DEPARTMENT OF ENVIRONMENTAL QUALITY / BLUE RIDGE REGIONAL OFFICE, ROANOKE
CEI GENERAL PERMIT FOR NONMETALLIC MINERAL MINING INSPECTION REPORT
PREFACE

VPDES/State Certification No.	(RE) Issuance Date	Amendment Date	Expiration Date
VAG840067	**July 1, 2019**		**June 30, 2024**

Facility Name	Address	Telephone Number
Rockydale Quarry	**4754 Old Rocky Mount Rd Roanoke, VA 24014**	**(540) 597-5017**
Owner Name	Address	Telephone Number
Rockydale Quarries Corp.	**P.O. Box 8425 Roanoke, VA 24014-0425**	**(540) 597-5017**
Responsible Official	Title	Telephone Number
Michael Starr	**Safety, Health and Environmental Coordinator**	**(540) 597-5017**
Responsible Operator	Title	Telephone Number
Michael Starr	**Safety, Health and Environmental Coordinator**	**(540) 597-5017**

TYPE OF FACILITY: **Crushed Limestone Quarry**

DOMESTIC				**INDUSTRIAL**			
Federal		Major		Major		Primary	
Non-federal		Minor		Minor	**X**	Secondary	

INFLUENT CHARACTERISTICS:		DESIGN:
	Flow	**NA**
	Population Served	**NA**
	Connections Served	**NA**
	BOD_5	**NA**
	TSS	**NA**

EFFLUENT LIMITS: SPECIFY UNITS

Parameter	Minimum	Average	Maximum	Parameter	Minimum	Average	Maximum

PLEASE SEE ATTACHED EFFLUENT LIMITATIONS PAGE

	Receiving Streams	**UT Back Creek**	
	Basin	**Roanoke River**	
Discharge Point (LAT)*	**37-13-07 N**	Discharge Point (LONG)*	**79-57-21W**

*** Latitude and Longitude converted from the data in the Registration Statement provide to the DEQ on 06/17/2014.**

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

Blue Ridge Regional Office, Roanoke

(Revised: 03-17-2015)

GENERAL PERMIT INSPECTION REPORT

Technical Inspection and Lab/Records Evaluation

FACILITY NAME:	Rockydale Quarry	**INSPECTOR:**	Chad H. Williams
PERMIT No.:	VAG# 840067	**INSPECTION DATE/TIME:**	01/13/2021
TYPE OF FACILITY:	Industrial - Nonmetallic Mineral Mining	**REPORT COMPLETED:**	03/01/2021
		UNANNOUNCED INSPECTION:	[ ] Yes [X] No
COUNTY/CITY:	Roanoke County	**PHOTOS TAKEN?**	[X] Yes [ ] No
REVIEWED BY:	S. C. Hale SCHale	**SAMPLES TAKEN?**	[ ] Yes [X] No

PRESENT DURING INSPECTION: Michael Starr

Technical Inspection Evaluation	Compliance Requests for Action?	[X] YES	[ ] No
Lab/Records Evaluation	Compliance Requests for Action?	[X] YES	[ ] No

* Note: Questions in report answered "NO" or items needing to be addressed

COMPLIANCE REQUESTS FOR ACTION

The following inspection report items (refer to section and question number in report) must be adequately addressed and a written response is required:

I. Operational Unit Review and Condition (specify):

There are no requests for action at this time for the operational unit review and condition section.

II. Effluent Monitoring and Reporting:

There are no requests for action at this time for the effluent monitoring and reporting section.

III. Record Keeping:

Please see the accompanying CEI General Permit Laboratory Inspection Report for the requests for corrective action.

IV. Special Conditions:

There are no requests for action at this time for the special conditions section.

V. Storm Water Pollution Prevention Plan:

There are no requests for action at this time for the storm water pollution plan.

