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Butler, Rhonda R (R7R)

From:	DePaoli, Susan (CONTR) <Susan.DePaoli@orem.doe.gov>
Sent:	Wednesday, March 21, 2018 11:52 AM
To:	Halsey, Patricia J
Cc:	Butler, Rhonda R (R7R)
Subject:	RE: ID xxxx transmittal of D2 EMDF FSP Phase I
Attachments:	Draft EPA comments on the EMDF D2 FSP

EPA draft comments by email are attached.

From: Halsey, Patricia J
Sent: Wednesday, March 21, 2018 11:49 AM
To: DePaoli, Susan (CONTR) <Susan.DePaoli@orem.doe.gov>
Cc: Butler, Rhonda R (R7R) (Rhonda.Butler@ettp.doe.gov) <Rhonda.Butler@ettp.doe.gov>
Subject: ID xxxx transmittal of D2 EMDF FSP Phase I

My comments on this D2 transmittal letter are contained in the file.

Since we are mentioning the incorporation of responses to TDEC and EPA comments into this D2 document we have to ensure that both the TDEC letter and the EPA e-mail comments are in the Administrative Record. Rhonda most likely already has the TDEC letter copy but please send a copy of the EPA e-mail to her. I've copied her so that you have her address.

Thanks.

Pat

DRAFT EPA Comments on the *Phase 1 Field Sampling Plan for the Proposed Environmental Management Disposal Facility for Comprehensive Environmental Response, Compensation, and Liability Act Oak Ridge Reservation Waste Disposal, Oak Ridge, Tennessee* (DOE/OR/01-2739&D2, dated December 2017)

GENERAL COMMENTS

GC-1. An EPA/TDEC Statement of Work (dated August 8, 2017) was provided to the DOE for use in the development of a characterization work plan for the Central Bear Creek Site 7c location. No comments were received from the DOE indicating that changes were necessary. The SEC DRA reinforced the scope of data collection identified in the SOW by stating in Resolution #3:

> The FSP shall reflect mutual agreement of the parties to implement data collection identified in the "Statement of Work" provided by EPA and TDEC for Site 7C.

Numerous data needs identified in the SOW were omitted from the revised D2 FSP. Those data will need to be collected in the D2 FSP. The specific data needs are listed below:

1. Page 4 of the SOW refers to acquisition of data to include "...geotechnical characteristics of natural materials at the site (e.g., horizontal and vertical hydraulic conductivity values)." Nothing in the D2 FSP indicates specifically that both horizontal and vertical hydraulic conductivity data will be obtained. The proposed laboratory hydraulic conductivity testing may be intended to measure vertical hydraulic conductivity, but that is not specifically identified as the testing intent. The FSP needs to specifically identify what testing procedure(s) will be used to measure vertical and horizontal hydraulic conductivity.

2. Near the bottom of page 4 of the SOW, the wording indicates that during piezometer borehole drilling, the procedure will "...log and sample soils and saprolite continuously throughout the deepest boring at each paired piezometer location." Nothing in the D2 FSP indicates continuous borehole logging will be conducted.

3. The FSP does not specifically state that piezometer locations and elevations will be surveyed as required per text at the top of SOW page 5. Such surveying activity is implied by the statements regarding measurements of groundwater elevations (the water-level elevation in a piezometer could not be defined without defining the elevation of the water-level monitoring point and measuring the depth to water beneath that point), but the FSP needs to specifically state that the geographic locations and elevations will be surveyed by someone qualified to do the work.

4. The FSP does not propose to "...record hydraulic head (water level), temperature, conductivity, and pH at intervals of at least every 30 minutes" in the piezometers as specified on page 5 of the SOW.

5. Near the bottom of SOW page 5, reference is made to a "buffer zone boundary" that DOE must estimate. There is no indication in the FSP that this estimation is proposed.

6. Near the top of SOW page 6, the wording indicates that the stream evaluations should be done twice during the wet season and twice during the dry season. The FSP proposes only one wet season stream evaluation.

Comment: The FSP must be consistent with the EPA/TDEC SOW to ensure that the CBCV Site 7c is adequately characterized and the data collected can address applicable or relevant and appropriate requirements related to citing criteria.

