



borealis

Geo-business  
for large organizations

# 1 INTRODUCTION

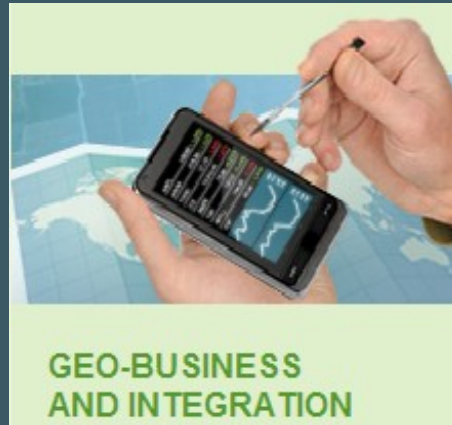
## ✓ Borealis – who we are

- Based in Canada, founded in 2004
- 39 employees, multi-language team
- GIS specialists, engineers, developers



# 1 INTRODUCTION

## ✓ Our expertise



## ✓ Main markets: mining and oil

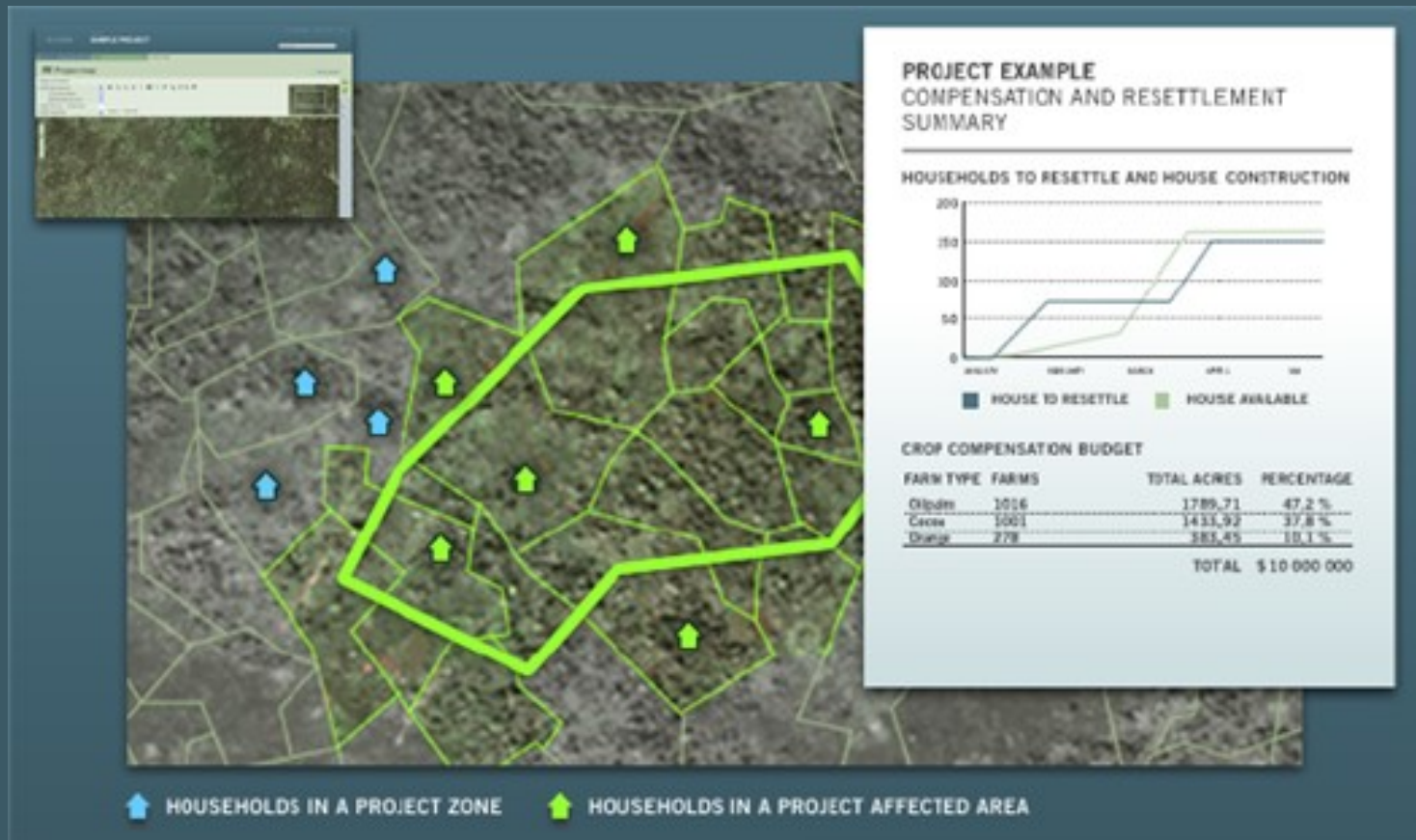
# 1 INTRODUCTION

## ✓ Our strengths

- Knowledge of business sector
- Geospatial tools integration
- Solutions based on open source technologies

# 1 INTRODUCTION

## ✓ Example



# 1 INTRODUCTION

## ✓ Open source components used

- Geoprisma
- Openlayers
- Mapfish
- Mapserver
- PostgreSQL / PostGIS
- Jasper Reports
- Talend
- Proj.4

## 2 CASE STUDY – PROGRESS REPORT

### ✓ Context

- Large mining enterprise : 18 B USD of revenues
- More than 40 mineral exploration sites in over 20 countries
- Big quantities of information, no standard way of reporting

## 2 CASE STUDY – PROGRESS REPORT

### ✓ Mandate

Implement an information system to generate automatically a Monthly Exploration Progress Report from worldwide operation sites



## 2 CASE STUDY – PROGRESS REPORT

- ✓ Web-based reporting application : on-site data entry



Information

Project order in report <input type="text"/>	Project status Pre-Feasibility Stud <input type="button" value="v"/>
Year budget (depth) <input type="text"/>	Reforecast budget (depth) 15611.00

Technical summary (CLICK ON ICON TO PASTE FROM WORD)

