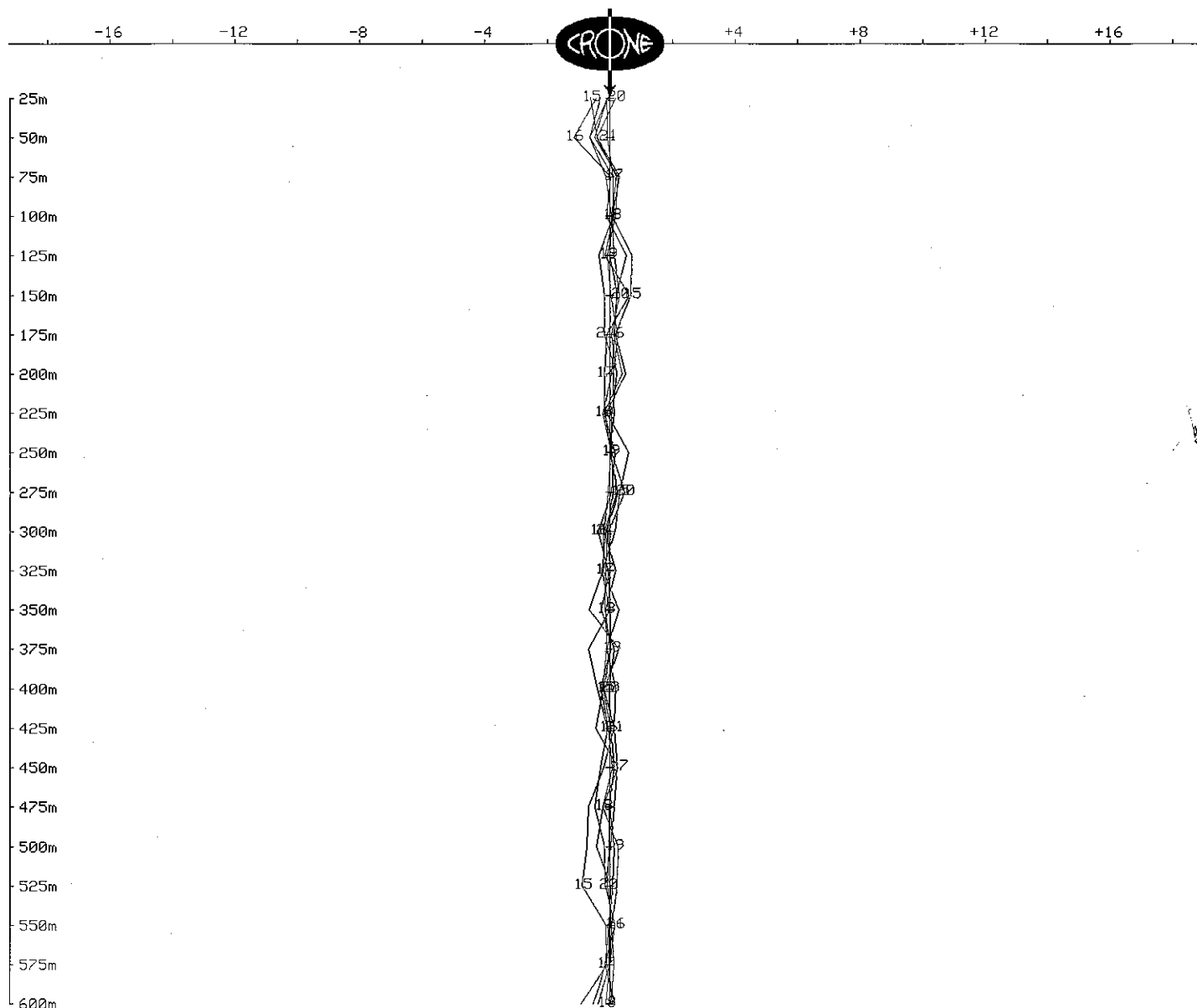
Client : Bass Metals Ltd  
Grid : Hellyer  
Date : Jan 26, 2008

Hole : HED-015  
Tx Loop : HED15-1  
File name : HED15XY1.PEM

Data Corrected for Probe Rotation using Orientation Tool #2  
Y COMPONENT dBy/dt nanoTesla/sec - 7 of 21 channels

Scale: 1:4000

Unit Scale: 1cm = 2 nT/s



# OUTER-RIM EXPLORATION SERVICES

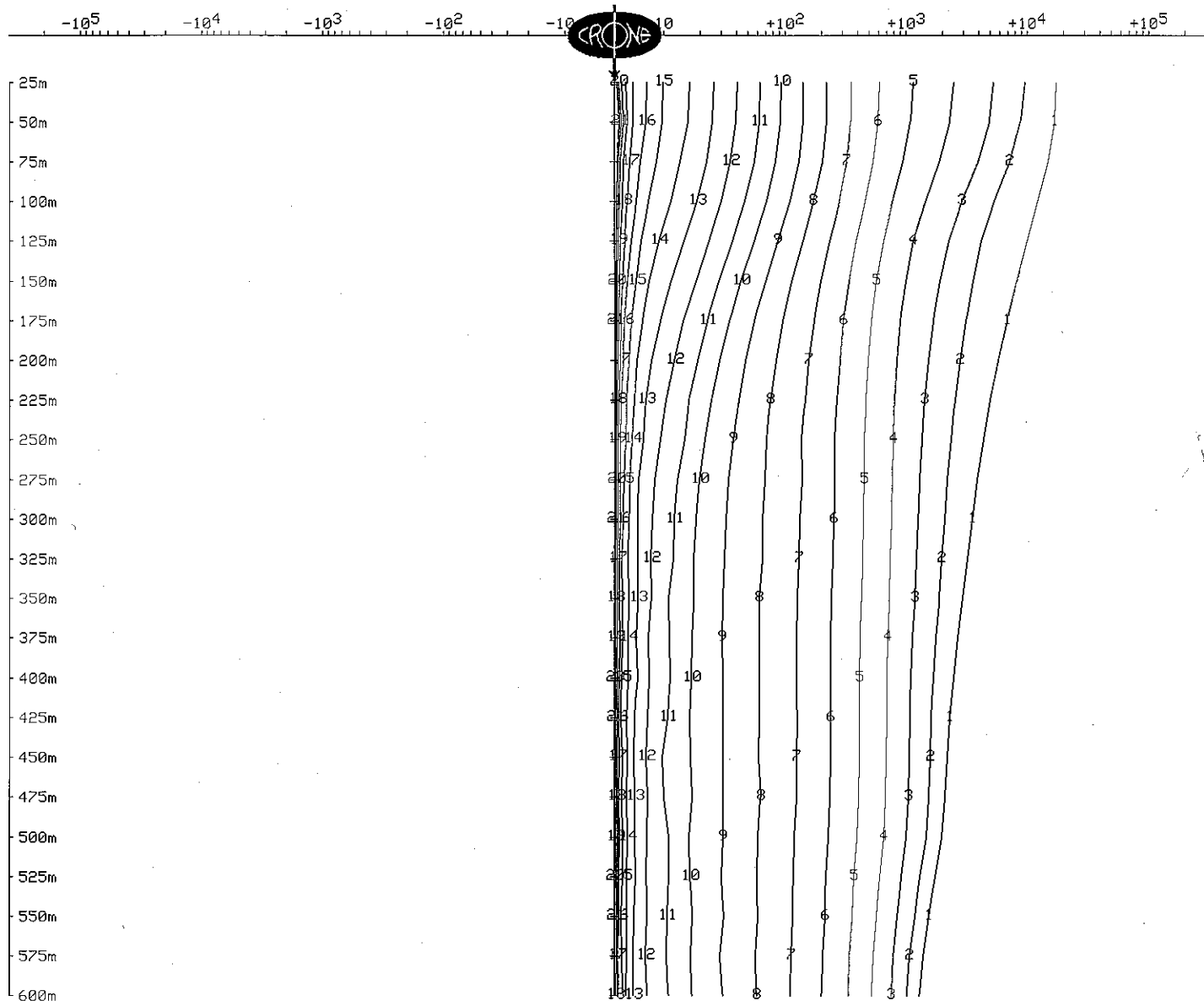
## Borehole Pulse EM Survey

Client : Bass Metals Ltd  
Grid : Hellyer  
Date : Jan 26, 2008

Hole : HED-015  
Tx Loop : HED15-1  
File name : HE15XYZ1.PEM

TOTAL FIELD dBxyz/dt nanoTesla/sec - 21 of 21 channels

Scale: 1:4000



Client	: Bass Metals Ltd	Hole	: HED-015
Grid	: Hellyer	Tx Loop	: HED15-2
Date	: Jan 27, 2008	File name	: HED15Z2.PEM
Time Base	: 20.00 ms	# Readings	: 24
Ramp Time	: 1.00 ms	Stn Units	: Metric
# Channels	: 21	Coil Area	: 6500 sq m
Sync Type	: Cable	Polarity	: +
Loop Size	: 600m X 300m	Receiver	: Digital #136
Current	: 20 Amps	Operator	: Humam

1. 6600m, 9000m, 0m	2. 6650m, 8600m, 0m
3. 6600m, 8450m, 0m	4. 7000m, 8450m, 0m
5. 7000m, 9000m, 0m	

1. 6553m, 8667m, 0m      2. 100deg, 60deg, 608m

Ch	Start	End	Center	Ch	Start	End	Center	Ch	Start	End	Center
PP	-200	-100	-150	1	48	64	56	2	64	84	74
3	84	112	98	4	112	152	132	5	152	204	178
6	204	268	236	7	268	360	314	8	360	480	420
9	480	640	560	10	640	848	744	11	848	1128	988
12	1128	1496	1312	13	1496	1992	1744	14	1992	2644	2318
15	2644	3512	3078	16	3512	4664	4088	17	4664	6192	5428
18	6192	8220	7206	19	8220	10920	9570	20	10920	14400	12660
21	14400	17700	16050								

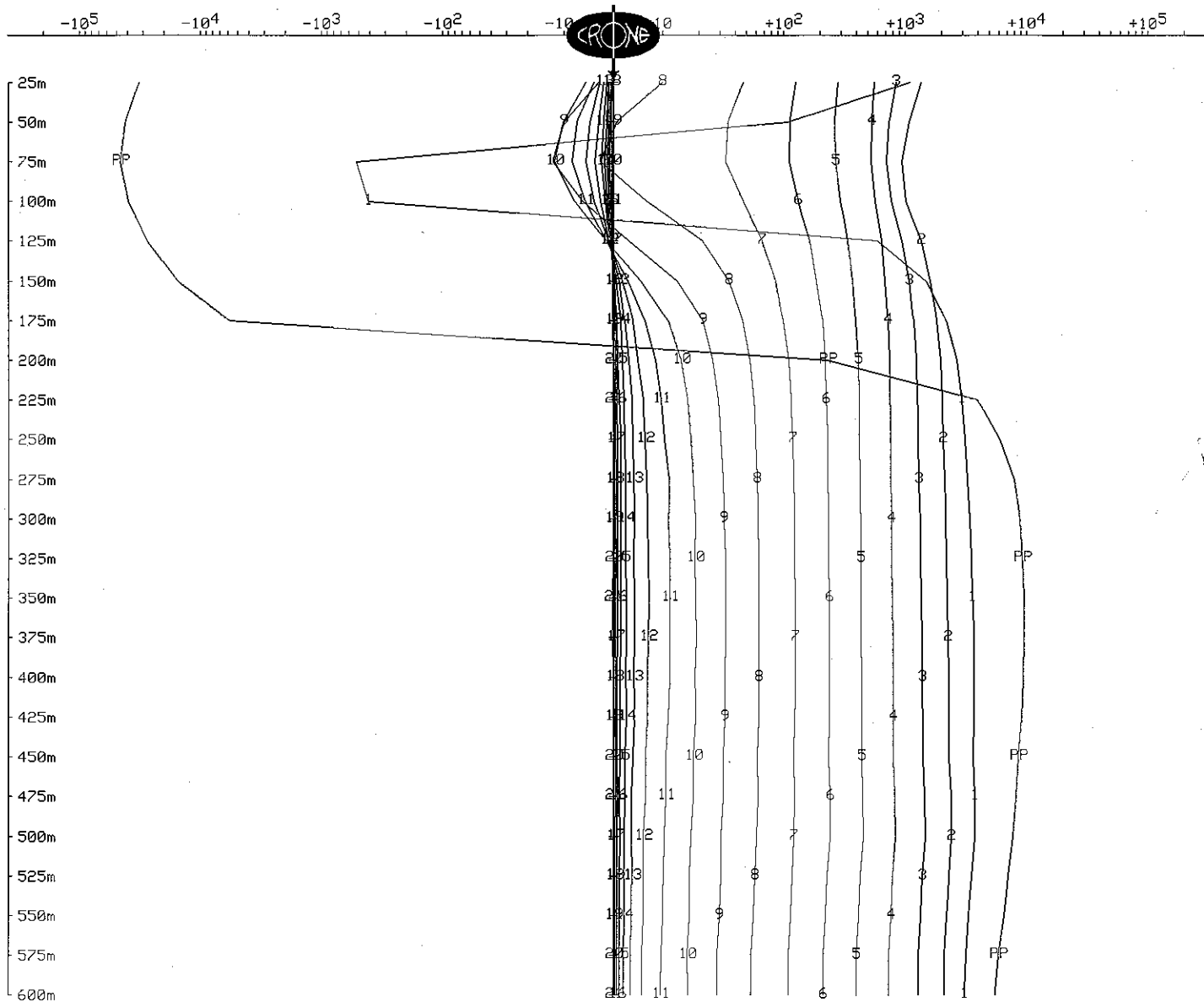
# OUTER-RIM EXPLORATION SERVICES

## Borehole Pulse EM Survey

Client : Bass Metals Ltd  
Grid : Hellyer  
Date : Jan 27, 2008

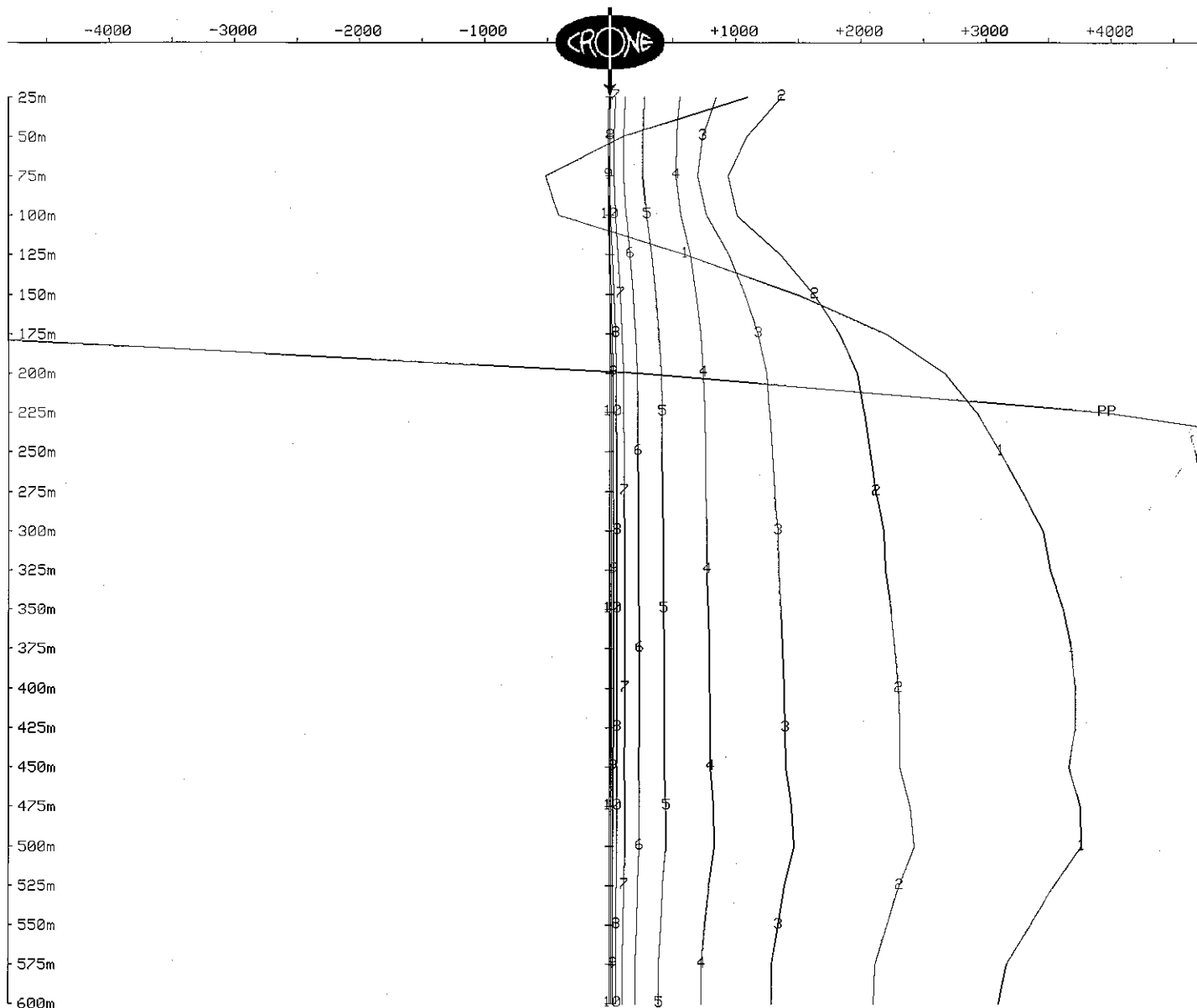
Hole : HED-015  
Tx Loop : HED15-2  
File name : HED15Z2.PEM

Z COMPONENT dBz/dt nanoTesla/sec - 21 of 21 channels and PP  
Scale: 1:4000



```
Hole      : HED-015
Tx Loop   : HED15-2
File name : HED15Z2.PEM
```

Z COMPONENT dBz/dt nanoTesla/sec - 10 of 21 channels and PP  
Scale: 1:4000 Unit Scale: 1cm = 500 nT/s