I. OPERATIONAL UNIT REVIEW AND CONDITION:

Describe Wastewater Treatment Units (include solids removal & disposal areas) and condition [Registration Statement and Fact Sheet]:

"Process wastewater" means any wastewater used in the slurry transport of mined material, air emissions control, or processing exclusive of mining, and any other water which becomes commingled with such wastewater in a pit, pond, lagoon, mine, or other facility used for treatment of such wastewater. It includes mine pit dewatering, water used in the process of washing stone, non-contact cooling water, wastewater from vehicle/equipment washing activities, return water from operations where mined material is dredged and miscellaneous plant cleanup wastewaters.

The process water system is designed to operate as "no discharge"

Describe Storm Water Treatment Units and Condition:

Treatment of the facility's storm water consists of 3 sedimentation ponds. Storm water associated with the active mining, crushing and processing area flows into a retention pond and into outfall 002. Storm water associated with the truck maintenance shop, lower lube pad and the "overburden" area flows into a retention pond and through outfall 003. Comingled water for process and storm water is collected in the quarry pit and in pumped in a holding pond at the front of the property and then to outfall 006 . The ponds collect storm water run off and help keep sediment from the mining process from entering the stream below the outfalls. All ponds had several feet of freeboard and appear to be in good condition.

***Condition of Effluent*:**
Neither pond was discharging at the time of this inspection.

***Condition of Receiving Stream*:**
Outfall 002 discharges into a concrete lined ditch that eventually flows into an unnamed tributary of Back Creek.
Outfall 003 discharges into a riprap lined ditch that eventually flows into an unnamed tributary of Ore Branch. The receiving streams were not observed.
Outfall 006 discharges into a riprap lined ditch that eventually flows into an unnamed tributary of Back Creek.

II. EFFLUENT MONITORING & REPORTING:

1. Are all required process wastewater, mine pit dewatering and commingled storm water parameters sampled at least once per three months if any discharge occurs during the period? [Part I.A.1] [**X**] YES [ ] NA

2. Is TPH monitored for outfalls that receive discharges of process wastewater from vehicle/equipment washing facilities or activities? [Part I.A.1] [ ] YES [**X**] NA

3. Are all required storm water events sampled at least once per year (occurring at least 72 hours from previous storm event, grab sample within 30 minutes of discharge) if any discharge occurs during the period? [Part II.A.2] [**X**] YES [ ] NA

4. Are sampling locations according to permit requirements? [Part II.A.1] [**X**] YES [ ] NO

5. Is pH analyzed within 15 minutes with calibrated pH meter? [Part III.A&B] [**X**] YES [ ] NA

6. Are TSS & TPH samples preserved properly (TSS iced and TPH acidified to pH < 2 and iced) and shipped at < 6 °C to an appropriate lab and are sample holding times met (TSS ≤ 7 days & TPH ≤ 28 days)? [Part III.A.2] [**X**] YES [ ] NA

Specify Lab:

Pace Analytical 225 Airport Industrial Park Road
Beaver, West Virginia 25813. VELAP ID: 460148

Comments:

III. RECORD KEEPING:

1.	Do Storm Water Management records include: the duration between the storm event sampled and the end of the previous measurable storm event and submitted with DMR as required? [Part II.A]	[X] YES	[ ] NO
2.	If permittee assumes two or more exclusively storm water outfalls constitute "substantially identical effluents", has the required explanation, estimate of the size of the drainage area and run-off coefficient of the drainage area been submitted? [Part II.B]	[ ] YES	[X] NA
3.	Have the required sampling waiver procedures been followed when applicable? [Part II.C]	[ ] YES	[X] NA
4.	Is a Certificate of Analysis and Chain of Custody documentation maintained? [Part III.A&B]	[ ] YES	[X] NA
5.	Do lab records include sampling date & time, analysis date & time, sample location, test methods, and analyst's name? [Part III.B]	[ ] YES	[X] NA
6.	Are records maintained for at least three years? [Part III.B]	[X] YES	[ ] NO
7.	Are DMRs submitted by the 10th day of the month after monitoring takes place and is the DMR complete and correct and are all sampling results reported? [Part III.C]	[X] YES	[ ] NO
8.	Is plant personnel aware of reporting requirements for "unauthorized discharges", "unusual or extraordinary discharges", and "noncompliance" and have none occurred? [Part III.F, G, H, & I]	[X] YES	[ ] NO

