



**North Slope of Alaska ARM Facilities
Monthly Status Update
Sandia National Labs**

February 2019

Contacts:

Mark Ivey
(North Slope)
mdivey@sandia.gov
505-284-9092

Fred Helsel
(Barrow/AMF3)
fmhelse@sandia.gov
505-284-3620

Dari Dexheimer
(Tethered Balloon Systems)
ddexhei@sandia.gov
505-844-7685

1	North Slope Facilities Management Executive Summary	1
2	Budget	1
3	Summary of Current Management Issues.....	2
4	Safety	2
5	Tethered Balloon Operations.....	3-5
6	North Slope Facilities	
	AMF3.....	6
	Barrow	7
	Appendices: Instrument Status Reports	8-15
	Distribution.....	16

1 North Slope Facilities Management Executive Summary

This monthly report is intended to communicate the status of North Slope ARM facilities managed by Sandia National Labs.

Operations Team

- * Mark Ivey- ARM Alaska Sites Manager (SNL)
- * Fred Helsel- Barrow and AMF3 Site Manager (SNL)
- * Darielle Dexheimer- Tethered Balloon Operations (SNL)
- * Valerie Sparks- ARM Project Office (SNL)
- * Martin Stuefer- Rapid Response Team (UAF)
- * Randy Peppler- ARM DQ Office Manager (OU)

2 Budget

FY2017 Financials (as of February 22, 2019)

	February	YTD
Carryover funds	\$4,850,599	
Funds Allocated YTD	\$6,750,000	
Carryover plus YTD funds	\$11,600,599	
Cost, burdened amount	\$2,683,471	
Uncosted Funds	\$8,917,128	
Commits, burdened total	\$1,489,323	
Current fiscal year uncommitted funds	\$7,427,805	
Subsequent fiscal year (SFY) commits	\$1,147,088	
Total uncommitted funds, including SFY commits	\$6,280,717	
Fully Burdened Staff Costs	\$307,000	\$1,551,000
Fully Burdened Contract Costs	\$287,000	\$1,132,000
Fully Burdened Total Costs	\$593,000	\$2,683,000

3 Summary of Current Management Issues

Management summary of current issues for February 2019

1. We began launching 2 sondes per day for the National Weather Service. They brought sondes and balloons to Barrow. The Vaisala Autosonde was reprogrammed for the extra launches. Our current understanding with them is they will provide helium for launches until we are able to install a hydrogen generator. Currently, we require helium in standard "K" bottles. We learned that we are under a helium allotment of 75% of last year's amount because of a nation-wide helium shortage.
2. We continue to push ahead on a NEPA request for installing new pilings and a deck at Utqiagvik/Barrow. We worked with the NEPA team at Sandia to finish a NEPA checklist.
3. We have been asked to prepare a list of documents for the Sandia Field Office and NNSA that show how authorizations for our work in Alaska "flow down" to our department. This request is part of a larger request at Sandia to understand how field work in remote sites is reviewed and approved.
4. We are attempting to modify our contract with UAF. Ross Bergener would report to Martin at UAF and would be available to travel to Barrow as needed to help with instrument problems, IOPS, etc. This could be very valuable once Walter retires.
5. It has been a very snowy winter, and we are hopeful the front-end loader will arrive soon via the recently completed ice road, which runs from Prudhoe Bay to Barrow. The loader should help significantly with snow clearing.
6. We are helping Matthew Sturm and Jen Delamere get ready for the start of their snow measurement campaign in Barrow. Looks like we have identified needed resources and will have them ready for the start of the work this spring.
7. With help from Walter, we were able to locate a stakebed truck that we could rent at a reasonable price while our GSA-supplied stakebed is being repaired.
8. Travel to Utqiagvik/Barrow and Oliktok is starting to ramp up as we approach the end of winter and start of another active spring and summer season.
9. Oil exploration and development work has noticeably increased over recent months. This means that travel and accommodations need to be booked earlier.

Safety

AMF3- No incident/Injury

Barrow - No Incident/Injury

4 Tethered Balloon Operations

TBS Report for February 2019

The TBS crew continued work on implementing new features and improvements to both TBS trailers. First, the crew worked to install the new electronics system onto each winch. A variable speed controller, heater, and control panel were mounted into an electronics box and then mounted on the face of each winch. This allowed the winches to be tested on generator power before being fully installed on the winch trailers. In addition, new balloon rest arms were manufactured. The new arms exhibit a telescoping feature that allows them to be dropped out of the way during flight. This allows for a clearer operating area and means the TBS can operate more safely at significant tether angles. A new auxiliary 21-gallon fuel tank and transfer pump were added to the AMF3 trailer, which will allow the crew to top off generators as needed during flight. Finally, the brackets which will be used to mount the ATV winches to both trailers were designed. The ATV winches will allow for more automated launch and retrieval of the balloons.



Storage box and backup generator mounted to AMF3 trailer.