# OUTER-RIM EXPLORATION SERVICES

## Borehole Pulse EM Survey

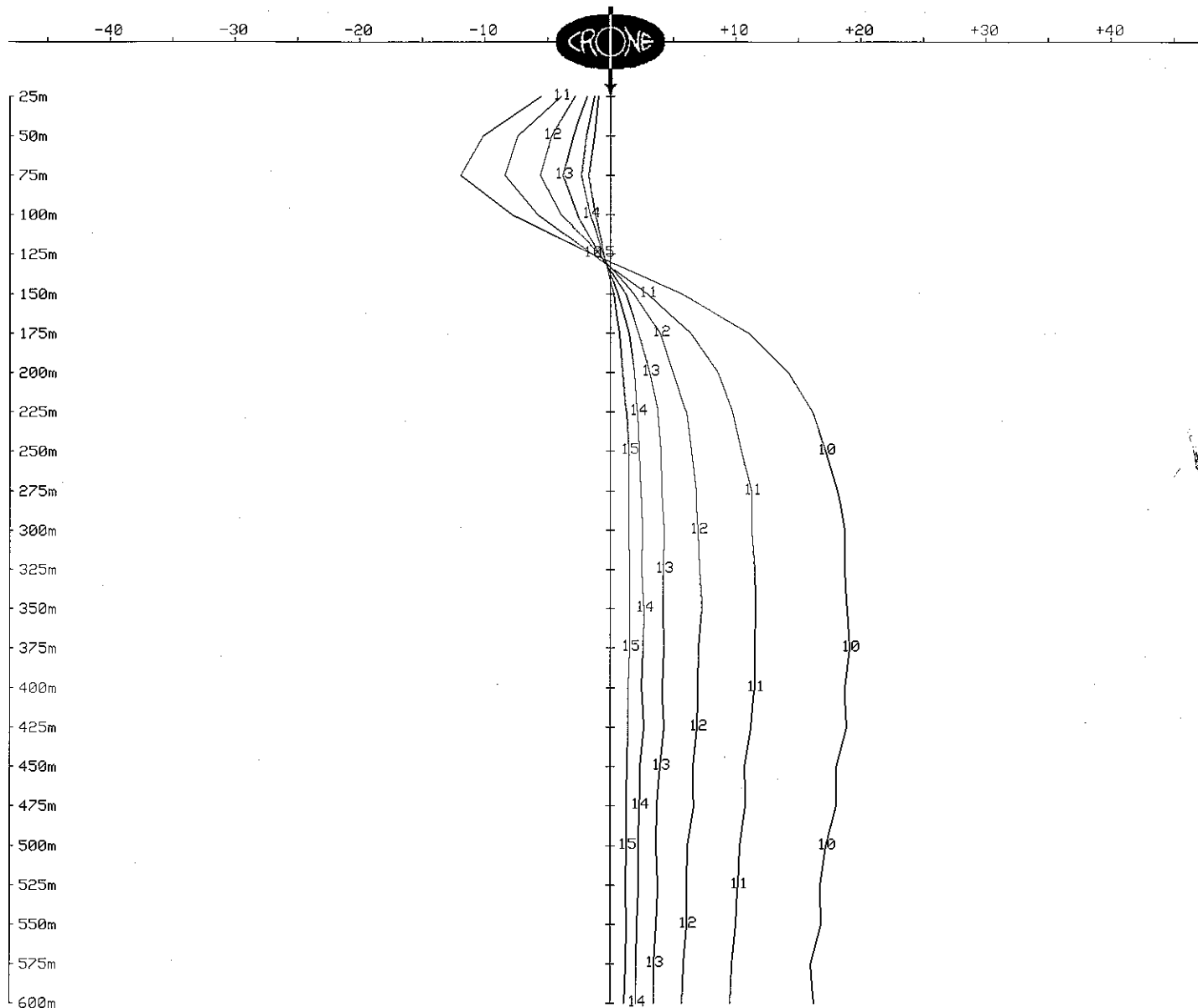
Client : Bass Metals Ltd  
Grid : Hellyer  
Date : Jan 27, 2008

Hole : HED-015  
Tx Loop : HED15-2  
File name : HED15Z2.PEM

Z COMPONENT dBz/dt nanoTesla/sec - 6 of 21 channels

Scale: 1:4000

Unit Scale: 1cm = 5 nT/s



# OUTER-RIM EXPLORATION SERVICES

## Borehole Pulse EM Survey

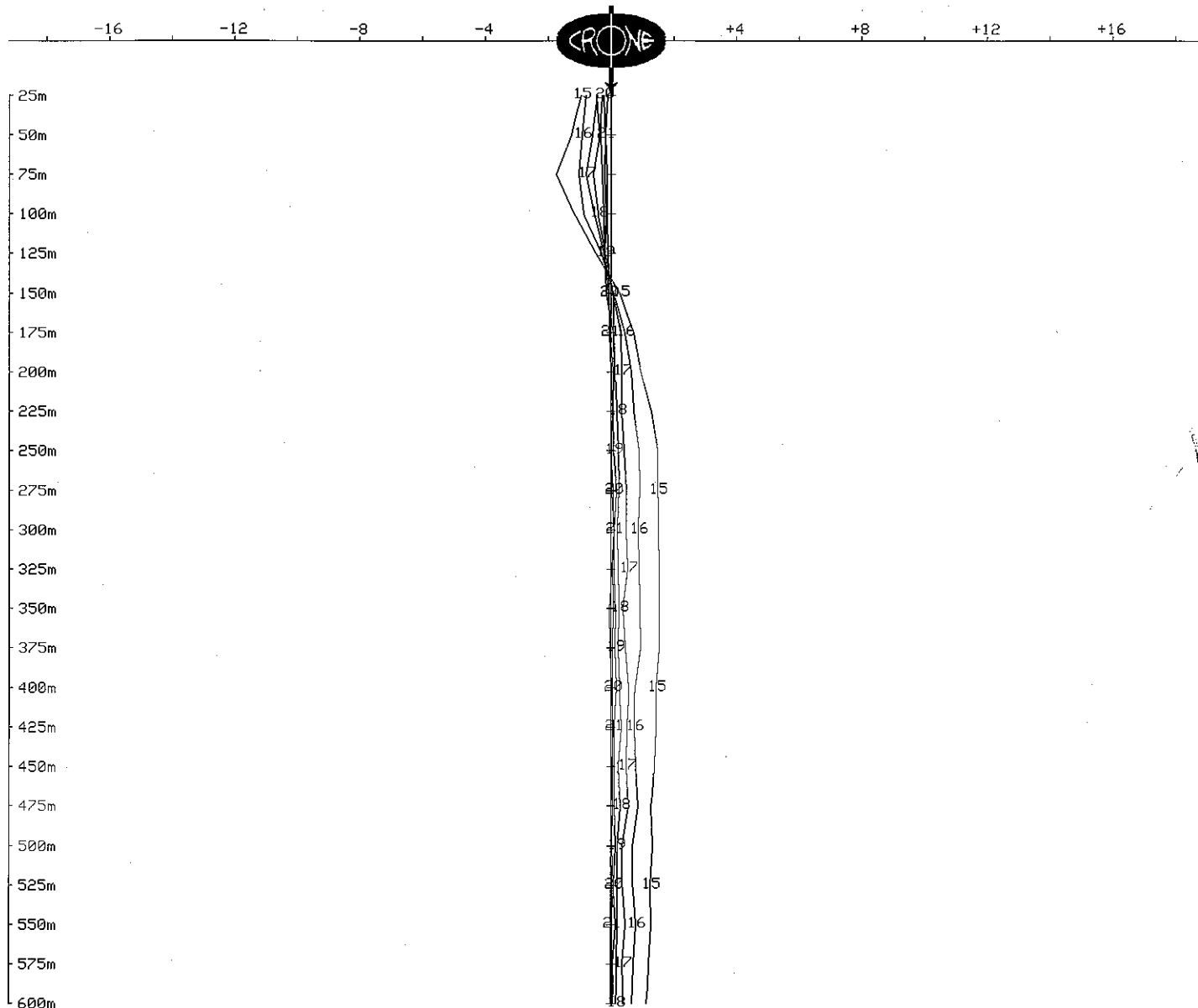
Client : Bass Metals Ltd  
Grid : Hellyer  
Date : Jan 27, 2008

Hole : HED-015  
Tx Loop : HED15-2  
File name : HED15Z2.PEM

Z COMPONENT dBz/dt nanoTesla/sec - 7 of 21 channels

Scale: 1:4000

Unit Scale: 1cm = 2 nT/s



# OUTER-RIM EXPLORATION SERVICES

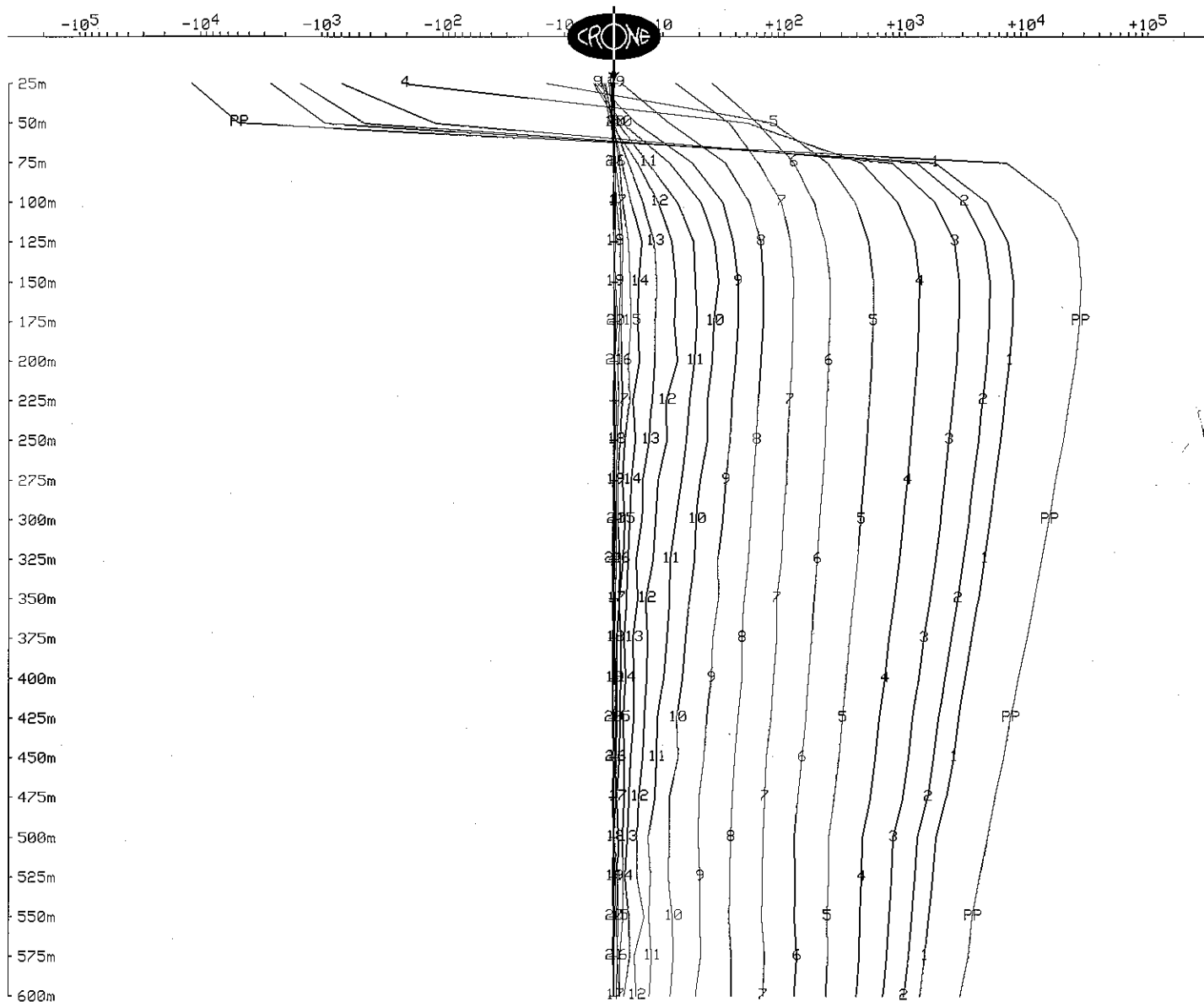
## Borehole Pulse EM Survey

Client : Bass Metals Ltd  
Grid : Hellyer  
Date : Jan 27, 2008

Hole : HED-015  
Tx Loop : HED15-2  
File name : HED15XY2.PEM

Data Corrected for Probe Rotation using Orientation Tool #2  
X COMPONENT dBx/dt nanoTesla/sec - 21 of 21 channels and PP

Scale: 1:4000



# OUTER-RIM EXPLORATION SERVICES

## Borehole Pulse EM Survey

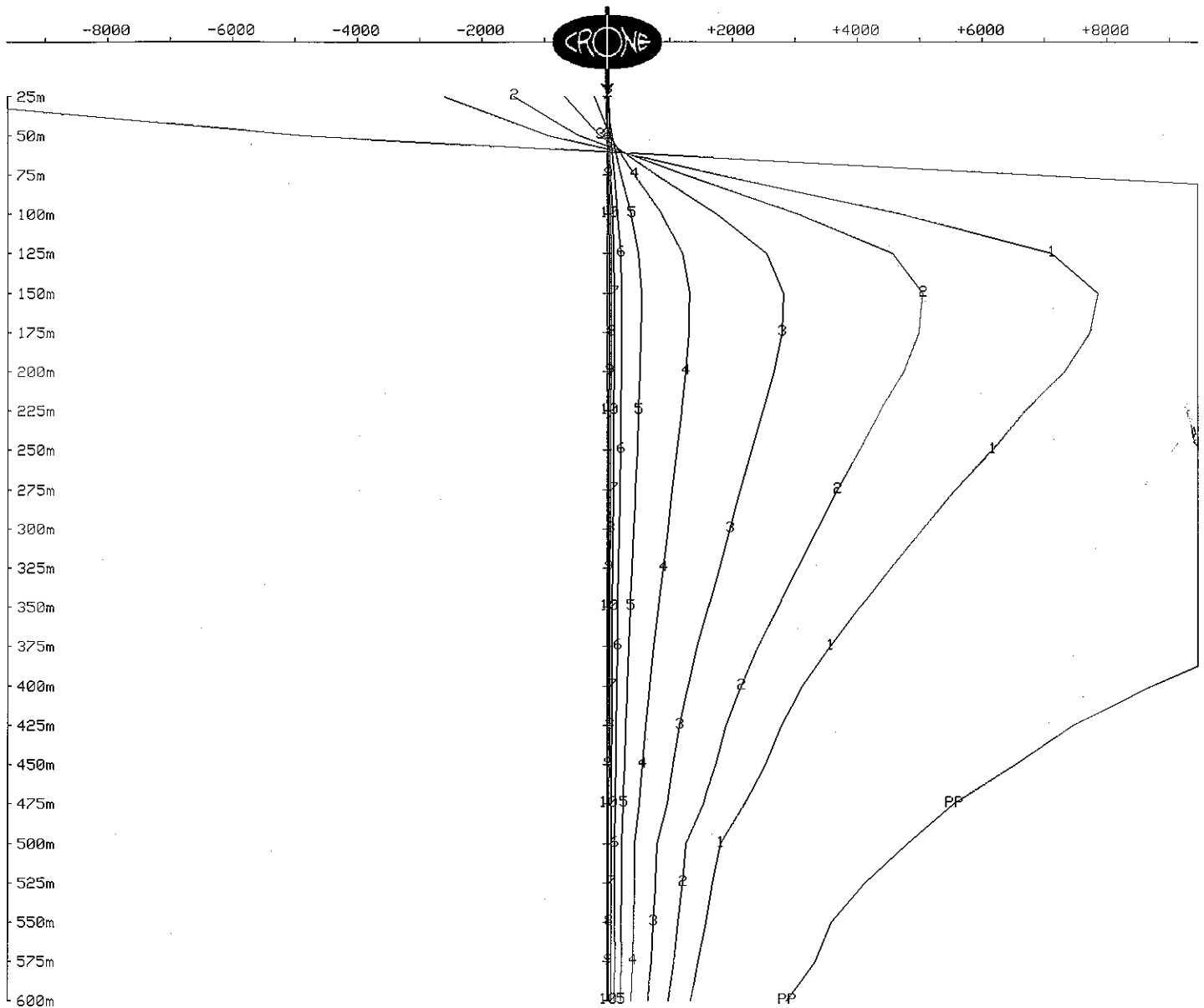
Client : Bass Metals Ltd  
Grid : Hellyer  
Date : Jan 27, 2008

Hole : HED-015  
Tx Loop : HED15-2  
File name : HED15XY2.PEM

Data Corrected for Probe Rotation using Orientation Tool #2  
X COMPONENT dBx/dt nanoTesla/sec - 10 of 21 channels and PP

Scale: 1:4000

Unit Scale: 1cm = 1000 nT/s



# OUTER-RIM EXPLORATION SERVICES

## Borehole Pulse EM Survey

Client : Bass Metals Ltd  
Grid : Hellyer  
Date : Jan 27, 2008

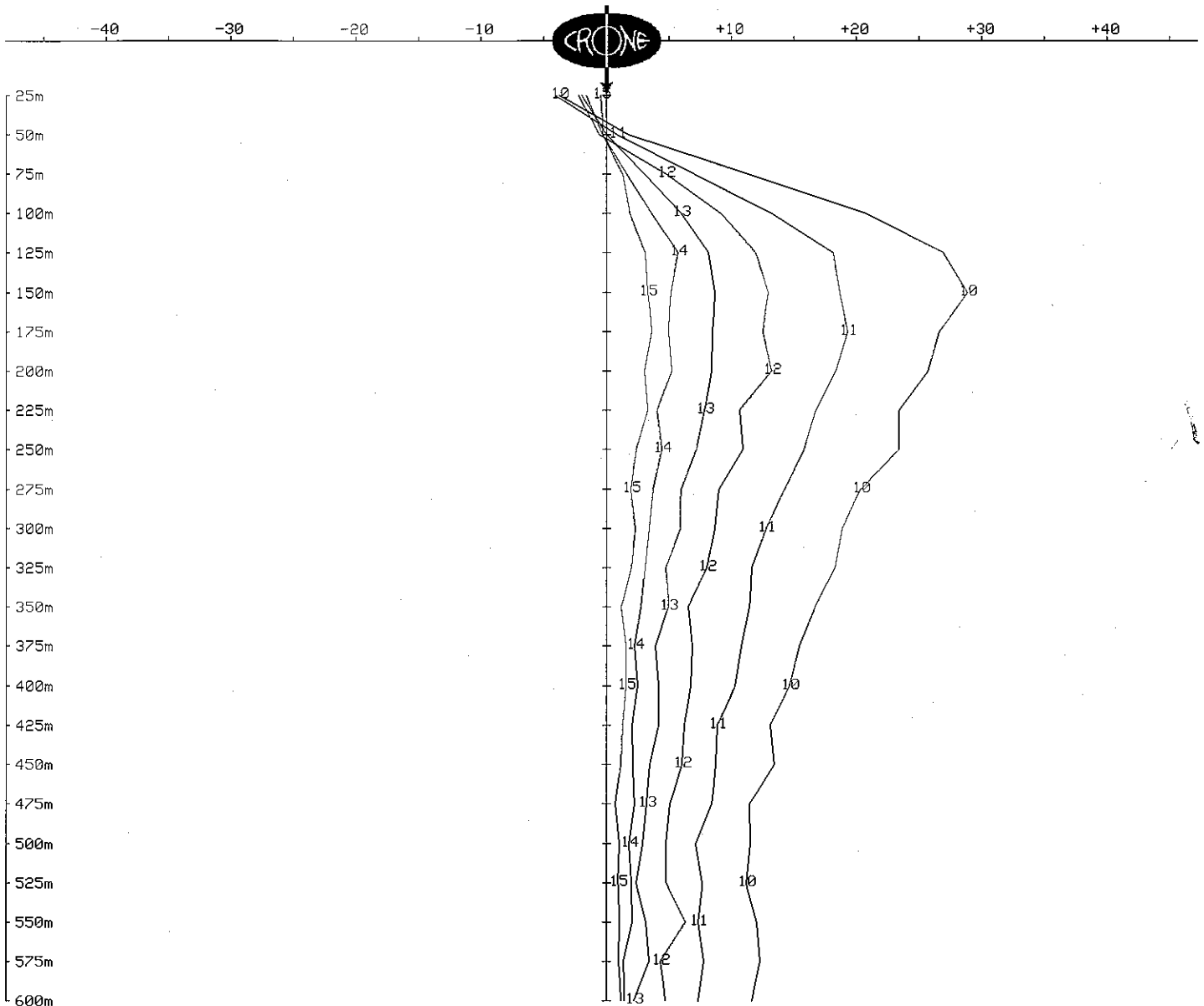
Hole : HED-015  
Tx Loop : HED15-2  
File name : HED15XY2.PEM

