

Trimble Access Pipelines Tutorial

This tutorial is designed to teach and demonstrate effective pipeline surveying using the Trimble® Access™ Pipelines software, compatible with Trimble Access version 2025.23 (Pipelines version 2.00) and later versions.

This document covers:

1. [Create your Pipeline project in the office](#)
2. [Download the pipeline project to the controller](#)
3. [Tally files](#)
4. [Map weld IDs to joint IDs \(joint mapping\)](#)
5. [Measure welds and bends](#)
6. [Send updates from the field](#)
7. [Merge updates in the office and publish new Primary tally files](#)
8. [Pipelines reports](#)
9. [Additional features](#)

Trimble Access Pipelines simplifies attribute collection by pre-recording pipe and joint data before installation, then seamlessly linking it to as-built surveyed joints to reduce field time, mistakes and pressure. The software also automates complex calculations, including cover computations, pipeline crossing reports, and deflection angle determinations.

Equipment Needed

Download the Pipelines data files to start. This tutorial uses the Trimble Access GNSS emulator to simulate a receiver connection; no additional equipment is needed.

Download the Pipelines sample data ZIP file from the Trimble Access Help portal:

<https://help.fieldsystems.trimble.com/trimble-access/latest/en/downloads-sample-data.htm>.

Unzip the files and use them as instructed during the Tutorial.

Folder name	File name	Utilization
PipelinesDemoData\2025.20	Pipelines Demo Guide 2025.20.pdf	Step-by-step tutorial covering Trimble Access Pipelines workflows
Trimble Sync Manager Pipelines set up files	Pipelines Alignment.rxl	Used in Trimble Sync Manager to create the project
	Pipelines Corridor.dxf	
	Pipelines Cover.csv	
	Pipelines Exclusion Zone.dxf	
	Pipelines Tally.csv	
	Pipelines.fxl	
Trimble Access Pipelines Tutorial Files	Pipelines Demo.job	Sample job data, used to demonstrate additional pipelines features
	Pipelines Tally.idx	Sample tally and weld map data
	Pipelines Tally.map	
	Pipelines.jpg	Used to simulate taking a photo
Reports	Various report templates	Sample reports

Create your Pipeline Project in the Office

There are two main field workflows to a pipeline project. The first is to record the joint attributes and weld details while the pipeline is above the ground. The second workflow takes place once the pipeline is in the trench, where the welds and other features such as bends are surveyed and the previously recorded attributes are retrieved from the tally files and stored with the as-built positions.

Pipelines projects can be created in the cloud using Trimble Sync Manager. The Trimble Sync Manager Pipelines tab allows you to configure the entire project which is then downloaded to the field controllers. The download process delivers all the required files to the field controllers, including the tally files, alignments, and exclusion zones, as well as a job template which contains the configuration details of the Pipelines system. The job template is used to create new jobs each day to record the as-built survey data and ensure the jobs are configured correctly and consistent settings are used for all field crews.

While you can create new Pipelines projects in Trimble Access Pipelines, using Trimble Sync Manager is the recommended and easiest way to set up Pipelines projects, so this document will demonstrate this workflow.

Sign in to Trimble Sync Manager

The Trimble Sync Manager desktop application can be downloaded and installed from here: <https://geospatial.trimble.com/sync-manager-installation>.

The first time you run Trimble Sync Manager, you are prompted to sign in using your Trimble ID. If you do not have a Trimble ID, you can create one.


Once you have signed in, any projects shared with you appear in the **Projects** screen.

Create the pipeline project in Trimble Sync Manager

1. In the **Project** screen, click **New**.
2. Enter the **Project name: Pipelines Demo**
3. In the **Region** field, select the region closest to where the project team is based.
4. In the **License** field, select the Trimble Connect License to use. The available license types depend on what you are entitled to. When creating a project for use in Trimble Access, you will usually **select the license that matches the name of your organization**. If a license matching your organization name is not shown, make sure a **Connect Business for Trimble Access** account has been set up for your controller(s). See [To set up your account](#) in the *Trimble Sync Manager Help*.
5. Click **Create**.

Wait briefly while the project is being created and Trimble Sync Manager shows the **Project Overview** screen.

Add the pipeline to the project

1. In Trimble Sync Manager, click **Properties** in the blue title bar to the right of the project name that you just created.
2. Select the  **Pipelines** tab in the lower left corner of the screen. The '**Pipelines Demo**' **Properties** screen is shown.
3. To add the pipeline tally:
 - a. Click **New**.
 - b. In the **Create Pipeline** pop-up window, click **Browse** and browse to the demonstration data **Trimble Sync Manager Pipelines setup files** folder. Select the file **Pipelines tally.csv**. One tally file is usually used as the primary tally file for the entire pipeline project and shared amongst multiple survey crews. The name of the tally file is used as the **Pipeline name**.
 - c. Select the unique joint ID: **Unique ID**.
This is the column heading from the tally file that contains the unique ID.
 - d. Click **Create**.
Wait while the software processes the file.
4. Click **Units** to expand the **Units** section and in the **Unit System** field, select **Metric**. Click the Units field again to collapse the **Units** section.
5. Click **Coordinate System** to choose the coordinate system for the job.
To choose a coordinate system from the library:
 - a. Click **Define**. The **Coordinate System Definition** dialog appears.
 - b. Select the **Library** tab.
 - c. Click and drag in the map to pan and use the slider below the map to change the zoom level. Focus the map on **Christchurch, New Zealand**. Alternatively, enter **Mt Pleasant** in the search box below the slider.
Appropriate coordinate systems for the map location are listed below the map.
 - d. From the list of coordinate systems, select **New Zealand/NZGD1949 (LC) Mt Pleasant Seven Parameter**, and click **Save**.
 - e. In the **Project height** field, enter 20.

- f. Click the **Coordinate System** field to collapse the coordinate system settings.
6. Use the **Tally file** settings to define the relationships between fields in the tally file, the joint map file, and the attributes used to record the tally details.
 - a. Select the Joint length ID: **Length**.
This is the column heading in the tally file that has the joint length – the length column needs to be identified so that we can automate joint length checking and PUP creation.
 - b. Enter the Minimum PUP length: **3 m**.
Any modification to the length of a joint by more than 3 m automatically prompts the creation of a PUP.

Tip: To view the tally file contents, click **Expand to view first 100 records**. The column headings and data in the first 100 records are shown. Click **Expand to view first 100 records** again to collapse the records.

7. Leave the **Check against pipeline manifest** switch set to **No**.

Tip: This option allows you to create a new tally – and have it automatically checked against an existing manifest – but we are not demonstrating this feature in this tutorial.

8. Use the **Feature coding** settings to define the relationships between fields in the tally file, the joint map file, and the attributes used to record the tally details:
 - a. To select the feature library, click **Browse** to navigate to the demonstration data **Trimble Sync Manager Pipelines setup files** folder and select **Pipelines.fxl**. Click **Accept**.

Use the Feature Definition Manager (FDM) utility to; create, view, or modify a feature code library, use the sample provided as a template if required.

FDM is included with TBC, but can also be downloaded and installed from here:

<https://help.fieldsystems.trimble.com/tbc/downloads-software.htm>

If installing a standalone version of FDM, you must also install Coordinate System Manager, available from the same link.

- b. Select attributes from the feature library file that are used to link the weld and joint details to the points measured during the as-built survey. For:
 - **Joint**, select **JOINT #: VALVE, BEND** from the list.
(JOINT # is the attribute name, VALVE and BEND are two codes that contain a JOINT # attribute)
 - **Weld**, select **XRAY: WELD** and **BEND ID: BEND** from the list
(Ensure both XRAY and BEND ID are checked).
 - **Joint ahead**, select **JOINT AHEAD: WELD** from the list.

– **Joint back**, select **JOINT BACK: WELD** from the list.

Weld and Bend linking connects the weld ID and bend ID to the joint IDs in the joint map file. You can easily identify this connection during attribute collection because the field is colored **orange**. A joint link connects the joint ID entered to the joint and its attributes to the tally file. You can easily identify this connection because the field is colored **green**. We will see these colors displayed later in the demo.

Trimble Sync Manager

Project Overview 'Pipelines demo' Properties

Pipeline name Pipelines Tally [New]

Units Metric
Distance and grid: Meters

Coordinate System Projection: Mt Pleasant
Datum: New Zealand Geodetic 1949 (LC)
Geoid: nz2016

Tally file Pipelines Tally.csv
Expand to view first 100 records...

Unique joint ID Unique ID

Joint length ID Length

Minimum PUP length 3.0 m

Reference manifest
Check against pipeline manifest ☐ No

Feature coding
Feature code library Pipelines.fxl [Browse]

Attribute linking

Joint JOINT #: VALVE, BEND

Weld XRAY : WELD; BEND ID : BEND

Joint ahead JOINT AHEAD : WELD

Joint behind JOINT BACK : WELD

Pipelines [Save]

9. Use the **Joint mapping options** to configure joint mapping settings to match your preferred workflow.

Joint mapping is another process used to collect additional information about the pipeline while it is still above ground. This makes the survey process faster and easier once the pipeline is in the trench.

The main joint mapping process is to record the attributes of each weld as well as the joint ahead ID.

- a. Enable the **Warn if joint not found in tally file** check box.

A warning will be displayed if a joint ID that does not exist in the tally file is used for joint mapping.

- b. Enable the **Default next joint ID from tally** check box.

If the joints are strung out in the same order as they were tallied, then enabling this check box makes the process of creating a joint map quick and easy.

- c. Set the **Weld ID default** field to **Increasing**.



When mapping welds, you can match the default weld ID selection with the direction along the pipeline that the joints were welded.

- d. Set the **Present joint maps in** field to **File order**.

File order presents the joint maps in the order that they were recorded in the field. **Sequence order** presents the joint maps by matching the joint ahead and joint behind IDs to create linked sequences. **File order** provides faster presentation for larger files over **Sequence order**, since no extra processing is needed.

- e. Use the **Define weld fields** section to add additional attributes to be collected. The standard weld map records the **Weld ID** and **Joint behind ID** and **Joint ahead ID**. Our weld ID is the XRAY number written next to the weld. To record additional information, select **Welder ID** from the list and tap **Add field**. Repeat to add the **Heat #**, **Weld coating** and **Temperature** attributes.

- f. Use the **Define bend fields** section to add additional attributes to be collected. Standard bend mapping records only the Bend ID and associated Joint ID. To record additional information, select **BEND TYPE** from the list and tap **Add field**. Repeat to add the **DIRECTION 1**, **ANGLE 1**, **DIRECTION 2**, and **ANGLE 2** attributes.

Tip: When adding additional **Weld** and **Bend** fields, you can use the  and  arrows as the additional fields are added to sort them in the order that you want them to appear in Trimble Access.

10. In the **Alignment** settings group box:

- Use **Browse** to select the **Pipelines Alignment.rxl** file.
- Ensure the **Slope stationing** check box is not set.

When slope stationing is enabled, stationing is computed on the slope distance instead of the horizontal distance.

- In the **Corridor limits defined by** field, select **Polygon**.
- Click **Browse** and select the DXF polygon file: **Pipelines Corridor.dxf**.
- Select the **Active** check box.
- Select the corridor **Map display color: Green**.

11. In the **Compute cover** group box:

- Set the **Compute pipe cover** switch to **Yes**.
- Set **Method** to **Use ground point**.
- Set **Default ground point** to **Last point in the job**.

- d. Set **Use only ground points with the code** to **NG**.

Only points with a code set to NG (natural ground) will be found when searching for points to use in cover calculations.

- e. Set **Maximum pipeline to ground point distance** to **5 m**.

A warning appears if points more than **5 m** away are used for cover calculations.

- f. Set **Minimum cover definition method** to **CSV file**.

- g. Click **Browse** and select the CSV file: **Pipelines Cover.csv**.

The minimum cover requirements are determined from the station+depth settings in the CSV file.

With compute cover configured this way, the last point stored in the job that has the code NG, is automatically used to compute cover. If the point is more than 5 m away from the measurement on the pipe, a warning appears. The stationing of the measurement is computed by referencing the associated alignment. The software then uses this station value and looks in the minimum cover CSV file to determine the required minimum cover. If the minimum is not met, a warning appears.

Note: Stationing is determined from the **Pipelines Alignment.rxl** alignment file specified in the **Pipeline options** screen. The stationing computed is entirely dependent on the accuracy of this preliminary alignment. True stationing can only be computed from the beginning of the pipeline using as-built pipeline data, which may differ a little from the stationing computed from the preliminary alignment.

12. In the **Exclusion zone** group box:

- a. Click **Browse** and select the DXF file: **Pipelines Exclusion Zone.dxf**.
- b. Select the exclusion zone **Map display color: Red**.
- c. Select the **Active** check box.
- d. Select the **Record zone entry and exit** check box.