New electrical system mounted directly to the winch.



Auxiliary fuel tank mounted to the AMF3 trailer. The tank has a capacity of 21 gallons, allowing a run time of ~40 hours between all tanks.

TBS Datastreams

1) tbsimetxq2

- TBS IM provided flags for the b-level tbsimetxq datastream on 2/13.
- On 2/13 IM and Erol Cromwell confirmed no tbsimetxq data from 2018 had yet been collected from the AMF3 TBS computer. Erol suggested closing PRJTASK0032425, Physical Instrument Development for the XQ2, to help kick off tasks for the ADC Operation team – and this task was closed on 2/13.

2) tbswinds

- TBS IM created ENG0004085 on 2/26 to promote tbswinds to b-level and include tbsimet or tbsimetxq-derived altitude data from three header rows included in revised TBS anemometer files uploaded to the ENG.
- On 2/13 IM and Erol Cromwell confirmed no tbswinds data from 2018 had yet been collected from the AMF3 TBS computer. Erol suggested Heath Powers close an outstanding task, PRJTASK0037767, in the tbswind INST. Erol closed task on 02/13 after coordination with Heath.

3) tbsimet

- At IM meeting in February TBS IM and Ken Kehoe discussed running test qc flags on a-level tbsimet data, before finalizing flags for a b-level ingest. TBS IM emailed test flags to Ken, Austin, and Corey on 2/26.

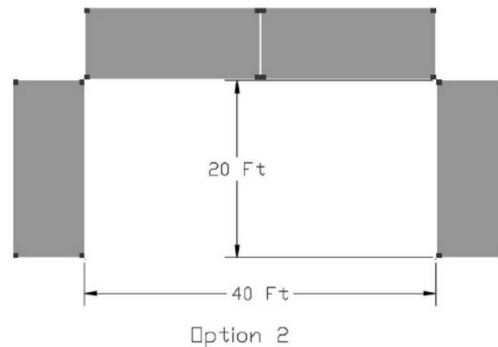
4) tbsslwc

- On 2/12 Brian Ermold advised that if the existing SLWC ingest can be run on the existing ingested iMet SLWC data then a new ENG should not be needed to proceed.

- On 2/26 TBS IM emailed Brian and Erol that the existing SLWC ingest could be run on the SLWC frequency data included in the a-level tbsimet ingest.
 - tbsdts
- 5) At IM meeting in February Jennifer Comstock advised that DTS data should be PI-provided. TBS IM will complete archived DTS data processing as able and provide it to the ADC.
- tbsdts
- 6) On 2/19 on a TBS data call with several ARM staff and Oliktok Site Science team members, Hagen Telg advised that the tbspops data available through the archive appeared corrupted, and then sent an email with details. Work has continued on this issue with the TBS IM, the POPS IM, Ric Cedarwall, Maggie Davis, Gijs de Boer, and Hagen Telg. The issue seems to arise from data from both POPS being ingested as if they were from a single unit. A collections and ingest scheme to identify the instruments as separate needs to be determined. On 2/26 Jim Mather advised that the rule against including unit SN in filenames could be revisited.

TBS ENGs & EWOs

- 1) Under ENG0004057 it was determined to forego a structure for TBS at SGP for the April 2019 deployment. Eight containers will be deployed as a windbreak as depicted below. This configuration will be evaluated during April to consider if any changes are needed for future TBS activity at SGP in 2019.



- 2) Cory Stuart created EWO0023697 on 2/14 to procure and install a desktop, laptop, and network infrastructure for TBS operations at SGP.

6 North Slope Facilities

AMF3

Current and Upcoming Site Visits

Fred Helsel, Valerie Sparks/SNL	03/06	Site overview/inventory
Joe Hardesty, Mark Ivey, Lori Parrott/SNL; Major Susan Martin/Alaska Command; Nettie Labelle-Hamer, Bob McCoy/UAF	03/17	Site visit/tour by Arctic partners

Current and Upcoming Field Campaigns/FCs

[AFC06968](#) - MACAWS Receiver Site (Pre-Campaign)

Site News

NA

Site and Safety Issues

2019/02/09, CM-2019-AMF3-VSN-2816: The ASCO Red Hat solenoid failed, in Power Shelter 2. Solenoid was stuck in closed position, not allowing the day tank to fill with fuel, causing the facility to shut down. OPS switched power to the diesel generators, replaced the failed solenoid with a spare, and verified operations.

Unmet Needs

NA

Site Changes/Upgrades

Site is operating in winter mode.