GC- 2. The "D2 Phase 1" field sampling plan (FSP) presents a strategy and schedule inconsistent with the EPA/TDEC Statement of Work [SOW] (dated August 8, 2017) and the Senior Executive Committee (SEC) three-party signed EMDF RI/FS Dispute Resolution Agreement [DRA] (dated 12/07/2017). Specifically, the FSP proposes to construct piezometers and monitoring wells from which four weeks of data will be collected. Per the FSP, at the end of the four weeks:

> The results of the Phase 1 field investigation will be presented in a Technical Memorandum and submitted to the Administrative Record prior to the public comment period on the EMDF preferred alternative (FSP, p. 47).
>
> Groundwater data... Up to 4 weeks of data will be considered part of the Phase 1 data collection to be provided prior to the public comment period (FSP, p. 47).

The EPA/TDEC SOW states:

> The Field Sampling Plan shall include a schedule of activities necessary to collect groundwater data during the January-April portion of the FY2018 wet season and anticipated dates for the delivery of the report of findings to EPA and TDEC for regulatory review (SOW, p. 7).

Comment: The D2 FSP schedule must be revised for consistency with the EPA/TDEC SOW. A full wet season (January to April) of groundwater data must be collected specific to the CBCV Site 7c location. That work must be reflected in the FSP schedule.

GC-3. The scope of the "Phase 1" characterization activities must include all data collection information conveyed in the EPA/TDEC SOW for the Central Bear Creek Valley (CBCV) Site 7c location:

> In order to obtain data on water level fluctuations through one wet season and to use that data to estimate historical high water table fluctuations pursuant to 40 CFR 761.75(b)(3), DOE must 1) perform continuous water-level monitoring at CBCV Site 7c piezometers, 2) identify appropriate monitoring wells/piezometers from similar locations in Bear Creek Valley that DOE will use to correlate with the CBCV Site 7c to establish historic high water levels, 3) demonstrate these wells are comparable to CBCV Site 7c piezometers, and 4) estimate historical high water table fluctuations. DOE shall document precipitation recorded at stations monitored by operations personnel at the Environmental Management Waste Management Facility (EMWMF) [SOW, p. 4].

Data must be sufficient to demonstrate how groundwater moves through the site and discharges to the ground surface and surface water, including geotechnical characteristics of natural materials at the site (e.g., horizontal and vertical hydraulic conductivity values) [SOW, p. 4].

DOE must evaluate NT-10, D-10W, and NT-11 at intervals of 50 feet or less within the disposal site including buffer zone by describing stream sections, including any observed springs or seeps, and measuring temperature, conductivity, and pH. This evaluation should be performed twice during the wet season and twice during the dry season. Dry season evaluation may be performed during the fall of 2017 to prevent extending the schedule (SOW, p. 6).

GC-4. The "Investigation Schedule/Approach" section presented in the D2 FSP is not consistent with the schedule presented in the SOW:

> DOE shall provide a Field Sampling Plan consistent with this Statement of Work for EPA and TDEC review and shall resolve EPA and TDEC comments. The Field Sampling Plan shall include a schedule of activities necessary to collect groundwater data during the January-April portion of the FY2018 wet season and anticipated dates for the delivery of the report of findings to EPA and TDEC for regulatory review (SOW, p. 7).

Comment: The current D2 FSP proposes up to four weeks of data collection for "Phase 1" activities. While additional data will be collected it is not considered part of this FSP (p. 39). This four-week period of data collection is inconsistent with the wet season data required in the SOW. The SOW calls for data collection across the CBCV Site 7c to span a full January to April wet season cycle. If that work cannot be accomplished in the Jan-April 2018 wet season, then it is expected for the Jan-April 2019 wet season. This section must be rewritten to address a full wet season of sampling and how dry seasonal data will also be incorporated in the FSP report. The FSP schedule must be changed to incorporate this work.