Comments:

IV. SPECIAL CONDITIONS:

1.	Is vehicle/equipment operation and maintenance; fuels, lubricants, coolant, hydraulic fluids, petroleum products spillage clean up and disposal handled in a manner to not allow their entry into surface water or groundwater? [Part I.B.1]	[X] YES	[ ] NO
2.	Is sewage handled to prevent discharge unless under separate VPDES permit? [Part I.B.2]	[ ] YES	[X] NA
3.	Have all chemicals added to the discharge (e.g., polymers, flocculents) been listed on the approved registration statement or approved by the DEQ Director? [Part I.B.3]	[ ] YES	[X] NA
4.	Has a new registration statement been submitted within 30 days if the approved DMM permit has been modified or reissued in any way that would affect the outfall location or the characteristics of a discharge? [Part I.B.4]	[ ] YES	[X] NA
5.	Is all raw or intermediate materials, final product, by-product or wastes handled, disposed of or stored to prevent a discharge of such product, materials or wastes to State Waters? [Part I.B.7]	[X] YES	[ ] NO
6.	Is there no discharge of process wastewater pollutants from co-located asphalt paving material operations? [Part I.B.8]	[ ] YES	[X] NA

Comments:

V. STORM WATER POLLUTION PREVENTION PLAN (SWPPP):

1. Has a SWPPP been developed and implemented? [Part II.D&E] **[X]** YES [ ] NO

2. Were the SWPPP, compliance inspection report, and other information available and is the SWPPP current? [Part II.F&G] **[X]** YES [ ] NO

3. Contents must include [Part II.H]:

Pollution prevention team identification and responsibilities [Part II.H.1] **[X]** YES [ ] NO

Description of potential pollutant sources must include [Part II.H.2]: **[X]** YES [ ] NO

- **[X]** Detailed site drainage map [Part II.H.2.a]
- **[X]** Inventory of exposed materials [Part II.H.2.b]
- **[X]** Updated list of spills and leaks of toxic or hazardous pollutants [Part II.H.2.c]
- **[X]** Sampling data [Part II.H.2.d]
- **[X]** Risk identification and summary of potential pollutant sources [Part II.H.2.e]

Measures and controls must include [Part II.H.3]: **[X]** YES [ ] NO

- **[X]** Good housekeeping [Part II.H.3.a]
- **[X]** Preventive maintenance [Part II.H.3.b]
- **[X]** Spill prevention and response procedures [Part II.H.3.c]
- **[X]** Quarterly inspections and visual exam of storm water samples plus documentation and follow up tracking and procedures [Part II.H.3.d]
- **[X]** Employee training [Part II.H.3.e]
- **[X]** Record keeping and internal reporting procedures [Part II.H.3.f]
- **[X]** Sediment and erosion control [Part II.H.3.g]
- **[X]** Management of run-off [Part II.H.3.h]

Annual Comprehensive site compliance evaluation [Part II.H.4]: **[X]** YES [ ] NO

- **[X]** Visual inspection of all areas contributing to a storm water discharge with industrial activity; evaluation of measures to reduce pollutant loadings; observing structural storm water management measures, sediment and erosion control measures, and other structural pollution prevention measures; visual inspection of equipment needed to implement the plan [Part II.H.4.a]
- **[NA]** Based on results of evaluation, revise Part II.H.2 and Part II.H.3 [Part II.H.4.b]
- **[X]** Compliance inspection report summarizing the scope of the evaluation, personnel making evaluation, dates of evaluation, major observations, actions taken, certification of compliance and signatory requirements met [Part II.H.4.c]

Comments:

Facility Inspection Photos

Drainage area outfall 001

Storm water pond prior to outfall 002

Outfall 002

Storm water pond and drainage

Outfall 003

DEPARTMENT OF ENVIRONMENTAL QUALITY – BLUE RIDGE REGIONAL OFFICE, ROANOKE
CEI GENERAL PERMIT LABORATORY INSPECTION REPORT SUMMARY

FACILITY NAME:	**Rockydale Quarry**	Permit #:	**VAG840067**	INSPECTION DATE:	**03/09/2016**
LABORATORY EVALUATION			No required actions at this time		
		X	**REQUIRED CORRECTIVE ACTION(s) IDENTIFIED**		

SUMMARY of REQUESTS FOR CORRECTIVE ACTION

QUALITY ASSURANCE / QUALITY CONTROL

There were no deficiencies noted with the Quality Assurance / Quality Control section.

LABORATORY RECORDS

There were no deficiencies noted with the Laboratory Records section.

GENERAL SAMPLING AND ANALYSIS

A deficiency was noted with the General Sampling and Analysis section. The following item must be corrected:

- **The automatic temperature compensator (ATC) of the pH meter must be checked against an NIST or NIST traceable thermometer annually. Any correction offset must be tagged on the unit. Agreement with NIST thermometer must be within +/- 1.0°C, otherwise the unit must be repaired or replaced. Any measurement value obtained using this meter must be "flagged" until it can be checked against the NIST traceable.**

pH Analysis

There were no deficiencies noted with the pH parameter.

OTHER – Comments or Observations

DEPARTMENT OF ENVIRONMENTAL QUALITY – BLUE RIDGE REGIONAL OFFICE, ROANOKE
CEI GENERAL PERMIT LABORATORY INSPECTION REPORT
11/2014

PERMIT #:	INSPECTION DATE:	PREVIOUS INSP. DATE:	PREVIOUS EVALUATION:	TIME SPENT:
VAG840067	01/13/2021	03/09/2016	Deficiencies	20 hours w/ travel & report

NAME/ADDRESS OF FACILITY:
Rockydale Quarry
4754 Old Rocky Mount Road
Roanoke, VA 24014

Mailing Address
P.O. Box 8425
Roanoke, VA 24014-0425

FACILITY CLASS:
( ) MAJOR
( ) MINOR
( ) MINOR (Small)
(X) VPDES GENERAL

FACILITY TYPE:
( ) MUNICIPAL
(X) INDUSTRIAL
( ) FEDERAL

UNANNOUNCED INSPECTION?
( ) YES
(X) NO

FY-SCHEDULED INSPECTION?
(X) YES
( ) NO

INSPECTOR(S):	REVIEWER(S):	PRESENT AT INSPECTION:
Chad H. Williams	S. C. Hale	Michael Starr

LABORATORY EVALUATION	DEFICIENCIES? Yes	No
QUALITY ASSURANCE / QUALITY CONTROL		X
LABORATORY RECORDS		X
GENERAL SAMPLING AND ANALYSIS	X	
pH PROCEDURE		X

VELAP CERTIFICATION (on site Environmental Laboratory)	Yes	No
Does the laboratory have VELAP certification (interim or final)?		X
– Document the laboratory's VELAP laboratory number:	NA	
– List the certified parameters:	NA	

VELAP ACCREDITATION (Commercial Environmental Laboratory)	Yes	No
IS A VELAP ACCREDITED LAB USED FOR OTHER PERMIT REQUIRED ANALYSES? VELAP#, LAB NAME, ADDRESS and LIST PARAMETERS:	(Yes)	(No)
VELAP # LAB NAME: PARAMETERS:		
460148 Pace Analytical, 225 Airport Industrial Park Road, Beaver, West Virginia 25813 — Total Suspended Solids	X	
IF PERMIT REQUIRED SAMPLE ANALYSIS IS PERFORMED AT ANOTHER LOCATION, ARE SHIPPING PROCEDURES ADEQUATE?	(Yes) NA	(No)

