UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

September 25, 2003

Monte McCue
US Filter Westates
PO Box 3308
Parker, AZ 85344

RE: Comments on Performance Demonstration Test Plan and Risk Assessment Workplan

Dear Mr. McCue:

Thank you for Westates' submittal of the Performance Demonstration Test Plan and Risk Assessment Workplan dated May 30, 2003. We have performed a detailed review of the Plans, and are providing our comments in the enclosures to this letter. Please submit a revised Performance Demonstration Test Plan and Risk Assessment Workplan by November 5, 2003. You must request in writing any extension to this submittal date.

As you know, the Performance Demonstration Test Plan and Risk Assessment Workplan are subject to public review. Upon receipt of the revised Plans, EPA intends to public notice the availability of the Plans and to announce a public workshop to discuss the Plans with the public. When EPA believes the Plans are ready for approval, we will public notice our intent to approve the Plans and will conduct a public comment period. We will carefully review all comments from the public regarding these Plans, and may request Westates to make additional revisions based on relevant issues raised by the public. We also will continue our consultation with the Colorado River Indian Tribes during our review of the Plans.

Thank you for your attention to this matter. If you or your staff have any questions, please call Karen Scheuermann of my staff at (415) 972-3356.

Sincerely,

Arlene Kabei, Associate Director
Waste Management Division

Enclosures

cc: Daniel Eddy, Jr., Chairman, Colorado River Indian Tribes
Elena Etcitty, Director, CRIT Environmental Protection Office
Eric Shepard, CRIT Attorney General's Office
Dave Harper, Mohave Cultural Preservation Program
Allen Anspach, Superintendent, Colorado River Agency
John Krause, Bureau of Indian Affairs
Bradley Angel, Greenaction
Jane Williams, California Communities Against Toxics
Steve Brittle, Don't Waste Arizona
Tom Goldtooth, Indigenous Environmental Network
Joaquin Lujan, Southwest Network for Economic and Environmental Justice

Enclosure A to letter from EPA to Westates
dated 25 September 2003

EPA Comments on Westates' Performance Demonstration Test Plan

Background

This enclosure provides comments on the Performance Demonstration Test Plan which Westates submitted to EPA on May 30, 2003. EPA performed a detailed review of the Test Plan and of the response to comments accompanying the Test Plan. On several dates in September 2003, EPA also discussed some aspects of the Test Plan with Westates and the Colorado River Indian Tribes as noted in several comments.

General Items

1. In this enclosure, EPA refers to the Performance Demonstration Test as the Comprehensive Performance Test (CPT), to parallel terminology used in 40 CFR 63 Subpart EEE.

2. Thank you for submitting the CPT Plan in electronic form as well as hard copy. As before, please submit the revised CPT Plan in both hard copy and electronic form (PDF is acceptable).

   Also as before, please indicate revisions in the text of the revised CPT Plan using annotations such as strike-out of removed text and red-lining of new text, along with a "clean" copy of the revised CPT Plan. Please also submit a response to comments to accompany the revised CPT Plan, providing detailed rationale and explanations in response to these comments, and indicating what portions of the CPT Plan were revised.

Comments on Westates' Response to Comments

3. *Blending and Stockpiling.* EPA agrees that the amount proposed for spiking will suffice to make the feed as homogeneous as possible. EPA also requires that samples be taken during feeding of waste to be analyzed for metals and organics (in accordance with SW-846, 8260 and 8270). The results of the analysis, as agreed, shall be provided in the CPT report.

4. Response noted. EPA will provide under separate cover our determination of whether we will conduct sampling and analysis of the carbon product.

5. *Totally Sealed System*. For the data shown in Table 3, where did you take the fugitive emissions readings and where was background taken? What gas was used for calibration?

6. Response noted.

7. *Startup, Shutdown and Malfunction (SSM) Plan.* EPA agrees that a stand-alone SSM Plan will meet the requirements of 40 CFR 63 Subpart EEE. Please add in the appropriate locations in the CPT Plan (e.g. in Section 3.6) that the SSM Plan is a stand-alone document incorporated by reference. As discussed, please submit the SSM Plan along with the revised CPT Plan.

