

Bentley[®]
Advancing Infrastructure



Key Components

- gINT Logs
- gINT Professional
- gINT Professional Plus
- gINT Civil Tools Professional Plus

gINT[®] CONNECT Edition

Geotechnical and Geoenvironmental Data Management

Bentley's gINT software provides centralized data management and reporting for geotechnical subsurface projects of all types. The software automates many repetitive tasks, eliminates redundant data entry, and dramatically increases productivity. gINT allows users to streamline processes, provide accessible, interoperable data, and enhance subsurface reporting and visualization for soil and rock, borelogs, and lab tests while increasing productivity and improving decision-making.

Subsurface Data Management and Reporting Software

gINT provides centralized data management and reporting for subsurface projects of all types. Data is entered into gINT once, and then can be used to generate multiple reports from the same data set. The software allows users to streamline processes, provides accessible, interoperable data, and enhances subsurface reporting while increasing productivity and supporting engineering knowledge and judgment.

Flexible, Powerful Data Management

gINT's flexible, central database enables consolidation of all types of subsurface data including environmental, geophysical, petroleum, and mining. With all subsurface data in one central location, users can quickly create any type of subsurface report from the same data. gINT CONNECT Edition is designed for interoperability with MicroStation[®] and ProjectWise[®], as well as Bentley civil engineering design applications. gINT Civil Tools connects and queries data from gINT for 2D and 3D applications of the data. gINT exports logs, fences, and other reports into MicroStation DGN format, and stores all gINT data (project files, libraries, scripts, for example) in ProjectWise for simplified project collaboration.

Comprehensive, Customizable Reporting

With gINT's advanced reporting capabilities users can create virtually any type of subsurface report for field, laboratory, and interpreted data. gINT CONNECT Edition includes customizable report templates that allow unlimited depth, layers, symbols, samples, and images. Advanced report design capabilities such as conditional formatting, data manipulation, and decision-making save time and help ensure consistent, standardized reporting.

Free gINT report templates are also available for various countries, agencies, and organizations and readily available for download from the Bentley Communities website. In addition, Bentley Professional Services can help create custom reports to user's exact specifications.

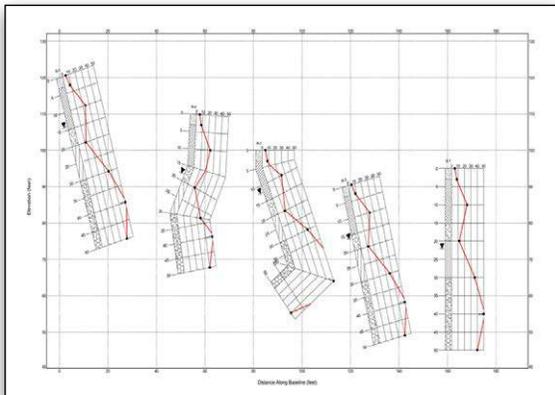
Interoperability Supports Data Reuse and Efficient Workflows

gINT's open database and numerous import and export formats support data reuse, as well as provide interoperability with other software used in the project lifecycle such as CAD, GIS, civil, and other database applications. gINT shares data with design, modeling, and analysis software including gINT Civil Tools; supports import and export for industry standard formats; and presents subsurface data spatially using Bentley gINT Civil Tools and ArcGIS (gINT Professional and gINT Professional Plus).



From boring and well logs to 2D and 3D visualization, to complete subsurface data management and reporting with Microsoft SQL Server, there is a gINT product to suit every need.

- gINT Logs supports boring and well log data management and reporting.
- gINT Professional offers expanded reporting and enhanced interoperability for logs, fences, lab testing, and more.
- gINT Professional Plus enables powerful multiproject reporting and data management with support for Microsoft SQL Server.
- gINT Professional and gINT Professional Plus offer integration with gINT Civil Tools for integration in a MicroStation environment.



