EPA REGION 8 QA DOCUMENT REVIEW CROSSWALK

QAPP/FSP/SAP for: *(check appropriate box)* GRANTEE CONTRACTOR EPA Other	**Entity** *(grantee, contract, EPA AO, EPA Program, Other)* BNSF Railway Company and Union Pacific Railroad	**Regulatory Authority and/or Funding Mechanism**	___ **2 CFR 1500 for Grantee/Cooperative Agreements** ___ **48 CFR 46 for Contracts** ___ **Interagency Agreement** ___ **EPA/Court Order** ___ **EPA Program Funding** ___ **EPA Program Regulation** ___ **EPA CIO 2105**
Document Title *[Note: Title will be repeated in Header]*	Draft Quality Assurance Project Plan: Railroad Assets – Long-Term Operation and Maintenance, BPSOU (August 2018)		
QAPP/FSP/SAP Preparer	Kennedy/Jenks Consultants		
Period of Performance *(of QAPP/FSP/SAP)*	**2018-2019**	**Date Submitted for Review**	8/27/18
EPA Project Officer **EPA Project Manager**	Nikia Greene	**PO Phone #** **PM Phone #**	406-457-5019
QA Program Reviewer or Approving Official		**Date of Review**	10/22/18

Documents Submitted for QAPP Review **(QA Reviewer must complete):**

1. QA Document(s) submitted for review:

QA Document	Document Date	Document Stand-alone	Document with QAPP
QAPP	**August 2018**	**Yes** / No	
FSP		Yes / No	Yes / No
SAP		Yes / No	Yes / No
SOP(s)			Yes / No

2. WP/SOW/TO/PP/RP Date _____
WP/SOW/TO/RP Performance Period _____

3. QA document consistent with the:
WP/SOW/PP for grants? Yes / No
SOW/TO for contracts? Yes / No

4. QARF signed by R8 QAM Yes / No / NA
Funding Mechanism IA / contract / grant / NA
Amount _____

Notes for Document Submittals:

1. A QAPP written by a Grantee, EPA, or Federal Partner must include for review: Work Plan(WP) / Statement of Work (SOW) / Program Plan (PP) / Research Proposal (RP) and funding mechanism
2. A QAPP written by Contractor must include for review:
   a) Copy of Task Order Work Assignment/SOW
   b) Reference to a hard or electronic copy of the contractor's approved QMP
   c) Copy of Contract SOW if no QMP has been approved
   d) Copy of EPA/Court Order, if applicable
   e) The QA Review must determine (with the EPA CO or PO) if a QARF was completed for the environmental data activity described in the QAPP.
3. **a**. Field Sampling Plan (FSP) and/or Sampling & Analyses Plan (SAP) must include the Project QAPP ***or*** must be a stand-alone QA document that contain all QAPP required elements (Project Management, Data Generation/Acquisition, Assessment and Oversight, and Data Validation and Usability).
   c. SOPs must be submitted with a QA document that contains all QAPP required elements.

Summary of Comments *(highlight significant concerns/issues)*:

1. The Railroads must address the comments in the Summary of Comments, as well as those identified in the Comment section(s)

Draft Quality Assurance Project Plan: Railroad Assets – Long-Term Operation and Maintenance, BPSOU (August 2018)

Element	Acceptable *Yes/No/NA*	Page/ Section	Comments
A. Project Management			
A1. Title and Approval Sheet			
a. Contains project title	Yes	1st page	EPA: No comments.
b. Date and revision number line (for when needed)	Yes	Page i	EPA: Be sure to change the date in the final version.
c. Indicates organizations name	Yes	Page i	EPA: No comments.
d. Date and signature line for organizations project manager	Yes	Page i	EPA: No comments.
e. Date and signature line for organizations QA manager	No	Page i	EPA: Please add a signature line for the QA manager responsible for implementing this QAPP.
f. Other date and signatures lines, as needed	Yes	Page i	EPA: No comments.
A2. Table of Contents			
a. Lists QA Project Plan information sections	Yes	Page ii through v	EPA: No comments.
b. Document control information indicated	Yes	N/A	EPA: No comments.
A3. Distribution List			
Includes all individuals who are to receive a copy of the QA Project Plan and identifies their organization	Yes	Section A.3	EPA: No comments.
A4. Project/Task Organization			
a. Identifies key individuals involved in all major aspects of the project, including contractors	Yes	Section A.4.1	EPA: No comments.
b. Discusses their responsibilities	Yes	Section A.4.1	EPA: No comments.
c. Project QA Manager position indicates independence from unit generating data	Yes	Section A.4.2	EPA: No comments.
d. Identifies individual responsible for maintaining the official, approved QA Project Plan	Yes	Section A.4.3	EPA: No comments.
e. Organizational chart shows lines of authority and reporting responsibilities	Yes	Section A.4.4, Figure A-1	EPA: No comments.
A5. Problem Definition/Background			
a. States decision(s) to be made, actions to be taken, or outcomes expected from the information to be obtained	Yes	Section A.5.1	EPA: No comments.
b. Clearly explains the reason (site background or historical context) for initiating this project	Yes	Section A.5.2	EPA: No comments.

