AGS4

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Summary

- Background

- Guiding principles

- Details
  - Rules
  - Dictionary
  - Abbreviations

- Website

- Specification of AGS Data

- Implementation

Background

Best Sellers 2004

- The De Vinci Code, Dan Brown
- Harry Potter and The Order of the Phoenix, JK Rowling
- My Life, Bill Clinton
- The 9/11 Commission Report
- Eats Shoots & Leaves, Lynn Truss

- AGS3.1

Electronic Transfer of Geotechnical and Geoenvironmental Data

(Edition 3.1)
Including addendum May 2005

2004

Published by
Association of Geotechnical and Geoenvironmental Specialists

AGS ASSOCIATION OF GEOTECHNICAL & GEOENVIRONMENTAL SPECIALISTS

Since 2004

- Greater awareness in industry

- Standard product for GI investigation companies

- Extended software support

- Increased use of format in supply chain

- XML format: Data Interchange for Geotechnical and Geoenvironmental Specialists (DIGGS)

Reasons for the Update

- Expanded information requirements
  - QA information
  - Eurocodes
  - Geoenvironmental information
- Increased usage
  - Data exchange within investigation process
  - Emerging data standards
  - Benefit from good practice
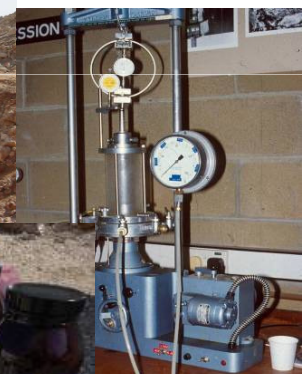 - GIS
  - Spreadsheets

Guiding Principles

Scope

- Ground engineering information
  - Ground investigations
  - In situ testing
  - Monitoring
  - Laboratory Testing

- Process
  - Sample chain of custody
  - Laboratory scheduling & testing
  - Reporting

Principles

- Exchange of data
- Transfer & archive format
- Accessible - software independent
- Self defining
- Hierarchy of information
- Include derived parameters
- Groups aligned to standards and UK practice
- Allows for transfer of information described by a specification

Data Transfer not Database

- AGS Format definition is not a specification for which data are transferred but how they are transferred

- AGS Format is a definition of a language; dictionary and grammar

- Defines how to say something but not what is said

Having to move house?

Transfer Format in action

Transfer Format Definition

Included

Excluded

- What to pack...
- Dismantling ...
- How much to pack ... and what to leave behind...

- What to unpack...and which boxes go straight to the loft
- Where to position items...
- Checking for damage...

AGS Transfer Format

Included

- Containers for data

- Syntax to allow interpretation

- Self-definition

- Extensible

Excluded

- Data content / extent specification

- Validation of data (integrity/completion)

- Acceptance of transfer files into data systems

Data Format

Data Management

AGS

Details

What's in the new version?

- Revised and new rules
- Expanded data dictionary
  - 123 groups
  - Over 2050 headings
  - Each group has associated notes for guidance
- Supported by resources and update on AGS website
- Advice on specification of data deliverables; template provided (Appendix 3)

Rules

Basic AGS Principles

- An AGS file is organised into groups

- Each group is defined by the data dictionary

- Each group contains headings used to define an item of information (group item)

- Each group item is separated by a comma (,)

- Each group item is enclosed in quotes ("")
    - e.g.   "Box 1", "Blue", "Kitchen utensils"

- Each group item contains text

- User defined groups are permitted

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```
"**PROJ"
"*PROJ_ID","*PROJ_NAME","*PROJ_LOC","*PROJ_CLNT","*PROJ_ENG","*PROJ_CONT","*PROJ_DATE","*?PROJ_CID","*?PROJ_ISNO","*PROJ_AGS","*FILE_FSET"
"<UNITS>","","","","","","dd/mm/yyyy","","","",""
"7845","Trumpington Sewerage","Trumpington","Trumpington District Council","Geo-Knowledge International","Lithosphere Investigations Ltd","23/09/2004","TRUMP001","1.0","3.1","FS001"

"**HOLE"
"*HOLE_ID","*HOLE_TYPE","*HOLE_NATE","*HOLE_NATN","*HOLE_GL","*HOLE_FDEP","*HOLE_STAR","*HOLE_LOG","*FILE_FSET"
"<UNITS>","","m","m","m","m","dd/mm/yyyy","",""
"TP501","TP","523196","178231","61.86","3.25","12/09/2004","ANO","FS002"
"BH502","IP+CP","523142","178183","58.72","15.45","13/09/2004","ANO","FS003"

"**?HDPH"
"*?HOLE_ID","*?HDPH_TOP","*?HDPH_BASE","*?HOLE_TYPE","*?HDPH_STAR","*?HDPH_STAT","*?HDPH_ENDD","*?HDPH_ENDT","*?HDPH_EXC"
"<UNITS>","m","m","","dd/mm/yyyy","hhmm","dd/mm/yyyy","hhmm",""
"BH502","0.00","1.20","IP","13/09/2004","0945","13/09/2004","1200","Hand dug"
"BH502","1.20","15.45","CP","13/09/2004","1300","14/09/2004","1730","Dando 150"

