GEOKON | TRUSTED MEASUREMENTS®

Product Tutorial

Using Agent Software with GeoNet Data Hosting Systems

Topics Covered in this Tutorial

- Software Installation
- Program Overview
- Projects and Networks
- Downloading Data
- Sensors
- Charts

Software Installation

Before Using Agent

- Make sure all Loggers have successfully joined the Network
- Cellular Gateways and Loggers must already be commissioned using the api.geokon.com
- Local (non-cellular) Gateways need to be connected to the computer using the factory supplied cable
- If using an exterior (add on) serial server or cellular modem, the device URL or IP Address must already be established
- For information regarding the installation of GeoNet devices, refer to the Installing GeoNet Wireless Data Hosting Systems tutorial and the GeoNet manual

Program Download

1. Before installing Agent onto a computer, verify that it meets these minimum system requirements:
   - Microsoft® Windows® 7, 8, or 10; running a 32-bit or 64-bit operating system
   - 1 GB of RAM (physical memory) available during runtime
2. Navigate to www.geokon.com/Software
3. Select the appropriate installer based on the operating system of the computer:
   - For 32-bit systems, download “Agent Software (x86)”
   - For 64-bit systems, download “Agent Software (x64)”

   (To determine the computer’s operating system, click Start , type “system” in the start search box, click “System” in the control panel list, then look for “System Type:”)

Installing the Software

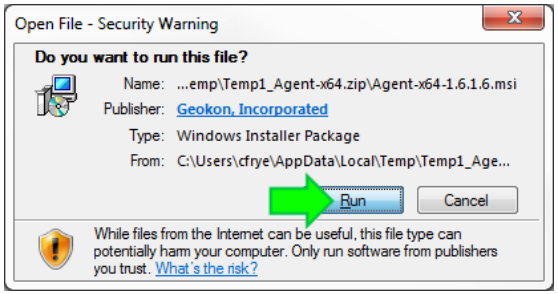
1. Locate and open the Agent-x64.zip (or Agent-x86.zip) folder that was downloaded from the GEOKON website

Agent-x64.zip

2. Double click on the windows installer

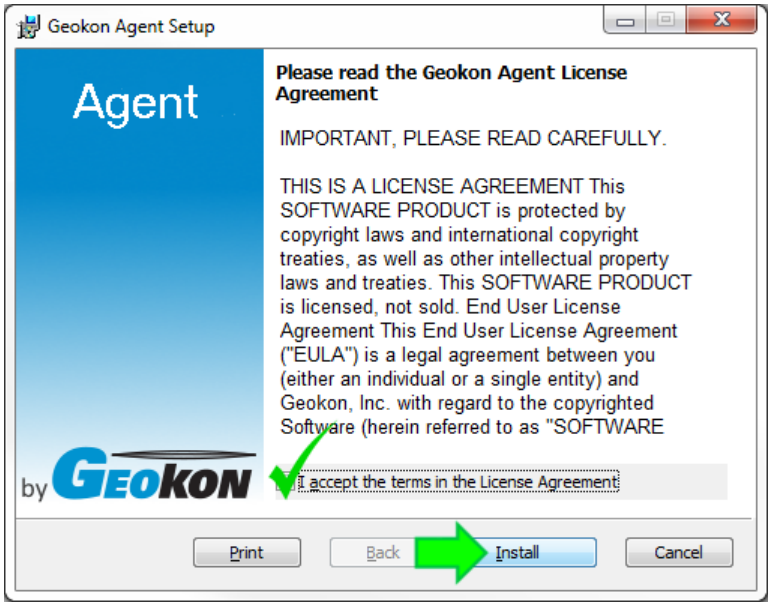
Agent-x64-1.6.1.1.msi

3. If a security warning appears, click “Run”



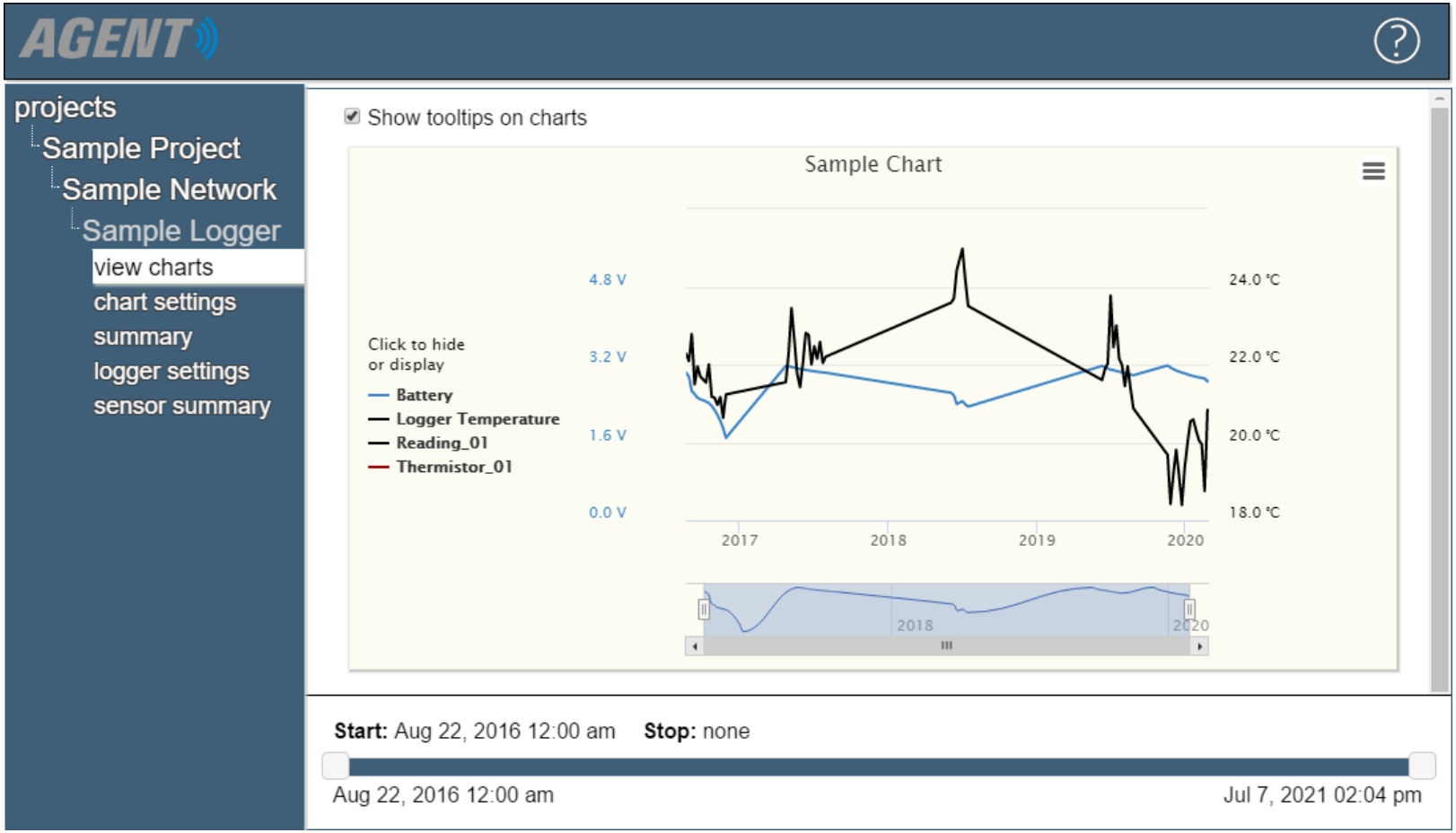
Installing the Software (Continued)

4. Read the License Agreement, check the box below to accept the terms of the agreement, and then click “Install”



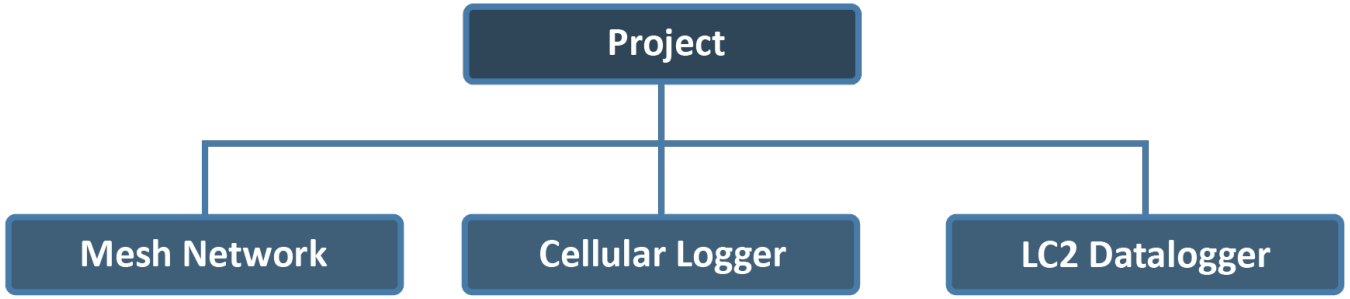
5. When the installation is complete, click “Finish” to close the installer and launch the program