Site Staffing

NA

Barrow

Current and Upcoming Site Visits

Ben Bishop/SNL	03/06-12	SACR repair
Fred Helsel/SNL	03/07-11	Site overview
Valerie Sparks/SNL	03/07-11	Inventory, site maintenance
Mark Ivey/SNL	03/18	Site overview

Current and Upcoming Field Campaigns/FCs

SNPP/NPOESS Ground Truth Sonde Launch, Phase 5 – start date Oct 1, 2016
Global Navigation Satellite System (GNSS) – start date July 2017
RIVAL - Sonde RS92 RS41 comparison. (Donna Holdridge)
Arctic Observing eXperiment: March 2013-March 2019
ARM Radiosondes for SNPP/JPSS Validation
Heated Pyrhelimeter IOP requesting extension - winter 2018
Seasonal Evolution of Land and Sea Ice Albedo. May 2019
Sources of Ice Nucleating Particles in the Arctic. May 2019
BEAR-oNS. June 2019-August 2020

Site News

NA

Site and Safety Issues

SACR II has a glycol leak on the K band side, similar to the W Band side that was repaired in February. It appears to be a bad design from the manufacturer, ProSensing. It will be fixed using the correct hardware (*Push-On Hose End Connection, 3/8 in. Stainless Steel Swagelok Tube Fitting, 3/8 in*). In the extreme cold weather, the stainless tubing must contract, and the lubrication of the glycol slips off under pressure from the chiller. The issue will be resolved using a fitting made for stainless tubing and flexible hose.

Unmet Needs

We are looking into leasing a truck while the GSA truck is repaired, which could take up to three months, as we are headed into the busiest months of the year.

Site Changes/Upgrades

Site is operating in winter mode.

Site Staffing Issues

NA

Appendices: Instrument Status – Provided by Martin Stuefer and Telayna Gordon

- Appendix A: AMF3

INFORMAL AMF3 INSTRUMENT STATUS REPORT FOR February 15, 2019 - February 22, 2019
BRIEF STATUS OF INSTRUMENTS AND SITE IN OLIKTOK AS OF 2019/02/22:

Facilities	Operational
Data Systems	Operational
Vehicles	Operational
Desktop Computers	Operational
SKYRAD - SKY Radiometer on Stand for downwelling	Operational
MFRSR - Multifilter Rotating Shadowband Radiometer	Not Operational
GNDRAD - Ground Radiometer on Stand for Upwelling	Operational
MFR2.5m - Multifilter Radiometer at 2.5m height	Not Operational
MAWS - Automatic Weather Station	Operational
MET - Surface & Tower Meteorological Instruments	Operational
CMH - Chilled Mirror Hygrometer	Operational
AMC - Soil, up/downwelling radiation measurements	Operational
ECOR - Eddy Correlation Flux System	Operational
MWR3C - Three Channel Microwave Radiometer	Operational
MPL - Micropulse Lidar	Operational
DL - Doppler Lidar	Operational
RL - Raman Lidar	Not Operational
CEIL - Vaisala Ceilometer	Operational
KAZR - Ka ARM Zenith Radar	Operational as per warno.arm.gov
BBSS - Balloon Borne Sounding System	Operational
TSI - Total Sky Imager	Operational
AOS - Aerosol Observing System	Partly Operational
AOSMET - AOS Meteorological Measurements	Operational
CO - AOS Carbon Monoxide Analyzer	Operational
CPC - Condensation Particle Counter	Operational
CAPS - Cavity Attenuated Phase Shift Extinction Monitor	Not Operational
ACSM - Aerosol Chemical Speciation Monitor	Not Operational
HTD-MA - Humidified Tandem Differential Mobility Analyzer	Not Operational
GHG - PICARRO	Operational
NEPH - Nephelometer	Operational
PSAP - Particle Soot Absorption Photometer	Operational
UHSAS - Ultra-High Sensitivity Aerosol Spectrometer	Operational
IMPACTOR - AOS Impactor	Operational
OZONE - AOS Ozone	Operational
CCN - Cloud Condensation Nuclei Particle Counter	Not Operational
LPM - Laser Precipitation Monitor	Operational
GEONOR - Geonor Weighing Gauge	Operational
SRS - Snow Depth Sensor	Operational
AERI - Atmospheric Emitted Radiance Interferometer	Operational
CIMEL - Cimel Sunphotometer	Not Operational
IRT - Infrared Thermometer	Operational
MET-AIR - DataHawk Unmanned Aerial System	Operational
TBS - Tethered Balloon System	Operational

* Oliktok Instruments in Detail: *

INFRASTRUCTURE --- Facilities --- Operational.

INFRASTRUCTURE --- Data Systems --- Operational.

2019/02/22, CM-2019-AMF3-VSN-2827: HDD S/N NA75FF79 was filled, so it was replaced with HDD S/N NA7Q2CRB. Ops will ship HDD S/N NA75FF79 via USPS tracking # 9114 9014 9645 0852 3627 46.

2019/02/16, CM-2019-AMF3-VSN-2824: HDD S/N NA78Y6WC was filled, so it was replaced with HDD S/N NA77YRDE. Ops will ship HDD S/N NA78Y6WC via USPS tracking # 9114 9014 9645 0852 3627 60.

INFRASTRUCTURE --- Vehicles --- Operational.