Trimble Sync Manager

← Project Overview

'Pipelines demo' Properties

Pipeline name: New

Pipeline options

▼ Alignment

Pipe alignment file: Browse Clear

Slope stationing: ☐

Corridor limits defined by: ☐ Left and right offsets ☒ Polygon

Browse Clear

Active: ☒

Map display color:

▼ Compute cover

Compute pipe cover: ☒ Yes

Method: ☒ Use ground point ☐ Use surface model

Default ground point: ☒ Last point in the job ☐ Closest point

Use only ground points with the code:

Maximum pipeline to ground point distance:

Minimum cover definition method: ☐ Fixed minimum cover ☒ CSV file

Minimum cover station, depth csv file: Browse Clear

▶ Expand to view cover file records...

▼ Exclusion zone

Exclusion zone file: Browse Clear

Map display color:

Active: ☒

Record zone entry and exit: ☒

Pipelines Save

13. Click **Save**.

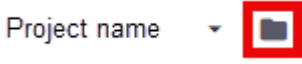
The new pipeline data is sent to Trimble Connect. If you have uploaded large files this can take a few minutes.

The software returns to the **Project overview** screen.

14. To see the new pipeline we created, tap near the top of the screen. The name of the pipeline you added (**Pipeline Tally**) appears above the list of jobs.




Configure the Feature Code Library in Trimble Connect

A few extra steps are currently required to configure the feature code library in Trimble Connect to ensure a pipeline project's **feature code library** is downloaded to the controller.

1. Open a web browser and go to **Trimble Connect**:
<https://web.connect.trimble.com/projects>
2. From the **Project** screen click on the Project you just created in TSM.
3. Click the folder icon beside the project name , then click **Open Explorer**.
4. In the blue menu bar click **Settings / Extensions**, and then enable the **Field Data** extension.
5. After a few seconds, **Field Data** will appear in the blue menu, click **Field Data**. This is where you can now define the **Feature Code Library** for the Connect Project.
6. Click **Upload** and then select the same **Pipelines.fxl** library you selected in Trimble Sync Manager Pipelines earlier.

The pipeline project is now ready for the field crew to download.




Note: You will have access to the Pipeline project when you sign in to Trimble Access using the same Trimble Identity details you used to sign into Trimble Sync Manager.

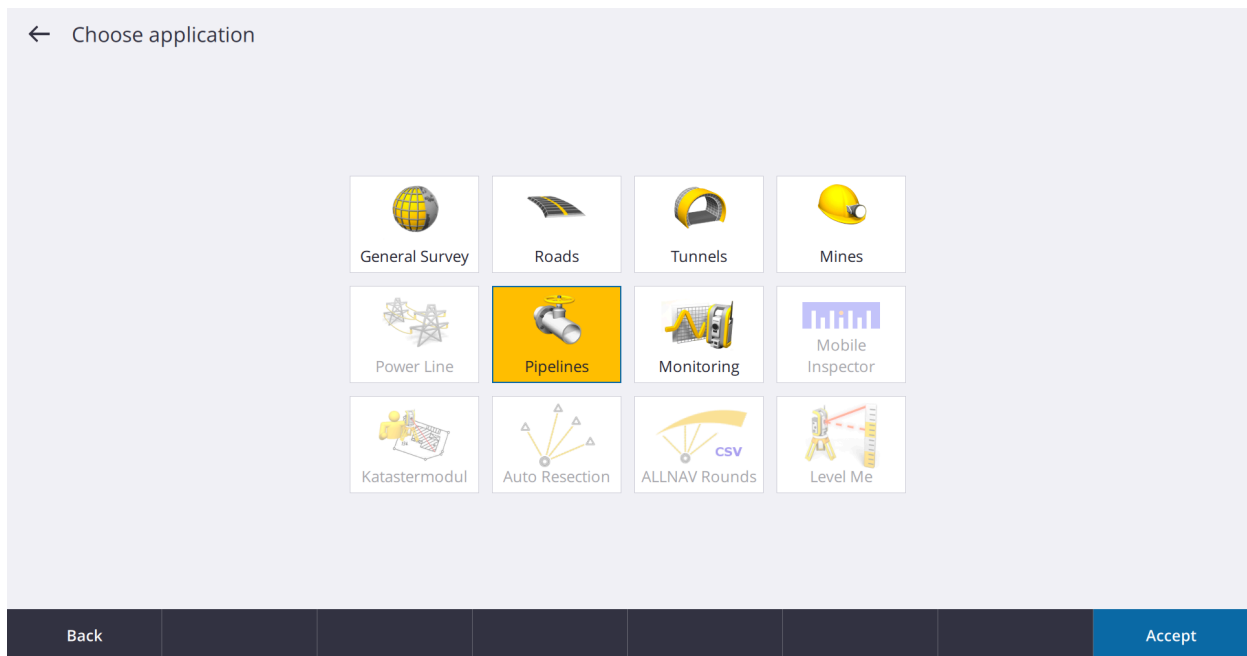
To invite additional team members to the project you must first sign in to Trimble Access and download the Project (see instructions below). After the project has been downloaded, tap  then <project name>, then tap  to the right of the Project name and select **Settings** and then select the **Team** tab. Tap **Invite** and enter the new project member email address. You can also invite team members using Trimble Sync Manager (TSM) and Connect. In TSM, from project properties, tap  to add new team members.

Download the pipeline project to the controller

In Trimble Access Pipelines, each field crew downloads the project and associated files from the cloud. To start work, simply create a job from the job template that was downloaded with the Pipelines project.

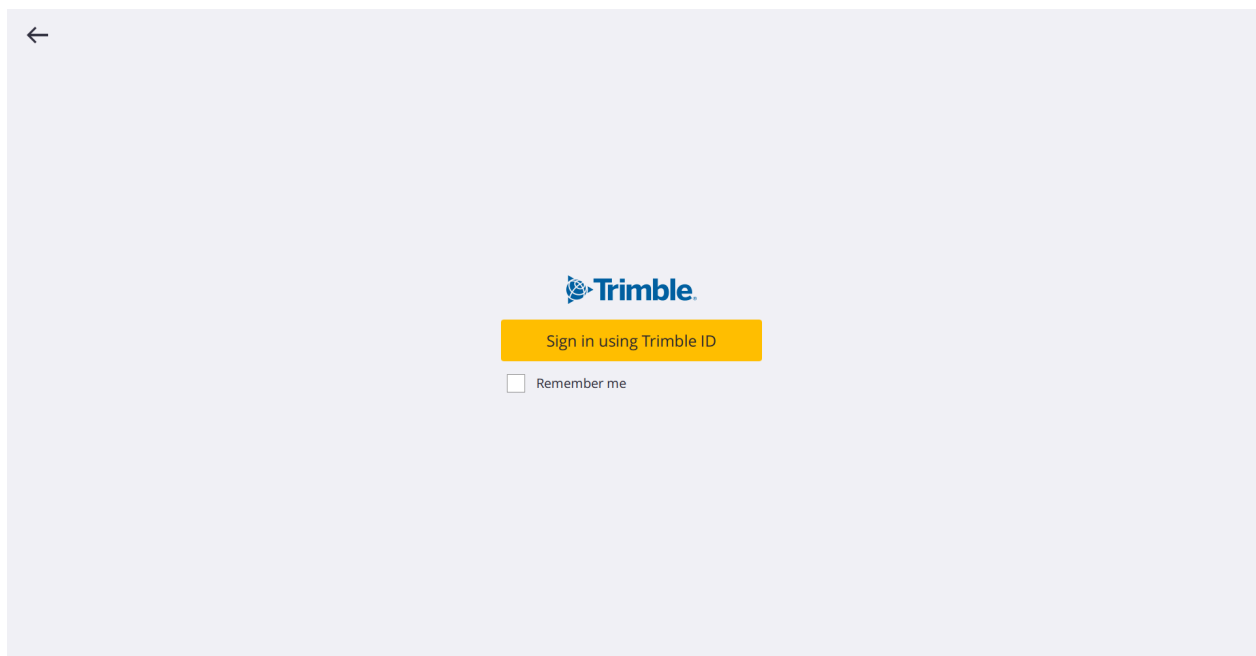
Download the project in the field


1. Start the Trimble Access software. The **Projects** screen is shown.
2. To make sure the Pipelines app is selected, tap  and make sure the item next to the selected app icon  is **Pipelines**. If a different app is selected, such as **General Survey**, tap . In the **Choose application** screen, tap **Pipelines**, to switch to the Pipelines app.













Note: If Pipelines is not available, it is either because the software is not installed or your device is not licensed for Pipelines.

- From the **Projects** screen, tap the  icon and sign in to connect to Trimble Connect.



- Select the **Pipelines demo** project you created in Trimble Sync Manager within the project screen and tap **Download** or tap the download icon .
- The files that will be downloaded are displayed, tap **Download**.

Download Pipelines Demo						
Name	Type	Size	Local version	Cloud version	Mo	
 Pipelines	FXL	13 KB		1		
 Pipelines Alignment	RXL	3 KB		1		rob_
 Pipelines Corridor	DXF	69 KB		1		rob_
 Pipelines Cover	CSV	47 B		1		rob_
 Pipelines Exclusion Zone	DXF	161 KB		1		rob_
 Pipelines Tally	CSV	2 KB		1		rob_
 Pipelines Tally	IDX	211 B		1		rob_
 Pipelines Tally	JOT	4 KB		3		rob_
 Pipelines Tally	DFN	254 B		3		rob_
 Pipelines Tally	MAP	210 B		2		rob_

The project and all associated files including the tally file, feature library file, and job template are downloaded to the **Trimble Data\Projects** folder.

6. Tap **Next** then **Next** again.

Create a new job from the template

1. Tap **New** and enter a job name **Pipelines Test**.
2. Ensure **Create from Template** is selected.
3. From the **Template** list, select **Pipelines Tally**.

The **Coordinate system** field changes to show the coordinate system you defined in Trimble Sync Manager.

4. To upload photos captured while performing the tally check or joint mapping to the cloud when you upload tally file changes, tap the **Media file** button in the job **Properties** group and select **Job** in the **Link to** field. Tap **Accept**.

Once completed, your settings should look as follows:


New job: Pipelines Demo\Pipelines Test	
Job name	Pipelines Test
Create from	Template
Template	Pipelines Tally
Properties	
Coord. sys.	Mt Pleasant (New Zealand/NZGD1949 (LC))
Units (Dist.)	Meters
Layer manager	None
Feature library	Pipelines
Cogo settings	Ground
Additional settings	Off
Media file	Job
Reference	?
Description	?
<div> Esc Accept </div>	

5. Tap **Accept**.

The new job opens. The tally files linked to the job template are copied from the **Trimble Data\Projects** to the **Trimble Data\Common\Tally** folder and are ready to use in Pipelines.

Assign computed values as attributes

During survey of the as-built pipeline, the Pipelines software stores the depth of cover, station, and offset values as records in the job. We have configured how the software will compute cover in the pipelines options in Trimble Sync Manager. To save these values as attributes of the weld, in Trimble Access select the appropriate attribute from the feature library:

1. Tap  and select **Pipeline options**.
2. Scroll down to the **Assign computed values as attributes** group box:
 - a. Select COVER as the **Depth of cover** attribute.
 - b. Select STATION as the **Station** attribute.

When these are set, the COVER and STATION attributes are automatically completed.

Pipeline options

Exclusion zone file

Pipelines Exclusion Zone.dxf

map display color

Red

Active

☒

Record zone entry and exit

☒

Assign computed values as attributes

Depth of cover

COVER

Station

STATION

Offset

<None>

Joint map ID defaults

Based on measurements taken in

Downstream direction

Printer label file


TallyLabelDefn.lbl

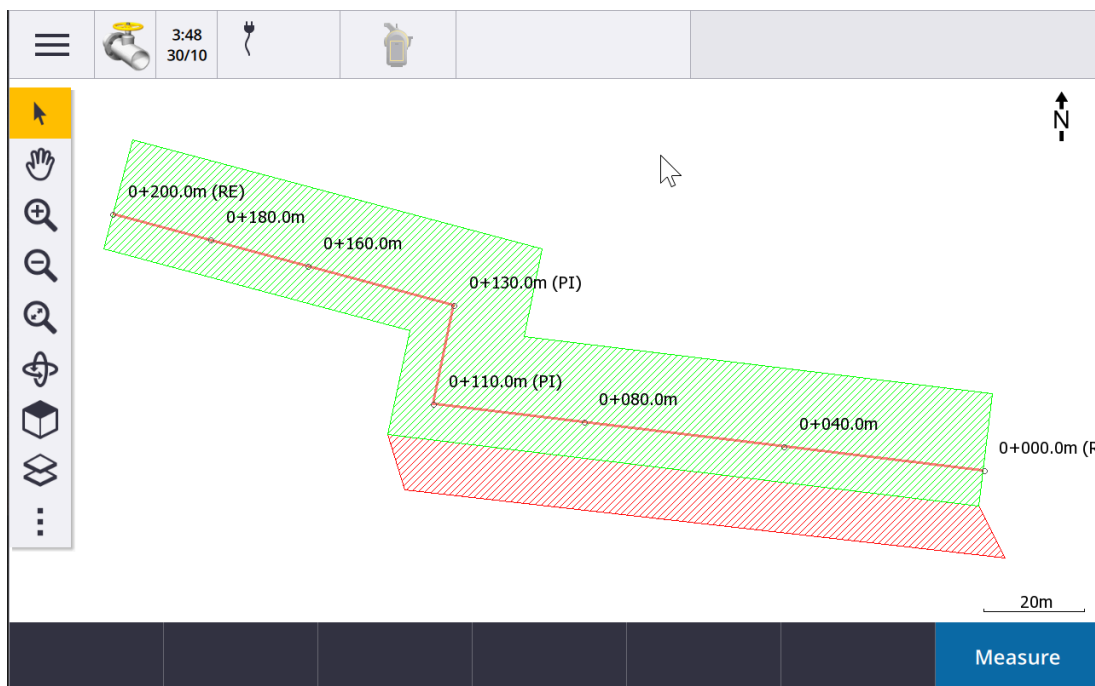
Esc

Accept




c. Tap **Accept**.