Data Corrected for Probe Rotation using Orientation Tool #2

X COMPONENT dBx/dt nanoTesla/sec - 6 of 21 channels

Scale: 1:4000

Unit Scale: 1cm = 5 nT/s



# OUTER-RIM EXPLORATION SERVICES

## Borehole Pulse EM Survey

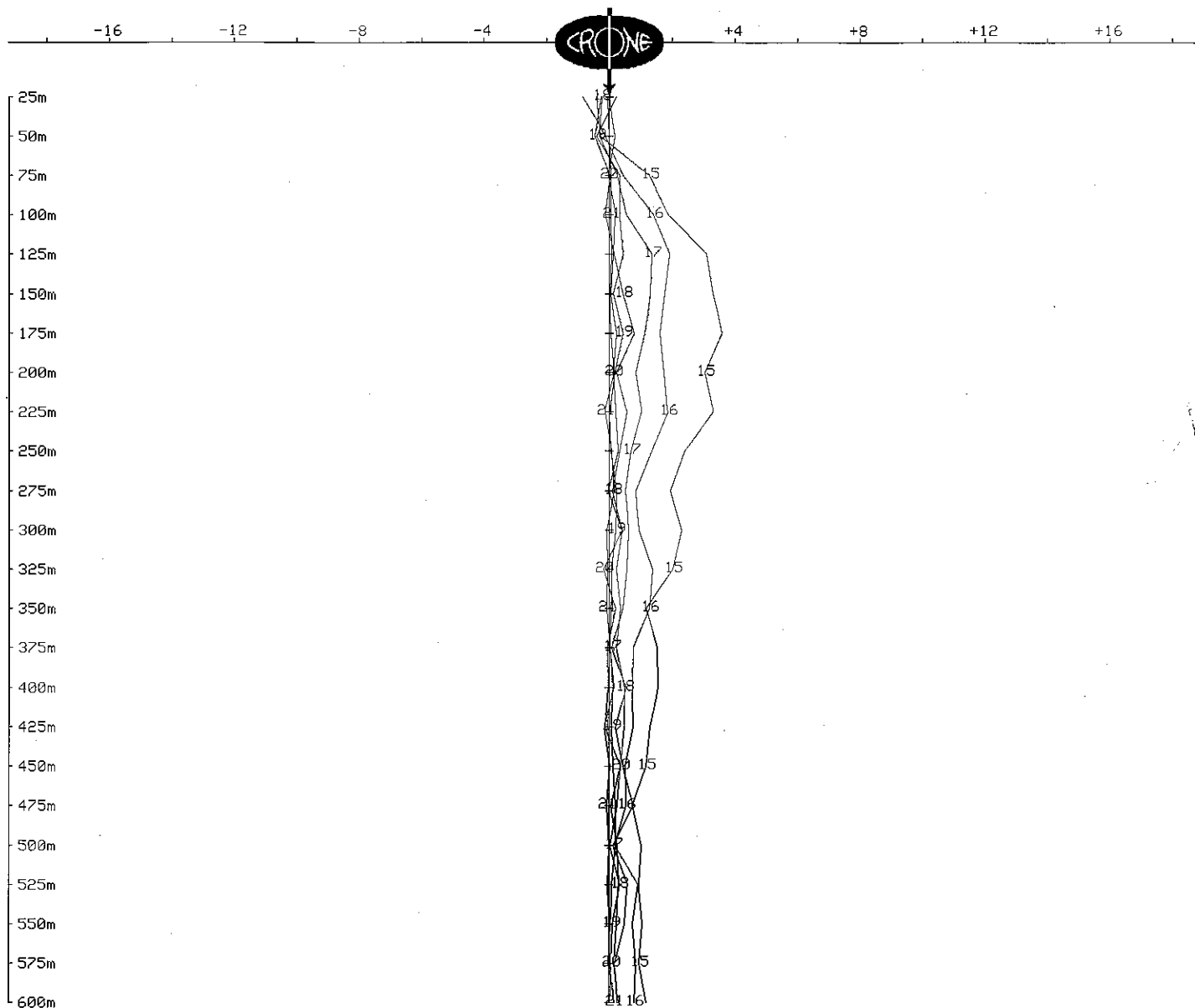
Client : Bass Metals Ltd  
Grid : Hellyer  
Date : Jan 27, 2008

Hole : HED-015  
Tx Loop : HED15-2  
File name : HED15XY2.PEM

Data Corrected for Probe Rotation using Orientation Tool #2  
X COMPONENT dBx/dt nanoTesla/sec - 7 of 21 channels

Scale: 1:4000

Unit Scale: 1cm = 2 nT/s



# OUTER-RIM EXPLORATION SERVICES

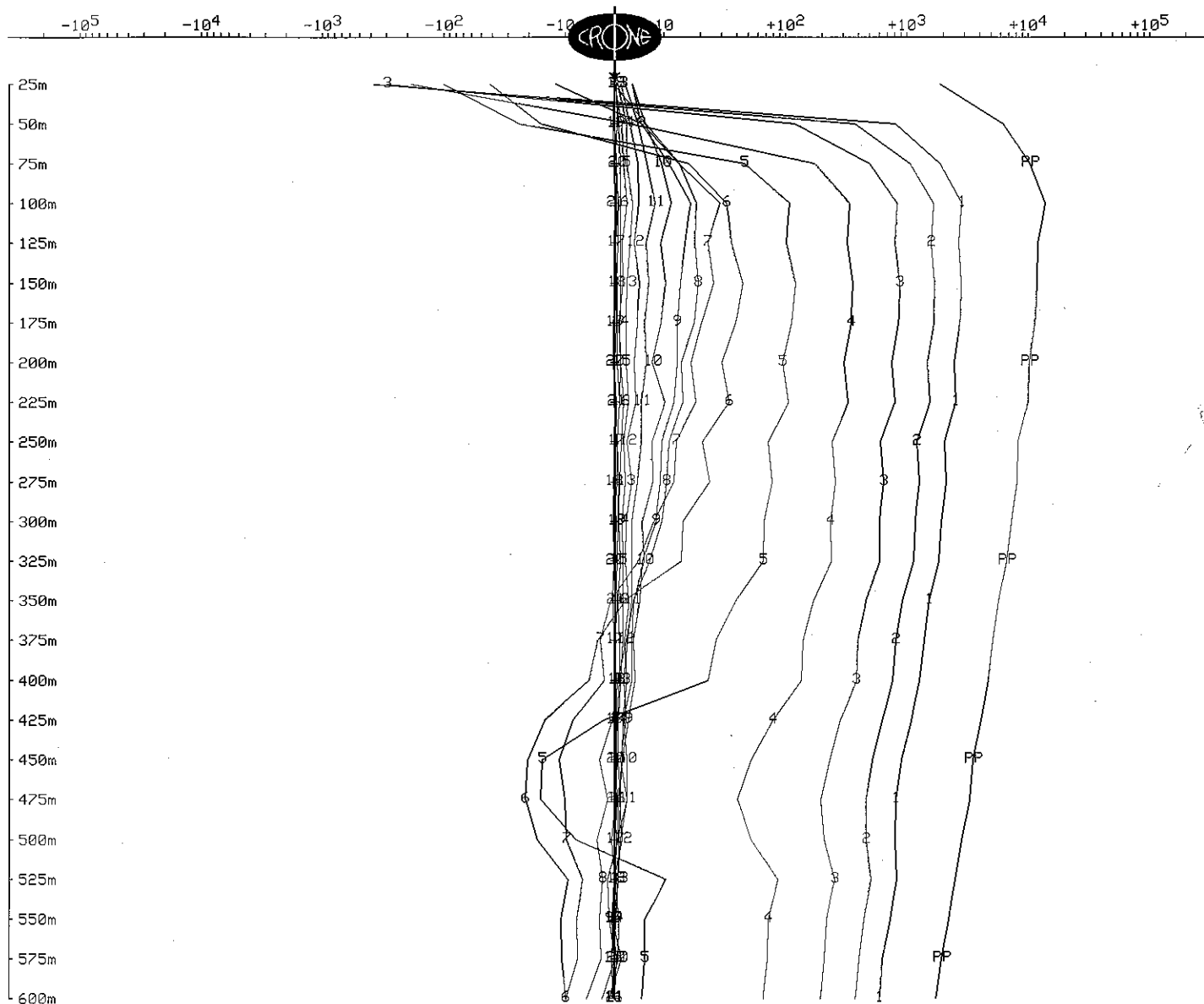
## Borehole Pulse EM Survey

Client : Bass Metals Ltd  
Grid : Hellyer  
Date : Jan 27, 2008

Hole : HED-015  
Tx Loop : HED15-2  
File name : HED15XY2.PEM

Data Corrected for Probe Rotation using Orientation Tool #2  
Y COMPONENT dBy/dt nanoTesla/sec - 21 of 21 channels and PP

Scale: 1:4000



# OUTER-RIM EXPLORATION SERVICES

## Borehole Pulse EM Survey

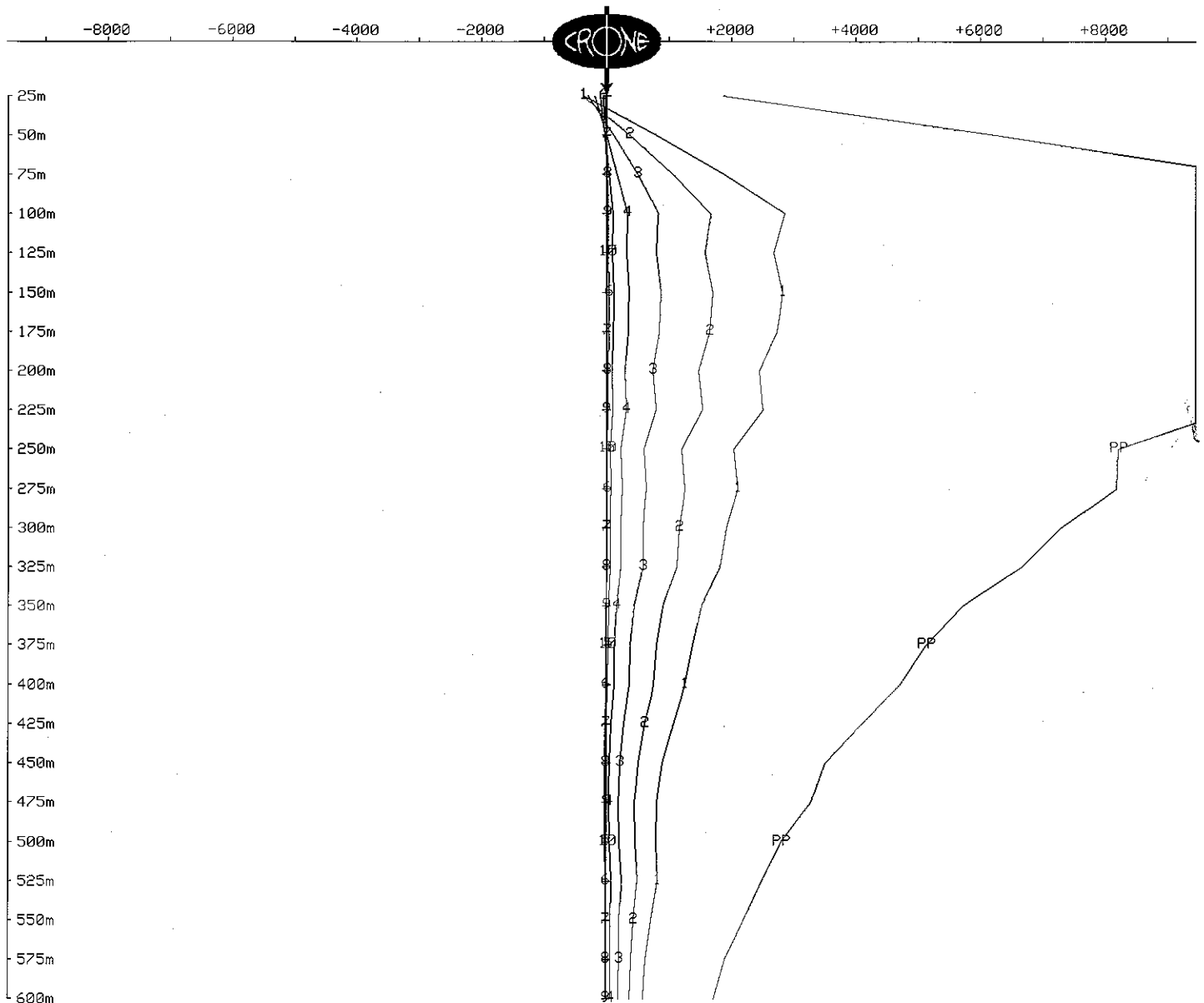
Client : Bass Metals Ltd  
Grid : Hellyer  
Date : Jan 27, 2008

Hole : HED-015  
Tx Loop : HED15-2  
File name : HED15XY2.PEM

Data Corrected for Probe Rotation using Orientation Tool #2  
Y COMPONENT dBy/dt nanoTesla/sec - 10 of 21 channels and PP

Scale: 1:4000

Unit Scale: 1cm = 1000 nT/s



# OUTER-RIM EXPLORATION SERVICES

## Borehole Pulse EM Survey

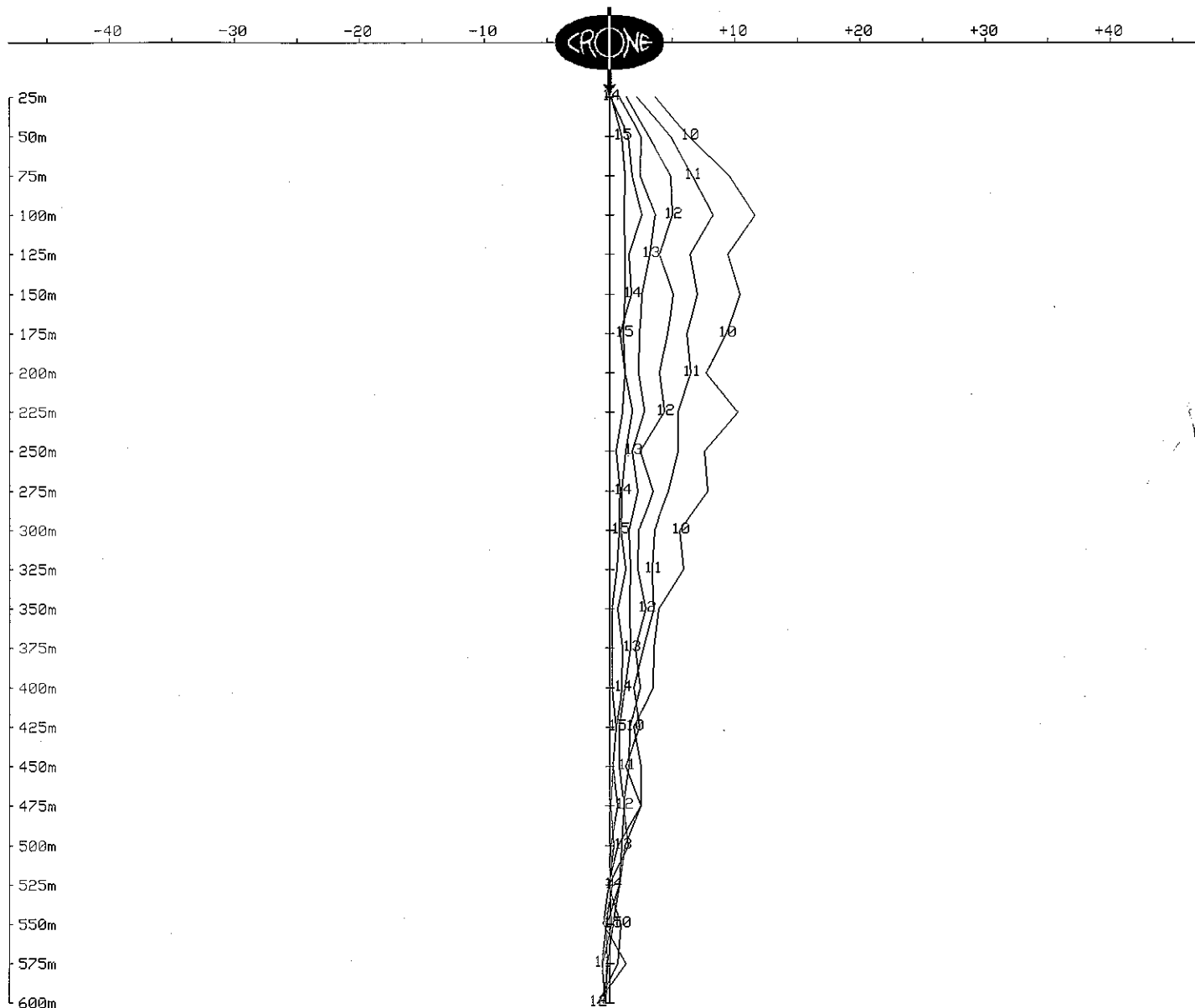
Client : Bass Metals Ltd  
Grid : Hellyer  
Date : Jan 27, 2008

Hole : HED-015  
Tx Loop : HED15-2  
File name : HED15XY2.PEM

Data Corrected for Probe Rotation using Orientation Tool #2  
Y COMPONENT dBy/dt nanoTesla/sec - 6 of 21 channels

Scale: 1:4000

Unit Scale: 1cm = 5 nT/s



# OUTER-RIM EXPLORATION SERVICES

## Borehole Pulse EM Survey

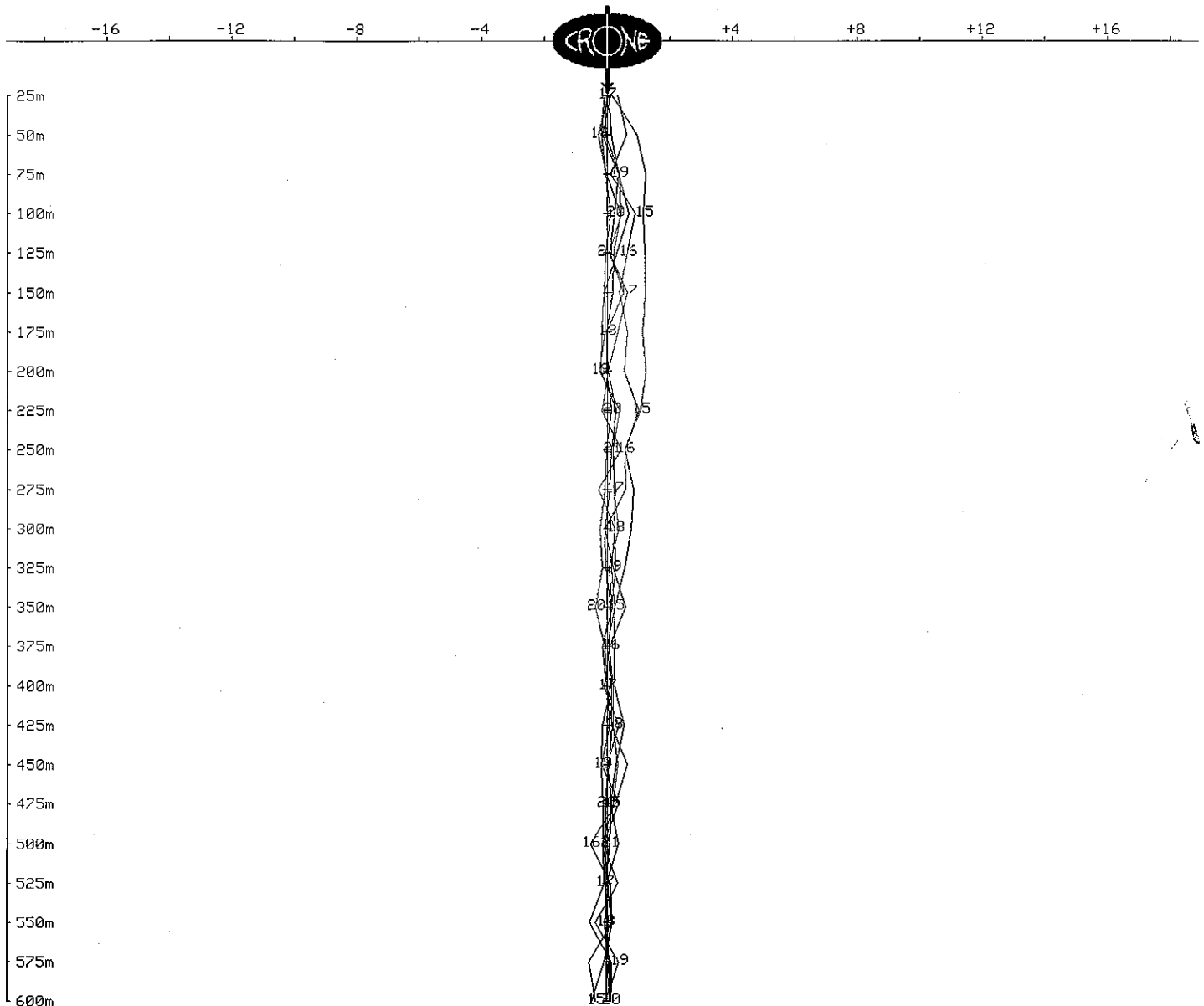
Client : Bass Metals Ltd  
Grid : Hellyer  
Date : Jan 27, 2008

```
Hole      : HED-015
Tx Loop   : HED15-2
File name : HED15XY2.PEM
```

