

# NEON STANDARD OPERATING PROCEDURE: SUNA V2 NITRATE SENSOR DATA MANAGEMENT PROCEDURE

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See configuration management system for approval history.

The National Ecological Observatory Network is a project solely funded by the National Science Foundation and managed under cooperative agreement by Battelle. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.



## **Change Record**

REVISION	DATE	ECO #	<b>DESCRIPTION OF CHANGE</b>
А	01/03/2020	ECO-06299	Initial release.
В	03/16/2022	ECO-06785	<ul> <li>Update to reflect change in terminology from relocatable to gradient sites.</li> </ul>



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#### **1 DESCRIPTION**

#### 1.1 Purpose

The purpose of this document is to provide standard instructional guidance on how to download, store and transfer data for the Sea-Bird Scientific SUNA V2 Nitrate Sensor. This document applies to Field Science, Manufacturing (Repair Lab), and the Calibration, Validation and Audit Laboratory (CVAL).

#### 1.2 Scope

The operating procedures herein apply to managing data for the Sea-Bird Scientific SUNA V2 Nitrate Sensors at stream, lake and river Aquatic Instrument Sites (AIS). Data management procedures include data transmission and storage (downloading the DAT files and transferring them to the network drive) using the Sea-Bird Scientific UCI software.



#### 2 RELATED DOCUMENTS AND ACRONYMS

#### 2.1 Applicable Documents

The following applicable documents (AD) contain mandatory requirements and/or supplementary information that are directly applicable to the topic and/or procedures herein. Visit the NEON Document Warehouse for electronic copies of these documents.

AD [01]	NEON.DOC.002716	NEON Preventive Maintenance Procedure: AIS Nitrate Analyzer
AD [02]	NEON.DOC.004613	NEON Preventive Maintenance Procedure: AIS Buoy

#### 2.2 Reference Documents

The reference documents (RD) listed below may provide complimentary information to support this procedure. Visit the NEON Document Warehouse for electronic copies of these documents.

RD [01]	NEON.DOC.000008	NEON Acronym List
RD [02]	NEON.DOC.000243	NEON Glossary of Terms
RD [03]	NEON.DOC.001570	NEON Sensor Command, Control and Configuration - Submersible
		Ultraviolet Nitrate Analyzer (SUNA)
RD [04]	NEON.DOC.003808	NEON Sensor Command, Control and Configuration (C3) Document:
		Buoy Meteorological Station and Submerged Sensor Assembly
RD [05]	NEON.DOC.004713	AIS SUNA Nitrate Analyzer Formal Verification Procedure
RD [06]	NEON.DOC.004419	Stream or Lake Water Level Formal Verification Procedure
RD [07]	NEON.DOC.003880	NEON Preventive Maintenance Procedure: AIS Stream
		Infrastructure
RD [08]	NEON.DOC.004886	NEON Preventive Maintenance Procedure: Aquatic Portal & AIS
		Device Posts
RD [09]	NEON.DOC.005037	AIS Buoy Infrastructure Design Drawings and Schematics
RD [10]	NEON.DOC.004608	AIS Buoy Verification Procedures

#### 2.3 External References

The external references (ER) listed below contains supplementary information relevant to this procedure. These documents are external to the NEON program and Battelle.

ER [01]	Sea-Bird Scientific. UCI Software for HydroCAT, HyroCAT-EP, SUNA, SeaFET V2 Reference.
	Document No. UCIref180726, Version A, July 26, 2018.
	https://www.seabird.com/asset-get.download.jsa?id=54712835755
ER[02]	Sea-Bird Scientific. SUNA V2 User Manual. Document No. SUNA180725, Version F, July 26,
	2018. https://www.seabird.com/asset-get.download.jsa?id=54627862534

#### 2.4 Acronyms

.CSV	Comma Separated Values
A/R	As Required



<i>Title</i> : NEON Standard Operating Pro Procedure	Date: 03/16/2022	
NEON Doc. #: NEON.DOC.005227	Author: M. Haack, M. Pursley, M. Cavileer	Revision: B