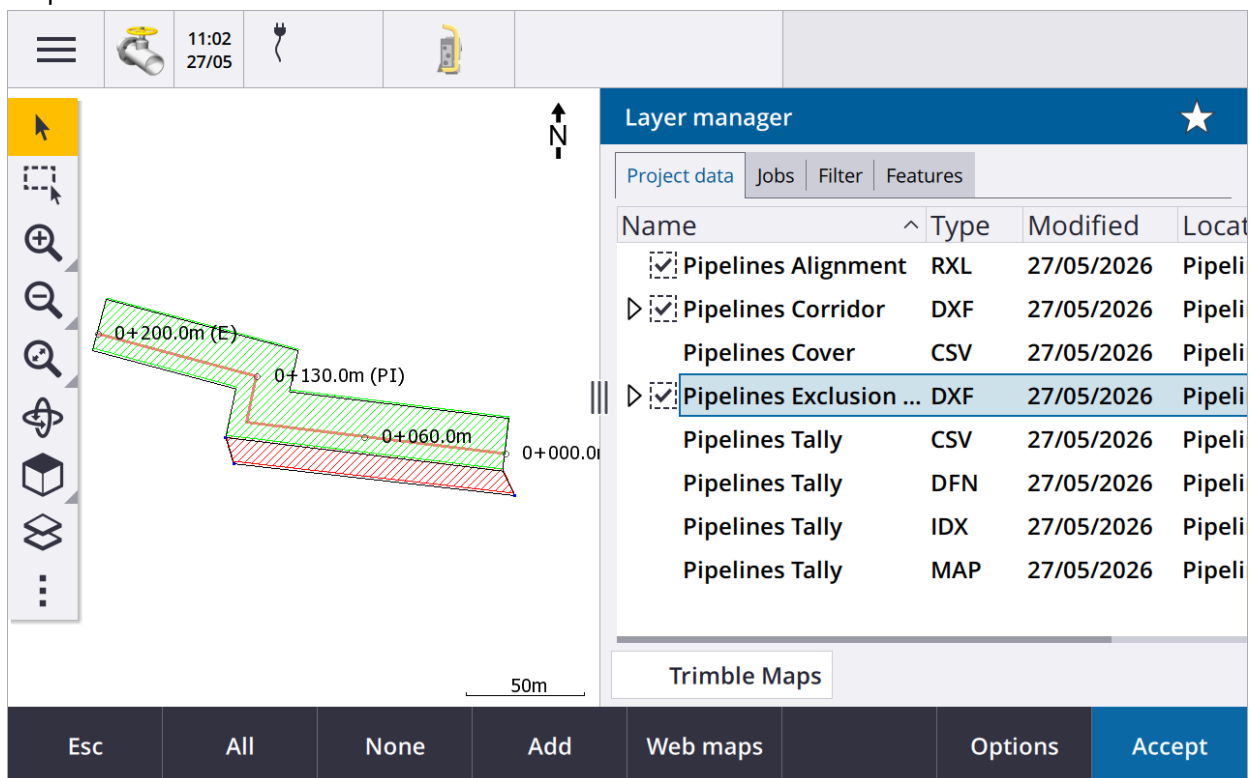
Show the pipeline in the map

To view the map extents, tap . The map shows the alignment with stationing labels. The green hatched area is the pipeline corridor, and the red hatched area is an exclusion zone:





If your map does not look like this, modify the map display settings as required:


1. Tap  in the map toolbar, and select the **Project data** tab.
2. To display the alignment, tap the Pipelines Alignment file. A check mark  in front of the Pipelines Alignment file will appear indicating this layer is now selectable in the map.
3. To display the green and red hatched areas, tap the **Pipelines Corridor** and the **Pipelines Exclusion** file **once**. A check mark  indicates features in these layers are visible in the map



4. Tap **Accept**.

Note: Additional Pipelines files are displayed in Layer manager which can be hidden using the

Project data tab. To do this tap , select the job then the **Project data** tab and tap  to hide the **Pipelines Cover** CSV, and the four **Pipelines Tally** files; CSV, DFN, IDX MAP. Then tap **Esc** to return back to the Map.

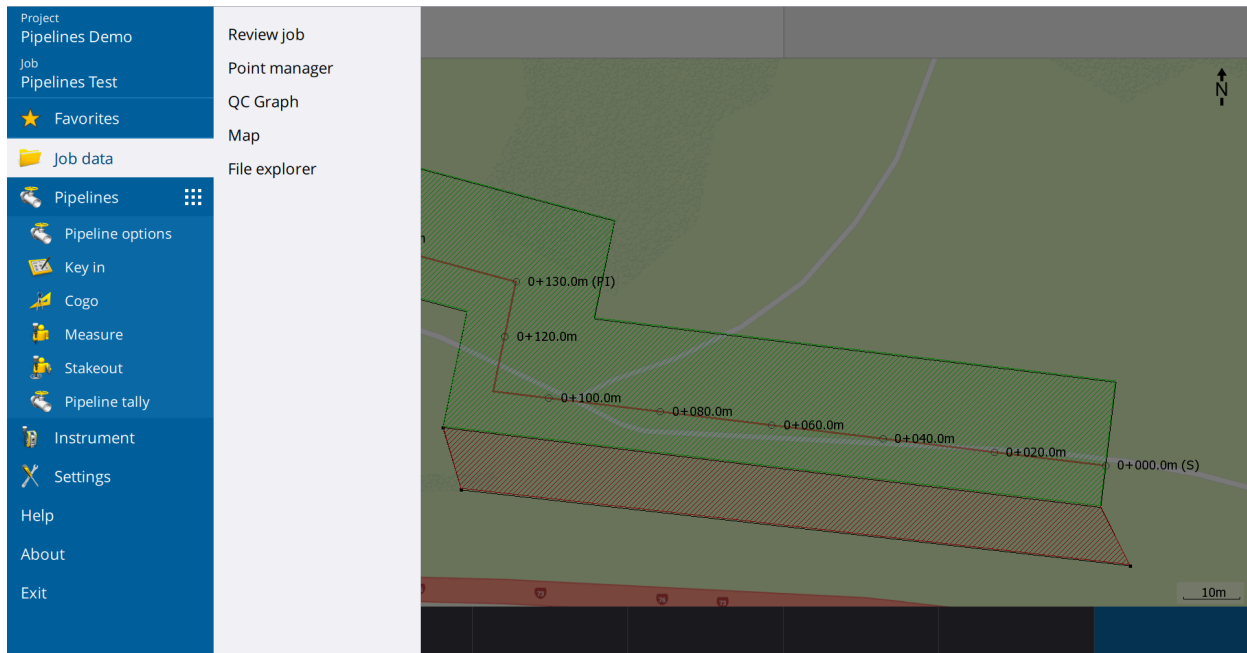
5. To display the stationing values, tap  and select **Settings**. In the **Map data controls** section, enable the **Display station values** check box and tap **Accept**.


Copy pre-populated tally files into the project

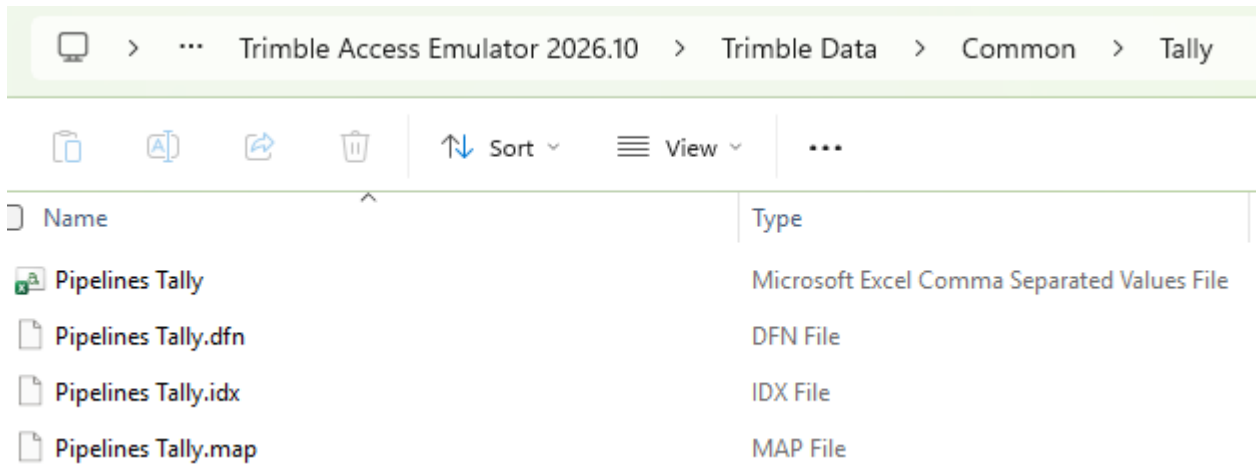
We created a new project in Trimble Sync Manager with the Pipelines Tally.csv file. Trimble Sync Manager created the additional .idx and .map files. Because this is a new project these two files do not yet contain any data. For this tutorial, we want to simulate a project that already has some data in it, so we will replace the two files downloaded with the two files from the sample data.

To replace the .idx and .map files on a **Windows computer**:

1. Tap  and select **Job Data** and then **File Explorer**.



2. In **Windows Explorer** browse back one folder and select the **Common \ Tally** folder.
3. Open another **Windows Explorer** window ( e) and browse to the sample data you downloaded previously. Then copy the **Pipelines Tally.idx** and **Pipelines Tally.map** from the **Trimble Access Pipelines demo files** folder to the **C:\ProgramData\Trimble\Trimble Access Emulator <version>\Trimble Data\Common\Tally** browser window and replace the .idx and .map files already there.



4. To ensure the latest tally file data is being read by Trimble Access, **close** and then **restart** Trimble software and open the Pipelines job again.

Start the GNSS survey

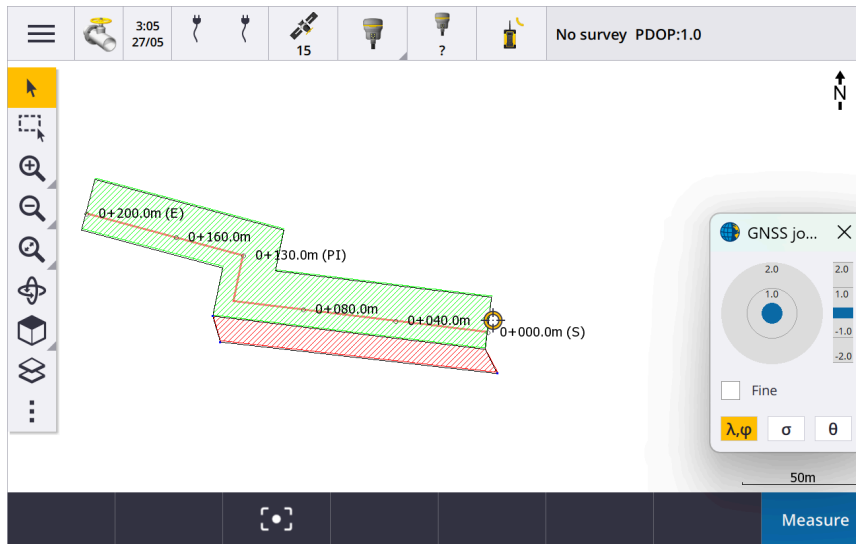
You can survey a pipeline using a GNSS or conventional survey. For this tutorial we will use the GNSS emulator to simulate a connection to a GNSS receiver.


1. Tap and swipe up the menu to see the items at the bottom of the menu. Tap **About / Support / GNSS Emulator**. The **GNSS Emulator** form appears next to the map.
2. To configure the location of the base receiver, tap inside one of the **Base location** coordinate fields and then tap a location in the map. The coordinate fields are updated with the coordinates of the selected position.
3. To configure the location of the rover receiver, tap inside one of the **Rover location** coordinate fields and then tap a location in the map near the beginning of the alignment. The coordinate fields are updated with the coordinates of the selected position.
4. Select the **Open GNSS joystick** check box so that the **GNSS joystick** appears.