Data Corrected for Probe Rotation using Orientation Tool #2  
Y COMPONENT dBy/dt nanoTesla/sec - 7 of 21 channels

Scale: 1:4000

Unit Scale: 1cm = 2 nT/s



# OUTER-RIM EXPLORATION SERVICES

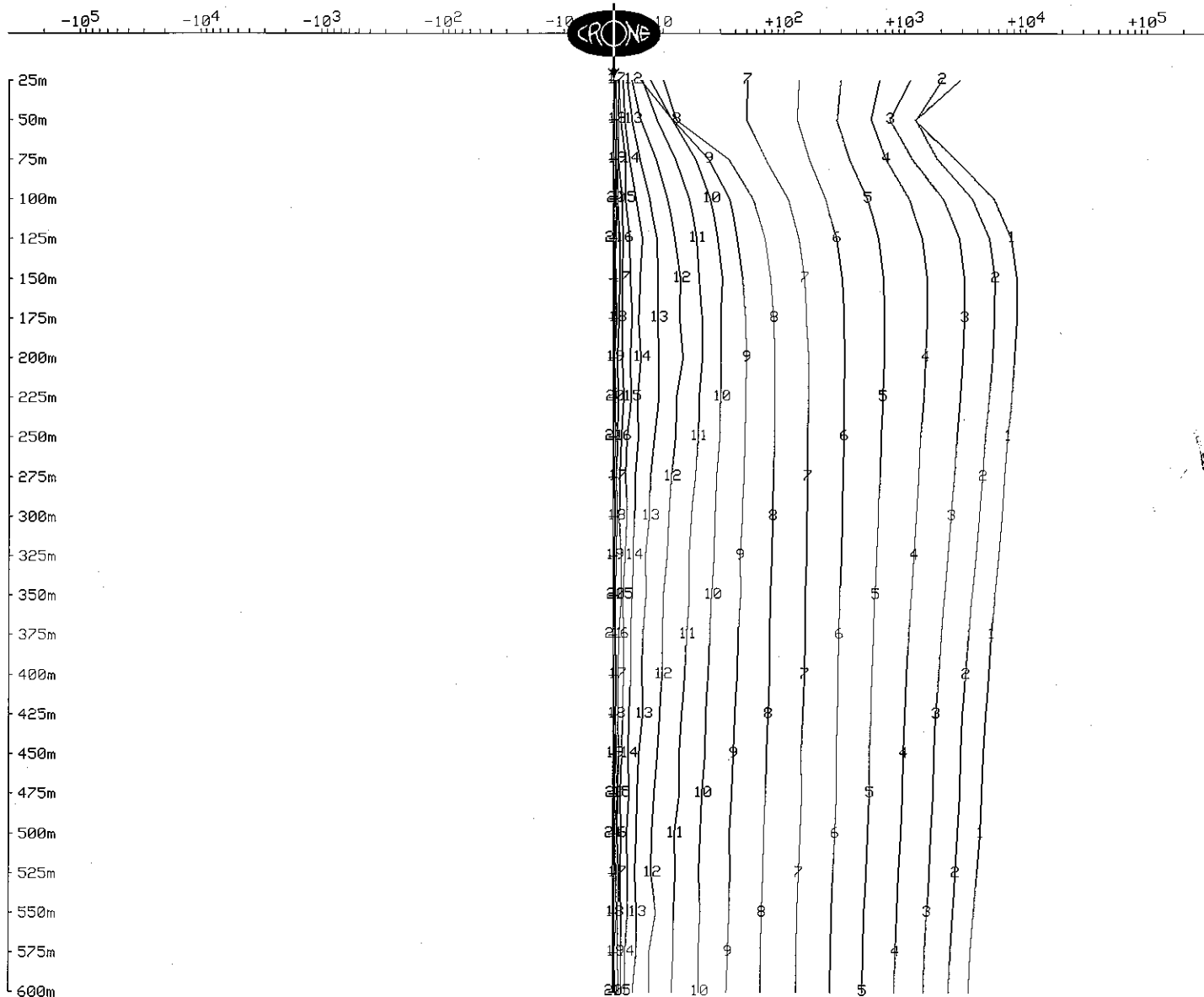
## Borehole Pulse EM Survey

Client : Bass Metals Ltd  
Grid : Hellyer  
Date : Jan 27, 2008

Hole : HED-015  
Tx Loop : HED15-2  
File name : HE15XYZ2.PEM

TOTAL FIELD dBxyz/dt nanoTesla/sec - 21 of 21 channels

Scale: 1:4000



# OUTER-RIM EXPLORATION SERVICES

## Borehole Pulse EM Survey

Client	: Bass Metals Ltd	Hole	: HED-015
Grid	: Hellyer	Tx Loop	: HED15-2
Date	: Jan 30, 2008	File name	: HED15Z2B.PEM
Time Base	: 20.00 ms	# Readings	: 18
Ramp Time	: 1.00 ms	Stn Units	: Metric
# Channels	: 21	Coil Area	: 6500 sq m
Sync Type	: Cable	Polarity	: +
Loop Size	: 600m X 300m	Receiver	: Digital #136
Current	: 20 Amps	Operator	: Humam

### Loop Coordinates (X,Y,Z)

1. 6600m, 9000m, 0m	2. 6650m, 8600m, 0m
3. 6600m, 8450m, 0m	4. 7000m, 8450m, 0m
5. 7000m, 9000m, 0m	

### Hole Coordinates (X,Y,Z) or (Azimuth,Dip,Length)

1. 6553m, 8667m, 0m	2. 100deg, 60deg, 600m
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### Channel Times (usec)

Ch	Start	End	Center	Ch	Start	End	Center	Ch	Start	End	Center
PP	-200	-100	-150	1	48	64	56	2	64	84	74
3	84	112	98	4	112	152	132	5	152	204	178
6	204	268	236	7	268	360	314	8	360	480	420
9	480	640	560	10	640	848	744	11	848	1128	988
12	1128	1496	1312	13	1496	1992	1744	14	1992	2644	2318
15	2644	3512	3078	16	3512	4664	4088	17	4664	6192	5428
18	6192	8220	7206	19	8220	10920	9570	20	10920	14400	12660
21	14400	17700	16050								

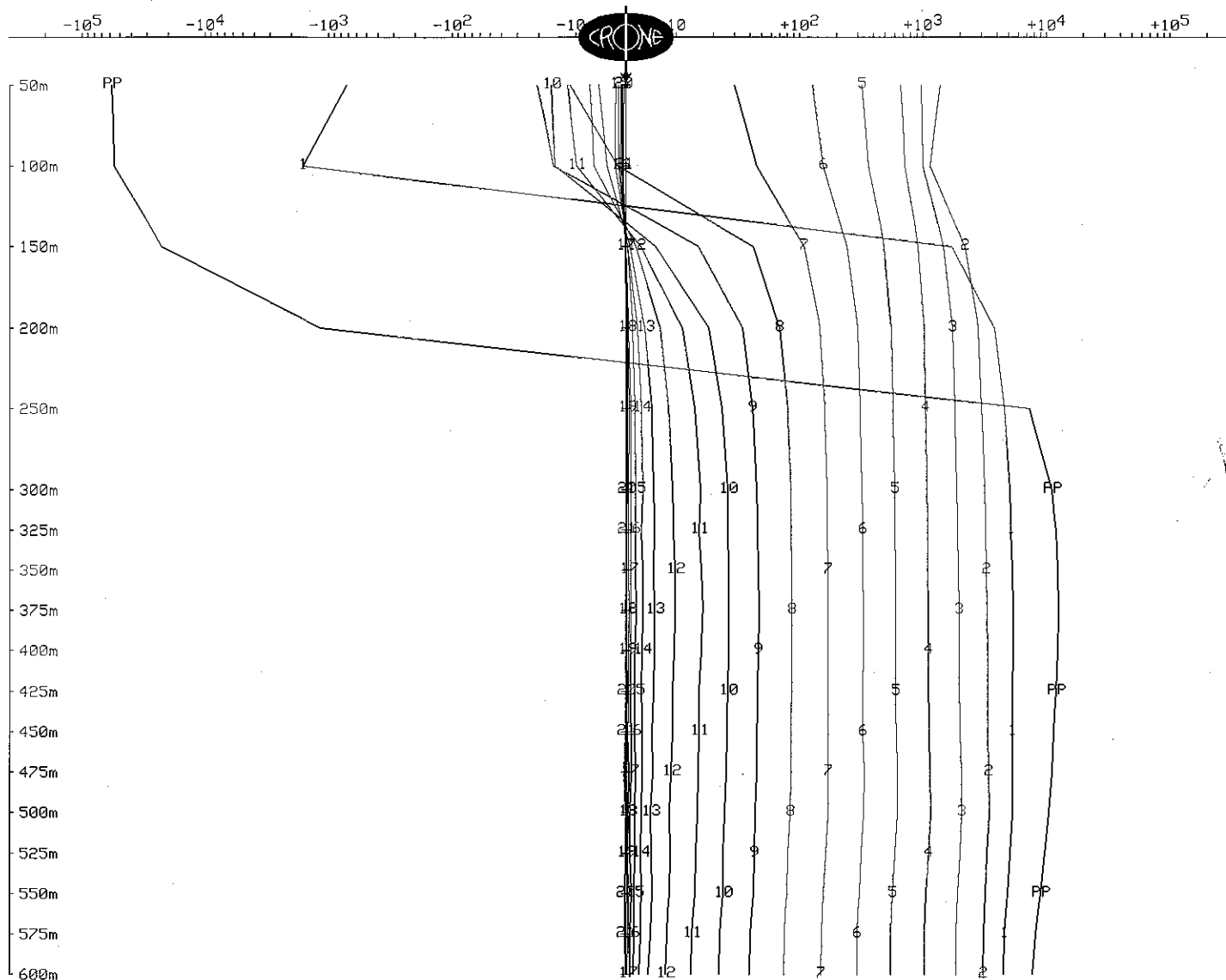
# OUTER-RIM EXPLORATION SERVICES

## Borehole Pulse EM Survey

Client : Bass Metals Ltd  
 Grid : Hellyer  
 Date : Jan 30, 2008

Hole : HED-015  
 Tx Loop : HED15-2  
 File name : HED15Z2B.PEM

Z COMPONENT dBz/dt nanoTesla/sec - 21 of 21 channels and PP  
 Scale: 1:4000



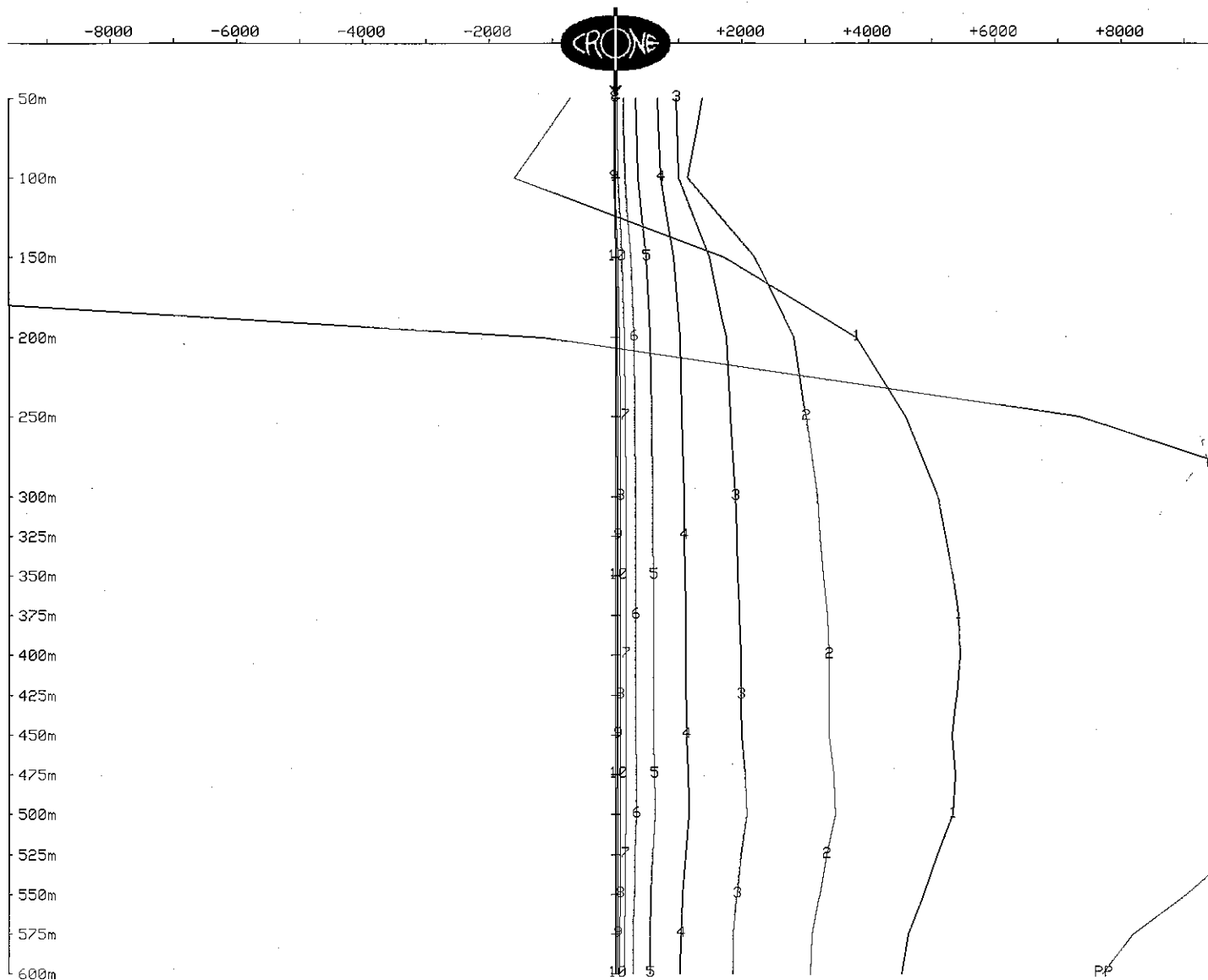
# OUTER-RIM EXPLORATION SERVICES

## Borehole Pulse EM Survey

Client : Bass Metals Ltd  
Grid : Hellyer  
Date : Jan 30, 2008

Hole : HED-015  
Tx Loop : HED15-2  
File name : HED15Z2B.PEM

Z COMPONENT dBz/dt nanoTesla/sec - 10 of 21 channels and PP  
Scale: 1:4000 Unit Scale: 1cm = 1000 nT/s



# OUTER-RIM EXPLORATION SERVICES

## Borehole Pulse EM Survey

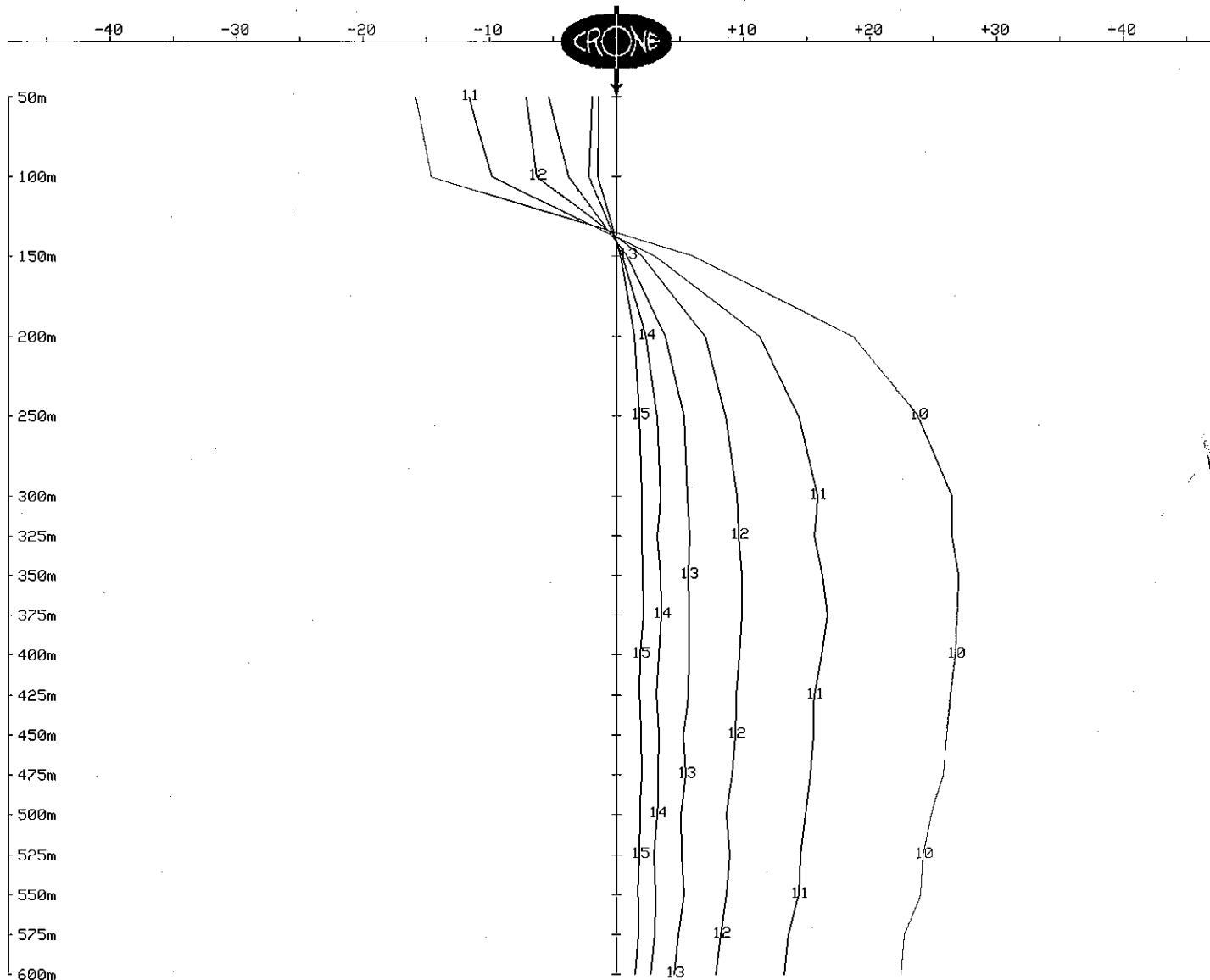
Client : Bass Metals Ltd  
Grid : Hellyer  
Date : Jan 30, 2008