GC-5. Appendix A [QUALITY ASSURANCE PROJECT PLAN FOR THE PROPOSED EMDF DESIGN INVESTIGATION, OAK RIDGE, TENNESSEE] and Appendix B [MEASUREMENT AND TESTING APPROACH AND METHODS] contain work performance objectives that are outside the scope of this site characterization effort. While DOE can retain them in this FSP it must be clearly stated in both appendices that much of this work related specifically to design data collection will be presented in a post-Record of Decision Remedial Design/Remedial Action Work Plan. Without this clarity, the public may be misled to believe that this FSP will collect all of the design work and geologic/hydrogeologic data necessary to construct this facility.

SPECIFIC COMMENTS

SC-1. INTRODUCTION, third paragraph, p. 1: The text is inconsistent with the EPA/TDEC SOW and SEC DRA and must be modified as follows:

> This Field Sampling Plan identifies the ~~initial~~ site characterization activities (Phase 1) that have been agreed to by the FFA parties consistent with the EPA/TDEC EMDF

Statement of Work (dated 08/08/17) and the Senior Executive Committee's Dispute Resolution Agreement (dated 12/07/17)~~to be included in the Administrative Record prior to the public comment period on the preferred EMDF alternative~~. If the Central Bear Creek Valley Site 7c location is approved by all three FFA parties, then ~~A~~additional investigations (under a post Record of Decision Remedial Design/Remedial Action Work Plan) will be conducted in the future to obtain geotechnical and geophysical data for the EMDF design, including support facilities, and required relocation of the Haul Road and Bear Creek Road.

SC-2. HYDROGEOLOGIC SETTING, second paragraph, p. 5: The text states:

An additional shallow east-west trending drainage was present in the southern part of the area prior to construction of the Uranium Processing Facility (UPF) wet spoils pile. This drainage was noted as dry when previously observed. The drainage is now covered by the UPF wet spoils pile; however, there is a downgradient seep within this drainage area.

Comment: The drainage feature and associated seep must be presented on a map so the reader can understand their location relative to the proposed EMDF CBCV site. These features can be added to an existing map if the map size and scale allow.

SC-3. HYDROGEOLOGIC SETTING, second paragraph, p. 5: The text states:

The Bear Creek Valley (BCV) has been extensively investigated. Geologic, hydrogeologic, and groundwater contamination conditions have been characterized extensively and there is routine monitoring of surface water conditions. There also have been additional investigations conducted for BCV to identify wetlands, ecological species of concern, and cultural resources. However, no CBCV site specific investigations have been conducted.

The available hydrogeologic data for various potential EMDF sites in BCV are described in Appendix E and Sects. 2 and 5 of the RI/FS (DOE 2017). The information available for BCV was used to summarize various potential CBCV site conditions discussed below.

Comment: This field sampling plan must identify all of the locations where supporting data collection will occur. The general statement cited above is insufficient to convey necessary Bear Creek Valley sampling locations and is burdensome on the public to find that data. All of the locations (i.e., piezometers, monitoring wells, springs, surface streams, and any other data points) used in this FSP must be listed in tabular form and keyed to a map. The public must understand the locations outside of Central Bear Creek Valley Site 7c used to support a possible decision to construct a hazardous waste cell.

SC-4. Figure 2, page 6: The topographic contours are not clear and the elevation labels are too small to read. This map needs to be revised to present the data more clearly.

SC-5. Figure 3, page 7: This map is missing a legend and scale. Please revise and add this information.

SC-6. Section 2.2.2 Potential for Karst Features, sixth paragraph, p. 8: The distance from the contact between the Nolichucky Shale/Maynardville outcrop and the "southernmost waste limit" is reported as 300 ft. Please clarify this statement regarding what the "southernmost waste limit" represents. If this is not the southernmost exterior toe of the surrounding waste cell berm, then also include that distance.

SC-7. Figure 4, page 9: The horizontal and vertical scales are not defined. Are the units in feet? Meters? Revise this figure and add the appropriate measurement units.

SC-8. Figure 6, page 11: This figure is too small to read the legend. Please enlarge the figure. Also place the approximate footprint of the proposed CBCV Site 7c location on this map so the public can understand the relationship of the watersheds to the proposed hazardous waste cell.