Program Overview



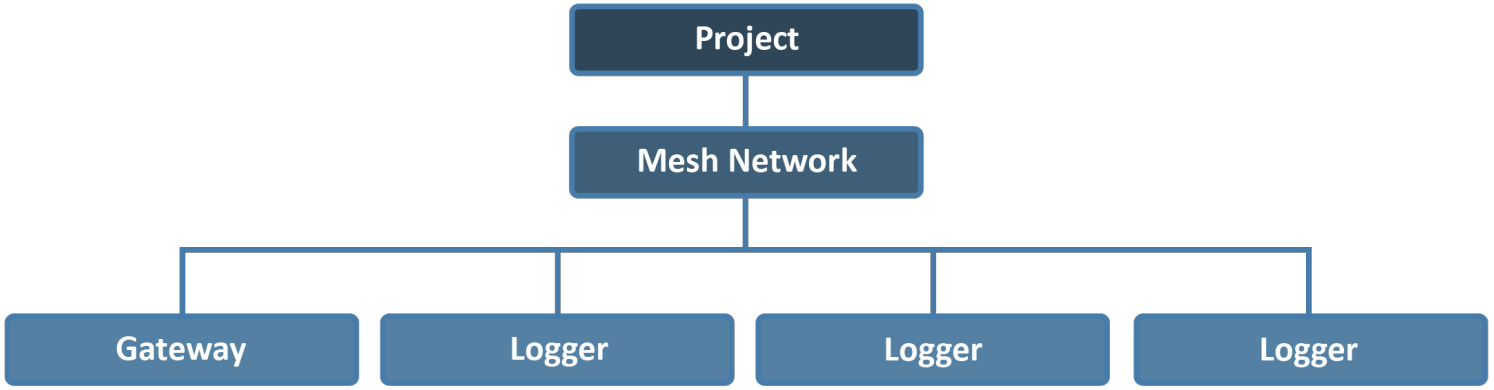
Program Overview

- On startup, Agent defaults to a screen that shows any Projects that have been created
- Projects are at the top of the program's hierarchy
- Projects can be assigned multiple GeoNet Mesh Networks (Models 8800, 8901, 8903), GeoNet Cellular Loggers (Model 8920), and LC2 Dataloggers (Model 8002)



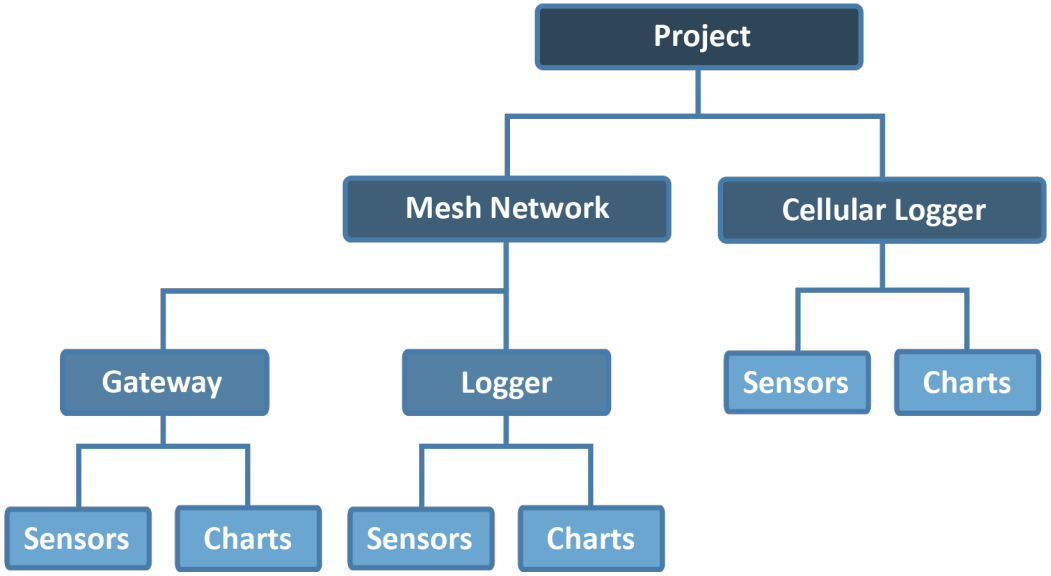
Program Overview (Continued)

- Each GeoNet Mesh Network contains one Gateway and one or more Loggers



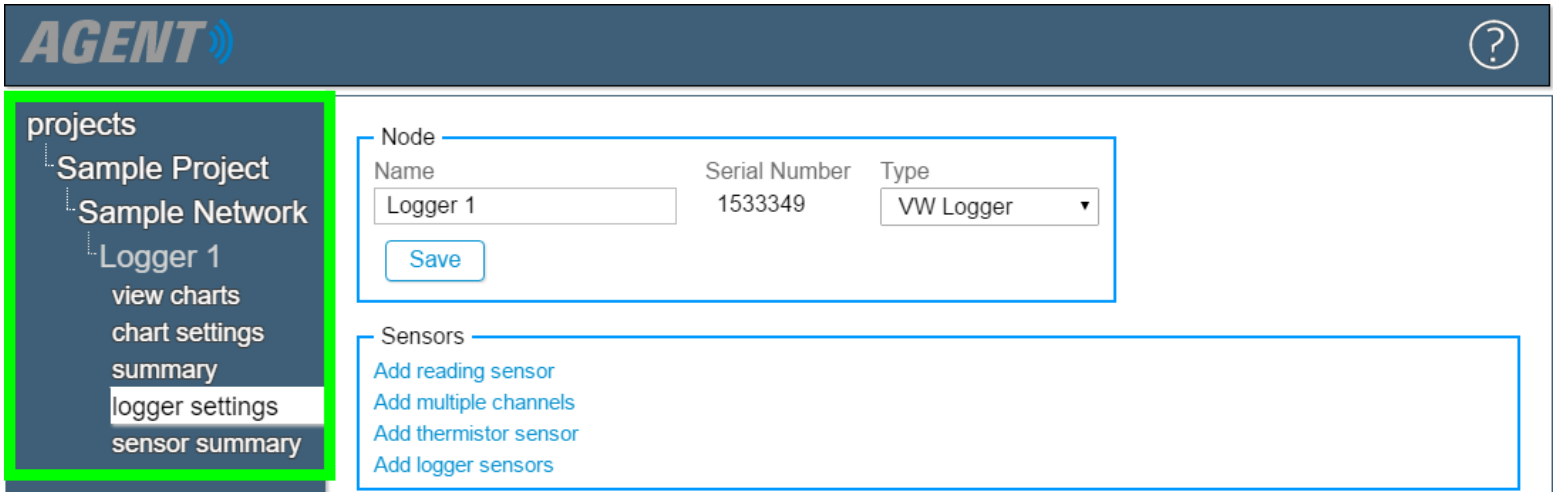
Program Overview (Continued)

- "Sensors" represent GEOKON instruments connected to loggers, as well as the internal sensors of a device
- Charts display the data imported by sensors
- Multiple sensors and charts can be assigned to each device



Program Overview (Continued)

- The menu on the left side of the screen is used to navigate the program

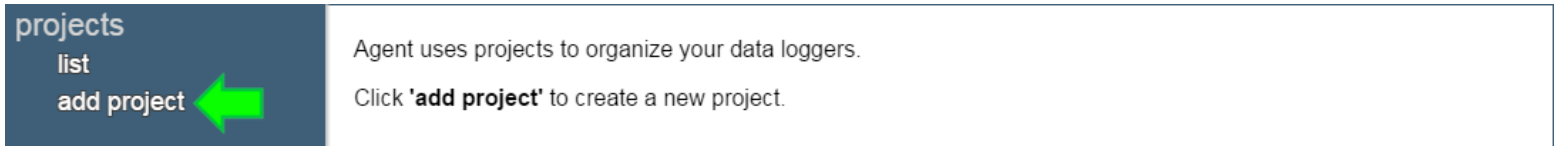


- The menu expands and contracts as the user navigates through the different levels of the program's hierarchy