8. *Operating Conditions for Startup, Shutdown and Non-Feed Conditions.* Please specify in Section 3.6 of the CPT Plan that the operating conditions apply as follows:

> "Operating conditions specified in Tables 4-2, 7-1 and 7-2 apply any time there is waste in the system, whether or not waste is being fed, except during startup and shutdown."

9. *Shakedown or Preliminary Testing.* Does Westates plan on spiking during the preliminary testing? If so, please indicate in the appropriate location in the CPT Plan that the feed will be spiked.

Comments on the Comprehensive Performance Test (CPT) Plan

Sections 1 and 2

10. As requested in EPA's earlier comments, the CPT Plan should not reference the Part B Permit Application as a source of information, as is done in Section 2.1.1 and elsewhere. This is because the Part B Permit Application has not been approved by EPA. The CPT Plan may, however, reference documents that are part of Westates' interim status operating record.

11. In Section 1.2, please refer specifically to 40 CFR 63 Subpart EEE when noting "applicable regulatory requirements". In Section 1.4, for clarity, please refer to 40 CFR 63 Subpart EEE instead of the "applicable HWC MACT".

Section 3

12. In Section 3.0, paragraph 3, please define what "periodically" means when used in

reference to the frequency of blowdown.

13. EPA is concerned about the discussion of "regulated constituent feed rate" in Section 3.5.1 of the CPT Plan. Who determines whether or not the feed has a "potential" for metals to be present? How is the determination made regarding how much metal is present and what the appropriate feed rate for the metal is? How is "feedstream characterization" determined? When and how is it updated?

14. To clarify the discussion of Automatic Waste Feed Cut Offs (AWFCOs) in Section 3.5.3, please change the phrase "non-regulatory AWFCOs" to "administrative stop feeds" or "safety stop feeds." The "administrative stop feeds" or "safety stop feeds" would refer to the control parameters listed in Group B and Group C in Table 7.1.

15. During the CPT, Westates is subject to regulations regarding operating conditions, automatic waste feed cut-offs (AWFCOs), and emergency shutdowns in 40 CFR 63 Subpart EEE. As discussed, any AWFCO which occurs during the CPT, but which is not noted in Table 3.3 and Section 3.5.3, will be considered an exceedance of emission standards or operating requirements and will be counted toward the maximum number of such exceedances allowed per 40 CFR 1206(c)(2)(v)(A). As there are many more ways a malfunction can occur than are noted in Table 3-3 and Section 3.5.3, we recommend that the SSM Plan include a wider variety of possible malfunction and emergency shutdown scenarios.

    For example, since the residence time in the hearth is 42 minutes, it is conceivable that a "stop feed" or AWFCO could happen in which an air Pollution Control Device (APCD) is the part that is malfunctioning. In this case, processing the feed that is already in the system could cause emissions from the stack that exceed emissions limits, even though the feed has stopped.

16. Section 3.6.3 says the residence time is 42 minutes. The table in Attachment E says the residence time in the hearths is 48 minutes. Please correct this discrepancy.

Section 4

17. Please specify if the operating conditions provided in Table 4-2 are maximums or minimums, using the same format as Table 7-1. For example, maximum activated carbon feed rate would be specified at 3,000 lb/hr with no need to specify the minimum. Please also include a table showing operating conditions which will result in administrative stop feeds. Test observers need to have information on all conditions which will cause a stop feed.

18. EPA reiterates that a carcinogenic metal spike should not be used. As discussed, please

change the text in Sections 4.4.5 and 7.2.5 to indicate the use of nitrate forms of the spikes for lead and chromium.

Section 5

19. Please indicate how the sampling trains listed in Table 5-1 will be arranged on the stack. For example, indicate on the stack elevation and the test port layouts in Drawings D95-75-S1-1 and D95-75-S2-1 (in Attachment E) which ports will be used for which sampling trains, and provide corresponding information in Table 5-1. Please also indicate which trains will be combined (e.g. metals, particulates, HCl).

20. Section 5.1.4.9 indicates that particle size distribution data will be collected during the CPT, and the sampling and analysis methods to be used are found in Table A-15 in Attachment A. However, Section 5.1.4.9 and Section 9 also discuss data in lieu of testing for particle size distribution, and additional information is provided in Attachment G. As discussed, there is not sufficient information in the CPT Plan for EPA to determine whether the data in lieu of testing will be acceptable. Please confirm in the CPT Plan whether you intend to collect particle size distribution data during the CPT.