PERMIT #: VAG840067

LABORATORY RECORDS SECTION

LABORATORY RECORDS INCLUDE THE FOLLOWING:

X	SAMPLING DATE	X	ANALYSIS DATE	NA	CONT MONITORING CHART
X	SAMPLING TIME	X	ANALYSIS TIME	X	INSTRUMENT CALIBRATION
X	SAMPLE LOCATION	X	TEST METHOD	X	INSTRUMENT MAINTENANCE
				X	CERTIFICATE OF ANALYSIS

WRITTEN INSTRUCTIONS INCLUDE THE FOLLOWING:

X	SAMPLING SCHEDULES	X	CALCULATIONS	X	ANALYSIS PROCEDURES

	YES	NO	N/A
DO ALL ANALYSTS INITIAL THEIR WORK?	X		
DO BENCH SHEETS (or LOG BOOK) INCLUDE ALL INFORMATION NECESSARY TO DETERMINE RESULTS?	X		
IS THE DMR COMPLETE AND CORRECT? LIST MONTH(S) REVIEWED: **December 2021**	X		
ARE ALL MONITORING VALUES REQUIRED BY THE PERMIT REPORTED?	X		
DOES CHAIN OF CUSTODY DOCUMENT PROPER SAMPLE PRESERVATION WAS MET?	X		
WHEN THE CERTIFICATE OF ANALYSIS CONTAINS FLAGGED DATA IS THE 'FLAG' REPORTED ON THE DMR?	X		

GENERAL SAMPLING AND ANALYSIS SECTION

	YES	NO	N/A
ARE SAMPLE LOCATIONS ACCORDING TO PERMIT REQUIREMENTS?	X		
ARE PERMIT REQUIRED SAMPLE COLLECTION PROCEDURES APPROPRIATE?	X		
ARE EFFLUENT SAMPLES REPRESENTATIVE OF THE MONITORED ACTIVITY?	X		
ARE PERMIT REQUIRED COMPOSITE SAMPLES FLOW PROPORTIONAL? **NOTE:** Equal volume composite aliquots are acceptable ***if the measured flow for each aliquot is within ± 10% of the monitoring period's average flow***. Some permits specify how the composite is to be taken (e.g., 5G/8HC).			X
IS COLLECTION/SAMPLE EQUIPMENT ADEQUATE?		XΔ	
IS FLOW MEASUREMENT ACCORDING TO PERMIT REQUIREMENTS?	X		

Δ **The automatic temperature compensator (ATC) of the pH meter must be checked against an NIST or NIST traceable thermometer annually. The facility's pH meter pH meter has not been checked since 2011 and is overdue. Any correction offset must be tagged on the unit. Agreement with NIST thermometer must be within +/- 1.0°C, otherwise the unit must be repaired or replaced. Any measurement value obtained using this meter must be "flagged" until it can be checked against the NIST traceable.**

DEPARTMENT OF ENVIRONMENTAL QUALITY – BLUE RIDGE REGIONAL OFFICE, ROANOKE
SAMPLE ANALYSIS HOLDING TIME / CONTAINER/PRESERVATION CHECK SHEET
Revised 11/2014 [40 CFR, Part 136.3, Table II]