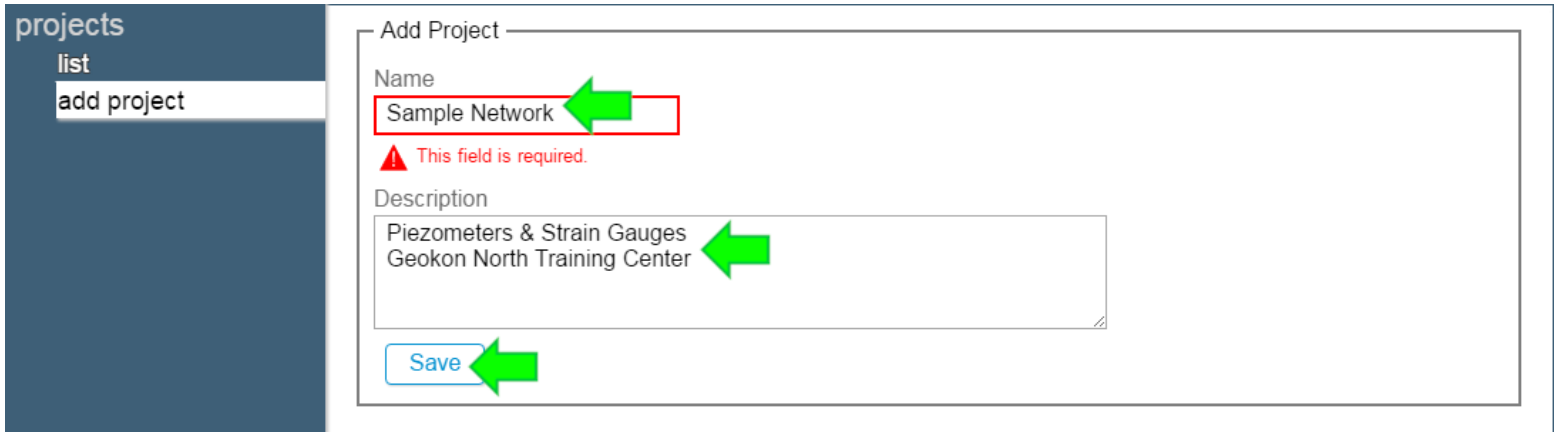
Projects and Networks

Adding Projects

1. Click “add project”

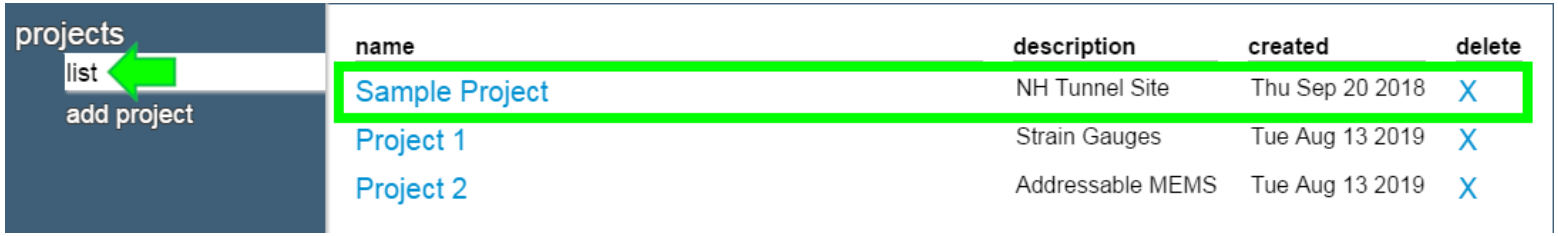


2. Enter a Name and Description for the project, then click “Save” (Name is required, Description is optional)



Project List

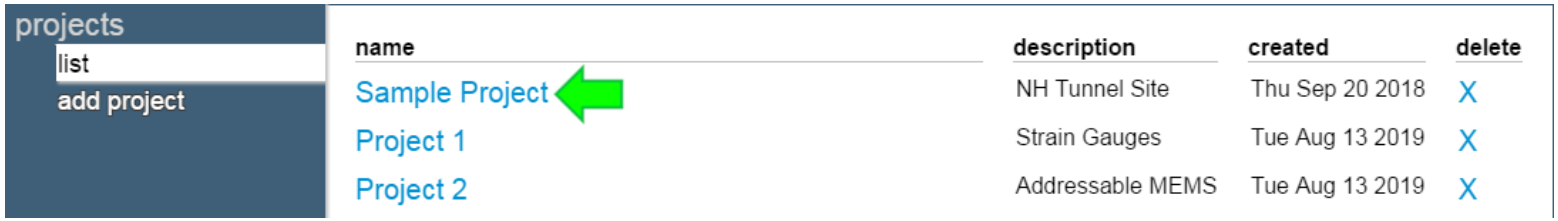
- Once a project has been created, it will be added to the projects list



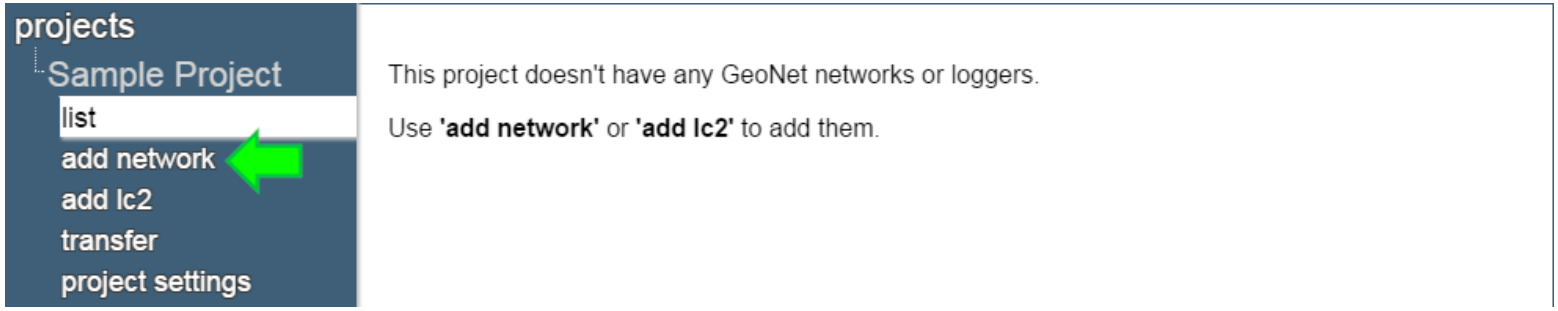
- The list of projects can be accessed at any time by clicking “projects” at the top of the menu

Adding a Network

1. Select a project by clicking on the project name



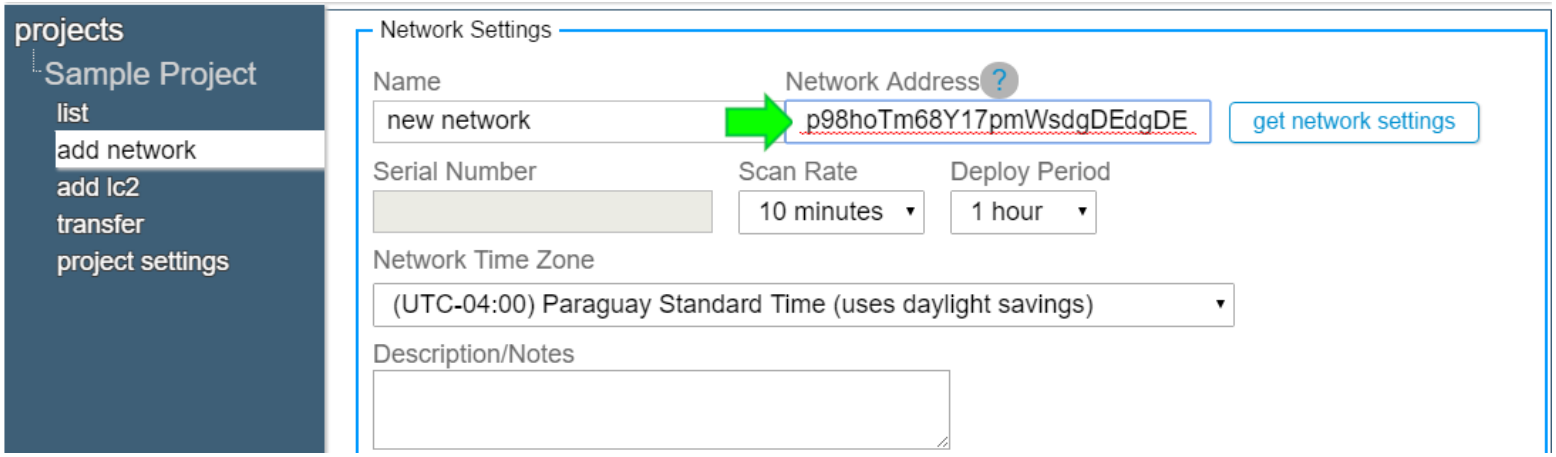
2. Click “add network”



Adding a Network:
Cellular Gateways & Loggers

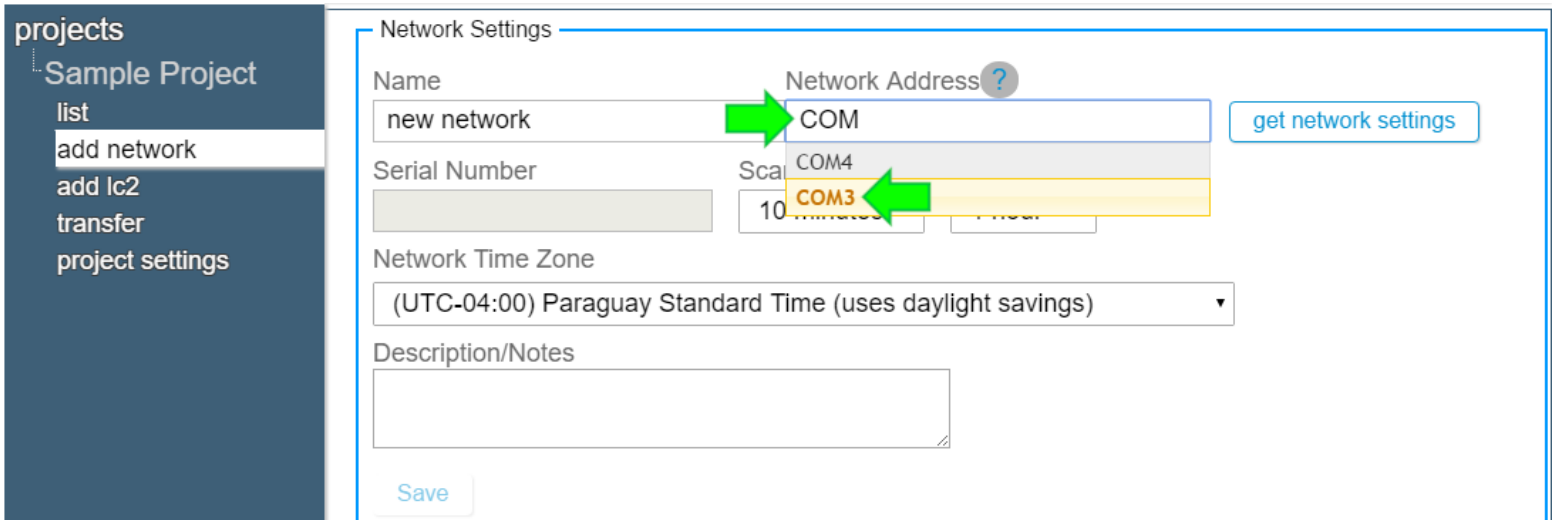
- The Gateway/Logger must already be commissioned on the GEOKON API Portal: https://api.geokon.com
- A tutorial on using the API portal is available at: https://www.geokon.com/8900-Tutorials#API

3a. Copy and paste a token from the GEOKON API Portal into the Network Address field



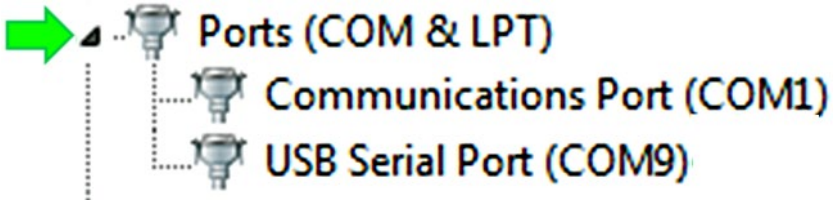
Adding a Network:
Local Gateways

3b. Type “COM” in the “Network Address” field, then select the COM port the Gateway is connected to
(If the correct port is not shown, close Agent, make sure the device is powered on, the cable connection secure, and then try again)