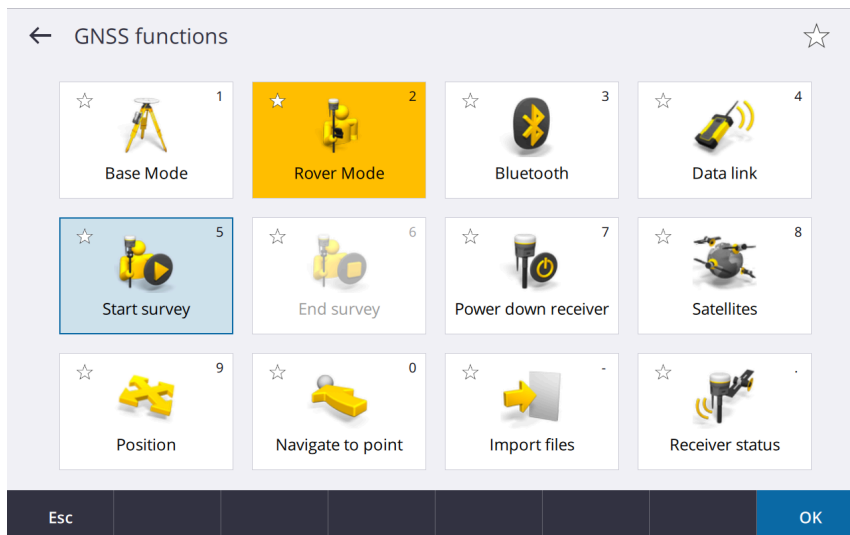
Tip: To move the joystick window, drag the window by tapping in the **GNSS joystick** title bar. Tap to hide the joystick. To show the GNSS joystick again tap and hold in the map and select **GNSS joystick**.

5. Tap **Accept**.

The icons in the status bar update to show you are connected to the receiver and a crosshair on the map shows the current position of the rover.



6. To start the survey, tap the receiver icon  in the status bar, then tap the **Start survey**.



7. If prompted, select the **RTK** survey style.

Note: If this is the first time the **Survey Style** gets set up for **RTK** you will be prompted to select a few settings otherwise skip to step 11.

8. Select **CRMX**.

1:44
8/21

84%

15

?

No survey PDOP:1.0

Broadcast format

RTCM RTK

CMR

CMR+

CRMx

FKP (RTCM)

VRS (RTCM)

VRS (CMR)

Multi station (RTCM)

Multi station (CMR)

RTCM3Net

RTX (internet)

RTX (SV)

Esc

Accept

9. Select **Radio**.

1:44
8/21

84%

15

?

No survey PDOP:1.0

Select method

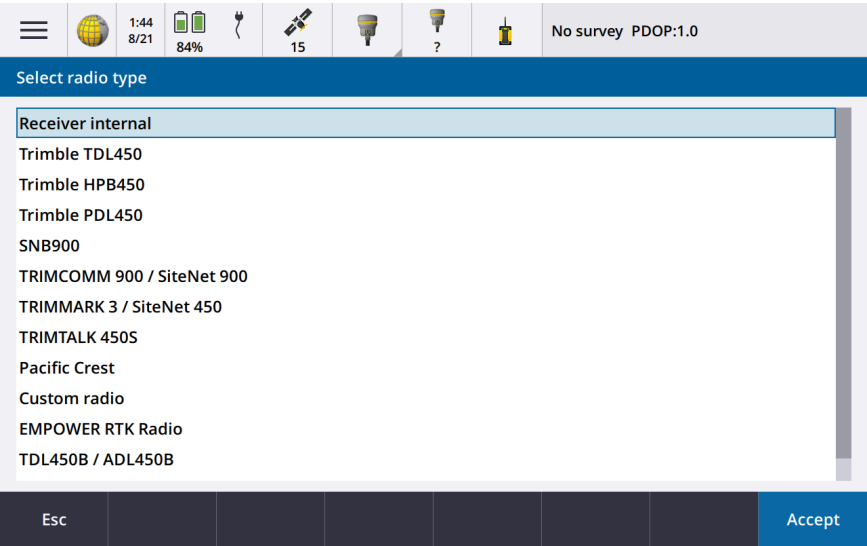
Radio

Internet connection

Esc

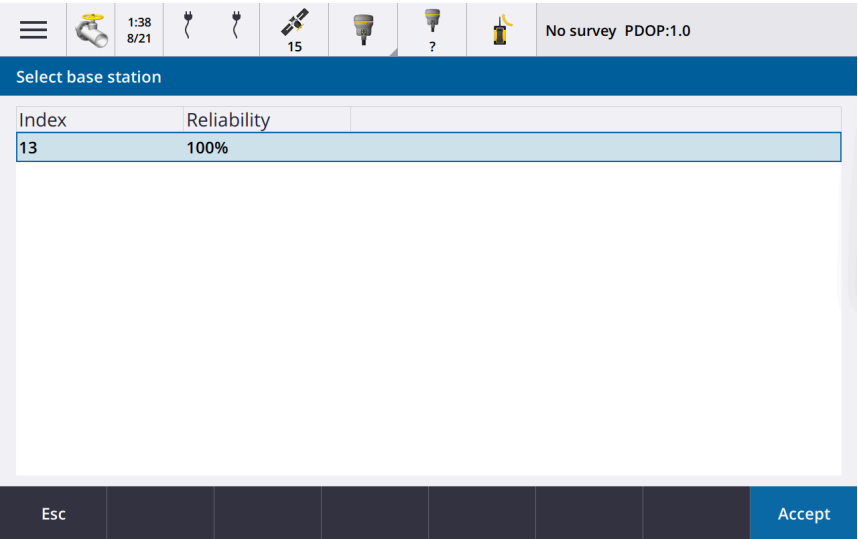
Accept

10. Select **Receiver Internal**.



11. Wait for the **Select base station** to reach 100% and select **Accept**.

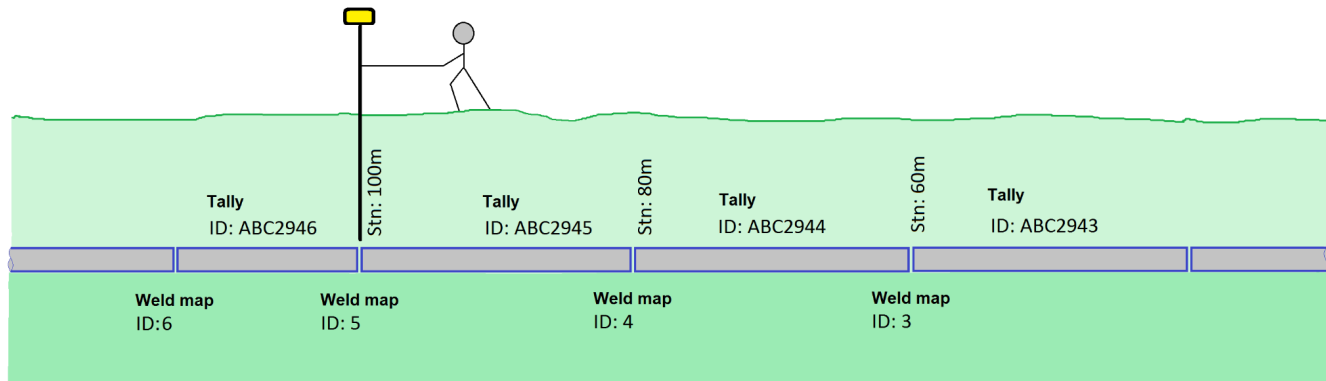
The survey is started.



Survey the pipeline

Refer to the diagram below when:

- Checking the tally
- Mapping welds to joints
- Measuring welds along the as-built pipeline



Tally files

Tally files record the joint attributes. Tally files are typically created or checked as soon as the pipe is strung out, sometimes after welding – but usually before the pipe is placed in the trench. Tally files are created when the pipes are above ground because access is a lot easier, and there is usually less pressure from other contractors at this time. Once the pipe has been lowered into the trench there are contractors wanting to backfill the trench and the surveyor needs to get in to survey the weld and get out quick – they don't want to spend time trying to locate and record all the joint attributes.

Different companies tally in different ways. Some create a new tally by recording the attributes written on the pipe, some have the attributes in a report from the mill manufacturer and they simply check them. Some companies have a slight variation on using the mill data where they add a new unique ID to the mill data. Some companies like the surveyor to create a new tally based on the attributes written on the pipe and have the Pipelines software automatically check the entered attributes against the mill data from the joint manufacturer as the attributes are entered. Different workflows are used for a variety of reasons; the Pipelines software supports multiple workflows so that each user can use the one that suits their methodology best.


The workflow we are using today is to check that the attributes on the pipe match the attributes in the mill report, and then update them if necessary.

The tally files reside in the **Common / Tally** folder. (The tally files in the Project folder are an artifact of cloud data syncing, and should be ignored).

The main tally file is the .csv file, which holds the joint attributes. There is also an index file (*.idx) which records additional information such as check status and position, the joint map file (*.map) which records additional joint map information including time and position, and the definition file (*.dfn) which includes tally configuration details. The sample files provided will be updated as you work through the demonstration.

Check the tally

For the selected tally file, the first five joints have already been checked. To check additional joints:

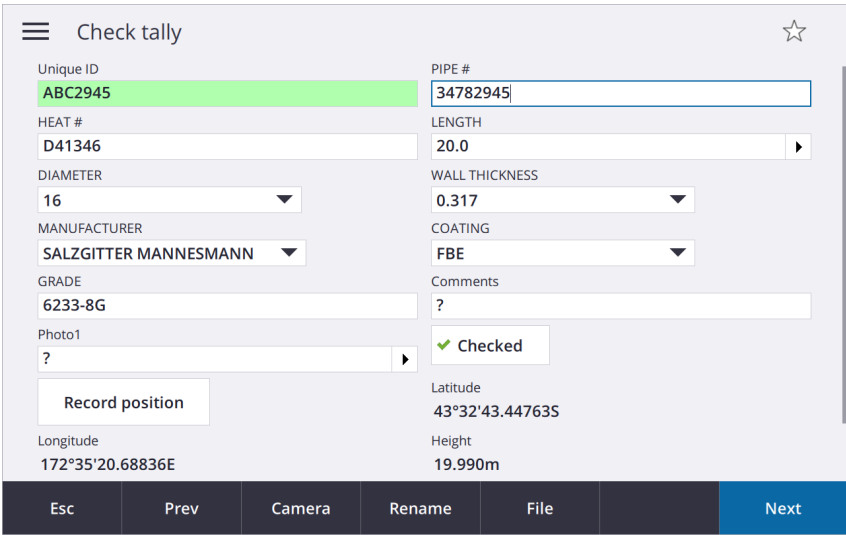
- 7. Tap  and select **Pipeline tally / Check tally**.
- 8. To review the fifth joint:
 - a. In the **Unique ID** field, enter 45 and press **Enter**.

There is no need to enter the entire ID – you only need to enter part of the ID, preferably a unique part like the last few characters.

The Pipelines software does a type of wildcard search in the tally and finds only one joint ID with 45 in the name (joint ABC2945) and populates all fields from the tally file.

Normally these values are written on the physical joint by the manufacturer and they should be checked and updated where necessary.


- b. The green check mark on the **Checked** button indicates that the joint has already been checked.




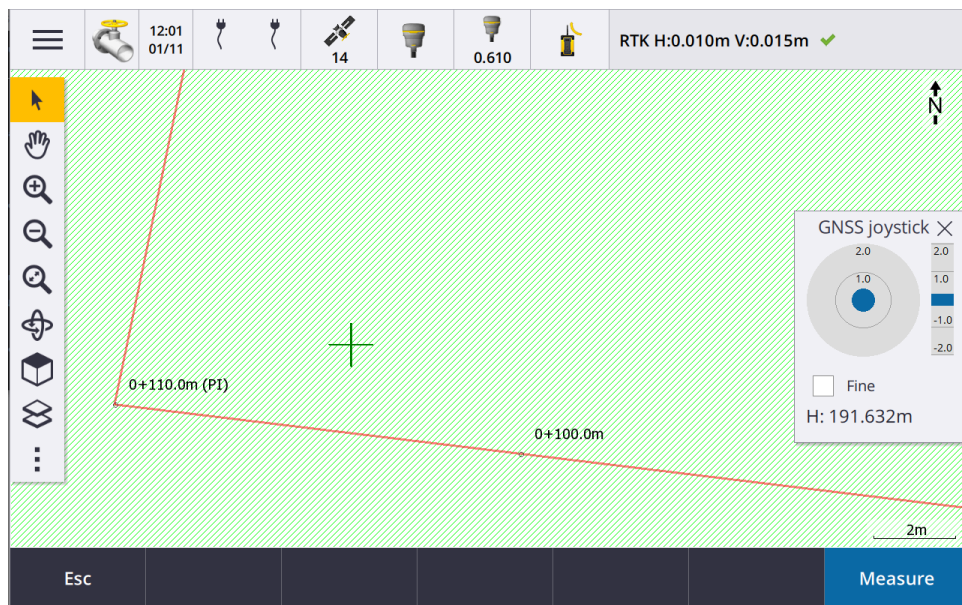
The screenshot shows the 'Check tally' interface. It has a header bar with a hamburger menu icon and the title 'Check tally'. Below the header, there are two columns of input fields. The left column contains: 'Unique ID' (highlighted in green with 'ABC2945'), 'HEAT #' (D41346), 'DIAMETER' (16), 'MANUFACTURER' (SALZGITTER MANNESMANN), 'GRADE' (6233-8G), 'Photo1' (?), and a 'Record position' button. The right column contains: 'PIPE #' (34782945), 'LENGTH' (20.0), 'WALL THICKNESS' (0.317), 'COATING' (FBE), 'Comments' (?), and a green 'Checked' button with a checkmark. At the bottom, there are fields for 'Longitude' (172°35'20.68836E), 'Latitude' (43°32'43.44763S), and 'Height' (19.990m). A bottom navigation bar contains buttons for 'Esc', 'Prev', 'Camera', 'Rename', 'File', and 'Next'.