AIS	Aquatic Instrument Site
CVAL	Calibration, Validation and Audit Laboratory
LC	Location Controller
P/N	Part Number
S1	Upstream
S2	Downstream
SCI	Science



#### **3 OVERVIEW**

#### 3.1 Components

This document includes components from the following sensors and parts:

- 0329950000 Sensor, SUNA Nutrient with Integrated Wiper
- 0329950100 Sensor, Buoy, SUNA Nitrate with Integrated Wiper, Titanium Housing
- 0329950005 Sensor, 5 mm pathlength SUNA Nitrate with Integrated Wiper

#### 3.2 Subsystem Location and Access

SUNA V2 Nutrient Sensors reside at both core and gradient AIS sites. Access to AIS sites require Aquatic PPE and may require a boat. At wadeable stream sites, the SUNA sensors are part of the downstream sensor set (S2) or single station sensor sets. At river and lake sites, the SUNA mounts from the AIS buoy in an enclosure 0.5 meters below the water surface.



#### 4 FIELD DATA MANAGAMENT PROCEDURE

IMPORTANT: This procedure requires UCI Software Version 1.2.5. Download UCI via N:\Common\CVL\Field\_Calibration\UCI. If you are still using SUNACom, stop, and download UCI. Completely read this section before conducting any procedure in the field. This procedure also requires the IS Control and Monitoring Suite to rename the files: N:\Common\CVL\Field\_Calibration\Required Directory\Test\_Data\CurrentExecutables\IS Control and Monitoring Suite. (*Side Note: This document does not include an enable or disable logging section because configuration of the sensor already includes logging.*)

#### 4.1 Equipment

Part Number (P/N)	NEON P/N	Description	Quantity
N/A	HB09780000	USB-Power-SUNA Cable (known as the Y-Cable)	1
	NEON IT	Laptop with UCI Software	1
	NEON ENG	IS Control and Monitoring Suite Software	1

#### Table 1. Equipment Table

**PRO TIP:** Recommend downloading the UCI software on a loaner laptop to use in the field to prevent damaging the laptop you use daily for the NEON program. This procedure may require FTDI Drivers if you are using a loaner or new laptop. Download the drivers here <u>http://www.ftdichip.com/FTDrivers.htm</u> or via **N:\Common\CVL\Field\_Calibration\Drivers\FTDI**.

#### 4.2 Connect to a SUNA: Communication Settings

To connect to the SUNA, plug into the SUNA sensor and USB into the Laptop, <u>**THEN**</u> plug the cable into the power supply or Grape (See AD [01] or AD [02], as applicable, for additional information). Follow the order of operations provided in **Figure 1**. Ensure the PoE Power Cable (Cable that connects to the Grape to the Comm Box) is disconnected from the Grape before plugging and unplugging sensors or the Y-cable into it.



## Option 1: Battery or Other Power Supply



Figure 1. How to Connect to the SUNA with the SUNA Y-Cable - Order of Operations

#### 4.3 DAT File Download Procedure

Download the SUNA DAT files onto a laptop to transfer them to the network drive for AQU SCI on a quarterly cycle, meaning every three (3) months (or 12 weeks) ± 2 weeks. This is subject to change depending on information gleaned from implementation, such as the time it takes to transfer the log files from the sensor or issues resulting from environmental/site variables. <u>If utility/main power is</u> <u>unavailable or down onsite, download the SUNA data during biweekly PM bouts.</u>

 After connecting to the SUNA in accordance with Section 4.2 (Figure 1), open your laptop and open a File Explorer window. Navigate to This PC and click on the USB Drive (Figure 2). Note that your Drive letter may be different on your laptop.

Note: Your laptop may not immediately recognize the SUNA as a hard drive due to its super capacitor, especially if the order of operations on connecting to the SUNA was not followed (see Figure 1 from the previous section). If you do not see the SUNA USB Drive, power down the sensor for approximately 15 minutes and try again, reconnecting the sensor in the order of operations in Section 4.2.