Adding a Network:
Local Gateways (3b. Continued)

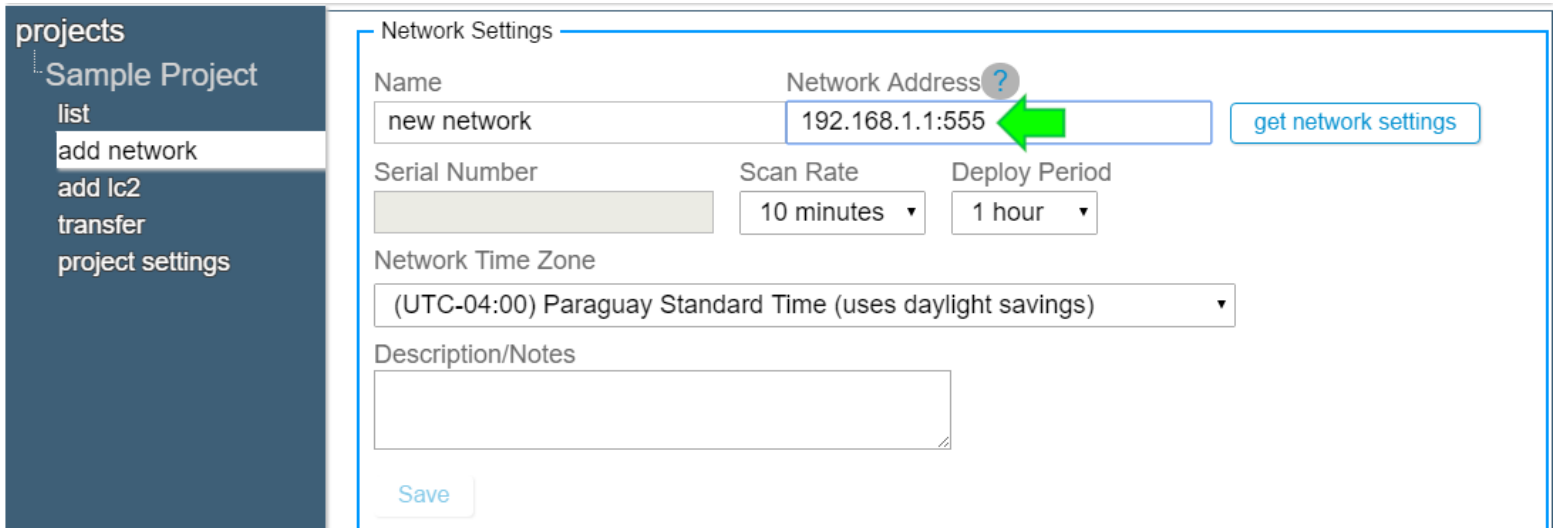
- Unsure of which COM port the Gateway is connected to?
  - RS-232 connections will normally use COM1, but may use COM2 or COM3 if the computer has multiple serial ports
  - To determine the correct port for a USB connection, click Start, type “device” in the search box, then click “device manager” in the control panel list. Next, click the triangle next to “Ports (COM & LPT)” to expand the list



Disconnect and then reconnect the USB cable to the computer—the COM port the Gateway is using will disappear and then reappear on the list

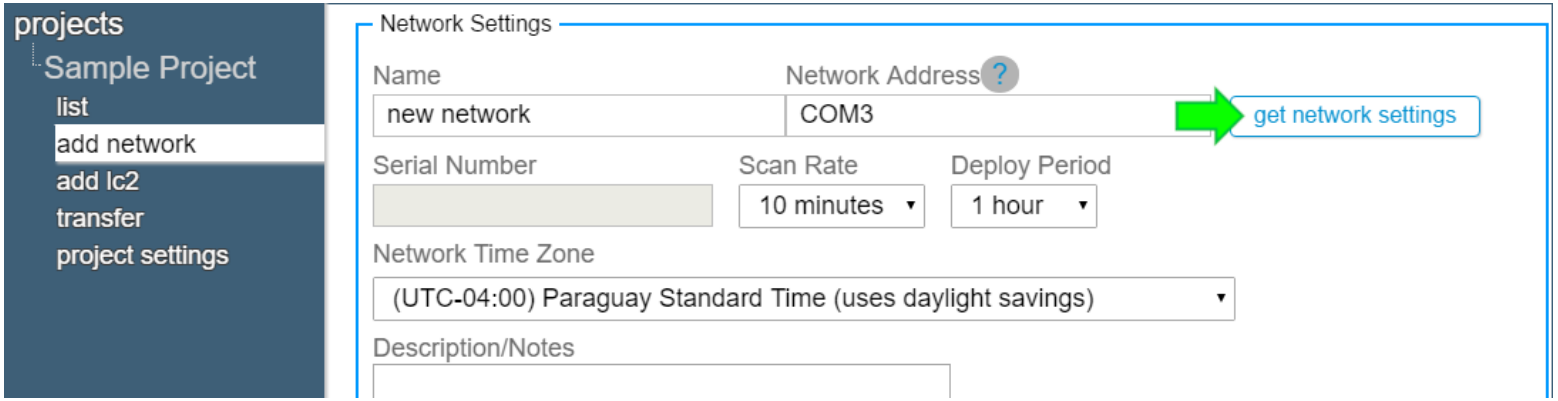
Adding a Network:
Wireless Connections

3c. If connecting to the Gateway via an external serial server or cellular modem, enter the device URL or IP Address as the "Network Address"
(IP addresses must be followed by a colon and then the port number)



Adding a Network (Continued)

4. After entering a Network Address, click “get network settings”; Agent will attempt to connect to the Gateway



5. Cellular Gateways/Loggers: A “Choose Cloud Network” field will appear, select the desired Gateway/Logger from the list

6. The “Serial Number” field will populate automatically once Agent has successfully connected to the Gateway

Adding a Network (Continued)

7. Other Network Settings available include:
   - Name: Enter a descriptive name for the Network
   - Scan Rate: Determines how often Loggers take sensor readings (Should be left at 10 minutes until it has been verified that all Loggers are present and collecting data)
   - Deploy Period: Sets duration of "Deployment Mode" on the Gateway (i.e. how long it will search for new Loggers)
   - Network Time Zone: Use the drop-down to select the correct time zone
   - Description/Notes: Enter any additional Network information
8. When finished editing the Network Settings, click "Save"

Loggers Screen

- After a Network is created, Agent automatically navigates to a screen that lists all the devices associated with that Network

- Only Loggers that have joined the Network will be displayed
- Loggers subsequently added to the Network will not appear on the list until after the next downloaded
- Data for “last reading”, “battery level”, and “signal strength” will displayed once it has been downloaded from the Network

Downloading Data

Downloading Data

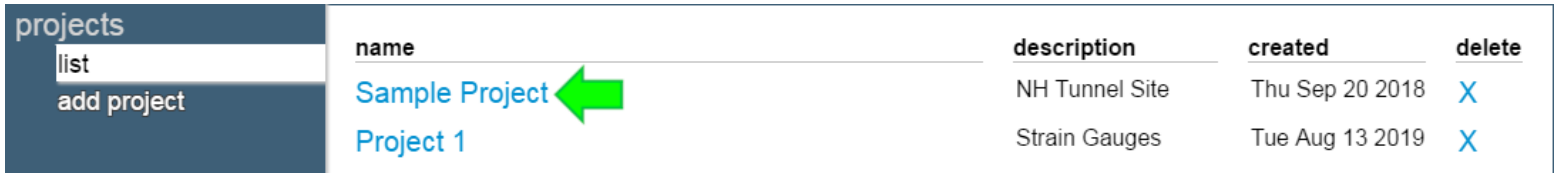
- Data will only be collected from the Network when a data download occurs
- Data will not appear on charts, on the Logger Screen, etc., until it has been downloaded from the Network
- Downloads can be initiated manually or set to occur automatically
- When Automatic Download is enabled, Agent will automatically download data from the Network at specific times or intervals
- If Automatic Download is disabled, Agent will only download data when the user initiates a manual download

Downloading Data
Cellular Gateways & Loggers

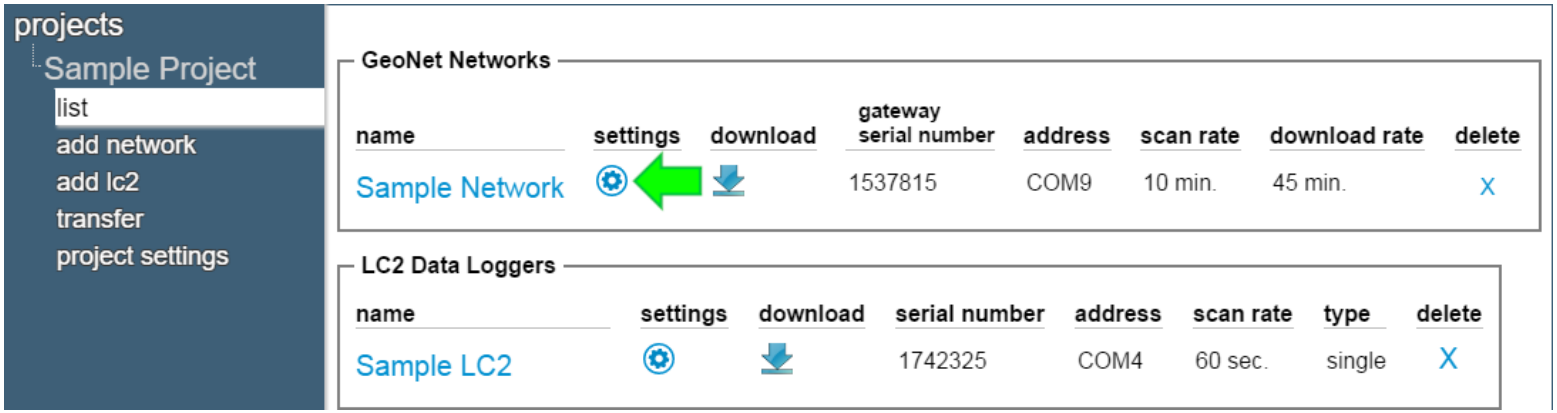
- Data is uploaded from the Cellular Gateway/Logger to the GEOKON API (Network server)
- Data is uploaded in recurring intervals when:
  - A certain amount of time has passed
  - A set number of readings is reached
- Agent communicates with the GEOKON API (not the Gateway/Logger)
- Only data that has been uploaded to the GEOKON API can be downloaded by Agent