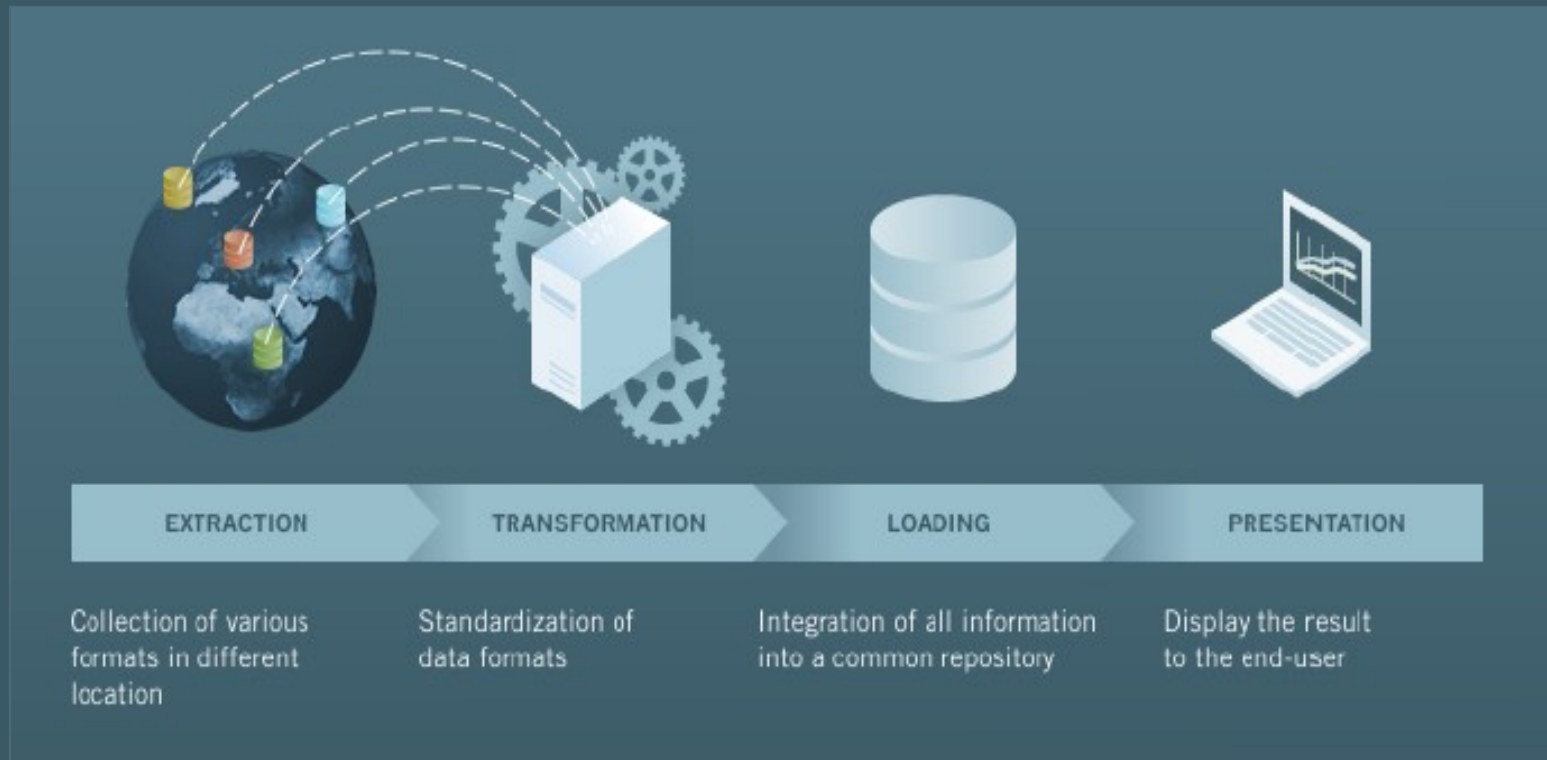
**B** *I* U |

Drill hole BH001 was continued from 10m to 20m.

This is a technical summary that will be stored and secured. It is an analysis done by a geologist and it insures that the professional opinion is kept on a long-term basis and available to allowed personnel.

## 2 CASE STUDY – PROGRESS REPORT

- ✓ Multi-site data integration (multi-projection)



## 2 CASE STUDY – PROGRESS REPORT

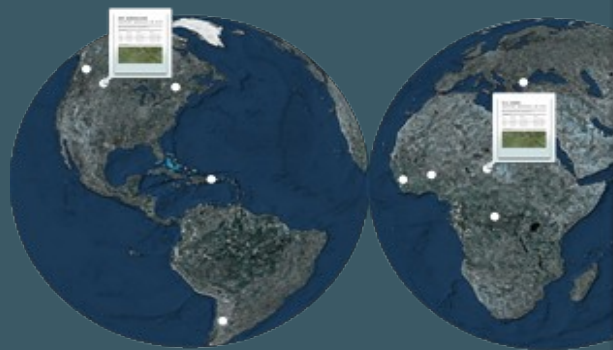
### ✓ Data approval mechanism



- Responsibility taken by all parties
- Process auditability

### 3 ACHIEVEMENT

- ✓ Monthly Progress Report : Huge success !!
- ✓ Sent monthly to the CEO and board of the company



**EXPLORATION ACTIVITIES**  
MONTHLY PROGRESS REPORT

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A world map showing project locations with white dots across various continents.