I     Image: Second state       File     Computer       ←     Image: Second state	View > This PC >			
Quick access Desktop Downloads Documents Pictures	<ul> <li>Folders (7)</li> <li>3D Objects</li> <li>Videos</li> </ul>	Desktop	Documents	Downloads
Matt ETRs personal Test data and o	O Devices and drives (2)     Windows (C:)     I61 (B6 free of 235 G8     NTF5     NTF5     O Network locations (3)	USB Drive (D:) 3.49 GB free of 3.68 GB FAT32		
<ul> <li>OneDrive</li> <li>This PC</li> <li>3D Objects</li> <li>Deckton</li> </ul>	Copy of MDP Assets 20171018.xlsx Microsoft Excel Worksheet 170 KB	Home Directory (H:) 611 GB free of 5.49 TB NTFS	NEON Shares (N:) 40.0 GB free of 59.5 GB NTFS	

Figure 2. Navigate to This PC and Click on USB Drive

2. Open the DAT folder (Figure 3).

			Manage	USB Drive (D:)			
File Home S	Share	View D	trive Tools				
·	This PC	> USB Driv	ve (D:) >				
10:1	N	lame	^		Date modified	Type	Size
Quick access     Desktop	. 🗖	DAT			1/9/2019 9:04 PM	File folder	
- Downloads	<u></u>				17 27 2012 2014 PTM	THE IMAGE	
Documents	*	] CAL_BIN.	BCK		8/12/2019 7:19 PM	BCK File	11 KB
Pictures	*						
_Matt							

Figure 3. Open DAT Folder in USB Drive

3. The DAT folder is the folder that contains the SUNA .CSV Data Files (Figure 4). The SUNA saves the data file by the year (2019) and the day of the year (1-365). Drag and drop the DAT files onto your laptop in a new folder labeled "AssetTag\_SITE\_YYYY-MM-DD" (the full 14-digit asset tag), as you would with any computer operating system. This process requires monitoring. The file transfer process can time-out and require you to restart the process. The upload process will break if the folder naming convention is not followed.

I 🛃 📄 ╤ I DAT File Home	Share	View	> DAT			
		Name	^	Date modified	Туре	Size
Quick access		D2019080.CSV		3/21/2019 9:02 PM	Microsoft Excel C	56 KB
Desktop	×	D2019114.CSV		4/24/2019 8:44 PM	Microsoft Excel C	109 KB
Downloads	*	D2019133.CSV		5/13/2019 6:04 PM	Microsoft Excel C	1,209 KB
Documents	1	D2019150.CSV		5/30/2019 11:45 PM	Microsoft Excel C	618 KB
Pictures	*	D2019151.CSV		5/31/2019 11:45 PM	Microsoft Excel C	3,052 KB
_Matt		D2019152.CSV		6/1/2019 11:45 PM	Microsoft Excel C	3,050 KB
ETRs		D2019153.CSV		6/2/2019 11:45 PM	Microsoft Excel C	3,047 KB

Figure 4. The DAT folder is the folder that contains the SUNA.CSV Data Files



IMPORTANT: DO NOT DELETE FILES FROM THIS FOLDER; IT CAN CAUSE THE SUNA TO ACT FINICKY. To

properly delete DAT files, follow the instructions in Section 4.4.

- 4. Delete the **DAT** files from two quarters ago (the data for these timeframes should already have been uploaded to the N Drive) using the UCI software. This redundancy is to prevent losing data in the event a laptop is lost, dropped into a stream or lake or otherwise compromised. If you only have one or two quarters of data collected, then leave the files on the SUNA until you have two prior quarters of data to delete. If you have two quarters of data to delete, move onto the next section, Section 4.4.
- 5. Disconnect from the SUNA software, and then physically disconnect from the SUNA (reference Section 4.4).