c. Identifies regulatory information, applicable criteria, action limits, etc. necessary to the project	Yes	Section A.5.3 through A.5.4	EPA: No comments.
A6. Project/Task Description			
a. Summarizes work to be performed, for example, measurements to be made, data files to be obtained, etc., that support the projects goals	Yes	Section A.6.1	EPA: No comments.
b. Provides work schedule indicating critical project points, e.g., start and completion dates for activities such as sampling, analysis, data or file reviews, and assessments	Yes	Section A.6.2	EPA: No comments.
c. Details geographical locations to be studied, including maps where possible	Yes	Section A.6.3, Figures A-3 through A-8	EPA: No comments.
d. Discusses resource and time constraints, if applicable	Yes	Section A.6.4	EPA: No comments.
A7. Quality Objectives and Criteria			
a. Identifies - performance/measurement criteria for all information to be collected and acceptance criteria for information obtained from previous studies, - including project action limits and laboratory detection limits and - range of anticipated concentrations of each parameter of interest	Yes	Section A.7, Appendix A	EPA: No comments.
b. Discusses precision	Yes	Section A.7.1	EPA: No comments.
c. Addresses bias	Yes	Section A.7.2	EPA: No comments.
d. Discusses representativeness	Yes	Section A.7.3	EPA: No comments.
e. Identifies the need for completeness	Yes	Section A.7.4	EPA: No comments.
f. Describes the need for comparability	Yes	Section A.7.5	EPA: No comments.
g. Discusses desired method sensitivity	Yes	Section A.7.6	EPA: No comments.
A8. Special Training/Certifications			
a. Identifies any project personnel specialized training or certifications	Yes	Section A.8.1	EPA: No comments.
b. Discusses how this training will be provided	Yes	Section A.8.1	EPA: No comments.
c. Indicates personnel responsible for assuring training/certifications are satisfied	Yes	Section A.8.1	EPA: No comments.
d. identifies where this information is documented	Yes	Section A.8.1	EPA: No comments.

A9. Documentation and Records			
a. Identifies report format and summarizes all data report package information	No	Section A.9.2	EPA: Include a discussion (similar to Section 9.2) of the content of the BRES and Stormwater inspection reports.
b. Lists all other project documents, records, and electronic files that will be produced	Yes	Section A.9.2	EPA: In the last two sentences of Section A.9.1, the references to Sections B.3.1 and B.9.1 are not correct. Please clarify.
c. Identifies where project information should be kept and for how long	Yes	Section B.9	EPA: No comments.
d. Discusses back up plans for records stored electronically	Yes	Section B.9	EPA: No comments.
e. States how individuals identified in A3 will receive the most current copy of the approved QA Project Plan, identifying the individual responsible for this	Yes	Section A.9.2	EPA: No comments.
B. Data Generation/Acquisition			
B1. Sampling Process Design (Experimental Design)			
a. Describes and justifies design strategy, indicating size of the area, volume, or time period to be represented by a sample	Yes	Section B.1.2 through B.1.4	EPA: No comments.
b. Details the type and total number of sample types/matrix or test runs/trials expected and needed	Yes	Section B.1.2 through B.1.4	EPA: No comments.
c. Indicates where samples should be taken, how sites will be identified/located	Yes	Section B.1.2 through B.1.4	EPA: No comments.
d. Discusses what to do if sampling sites become inaccessible	Yes	Section B.1.1	EPA: No comments.
e. Identifies project activity schedules such as each sampling event, times samples should be sent to the laboratory, etc.	Yes	Section B.1.2 through B.1.4	EPA: No comments.
f. Specifies what information is critical and what is for informational purposes only	Yes	Section B.1.2 through B.1.4	EPA: No comments.
g. Identifies sources of variability and how this variability should be reconciled with project information	Yes	Section B.1.2 through B.1.4	EPA: No comments.
B2. Sampling Methods			
a. Identifies all sampling SOPs by number, date, and regulatory citation, indicating sampling options or modifications to be taken	No	Section B.2.1	EPA: In the SOPs, remove CDM Smith as signatory and replace with EPA and DEQ in the signature lines, where applicable.
b. Indicates how each sample/matrix type should be collected	Yes	Section B.2.2 through Section B.2.4	EPA: No comments.