- 9. To check the next joint:
 - a. Tap **Next**. The unique ID and details are shown for joint ABC2946.

Tip: If the joints on the ground are not in numerical order, instead of entering the entire ID, you can simply enter the last significant characters of the ID into the **Unique ID** field.

- b. Check the attributes listed are correct. The joint length is listed as 20 m, but we have checked the length and identified that this joint has been cut and is now only 10.1 m long.
- c. Change the **LENGTH** to **10.1**. This will leave a 9.9 m partial unit of pipe (PUP).
- d. To return to the map, press **Ctrl + M**, or tap  and then tap **Map** on the far right (in the **Return** to list).

Use the Pan tool to pan along the alignment until you can see stations 100 and 110. Switch to the **Select** tool . Tap and hold on the map between stations 100 and 110, about 3 or 4 m north of the pipeline alignment and select **Move rover here**.



To return to **Check tally**, press **Ctrl + TAB**, or tap  and then tap **Check tally** on the far right (in the **Return** to list).

Tap **Record position** to record your current position.

If you are connected to an RTK receiver then the position will come from the connected receiver – otherwise it will come from the internal receiver used to record the tally. This position is recorded with the tally file – it is not recorded in the job file.

- e. Tap **Checked**.
- f. Tap **Next**.

The Pipelines software detects a joint has been cut and now prompts you to add a PUP to the Tally:

- g. Tap **Yes** to add the PUP to the tally.
- h. Add the suffix "-A" to the unique ID to identify this as a PUP and tap **Enter**. The length is automatically set to the remainder 9.9.

If you know where the PUP is, then at this point you should walk over to the PUP, check the attributes of the PUP and tap **Checked**, record the position and then tap **Add** to add the PUP to the tally file. If the PUP is not sighted, do not mark it as **Checked** until it has been.

Once you tap **Add**, the unique ID and details are shown for joint ABC2947.

10. To check the next joint:

- a. Check the attributes listed are correct.
- b. On your keyboard, press **Ctrl + M** to switch to the Map. Tap and hold in the map a few meters to the north west of the current rover position and select **Move rover here**.

Press CTRL + TAB to switch back to Check tally.

Tap Record position to record your current position.


- c. Tap **Checked**.
- d. Tap **Next**. If required, you can repeat this process to check additional joints. All changes are automatically saved to the tally.

11. Tap **Esc** to exit to the map.

Map weld IDs to joint IDs (joint mapping)

Joint mapping is another process used to collect additional information about the pipeline while it is still above ground. This makes the survey process faster and easier once the pipeline is in the trench.

The main joint mapping process is to record the attributes of each weld as well as the joint ahead ID.

1. Tap  and select Pipeline tally / Joint mapping.
2. In the **Joint mapping** screen, tap the arrow at the end of the first field currently called **Loose end ID**, and select **Next weld ID**.

The field is now called **Weld ID** and displays weld ID 6.

3. Complete the fields for Weld ID 6:
 - a. In the **Joint behind ID** field, enter **46**. Because joint ABC2946 was cut earlier, the Pipelines software finds two matches: joint ABC2946 and joint ABC2946-A. Select joint **ABC2946**.
 - b. In the **Joint ahead ID** field, enter **47**. The Pipelines software finds only one match for 47 and autocompletes the field with ABC2947.

The next four fields displayed are the additional fields you configured in Trimble Sync Manager. The list in the **WELD COATING** field was created in the Feature Definition Manager, and provides a selection of coatings to choose from.


- c. In the **WELDER ID** field, enter the welder's initials: **ME**.
 - d. In the **HEAT #** field, enter **12345**.
 - e. In the **WELD COATING** field, select **ARO**.
 - f. In the **TEMPERATURE** field, enter **17**.
4. Tap **Record position** to record the current position of the weld.

This position is recorded with the joint map file; it is not recorded in the job file.

5. Tap **Add** and then tap **OK**.

The **Weld ID** automatically increments to 7 and the joint IDs update with the next IDs: the joint ahead previously entered becomes the joint behind, and the joint ahead defaults to the next joint from the tally file.

If the **Default next joint ID from tally** option was not enabled then the joint ahead field would have been empty, ready for you to type in the ID of the joint ahead lying on the ground in front of you.

The  button displayed between the joint behind and joint ahead ID is used to change direction, depending on whether you are joint mapping upstream or downstream.

6. Complete the fields for Weld ID 7 and then tap **Add**.
7. Joint ABC2947 also has a bend that we want to record additional information for. To do this:
 - a. In the **Method** field, select **Bends**.
 - b. In the **Bend ID** field, enter **B1**.
 - c. In the **Joint ID** field, enter **47**, and then select **ABC2947**.
 - d. In the **BEND TYPE** field, select **Field**.
 - e. In the **DIRECTION 1** field, select **Right**.
 - f. In the **ANGLE 1** field, enter **90**.
 - g. In the **DIRECTION 2** field, select **Sag**.
 - h. In the **ANGLE 2** field, enter **10**.

- i. Tap **Record position** to record the current position of the bend.
8. Tap **Add**.

The Bend attributes have now been added to the joint map. When the bend is surveyed, the bend attributes recorded in the joint map are retrieved and stored with the measured bend location.

9. Tap **Esc** to exit the **Joint mapping** screen and return to the map.

***Tip:** Because the system is automatically setting default values for the ahead and behind IDs after adding a new ID, when you exit joint mapping the software asks if the currently displayed values need to be saved. If you have already tapped **Add**, then when asked on exit to **Add the currently displayed joint map?** you would usually tap **No**.*

Measure welds and bends

We have configured the system to compute cover from the last point that has a code NG (natural ground) measured prior to the weld. Our field workflow is therefore to measure a natural ground shot before the weld. We'll be using the GNSS emulator to change our position to emulate real field work.

1. Tap and hold a point on the map about 2 m north of station 100.0 and select **Move rover here**.
2. We want to measure a natural ground shot:
 - a. Tap **Measure**.
 - b. Make sure the **Method** is **Topo point**.

- c. Tap **Options** which is found at the bottom of the screen. Enable the **Auto store point** check box. Tap **Accept**.

***Tip:** You can make these changes to the survey style to have them applied for all subsequent surveys.*

- d. In the **Measure points** screen, enter: a suitable point name; **Code: NG; Antenna height: 2 m** and then tap **Measure**.
3. We now want to measure the weld:
 - a. Tap near the bottom of the position circle in the **GNSS joystick** popup window to change your position by 2 m south, and then tap in the **Height** bar at about -1.6 m. We have now 'moved' from our NG location down into the trench and are ready to measure the weld.

- b. In the **Measure points** screen enter the **Code: WELD**, and tap **Measure**. The measurement auto-completes. Because WELD is configured to have JOINT attributes, the compute cover routine is automatically invoked.
- c. The **Compute pipe cover** screen now displays something similar to the following:

The screenshot shows the 'Compute pipe cover' screen. At the top, there's a status bar with icons for menu, location, time (11:08), date (22/02), battery (85%), signal strength, and RTK status (RTK H:0.010m V:0.015m). Below this, the screen title is 'Compute pipe cover'. The main area contains several input fields and labels: 'Point name' (1030), 'Elevation' (6.050m), 'Ground point name' (1028), 'Code' (NG), 'Distance to ground point' (1.561m), 'Ground elevation' (7.917m), and 'Depth of cover' (1.867m). A 'GNSS joystick' overlay is on the right, showing a circular control with a blue dot and a 'Fine' checkbox. The bottom bar has four buttons: 'Esc', 'Closest', 'Options', and 'Store'.

The weld point name and elevation are displayed, with the name, code, distance to ground point and its elevation. The **Depth of cover** computed between these two points is also displayed.

At this point you still have the flexibility to pick another point, enter the ground elevation or depth of cover if you have computed it using other means, or you could tap **Closest** to select the closest point.

For more information on other options such as computing the cover from a surface or alignment, or a CSV file of topo points, refer to the *Pipelines Help*.

- d. Tap **Store**.

If the **Distance to ground point** was more than 5m, you would have seen a warning. If the **Depth of cover** was less than 1.5 m you would also have seen a warning.

The depth of cover check is being made against the depth of cover CSV file selected in the **Pipeline options** screen (between stations 0 and 115 we need 1.5 m cover).

The **Pipelines attributes** screen now appears.

Pipelines Cover.csv	
1	Station, Cover
2	0, 1.5
3	115, 2
4	130, 1.5
5	200, 1.8

- e. Enter an **XRAY** value of **6** (this would be written on the pipe in front of you).

The **WELDER ID**, **JOINT BACK**, **JOINT AHEAD**, **HEAT #**, **WELD COATING**, and **TEMPERATURE** fields are completed from the Joint map file you recorded earlier. The **COVER** and **STATION** fields are computed when the weld is measured.

- f. Tap **Details**. Check the attributes of the Joint back are correct. Note that the Joint back **LENGTH** that we modified earlier is shown as 10.1. Then tap **Next** and check the attributes of the Joint ahead are correct. Tap Close.

Note: *If you modify the **LENGTH** at any time anywhere in the Pipelines software by more than the minimum configured in Options, the software automatically prompts you to create a PUP.*

- g. Let's emulate taking a photo. Copy the **Pipelines.jpg** file from the **Trimble Access Pipelines demo files** folder in the sample data you downloaded previously and paste it into the Pictures folder. The Pipelines software detects the photo added to the Pictures folder and moves it to the **Trimble Data\Projects\Pipelines Demo\Pipelines Files** folder. The photo filename is automatically added to the photo attribute field.

- h. Tap **Accept** and then tap **Store** to return to the **Map** screen.

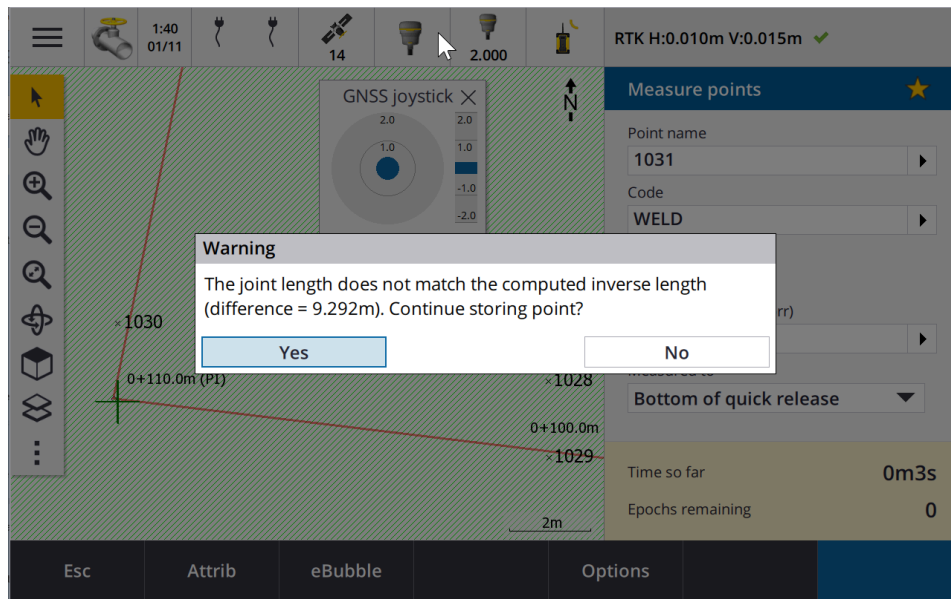
4. Measure another natural ground point near the next weld:

- a. In the **GNSS joystick** window, tap in the **Height** field to move up 1.6 m out of the trench and then tap and hold in the map about 2 m north of station 110.0 m and select **Move rover here**.
- b. In Pipelines, tap **Measure**, enter the code **NG** and then tap **Measure**. The natural ground shot is measured and stored.

5. Measure the weld:

- a. Tap near the bottom of the position circle in the **GNSS joystick** popup window to change your position by 2 m south, and then tap in the **Height** bar at about -1.6 m. We have now 'moved' from our natural ground point location down to the weld in the trench.
- b. Enter the code **WELD** and then tap **Measure**.
- c. In the **Compute pipe cover** screen, check the details and if they look OK, tap **Store**. If they don't look OK, tap **Esc**, move your position and then measure again.
- d. The **Pipeline attributes** are displayed. The XRAY value has automatically updated to the next value (7) as well as the joint back and ahead IDs. Check as required and tap **Store**.