WARNING: DO NOT REMOVE THE CABLE FROM THE SUNA WITHOUT DISCONNECTING FROM THE UCI

**SOFTWARE FIRST!** In addition, for sites using a Grape, remember to disconnect the PoE Cable (RJF/Eth to Comm) that connects to the Grape **FIRST** when disconnecting/reconnecting sensors. This prevents hot-swapping connections. Wait at least 5 minutes after physically disconnecting the SUNA from the Grape after conducting maintenance using the UCI software and before reconnecting the SUNA to the Grape at stream sites. This resets the Grape communication protocols to reinitialize with the SUNA together. Failure to reset the Grape's communication protocol prevents the SUNA data from streaming to the LC (location controller). This does not apply to the SUNA on the AIS Buoy or SUNAs in the HQ Repair Lab or CVAL.

- 6. <u>Field Science</u>: Reconnect the SUNA to its onsite location (stream anchor or buoy) and verify the SUNA is back up on the network streaming data.
- 7. Update the DAT file naming convention on your laptop. You can complete this step anywhere (onsite or offsite). Use the following naming convention for your .csv DAT files that you upload to the Sensor Swap under the SUNA DAT Files folder: SITE\_ASSET TAG\_DYYYYDDD. Reference Section 4.5 for additional information on uploading these files to the N drive. There is a separate folder for Field Science, HQ Repair Lab, and CVAL.
- 8. <u>Field Science:</u> For sites with power and have a network connection, monitor the data for at least 24 hours to verify there are no issues derived from conducting this procedure. If so, submit an incident ticket immediately to AISSCI and Advanced Engineer via ServiceNow.

### 4.4 Delete DAT File Procedure

Only delete the SUNA DAT files from two quarters ago (the data for these timeframes should have been already uploaded to the N Drive) using the UCI Software to free up memory space on the sensor. If the SUNA runs out of memory, it creates blank files with 0 kilobytes, which become difficult to remove from the sensor, and may cause other functional issues. The SUNA has 2 GB of memory and one day of data is approximately 3 MB. If you only have one or two quarters of data collected, leave the files on the SUNA until you have two prior quarters of data to delete (assuming the data you are deleting was downloaded and uploaded onto the N Drive).



1. Connect to the SUNA in accordance with Section 4.2. Skip this step if you are already connected to the SUNA.

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	©														Q-	
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Connection Status:	Connected								Ti	ime Serie	25					
Available Lamp Time:	232 hours (23%)															
Available Disk Space:	3,583 MB (95%)															
SUNA Clock Time:	16 Sep 2019 17:06:47 U	лс	M													
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Select Sensors	1	^							- Nitrate -	- ABS_254	ABS_350					
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2. Open the UCI Software and Select Transfer Files (Figure 5).

Figure 5. Open the UCI Software and Select Transfer Files

 In the File Manager pop-up window, delete the files that are from two quarters ago in the Instrument Filesystem section/box. Select the .CSV data file with your curser, and then select Delete (Figure 6). Select and delete 10 files at a time and repeat until all files are deleted. This prevents the SUNA from acting up due to its small microprocessor.