# 3 ACHIEVEMENT

## ✓ Interactive world map

Carte du Monde

Information

Layers

- Google Hybrid
- Countries
- Geology - World geology
- Geology - Africa Geology Form
- Geology - East Asia Geology f
- Geology - Arizona Lithology
- Geology - Colorado Lithology
- Geology - New Mexico Litholoi
- Boreholes - Historical data
- Boreholes - current month
- Boreholes - Ore holes
- Site names
- Sites

### Layer: Boreholes

Borehole ID	Project Site Name	Project Name	Meters drilled	Meters drilled (ytd)	Ore hole (ytd)
BHID_192	Demo Site 1	Demo project 42	457.2	457.2	Yes
BHID_2526	Demo Site 1	Demo project 42	679.704	679.704	Yes

### Demo Site 1

2008 - Dec (status : Open)

Meters drilled : 2295 (YTD : 110347)

Number of ore holes : 4 (YTD : 34)

Number of holes : 4 (YTD : 79)

Number of rigs : 4

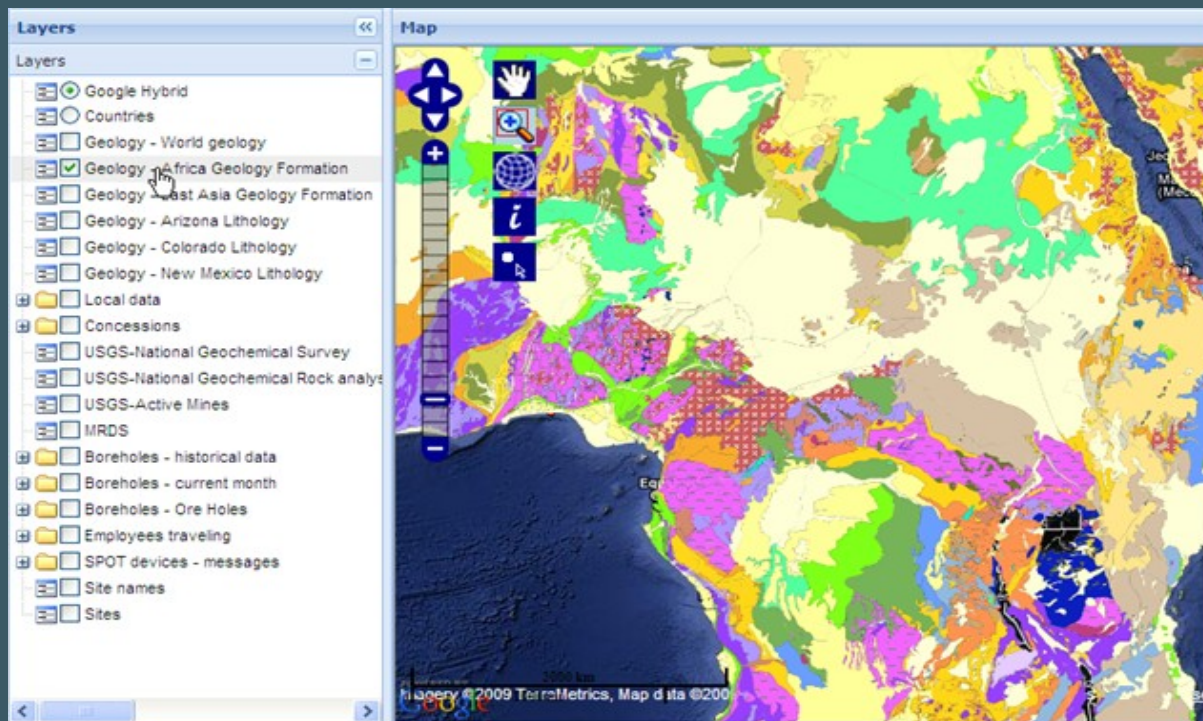
TRIR : 0.0

Results : undefined

Demo Site 2  
Demo Site 1

### 3 ACHIEVEMENT

- ✓ Data in context with external sources
  - One Geology (web services), Google layer, USGS geochemical database