    Please note that if you would like us to consider data in lieu of testing for particle size distribution, you must show that the data you are providing was collected under the same operating conditions at which the CPT is to be performed. Otherwise the data would not be representative of what you would see during the CPT.

21. Please provide in Section 5.3 of the CPT plan more detail about the calibration schedule for CEMS during the CPT. Please also indicate in the CPT Plan that during the in-briefing before the CPT, Westates will provide to test observers the most recent calibration data for all equipment and instrumentation that requires periodic calibration.

Section 6

22. As discussed, EPA requests that Westates provide EPA staff access to the operating parameter data collected during the preliminary test, noted in Section 6.5 and Table 7-1. EPA staff will be interested in visiting Westates to view the data after the preliminary test is completed so we can familiarize ourselves with the operating conditions that are to be expected during the CPT.

    Please also indicate in Section 6.5 and Section 7 that Westates will inform EPA in writing if there are proposed changes to operating conditions for the CPT, based on information collected during the preliminary test.

23. Please indicate in Section 6.5 which sampling trains will be used during the preliminary

test. Please note in Section 6.5 that if any of the emissions standards are exceeded during preliminary testing, Westates will notify EPA.

Section 7

24. In Section 7.1, please refer specifically to 40 CFR 63 Subpart EEE when noting "established regulatory requirements".

25. Please specify in Section 7 and Table 7-1 the minimum and maximum furnace temperatures within which you propose to operate during the CPT.

26. A maximum feed rate of 3,000 lb/hr is proposed in Table 7.1 as the anticipated permit limit, and a maximum feed rate of 3,300 lb/hr is proposed in Table 7.2 as the maximum spent carbon feed rate during the CPT. A maximum interim status feed rate of 2,760 lb/hr is established in Westates' current Part A permit application, dated October 1996. Westates' Part B permit application of November 1995 proposed an expansion of the feed rate to 4,140 lb/hr. However, in Westates' letter to EPA dated 25 August 2000, Westates stated that they will resubmit a Part B permit application which will reflect the deletion of the increased feed capacity request. Please clarify in the CPT Plan whether Westates is proposing an expansion of the feed rate from 2,760 lb/hr to 3,000 lb/hr (or 3,300 lb/hr) under permit conditions.

27. For the preliminary test and the CPT, for all operating conditions noted in Sections 7.2.1, 7.2.2, and 7.2.3 that have rolling averages, please provide the instantaneous 1-minute averages as well as the rolling averages.

28. Regarding the discussion in Section 7.2.3.1 and information provided in Attachment F, if Westates wishes to use a chlorine vs total dissolved solids (TDS) correlation to demonstrate compliance with the chlorine feed rate limit, data must be collected during the CPT to show there is a correlation. How often will TDS be monitored during the CPT? Does Westates monitor for TDS during normal operating conditions? Also, please clarify what the word "delta" means in paragraph 3 of Section 7.2.3.1.

29. For Group C parameters noted in Section 7.2.4, please provide the manufacturer's recommended operating conditions as well as or in lieu of the "past operating experience." Test observers will need this information in order to prepare for the CPT.

Section 8

30. Please include in the table in Section 8.4 the volumetric air flow rate at the furnace inlet and at the furnace outlet. Alternatively, you may provide the pressure drop across the furnace as a differential. If you cannot provide this information, please describe in detail

why.

Also, we understand that there are thermocouples in each of the hearths in the furnace. Please include the hearth temperatures in the table in Section 8.4.

Section 9

31. Please see comment #20 for comments relevant to Section 9.

Attachments

32. Please see comment #28 for comments relevant to Attachment F.

33. Please see comment #20 for comments relevant to Attachment G.

Enclosure B to letter from EPA to Westates
dated 25 September 2003

EPA Comments on Westates' Quality Assurance Project Plan (QAPP)

Background

This enclosure provides comments on the Quality Assurance Project Plan (QAPP) which Westates submitted to EPA on May 30, 2003. We performed a detailed review of the QAPP and of the response to comments accompanying the QAPP.