NSE	ne⊘n	<i>Title</i> : NEON Standard Operating Pro Procedure	Date: 03/16/2022
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					Instrument Filesystem				
Dept\PROD\Repai	ir Lab \RMA \SUNA \Test data ar	nd configurations	E	e	Name	Date	Size	Туре	
					D2019207.CSV	2019-07-26 23:46:24	2883486	CSV	
ime	Date	Size	Type		D2019114.CSV	2019-04-24 20:44:38	111528	CSV	
					D2019204.CSV	2019-07-23 23:46:24	2889568	CSV	
					D2019188.CSV	2019-07-07 23:45:54	3052235	CSV	
					D2019169.CSV	2019-06-18 23:45:54	3175036	CSV	
					D2019161.CSV	2019-06-10 23:45:54	3119562	CSV	
					D2019151.CSV	2019-05-31 23:45:54	3124873	CSV	
					D2019198.CSV	2019-07-17 23:46:24	2893481	CSV	
				1	D2019203.CSV	2019-07-22 23:46:18	2880969	CSV	
					D2019193.CSV	2019-07-12 23:45:54	3072247	CSV	
					D2019163.CSV	2019-06-12 23:45:54	2876580	CSV	
					D2019184.CSV	2019-07-03 23:45:54	3176754	CSV	
					D2019199.CSV	2019-07-18 23:46:24	2889876	CSV	
					D2019171.CSV	2019-06-20 23:45:54	3180454	CSV	
					D2019211.CSV	2019-07-30 23:46:10	3021855	CSV	
					D2019182.CSV	2019-07-01 23:45:54	3177498	CSV	
					D2019212 CSV	2019-07-31 17:07:16	2187139	CSV	
Select All D	Delete		R	1	Select All Dele	ete			

Figure 6. Select the .CSV Data File with your Curser and then Select Delete

#### 4. When complete, click Close to close the File Manager pop-up window (Figure 7).

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pept\PROD\Repair	Lab\RMA\SUNA\Test data and confi	igurations	Br		Name	Date	Size	Туре	_
ame	Date	Size	Type		D2019207.CSV	2019-07-26 23:46:24	2883486	CSV	_
010114 CSV	2010-00-16 17:10:05	111529	CSV		D2019114.CSV	2019-04-24 20:44:38	111528	CSV	
01011100V	2019-09-10 17.10.00	111520	0.07		D2019204.CSV	2019-07-23 23:46:24	2889568	CSV	
					D2019188.CSV	2019-07-07 23:45:54	3052235	CSV	
					D2010161 CSV	2019-00-18 23:45:54	31/5036	CSV	
					D2019101.CSV	2019-06-10 23:45:54	2124972	CSV	
					D2019131.CSV	2019-03-31 23:45:34	3124073	CSV	
					D2019198.CSV	2019-07-17 23:46:19	2093901	CSV	
				<-	D2019203.CSV	2019-07-22 23:46:10	3072247	CSV	
					D2019153.CSV	2019-07-12 23:45:54	2876580	CSV	
					D2019184.CSV	2019-07-03 23:45:54	3176754	CSV	
					D2019199.CSV	2019-07-18 23:46:24	2889876	CSV	
					D2019171.CSV	2019-06-20 23:45:54	3180454	CSV	
					D2019211.CSV	2019-07-30 23:46:10	3021855	CSV	
					D2019182.CSV	2019-07-01 23:45:54	3177498	CSV	
					D2019212 CSV	2019-07-31 17:07:16	2187139	CSV	
Select All De	elete		Ret		Select All Delet	te			

#### Figure 7. Click Close to Close the File Manager Pop-up Window

5. Disconnect from the SUNA software (Figure 8), and then physically disconnect from the SUNA.

#### WARNING: DO NOT REMOVE THE CABLE FROM THE SUNA WITHOUT DISCONNECTING FROM THE UCI

**SOFTWARE FIRST!** In addition, for sites using a Grape, remember to disconnect the PoE Cable (RJF/Eth to Comm) that connects to the Grape **FIRST** when disconnecting/reconnecting sensors. This prevents hot-swapping connections. Wait at least 5 minutes after physically disconnecting the SUNA from the Grape after conducting maintenance using the UCI software and before reconnecting the SUNA to the

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Grape at stream sites. This resets the Grape communication protocols to reinitialize with the SUNA together. Failure to reset the Grape's communication protocol prevents the SUNA data from streaming to the LC (location controller). This does not apply to the SUNA on the AIS Buoy or SUNAs in the HQ Repair Lab or CVAL.