Hole : HED-015  
Tx Loop : HED15-2  
File name : HED15Z2B.PEM

Z COMPONENT dBz/dt nanoTesla/sec - 6 of 21 channels

Scale: 1:4000

Unit Scale: 1cm = 5 nT/s



# OUTER-RIM EXPLORATION SERVICES

## Borehole Pulse EM Survey

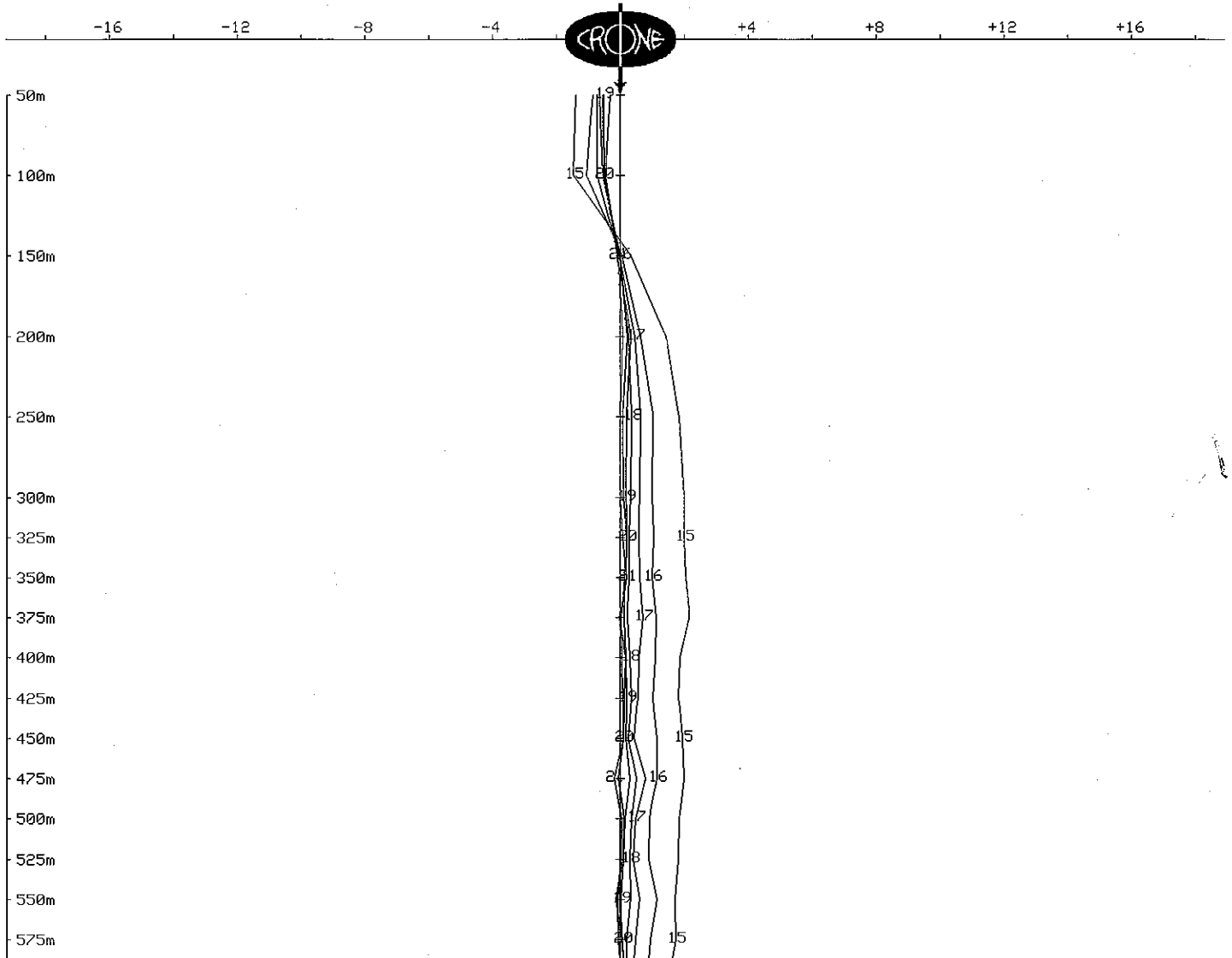
Client : Bass Metals Ltd  
Grid : Hellyer  
Date : Jan 30, 2008

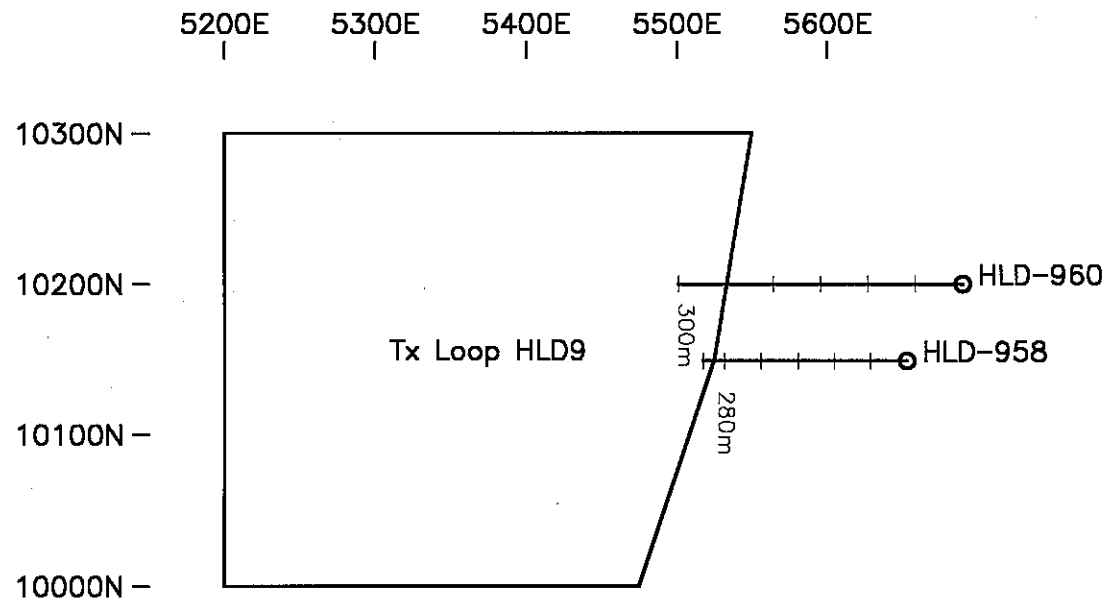
Hole : HED-015  
Tx Loop : HED15-2  
File name : HED15Z2B.PEM

Z COMPONENT dBz/dt nanoTesla/sec - 7 of 21 channels

Scale: 1:4000

Unit Scale: 1cm = 2 nT/s





Scale 1:5000

50 0 50 100

(metres)

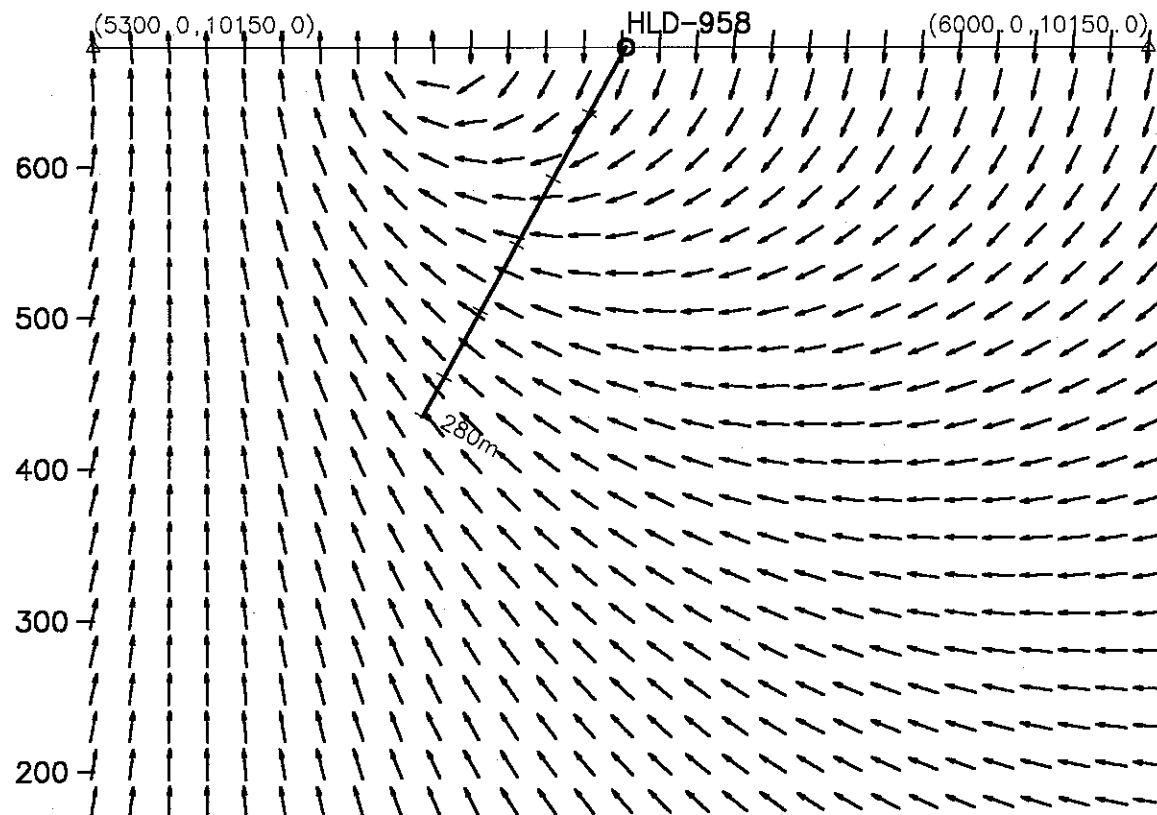
*Bass Metals Ltd*  
Hellyer

**3-D Borehole Pulse EM Survey  
Borehole & Loop Location Map**

Hole: HLD-958 & HLD-960

Survey Date: Jan 29/30, 2008

***Outer-Rim Exploration Services***



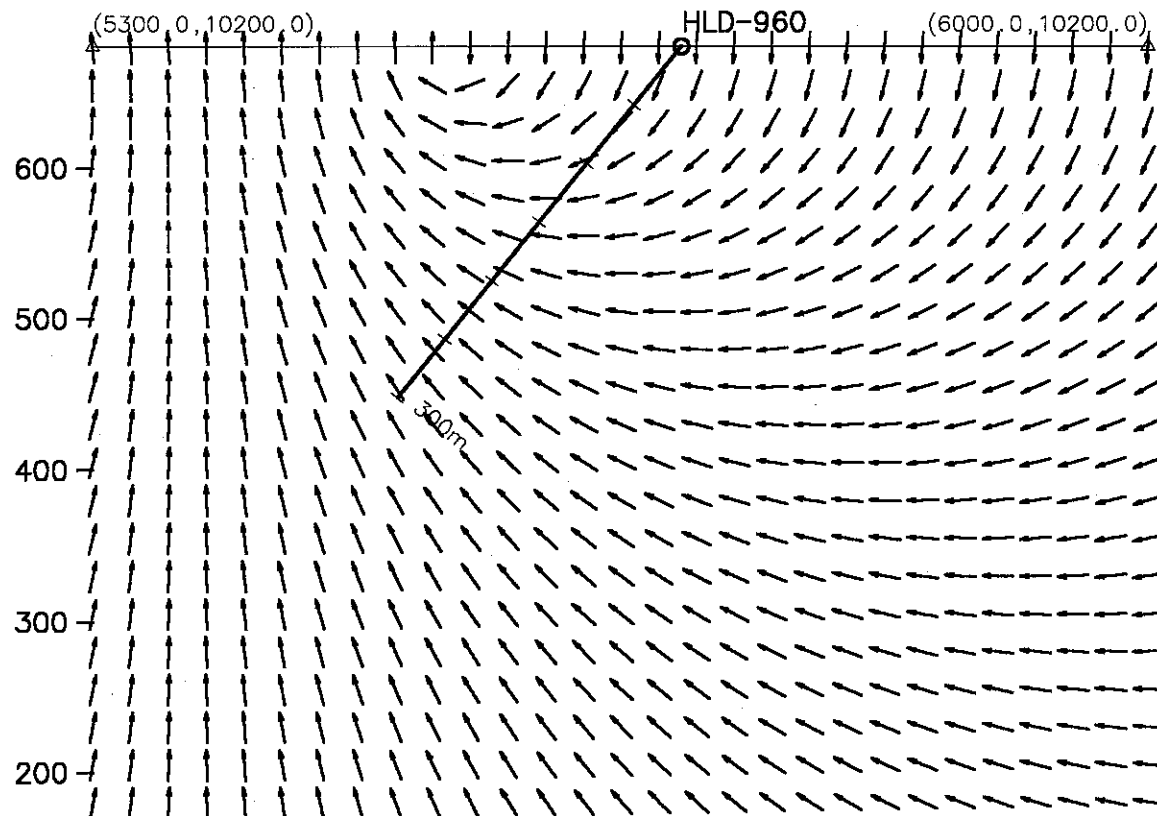
Scale 1:5000  
50 0 50 100  
(metres)

*Bass Metals Ltd*  
Hellyer

**3-D Borehole Pulse EM Survey**  
**Hole Section with Primary Field**

Hole: HLD-958  
Survey Date: Jan 29, 2008

***Outer-Rim Exploration Services***



Scale 1:5000  
 50 0 50 100  
 (metres)

*Bass Metals Ltd*  
 Hellyer

**3-D Borehole Pulse EM Survey**  
**Hole Section with Primary Field**

Hole: HLD-960  
 Survey Date: Jan 29, 2008

***Outer-Rim Exploration Services***

# OUTER-RIM EXPLORATION SERVICES

## Borehole Pulse EM Survey

Client	: Bass Metals Ltd	Hole	: HLD-958
Grid	: Hellyer	Tx Loop	: HLD9
Date	: Jan 29, 2008	File name	: HLD958Z.PEM
Time Base	: 20.00 ms	# Readings	: 26
Ramp Time	: 1.00 ms	Stn Units	: Metric
# Channels	: 21	Coil Area	: 6500 sq m
Sync Type	: Cable	Polarity	: +
Loop Size	: 375m X 300m	Receiver	: Digital #136
Current	: 40 Amps	Operator	: Humam

### Loop Coordinates (X,Y,Z)

1. 5200m, 10300m, 660m	2. 5200m, 10000m, 660m
3. 5475m, 10000m, 680m	4. 5525m, 10150m, 680m
5. 5550m, 10300m, 680m	

### Hole Coordinates (X,Y,Z) or (Azimuth,Dip,Length)

1. 5653m, 10149m, 679.7m	2. 270deg, 61deg, 280m
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### Channel Times (usec)

Ch	Start	End	Center	Ch	Start	End	Center	Ch	Start	End	Center
PP	-200	-100	-150	1	48	64	56	2	64	84	74
3	84	112	98	4	112	152	132	5	152	204	178
6	204	268	236	7	268	360	314	8	360	480	420
9	480	640	560	10	640	848	744	11	848	1128	988
12	1128	1496	1312	13	1496	1992	1744	14	1992	2644	2318
15	2644	3512	3078	16	3512	4664	4088	17	4664	6192	5428
18	6192	8220	7206	19	8220	10920	9570	20	10920	14400	12660
21	14400	17700	16050								