General Items

1. As for the CPT Plan, please submit the revised QAPP in both hard copy and electronic form (PDF is acceptable).

   Also as for the CPT Plan, please indicate revisions in the text of the revised QAPP using annotations such as strike-out of removed text and red-lining of new text, along with a "clean" copy of the revised QAPP. Please also submit a response to comments to accompany the revised QAPP, providing detailed rationale and explanations in response to these comments, and indicating what portions of the QAPP were revised.

2. The QAPP was reviewed in terms of the guidance provided in the following documents:

   "EPA Requirements for Quality Assurance Project Plans," (EPA QA/R-5, March 2001)

   "Guidance for Quality Assurance Project Plans" (EPA QA/G-5, December, 2002)

   "Guidance for the Data Quality Objectives Process" (EPA QA/G-4, August, 2000).

3. The QAPP was prepared following the older QAPP format in QAMS 005/80 (Interim Guidelines and Specifications for Preparing Quality Assurance Project Plans) which was superseded by the more current "R-5" referenced above over ten years ago. However, the information provided in the QAPP covers all relevant R-5 requirements, so this is not a problem. A number of clarifications or minor issues were identified and are noted below.

4. Because of the large number of tests and associated quality control (QC) measures associated with them, a separate section on QA should be provided in the final test report.

Comments regarding the QAPP

5. [Test Plan; Table 6-1, Anticipated Daily Schedule for Performance Test] The test schedule outlined in Table 6-1 is both ambitious and highly dependent on optimal operating conditions to execute. Generally access to sampling ports is physically constrained to relatively small platforms and a small number of ports, yet the sampling effort planned requires that several Modified Method 5 (MM5) Trains, or variants thereof, all be operational at the same time. Whether Method 0010, 0023A, 0061, 0026A, 0029, etc., a long probe and multiple impingers must be set up, leak tested, and run, many of them simultaneously. There are other non MM5 trains like the volatile Organic Sampling Train (VOST) which must be operational as well. In some cases there is only a half hour between runs. Even assuming that the contractor provides the number of personnel and equipment required to conduct the tests (for example, how will tests for Methods 1-4 be conducted on several ports at once?), it seems unlikely there would be sufficient room for the different teams and their probes to move about. The Test Plan, or Sampling Procedures part of the plan (Attachment A) should discuss how the different tests will be carried out simultaneously and what probability there is that the schedule in Table 6-1 can be met.

6A. [Attachment A, Sampling Procedures; Table A-1, Spent Activated Carbon Sampling Procedure] It is recommended that volatile organic compound samples be placed in 40 mL VOA vials to reduce potential losses of volatile organic compounds (VOCs). Some losses will probably occur since the containers are not hermetically sealed, and if it is felt that the levels will be high enough, methanol preservation may be considered. See also comment 9 below.

6B. [Table A-2, Spiking Material Sampling Procedure; Table A-3, Makeup Water Sampling Procedure] It is not clear what the purpose of the 40-mL VOA vial containers might be since their use is not discussed in the Procedure Summary.

7A. [Attachment B, Analytical Procedures; General] The various method descriptions are not clear with respect to when matrix spikes will be added. This should be clarified in situations where multiple impingers/filters will be collected. This comment is not relevant if only a blank spike of XAD-2 resin is planned.

7B. Some of the methods are not clear with respect to the frequency with which spiking, blanks and other QC will take place. In some cases it specifies once per batch, but a batch is not defined. It is recommended QC samples be once per batch or per “x” number of samples.

8. [Attachment B, Table B-6, Analysis of Volatile Organics in Solids, Semi-Solids and Liquids] It is indicated that spent carbon will be dispersed in methanol, "as appropriate." It is not clear whether this will happen routinely or not. Once in methanol it is assumed, but not stated, that an aliquot would be withdrawn and injected into a standard purge and trap vessel, but none of this is discussed in the method description. Also, if samples will be placed in methanol, Westates may wish to consider preserving the samples in the field so that VOCs are not lost due to off gassing of the spent carbon.

9. [Section 4.0, Organization of Personnel, Responsibilities, and Qualifications] The laboratory that will support the effort is not identified. Although this is not crucial to the project because the QAPP defines QC requirements prescriptively so that the quality system for the test is defined, the QAPP should optimally identify the laboratory that will be performing this support.