- e. Unless you got extremely lucky, the software will now tell you that the length between this weld and the previously measured weld does not match the length defined in the tally (the tolerance is 0.2 m):



When measuring real welds with correct tally lengths you would not normally see this message. However, if the tally is wrong because a joint has been cut and this was not identified earlier and corrected, then the software will trap the error and give you a chance to correct it.

Tap **Yes** to store the point anyway.

If you didn't see the joint length mismatch warning, go to **Review** and delete the weld you just stored. Using the GNSS emulator to move your position by more than 0.2 m, then measure and store the same weld again.

6. Measure the bend:

- a. In Pipelines, tap **Measure**, enter the code **BEND** and then tap **Measure**.

The bend is near the previous weld, and so we are using the NG measurement we took before the weld to check the cover on the bend as well.


- b. In the **Compute pipe cover** screen, check the details and then tap Store.

- c. In the **BEND ID** field, enter **B1**. Joint number ABC2947 is displayed along with the bend attributes you entered earlier.

7. Tap **Store**.

Send updates from the field

To send tally updates to Trimble Sync Manager from the field:

1. Tap  and select **Pipeline tally**.
2. Select **Sync tally files**.
3. Tap **Upload**.

The tally and joint map files and associated files in the Trimble Data\Common\Tally folder are uploaded to the cloud. The files are also temporarily copied to the Upload folder in the Tally folder. Trimble Access uses the files in the Upload folder to check for changes to the files in the Tally folder. Other project changes including job data are uploaded at the same time.

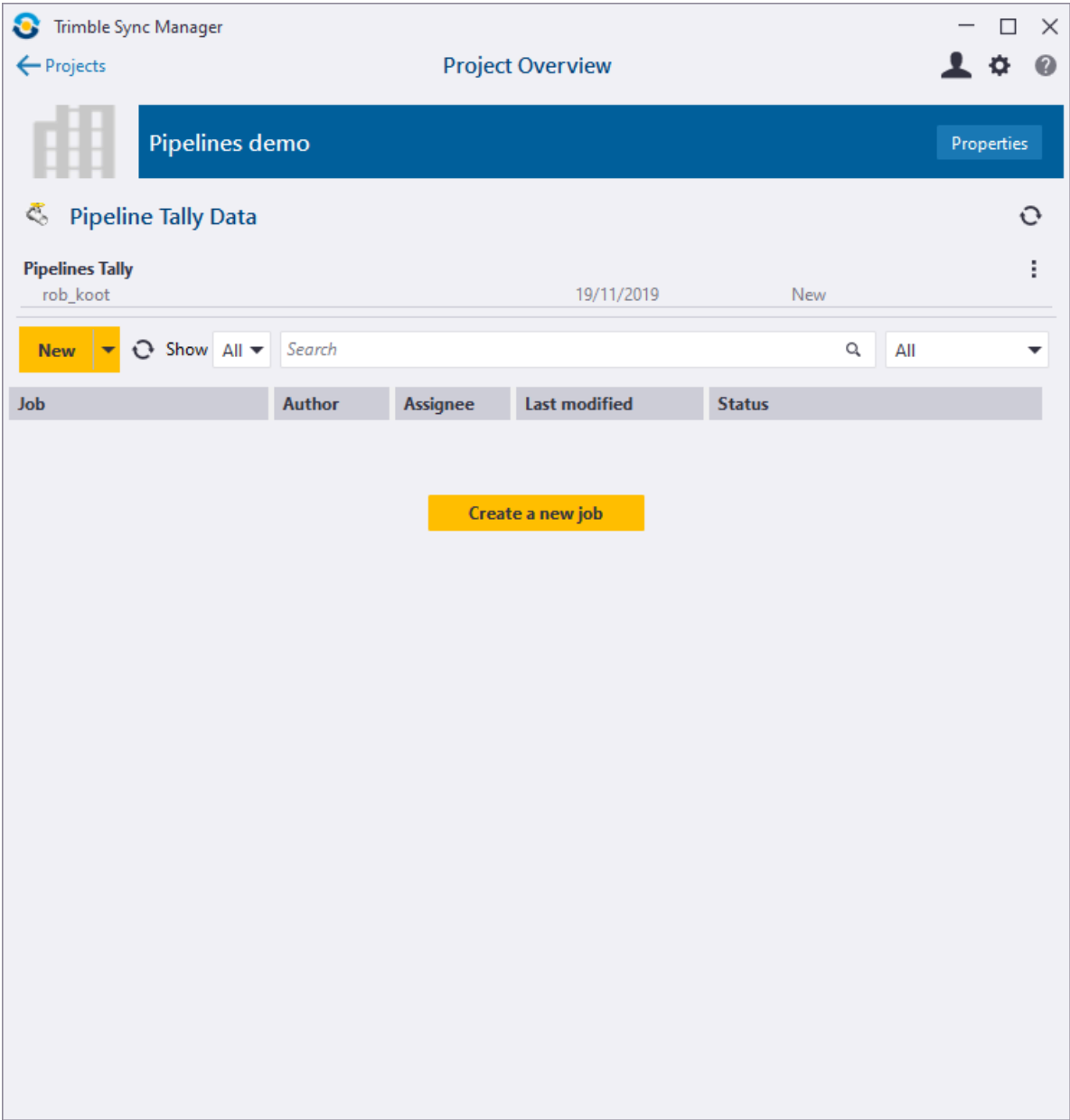
4. Tap **Close**.

The usual workflow for a pipeline project is that at the end of each day, each field crew uploads their updated tally and joint map files to the cloud. In the office, the changes from the field are merged to the primary set of tally files using the **Merge Tally File** function in Trimble Sync Manager. Once the updates from all field crews have been merged, field crews can use the **Sync tally files** screen to download the updated set of master tally files at the start of the following workday.

Tip: When downloading a new Pipelines Project, always Download the Primary tally files before creating tally files in the field. It is important to always start the survey with the latest set of Primary tally files.

Merge updates in the office and publish new Primary tally files

- 1. Start Trimble Sync Manager and open the **Pipelines demo** project.
You will see the tally data from the field has arrived in Trimble Sync Manager.



- 2. Click the row displaying your username, date and **New** status.

Trimble Sync Manager

Project Overview Merge Tally

Pipelines Demo

Pipelines Tally nathaniel_thomas

▼ Joints Merging: 8

✓	Unique ID	Pipe #	Heat #	Length	Diameter	Wall thickness	Manufacturer	Coating	Grade	Comments	Photo1	Position
✓	ABC2941	34782941	D41346	20.0	16	0.317	SALZGITTER MANNESMANN	FBE	6233-8G			-43.5455
✓	ABC2942	34782942	D41346	20.0	16	0.317	SALZGITTER MANNESMANN	FBE	6233-8G			-43.5454
✓	ABC2943	34782943	D41346	20.0	16	0.317	SALZGITTER MANNESMANN	FBE	6233-8G			-43.5454
✓	ABC2944	34782944	D41346	20.0	16	0.317	SALZGITTER MANNESMANN	FBE	6233-8G			-43.5454
✓	ABC2945	34782945	D41346	20.0	16	0.317	SALZGITTER MANNESMANN	FBE	6233-8G			-43.5454
✓	ABC2946	34782946	D41346	10.1	16	0.317	SALZGITTER MANNESMANN	FBE	6233-8G			-43.5454
Last seen 8/20/2025 1:38:07 PM with, Length=20.0, Manufacturer=Salzgitter Mannesmann												
✓	ABC2947	34782947	D41346	20.0	16	0.317	SALZGITTER MANNESMANN	FBE	6233-8G			-43.5454
Last seen 8/20/2025 1:38:07 PM with, Manufacturer=Salzgitter Mannesmann												
✓	ABC2946-A	34782946	D41346	9.9	16	0.317	SALZGITTER MANNESMANN	FBE	6233-8G			No Posit

▼ Joint Mappings Show only invalid mappings Merging: 8

✓	ID	Joint Behind	Joint Ahead	Method	TimeStamp	Note	Position
✓	LE1		ABC2941	LooseEnd	2015-04-30T11:20:12		-43.54553480 172.59017901 21.223 Survey,704817.386 288916.657 15.149,0
✓	1	ABC2941	ABC2942	Weld	2015-04-30T11:22:09		-43.54549650 172.58993108 19.990 Survey,704821.609 288896.613 13.916,20
✓	2	ABC2942	ABC2943	Weld	2015-04-30T11:24:49		-43.54547772 172.58969249 19.990 Survey,704823.663 288877.328 13.916,39

Publish new primary files Cancel

In the **Joints** section you can see two changes. Joint ABC2946 is highlighted to show there was a change made to the tally which in this case was the modification to the joint length. You can also see the new PUP record.

In the **Joint Mappings** section you can see new joint mappings. If you look at the timestamps you will see some of these are much older and came from the .map file we copied into the Tally folder. You can also see new Weld ID 6 and 7, and bend B1.

You can make corrections to any of the data at this point if required, and you can clear the check box if there is data you do not want to merge.

If there were multiple crews collecting tally and weld map data you would repeat this process for each user's set of data.

3. We are happy with the data here, so click **Publish new Primary File** to publish the new primary tally data files to the cloud and make this data available to all field crews that are members of this project.

Field crews can download the new primary tally files on the controller when required, typically at the start of each day. To do this, in Trimble Access select the **Pipeline tally** menu and then select **Sync tally files** and tap **Download**.

4. To generate reports on the master tally data in Trimble Sync Manager, first minimize the **Joints** section and then expand the **Reports** section. Select the reports you want to generate. For each report type, expand the report type section and complete any fields and then click **Generate**.

When the reports have been created you can click on them to review them.

The screenshot shows the Trimble Sync Manager interface. At the top, there's a header with the Trimble Sync Manager logo, a back arrow labeled 'Project Overview', and the title 'Pipeline Dashboard'. On the right, there are icons for user, settings, and help. Below the header, there's a 'Pipelines Tally' section with a grid icon. The main content area is divided into sections: 'Joints' (21 items), 'Joint mappings' (9 items), and 'Reports'. The 'Reports' section is expanded, showing a 'Generate' button. Below this, there are several report types with checkboxes and dropdown menus: 'Optional Start Date' (calendar icon, 18), 'Optional End Date' (calendar icon, 18), 'Checked joint list' (checkbox checked), 'Sort output by time stamp' (dropdown: Yes), 'Report on' (dropdown: All joints), 'Cut out welds report' (checkbox checked), 'Joint details csv file' (checkbox checked), 'Include only checked joints' (dropdown: Yes), 'Include only modified joints' (dropdown: No), 'Joint details report' (checkbox checked), 'Joint map list' (checkbox checked), 'Select the display order' (dropdown: Sequence order), 'Joint mapping csv file' (checkbox checked), and 'Joint mapping KML file' (checkbox checked). A 'Download' button is at the bottom right.

Section	Count
Joints	21
Joint mappings	9
Reports	Generate

Report Type	Optional Start Date	Optional End Date	Checked joint list	Sort output by time stamp	Report on	Cut out welds report	Joint details csv file	Include only checked joints	Include only modified joints	Joint details report	Joint map list	Select the display order	Joint mapping csv file	Joint mapping KML file
	18	18	<input checked="" type="checkbox"/>	Yes	All joints	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Yes	No	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Sequence order	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Download

Pipeline reports

The sample files you downloaded include a **Reports** folder. This folder contains some sample reports generated from the data in the sample job provided.

There are a variety of reports and files that can be created on the controller or generated using Trimble Sync Manager. The easiest way to generate reports is using Trimble Sync Manager. Reports generated using Trimble Sync Manager contain data for the **primary** tally file set, whereas reports generated on the controller contain data only for the tally files on the controller. For more information, refer to the **Pipelines projects** section of the [Trimble Sync Manager Help](#).

Available report types are listed below.

Job reports

- **Pipeline Asbuilt Joint Details CSV**

CSV file listing measured points and their attributes.

- **Pipeline Computations Report**

Contains intersection computation details as well as deflection angle computation details if these cogo routines have been used.

- **Pipelines Asbuilt KML file**

KML file including the joint and its attributes, surveyed points such as NG shots, weld measurements and their attributes.

- **Pipelines Cover Report**

An HTML report listing measured pipeline points with their station, cover, whether they meet minimum depth, ground elevation and ground point name used. You can choose whether to include only points that do not meet minimum depth. I

- **Pipelines Welds Report**

A word report with an image of a weld per page, along with the joint back attributes, weld attributes, and joint ahead attributes.

Tally reports

- **Checked joint list**

HTML report listing the joint ID, whether the joint ID has been modified and a timestamp.

You can choose whether to sort the data by timestamp.

- **Cut out welds**

HTML report listing the cut out weld ID, joint behind and joint ahead, timestamp, station, and any recorded notes.