Automatic Download

1. Select a project by clicking on the project name

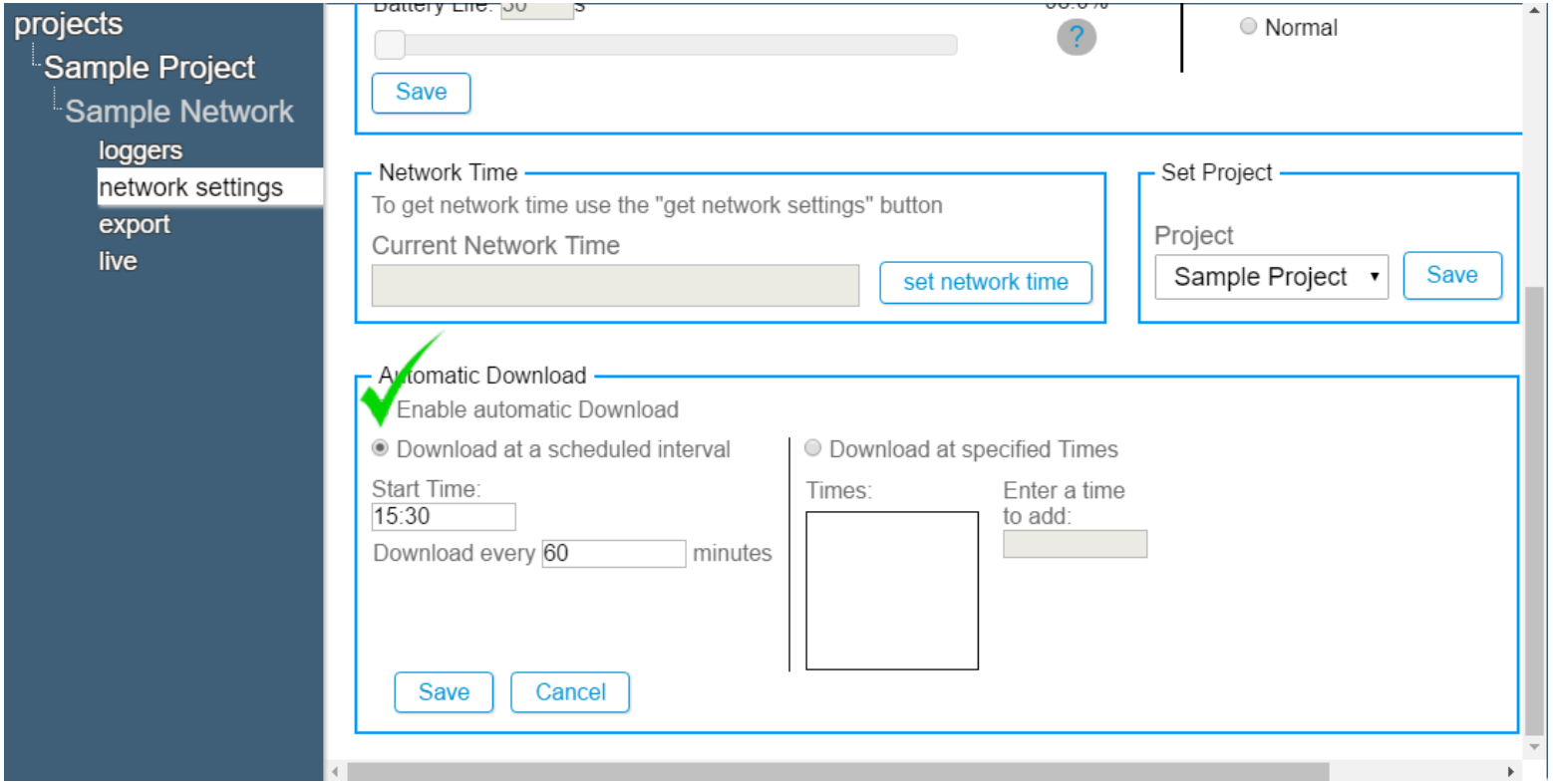


2. Click the ⚙ icon that corresponds with the Network to be downloaded



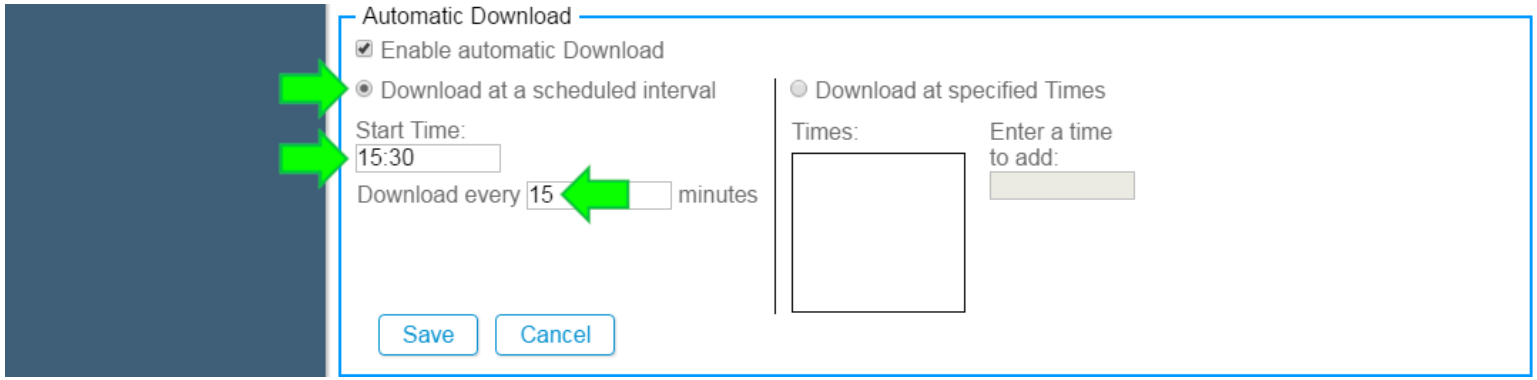
Automatic Download (Continued)

3. Check “Enable automatic Download”



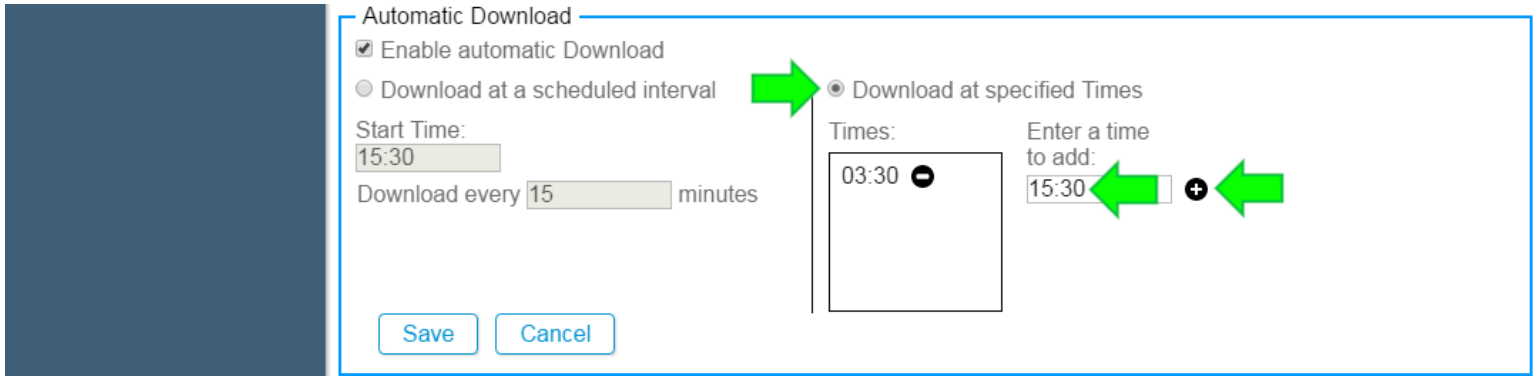
Automatic Download:
Download at Scheduled Intervals

4a. To set the automatic download to occur at scheduled intervals, click the “Download at a scheduled interval” button, then enter a Start Time and an interval in minutes
(An interval in minutes is required, a Start Time is optional. Start Times must be entered in 24-hour hour format, e.g., 3:30 PM becomes 15:30)



Automatic Download:
Download at Specific Times

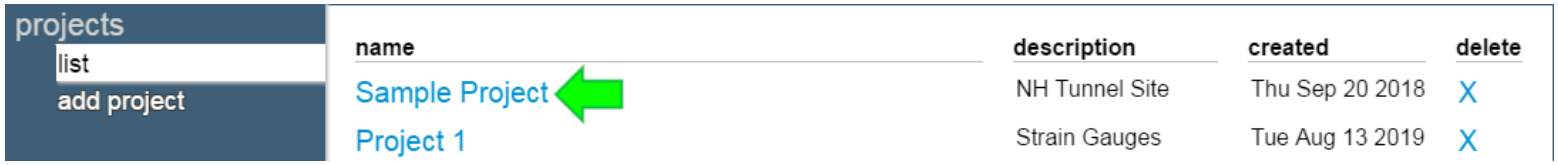
4b. To set the automatic download to occur at specific times, click the "Download at specified Times" button, input a time in the "Enter a time to add field" and then click ⊕
To remove a time from the list, click ⊖
(Times must be entered in 24-hour hour format, e.g., 3:30 PM becomes 15:30)