"**GEOL"
"*HOLE_ID","*GEOL_TOP","*GEOL_BASE","*GEOL_DESC","*GEOL_LEG","*GEOL_GEOL","*GEOL_GEO2","*GEOL_STAT","*FILE_FSET"
"<UNITS>","m","m","","","","","",""
"TP501","0.00","0.25","Friable brown sandy CLAY with numerous rootlets (Topsoil)","101","TS","CLAY","A",""
"TP501","0.25","1.55","Firm brown slightly sandy very closely fissured CLAY with some fine to coarse subrounded gravel. Widely spaced vertical rough desic","","","","",""
"<CONT>","","","cation cracks with concentrations of rootlets. (Weathered Boulder Clay)","220","WBC","CLAY","B",""
"TP501","1.55","3.25","Stiff grey closely fissured CLAY with a little fine to medium subrounded gravel and rare sandstone cobbles (Boulder Clay)","204","BC","CLAY","C",""
"BH502","0.00","0.30","Friable brown sandy CLAY with numerous rootlets (Topsoil)","101","TS","CLAY","",""
"BH502","0.30","2.60","Firm brown very closely fissured CLAY with a little fine to medium subrounded gravel (Weathered Boulder Clay)","204","WBC","CLAY","",""
"BH502","2.60","5.75","Stiff grey slightly sandy closely fissured CLAY with some fine to coarse subrounded gravel (Boulder Clay)","220","BC","CLAY","",""
"BH502","5.75","15.45","Dense becoming very dense yellow brown very sandy fine to coarse subrounded GRAVEL (Glacial Gravels)","504","GG","GRAVEL","",""

"**SAMP"
"*HOLE_ID","*SAMP_TOP","*SAMP_REF","*SAMP_TYPE","*SAMP_BASE","*SAMP_DATE","*SAMP_TIME","*GEOL_STAT","*FILE_FSET"
"<UNITS>","m","","","m","dd/mm/yyyy","hhmmss","",""
"TP501","1.00","1","D","1.00","","","B",""
"TP501","1.00","2","B","1.30","","","B",""
"TP501","2.50","3","B","2.75","","","C",""
"BH502","1.00","1","U","1.45","","","","FS058"
"BH502","1.50","2","D","1.50","","","",""
"BH502","3.00","3","U","3.45","","","",""
"BH502","3.50","4","D","3.50","","","",""
"BH502","6.00","5","D","6.45","","","",""
"BH502","6.00","6","B","6.50","","","",""
"BH502","9.00","7","D","9.45","","","",""
"BH502","9.00","8","B","9.50","","","",""
"BH502","3.00","10","W","3.00","14/09/2004","140000","",""
"BH502","3.00","11","W","3.00","14/09/2004","163000","",""