SUNACom 3.0.11_551													
SUNACom Sensor Data View Window Help	lp												
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Connection Mode: Setup	_	🔍 Zoom In	C Zoom Out Auto	Range 🔽 Time Axis	Range Axis							🔀 Se	lect Sensors
Connection Status: Connected							Tin	ne Series					
Available Lamp Time: 232 hours (23%)													
Available Disk Space: 3,583 MB (95%)													
SUNA Clock Time: 16 Sep 2019 17:06:	:47 UTC	2											
SUNA Serial Number: 716 FW 8	Rev: 2.5.1	-											
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SUNK SELUTION													
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C Lipiate Calibration		a.u.											
The observe constants													
Start													
		3											
			16:59:35	16:59:40	16:59:45	16:59:50	16:59:55	17:00:00	17:00:05	17:00:10	17:00:15	17:00:20	17:00:25

 $Figure \ 8. \ Disconnect \ the \ SUNA \ from \ the \ UCI \ Software \ FIRST, and \ then \ Disconnect \ the \ SUNA \ Physically$ 

6. <u>Field Science</u>: Reconnect the SUNA to its onsite location (stream anchor or buoy) and verify the SUNA is back up on the network streaming data.

#### 4.5 DAT File Upload Procedure

#### 4.5.1 Automated Upload Procedure

This procedure requires the IS Control and Monitoring Suite software. It renames the SUNA DAT files to "SITE\_ASSET TAG\_DYYYDDD.csv" and uploads the files to the SUNA DAT Files folder in the Sensor Swap folder. Ensure the files are pulled from the folder you created in Section 4.3: "AssetTag\_SITE\_YYYY-MM-DD" (Using the full 14-digit asset tag.)

- 1. Open the IS Monitoring Suite.
- 2. Click the **RUN** arrow.
- 3. Select the "Utilities" tab and click on "AIS SUNA DAT file rename" button (Figure 9).

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Author: M. Haack, M. Pursley, M. Cavileer Author: M. Haack, M.	Revision: B
EddyCo SIV./vproj/My Computer) <	~

Figure 9. Select the "Utilities" tab and click on "AIS SUNA DAT file rename" button

4. In the pop-up window, click the small folder icon next to the **Path** field (**Figure 10**).



>	Pop-up	p Gener	ic File Sele	ect.vi		_		×
File	Edit	View	Project	Operate	Tools	Window	Help	GENERIC
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Na N( bu	avigate DTE: W itton.	e to the /hen in	folder o the desi	of the Suna red folder	a files to r, click t	o be renar he "Currer	med. nt Folder	.n
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Figure 10. Click the Small Folder I con next to the Path Field

5. Navigate to the folder with the current files and click the "Current Folder" button.

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CVL	* ^	Name	Date modified	Туре	Size		
xml	*	D2019126.CSV	2019-05-06 17:08	Microsoft Excel C	103 KB		
Mikey	*	D2019135.CSV	2019-05-15 17:45	Microsoft Excel C	99 KB		
, Downloads	*	D2019136.CSV	2019-05-16 23:45	Microsoft Excel C	409 KB		
Dictures		D2019137.CSV	2019-05-17 23:45	Microsoft Excel C	2.826 KB		
prictures	1	D2019138.CSV	2019-05-18 23:45	Microsoft Excel C	2,862 KB		
cval-nas i	*	D2019139.CSV	2019-05-19 15:30	Microsoft Excel C	1,899 KB		
MetaData V		D2019162.CSV	2019-06-11 23:45	Microsoft Excel C	773 KB		
Misc_Utilitie	5	D2019163.CSV	2019-06-12 23:45	Microsoft Excel C	2,959 KB		
Pics		D2019164.CSV	2019-06-13 23:45	Microsoft Excel C	2,999 KB		
XML		D2019165.CSV	2019-06-14 12:45	Microsoft Excel C	1,636 KB		
D		D2019170.CSV	2019-06-19 23:45	Microsoft Excel C	1,181 KB		
UneDrive		D2019171.CSV	2019-06-20 23:45	Microsoft Excel C	3,108 KB		
This PC		D2019172.CSV	2019-06-21 23:45	Microsoft Excel C	3,107 KB		
3D Objects		D2019173.CSV	2019-06-22 12:30	Microsoft Excel C	1,654 KB		
Desktop		D2019196.CSV	2019-07-15 23:45	Microsoft Excel C	679 KB		
Documents		D2019197.CSV	2019-07-16 23:45	Microsoft Excel C	3,100 KB		
Developede	- 11	D2019198.CSV	2019-07-17 23:45	Microsoft Excel C	3,108 KB		
Downloads		D2019199.CSV	2019-07-18 14:15	Microsoft Excel C	1,880 KB	_	
Music		🔂 D2019225.CSV	2019-08-13 23:45	Microsoft Excel C	674 KB		
Pictures		🔂 D2019226.CSV	2019-08-14 23:45	Microsoft Excel C	2,996 KB		
Videos		D2019227.CSV	2019-08-15 23:45	Microsoft Excel C	2,973 KB		
OSDisk (C:)		D2019228.CSV	2019-08-16 13:30	Microsoft Excel C	1,713 KB		
Personer (D	a 🗸	D2019239.CSV	2019-08-27 23:45	Microsoft Excel C	1.005 KB		•