10. [Section 5.3.6, Stack Gas SVOCs, PAHs, OCPs, and PCBs] This section indicates that the sampling train will be spiked with isotopically labeled surrogate compounds. Although this is generally borne out in subsequent discussions, there is no provision for the spiking of organochlorine pesticide (OCP) surrogates prior to sampling, nor are the surrogates to be used in the OCP isotopically labeled (nor do they need to be) since a gas chromatographic method, rather than a gas chromatography/mass spectrometry (GC/MS) method will be used instead. The discrepancy in the text should be resolved in this section and other related parts of the QAPP (for example, Table 5-2).

11. [General; Section 11.2, Data Validation] The QAPP makes reference to a number of different detection limits; seemingly more than necessary. There are method detection limits (MDLs), reliable detection limits (RDLs), Practical Quantitation Limits (PQLs), and Estimated Detection Limits (EDLs). It would be helpful if the QAPP could define a more limited number of measures, for example the MDL and a higher quantitation limit, or, at a minimum, provide concise definitions of each. Presently the plan defines some, but not all, of these terms. This means that lists, such as appear on page 60 of 72, which indicate the lab will report method detection limits and sample quantitation limits, are not clear in the context of PQLs, RDLs, and EDLs. We acknowledge that this plethora of detection limits is partly a result of different conventions in different EPA guidance documents, but the plan could simplify the terminology.

12. [Section 8.2.3, Digital Temperature Indicator] It is not clear how a mercury thermometer can be used to calibrate a digital thermometer up to 450°F.

13. [Section 9.0, Analytical Procedures; Section 11.3.2, Reporting of Tentatively Identified Compounds] Section 9.0 is not clear with respect to the investigation of tentatively identified compounds (TICs). The text indicates that a library search will be performed for all SW-846 8260 and 8270 analyses. Usually such searches are based on the database

of compounds in the instruments' database, which typically consists of 50,000+ compounds. A full library search is described later in Section 11.3.2. The two sections should be consistent and indicate TICs will be identified using the full scan of all database compounds.

14A. [Section 9.0, Analytical Procedures; Table 9-1, Summary of Performance Test Analytical Procedures and Methods] The present plans call for the OCPs and semi-volatile organic compounds (SVOCs) to come from the same sampling runs. This means that after all the extracts from the Modified Method 5 train are combined that there must be sufficient extract to use for both analyses. The OCP extract will need to be solvent exchanged into hexane as a methylene chloride extract (or methylene chloride/acetone extract) and cannot be used for a method 8081 analysis. Assuming that the extract is split, this means that detection limits may be lowered as a result. Also Table 9-1 should indicate that the extract will be solvent exchanged.

14B. The organochlorine pesticide (OCP) analysis is likely to present considerable difficulties. XAD-2 resin often contains numerous impurities. Whereas gas chromatography/mass spectrometry (GC/MS) can possibly identify these impurities, or at least distinguish between them and target compounds, the GC/Electron Capture Detector (ECD) used in Method 8081 is not as discriminating. Please discuss how these difficulties will be addressed.

15. [Section 11.3.5, Final Case Files] It is recommended that files be retained for at least five years, rather than three as indicated here.

16. [Section 14.1.1, Field Audits] If a field audit will be conducted, it is recommended that it be held during the preliminary test. There are many steps involved before trains are set up (pre-spiking of materials, cleaning and leak testing, etc.), but there are also a large number of steps which must be taken during the collection of the samples themselves. An audit would be more effective if conducted while work was in progress. Then documentation of the earlier steps could be examined as well as the execution and documentation of activities during the tests themselves. A copy of the checklist referenced here should be included with the plan.

17A. [Table 5-1, Test Analytical Data Quality Objectives] A number of the precision objectives for stack gas samples are not clear. The precision objective is defined as a relative percent difference (RPD), but the statements suggest that data from all three test runs will be used. If this is the case, a relative standard deviation (RSD) should be calculated. The definition of RPD provided in the plan on page 9 of Table 5-1 [(highest value - lowest value)/average value] could be used for three results, but this is not felt to be appropriate if a RSD can be calculated. In some cases, a RPD will be calculated from a matrix spike/matrix spike duplicate (MS/MSD) analysis of spiked blank trains, which is

appropriate. Table 5-2 should be evaluated to determine when RPD vs. RSD is appropriate and should also clarify that some of these calculations will take place with data from multiple runs.