"**CLSS"
"*HOLE_ID","*SAMP_TOP","*SAMP_REF","*SAMP_TYPE","*SPEC_REF","*SPEC_DPTH","*CLSS_NMC","*CLSS_LL","*CLSS_PL"
"<UNITS>","m","","","","m","%","%","%"
"BH502","1.00","1","U","A","1.10","28","56","22"
"BH502","1.00","1","U","B","1.25","31","62","24"
"BH502","3.00","3","U","","","28","53","28"
"BH502","3.50","4","D","","","24","",""
```
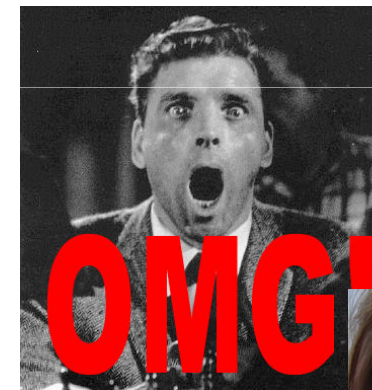
Rule Change

Use of the Extended ASCII character set allowed

(AGS 3.1 Rule 1 – AGS 4 Rule 1)

ASCII Codes 128 to 255 acceptable

Rule Change

Quotes (") are allowed within the text   *(AGS 4 Rule 5)*

Achieved by defining the quote twice

e.g. "he said ""hello"""

Rule Change

<CONT> continuation line removed *(AGS 3.1 Rule 14)*

All rows/lines have no length limit ... *(rule removed)*

....but you still can't use a carriage return within the text

(AGS 4 Rule 6)

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Rule Change

Prefixes **, * and **?, *? removed   *(AGS 3.1 Rule 10 & 11)*

Instead 'Data Descriptors' are used at the beginning of each line to mark the data following.   *(AGS 4 Rule 3)*

Current data descriptors are:-

GROUP
HEADING
UNIT   ← This order is fixed
TYPE
DATA

AGS 3.1 Example

"**GEOL"
"*HOLE_ID","*GEOL_TOP","*GEOL_BASE","*GEOL_DESC","*GEOL_LEG"
"<UNITS>","m","m","",""
"501","1.2","2.4","Stiff fissured brown CLAY. Fissures ",""
"<CONT>","","","are closely spaced","201"

becomes……………

AGS 4.0 Example

"GROUP","GEOL"
"HEADING","LOCA_ID","GEOL_TOP","GEOL_BASE","GEOL_DESC","GEOL_LEG"
"UNIT","","m","m","",""
"DATA","501","1.20","2.40"," Stiff fissured brown CLAY. Fissures are closely spaced","201"

Note: The AGS 4.0 Example above is only a partial example

Rule Change

New concept data descriptor called

"TYPE"

used to denote how data *must* be presented for each heading

(AGS 4 Rule 8)

All type codes used listed in a TYPE Group *(AGS 4 Rule 17)*

AGS 4.0 Examples

"GROUP","PROJ"
"HEADING","PROJ_ID","PROJ_NAME","PROJ_CLNT"
"UNIT","","",""
"TYPE","X","X","X"
"DATA","121415"," ACME Gas Works Redevelopment","ACME Enterprises"

"GROUP","BKFL"
"HEADING","LOCA_ID","BKFL_TOP","BKFL_BASE","BKFL_LEG","BKFL_DATE","BKFL_REM"
"UNIT","","m","m","","yyyy-mm-dd",""
"TYPE","X","2DP","2DP","PA","DT","X"
"DATA","BH1","1.00 ","10.00","901","2010-01-26",""

"GROUP","GEOL"
"HEADING","LOCA_ID","GEOL_TOP","GEOL_BASE","GEOL_DESC","GEOL_LEG"
"UNIT","","m","m","",""
"TYPE","X","2DP","2DP","X","PA"
"DATA","501","1.20","2.40","Stiff fissured brown CLAY. Fissures are closely spaced.","201"

Data Types

- ID   Unique identifier across the project
- DT   Date time international format (see ISO 8601:2004)

References ISO 8601:2004. This is an extensible standard which allows dates and/or times to be presented in many ways:-

What the standard covers:

        Date

        Time of the day

        Coordinated universal time (UTC)

        Local time with offset to UTC

        Date and time

        Time intervals

It can be presented in any of these forms, all are valid:

        yyyy-mm-ddThh:mm:ss.sssZ(+hh:mm)

        yyyy-mm-ddThh:mm:ss.sss

        yyyy-mm-dd

        hh:mm:ss

        yyyy

Data Types

- ID Unique identifier across the project
- DT Date time international format (see ISO 8601:2004)
- T Elapsed time
- X Text (non-numeric)
- XN Text / Numeric (e.g. 1.00 or Dry)
- nDP Value to n decimal places
- nSF Value to n significant figures
- nSCI Scientific notation to n decimal places
- PA Text abbreviation taken from ABBR group
- PU Text abbreviation taken from UNIT group
- PT Text abbreviation taken from TYPE group
- U Value with variable format
- MC British Standard BS1377: Pt 2 reported moisture content

MC < 10% value reported to 1 decimal place   e.g. 9.7%

MC => 10% reported to nearest whole number   e.g. 12%

Data Types

- ID — Unique identifier across the project
- DT — Date time international format (see ISO 8601:2004)
- T — Elapsed time
- X — Text (non-numeric)
- XN — Text / Numeric (e.g. 1.00 or Dry)
- nDP — Value to n decimal places
- nSF — Value to n significant figures
- nSCI — Scientific notation to n decimal places
- PA — Text abbreviation taken from ABBR group
- PU — Text abbreviation taken from UNIT group
- PT — Text abbreviation taken from TYPE group
- U — Value with variable format
- MC — British Standard BS1377: Pt 2 reported moisture content
- DMS — Degrees: minutes: seconds
- YN — Y(es) or N(o)
- RL — Record Link

Record Link

- Provides cross-hierarchical links
- SAMP_LINK is the only one defined

Example:

Disturbed sample taken from split spoon in BH1 at 4.00-4.45m :

"GROUP","SAMP"
"HEADING","LOCA_ID","SAMP_TOP","SAMP_REF","SAMP_TYPE","SAMP_ID","SAMP_LINK"
"UNIT","","m","","","",""
"TYPE","X","2DP","X","PA","X","RL"
"DATA","BH1","4.00","","D","","ISPT|BH1|4.00"

"GROUP","ISPT"
"HEADING","LOCA_ID","ISPT_TOP","ISPT_REP"
"UNIT","","m",""
"TYPE","X","2DP","X"
"DATA","BH1","4.00","13"

"GROUP","TRAN"
"HEADING","TRAN_ISNO","TRAN_DLIM","TRAN_RCON"
"UNIT","","",""
"TYPE","X","X","X"
"DATA","1","|","+"

Record Link

- Provides cross-hierarchical links

- SAMP_LINK is the only one defined

- The key fields from other groups are used to form the link in a structured way:

  - Group | key1 | key2 | key3 etc....

    TRAN_DLIM

- TRAN_DLIM default delimiter is | (pipe / vertical bar)