INFRASTRUCTURE --- Desktop Computers --- Operational.

SKYRAD --- SKYRAD general --- Operational.

2019/01/08, DQPR-7365: ADC cleared the ingest on 2018/12/18. Normal plots are appearing on DQExplorer starting at 00:00 UTC on 2018/12/17, and Mark Kutchenreiter has been assigned DQR D190108.4. to notify users about the data with an increased time step. The most recent DQPR status is "in progress - assignments."

2018/12/07, DQPR-7342: Visual checks of the global horizontal PSP should be made starting at about September 15, 2019, when skies are clear enough, to see if there is any shadowing from about 1 to 2 UTC. The most recent DQPR status is "waiting - for site visit."

SKYRAD --- PIR 1 shaded --- Operational.

SKYRAD --- PIR 2 shaded --- Operational.

SKYRAD --- SOLAR Tracker --- Operational.

SKYRAD --- B&W diffuse --- Operational.

SKYRAD --- NIP --- Operational.

SKYRAD --- PSPg --- Operational.

SKYRAD --- MFRSR --- Not Operational. Removed for winter.

2018/11/11, CM-2018-AMF3-VSN-2714/DQPR-7420: MFRSR SN # 199 needed to be removed for winter calibration, so ops powered down the instrument, removed the cables, and sealed them in plastic bags. The unit was packed and shipped for calibration at SGP (shipped to James Martin). Christian Herrera was assigned DQR D181112.3. The most recent DQPR status is "in progress - assignments."

TIPTWR --- GNDRAD general --- Operational.

TIPTWR --- MFR2.5m --- Not Operational. Removed for winter.

TIPTWR --- PIRgnd --- Operational.

TIPTWR --- PSPgnd --- Operational.

MAWS --- Automatic Weather Station --- Operational.

MET --- METTOWER general --- Operational.

MET --- CMH --- Operational.

2019/01/18, DQPR-7557: Site ops alerted Jenni about noisy RH data from the CMH. The mirror cleaning/calibration was done on 12/27, and the mirror assembly was replaced 12/29. Fan failure was noted on 1/11, and then the aspirator was replaced. Data are looking better and trending well with the HMT (as of 1/18, the temperature is starting to look a little high, but Jenni will keep an eye on it). David Oaks notes the replacement fan might be close to failure. Jenni is waiting on a manufacturer quote for replacement fans. The most recent DQPR status is "waiting - for spares."

MET --- Barometer --- Operational.

MET --- TEMPERATURE / HUMIDITY --- Operational.

MET --- WIND INSTRUMENTS (SONIC) --- Operational.

MET --- PWD --- Operational.

MET --- AMC --- Operational.

ECOR --- ECOR --- Operational.

ECOR --- SEBS --- Operational.

MW RADIOMETERS --- MWR3C --- Operational.

LIDAR --- Micropulse LIDAR --- Operational.

2019/01/04, DQPR-7530/CM-2019-AMF3-VSN-2770: SDS and the mentor found that the USB to Ethernet device had failed, thus stopping data ingest for roughly a 24 hour period. It was decided previously that if the MPL virtual machine (VM) failed, site ops would change over to a new physical computer that was sent up by the mentor. At 16:14 UTC, ops shut down the MPL and switched the hard wiring/connections to a new physical computer. Site ops then contacted SDS and was able to connect the physical computer to the instrument network. At this point, ops tasks are complete with this change over. SDS and mentor will complete the software changes/updates needed to run the new physical computer. The most recent DQPR status is "open - requires action."

LIDAR --- Doppler LIDAR --- Operational.

LIDAR --- Raman LIDAR --- Not Operational. Shut Down for winter.

LIDAR --- CEIL --- Operational.

RADAR --- KAZR --- Operational as per warno.arm.gov.

Sonde --- BBSS --- Operational.

2019/02/19, CM-2019-AMF3-VSN-2826: Technicians are unable to launch the 23:30 UTC balloon due to high wind conditions (>30 mph sustained, gusting >40mph). Launches will resume when weather conditions permit.

IMG --- TSI --- Operational.

AOS --- General --- Partly Operational, Some Instruments Shut Down.

AOS --- AOSMET --- Operational.

2018/10/29, DQPR-7391: Wind speed and wind direction are often missing beginning at 16:46 UTC on 2018/10/16. There were short intermittent periods of missing data prior to this date, but the periods of missing data have become more frequent. Site ops commented that this problem happens every winter since the WXT520 unit sits on top of the AOS connex and is non-heated. It cannot be serviced/maintained over the winter months. Kenneth Kehoe decided to leave the end date of this DQPR open until the ice is no longer an issue as to warn data users now. Jenni Kyrouac submitted DQR D181030.1. The most recent DQPR status is "in progress - assignments."

AOS --- CO - Analyzer --- Operational.

AOS --- CPC (CPCU and CPCF) --- Operational.

AOS --- CAPS --- Not Operational. Instrument at Vendor.

