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General Information

| Date: | February 5, 2018 |
|-------------------------|--|
| Products: | PRIZM, smartSECTION, DepthRegistration, SeisVision, LogM, WellBase, |
| | QueryBuilder, Lease Planner, Field Planner, GeoAtlas, & SeisBase |
| Version: | 2016.1 Service Pack 5 for GeoGraphix® |
| Build Number | 16.5.16240.0 |
| ECCN: | This GeoGraphix service pack is exported under the license exception TSU |
| Platform: | Windows® 7 or 10, 64-bit |
| Prerequisite Updates: | GeoGraphix 2016.1.2 must be installed |
| Supersedes Version: | None |
| Compatible Releases: | 2016.1.2 |
| Checksum for .exe (MD5) | 3626a966acf48057b4bedb83481ff7ce Discovery2016.1.5setup.exe |

What's in this Release?

This service pack includes new features and usability enhancements. The Fixed Issues section highlights customer reported bugs fixed in this service pack.

Service Pack Dependencies

GeoGraphix 2016.1.2 must be installed prior to the installation of this service pack.

New Features

PRIZM

Import and Merge Curves

You can import new curves and merge them into an existing computed curves set instead of replacing them and use the new curves in petrophysical analysis.

Small Permeability Crossplot Values

Set the values of crossplot axes to display small permeability values to allow for comparison to plots with smaller values.

Customization of Well ID Format

While importing log curves (DLIS or LAS/LBS), you can choose to strip-out the dashes (-) in a Well ID in order to get the API in an LAS file that contains dashes to match the wells in WellBase without dashes.

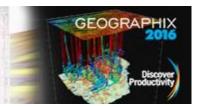
Selective Merge/Splice of Curvesets

In the **Automatic** mode of Multi-Well Import, you can choose to prevent the automatic merging/splicing of all curve sets during import, and later merge or splice only the required curves and curvesets.

Custom Titles of Curvesets

While importing curvesets, you can enter a custom name for the first curveset in a single well to any curveset name, to better describe what the data file contains.





smartSECTION

Vertical Curve Export to LAS

Export the modeled vertical curves in the **Vertical Panel** to an LAS file to use the curve in other applications. The **smartSTRAT Options** dialog provides options to export all curves or only the first encountered curves with their depths in MD or TVD.

DepthRegistration

Display Log Scale with the Log Name

Ability to differentiate between logs based on their scale as the log scale is now mentioned with the name of each log after it is imported. The log name along with the log scale is listed in the **Registered Images** section of DepthRegistration window.

SeisVision

Log Curves Aliasing in LogM

LogM recognizes Sonic and Density log curves aliases (defined in PRIZM) when sending wells from SeisVision.

SeisVision Enhancements

The following enhancements are incorporated to improve certain workflows in SeisVision:

- Segments can be reassigned to other faults directly from Fault Manager.
- Horizons can be arranged according to the stratigraphic order of their associated formations in Horizon Manager.
- Improvements to Horizon and Fault palettes.

GeoAtlas

Support has been added for ESRI ArcEngine 10.4.x and 10.5.

WellBase

User Defined Core Fields

User can add data for up to 200 user defined fields in the Core table.

Core Types in WellBase

Plug and **Cuttings** added as new and default options for **Core Type** along with the existing **Conventional** and **Sidewall** core types.

Accessing Strat Columns

The **Strat Column** drop-down list has been added to the **Calculate Formations** dialog. Formations can be calculated using both public and user-defined strat columns.

QueryBuilder

Display of Log Filters in Alphabetical Order

The curve and raster filters display in alphabetical order in the Log Data Filter dialog.

Lease Planner

Layer Names Updated

Source path of the imported shapefile displays on the tooltip.

Lease Area Color

Lease Area color has been modified to make it more user friendly.

Add or Remove Multiple Tracts

User can select both pre-existing and new tracts in a single selection and add or remove tracts with multiple selections.

Modify or Delete Setbacks

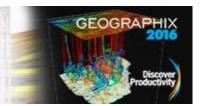
User now has the option to either modify the setbacks or delete them.