- Links to multiple records - use the character defined in TRAN_RCON

  - Group1 | key1 | key2 | key3 + Group2 | key1 | key2 | key3

    TRAN_RCON

- TRAN_RCON default character is +   (plus sign)

Disturbed sample taken from split spoon in BH1 at 4.00-4.45m :

"GROUP","SAMP"
"HEADING","LOCA_ID","SAMP_TOP","SAMP_REF","SAMP_TYPE","SAMP_ID","SAMP_LINK"
"UNIT","","m",","","","","
"TYPE","X","2DP","X","PA","X","RL"
"DATA","BH1","4.00","","D","","ISPT|BH1|4.00"

"GROUP","ISPT"
"HEADING","LOCA_ID","ISPT_TOP","ISPT_REP"
"UNIT","","m",""
"TYPE","X","2DP","X"
"DATA","BH1","4.00","13"

"GROUP","TRAN"
"HEADING","TRAN_ISNO","TRAN_DLIM","TRAN_RCON"
"UNIT","","",""
"TYPE","X","X","X"
"DATA","1","|","+"

Sample taken from a monitoring point :

"GROUP","SAMP"
"HEADING","LOCA_ID","SAMP_TOP","SAMP_REF","SAMP_TYPE","SAMP_ID","SAMP_LINK"
"UNIT","","m",","","","","
"TYPE","X","2DP","X","PA","X","RL"
"DATA","BH1","","","W","","MONG|BH1|1|30.25"

"GROUP","MONG"
"HEADING","LOCA_ID","MONG_ID","MONG_DIS","MONG_DATE","MONG_TYPE","MONG_TRZ","MONG_BRZ","MONP_INCA"
"UNIT","","","m","yyyy-mm-dd","","m","m","deg"
"TYPE","ID","X","2DP","X","DT","PA","2DP","2DP","0DP"
"DATA","BH1","1","30.25","2009-06-04","SP","28.25","30.25","90"

Sample taken from a monitoring point with a time related remark :

"GROUP","SAMP"
"HEADING","LOCA_ID","SAMP_TOP","SAMP_REF","SAMP_TYPE","SAMP_ID","SAMP_LINK"
"UNIT","","m","","","",""
"TYPE","X","2DP","X","PA","X","RL"
"DATA","BH1","","","W","","MONG|BH1|1|30.25+TREM|BH1|2010-02-23T13:00"

"GROUP","MONG"
"HEADING","LOCA_ID","MONG_ID","MONG_DIS","MONG_DATE","MONG_TYPE","MONG_TRZ","MONG_BRZ","MONP_INCA"
"UNIT","","","m","yyyy-mm-dd","","m","m","deg"
"TYPE","ID","X","2DP","X","DT","PA","2DP","2DP","0DP"
"DATA","BH1","1","30.25","2009-06-04","SP","28.25","30.25","90"

"GROUP","TREM"
"HEADING","LOCA_ID","TREM_DTIM","TREM_REM"
"UNIT","","yyyy-mm-ddThh:mm",""
"TYPE","ID","DT","X"
"DATA","BH1","2010-02-12T13:00","Signs of surface pollution – oil spill"

"GROUP","TRAN"
"HEADING","TRAN_ISNO","TRAN_DLIM","TRAN_RCON"
"UNIT","","",""
"TYPE","X","X","X"
"DATA","1","|","+"

Heading types

There are 3 different types of heading

- Key
- Required
- Other (everything else!)

Heading types

- ## Key

  - ### necessary to uniquely define the data in the group

    The headings *must* appear in the data file but be can be null

    null = blank or empty = "" (double quotes).

    There *must* only be *one* combination of key headings in any data file.   *(AGS 4.0 Rule 10)*

    e.g.   BH1, 0.00 - 0.50m, Tarmac
    BH1, 0.50 - 3.50m, Silty sandy clay

    "LOCA_ID","GEOL_TOP","GEOL_BASE","GEOL_DESC"
    "BH1","0.00","0.50","Tarmac"
    "BH1","0.50","3.50","Silty sandy clay"

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Heading types

- Key
  - necessary to uniquely define the data in the group

- Required
  - necessary to allow interpretation of the data file

  These headings *must* appear in the data file and *must* contain information - they cannot be left blank/empty (null).

  (AGS 4.0 Rule 10b)

  e.g.
  PROJ_ID
  TYPE_TYPE and TYPE_DESC

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Heading types

- Key
  - necessary to uniquely define the data in the group

- Required
  - necessary to allow interpretation of the data file

- Other
  - no rules and no requirement for the headings to be present in the file
  - their inclusion in an AGS4 submission is only when data is to be transferred

Rule Change

The order of the headings within each group is fixed and *must* appear as shown in the document

<div align="right">*(AGS 4.0 Rule 7)*</div>

Where user defined headings have been created, these new headings must follow *after* the existing headings in a group

<div align="center">*(AGS 4.0 Rule 9)*</div>

...however, *all* the headings in each group do not have to be present.

Mandatory Groups

PROJ	• Project Details
TRAN	• File transmission information
TYPE	• Data types
UNIT	• Unit definitions
ABBR	• Abbreviations

Rule Change

PROJ group split into PROJ and TRAN, both these groups *must* appear in every AGS4 submission *(AGS 4 Rules 13 & 14)*

- PROJ - project details
  - Name
  - Client
  - Contractor etc…
- TRAN – transmission details
  - AGS version number
  - Date of issue
  - Status of data within the submission
  - Record link delimiter used
  - Concatenation character used

AGS 3.1 Example

"**PROJ"
"*PROJ_ID","*PROJ_NAME","*PROJ_CLNT","*PROJ_CONT","*PROJ_DATE","*?PROJ_ISNO",
"*?"PROJ_STAT","*PROJ_AGS"
"<UNITS>","","","","dd/mm/yyyy","","",""
"121415","ACME Gas Works Redevelopment ","ACME Enterprises","ACME Drilling Ltd","31/07/1999","1","Draft","3.1"

AGS 4.0 Example

"GROUP","PROJ"
"HEADING","PROJ_ID","PROJ_NAME","PROJ_CLNT","PROJ_CONT"
"UNIT","","","",""
"TYPE","X","X","X","X"
"DATA","121415","ACME Gas Works Redevelopment","ACME Enterprises","ACME Drilling Ltd"

"GROUP","TRAN"
"HEADING","TRAN_ISNO","TRAN_DATE","TRAN_PROD","TRAN_STAT","TRAN_AGS","TRAN_RECV","
TRAN_DLIM","TRAN_RCON"
"UNIT","","yyyy-mm-dd","","","","","",""
"TYPE","X","DT","X","X","X","X","X","X"
"DATA","1","1999-07-31","ACME Drilling Ltd","Draft","4.0","ACME Consulting","|","+"

Rule Change

Associated files to be included with an AGS file submission (i.e. those defined in FILE group) have the following structure for submission

(AGS 4 Rule 20)

AGS 4.0 Example