FACILITY NAME:	**Rockydale Quarry**						VPDES NO	**VAG840067**	DATE:	**01/13/2021**			
HOLDING TIMES *[Note: Collection period (for composites) and Sample Collection time (end of collection period) must be recorded on the COC.]*					**SAMPLE CONTAINER**				**PRESERVATION** *[Note: Preservation is to occur within 15 minutes of the end of the collection period.]*				
PARAMETER	APPROVED	MET?		LOGGED?		ADEQ. VOLUME		APPROP. TYPE		APPROVED	MET?		CHECKED?	
		Y	N	Y	N	Y	N	Y	N		Y	N	Y	N
pH	15 MIN.	**X**		**X**		**X**		**X**						
CHLORINE	15 MIN.	**NA**		**NA**		**NA**		**NA**		Within 15 minutes				
DISSOLVED 0_2	15 MIN	**NA**		**NA**		**NA**		**NA**		Within 15 minutes				
TEMPERATURE	IMMERSION STAB.	**X**		**X**		**X**		**X**		N/A - Immediately				
BOD5 & CBOD5	48 HOURS									≤ 6 °C	**NA**		**NA**	
TSS	7 DAYS									≤ 6 °C	**X**		**X**	
OIL & GREASE	28 DAYS									≤ 6 °C + H_2S0_4,or HCl pH<2	**NA**		**NA**	
FECAL COLIFORM / *E. coli / Enterococci*	8 HRS									< 10 °C + 0.008% $Na_2S_2O_3$	**NA**		**NA**	
AMMONIA	28 DAYS									≤ 6 °C + H_2S0_4 pH<2t	**NA**		**NA**	
TKN	28 DAYS									≤ 6 °C + H_2S0_4 pH<2	**NA**		**NA**	
WHOLE EFFLUENT TOXICITY (WET)	36 HOURS									≤ 6 °C	**NA**		**NA**	
NITRATE+NITRITE	28 DAYS									≤ 6 °C + H_2S0_4 pH<2	**NA**		**NA**	
NITRITE	48 HOURS									≤ 6 °C	**NA**		**NA**	
Cr^{+6}	28 DAYS									Dissolved: 0.45 µm filter immediately. Buffer solution plus NaOH within 24 hrs	**NA**		**NA**	
PROBLEMS:														

DEPARTMENT OF ENVIRONMENTAL QUALITY – BLUE RIDGE REGIONAL OFFICE, ROANOKE

EQUIPMENT TEMPERATURE LOG/THERMOMETER VERIFICATION CHECK SHEET
11/2014

FACILITY NAME:	Rockydale Quarry				PERMIT NO:	VAG840067		DATE:	01/13/2021			
EQUIPMENT	Preservation Range	In Range?		Inspector Reading	Checked & Logged Daily?		Correct Increment?		ANNUAL THERMOMETER VERIFICATION			
									Is the NIST / NIST-Traceable Reference Thermometer within the manufacturer's expiration date or recertified yearly?			Yes/No NA*
									DATE CHECKED	MARKED		OFFSET VALUE (Correction) / INSPECT TEMP
		Yes	No	°C	Yes	No	Yes	No		Yes	No	°C / °C
SAMPLE REFRIGERATOR	1 – 6 °C	*NA*		NA	NA		NA		NA	NA		NA / NA
NIST Traceable	± 0.01 °C	NA		NA	NA		NA		NA	NA		NA / NA
AUTO SAMPLER	1 – 6 °C	NA			NA		NA		NA	NA		NA / NA
pH METER Oakton pHTestr® 30	± 1 °C		*	*	Reportedly, before each use			X	*		X	* / *
DO METER	± 1 °C	NA							NA	NA		NA /
THERMOMETER-(EFFLUENT)	± 1 °C	NA							NA	NA		NA /

PROBLEMS: * **The automatic temperature compensator (ATC) of the pH meter must be checked against an NIST or NIST traceable thermometer annually. The facility's pH meter pH meter has not been checked. Any correction offset must be tagged on the unit. Agreement with NIST thermometer must be within +/- 1.0°C, otherwise the unit must be repaired or replaced. Any measurement value obtained using this meter must be "flagged" until it can be checked against the NIST traceable.**

In addition, field instruments (e.g., pH meters) must be checked over the range of temperatures the instruments are likely to encounter while making field measurements. It is recommended field instruments measuring temperature be checked at 0 °C, (ice water), 20 °C (room temperature), and 40 °C (warm water).