2019/02/05, DQPR-5816: The 3W-CAPS (originally staged at OLI) is at the vendor due to hardware issues. As of 2019/02/04, the vendor has identified a long-running problem that has plagued this instrument. The problem is now solved and they will be doing in-house testing this week. The unit will be shipped out to BNL during the following week. Once received, BNL will confirm operation and performance before starting the physical swapping of the 1W-CAPS currently at ENA with this 3W-CAPS (along with the concomitant shipment of the 1W-CAPS to OLI). The most recent DQPR status is "in progress - assignments."

2018/10/05, DQPR-5816: The repaired unit is back at BNL and was just used in the ARM-sanctioned PSAP filter laboratory study. One of the three pumps failed during this study and BNL is awaiting the delivery of the replacement pumps. Once replaced, the instrument can be shipped back to the site. DQR D181005.1 has been assigned to Arthur Sedlacek.

AOS --- ACSM --- Not Operational. Removed from Service for Redeployment to AMF2.

AOS --- HT-DMA --- Not Operational. Instrument Removed for the winter.

AOS --- GHG-Picarro --- Operational.

2019/01/28, DQPR-7570: The ingest was reenabled. The most recent DQPR status is "open - requires action."

2019/01/18, DQPR-7524: The gas analyzer crashed over a period of time, with problems accumulating from 2018/12/24 through 2019/01/15, at which point the 'oliaosghg' system was shut down. The system should be running normally within about a week, at which point Andrew Moyes will submit a DQR for the missing data period starting at 12/24/18. B1-level data from 11/09 - 12/24 should be available once ENG0004051 is released and that period is reprocessed. The most recent DQPR status is "open - requires action."

2019/01/02, DQPR-7524: The instrument started with roughly 20% of all data missing on 2018/12/01, which has now progressed to 30% of all data missing. This period (12/15-12/21) also had a day (12/21) where the data was completely unavailable.

AOS --- UHSAS --- Operational.

AOS --- NEPH --- Operational.

AOS --- IMPACTOR --- Operational.

AOS --- Ozone --- Operational.

AOS --- PSAP --- Operational.

2018/11/11, DQPR-7418: Data was not available from 02/25 at 18:03 UTC to 2/26 at 18:39 UTC. DQRs for other instruments at this location indicate that the UPS failed during this time. DQR D181112.1 was assigned to Arthur Sedlacek. The most recent DQPR status is "in progress - assignments."

AOS --- IMPACTOR --- Operational.

AOS --- CCN --- Not Operational. At BNL, Waiting for Parts and Working on Performance Issues.

2018/08/13, DQPR-7136: New parts were installed, and a full flow calibration and a zero test was performed. The instrument is working well. Janek is waiting for an SMPS to become available for SS% calibration. The most recent DQPR status is "in progress - assignments."

Precip --- LPM --- Operational. Ingest Work in Progress.

2018/08/29, DQPR-7265: The ingest is not yet operational. The most recent DQPR status is "open - requires action."

Precip --- GEONOR --- Operational. Ingest Work in Progress.

2018/11/29, DQPR-7267: The ingest is currently down, so we may want to leave this open until start/end dates/times can be accurately determined. The most recent DQPR status is "in progress - assignments."

Precip --- SRS --- Operational. Ingest Work in Progress.

2018/11/29, DQPR-7266: Ingests are currently down, so we may want to leave this open until start/end dates/times can be accurately determined. The most recent DQPR status is "in progress - assignments."

Other --- AERI --- Operational.

Other --- CIMEL --- Not Operational.

2019/01/18, DQPR-7346: All parts have been packed and are ready to be shipped. The government shutdown is preventing ops from sending the instrument to Aeronet at the moment, but it will be shipped as soon as possible. The most recent DQPR status is "waiting - for spares."

2018/12/04, CM-2018-AMF3-VSN-2740/DQPR-7346: The CIMEL was no longer performing its normal scans. After site ops performed numerous tests, the mentor came to the conclusion that the best thing would be to remove the instrument due to the loss of functionality. Site ops removed the instrument from its base and removed the cables from the shelter between 19:00 and 19:25 UTC. The instrument will be packaged in its case and shipped to the manufacturer (AERONET) for repairs. The most recent DQPR status is "waiting - for spares."

Other --- DataHawk Unmanned Aerial System --- Operational, not a full time instrument.

Other --- IRT --- Operational.

Other --- TBS --- Operational.

2018/11/11, DQPR-7419: Data was not available from 18:00 UTC on 04/01 to 23:07 UTC on 04/03. DQR D181112.2 was assigned to Dari Dexheimer. The most recent DQPR status is "in progress - assignments."