```
"GROUP","FILE"
"HEADING","FILE_FSET","FILE_NAME","FILE_DOCT"
"UNIT","","",""
"TYPE","X","X","PA"
"DATA","FS128","BH1_Core_West.jpg","PH"
"DATA","FS128","BH1_Core_East.jpg","PH"
"DATA","FS202","TP1.jpg","PH"
"DATA","FS202","TP2.jpg","PH"
```

AGS submission

121415v1.AGS

FILE

FS128

FS202

BH1_Core_West.JPG

BH1_Core_East.JPG

TP1.JPG

TP2.JPG

Dictionary

Major Group Changes

- HOLE renamed to LOCA (Location)
  - "Hole or Location Equivalent" not thought obvious enough
  - Emphasises that not all samples and observations are made in boreholes
  - Focus on spatial location

- PROJ split into PROJ & TRAN groups

- MONP/MONR renamed MONG/MOND and reformatted

- STND group added to indicate the overall standards the AGS file has been prepared to
  - Making the file complete and self defining without reference to the paper report reducing the need to refer back to the paper report.

STND Group

4   LABORATORY TESTING

4.1   Geotechnical Testing

The testing was scheduled by   ACME Consultants Ltd   and was carried out in accordance with BS 1377 (1990), ISRM (1981) and ISRM (1985) unless otherwise stated. The testing is summarised below and the results are presented in Enclosure C.