	Michael Starr	VPDES NO	VAG840067

Meter: **Oakton pHTestr® 30**
S/N: **778209**

Parameter: Hydrogen Ion (pH)
Method: Electrometric
11/2014

METHOD OF ANALYSIS:

*	21st Edition of Standard Methods (SM 21) – 4500-H+ B-2000 (SM 21 pH)
	22nd Edition of Standard Methods (SM 22), or Online Editions of Standard Methods – 4500-H+ B-2011 (SM 22 pH)

	pH is a method-defined analyte so modifications are not allowed. [40 CFR Part 136.6]	Y	N
1)	Is a certificate of operator competence or initial demonstration of capability available for each analyst/operator performing this analysis? **NOTE:** Analyze 4 samples of known pH; you may use an external source of buffers or other known standards (different lot/manufacturer than buffers used to calibrate meter). Recovery for each of the 4 samples must be ± 0.2 pH units of the known concentration of the sample. [SM 1020 B.1] **Note: The same ph buffer [values] used for calibration of the instrument can be used as LCS if from a different source or lot .**	X	
2)	**IF** a replicate sample is analyzed is there a written procedure for which result will be reported on DMR (Sample or Replicate) and is this procedure being followed? [DEQ – based on EPA Good Laboratory Practices Standards]	NA	
3)	Is a Laboratory Control Sample (LCS) tested at least annually and are results within acceptance criteria? [SM 21 B.2 or SM 22 1020 B.3.] **NOTE:** LCS should be a purchased Proficiency Test (PT) sample or a different buffer other than ones used for calibration of the meter [with a ± 0.1 pH units acceptance range or within "Acceptable Range" specified by the PT provider].. **NOTE: The same pH buffer [values] used for calibration of the instrument can be used as LCS if from a different source or different lot.**	X	
4)	Is the electrode in good condition (no chloride precipitate, scratches, deterioration, etc.)? [SM 21 pH or SM 22 pH 2.b./c. and 5.b.]	NA*	
5)	Is electrode storage solution in accordance with manufacturer's instructions? [SM 21 pH or SM 22 pH 4.a. and Mfr.]	NA*	
6)	Is meter calibrated on at least a daily basis using three buffers all of which are at the same temperature? [SM 21 pH or SM 22 pH 4.a.] **NOTE**: Start with Buffer 7 unless manufacturer's instructions state otherwise. **[NOTE:** If meter is not capable of 3 buffer calibration use 2 buffers bracketing the expected sample pH and then measure a 3rd buffer (the measurement value recorded must be ± 0.1 pH units), and then reread and record value of buffer 7 to ensure ± 0.1 SU.]	On days used	
7)	After calibration, is a buffer analyzed as a check sample to verify that calibration is correct? Verification measurement should be within ± 0.1 pH units. [SM 21 1020 B 10.c. or SM 22 1020 B 11.c.]	NA*	
8)	Is calibration verification measurement repeated with every 10 samples and at the end of a series of samples? Verification measurement should be within ±- 0.1 pH units. [SM 21 pH or SM 22 pH 4020 B 2.b.] **NOTE:** Not applicable if pH meter is calibrated before taking any measurement (e.g., if operator monitors daily pH at more than one facility and calibrates before each measurement).	NA	
9)	Do the buffer solutions appear to be free of contamination or growths? [SM 21 pH or SM 22 pH 3.a.]	NA*	
10)	Are buffer solutions within the listed shelf-life or have they been prepared within the last 4 weeks? [SM 21 pH or SM 22 pH 3.a.]	NA*	
11)	Is the cap or sleeve covering the access hole on the reference electrode removed when	NA*	

	measuring pH? [Mfr.]		
12)	Is sample analyzed within 15 minutes of collections? [40 CFR Part 136]	NA*	
13)	Is the electrode rinsed and then blotted dry between reading solutions (Disregard if a portion of the next sample analyzed is used as the rinsing solution.)? [SM 21 pH or SM 22 pH 4.a and 4.b]	NA*	
14)	Is the sample stirred gently at a constant speed during measurement? [SM 21 pH or SM 22 pH 4.b.]	NA*	
15)	Does the meter hold a steady reading after reaching equilibrium? [4.b.]	NA*	

PROBLEMS:

COMMENTS:

***The pH meter was not observed due to Covid 19 protocols.**