Create virtually any type of subsurface report for field, laboratory, and interpreted data.

gINT Logs

From borehole and well logs to CPT and geophysical logs, gINT Logs can report all types of subsurface. gINT log reports can be customized with the inclusion of graphics, photos, bar charts, plots, site maps, legends, and more.

gINT Logs offers high-end boring and well logs at an affordable price, especially well suited for industry professionals who “just want the logs.” Logs can include virtually any type of subsurface – geotechnical, environmental, geophysical, petroleum, mining, and more.

gINT Professional

gINT Professional builds on the data management and reporting capabilities of gINT Logs, providing enhanced interoperability and expanded report options for boring and well logs. Users can utilize the same data to create fence diagrams, graphs, tables, and virtually any other imaginable report.

Create Custom Fence Diagrams

gINT fence diagrams present data for multiple boreholes on a single report. Any information that can be shown on a borehole log can be displayed on a fence diagram: water levels, well information, lab data, and more. gINT fences can also display site maps, surfaces, alignments, deviated boreholes, and “drapes” with graphics that depict features in elevation along an alignment on a 2D fence report.

gINT performs the appropriate projection calculations for accurate display. Fence drapes can be used to display interpreted layered geometry, seismic tests results (for example, shear wave velocities), and existing features along an alignment (rivers, bridges, buildings, and roads).

Ensure Consistency with Advanced Reporting

gINT’s “smart” reports allow multiple report variants to be combined, so that only one report is needed to handle diverse data conditions, simplifying reporting maintenance and ensuring reporting consistency. For example, log reports can have columns for well or water level data that only display when that data is available. Environmental reports can present data using different colors depending on such values as not tested, passed, failed, and more. Advanced report design capabilities such as conditional formatting, data manipulation, and decision-making save time, and help ensure consistent, standardized reports.

Visualize Subsurface Data in ArcGIS

gINT allows users to view subsurface data directly from ArcGIS providing easy access to logs, lab data, reports, and more. The gINT for ArcGIS extension allows users to add the dimension of subsurface data to ArcGIS. Users can then generate gINT reports and query subsurface data direct from ArcMap.

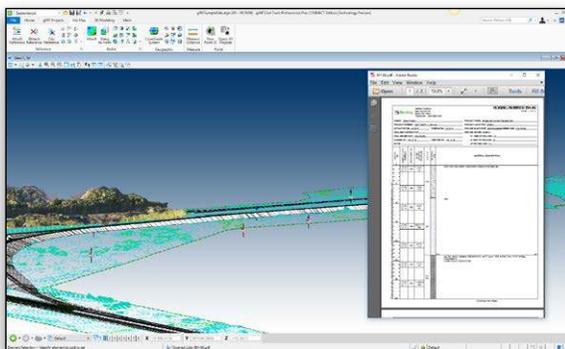
| DEPTH (ft) | SAMPLE NUMBER | REMARKS | TESTS AND RECOVERY | U.S.C.S. GROUP | MATERIAL DESCRIPTION | ENVIRONMENTAL DATA |
|------------|---------------|----------------|--|----------------|--|--|
| 0 | | | | | CLAY grey-brown clayey sandy gravel, medium dense to dense, moist to wet, gravels subrounded up to 2" diameter | |
| 5 | OR 0-1 | | MC = 17% DD = 95 pcf PL = 18 FI = 2% | SW-SM | WELL GRADED SAND WITH SILT, SILTY SAND, (SW-SM) (A-2-4) 10% gravel, 85% sand, 10% fines, light bluish gray and light bluish green (10YR6/3) well graded, fine to medium-grained, dry to moist, loose, fissured, no odor, weak cementation, hydrocarbon staining, weak HCL reaction, aluminum 99 | |
| 10 | SPT 5-1 | 1-2-3-4 (8) | MC = 20% LL = 27 PL = 40 | SW-SM | WELL GRADED SAND WITH SILT, SILTY SAND, (SW-SM) (A-2-4) 10% gravel, 85% sand, 10% fines, brown and olive, well graded, well rounded, fine to medium graded, moist, medium dense, trace clay, little ferrous nodules, and chert | FID = 20 GRO = 35 PID = 1 Vapor = 5 |
| 15 | SPT 5-2 | 4-5-6-7 (11) | PP = 3 blf | SW-SM | | |
| 20 | SPT 5-3 | 8-9-10-11 (19) | MC = 56% DD = 90 pcf LL = 18 PL = 12 FI = 1% | CL | SANDY LEAN CLAY, SANDY CLAY, (CL) (A6) 10% gravel, 25% sand, 65% fines, brown and green, moist to moist, very soft, trace medium to coarse sand, some ferrous nodules, and mica, chemical odor, strong cementation, hydrocarbon staining, weak HCL reaction, comments about the clay | |
| 25 | SH 76 | | | CH | SANDY FAT CLAY, SANDY FAT CLAY, (CH) gray, hard, high plasticity | FID = 50 Vapor = 25 |
| 30 | SPT 5-4 | 45-46-50 (7) | PP = 3 blf | CH | SANDY FAT CLAY, SANDY FAT CLAY, (CH) 5% gravel, 25% sand, 70% fines, gray, dry to moist, hard, fissured, high plasticity, no dilatancy, high liquid limit, high dry strength, trace clayey silt, little coal refuse, hydrocarbon odor, moderate cementation, hydrocarbon staining, moderate HCL reaction | FID = 60 Vapor = 60 |