```
"GROUP","STND",,
"HEADING","STND_REF","STND_TTLE","STND_SCPE"
"UNIT","","",""
"TYPE","X","X","X"
"DATA","BS 1377: 1990","Methods of test for soils for civil engineering purposes","Geotechnical laboratory testing"
"DATA","ISRM: 1981","ISRM Suggested Methods","Laboratory testing of rock core samples"
"DATA","ISRM: 1985","Suggested method for determining point load strength","Point load strength testing"
"DATA","BS EN ISO 1997-2: 2007","Eurocode 7 - Geotechnical design - Part 2 - Ground investigation and testing","Fieldwork, sampling"
"DATA","BS 5930: 1999","Code of practice for site investigations","Fieldwork and sampling"
```

SAMP Group

- SAMP group enhanced to incorporate a unique sample identifier *in addition* to the existing Location id, Sample depth, type and reference
    - LOCA_ID,SAMP_TOP,SAMP_TYPE,SAMP_REF (from AGS 3.1)
    - SAMP_ID (added in AGS 4.0)
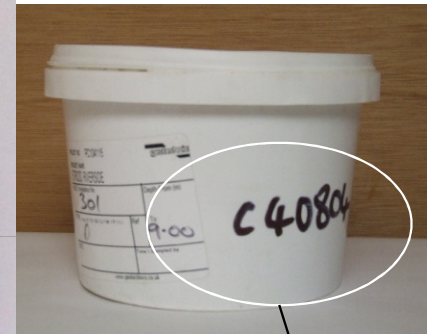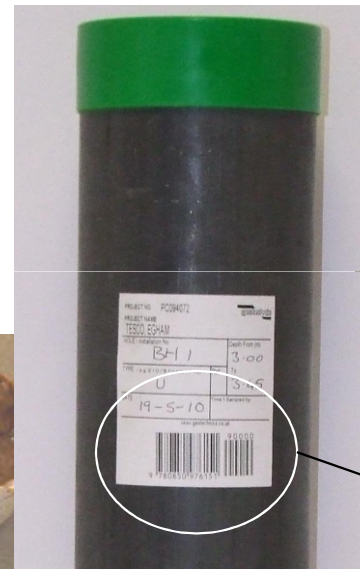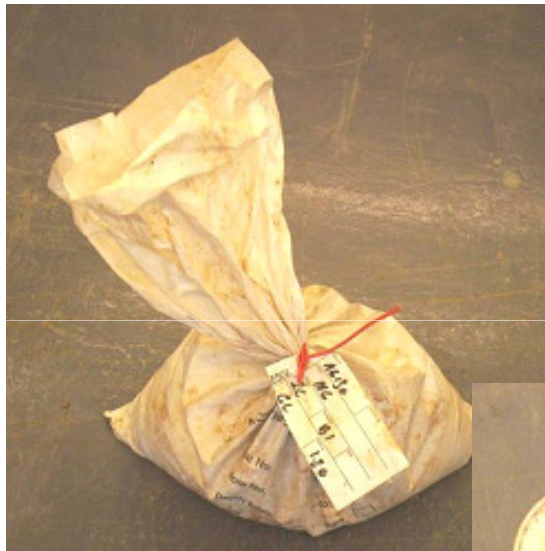
Both valid SAMP_ID values

Laboratory Test Groups

The principle of each test having its own group or paired grouping has been introduced throughout the format, so CLSS and ROCK groups have been split

Soil test groups

•	CBRG / CBRT	California Bearing Ratio Test
•	CMPG / CMPT	Compaction Test
•	CONG / CONS	Consolidation Test
•	LDEN	Density Test
•	LDYN	Dynamic Testing
•	ESCG / ESCT	Effective Stress Consolidation Test
•	FRST	Frost Susceptibility Test
•	GCHM	Geotechnical Chemistry Testing
•	LSTG / LSTT	Initial Consumption of Lime Test
•	LPEN	Laboratory Hand Penetrometer Test
•	PTST	Laboratory Permeability Test
•	LVAN	Laboratory Vane Test
•	LLIN	Linear Shrinkage Test
•	LLPL	Liquid and Plastic Limit Test
•	MCVG / MCVT	MCV Test
•	LNMC	Natural Moisture Content Test
•	LPDN	Particle Density Test
•	GRAG / GRAT	Particle Size Distribution Analysis
•	SHBG / SHBT	Shear Box Test
•	LSLT	Shrinkage Limit Tests
•	SUCT	Suction Test
•	LSWL	Swelling Index Testing
•	TNPC	Ten Per Cent Fines Test
•	TREG / TRET	Triaxial Test - Effective Stress
•	TRIG / TRIT	Triaxial Test - Total Stress

Laboratory Test Groups

Rock test groups
- RCCV   Chalk Crushing Value Tests
- RPLT   Point Load Testing
- RELD   Relative Density Tests
- RDEN   Rock Porosity and Density Tests
- RUCS   Rock Uniaxial Compressive Strength and Deformability Tests
- RSCH   Schmidt Rebound Hardness Tests
- RSHR   Shore Scleroscope Hardness Tests
- RTEN   Tensile Strength Testing
- RWCO   Water Content of Rock Tests

Materials testing groups (***NEW****)
- AAVT   Aggregate Abrasion Test
- ACVT   Aggregate Crushing Value Test
- ARTW   Aggregate Determination of the Resistance to Wear (micro-Deval)
- AELO   Aggregate Elongation Index Test
- AFLK   Aggregate Flakiness Test
- AIVT   Aggregate Impact Value Test
- APSV   Aggregate Polished Stone Test
- ASNS   Aggregate Soundness Test
- AWAD   Aggregate Water Absorption Test
- ALOS   Los Angeles Abrasion Test
- ASDI   Slake Durability Index Test

Laboratory Scheduling Data

Laboratory Test Scheduling groups LBSG/LBST/CHOC added

- LBSG for Testing Schedule details, when results required by etc….
- LBST for listing the tests required on each sample
- CHOC for managing the sample to its destination (Chain of custody)

LABORATORY GEOTECHNICAL TESTING SCHEDULE

| Job No. | 7845 | | | Job Name | Trumpington Sewerage | | | | | | | | Schedule Date | 14/05/2010 | | Schedule No. | 1 | | |
| Client | Trumpington Council | | | Engineer | Geo-Knowledge International | | | | | | | | Checked By | | | Date | | AGS Required | Yes/No |

SAMPLE DETAILS — SOIL — ROCK — CHEMISTRY — SHEAR STRENGTH and CONSOLIDATION

Borehole Number	Sample Top	Sample Ref	Sample Type	Moisture Content	Atterberg Limits	Sieve	Pipette	Particle Density & Intact Dry Density	Natural Density & Sat. Moisture Content	Compaction	MCV/MCC/CCV	CBR	Split & Describe		UCS / Point Load		Organic content	pH & Aqueous SO4	BRE Special Digest 1 (see notes)	38 /70 /102 mm Dia	ULT /cu /cd	Cell Pressure	SB60 or 300	Peak, or Peak + Residual	Oedometer	REMARKS
BH1	0.50	1	B																							
BH1	1.20	0	C																							
BH1	1.20	2	B	1	1																					
BH1	2.00	0	C																							
BH1	2.00	3	D																							
BH1	2.00	4	B	1		1	1																			
BH1	2.70	5	D																							
BH1	3.00	0	C																							
BH1	3.00	6	B	1	1																					
BH1	3.70	7	D																							
BH1	4.00	8	C																							
BH1	4.00	9	B	1		1	1																			
BH1	4.70	0	D																							
BH1	5.00	0	C												UCS											
BH1	5.00	10	B																							
BH1	5.60	0	C												UCS											

REMARKS: To include oedometer, triaxial multistage, shearbox and hydraulic cell loads or pressures, combination of samples, sample preparation, ACEC test suite, etc

See 'Laboratory Test Schedule Utilities' menu to wrap around text for long remarks

Laboratory Scheduling Data

Laboratory Test Scheduling groups LBSG/LBST added

LABORATORY GEOTECHNICAL TESTING SCHEDULE

| Job No. | 7845 | | Job Name | Trumpington Sewerage | | Schedule Date | 14/05/2010 | Schedule No. | 1 |
| Client | Trumpington Council | | Engineer | Geo-Knowledge International | | Checked By | | Date | | AGS Requi |

				SOIL								ROCK	CHEMISTRY		SHEAR STRENGTH and CONSOLIDATION		
SAMPLE DETAILS															Triaxial Cell	Direct Shear / Consolidation
Borehole Number	Sample Top	Sample Ref	Sample Type	Moisture Content	Atterberg Limits	Sieve	Pipette	Particle Density & Intact Dry Density	Natural Density & Sat. Moisture Content	Compaction	MCV/MCC/CCV	CBR	Split & Describe	UCS / Point Load	Organic content	pH & Aqueous SO4	BRE Special Digest 1 (see notes)	38/70/102 mm Dia	UUT /cu /cd	Cell Pressure	SB60 or 300	Peak. or Peak + Residual	Oedometer
BH1	0.50	1	B																				
BH1	1.20	0	C																				
BH1	1.20	2	B	1	1																		
BH1	2.00	0	C																				
BH1	2.00	3	D																				
BH1	2.00	4	B	1		1	1																
BH1	2.70	5	D																				
BH1	3.00	0	C																				