Figure 11. Click the "Current Folder" Button



6. If all goes well, a similar dialogue window to the one in Figure 12 will appear. Click "OK".

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Figure 12. Successful Rename and Upload Confirmation Window

7. Verify the files are in the SUNA DAT File Folder by navigating to N:\Science\Sensor Swap\SUNA DAT Files.

#### 4.5.2 Manual Upload Procedure

If you do not have access to the IS Control and Monitoring Suite software, or in the event it is not working, upload the SUNA data files manually to HQ Aquatic Science via the Network Drive using the instructions below.

 After returning to the Domain Support Facility or via VPN, change the name of the DAT files to "SITE\_ASSET TAG\_DYYYYDDD.csv" and save a copy of each .csv data files to the Network drive in the following folder (Figure 13): N:\Science\Sensor Swap\SUNA DAT Files

nean	<i>Title</i> : NEON Standard Operating Pro Procedure	cedure: SUNA V2 Nitrate Sensor Data Management	Date: 03/16/2022
Operated by Battelle	NEON Doc. #: NEON.DOC.005227	Author: M. Haack, M. Pursley, M. Cavileer	Revision: B

📙 🛛 🚽 🚽 Sensor Swap					
File Home Share View					
$\leftarrow \rightarrow \checkmark \uparrow$ $\longrightarrow$ This PC $\rightarrow$ NEON S	hares (N:) $\rightarrow$ S	cience > Sensor Swap			
📙 IS Training Material Development - NO	DT RE4 🖈 🔨	Name	Date modified	Туре	Size
Tower Hatch 20110923	A	aquaTROLL	9/23/2019 5:42 PM	File folder	
	1	CVAL Files Only	9/23/2019 11:45 AM	File folder	
Bearded Wisdom	*	levelTROLL	9/24/2019 2:32 PM	File folder	
Sensor Swap Photos For Madi	*	Sonde	9/19/2019 4:55 PM	File folder	
Bearded Wisdom 2.0	*	SUNA DAT Files	7/15/2019 4:17 PM	File folder	
Chris Local	*				
for Madeline	*				
Training Products for Skip	*				
GWWs	*				

Figure 13. N:\Science\SensorSwap

2. Field Science must drop the files in the **SUNA DAT Files** folder shown in Figure 13 under the prescribed naming convention above. CVAL files go into the **CVAL Files Only** folder and Manufacturing files go into the **MFG Files Only** folder (**Figure 14**).



Figure 14. CVAL Files Only and MFG Files Only Folder

Note: If you are unable to upload files to this folder, request access through ServiceNow.

3. Field Science: Maintain a local copy of the files for at least two (2) years to have backup files in the event of an emergency (if AQU SCI requires files are to be re-uploaded to another or same location).