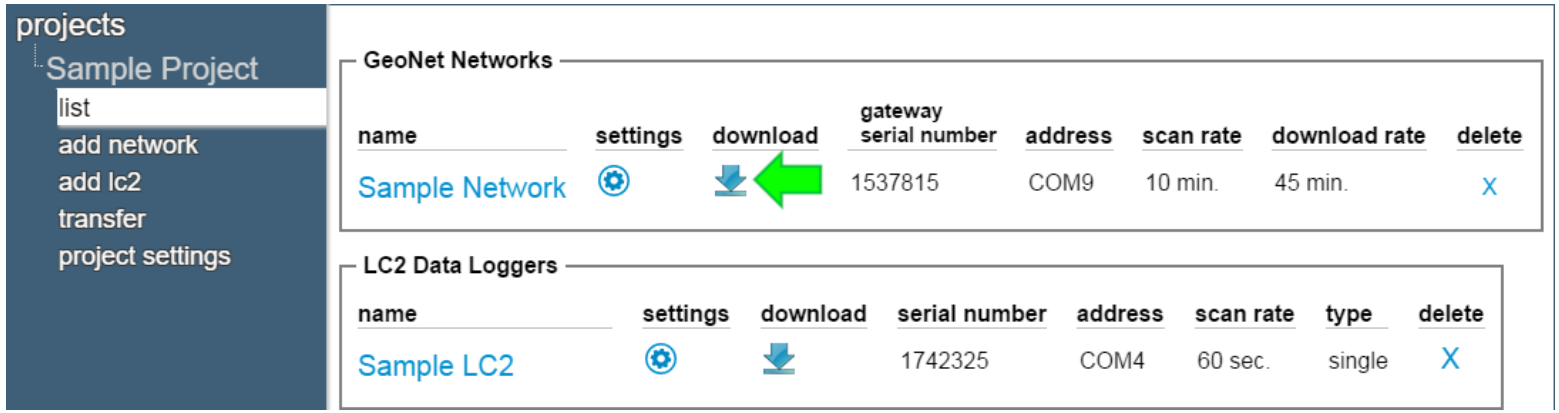
5. When finished, click "Save"

Manual Download

1. Select a project by clicking on the project name



2. Click the icon to download all new data from the Network (Note: Only one Network can be downloaded at a time)



Sensors

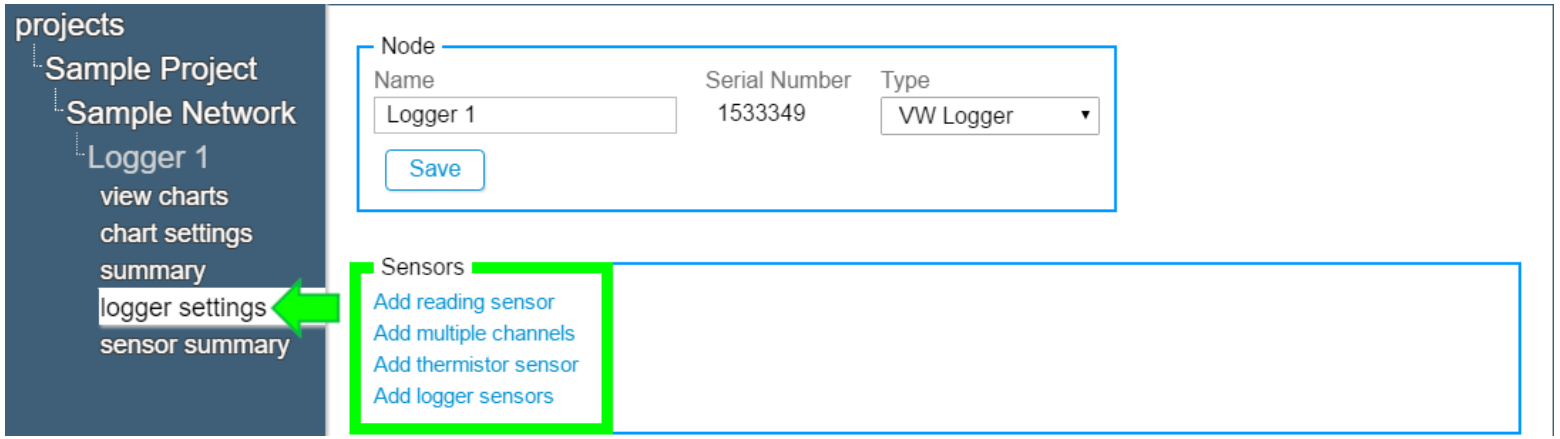

GEOKON
Model Number
4500HD-350 kPa
Geotechnical Instrumentation • Made in the U.S.A.
GEOKON
Model Number
4500H-350 kPa
Geotechnical Instrumentation • Made in the U.S.A.
GEOKON
Model Number
4500S-350 kPa
Geotechnical Instrumentation • Made in the U.S.A.
GEOKON
Model Number
4500C-2 MPa
S/N 1620025

Sensors

- Sensors created in Agent import data collected by Loggers and the Gateway
- Data imported by Sensors can be displayed on charts
- Sensors must be added to the device before they can be added to a chart

Adding Sensors to a Device

1. Select a project, a Network, and then the device the sensor will be added to
2. Click “Logger settings”
3. Select a Sensor to add
   (The available sensors will vary depending on the device type)



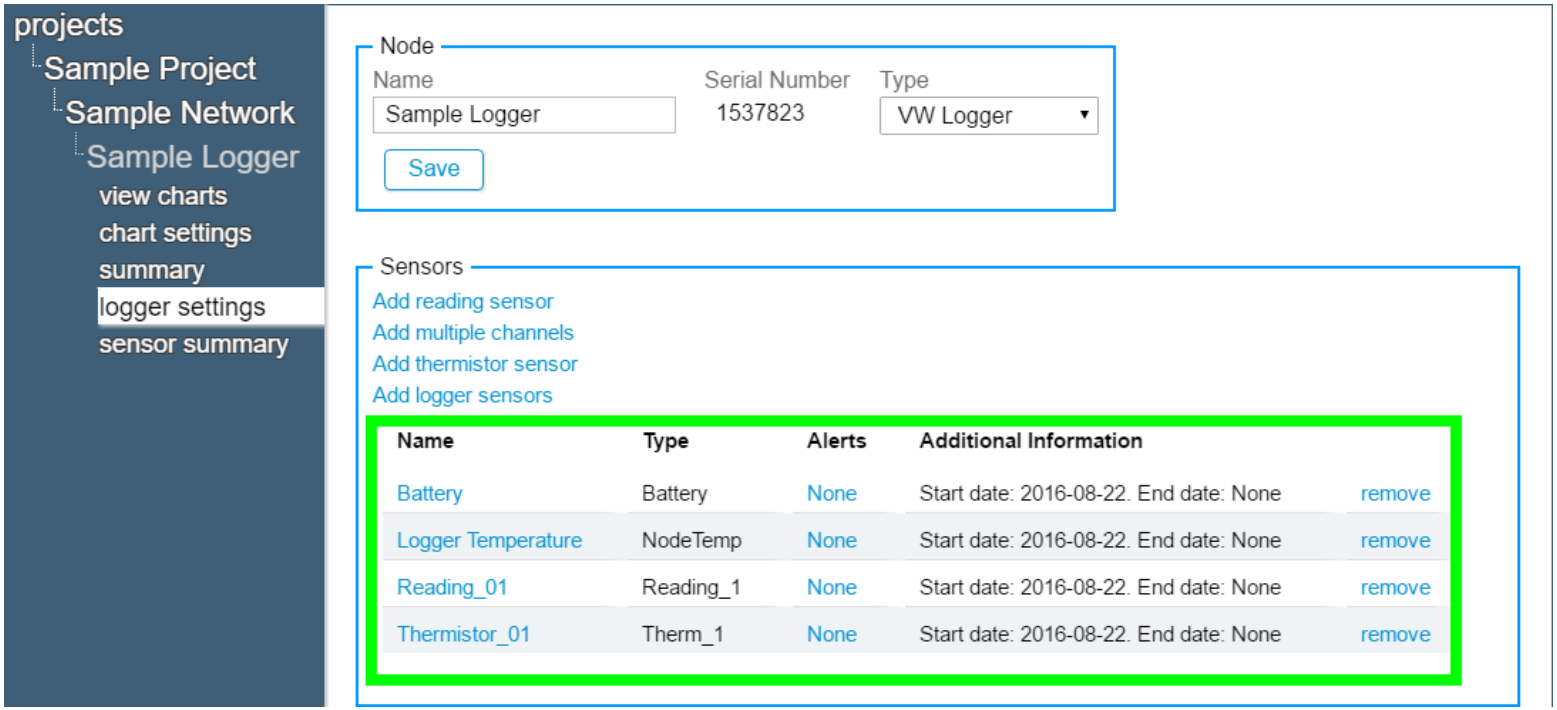
Adding Sensors to a Device (Continued)

Sensor types are as follows:

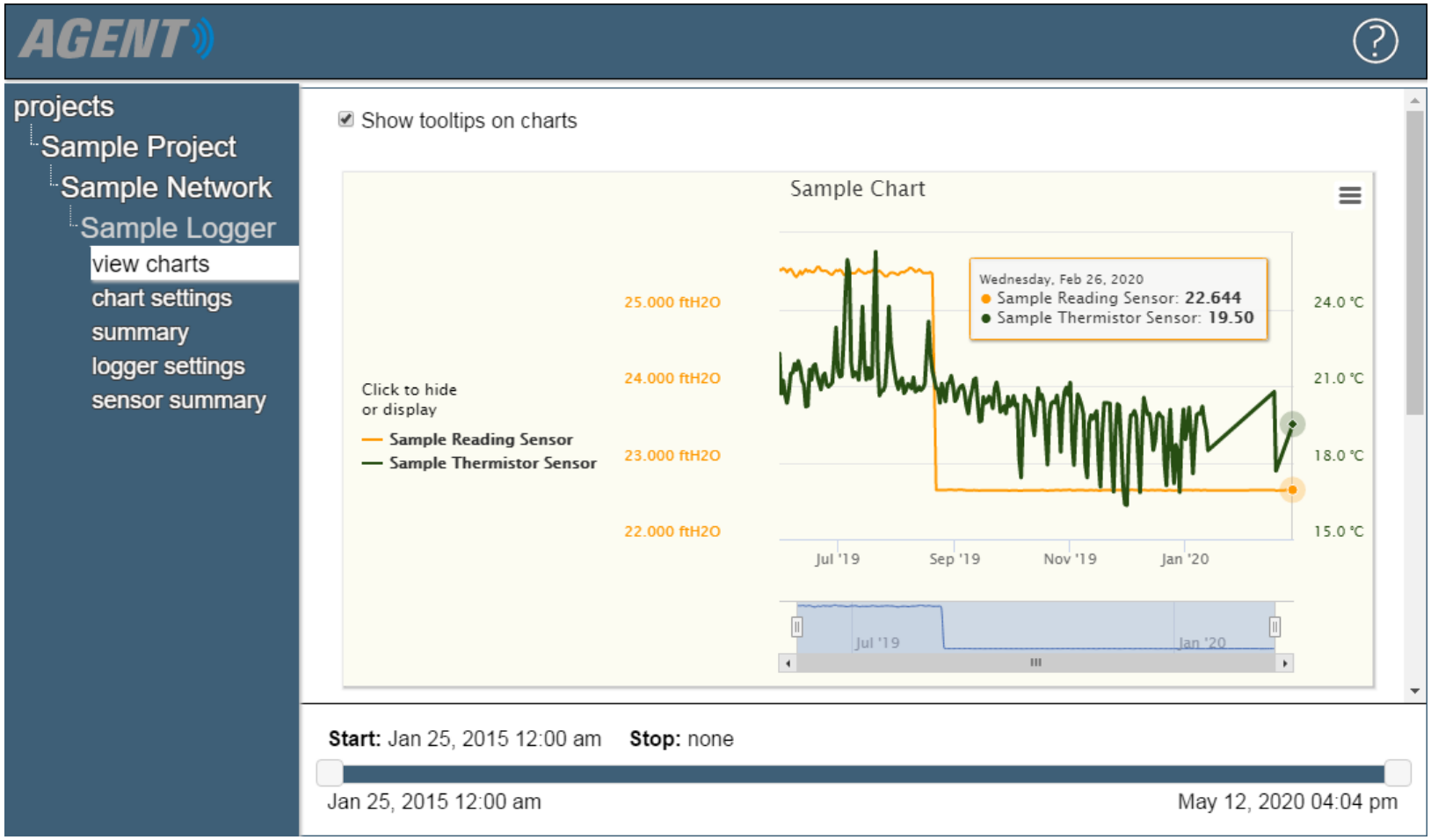
- Reading Sensor: Displays data collected from external gauges connected to the device
- Thermistor Sensor: Displays data collected from a thermistor (includes built-in thermistors and thermistor strings)
- Add Multiple Channels: Add several channels of readings at once (Designed for Multi-Channel Loggers and addressable sensors)
- Logger Sensors: Displays data collected by the device's internal sensors (e.g., Battery, Signal Strength, etc.)
- Tilt Sensors (angle/deflection): Displays data collected by MEMS tilt sensor including Tilt Loggers and Addressable Inclinometers

Adding Sensors to a Device (Continued)

4. Sensors that have been added to the device will be shown in the Logger settings screen
   (Sensor settings can be edited by clicking the name of the sensor)



Charts

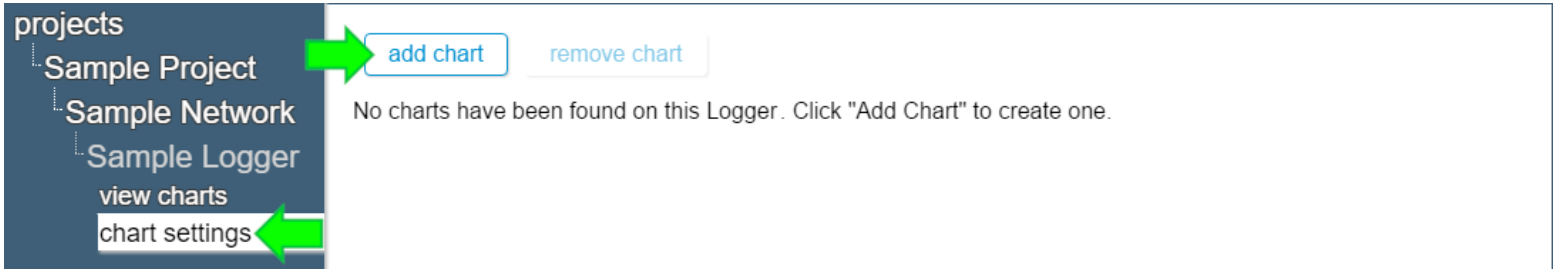

AGENT
projects
Sample Project
Sample Network
Sample Logger
view charts
chart settings
summary
logger settings
sensor summary
Show tooltips on charts
Sample Chart
Wednesday, Feb 26, 2020
Sample Reading Sensor: 22.644
Sample Thermistor Sensor: 19.50
25.000 ftH2O
24.000 ftH2O
23.000 ftH2O
22.000 ftH2O
24.0 °C
21.0 °C
18.0 °C
15.0 °C
Click to hide
or display
Sample Reading Sensor
Sample Thermistor Sensor
Jul '19
Sep '19
Nov '19
Jan '20
Start: Jan 25, 2015 12:00 am
Stop: none
Jan 25, 2015 12:00 am
May 12, 2020 04:04 pm

Charts

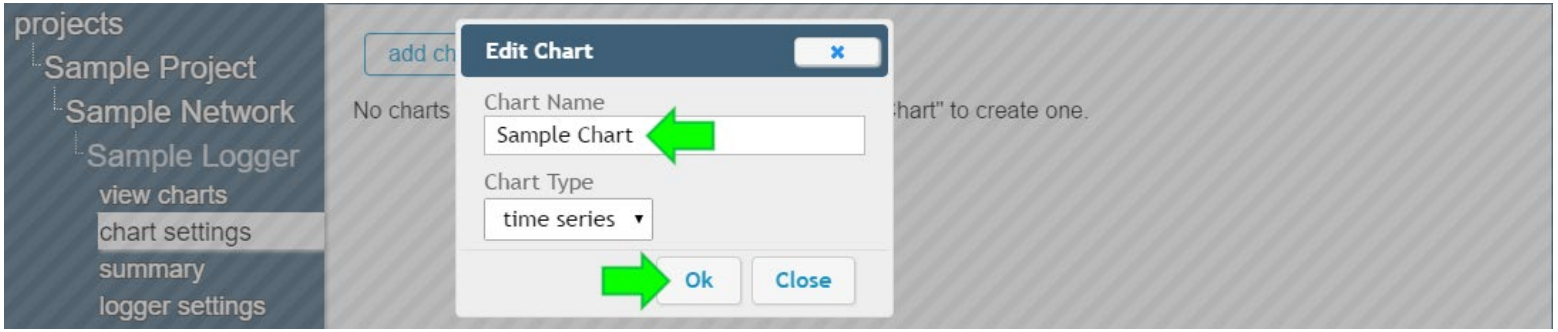
- Charts display data imported by sensors as a graph
- Sensors must be added to a chart before it will display any data
- If automatic download is enabled, new data will be added to charts automatically each time data is downloaded from the Gateway
- If automatic download is disabled, charts will not update until a manual download is performed

Creating Charts

1. Select a project, a Network, and then a GeoNet device
2. Click “chart settings” then “add chart”



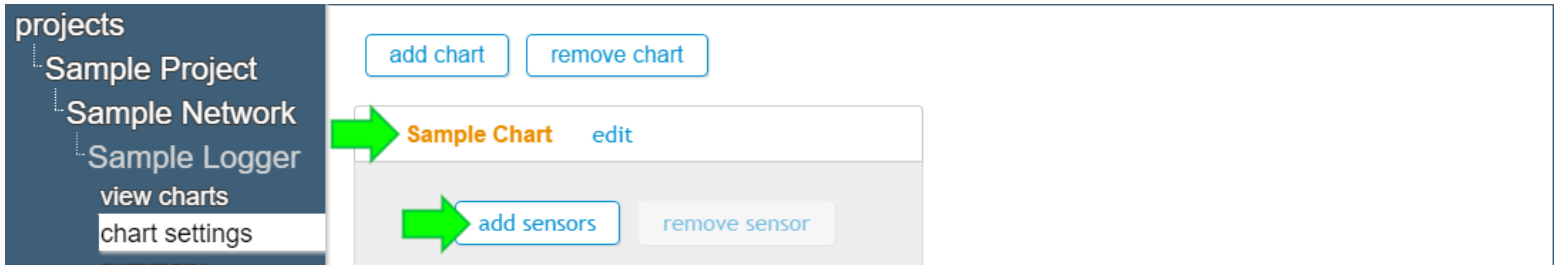
3. Give the chart a name, and then click “Ok”



Creating Charts (Continued)