- **Joint details CSV file**

CSV file listing all the attributes in the tally file, including position information if recorded.

- **Joint details report**

Similar in content to the **Joint details CSV file**, except it is an HTML report and does not include position information from the tally file.

You can choose to include only checked joints and to include only modified joints.

- **Joint map list**

HTML report reporting joints that have been mapped.

You can choose to sort the data by sequence order or file order.

- **Joint mapping KML file**

KML file with the weld mapped positions and the joint behind and ahead IDs.

KML files are typically viewed using Google Earth. Tap the weld ID to see weld attributes.

- **Joint mapping report**

Similar to the **Joint map list**, except it includes the joint length and any notes recorded in the weld map.

You can choose to sort the data by sequence order or file order.

- **Joints KML file**

KML file with a joint icon displayed at the position recorded in the tally.

KML files are typically viewed using Google Earth. Tap the icon to see joint attributes.

TBC Export

- **TBC Pipeline Attributes.xlsx**

Pipeline jobs imported into Trimble Business Center can be exported by selecting **Pipeline Attributes** from the Explore section in the **Data** tab.

This sample **TBC Pipeline Attributes.xlsx** spreadsheet report was created after importing the Pipelines Demo job into Trimble Business Center.

Repeating the demonstration

To redo the demonstration at any time, create a new project in Trimble Sync Manager, and then before you download the new project delete the following files on the device running Trimble Access so that you start again with 'clean' tally files:

1. Delete the tally files in the **Trimble Data/Common/Tally** folder.
2. Delete the Pipeline tally.xml file in the **Trimble Data/System Files** folder.

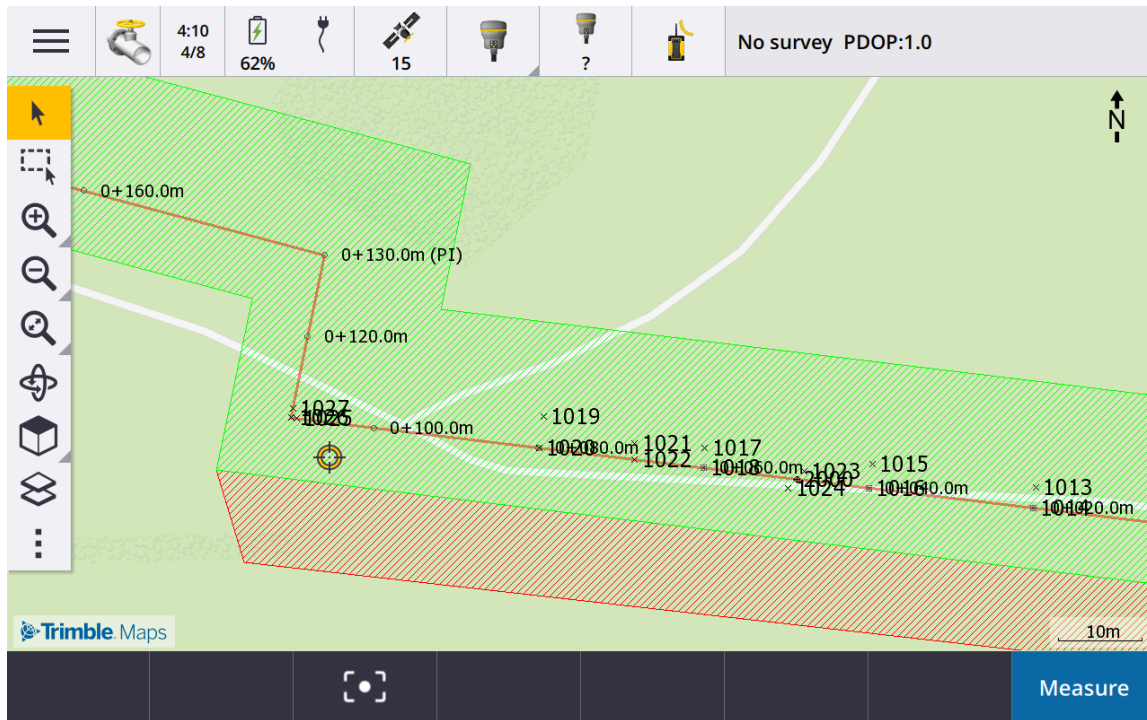
Additional features

There are a lot of other features available in Pipelines that we have not demonstrated. Some additional information about a few of them is provided below:

- Inclusion zones
- Exclusion zones
- Computing cover I Corridors
- Computing an intersection angle
- Computing deflection angles
- Averaged laser positions
- Printing joint labels on a P4T mobile Bluetooth printer

Some of these additional features are demonstrated in the **Pipelines Demo** job provided in the **Trimble Access Pipelines demo files** sample data that you downloaded at the beginning of this demo guide. To view the demo job that includes the necessary data, **copy** the job into your **Pipelines Demo** Project folder on the controller, and open the **Pipelines demo** job.

1. With the **Pipelines Demo** job now opened you will be able to see a series of points already collected that will be used to simulate these **Additional Features**.

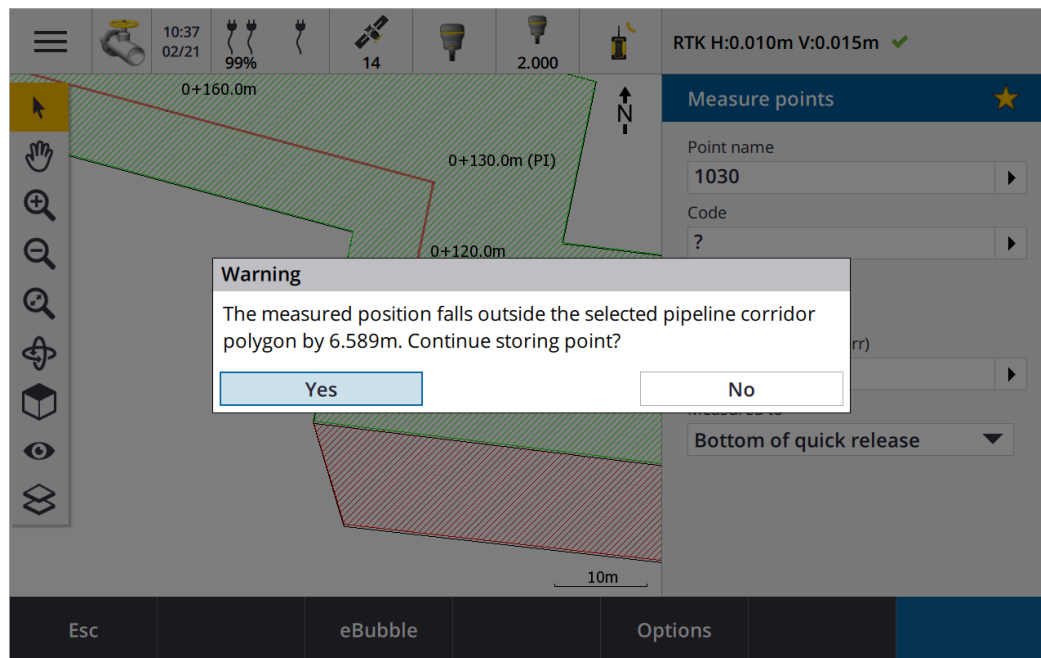


Inclusion zones

The corridor specified in **Pipeline options** defines the working inclusion zone. If you try to measure and store a point outside the corridor the software warns you.

To demonstrate this:

1. In the map, tap and hold a location **outside** of the green hatched **inclusion** zone, and outside the red hatched exclusion zone. Select **Move rover here**.
2. Tap **Measure** and then **Store**.

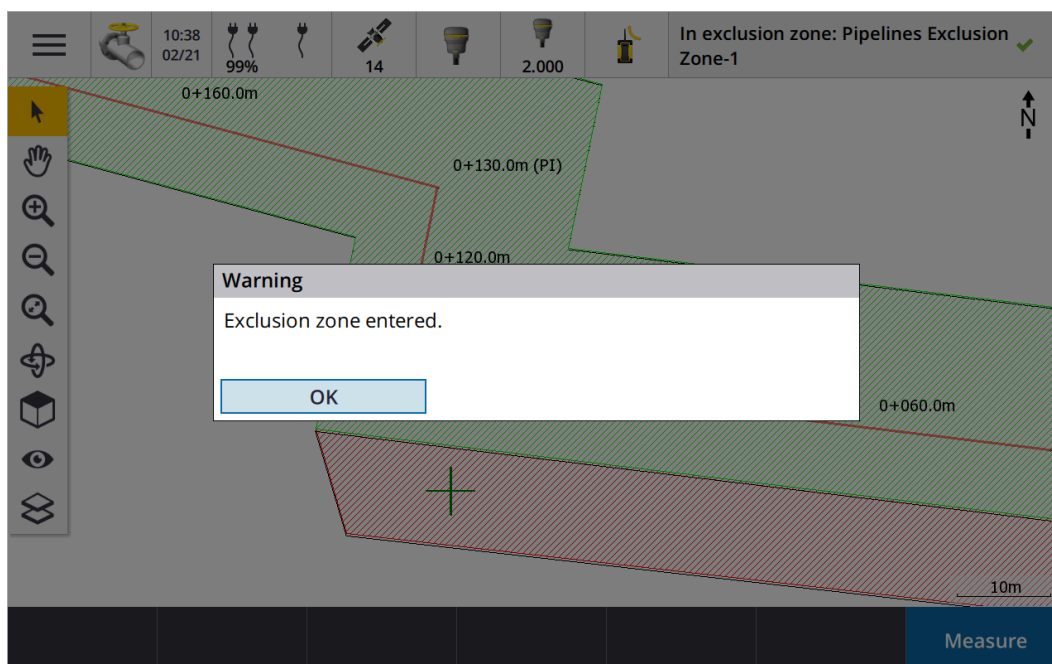


Exclusion zones

The exclusion file specified in Pipeline options defines areas you should not enter, such as wetlands. If you enter an exclusion zone the software warns you immediately, and if Pipelines is configured to record zone entry and exit, it records the position and time you entered and exited the exclusion zone.

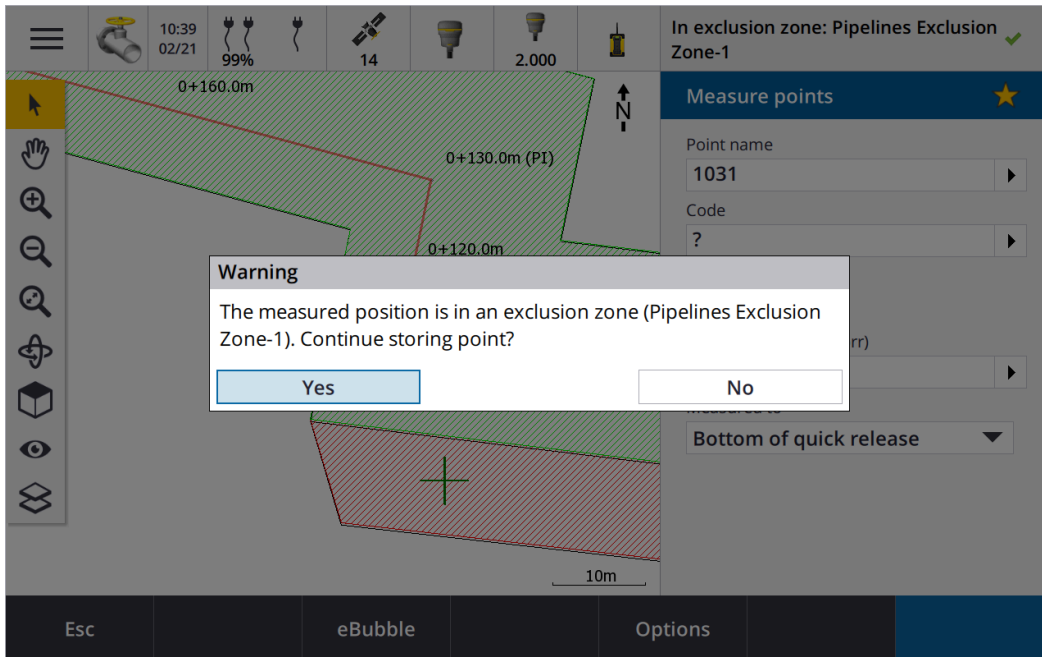
To demonstrate this:

1. In the map, tap and hold a location inside the red hatched exclusion zone and select **Move rover here**. The software warns when you enter the exclusion zone.