Create comprehensive logs from the subsurface data.

Supports Association of Geotechnical and Geoenvironmental Specialists Formats

gINT supports the data interchange formats from the U.K.’s Association of Geotechnical and Geoenvironmental Specialists (AGS). To make working with AGS data easier, gINT provides a starting database and reports for AGS data. However, gINT’s flexibility allows users to modify their database while allowing full AGS compatibility via correspondence files.

Users can import, export, and validate AGS data, as well as edit AGS data directly in Microsoft Excel. gINT AGS validation goes beyond simply detecting file errors. gINT finds conditions that could compromise data quality as well as unnecessary, redundant, or missing noncritical, descriptive data. Users can easily generate data statistics for their AGS files such as the number of records in each file, hole counts by type, total drilling length, and sample type.



Export gINT reports, including logs, fences, and graphs, and edit in MicroStation.

Design, Modeling, and Analysis Functionalities

gINT Professional users have access to gINT Civil Tools, which provides capabilities for modeling and 3D analysis. Lithology contacts and water table surfaces can be created and modified. Boreholes and subsurface observations can be displayed using different formats to enhance analysis.

gINT Professional Plus

gINT Professional Plus builds on the reporting and data management capabilities of gINT Professional, adding Microsoft SQL Server support for efficient, centralized data management and powerful multiproject reporting. gINT Professional Plus enables users to:

- Report and query subsurface data from an unlimited number of projects
- Standardize company methods for entering, importing, storing, and reporting data
- Share data with related software programs (including CAD, GIS, civil, and contouring and modeling applications)
- Convert projects so that all use the same geo-coordinate system

Integrated Geotechnical Lab Testing and Reporting

With gINT Professional and gINT Professional Plus users can quickly integrate lab testing results with other subsurface data. From raw lab data, gINT can perform calculations for any of 13 different lab tests provided with the gINT installation. Once raw lab data is entered into gINT, the resulting calculations can be used on any type of report: logs, fences, and tables. gINT California Bearing Ratio (CBR) and Concrete Testing are free applications available for download from the Bentley Communities website.

Visualize Subsurface Data in 3D

gINT Civil Tools Professional and gINT Civil Tools Professional Plus allow users to view subsurface data directly from their gINT project, in the same environment as MicroStation CONNECT Edition. Connected to a gINT database (.gpj or SQL Server), users can query the information needed and use different mapping methods to display data with different formats: Depth – Bottom; or Depth – Length; and Depth Only. For example, lithology is displayed using Depth – Bottom or Depth – Length data while a water level uses Depth Only. The objects created in the 3D model will contain information related to the mapping of its table.

Users have the choice to import specific, chosen information associated with an imported table depth and/or bottom/length

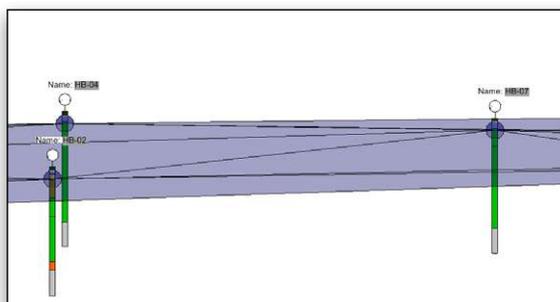
and identifier data into the model. This means users can import all the data in a table associated with the table, such as blow counts, lithology description, well construction remarks, lab data, and more. Three-dimensional annotation for boreholes is also available and is independent from the view to have a comprehensive model.