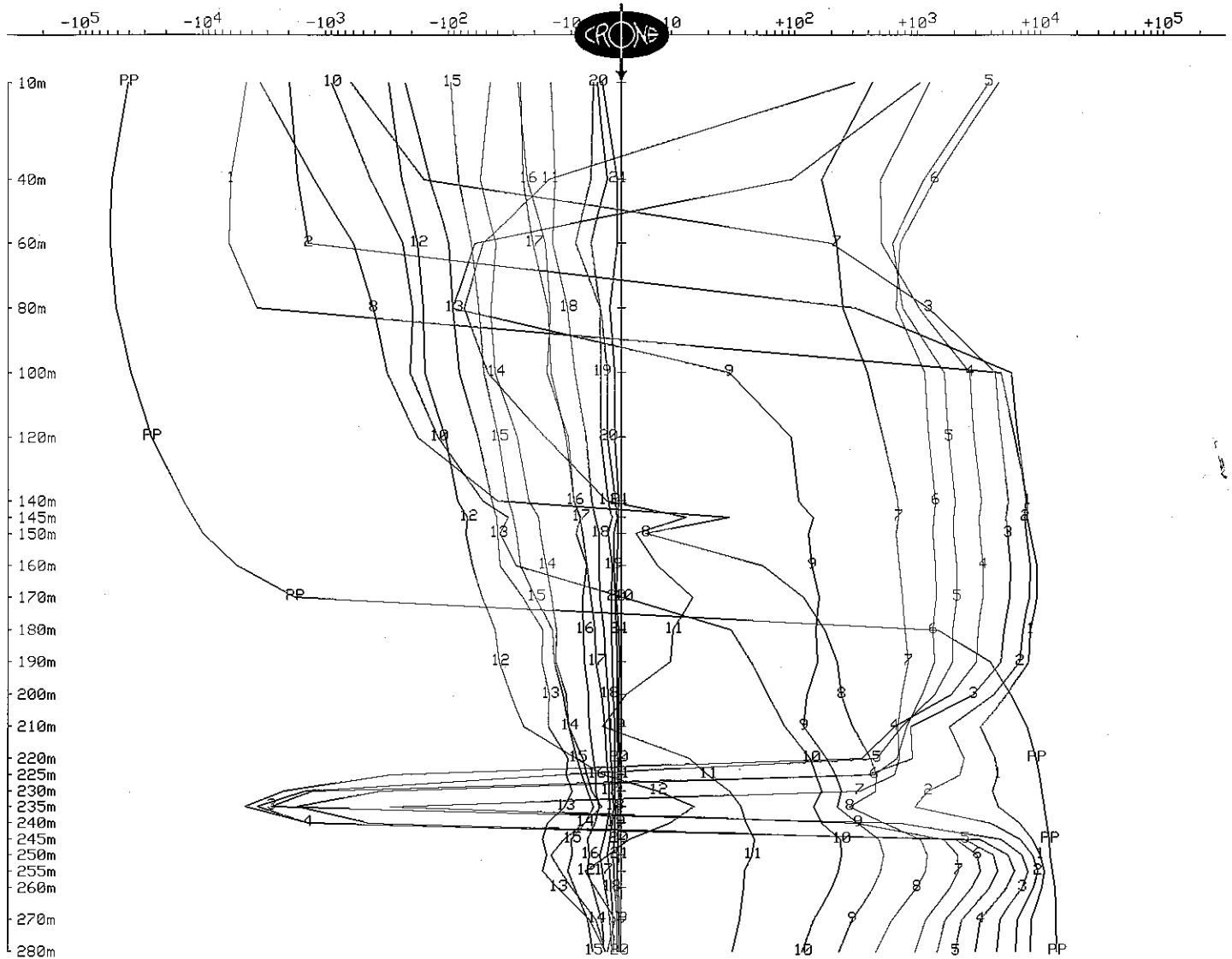
# OUTER-RIM EXPLORATION SERVICES

## Borehole Pulse EM Survey

Client : Bass Metals Ltd  
Grid : Hellyer  
Date : Jan 29, 2008

Hole : HLD-958  
Tx Loop : HLD9  
File name : HLD958Z.PEM

Z COMPONENT dBz/dt nanoTesla/sec - 21 of 21 channels and PP  
Scale: 1:2000



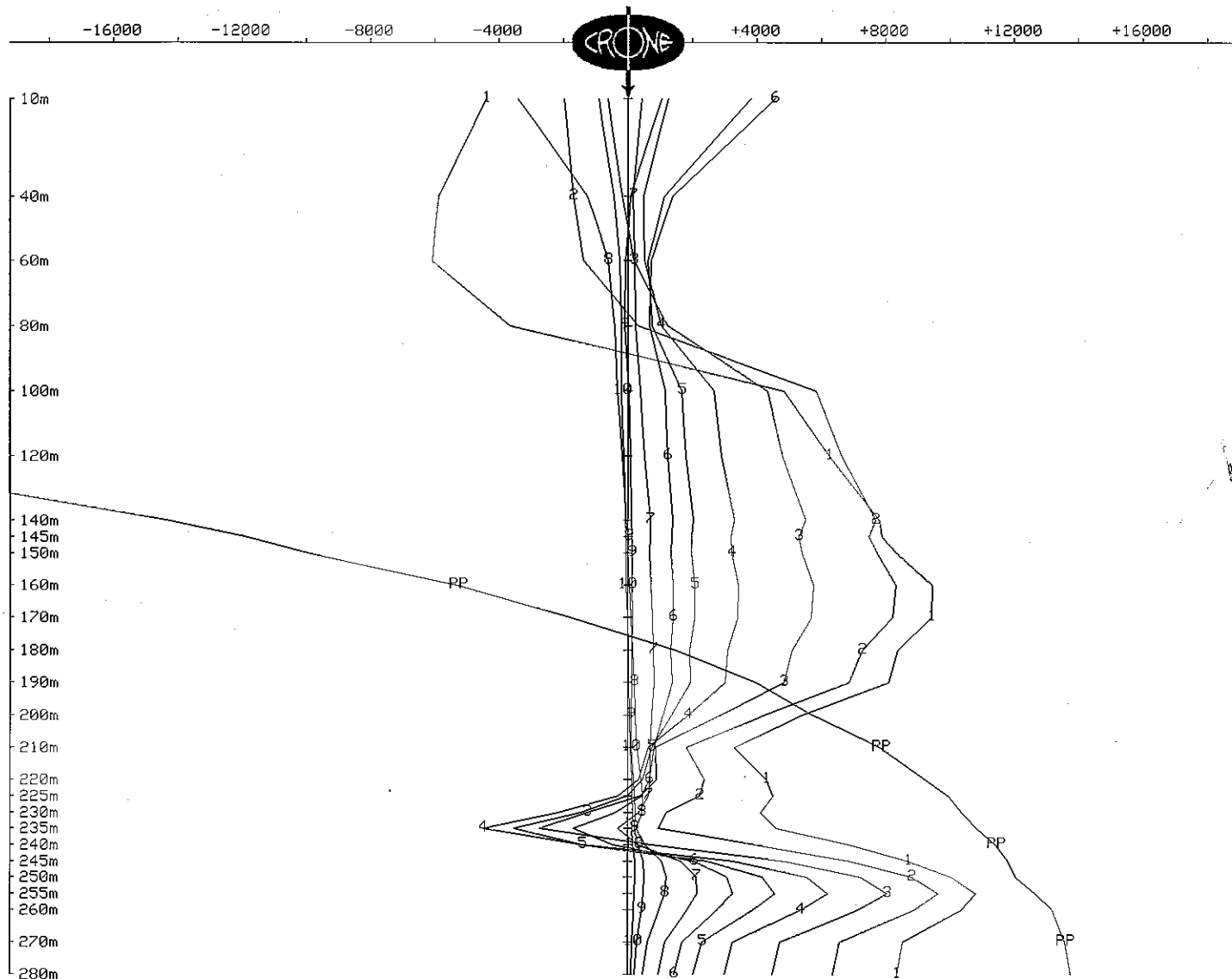
# OUTER-RIM EXPLORATION SERVICES

## Borehole Pulse EM Survey

Client : Bass Metals Ltd  
Grid : Hellyer  
Date : Jan 29, 2008

Hole : HLD-958  
Tx Loop : HLD9  
File name : HLD958Z.PEM

Z COMPONENT dBz/dt nanoTesla/sec - 10 of 21 channels and PP  
Scale: 1:2000 Unit Scale: 1cm = 2000 nT/s



# OUTER-RIM EXPLORATION SERVICES

## Borehole Pulse EM Survey

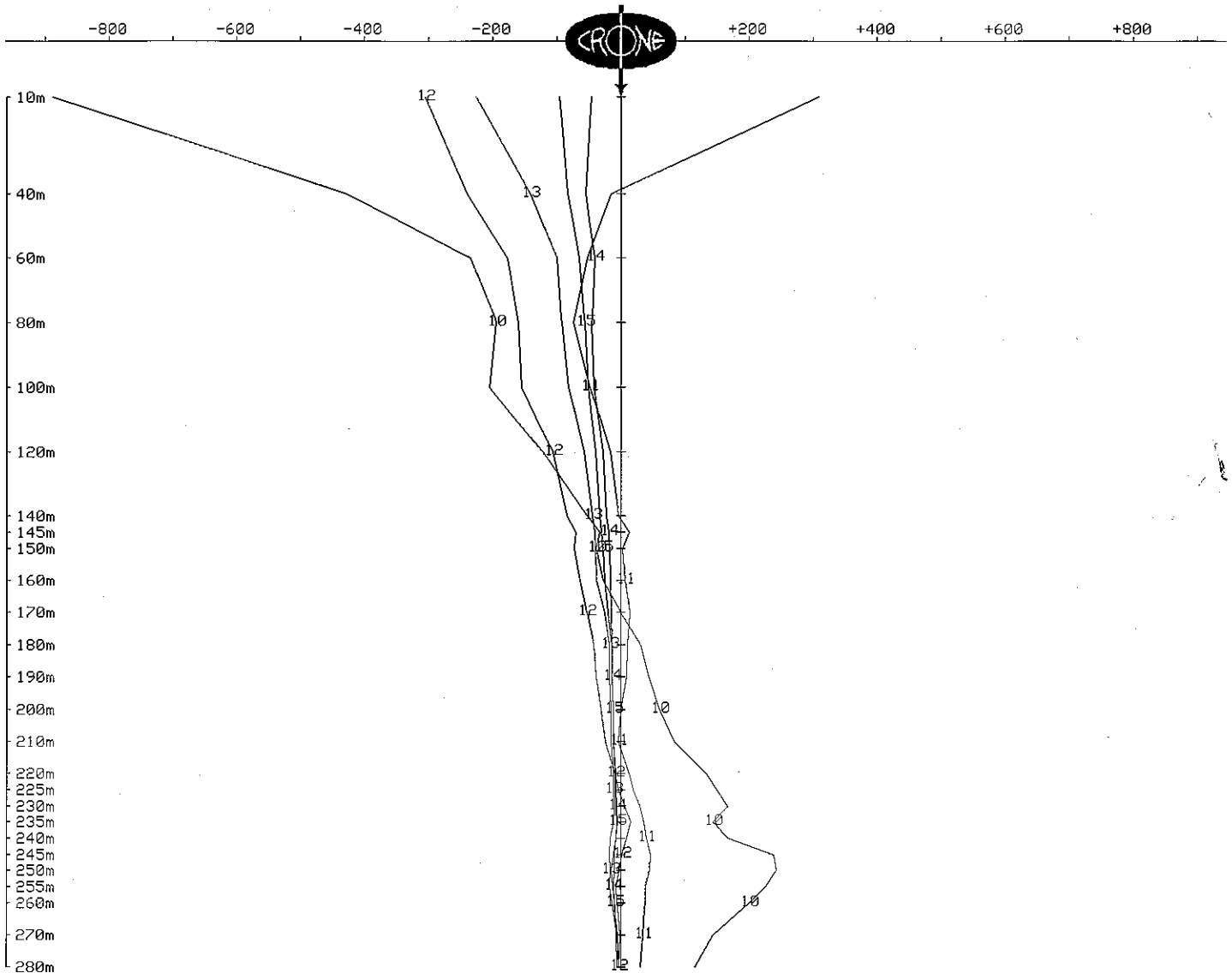
Client : Bass Metals Ltd  
Grid : Hellyer  
Date : Jan 29, 2008

Hole : HLD-958  
Tx Loop : HLD9  
File name : HLD958Z.PEM

Z COMPONENT dBz/dt nanoTesla/sec - 6 of 21 channels

Scale: 1:2000

Unit Scale: 1cm = 100 nT/s



# OUTER-RIM EXPLORATION SERVICES

## Borehole Pulse EM Survey

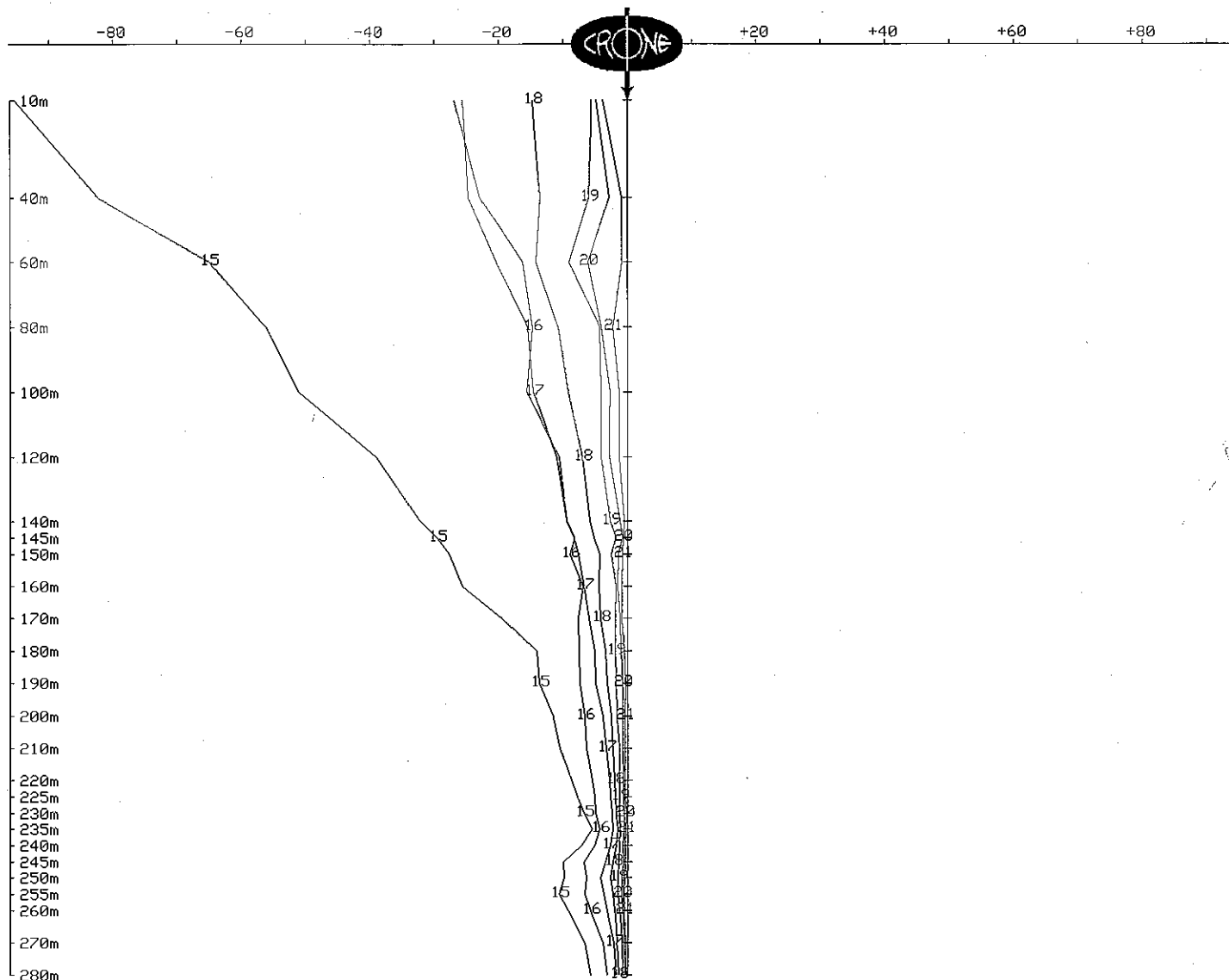
Client : Bass Metals Ltd  
Grid : Hellyer  
Date : Jan 29, 2008

Hole : HLD-958  
Tx Loop : HLD9  
File name : HLD958Z.PEM

Z COMPONENT dBz/dt nanoTesla/sec - 7 of 21 channels

Scale: 1:2000

Unit Scale: 1cm = 10 nT/s



Client : Bass Metals Ltd  
Grid : Hellyer  
Date : Jan 30, 2008

```
Hole      : HLD-958
Tx Loop   : HLD9
File name : HLD958XY.PEM
```

Data Corrected for Probe Rotation using Orientation Tool #2  
X COMPONENT dBx/dt nanoTesla/sec - 21 of 21 channels and PP

# OUTER-RIM EXPLORATION SERVICES

## Borehole Pulse EM Survey

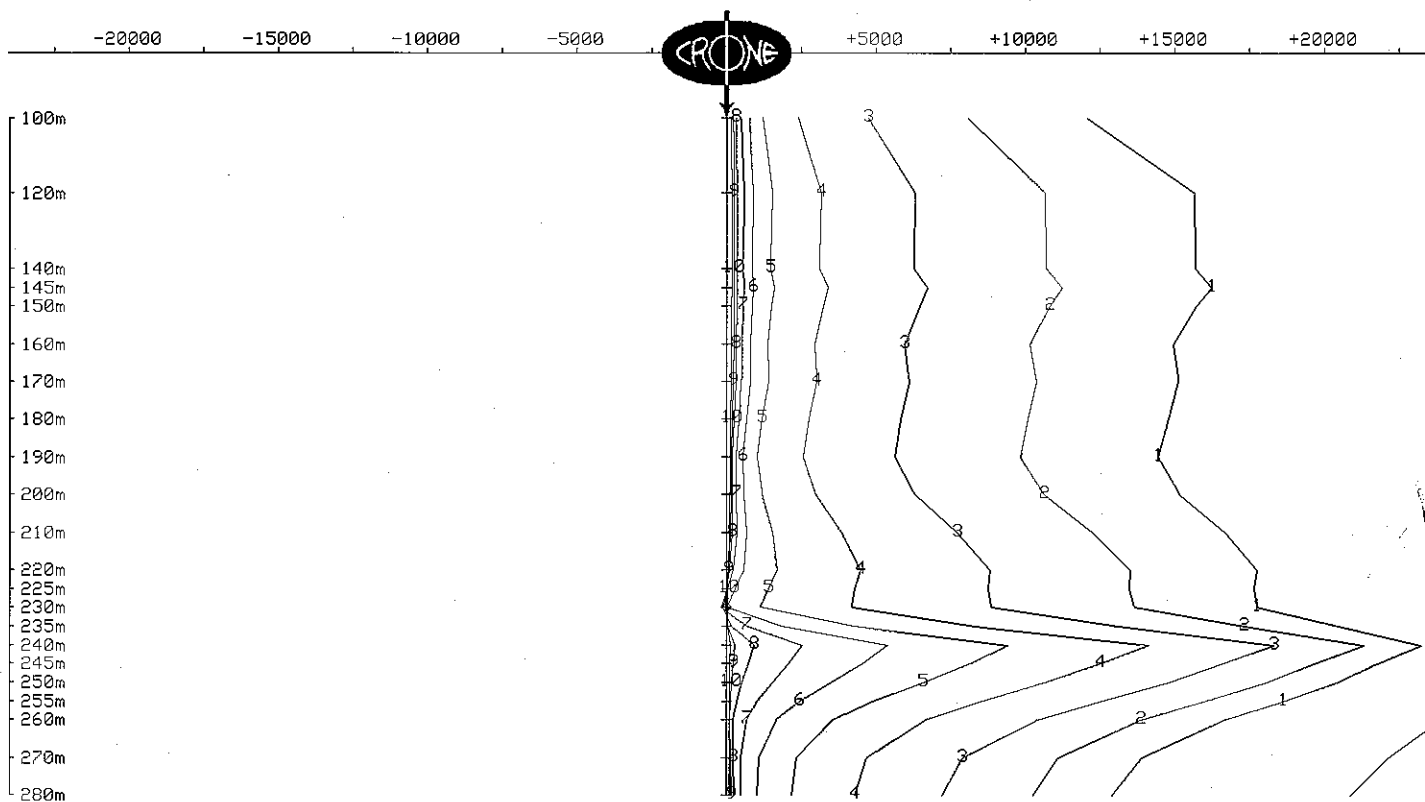
Client : Bass Metals Ltd  
Grid : Hellyer  
Date : Jan 30, 2008

Hole : HLD-958  
Tx Loop : HLD9  
File name : HLD958XY.PEM

Data Corrected for Probe Rotation using Orientation Tool #2  
X COMPONENT dBx/dt nanoTesla/sec - 10 of 21 channels and PP

Scale: 1:2000

Unit Scale: 1cm = 2500 nT/s



# OUTER-RIM EXPLORATION SERVICES

## Borehole Pulse EM Survey

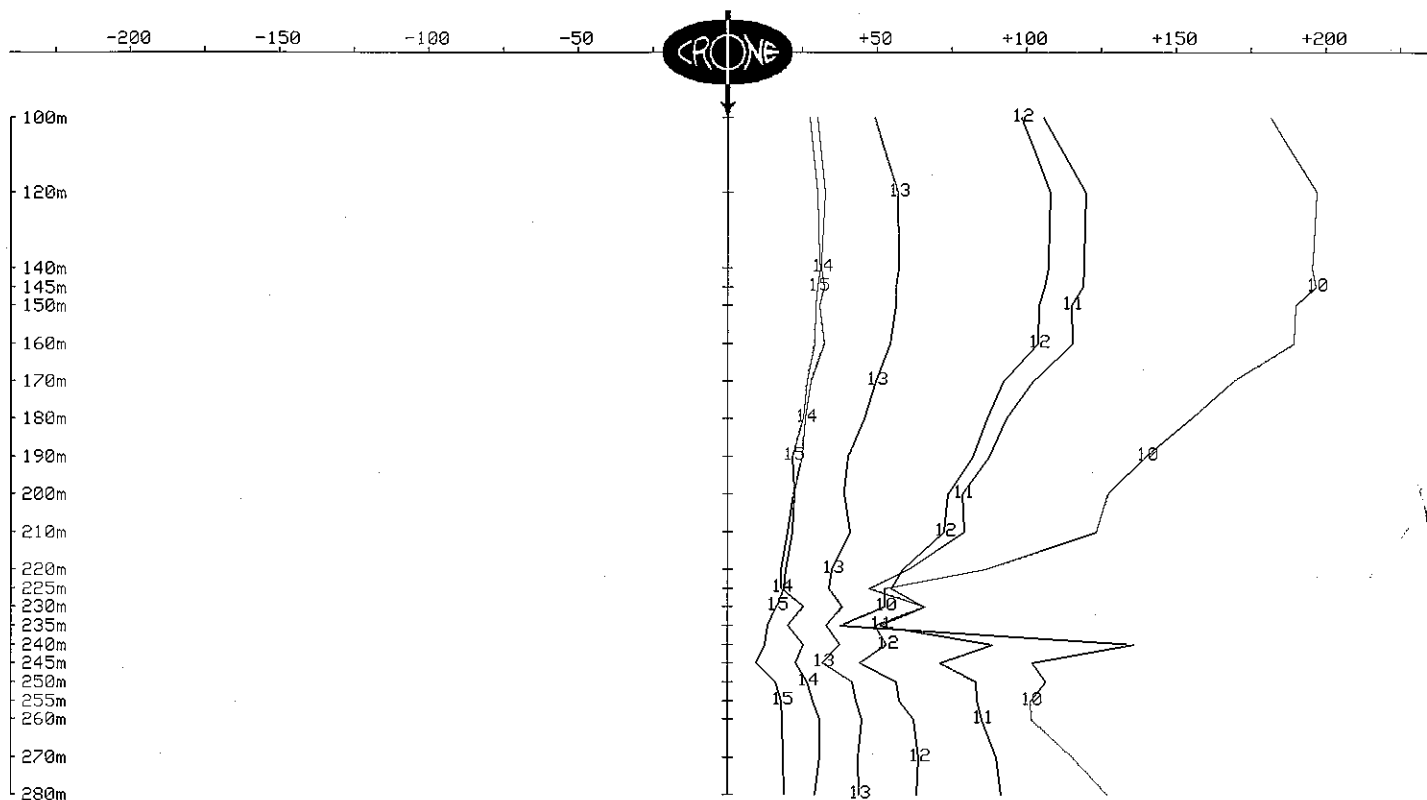
Client : Bass Metals Ltd  
Grid : Hellyer  
Date : Jan 30, 2008