Setbacks within Tracts

Setbacks have been included within tracts in the lease layer, for a legally safer user experience.

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Field Planner

Left Mouse Button to Select Well

You now have the ability to select the well with left mouse button.

Thematic Coloring of Different Payzones

In this release you can select different colors of well sticks for multiple formations in a single field plan.

Add Decimal Points to Azimuth

User can now add decimal points to the azimuth value.

Pad Polygon Edit

Creating a polygon with well pads and then further editing the polygons with **Node Display/Edit** option saves and conserves the edited polygon shape in database.

Fixed Issues

SeisVision

| ID | Issue Description | Fix Description |
|--------|---|---|
| 134864 | Some wells are deleted from main map view of SeisVision interpretation on reopening interpretation after performing a save operation. | Database query is fixed to handle non-rectangular surveys. |
| 142134 | Cursor hovering direction is incorrect in case of composite lines made using the Jump Tie mode. | The line direction is calculated similar to the non-jump tie mode. Also a context menu option Reverse Panel Direction is added to control the individual pane direction. |
| 119539 | The error 'Connection to IsoMap failed' generates on creating an IsoMap layer. | For SeisVision 64-bit, some users may face issues with ISO Map layer creation and Horizon creation from ISO Map layers. These issues are related to DCOM (local |
| 119540 | SeisVision crashes on using the Tools > IsoMap Layer to Horizon menu option. | ISO Map layer creation and Horizon creation from ISO |
| | | 6. In the Allow column under Permissions for User , select Local Access , and then click OK . |





LogM

| ID | Issue Description | Fix Description |
|--------|---|--|
| 138899 | The sequence of formation tops in the exported text file is incorrect, if one or more formation tops are missing from wells. | Fixed the formatting of the exported file. |

DepthRegistration

| ID | Issue Description | Fix Description |
|--------|---|--|
| 111900 | The XML import feature should include Vertical Scale as part of | Included Vertical Scale label in the log section name to identify different logs based on their scale. |
| | the log section name. | |

PRIZM

| ID | Issue Description | Fix Description |
|--------|---|--|
| 78588 | Log curves with null values in totality of their depths also import in PRIZM. | Added a check to skip the curve during import if all its values are null. |
| 148073 | If discriminator curve is enabled, then the background image does not save with the template. | Fixed the cross plot image serialization, hence, the background image saves with the template. |

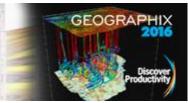
smartSECTION

| ID | Issue Description | Fix Description |
|--------|--|---|
| 140910 | TGS connectivity for data downloads is not working. | Correct version of Xceed DLLS are imported with the patch installer. |
| 141275 | TMP files created on opening cross sections are not deleted on closing the cross sections. | Object is properly disposed and velocity model related files no longer pile up on the disk. |

WellBase

| ID | Issue Description | Fix Description |
|--------|--|--|
| 144540 | Poor performance of WellBase and ZoneManager on opening projects with protected well data. | The performance of WellBase and ZoneManager for projects with protected well data is significantly improved. |
| 146207 | Add additional core types and user defined core fields to the Core tab. | Added 175 user defined core analysis numeric fields to the Core tab. In addition, Plug and Cutting are now available as Core Types . These new fields can be exported and imported in WellBase in ASCII4 format. The additional Core analysis fields can be imported using an Excel spread sheet. WellBase Layer can be created with the core types and additional Core analysis fields. Query and Filters can be made on these additional Core analysis fields. PRIZM can use also additional Core analysis fields |
| 146219 | Support for ArcGIS 10.5 is needed. | Support for ArcGIS 10.5 is added. A new version of AOLib is added for ArcGIS 10.5 support. |





| 146290 | Transform coordinates do not save values to BH Lat/Long fields. | Added save events to BH Lat/Long options, and corrected the output of the Transform Coordinates dialog. Hence, the borehole latitude and longitude values save correctly after applying a transformation. |
|--------|--|--|
| 146291 | The formation calculation performance needs improvement. | Performance improvements are made in well list loading and protected fields for faster formation calculation. |
| 150248 | Incorrect County field values display in Scout Ticket View for Texas Counties on importing IHS 297 into a new project. | The data for county fields in Texas now display accurately after importing IHS 297 into a new project. |
| 151501 | Unable to calculate wellbore for manually entered BH XYs in XY projects. | Validator coordinates for XY are updated for manual addition of BH XYs in XY projects. |