Site Investigation and Drilling Plan Preparation

gINT Civil Tools provides an environment where all the required information to start a new geotechnical project can be gathered and reviewed to create a site investigation plan. Working in gINT Civil Tools Professional or gINT Civil Tools Professional Plus, the user has access to geological maps, images directly from Google Earth, road plans, preliminary drawings, and more. Plans and maps can be overlaid to better understand the local environment and help plan the site investigation. To complete a site investigation plan, new points (borehole locations) can be created directly on the plan and stored in the connected gINT project to be used downstream in the project as data is collected and entered into gINT.

Surfaces Creation for Lithology

gINT Civil Tools Professional and gINT Civil Tools Professional Plus have the capability to create surfaces for different aspects of the stored data. For example, specialized functionality gives the user the ability to create a surface representing the actual ground based on boreholes' collars. Surfaces can also be created using lithology and other subsurface observations such as water level. When a lithology is used to generate a surface, the user has the choice to create it from the top or the bottom of the lithology. These surfaces can be smoothed using a simple kriging method to create a realistic model. Visualization of lithology contacts in a 3D model help the geotechnical team plan and understand the complexity of the site earlier in the project.

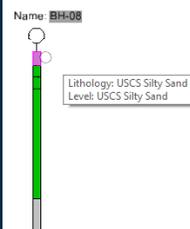


Load any depth-related data such as water, lithology, or sample. Create surfaces for a specific lithology or water observation.

Proven Subsurface Data Management and Reporting

The industry leader for over 25 years, gINT software is designed by experienced engineers who fully understand the standards and requirements that facilitate high-quality geotechnical and geoenvironmental data management and reporting. gINT delivers a full spectrum of data with flexible options to define and customize reports to best suit user preferences.

The CONNECT Edition provides a common environment for comprehensive project delivery and connects users, projects, and your enterprise. With gINT CONNECT Edition, you now have a personal portal to access learning, communities, and project information. You can also share personal files including iModels and PDFs directly from your desktop with other users. With the new project portal, your project teams can review project details and status, and gain visibility into project performance.



System Requirements

Processor

Intel Pentium-based or AMD Athlon-based PC or workstation

Operating System

Windows 10

Memory

Memory: 1 GB minimum, 2 GB recommended, (more memory typically results in better performance)

Disk Space

2 MB minimum free disk space

Find out about Bentley at www.bentley.com

Contact Bentley

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Outside the US +1 610-458-5000

Global Office Listings

www.bentley.com/contact

Which gINT is right for you?

| | gINT Logs CONNECT | gINT Professional CONNECT | gINT Professional Plus CONNECT |
|---|----------------------|---------------------------------|--------------------------------------|
| Borehole and well log reports | ✓ | ✓ | ✓ |
| ProjectWise integration | ✓ | ✓ | ✓ |
| Export to MicroStation, Microsoft Excel, databases, and DXF | ✓ | ✓ | ✓ |
| Import from Microsoft Excel and databases | ✓ | ✓ | ✓ |
| Fence reports, graphs, summary tables, site maps, and more | | ✓ | ✓ |
| Import AGS and CSV | | ✓ | ✓ |
| Geotechnical lab test reports | | ✓ | ✓ |
| gINT Civil Tools | | ✓ | ✓ |
| • 2D site work | | ✓ | ✓ |
| • 3D visualization | | ✓ | ✓ |
| • GIS work | | ✓ | ✓ |
| • Subsurface modeling | | ✓ | ✓ |
| • iModels | | ✓ | ✓ |
| gINT for ArcGIS add-in | | ✓ | ✓ |
| gINT Rules programming interface | | ✓ | ✓ |
| Multiproject database using Microsoft SQL server ** | | | ✓ |
| Geo-coordinate conversion tool | | ✓ | ✓ |

**Microsoft SQL Server licenses are not included with gINT Professional Plus.