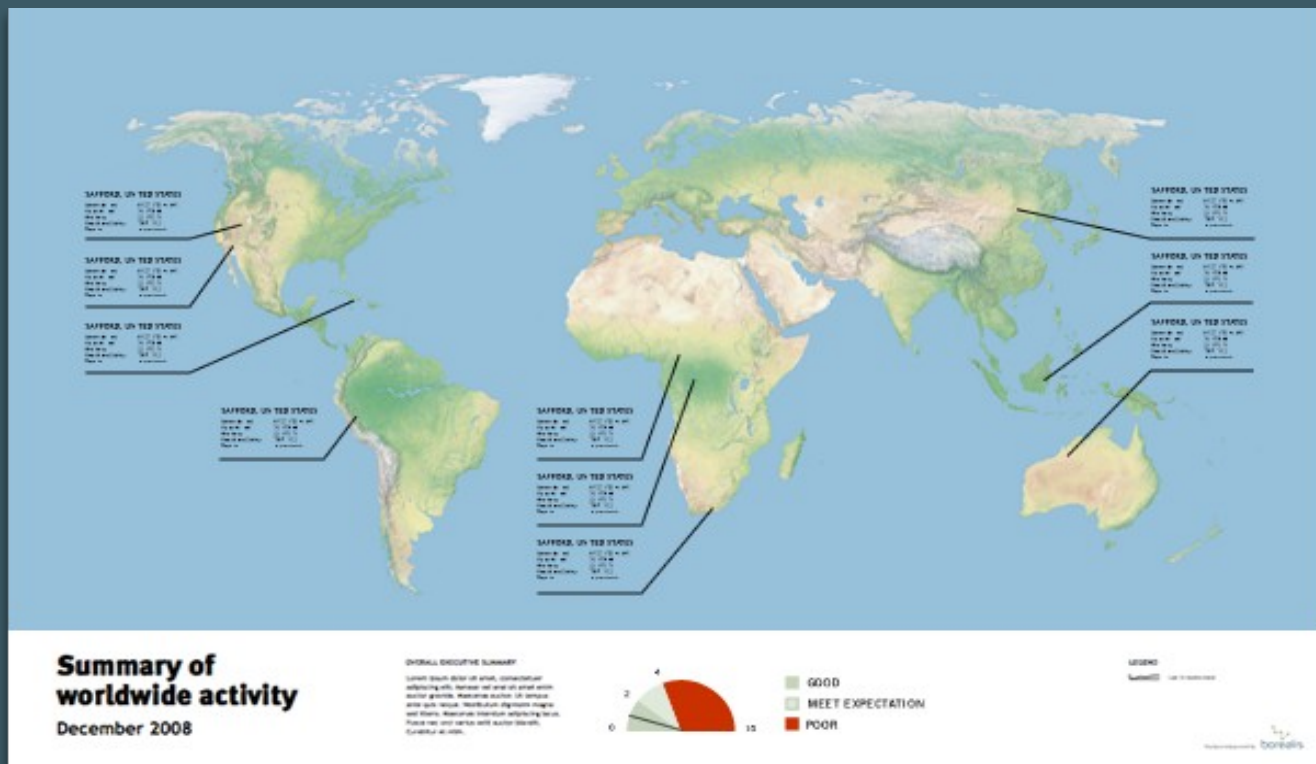
### 3 ACHIEVEMENT

- ✓ Customizable at will
- Personnel GPS devices : security and tracking



# 3 ACHIEVEMENT

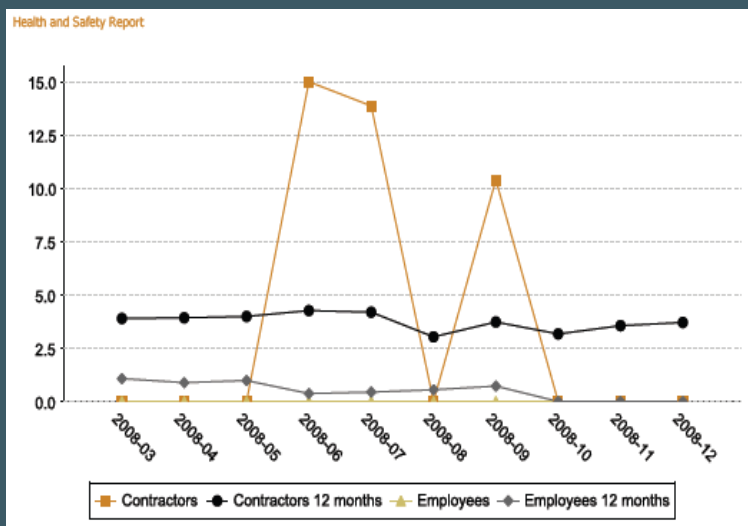
- ✓ World map poster
  - Worldwide dynamic monthly status
  - Printable map





### 3 ACHIEVEMENT

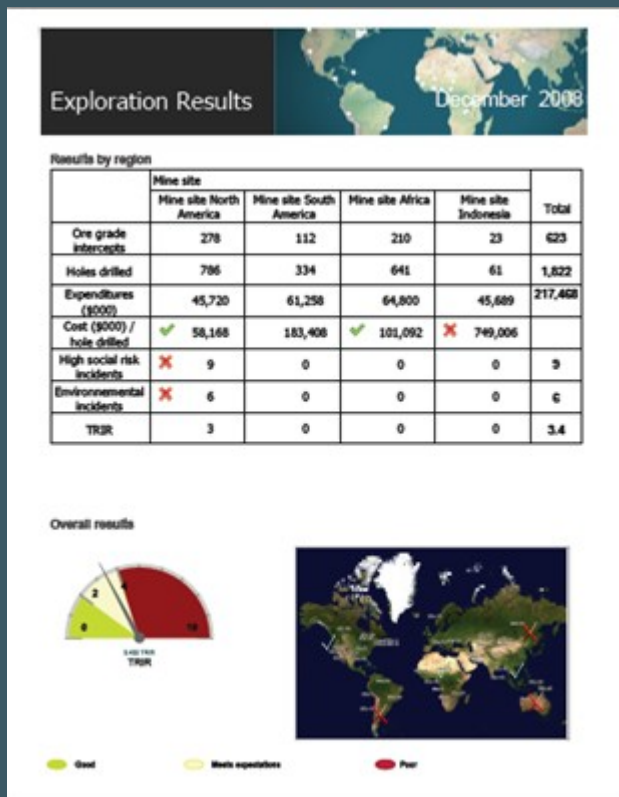
- ✓ Key performance indicators (KPI)
  - Several data axes, « on-the-fly » health & safety statistics calculation
  - Outputs are dashboards, reports and graphs



### 3 ACHIEVEMENT

#### ✓ General dashboard

- One page summary displaying monthly results



- Exploration
- Finances
- Health & Safety
- Environment

## 4 BENEFITS

- ✓ Several person-hours saved yearly
- ✓ Data traceability and process auditability
- ✓ Standard data reporting mechanism
- ✓ Centralized information access
- ✓ Quick custom reports integration

## 4 CHALLENGES

### ✓ Technical

- Multiple coordinate systems, and missing ones
- Remote implementation
- Low bandwidth
- Internal infrastructure

### ✓ Organizational

- Resistance to change
- Coordination with IT team
- Multi-country / multi-cultural environment

## 5 CONCLUSION

### ✓ Success factors

- Emphasis on business process instead of technology (added-value)
- Minimal technological constraints: Open source
- Iterative and AGILE approach aimed at quick results
- Commitment from high-level management
- Return to users : satisfy the needs

## 5 CONCLUSION

- ✓ Using open source technologies in large organizations
  - It is possible !



INTEGRATING TECHNOLOGIES  
AT A HUMAN SCALE

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