Hole : HLD-958  
Tx Loop : HLD9  
File name : HLD958XY.PEM

Data Corrected for Probe Rotation using Orientation Tool #2  
X COMPONENT dBx/dt nanoTesla/sec - 6 of 21 channels

Scale: 1:2000

Unit Scale: 1cm = 25 nT/s



# OUTER-RIM EXPLORATION SERVICES

## Borehole Pulse EM Survey

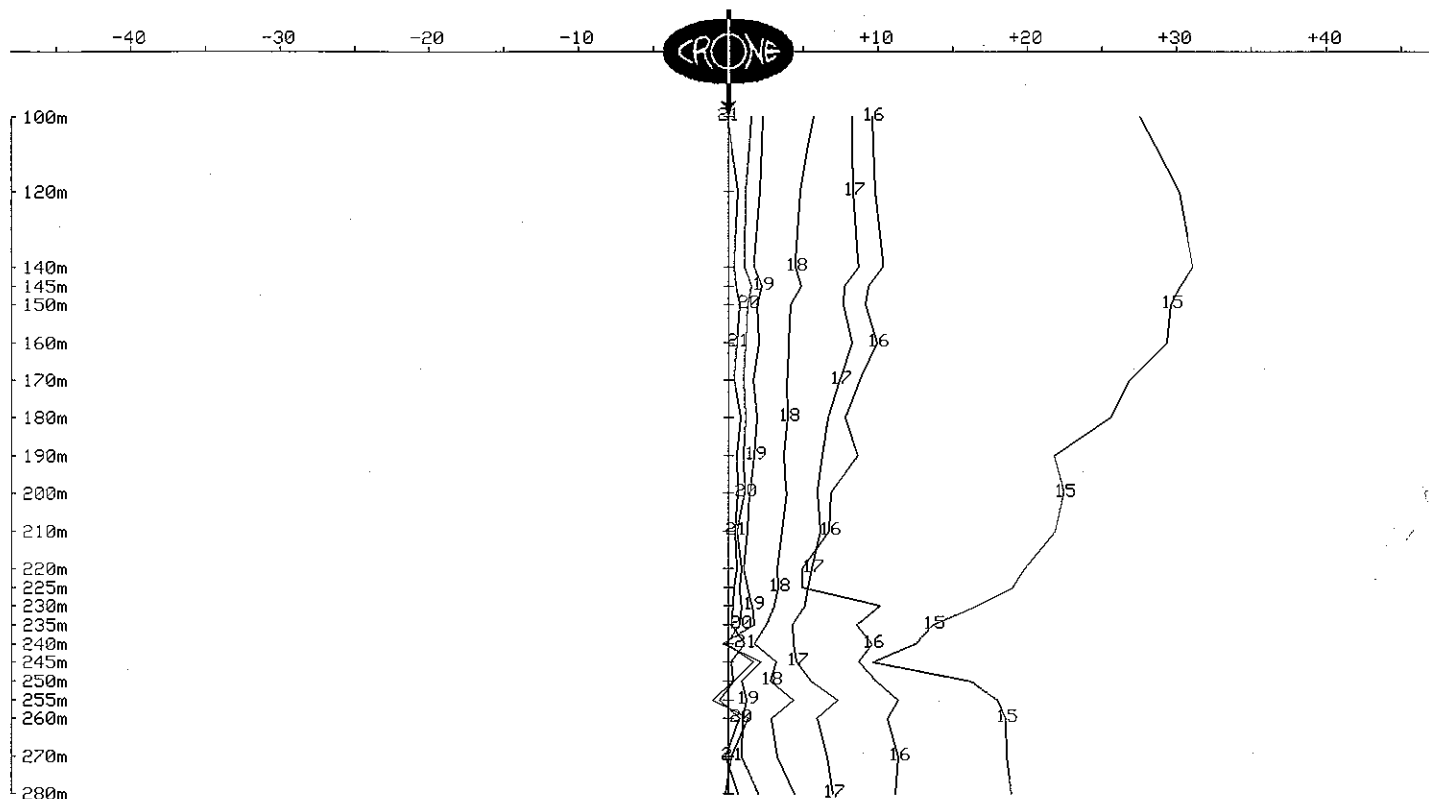
Client : Bass Metals Ltd  
Grid : Hellyer  
Date : Jan 30, 2008

Hole : HLD-958  
Tx Loop : HLD9  
File name : HLD958XY.PEM

Data Corrected for Probe Rotation using Orientation Tool #2  
X COMPONENT dBx/dt nanoTesla/sec - 7 of 21 channels

Scale: 1:2000

Unit Scale: 1cm = 5 nT/s



# OUTER-RIM EXPLORATION SERVICES

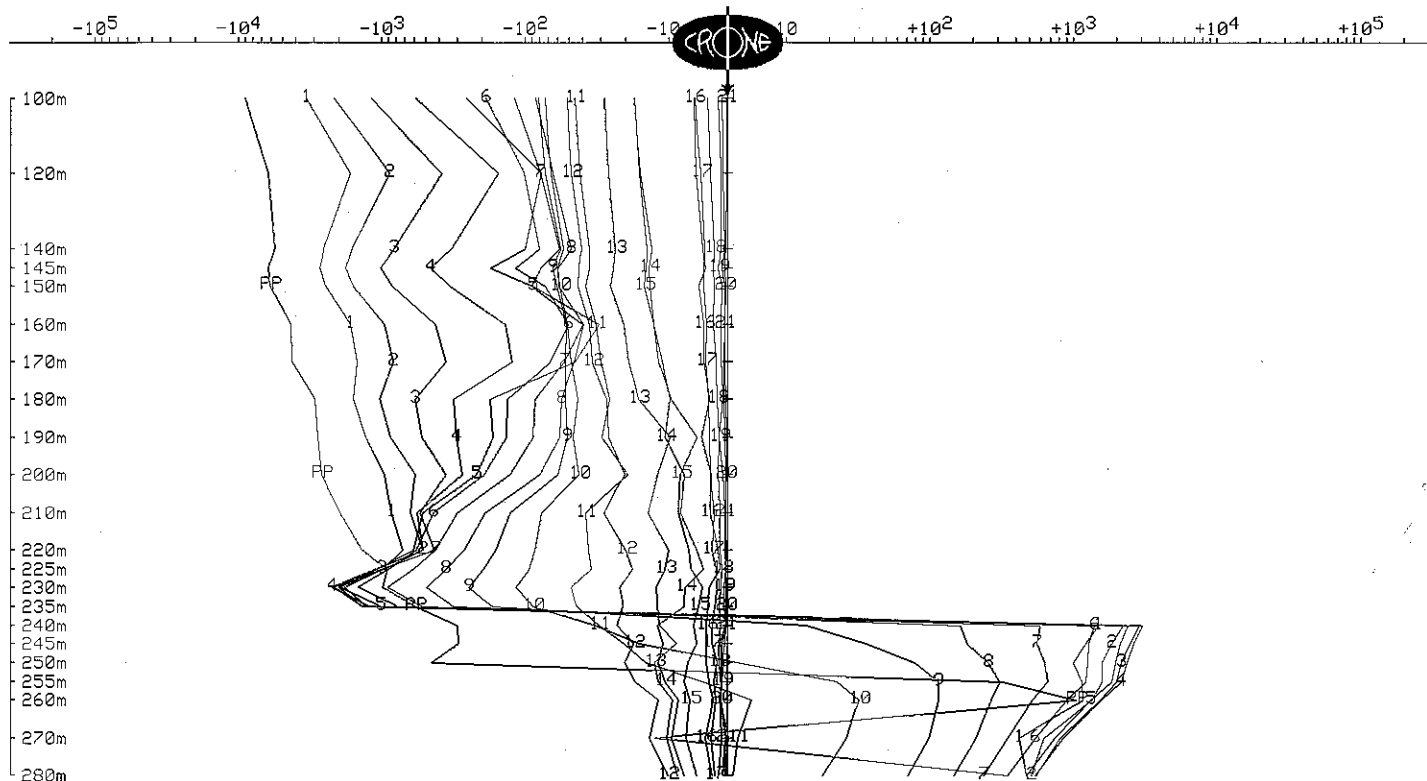
## Borehole Pulse EM Survey

Client : Bass Metals Ltd  
Grid : Hellyer  
Date : Jan 30, 2008

Hole : HLD-958  
Tx Loop : HLD9  
File name : HLD958XY.PEM

Data Corrected for Probe Rotation using Orientation Tool #2  
Y COMPONENT dBy/dt nanoTesla/sec - 21 of 21 channels and PP

Scale: 1:2000



# OUTER-RIM EXPLORATION SERVICES

## Borehole Pulse EM Survey

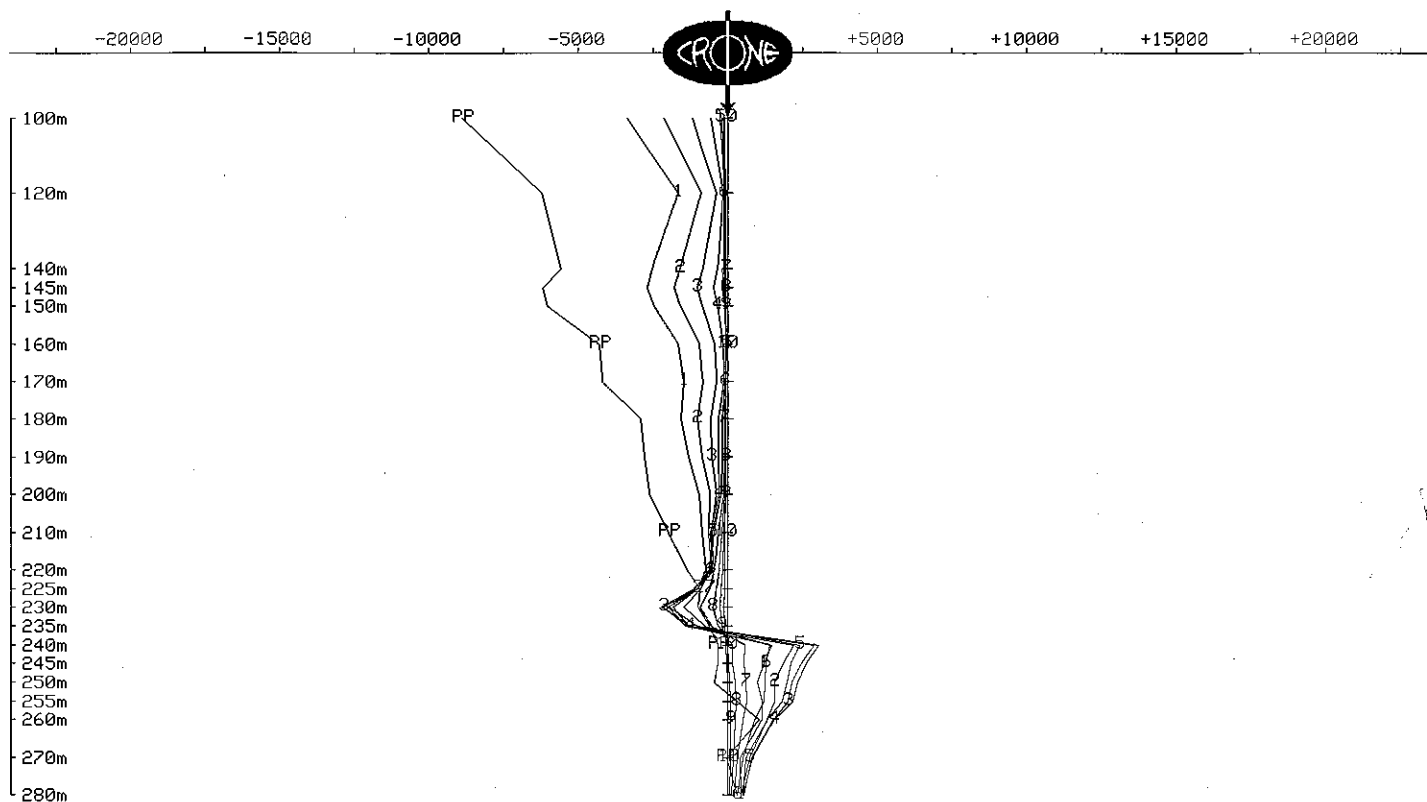
Client : Bass Metals Ltd  
Grid : Hellyer  
Date : Jan 30, 2008

Hole : HLD-958  
Tx Loop : HLD9  
File name : HLD958XY.PEM

Data Corrected for Probe Rotation using Orientation Tool #2  
Y COMPONENT dBy/dt nanoTesla/sec - 10 of 21 channels and PP

Scale: 1:2000

Unit Scale: 1cm = 2500 nT/s



# OUTER-RIM EXPLORATION SERVICES

## Borehole Pulse EM Survey

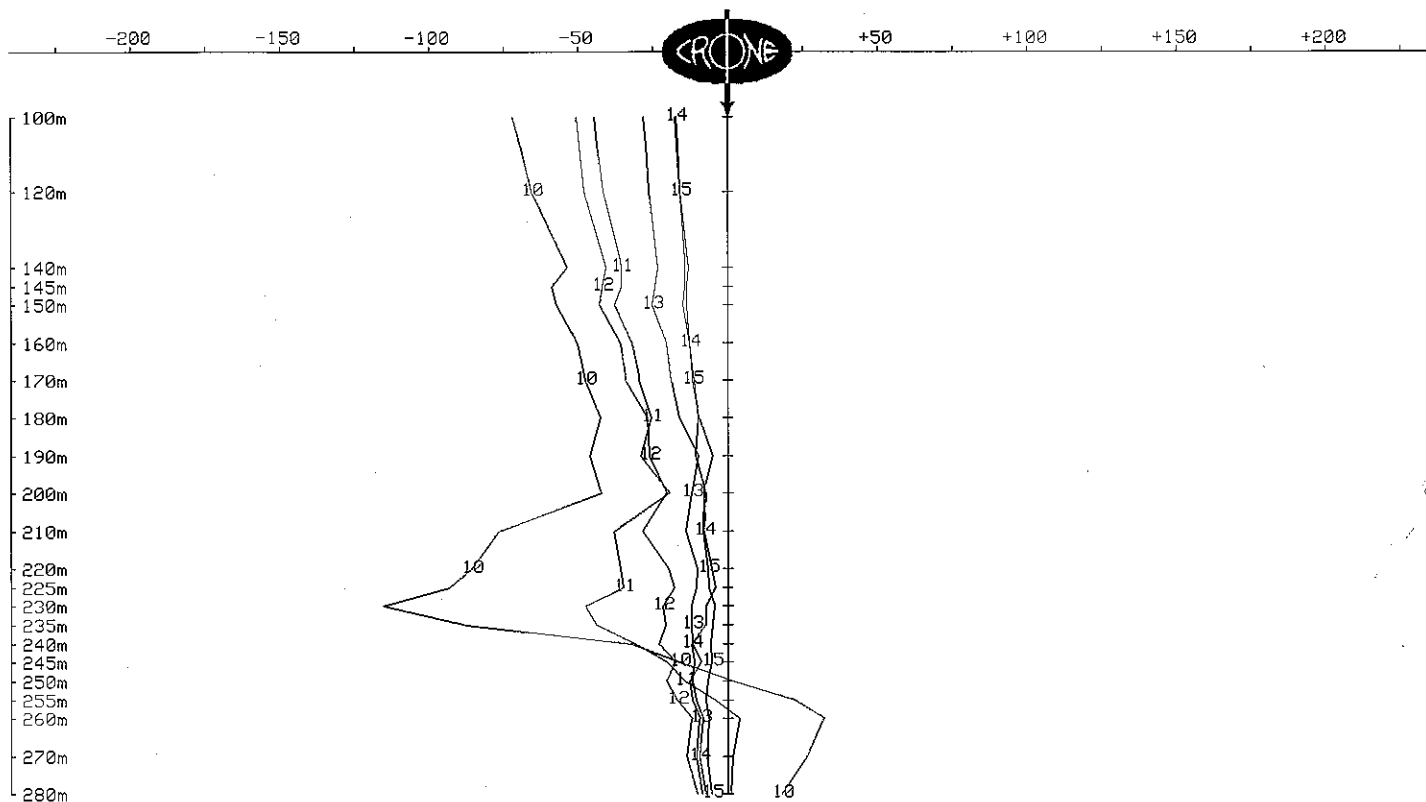
Client : Bass Metals Ltd  
Grid : Hellyer  
Date : Jan 30, 2008

Hole : HLD-958  
Tx Loop : HLD9  
File name : HLD958XY.PEM

Data Corrected for Probe Rotation using Orientation Tool #2  
Y COMPONENT dBy/dt nanoTesla/sec - 6 of 21 channels

Scale: 1:2000

Unit Scale: 1cm = 25 nT/s



# OUTER-RIM EXPLORATION SERVICES

## Borehole Pulse EM Survey

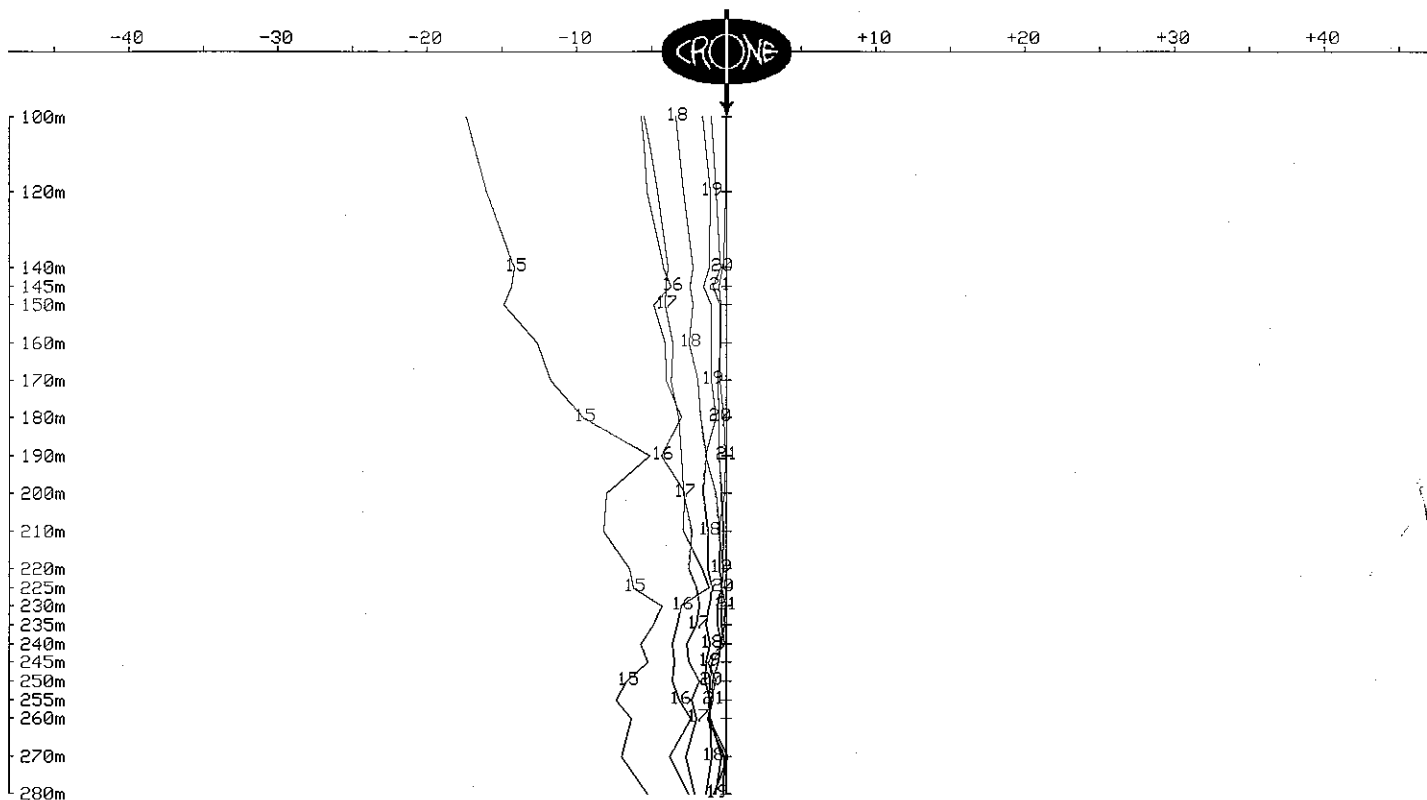
Client : Bass Metals Ltd  
Grid : Hellyer  
Date : Jan 30, 2008