BH1	3.00	6	B	1	1																		
BH1	3.70	7	D																				
BH1	4.00	8	C																				

"GROUP","LBSG"
"HEADING","LBSG_REF","LBSG_DATE","LBSG_FROM","LBSG_TO"
"DATA","1","2010-05-14","Trumpington Council","ACME Laboratories plc","

"GROUP","LBST"
"HEADING",<Sample stuff>,"LBSG_REF","LBST_TEST","CHOC_REF","LBST_TTYP","LBST_METH"
"DATA",<SAMPLE1>,"1","COC991-200","Moisture Content","",""
"DATA",<SAMPLE1>,"1","COC991-200","Atterberg","",""
"DATA",<SAMPLE2>,"1","COC991-200","Moisture Content","",""
"DATA",<SAMPLE2>,"1","COC991-199","Particle Size Distribution","",""
"DATA",<SAMPLE3>,"1","COC991-199","UCS","",""

Test names are typically unique to laboratories

Environmental Testing Group

- CNMT & ICCT groups *removed* and replaced

- Environmental Contaminant testing (ERES)

  - Analytical chemical testing

- Geotechnical Chemistry Testing (GCHM)

  - Aggressivity testing of soil and water in accordance with BRE Special Digest 1 and BS 1377-3

ERES Group

- Developed in consultation with major geoenvironmental testing laboratories

- Contains 47 headings allowing for transfer of detailed testing results

- Revised code list – based on CAS numbers

- CRITICAL POINT
specification of the headings required is necessary

Monitoring Data Groups

MONP & MONR replaced with MONG & MOND

AGS 3.1 Example

"**?MONP"
"*?HOLE_ID","*?MONP_DIS","*?MONP_ID","*?MONP_DATE","*?MONP_TYPE","*?MONP_TRZ","*?MONP_BRZ","*?MONP_BRGA","*?MONP_BRGB",
"*?MONP_INCA","*?MONP_INCB","*?MONP_INCC","*?MONP_RSCA","*?MONP_RSCB","*?MONP_RSCC","*?MONP_REM"
"<UNITS>","m","","dd/mm/yyyy","","m","m","deg","deg","deg","deg","","","",""
"1034B","30.25","1","06/04/2009","SP","28.25","30.25","","","90","","","up=+ve, down=-ve","","",""

"**?MONR"
"*?HOLE_ID","*?MONP_DIS","*?MONP_ID","*?MONR_DATE","*?MONR_TIME","*?MONR_WDEP","*?MONR_WHD","*?MONR_REM"
"<UNITS>","m","","dd/mm/yyyy","hhmmss","m","m",""
"1034B","30.25","1","24/04/2009","104500","24.57","5.68","Operator=TMR"
"1034B","30.25","1","28/06/2009","111500","Dry","","Operator=ANO"

AGS 4.0 Example

"GROUP","MONG"
"HEADING","LOCA_ID","MONG_ID","MONG_DIS","PIPE_REF","MONG_DATE","MONG_TYPE","MONG_TRZ","MONG_BRZ","MONP_INCA","MONP_RSCA","MONP_REM"
"UNIT","","","m","","yyyy-mm-dd","","m","m","deg","deg",""
"TYPE","ID","X","2DP","X","DT","PA","2DP","2DP","0DP","X","X"
"DATA","1034B","1","30.25","","2009-06-04","SP","28.25","30.25","90","up=+ve, down=-ve",""

"GROUP","MOND"
"HEADING","LOCA_ID","MONG_ID","MONG_DIS","MOND_DTIM","MOND_TYPE","MOND_RDNG","MOND_UNIT","MOND_REM"
"UNIT","","","m","yyyy-mm-ddYhh:mm","","","",""
"TYPE","ID","X","2DP","DT","PA","XN","PU","X"
"DATA","1034B","1","30.25","2009-04-24T10:45","WDEP","24.57","m","Operator=TMR"
"DATA","1034B","1","30.25","2009-04-24T10:45","WHD","5.68","m","Operator=TMR"
"DATA","1034B","1","30.25","2009-05-25T14:40","WDEP","Dry","-","Operator=TMR"

AGS

MOND abbreviations

EAST	Absolute position (Easting)		GMP	Peak methane as percentage of LEL
LEV	Absolute position (Level)		GOXS	Peak oxygen concentration
NRTH	Absolute position (Northing)		TGMP	Peak total methane concentration
TEMP	Atmospheric temperature		PRES	Pressuremeter test hole
BAR	Barometric pressure at time of monitoring		RAIN	Rainfall
BRG	Bearing		RFLOW	River flowrate measurement
GCD	Carbon dioxide concentration		RLEVEL	River level measurement
GCM	Carbon monoxide concentration		ANGC	Rotation in direction C
			ANGA	Rotation/Tilt in direction A
CURR	Current		ANGB	Rotation/Tilt in direction B
WDEP	Depth to water from LOCA_ID datum		ROTS	Rotational speed
GPRS	Differential Pressure		STAT	Status
DSPA	Displacement in direction A		GCDS	Steady carbon dioxide concentration
DSPB	Displacement in direction B		GCMS	Steady carbon monoxide concentration
DSPC	Displacement in direction C		HYSS	Steady hydrogen sulphide concentration
DSTL	Distance		GMS	Steady methane as percentage of LEL
DSTA	Distance A from LOCA_ID (slip indicator top rod)		GOXP	Steady oxygen concentration
DSTB	Distance B from LOCA_ID (slip indicator top rod)			
ERAT	Volume extraction rate		TGMS	Steady total methane concentration
FLOW	Flow		STRA	Strain in direction A
FORC	Force		STRC	Strain in direction A
GFLO	Gas flow rate		STRB	Strain in direction C
GAUG	Gauge length		TRST	Thrust
WHD	Head of water above tip		TORQ	Torque
HYS	Hydrogen sulphide concentration		TGM	Total methane concentration
GM	Measured methane as percentage of LEL		UPT	Up/run time
GOX	Oxygen concentration		VEL	Velocity
GCDP	Peak carbon dioxide concentration		VOLT	Voltage
GCMP	Peak carbon monoxide concentration		VOL	Volume
HYSP	Peak hydrogen sulphide concentration			

Other New Groups

- PREM   Project - Time Related Remarks

- DOBS   Drilling / Advancement Observations and Parameters

- WADD   Water Added Records

- PIPE   Monitoring Installation Pipe Work

- ISAG / ISAT   Soakaway Tests

- PLTG / PLTT   Plate Loading Tests

- DCPG / DCPT   Dynamic Cone Penetrometer Tests

Abbreviations

AGS

Abbreviation Changes

- CODE and ABBR rolled into one giant abbreviation group called ABBR!

- Pre-defined abbreviations are not contained within the AGS4 document, but on the website at www.ags.org.uk

- ABBR group to contain all abbreviations used within an AGS submission and all shorthand notations used throughout the file where appropriate

e.g.	ABBR_HDNG	ABBR_CODE	ABBR_DESC
	LLPL_PL	NP	Non-plastic
	GEOL_DESC	**	Drillers description
	CORE_RQD	NI	Non Intact

Website

www.ags.org.uk

Home ▶ About AGS ▶ Diary ▶ Training ▶ Safety ▶ Useful Tools ▶ Publications ▶ Position Papers ▶ Links ▶

AGS Data Transfer

AGS Data Transfer Format ▼
- Introduction
- Example
- Guidelines
- Tables and Fields
- Abbreviations
- Software
- Download

AGS-M Format (Monitoring Data) ▶

List of Registered Users ▶

Discussion ▶

AGS to Excel converter ▶

- Document download

- On-line data dictionary – groups & headings

- Download example files

- Abbreviations

- Discussion board

- Guidance notes (in development)
  AGS3 Appendix 6 replacement

Abbreviations

- Download full listing