17B. Some of the acceptance windows for relative percent difference for the spiked trains appear to be broader than one would expect (<50% RPD). A window more like <35% would appear to be tighter and easily achievable. This is especially true where the plan discusses a duplicate injection, such as for OCPs.

18. [Table 5-2, Organic Surrogate Spike and Matrix Spike Recovery Limits] Please explain why no surrogate is identified to be added to the XAD-2 resin prior field use.

19A. [Table 5-3, Estimated Stack Gas Detection Limits - Target Analytes] The footnotes to the table indicate that some detection limits are not known and so they are estimated, but all the compounds with these footnotes do not have any detection limits specified.

19B. There are several footnotes provided here which could not be located in Table 5-3.

20. [Section 6.2.3.8, Cascade Impactor for PSD] The third line is confusing. It is believed it should read, "...based on the flow of gas..." but this should be clarified.

21. [General] The plan is quite lengthy, and combined with the associated Work Plan is very large. That fact notwithstanding, there are a number of minor editorial problems and a few misspellings throughout the document. Possibly a spell check and a grammar checker would find some of these problems so the document could be "cleaned up" to some degree. None of these problems affect the technical content.

22. [General] The acronym "TOE" has not been defined.

Enclosure C to letter from EPA to Westates
dated 25 September 2003

EPA Comments on Westates' Risk Assessment Workplan

Background

This enclosure provides comments on the Risk Assessment Workplan which Westates submitted to EPA on May 30, 2003. We performed a detailed review of the Workplan and of the response to comments accompanying the Workplan.

General Items

1. Thank you for submitting the Risk Assessment Workplan in electronic form as well as hard copy. As before, please submit the revised Risk Assessment Workplan in both hard copy and electronic form (PDF is acceptable).

   Also as before, please indicate revisions in the text of the revised Risk Assessment Workplan using annotations such as strike-out of removed text and red-lining of new text, along with a "clean" copy of the revised Workplan. Please also submit a response to comments to accompany the revised Workplan, providing detailed rationale and explanations in response to these comments, and indicating what portions of the Workplan were revised.

2. The current review finds this Workplan largely consistent with the methods and principles articulated in the most recent Agency guidance materials regarding combustion source risk analysis. These are:

   - Risk Assessment Guidance for Superfund. Office of Solid Waste & Emergency Response, U.S. EPA 1989

   - Region IX Preliminary Remediation Goals. Pacific Southwest Region IX, U.S. EPA 2002

   - Ecological Risk Assessment Guidance for Superfund: Process for Designing and Conducting Ecological Risk Assessments. Office of Solid Waste & Emergency Response. U.S. EPA 1997

   - Soil Screening Guidance: Technical Background Document. Office of Solid Waste and Emergency Response. U.S. EPA 1996

- Human Health Risk Assessment Protocol for Hazardous Waste Combustion Facilities. Office of Solid Waste. U.S. EPA 1998

- Exposure Factors Handbook - General Factors. Office of Research and Development, National Center for Environmental Assessment. U.S. EPA 1997

3. A number of site-specific variables which support exposure assessment have not been included in the Risk Assessment Workplan pending collection of sensitive and confidential information retained by CRIT. An information sharing strategy has been proposed among Westates, various stakeholders, CRIT, and EPA. As the Risk Assessment Workplan and report continue to be developed, many of these data gaps will be resolved via the confidential information sharing strategy which has been proposed. At future stages of the Risk Assessment Workplan and Report, risk assessment reviewers will wish to examine a number of these site-specific variables (e.g. subsistence ingestion rates, etc.) to confirm their utility and appropriateness for both the human health and the ecological risk assessment.

Comments on the Human Health Risk Assessment Workplan

4. *Identification of Exposure Pathways (pg 50, section 4.2.4).* The utility and appropriateness of exposure pathway screening as submitted is not clear. The Risk Assessment Workplan states that a screening-level evaluation of exposure pathways will be performed based upon comparison with non-related combustion source risk assessments. This screening is designed to determine the need for quantitative pathway characterization.

   The rationale and justification for this screening is not clear. Many combustion source risk assessments incorporate a number of site-specific considerations into the development of their conceptual site model. The conceptual site model is a reflection of the exposure assessment's capability to predict potentially complete pathways of exposure. Because of the site-specific nature of combustion source exposure assessments, the appropriateness of screening putative exposure pathways based upon dissimilar site-specificity is not clear. Indeed, the Westates effort will collect a range of site-specific data via the proposed information sharing strategy.