Hole : HLD-958  
Tx Loop : HLD9  
File name : HLD958XY.PEM

Data Corrected for Probe Rotation using Orientation Tool #2  
Y COMPONENT dBy/dt nanoTesla/sec - 7 of 21 channels

Scale: 1:2000

Unit Scale: 1cm = 5 nT/s



# OUTER-RIM EXPLORATION SERVICES

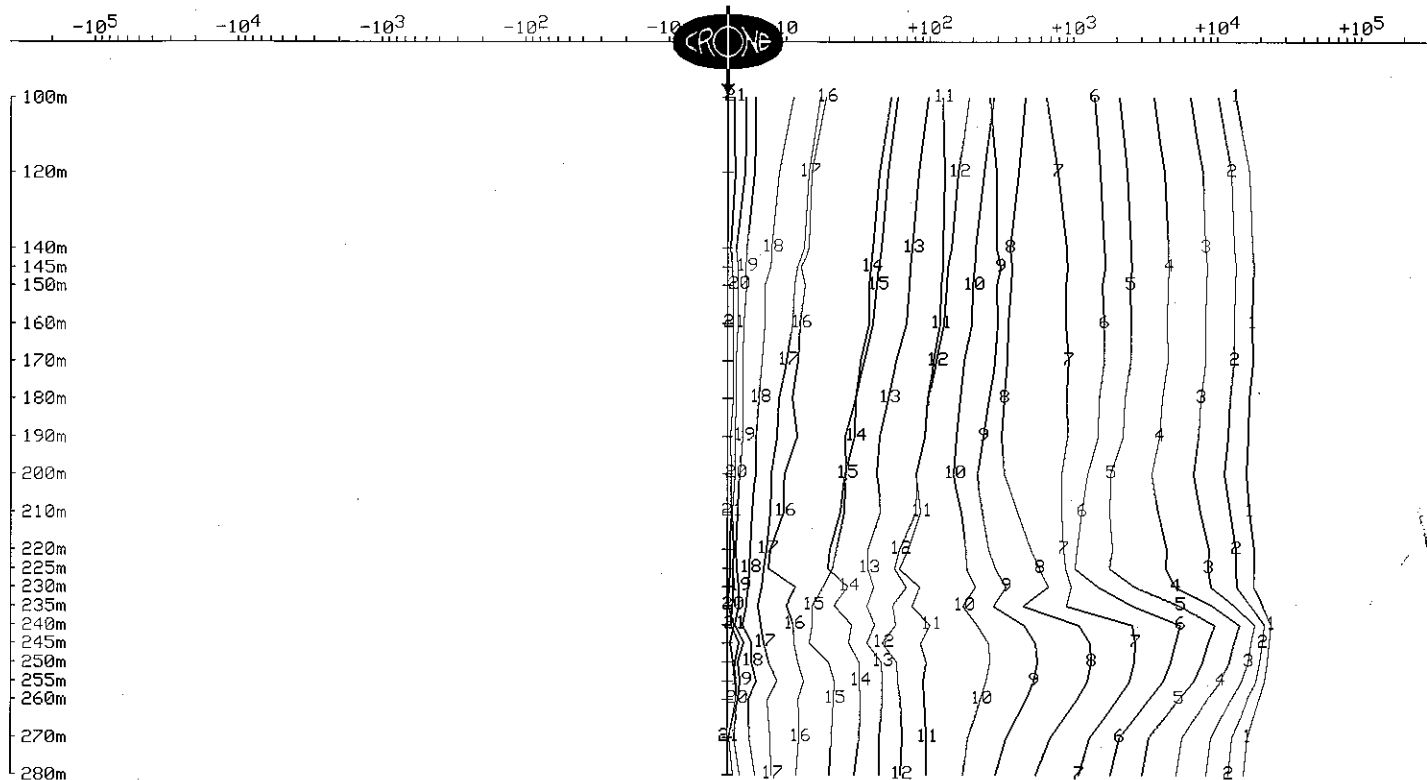
## Borehole Pulse EM Survey

Client : Bass Metals Ltd  
Grid : Hellyer  
Date : Jan 30, 2008

Hole : HLD-958  
Tx Loop : HLD9  
File name : HL958XYZ.PEM

TOTAL FIELD dBxyz/dt nanoTesla/sec - 21 of 21 channels

Scale: 1:2000



# OUTER-RIM EXPLORATION SERVICES

## Borehole Pulse EM Survey

Client	: Bass Metals Ltd	Hole	: HLD-960
Grid	: Hellyer	Tx Loop	: HLD9
Date	: Jan 29, 2008	File name	: HLD960Z.PEM
Time Base	: 20.00 ms	# Readings	: 15
Ramp Time	: 1.00 ms	Stn Units	: Metric
# Channels	: 21	Coil Area	: 6500 sq m
Sync Type	: Cable	Polarity	: +
Loop Size	: 375m X 300m	Receiver	: Digital #136
Current	: 40 Amps	Operator	: Humam

### Loop Coordinates (X,Y,Z)

1. 5200m, 10300m, 660m	2. 5200m, 10000m, 660m
3. 5475m, 10000m, 680m	4. 5525m, 10150m, 680m
5. 5550m, 10300m, 680m	

### Hole Coordinates (X,Y,Z) or (Azimuth,Dip,Length)

1. 5690m, 10200m, 680.8m	2. 270deg, 51deg, 300m
--------------------------	------------------------

### Channel Times (usec)

Ch	Start	End	Center	Ch	Start	End	Center	Ch	Start	End	Center
PP	-200	-100	-150	1	48	64	56	2	64	84	74
3	84	112	98	4	112	152	132	5	152	204	178
6	204	268	236	7	268	360	314	8	360	480	420
9	480	640	560	10	640	848	744	11	848	1128	988
12	1128	1496	1312	13	1496	1992	1744	14	1992	2644	2318
15	2644	3512	3078	16	3512	4664	4088	17	4664	6192	5428
18	6192	8220	7206	19	8220	10920	9570	20	10920	14400	12660
21	14400	17700	16050								

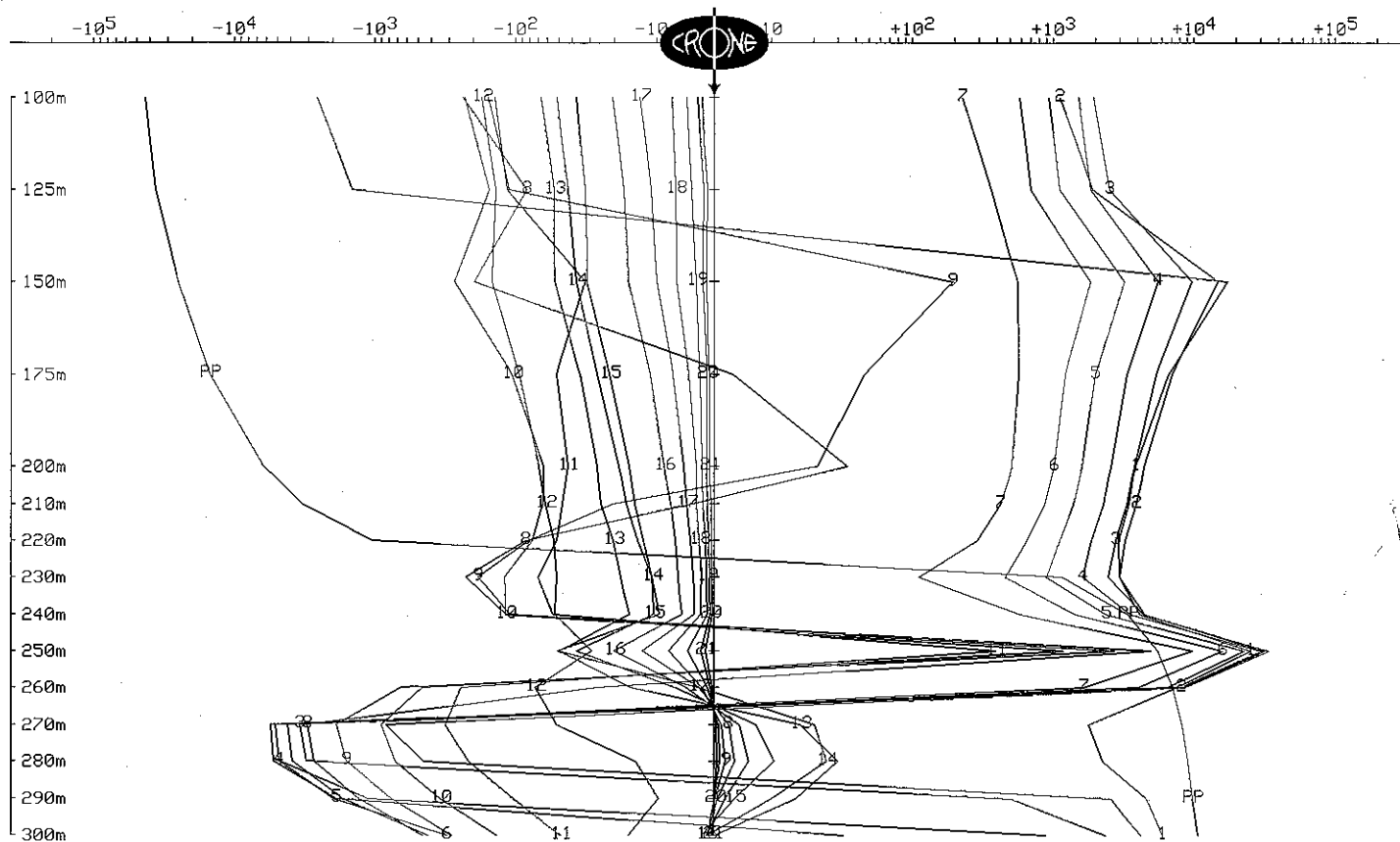
# OUTER-RIM EXPLORATION SERVICES

## Borehole Pulse EM Survey

Client : Bass Metals Ltd  
Grid : Hellyer  
Date : Jan 29, 2008

Hole : HLD-960  
Tx Loop : HLD9  
File name : HLD960Z.PEM

Z COMPONENT dBz/dt nanoTesla/sec - 21 of 21 channels and PP  
Scale: 1:2000



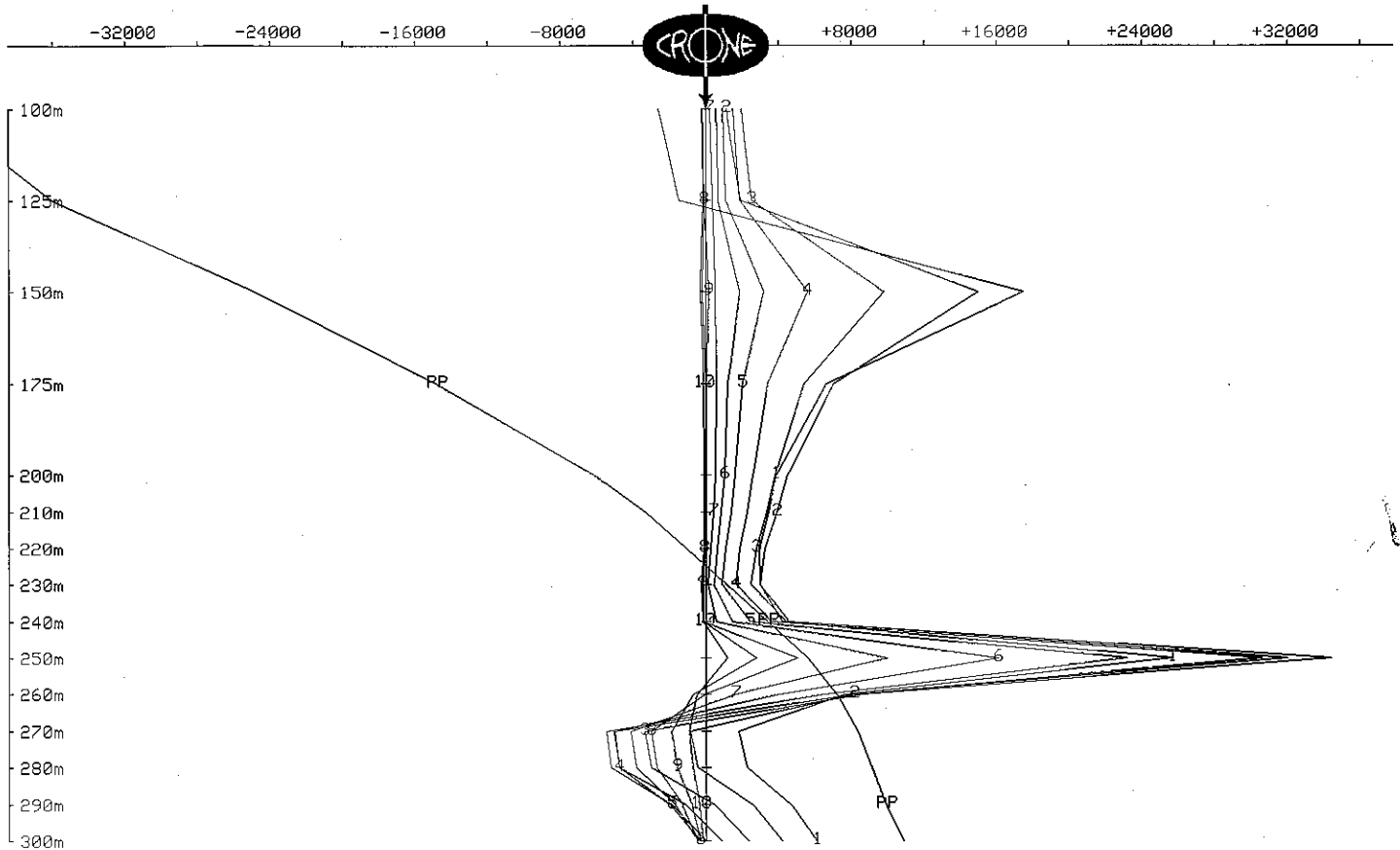
# OUTER-RIM EXPLORATION SERVICES

## Borehole Pulse EM Survey

Client : Bass Metals Ltd  
Grid : Hellyer  
Date : Jan 29, 2008

Hole : HLD-960  
Tx Loop : HLD9  
File name : HLD960Z.PEM

Z COMPONENT dBz/dt nanoTesla/sec - 10 of 21 channels and PP  
Scale: 1:2000 Unit Scale: 1cm = 4000 nT/s



# OUTER-RIM EXPLORATION SERVICES

## Borehole Pulse EM Survey

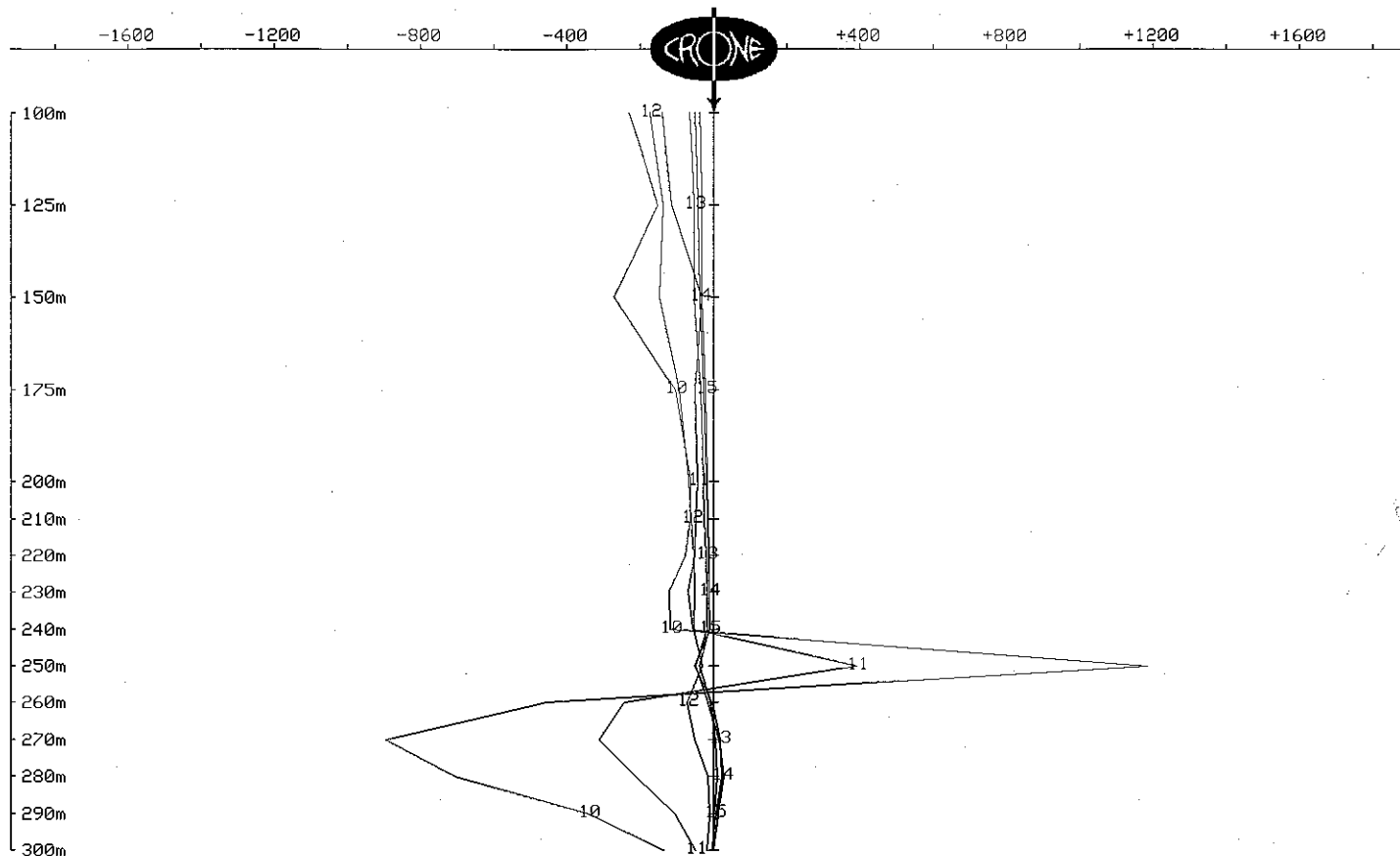
Client : Bass Metals Ltd  
Grid : Hellyer  
Date : Jan 29, 2008

Hole : HLD-960  
Tx Loop : HLD9  
File name : HLD960Z.PEM

Z COMPONENT dBz/dt nanoTesla/sec - 6 of 21 channels

Scale: 1:2000

Unit Scale: 1cm = 200 nT/s



# OUTER-RIM EXPLORATION SERVICES

## Borehole Pulse EM Survey

Client : Bass Metals Ltd  
Grid : Hellyer  
Date : Jan 29, 2008

Hole : HLD-960  
Tx Loop : HLD9  
File name : HLD960Z.PEM

Z COMPONENT dBz/dt nanoTesla/sec - 7 of 21 channels

Scale: 1:2000

Unit Scale: 1cm = 5 nT/s