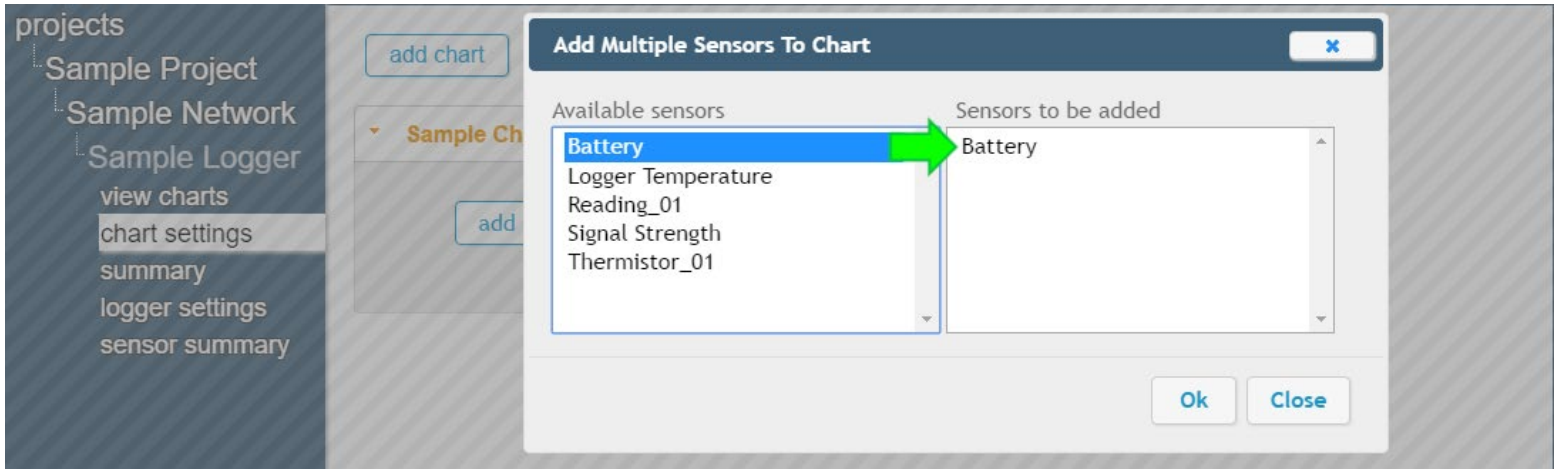
4. Charts that have been added to a device will be shown in the "chart settings" screen

5. Click on a chart name, and then click "add sensor"



Creating Charts (Continued)

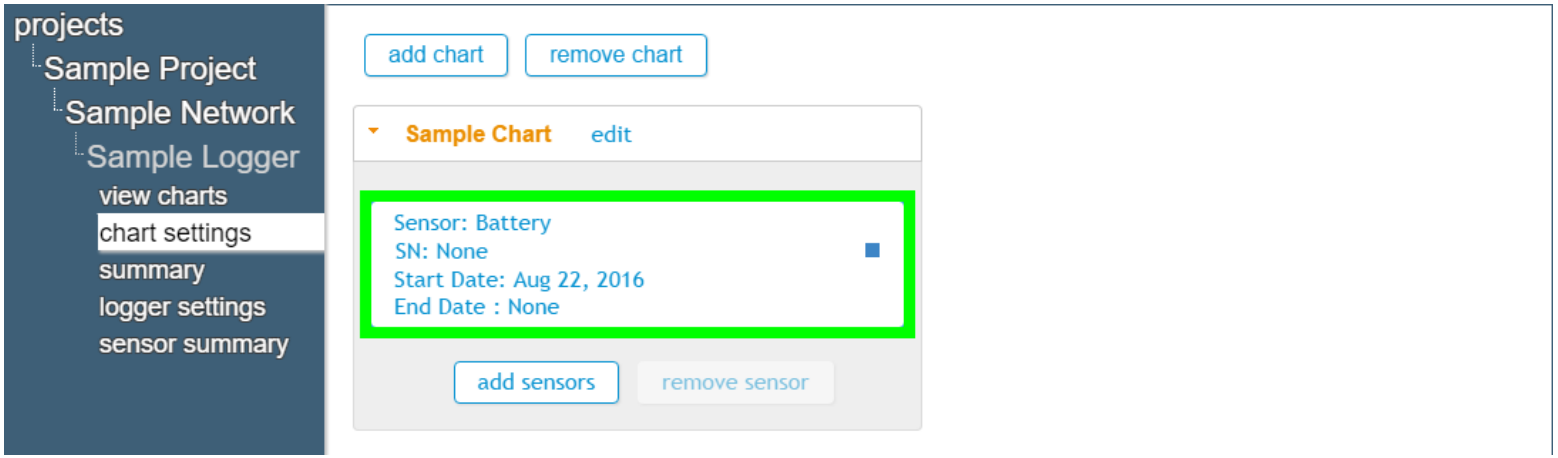
6. Click on a sensor to move it from the “Available sensors” column to the “Sensors to be added” column
(Only sensors that were previously added to the device will be shown as “Available Sensors”)



7. When all desired sensors have been added, click “Ok”

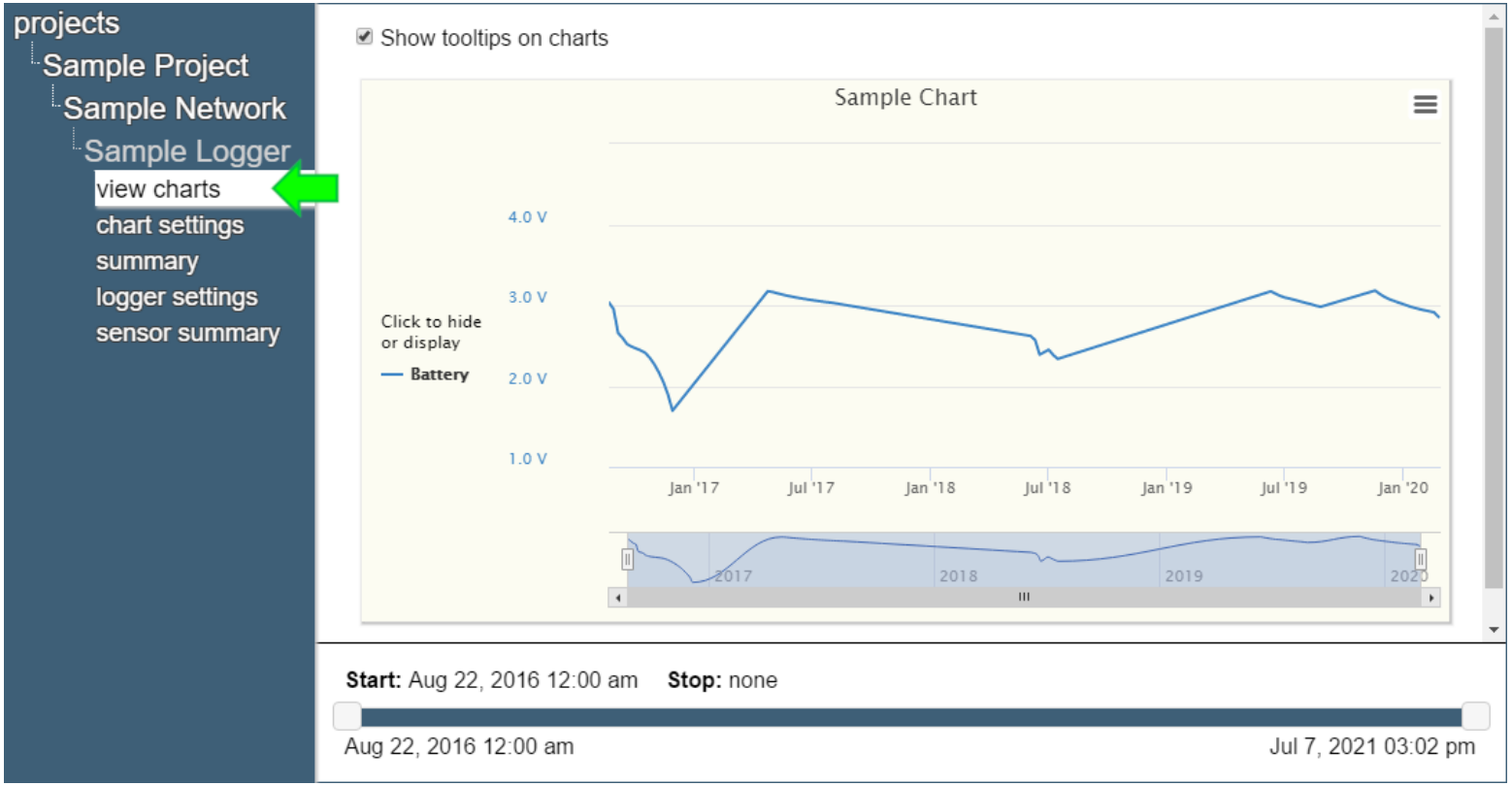
Creating Charts (Continued)

8. Sensors added to the chart will be shown below the chart name



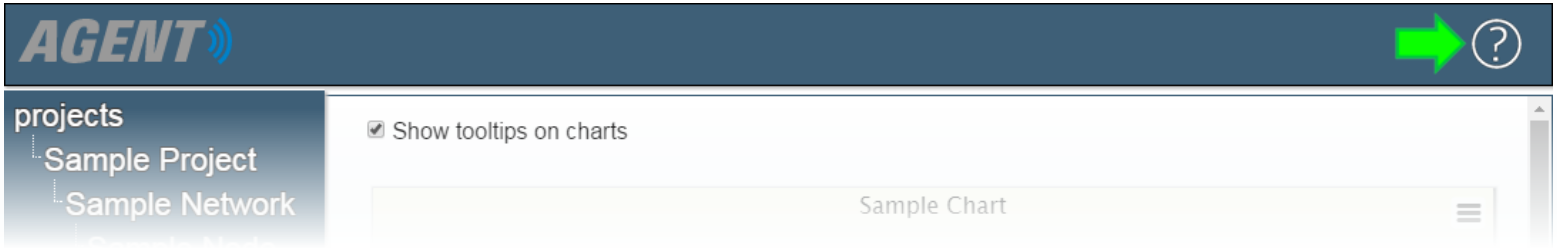
Viewing Charts

1. Click “view charts” to display all charts on the device



For more information…

- Consult Agent instruction manual, which can be accessed by clicking on the question mark at the top of the screen



- Instruction manuals are available for download at: www.geokon.com/Manuals
- Please visit https://www.geokon.com/Tutorials for more tutorials