GeoAtlas

| ID | Issue Description | Fix Description |
|--------|-----------------------------------|---|
| 145142 | The URLs along shapefiles are not | This issue is fixed by changing the code to allow |
| | used as Hyperlink. | hyperlinks on shapefiles. |

SeisBase

| ID | Issue Description | Fix Description |
|--------|------------------------------------|---|
| 151499 | The Seismic Event table and fields | Added the missing data to the Seismic Event |
| | are missing in gxdb.xla. | worksheet in gxdb.xla. |

QueryBuilder

| 40.0.70 | | |
|---------|--|---|
| ID | Issue Description | Fix Description |
| 146209 | The raster filters should display in alphabetical order, and an option | The curve and raster filters display in alphabetical order in the Log Data Filter dialog. The Filter Criteria |
| | to use raster aliases is required. | dialog selection is also updated accordingly. |

Architecture

| ID | Issue Description | Fix Description |
|--------|-------------------------------|--|
| 147274 | A black background displays | Icons display correctly in dialogs such as the Layer |
| | behind icons in some dialogs. | Selection dialog, when displayed on Windows 10 |
| | | machines with high-resolution displays. |

Install Instructions

To install:

- 1. **GeoGraphix 2016.1.2** must be installed.
- 2. Shutdown all **GeoGraphix 2016.1.2** applications and services.
- 3. Download **Discovery2016.1.5Setup.exe** to a folder on your hard drive.
- 4. Right-click **Discovery2016.1.5Setup.exe**, and then select **Run as Administrator** from the context menu.

Uninstall Instructions

To uninstall:

- 1. Open the **Programs and Features** applet by selecting **Start >> Control Panel >> Programs and Features**.
- 2. Click View Installed Updates on the left panel of the Programs and Features applet.
- 3. Select **Discovery 2016.1.5**.
- 4. Right-click, and then select **Uninstall** to remove the service pack.

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Files Updated

- Prizm.exe
- DepthRegistration.exe
- smartSECTION.exe
- SeisVision.exe (32-bit & 64-bit)
- LogM.exe
- WellBase.exe
- GeoAtlas.exe
- FieldPlanner.exe

Note: To view the file version, right-click the file, and select the **Properties** option from the shortcut menu. The Properties dialog displays. Select the **Details** tab.

DISCLAIMER

If you have any questions or encounter any problems, please visit the **LMKR Support website**: http://support.lmkr.com

Or, contact Customer Support in your region. Refer to the section **Contacting LMKR** for details.

Contacting LMKR

Our new dedicated system is accessible via local call-in numbers* and is an alternative way for you to submit a technical support case and/or speak directly with a GeoGraphix Support Analyst.

*Contact Us:

North & South America

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UAE: +971 4 3727 999

Asia Pacific & Australian Continent

Malaysia: +60 32 300 8777

Southwest Asian countries
Pakistan: +92 51 209 7400

Support via Web Portal

You can also submit a support request directly to LMKR Customer Support by registering a case through the **LMKR Customer Support Portal**: http://support.lmkr.com

To request support in the LMKR Customer Support Portal:

- 1. In the main support page, **login** using your registered email and password. Please register your email before you access the site.
- 2. Select the Case Management tab or use the Manage Cases link on the main support page.
- 3. In the Case Management tab, click the Create a New Case link.
- 4. In the **Create Case** page, fill in the necessary information. Provide details about your technical concern, including any error messages, the workflow steps where the problem occurred, and attach screenshot that display the problem. You can also attach other files, such as example data files, which may help understanding the issue
- 5. Click the **Create Case** button. A support analyst in the nearest Technical Assistance Center will respond to your request.

We will ensure a quick and satisfactory answer to your query. If the problem cannot be resolved over the phone at the regional level, an escalation team will take over the resolution of your support case and will get back to you without delay.

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