- Appendix B- Barrow

INFORMAL NSA INSTRUMENT STATUS REPORT FOR February 15, 2019 - February 22, 2019

BRIEF STATUS OF INSTRUMENTS AND SITE IN Utqiagvik (C1) AS OF 2019/02/22:

Facilities	Operational
Data Systems	Operational
Vehicles	Operational
Desktop Computers	Operational
SKYRAD - SKY Radiometer on Stand for Downwelling	Operational
MFRSR - Multifilter Rotating Shadowband Radiometer	Not Operational
NIMFR - Normal Incidence Multifilter Radiometer	Not Operational
GNDRAD - Ground Radiometer on Stand for Upwelling	Operational
MFR10m - Multifilter Radiometer at 10m height	Not Operational
MET - Surface & Tower Meteorological Instruments	Operational
AMC - Soil, Up/Downwelling Radiation Measurements	Operational

ECOR-twr - Eddy Correlation Flux System	Operational
MWR - Microwave Radiometer	Operational
MWRP - Microwave Radiometer Profiler	Operational
MWRHF - Microwave Radiometer High Frequency	Operational
GVR - G-band Vapor Radiometer	Operational
GVRP - G-band Vapor Radiometer Profiler	Operational
HSRL - High Spectral Resolution Lidar	Operational
MPL - Micropulse Lidar	Operational
CEIL - Vaisala Ceilometer	Operational
DL - Doppler LIDAR	Operational
KAZR - Ka ARM Zenith Radar	Operational
KaWSACR - Ka-Band Scanning ARM Cloud Radar	Not Operational
XSAPR - X-Band Scanning ARM Precipitation Radar	Testing
BBSS (Autosonde) - Balloon Borne Sounding System	Operational
AOS - Aerosol Observing System	Operational
CLAP - Continuous Light Absorption Photometer	Operational
CPC - Condensation Particle Counter	Operational
NEPH - Nephelometer	Operational
IMPACTOR - AOS Impactor	Operational
TSI - Total Sky Imager	Not Operational
TOWERCAM - 40m tower camera	Operational
Great White Camera	Operational
MASC - Multi-angle Snowflake Camera	Operational
LPM/LDIS - Laser Precipitation Monitor	Operational
SRS - Snow Depth Sensor	Operational
PIP - Precipitation Imaging Package	Operational
AERI - Atmospheric Emitted Radiance Interferometer	Operational
CIMEL - Cimel Sunphotometer	Not Operational
IRT - Infrared Thermometer	Operational
IOP - OYESNSA	Operational
IOP - RIVAL	Operational
IOP - GNSS	Operational

* Barrow Instruments in Detail: *

INFRASTRUCTURE --- Facilities --- Operational.

INFRASTRUCTURE --- Data Systems --- Operational.

2019/02/18, CM-2019-NSA-VSN-4881: Ops performed the Monday disk swap at 18:40 UTC. The disk will be mailed off via FedEx.

INFRASTRUCTURE --- Vehicles --- Operational.

INFRASTRUCTURE --- Desktop Computers --- Operational.

2019/02/21, CM-2019-NSA-VSN-4886: IT patches were sent to Walter's PC, so Walter rebooted the PC as requested by IT between 17:30 and 17:40 UTC.

SKYRAD --- SKYRAD General --- Operational.

SKYRAD --- PIR 1 Shaded --- Operational.

SKYRAD --- PIR 2 Shaded --- Operational.

SKYRAD --- SOLAR Tracker --- Operational.

SKYRAD --- B&W diffuse --- Operational.

SKYRAD --- NIP --- Operational.

SKYRAD --- PSPg --- Operational.

SKYRAD --- MFRSR --- Not Operational, Winter Removal.

SKYRAD --- NIMFR --- Not Operational, Winter Removal.

TIPTWR --- GNDRAD general --- Operational.
TIPTWR --- MFR10m --- Not Operational, Winter Removal.
TIPTWR --- PIRgnd --- Operational.
TIPTWR --- PSPgnd --- Operational.

MET --- METTOWER general --- Operational.

MET --- CMH --- Operational, but CMH Data is Inaccurate. Sensor Cleaned Once More, and May be Swapped Out if Problems Resume.

2019/02/23, CM-2019-NSA-VSN-4891: The CMH was inaccurately reporting relative humidity values, so ops pulled the instrument head and found icing inside the instrument unit. Ops thawed it inside, cleaned up inside the unit, and reinstalled it at the tower between 23:20 and 23:55 UTC.

2019/01/28, DQPR-7571: The CMH dew point/relative humidity/vapor pressure data began reading low after a self-check on 1/23 at 18:00 UTC (Telayna alerted via email). Site ops cleaned the mirror on 1/24. The instrument may need recalibrating, or a thermistor may have failed. The data are still trending well with HMT, but are much lower. The most recent DQPR status is "open - requires action."

MET --- Barometer --- Operational.

MET --- TEMPERATURE / HUMIDITY --- Operational, but Noisy Data is Being Investigated.