   The locally-raised livestock ingestion exposure pathway comparison with other combustion source risk assessments is illustrative of this confusion. The Risk Assessment Workplan references no supporting data or documentation which confirms the supposition that relative risks associated with different types of livestock ingestion are similar across combustion sources. Please clarify the rationale of this proposed screening, or conduct a pathway-specific analysis which is considerate of the site-specific

factors unique to the community surrounding Westates.

5. *Calculation of Environmental Concentrations (pg 52, section 4.2.5).* A facility emission period of 30 years is proposed as an exposure duration when performing calculations in support of the exposure assessment. Please specify the degree to which this exposure duration will be applied to the range of constituents emitted from the combustion source. That is, will this duration of exposure be applied for those compounds considered volatile and therefore subject to the direct pathway of inhalation exposure, or solely for those compounds subject to the indirect pathways of exposure from depositional impacts to water and soil?

6. *Acute Short-Term Risks (pg 61, section 4.4.1.4).* The narrative supporting characterization of short-term or acute risk is not clear. Will the predicted short-term or *one-hour average air concentration* be used for comparison with acute reference (risk-based) concentration, or will acute reference concentrations be compared to the *maximum one-hour average air concentration* predicted beyond the facility boundary? Please reconcile or clarify this inconsistency.

7. *Chronic Long-Term Risks (pg 61, section 4.4.2.1).* EPA recommends that the risk estimate derived from chronic stack emissions be combined with the risk estimate from chronic fugitive releases to characterize a comprehensive, facility-wide chronic risk. Please specify the degree to which the risk characterization will remain inclusive of chronic risks originating from various facility releases and facility activities.

8. *Worker Health and Safety (pg 63, section 4.4.4).* The Risk Assessment Workplan details a number of specific and deliberate operational procedures which serve to minimize both acute and chronic worker exposure to toxic compounds, while also reducing the magnitude of hazard and risk to the workforce. Consistent with the Risk Assessment Guidance for Superfund (RAGS) guidance document and the National Research Council's review (NRC 1994, "Science and Judgement in Risk Assessment") of Agency risk assessment practice, these procedures generally fall under the rubric of risk management practices rather than risk assessment methods or strategies. The management of a potential risk via compliance with Occupational Safety and Health Administration (OSHA) regulations, and the use of personal protective equipment (PPE) is dissimilar to the assessment of that risk. The assessment of risk involves an evaluation of compound hazard, chemical exposure concentration, and those conditions of human or ecological exposure which are ultimately characterized into a risk estimate. Impacts to workers should be assessed in this risk assessment rather than an articulation of the detailed management strategies used to obviate said risk.

9. *Conceptual Site Model & On-Site Worker Exposure to Reactivated Carbon Fugitive Releases (pgs 26, 53, 58).* The Risk Assessment Workplan details a site conceptual

model which specifies human and ecological receptors, as well as those pathways of exposure which link potential receptors with completed exposure pathways. The discussion of the reactivated carbon product details the operational fate and transport of the carbon product following reactivation.

In other submittals, Westates has provided EPA with analytical results which detail concentrations of various compounds in the product following carbon reactivation, showing the reactivated carbon to contain several heavy metals. The Risk Assessment Workplan claims that fugitive dust emissions from handling reactivated carbon are likely negligible because of the highly-localized emissions control systems at the point of dust generation. EPA has identified a potentially complete pathway of human exposure linking on-site worker activity with product fugitive releases associated with vehicular loading (loading of carbon product into transport tanker trucks). This putative pathway of exposure should be considered in the exposure assessment, and a determination of on-site worker risk should be included to more comprehensively characterize facility impacts.

10. *Tentatively Identified Compounds* (pg 68, section 4.5.4). The narrative in support of this section is not clear. The Risk Assessment Workplan suggests that many TICs do not have readily available toxicological data suitable for use in risk analysis; while also suggesting that compound-specific factors like emission rate and toxicity will be used to support risk characterization. Please clarify this methodological inconsistency.