c. If in situ monitoring, indicates how instruments should be deployed and operated to avoid contamination and ensure maintenance of proper data	Yes	Section B.2.4	EPA: No comments.
d. If continuous monitoring, indicates averaging time and how instruments should store and maintain raw data, or data averages	N/A	N/A	N/A
e. Indicates how samples are to be homogenized, composited, split, or filtered, if needed	No	Section B.2.4	EPA: The sampling summary in Section B.2.4 omits passing the sample through a No. 10 sieve. This step is critical to getting useful XRF results and comparable laboratory results. Please update this section to include the sieving step.
f. Indicates what sample containers and sample volumes should be used	Yes	Section B.2.4	EPA: No comments.
g. Identifies whether samples should be preserved and indicates methods that should be followed	N/A	N/A	EPA: Sample preservation not necessary.
h. Indicates whether sampling equipment and samplers should be cleaned and/or decontaminated, identifying how this should be done and by-products disposed of	Yes	Appendix B	EPA: No comments.
i. Identifies any equipment and support facilities needed	No		EPA: Is the XRF truly going to be operated in the field (e.g., on clean portable table covered with new disposable plastic sheeting at each location)? Or will the samples be analyzed in a more controlled environment (e.g., inside a building)? The same questions apply to sample sieving and the paste pH analyses. Please add any clarifying text to the main body of the QAPP.
j. Addresses actions to be taken when problems occur, identifying individual(s) responsible for corrective action and how this should be documented	Yes	Section B.2.5	EPA: No comments.
B3. Sample Handling and Custody			
a. States maximum holding times allowed from sample collection to extraction and/or analysis for each sample type and, for in-situ or continuous monitoring, the maximum time before retrieval of information	Yes	Section B.3.2	EPA: No comments.
b. Identifies how samples or information should be physically handled, transported, and then received and held in the laboratory or office (including temperature upon receipt)	Yes	Section B.3.2	EPA: No comments.
c. Indicates how sample or information handling and custody information should be documented, such as in field notebooks and forms, identifying individual responsible	Yes	Section B.3.1 through B.3.2	EPA: No comments.

d. Discusses system for identifying samples, for example, numbering system, sample tags and labels, and attaches forms to the plan	Yes	Section B.3.1	EPA: No comments.
e. Identifies chain-of-custody procedures and includes form to track custody	Yes	Section B.3.2	EPA: No comments.
B4. Analytical Methods			
a. Identifies all analytical SOPs (field, laboratory and/or office) that should be followed by number, date, and regulatory citation, indicating options or modifications to be taken, such as sub-sampling and extraction procedures	Yes	Section B.2.1	EPA: No comments.
b. Identifies equipment or instrumentation needed	Yes	Section B.4.2	EPA: No comments.
c. Specifies any specific method performance criteria	Yes	Section B.4.3	EPA: No comments.
d. Identifies procedures to follow when failures occur, identifying individual responsible for corrective action and appropriate documentation	Yes	Section B.4.5	EPA: No comments.
e. Identifies sample disposal procedures	Yes	N/A	EPA: No comments.
f. Specifies laboratory turnaround times needed	Yes	Section B.4.4	EPA: No comments.
g. Provides method validation information and SOPs for nonstandard methods	Yes	N/A	EPA: No comments.
B5. Quality Control			
a. For each type of sampling, analysis, or measurement technique, identifies QC activities which should be used, for example, blanks, spikes, duplicates, etc., and at what frequency	Yes	Section B.5.1 through B.5.2	EPA: No comments.
b. Details what should be done when control limits are exceeded, and how effectiveness of control actions will be determined and documented	Yes	Section B.4.5	EPA: No comments.
c. Identifies procedures and formulas for calculating applicable QC statistics, for example, for precision, bias, outliers and missing data	Yes	Section B.5.2	EPA: No comments.
B6. Instrument/Equipment Testing, Inspection, and Maintenance			
a. Identifies field and laboratory equipment needing periodic maintenance, and the schedule for this	Yes	Section B.6	EPA: No comments.
b. Identifies testing criteria	Yes	Section B.6	EPA: No comments.
c. Notes availability and location of spare parts	Yes	Section B.6	EPA: No comments.