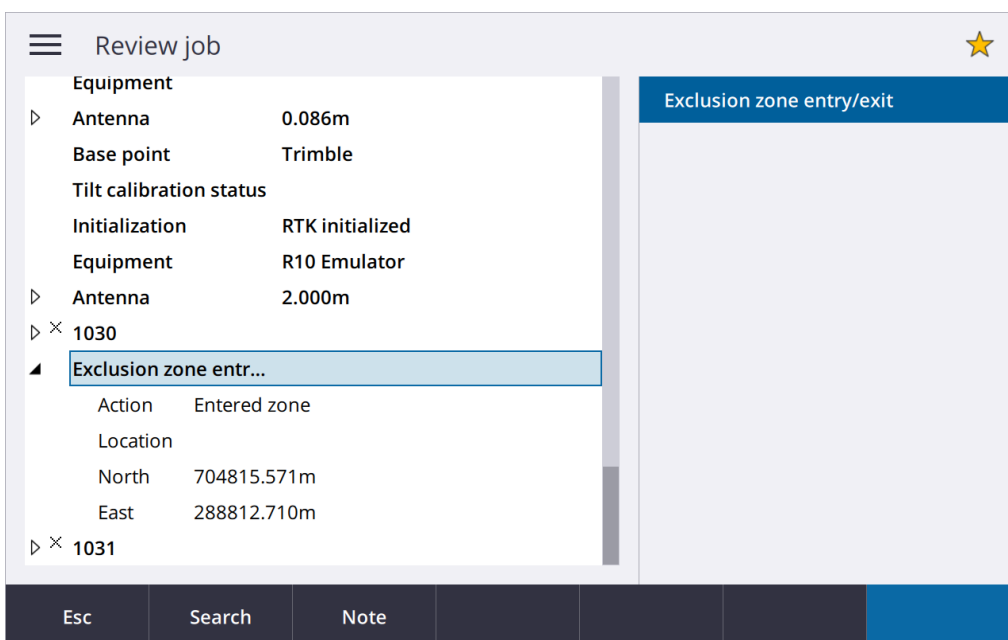


2. Tap **OK**.
3. Tap **Measure** and then **Store**.

The software warns that the measured position is within an **exclusion zone**:



4. If you choose to continue and store the point, it then warns that the measured position is **outside the inclusion zone**. Once again, you can choose to store the point if you wish.
5. Tap **≡** and select **Job data / Review job**, where you can see the exclusion zone entry and exit records look similar to the following:



Computing cover

We demonstrated computing cover from the last measured natural ground topo shot.

Cover can be computed in a variety of other ways:


- From the closest point (with or without a matching code).
The closest point could come from the current job, a linked job, or a CSV file.
- From an alignment – assuming of course the vertical component for the alignment was created from the natural ground.
- From a surface.

We demonstrated cover checks from a simple CSV file defining the station and cover required at that station, but cover can also be defined by a fixed value set in options.

Corridors

We demonstrated corridor support using a polygon definition from a DXF file, but a simple corridor can also be defined with left and right offsets from the alignment.

All points measured using the Pipelines software record whether a corridor had been specified, and if one has the software records the left and right distance to the corridor.

1. Using the **Pipelines Demo** job.
2. Tap  and select **Job data / Review** job. We're going to take a look at point 1022, which is a measurement of a VALVE.
3. To locate point 1022 in the job, tap **Search**. In the **Type** field, select **Point by name** and then enter **1022**. Tap Up.
4. Tap the arrow beside **1022** to expand the details about the VALVE. Tap the arrow beside **Pipeline data** to see the joint attributes recorded from the tally, and then tap the arrow beside **Corridor** distances to see the left and right distances.

Review job

Length20.0

Diameter16

Wall thickness0.317

ManufacturerSALZGITTER MANNESMANN

CoatingFBE

Grade6233-8G

Comments

Photo1

Corridor distances

Polygon definitionYes

Point inside corridorYes

Dist to left bdy7.470m

Dist to right bdy15.030m

Point

Point name1022

CodeVALVE

MethodTopo point

Northing704823.275m

Easting288848.657m

Elevation15.473m

Search classNormal

Esc

Search

Note

Delete

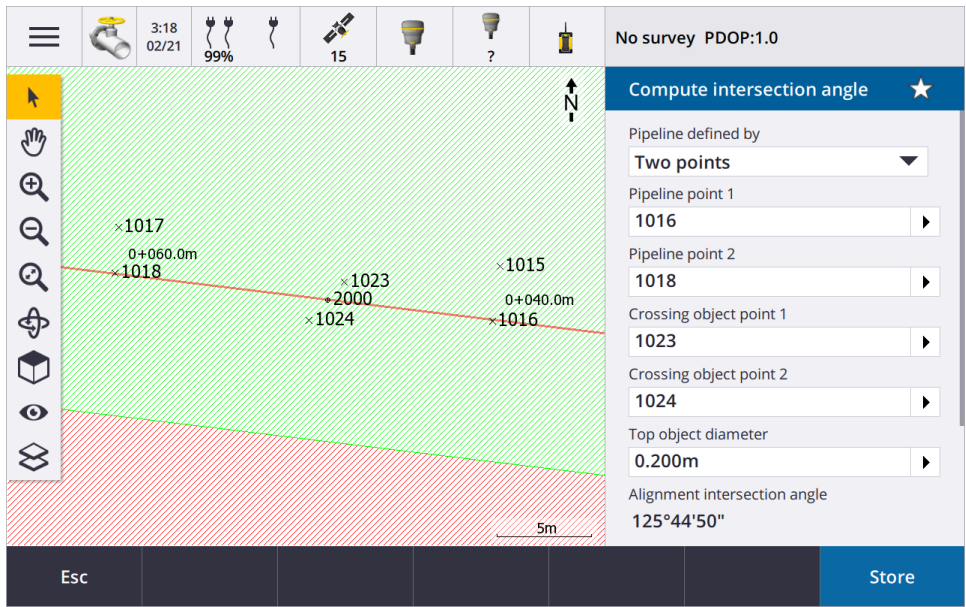
Options

Edit

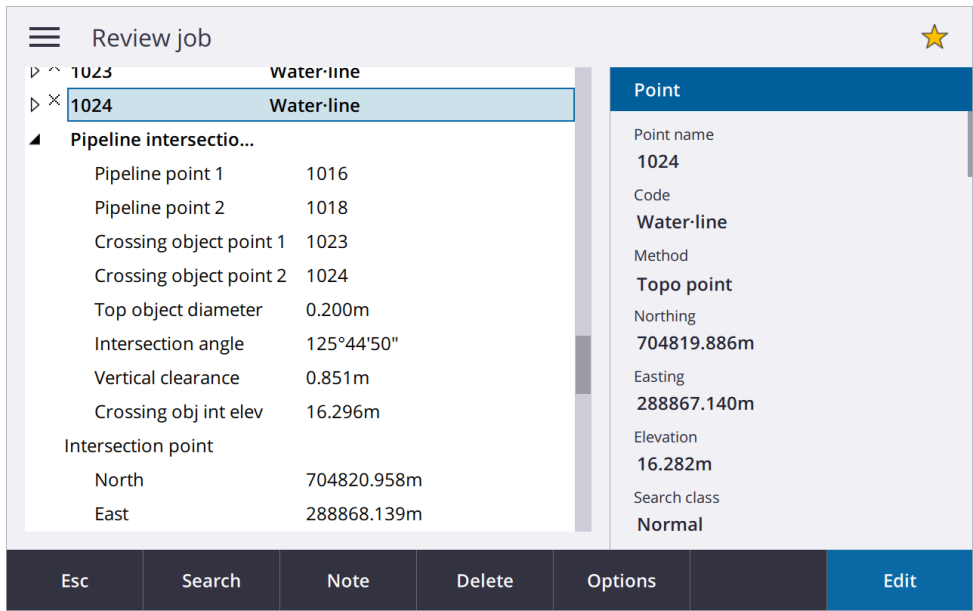
Computing an intersection angle

The Pipelines software enables you to compute the intersection angle for an object crossing the pipeline. The function can be accessed from the Map (when 4 points are selected), or from the **Cogo** menu tap **Compute intersection angle**. The intersection can be computed between the alignment and two other points, or from the intersection of two lines created between four points. You can enter the diameter of the top object to compute the separation between the two objects, and you can also compute and store a point at the intersection of the two alignments.

The **Pipelines Demo** job includes 4 points that were used to compute an intersection. You can open the job and compute the same or a different intersection yourself:



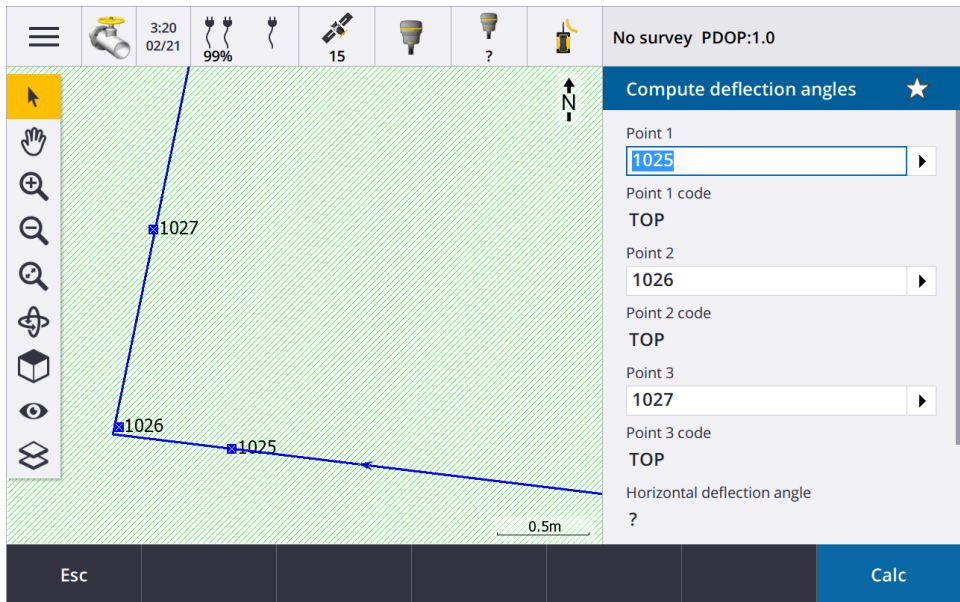
Alternatively, review the information recorded in the job, or check out the **Pipeline Computations Report.htm** provided with the sample data you downloaded.



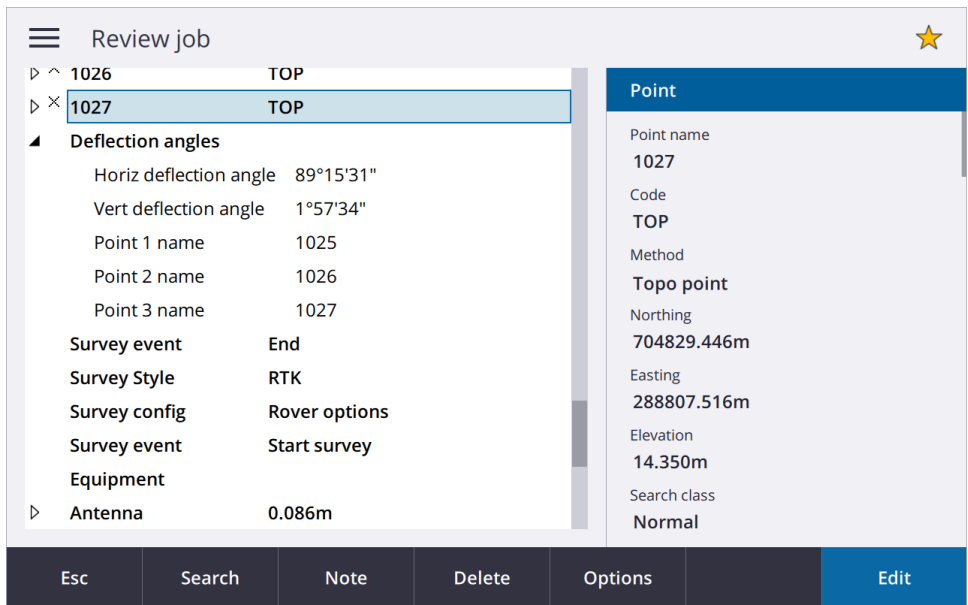
Computing deflection angles

The Pipelines software enables you to compute the deflection angles (horizontal, vertical, and true deflection angles) between three points.

The **Pipelines Demo** job includes 3 points that were used to compute the deflection angles. You can open the job and compute the same or a different deflection angle yourself:



Alternatively, review the information recorded in the job, or check out the **Pipeline Computations Report.html** provided with the sample data you downloaded.



Computing laser positions

When measuring the weld directly on the pipeline is difficult, you can take 3 measurements to one side of the pipeline using GNSS and for each measurement take a shot to the weld using a laser rangefinder. You can then use the **Averaged laser position** option in the **Cogo** menu to average the 3 laser shots to provide a good position in difficult-to-reach locations.

Printing joint labels on a P4T mobile Bluetooth printer

The Zebra P4T mobile Bluetooth® printer can be used to print durable labels, including a barcode, in the field with the tally attributes for affixing to a joint.



For more information

For more information, refer to the following resources:

Ressource	URL	Information Provided
Trimble Access Help Portal	https://help.fieldsystems.trimble.com/trimble-access/latest/en/home.htm	Complete help topics for Trimble Access in an easy to search format.
Trimble Access Release Notes Portal	https://help.fieldsystems.trimble.com/trimble-access-release-notes/en/home.htm	Changes to the software and bug fixes for each software release.