2018/11/14, DQPR-7034: The 10m level humidity data are often spiking twice a day, around the same times. This problem was apparent prior to maintenance and is addressed in DQPR-6542. This issue has continued after swap, with a suspected start date of 2017/10/09 at 22:00 UTC. Site ops noted that caps are missing from the shield at that level, which may be causing the problem. Jenni posted a picture of the instrument with the missing cap on the DQPR. The tower swap outs are now scheduled for spring 2019. The most recent DQPR status is "waiting - for spares."

MET --- WIND INSTRUMENTS (SONIC) --- Operational.

MET --- PWD --- Operational.

MET --- AMC --- Operational.

2018/11/16, DQPR-5694: Adam Theisen is wondering when the calibration will happen, and if the ingest is handling missing data vs saturated signals properly. The most recent DQPR status is "in progress - assignments."

ECOR --- ECOR-twr --- Operational.

ECOR --- SEBS --- Operational.

2018/11/06, DQPR-7280/CM-2018-NSA-VSN-4764: David Cook commented that the wetness sensor goes below the lower limit of the range when it's iced up--there is nothing that can be done to prevent it. Data will also spike above the upper limit of the range after the ice melts; the sensor does not need to be replaced. A DQR should be written to explain this situation to the data user, so D181105.10 with the start date of the instrument installation, was assigned to Ryan Sullivan. This information should also be put into the instrument handbook. Walter checked the rain sensor anyway between 21:15 and 21:30 and found it clean and dry; he also cleaned and checked the ECOR instruments. The most recent DQPR status is "open - requires action."

MW RADIOMETERS --- MWR --- Operational.

MW RADIOMETERS --- MWRP --- Operational.

MW RADIOMETERS --- MWRHF --- Operational, but Data Still Shows Excessive Noise Conditions.

2019/02/21, CM-2019-NSA-VSN-4888: IT patches were sent to the MWRHF instrument computer; it was rebooted accordingly to complete the updates between 19:45 and 19:55 UTC.

2018/02/09, DQPR-4165: Adam Theisen asked Maria Cadeddu if there has been any discussions on the future of the MWRHF. The current DQPR status is "in progress- assignments."

MW RADIOMETERS --- GVR --- Operational. Radiometrics is Troubleshooting.

2019/02/20, CM-2019-NSA-VSN-4884: The GVR instrument was moved from inside the shelter, where it had been put in testing mode, to the Great White instrument platform. Prosensing will check out the data.

2019/01/25, DQPR-7222: The instrument is having problems again. Andy Pazmany of Prosensing is trying to troubleshoot with Walter. Maria linked D190125.3 for the bad data between 12/15/2018 and 1/19/2019. The most recent DQPR status is "in progress - assignments."

2019/01/07, DQPR-7222: The software run issue was resolved by fixing a wire out of place. However, sky brightness temperatures still do not appear correct.

MW RADIOMETERS --- GVRP --- Operational.

2019/01/25, DQPR-7556: The GVRP software was not operating correctly starting at 01/12 at 00:00 UTC. The software is now working and generating data. Data are now being collected. DQR D190125.5 has been linked to this DQPR. The most recent DQPR status is "in progress - assignments."

LIDAR --- HSRL --- Operational.

LIDAR --- MPL --- Operational.

2019/02/21, CM-2019-NSA-VSN-4887: IT patches were sent to the MPL computer, so the instrument computer was rebooted to complete updates between 19:40 and 19:50 UTC.

LIDAR --- CEIL --- Operational.

LIDAR --- Doppler LIDAR --- Operational. Blower Needs to Be Replaced.

RADAR --- KAZR --- Operational.

RADAR --- KaWSACR --- Not Operational. Chillers are Leaking in KA Band, So They Were Turned Off.

2018/08/31, Warno.arm.gov: The mentor visited the site and performed RF measurements on the subsystems. Configuration, calibration, and testing will continue.

RADAR --- XSAPR --- Testing. Data is Not Being Ingested.

2019/02/19, CM-2019-NSA-VSN-4882: Walter installed a higher RPM, larger blue floor cooling blower to increase air flow for the Megatron transmitter between 22:50 and 23:00 UTC.

2018/08/31, Warno.arm.gov: The upgrade is completed and the latest repairs are being tested. Discussion for the baseline mode will be initiated soon. The baseline will be discussed in conjunction with the SACR baseline.

Sonde --- BBSS (Autosonde or Great White Manual Launches) --- Operational.

2019/02/21, CM-2019-NSA-VSN-4890: IT patches were sent to the Autolauncher computer (.32), so ops rebooted the system between 20:10 and 20:25 UTC to finish the install of patches.

2019/02/21, CM-2019-NSA-VSN-4889: IT patches were sent to the S03 instrument computer, so it was rebooted as requested by IT between 19:50 and 20:00 UTC.

AOS --- General --- Operational.

2019/01/16, DQPR-7551: All AOS instrument data went missing between 2019/01/08 at 20:00 UTC and 2019/01/11 at 18:00 UTC. The metrics were not found in entirety afterward. The most recent DQPR status is "open - requires action."