SC-9. Section 2.3.2 CBCV Site Preliminary Investigation, second paragraph, page 13: The text states:

> This feature joined another branch of subsurface flow from an unnamed western valley. These types of soil drainage features are common in undisturbed ORR soils and are a part of the stormflow system that rapidly conducts percolation water laterally downslope to stream channels.

Comment: The complexity of surface to subsurface drainage is highlighted in this statement regarding undisturbed soils. It is likely related to joint sets and fractures in the underlying bedrock. It is this complexity of groundwater migration that needs to be assessed and qualified as part of Site 7c characterization and considered in monitoring detection if this hazardous waste landfill is constructed. This same issue has been raised regarding lateral flow (i.e., flow along geologic strike) and leak detection monitoring in the Environmental Management Waste Management Facility Sampling Analysis Plan/Quality Assurance Project Plan (letter from Froede to Japp, dated 12/28/2017).

SC-10. Figure 12, page 15: It appears that the outline of the proposed EMDF is on this map? The legend does not refer to it and the black lines do not differentiate between a possible hazardous waste cell footprint and other black lines. Please revise and provide an outline of the location of the proposed EMDF on the map. Also revise the legend to identify the EMDF location outline.

SC-11. INVESTIGATION SCHEDULE/APPROACH, page 33: This schedule presents "Phase 1 work" that is conducted in the spring of 2018 and follows with four weeks of monitoring. This schedule and approach are inconsistent with the EPA/TDEC SOW (see General Comment #3):

> The Field Sampling Plan shall include a schedule of activities necessary to collect groundwater data during the January-April portion of the FY2018 wet season and anticipated dates for the delivery of the report of findings to EPA and TDEC for regulatory review (SOW, p. 7).

Comment: This schedule should be modified to be consistent with the SOW text above.

SC-12. Section 6.1 Groundwater Evaluation, fourth and fifth paragraphs, page 39: The "initial" four weeks of data collection associated with this "Phase 1" scope of activities is inconsistent with the EPA/TDEC SOW and SEC DRA. Per the DRA:

> The FSP shall reflect mutual agreement of the parties to implement data collection identified in the "Statement of Work" provided by EPA and TDEC for Site 7C.

Comment: The statement that all monitoring conducted after the four-week period is NOT considered part of this FSP (p. 39) is incorrect. The most important data to be collected (and specified in the EPA/TDEC SOW) is the January to April 2018 wet season. EPA fails to understand how an entire wet season comprising several months can be misconstrued by DOE to a four-week period sometime in the late spring. This section must be rewritten consistent with the EPA/TDEC SOW.

SC-13. Section 6.2.2, Surface Water Flow Measurement, third paragraph retained, page 40: The statement is made:

> Surface water flow measurements will be performed as described in Appendix B, Sect. B.4. In addition, pH and conductivity measurements will be collected on a bi-weekly basis. **The initial phase of characterization (Phase 1) will consist of the first 4 weeks of flow measurements.** (Emphasis added)

Comment: The last sentence (bolded) is incorrect as it is inconsistent with the EPA/TDEC SOW. See General Comment #1. One of the many goals of the Site 7c characterization effort is to collect wet season hydrogeologic data. This cannot be obtained in four weeks. This reference should be deleted and text added consistent with the schedule and deliverables outlined in the SOW.

SC-14. DATA REPORTING, first paragraph, page 47: The text states:

> The results of the Phase 1 field investigation will be presented in a Technical Memorandum and submitted to the Administrative Record prior to the public comment period on the EMDF preferred alternative.
> The following data, evaluations, calculations, and reports will be included in the administrative record.
>
> - Groundwater data… Up to 4 weeks of data will be considered part of the Phase 1 data collection to be provided prior to the public comment period.

Comment: See General Comment #1. The proposed "four weeks" of data collection for "Phase 1" activities is inconsistent with the scope of work presented in the EPA/TDEC SOW. The EPA expects a full wet season period of data collection (per the SOW) and if that cannot be achieved over the January to April 2018 wet season then it must be accomplished in the January to April 2019 wet season. This section must be rewritten to address a full wet season of sampling and explain how that data and dry seasonal data will be incorporated in the FSP report.

(End of Comments)