d. Indicates procedures in place for inspecting equipment before usage	Yes	Section B.6	EPA: No comments.
e. Identifies individual(s) responsible for testing, inspection and maintenance	Yes	Section B.6	EPA: No comments.
f. Indicates how deficiencies found should be resolved, re-inspections performed, and effectiveness of corrective action determined and documented	Yes	Section B.6	EPA: No comments.
B7. Instrument/Equipment Calibration and Frequency			
a. Identifies equipment, tools, and instruments that should be calibrated and the frequency for this calibration	Yes	Section B.7	EPA: No comments.
b. Describes how calibrations should be performed and documented, indicating test criteria and standards or certified equipment	Yes	Section B.7	EPA: No comments.
c. Identifies how deficiencies should be resolved and documented	Yes	Section B.7	EPA: No comments.
B8. Inspection/Acceptance for Supplies and Consumables			
a. Identifies critical supplies and consumables for field and laboratory, noting supply source, acceptance criteria, and procedures for tracking, storing and retrieving these materials	Yes	Section B.8	EPA: No comments.
b. Identifies the individual(s) responsible for this	Yes	Section B.8.1 through B.8.2	EPA: No comments.
B9. Use of Existing Data (Non-direct Measurements)			
a. Identifies data sources, for example, computer databases or literature files, or models that should be accessed and used	Yes	Section B.9	EPA: No comments.
b. Describes the intended use of this information and the rationale for their selection, i.e., its relevance to project	Yes	Section B.9	EPA: No comments.
c. Indicates the acceptance criteria for these data sources and/or models	Yes	Section B.9	EPA: No comments.
d. Identifies key resources/support facilities needed	Yes	Section B.9	EPA: No comments.
e. Describes how limits to validity and operating conditions should be determined, for example, internal checks of the program and Beta testing	Yes	Section B.9	EPA: No comments.
B10. Data Management			

a. Describes data management scheme from field to final use and storage	Yes	Section B.10	EPA: No comments.
b. Discusses standard record-keeping and tracking practices, and the document control system or cites other written documentation such as SOPs	Yes	Section B.10.3	EPA: No comments.
c. Identifies data handling equipment/procedures that should be used to process, compile, analyze, and transmit data reliably and accurately	Yes	Section B.10.3 through B.10.4	EPA: No comments.
d. Identifies individual(s) responsible for this	Yes	Section B.10.3 through B.10.4	EPA: No comments.
e. Describes the process for data archival and retrieval	Yes	Section B.10.3 through B.10.4	EPA: No comments.
f. Describes procedures to demonstrate acceptability of hardware and software configurations	N/A	N/A	N/A
g. Attaches checklists and forms that should be used	N/A	N/A	N/A
C. Assessment and Oversight			
C1. Assessments and Response Actions			
a. Lists the number, frequency, and type of assessment activities that should be conducted, with the approximate dates	Yes	Section C.1	EPA: No comments.
b. Identifies individual(s) responsible for conducting assessments, indicating their authority to issue stop work orders, and any other possible participants in the assessment process	Yes	Section C.1	EPA: No comments.
c. Describes how and to whom assessment information should be reported	Yes	Section C.1	EPA: No comments.
d. Identifies how corrective actions should be addressed and by whom, and how they should be verified and documented	Yes	Section C.1	EPA: No comments.
C2. Reports to Management			
a. Identifies what project QA status reports are needed and how frequently	Yes	Section C.2	EPA: No comments.

b. Identifies who should write these reports and who should receive this information	Yes	Section C.2	EPA: No comments.
D. Data Validation and Usability			
D1. Data Review, Verification, and Validation			
Describes criteria that should be used for accepting, rejecting, or qualifying project data	Yes	Section D.1	EPA: No comments.
D2. Verification and Validation Methods			
a. Describes process for data verification and validation, providing SOPs and indicating what data validation software should be used, if any	Yes	Section D.1 through D.2	EPA: No comments.
b. Identifies who is responsible for verifying and validating different components of the project data/information, for example, chain-of-custody forms, receipt logs, calibration information, etc.	Yes	Section D.2	EPA: No comments.
c. Identifies issue resolution process, and method and individual responsible for conveying these results to data users	Yes	Section D.2	EPA: No comments.
d. Attaches checklists, forms, and calculations	Yes	Section D.2	EPA: No comments.
D3. Reconciliation with User Requirements			
a. Describes procedures to evaluate the uncertainty of the validated data	Yes	Section D.3.1	EPA: No comments.
b. Describes how limitations on data use should be reported to the data users	Yes	Section D.3.1	EPA: No comments.