AOS --- AETH --- Operational.

AOS --- CLAP --- Operational.

AOS --- CPC --- Operational.

2019/01/27, DQPR-7569: Data became unavailable starting on 1/25 at 21:00 UTC. NOAA is currently looking into the issue; NOAA currently cannot reach the data acquisition computer from Boulder, so they are waiting for the local technician to give feedback about the state of the computer; he may need to reboot. The most recent DQPR status is "open - requires action."

2018/11/06, DQPR-7443/7444: The CPC number concentration was oscillating with a regular frequency (over about 24 min) from 10/27 at 15:13 UTC to 12:09 UTC on 10/29, and again from 11/03 at 6:43 UTC to 11/05 at 00:01 UTC. Elisabeth Andrews is not sure if the problem is related to the instrument, the sampling system, environmental conditions (e.g., wind), or some combination of things.

AOS --- NEPH --- Operational. Lamp Holder Replaced.

2019/02/15, DQPR-7586: The on-site NOAA technician replaced the lamp holder, and the nephelometer appears to be back in working order. The most recent DQPR status is "in progress - assignments."

2019/02/05, DQPR-7586: The nephelometer lamp failed at 12:45 UTC on 2019/02/03, so Betsy Andrews is working with the on-site NOAA technician to get it replaced; the first replacement did not work. The lamp holder also broke, and a new one is being sent up; it could take up to 2 weeks to be received. The on-site tech will replace it when he receives it and has time, as he's currently running everything at the NOAA observatory on his own. A new tech hasn't been hired yet due to the government shutdown.

AOS --- IMPACTOR --- Operational.

IMG --- TSI --- Not Operational. Spring Reinstall Pending.

2019/02/14, DQPR-7426: IM Victor Morris requested that the TSI be reinstalled at NSA. Ops will reinstall when the weather is appropriate. The most recent DQPR status is "in progress - assignments."

IMG --- TOWERCAM --- Operational.

IMG --- Great White Camera --- Operational.

Precip --- MASC --- Operational.

Precip --- LPM/LDIS --- Operational, Ingest Work in Progress.

2019/02/19, CM-2019-NSA-VSN-4883: There was a possible power supply issue, so ops removed the previously installed 12VDC, 1000mA supply, and installed an Altech Corp PS-S6012, a 12VDC, 5A power supply in it's place between 23:00 and 23:15 UTC.

2019/02/16, CM-2019-NSA-VSN-4880: Walter checked the LPM logger enclosure, as the instrument was unresponsive. He found that the power inverter (110VAC to 12 VDC) had failed, and this is what runs everything in the enclosure. He found a spare and installed it between 23:30 UTC on 02/15 and 00:25 UTC on 02/16.

2019/01/18, DQPR-7427: The LPM ingest is being updated to handle a new data format, hence the stall. The most recent DQPR status is "open - requires action."

2018/11/13, DQPR-7427: Since 10/27/18 at 3:57 UTC, metrics were unavailable. The DSView log indicates the following error: status: Could Not Map Input CSV Data To Output Dataset.

Raw data appear to be on the ADC computer so this does not appear to involve a site issue.

Precip --- SRS --- Operational, Ingest Work in Progress.

2018/11/10, DQPR-7416: Data are unavailable starting at 19:00 UTC on 10/19. This appears to be an ingest issue per DSView. This is because the raw data file format for the SRS at NSA (and OLI) has changed (see ENG0003770 for more detail). As such the ingest is not processing the new raw data files. The ingest will be updated to accommodate the new file format (INST01114). The most recent DQPR status is "waiting - for spares."

Precip --- PIP --- Operational.

2019/02/20, CM-2019-NSA-VSN-4885: An email from David Swank pointed out that the PECIPIPMVAP collection was lagging. In response, the software was closed out in entirety; all apps were then restarted at 18:20 UTC.

Other --- AERI --- Operational.

Other --- CIMEL --- Not Operational.

Other --- IRT --- Operational.

IOP --- OYESNSA --- Operational.

IOP --- RIVAL --- Operational.

IOP --- GNSS --- Operational.

Distribution

ARM	
Sally McFarlane ARM Climate Research Facility Program Manager Climate and Environmental Sciences Division Office of Biological and Environmental Research Sally.McFarlane@science.doe.gov	Jim Mather ARM Technical Director Pacific Northwest National Laboratory P.O. Box 999, MS K9-38 Richland, WA 99352 jim.mather@pnnl.gov
Nicki Hickmon ARM Associate Director of Operations Argonne National Laboratory 9700 S Cass Ave 240-5132 Lemont, IL 60439 nhickmon@anl.gov	



Sandia National Laboratories is a multimission laboratory managed and operated by National Technology & Engineering Solutions of Sandia, LLC, a wholly owned subsidiary of Honeywell International, Inc., for the U.S. Department of Energy's National Nuclear Security Administration under contract DE-NA0003525.