```
"GROUP","ABBR"
"HEADING","ABBR_HDNG","ABBR_CODE","ABBR_DESC"
"UNIT","","",""
"TYPE","X","X","X"
"DATA","ERES_CODE","513-88-2","1,1 - Dichloroacetone"
"DATA","ERES_CODE","918-00-3","1,1,1 - Trichloro-2-Propanone"
"DATA","ERES_CODE","630-20-6","1,1,1,2-Tetrachloroethane"
"DATA","ERES_CODE","354-58-5","1,1,1-Trichloro-2,2,2-Trifluoroethane"
"DATA","ERES_CODE","71-55-6","1,1,1-Trichloroethane"
"DATA","ERES_CODE","79-34-5","1,1,2,2-Tetrachloroethane"
"DATA","ERES_CODE","76-13-1","1,1,2-Trichloro-1,2,2-Trifluoroethane"
"DATA","ERES_CODE","79-00-5","1,1,2-Trichloroethane"
"DATA","ERES_CODE","92-52-4","1,1-Biphenyl"
"DATA","ERES_CODE","75-34-3","1,1-Dichloroethane"
"DATA","ERES_CODE","75-35-4","1,1-Dichloroethene"
"DATA","ERES_CODE","563-58-6","1,1-Dichloropropene"
"DATA","ERES_CODE","75-91-2","1,1-Dimethylethyl Hydroperoxide"
"DATA","ERES_CODE","57-14-7","1,1-Dimethylhydrazine"
"DATA","ERES_CODE","87-61-6","1,2,3 Trichlorobenzene"
"DATA","ERES_CODE","35822-46-9","1,2,3,4,6,7,8-Heptachlorodibenzo-P-Dioxin"
"DATA","ERES_CODE","39227-28-6","1,2,3,4,7,8-Hexachlorodibenzo-P-Dioxin"
"DATA","ERES_CODE","634-66-2","1,2,3,4-Tetrachlorobenzene"
"DATA","ERES_CODE","57653-85-7","1,2,3,6,7,8-Hexachlorodibenzo-P-Dioxin"
"DATA","ERES_CODE","19408-74-3","1,2,3,7,8,9-Hexachlorodibenzo-P-Dioxin"
"DATA","ERES_CODE","57117-41-6","1,2,3,7,8-Pentachlorodibenzofuran"
"DATA","ERES_CODE","40321-76-4","1,2,3,7,8-Pentachlorodibenzo-P-Dioxin"
"DATA","ERES_CODE","96-18-4","1,2,3-Trichloropropane"
"DATA","ERES_CODE","96-19-5","1,2,3-Trichloropropene"
"DATA","ERES_CODE","1678-81-5","1,2,3-Trimethyl Cyclohexane"
"DATA","ERES_CODE","95-94-3","1,2,4,5-Tetrachloroethylene"
"DATA","ERES_CODE","95-93-2","1,2,4,5-Tetramethylbenzene"
```

AGS

Abbreviations

Request Abbreviations

Request Abbreviations

Revised Website

- Abbreviations will be reviewed and approved within 5 working days

- Discussion boards to be more responsive

Specification of AGS data

Appendix 3 – Data Deliverables

- Notes and example specification to fully define an AGS data deliverable

- Tabulation of key information for clarity:
  - Submission schedule
  - Required groups and headings
  - Preset data – PROJ_NAME, PROJ_CLNT, (LOCA_IDs)
  - Codes
  - User defined headings (careful...!)

A3 Schedule for submission of data

> The data will normally be submitted in accordance with the reporting requirements given in the contract. Where these require the electronic data to be submitted separately, or to a different schedule, then the following information shall be given.

The electronic data is to be submitted in accordance with the following schedule:

Data Type	Timing
Field data	Within two days of completion of hole
Preliminary data	Within one week of completion of test
Final prelim	Within two weeks of completion of all testing
Final	Within one week of Engineers approval of final prelim report

A4 Notes on Particular AGS Groups & Fields

Where particular or project-specific requirements are required they are listed below:

Group	Field	Note / example
PROJ	PROJ_ID	Contractors project/investigation reference
	PROJ_NAME	ACME Gas Works Redevelopment Phase 1
	PROJ_CLNT	ACME Developments plc
	PROJ_ENG	ACME International
TRAN	TRAN_STAT	Preliminary, Draft or Final
LOCA	LOCA_ID	See list in Schedule
	LOCA_TYPE	Compound codes to be used where appropriate, e.g. CP+RC
	LOCA_NATE LOCA_NATN LOCA_GL	Used to report hole collar position in UK National Grid coordinates and datum
	LOCA_LOCX LOCA_LOCY LOCA_LOCZ	Used to report hole collar position in site coordinates and datum
	LOCA_CLST	Set to Phase 1

Implementation

Why change from AGS3?

- Extension of range of data that can be included in files
- Greater application in supply chain
- Maintains compliance with current standards
- Process - use of data improves quality
- GIS – spatial data

- Drivers
  – Specifications from Receivers (Clients)
- Requirements
  – Software tools

Get Ready

- ## Producers
  - Review format definition for clues on likely data requirements
  - Ensure software update route is planned

- ## Receivers
  - Consider benefits of additional data
  - Consult with producers on ability to deliver AGS4
  - Ensure data system updates compatible

Implementation

Any Questions