11. *Monte Carlo Simulation (pg 68, section 4.5.5)*. To support Monte Carlo simulations, please provide all parameter-specific distributions, in addition to the source of those distributions for quality control purposes.

12. *Averaging of Emissions Rates (pg 43, section 4.2.1)*. Please provide more detail (e.g., equations to be used and sample calculations) regarding the protocol proposed for averaging the emissions rates for use in the risk assessment. Also, please make any changes to Section 5.5 of the Test Plan that are necessary in light of changes to Section 4.2.1 of the Risk Assessment Workplan.

Comments on the Ecological Risk Assessment Workplan

13. *Environmental Transport (pg 71, section 5.1.2*). The narrative in support of the statement regarding low precipitation frequency in the study area is not clear. Though seasonal precipitation may occur on a relatively infrequent basis, it is likely that rainfall events, especially those associated with monsoon activity, may be locally intense. Please address this aspect of meteorology in the study area during the evaluation of environmental fate and transport.

14. *Terrestrial Wildlife (pg 72, section 5.1.3.1).* This section indicates that surface water ingestion pathways will not be considered for deer, sheep and coyote. However, page 16, Section 2.3.2.3 identifies that local canals may be important regional sources of drinking water for these types of ecological receptors. This assessment should represent a conservative screening of potential risk to ecological receptors. Please explain why this pathway is not proposed for evaluation for these types of receptors.

15. *Terrestrial Plants (pg 73, section 5.1.3.2).* The second and third paragraphs in this section indicate that several potential exposure pathways will be excluded from assessment due to lack of toxicity data. As was mentioned in previous EPA comments, if toxicity data is lacking then these exposure pathways should be handled as potential data gaps, and uncertainty associated with these pathways should be addressed in the uncertainty analysis. Please address these topics in the revised Workplan.

16. *Aquatic Life (page 74, section 5.1.3.3).* Please explain the rationale for excluding evaluation of sediments in local aqueducts, canals, and the Main Drain, given that Section 2.3.2.3 indicates these water bodies may be used by ecological receptors.

17. *Selection of Chemicals for Evaluation (page 75, section 5.2.1).* The selection of COPCs is proposed to occur after the completion of the performance demonstration test. Therefore, EPA reserves the right to make additional comments on the risk assessment when the COPC list is generated.

18. *Selection of Chemicals for Evaluation (page 75, section 5.2.1).* Screening ecological benchmarks will be compiled from existing sources. Please explain how the screening benchmark will be selected if there are multiple sources for a particular COPC. Please explain how acute toxicity data will be used to represent chronic toxicity data.

19. *Selection of Chemicals for Evaluation (page 82, section 5.2.1).* The Risk Assessment Workplan should have included the proposed ecological screening benchmarks in an appendix, and the preferred benchmark values should have been identified upfront. EPA reserves the right to make additional comment on the ecological screening benchmark values after the completion of the performance demonstration test and the proposal of COPCs.

20. *Table 10, Ecological Receptors and Exposure Pathways to be Evaluated in the Ecological Risk Assessment, Creosote Bush Scrub, Great Horned Owl (page 76).* Please provide rationale for exclusion of soil ingestion by great horned owl. How will incidental ingestion of soil via preening be addressed?

21. *Table 10, Ecological Receptors and Exposure Pathways to be Evaluated in the*

Ecological Risk Assessment, Riparian Corridors (page 78). Please identify whether or not the working definition of "riparian corridor" includes land that is submerged at any time. If so, please identify how the sediment ingesting bird pathway will be evaluated.

22. *Table 10, Ecological Receptors and Exposure Pathways to be Evaluated in the Ecological Risk Assessment, Colorado River, Double-crested Cormorant (page 79).* Please provide rationale for not also evaluating an avian receptor that may ingest sediment. Please provide additional information on the determination that "surface water ingestion is minimal" for the cormorant.

23. *Table 10, Ecological Receptors and Exposure Pathways to be Evaluated in the Ecological Risk Assessment, Colorado River, Aquatic Community (page 79).* Please provide rationale for not including depositional areas and associated sediment pathways in this Risk Assessment Workplan.

24. *Table 10, Ecological Receptors and Exposure Pathways to be Evaluated in the Ecological Risk Assessment, Riparian Backwaters, Yuma Clapper Rail (page 80).* Please explain why surface water is not evaluated for this species.

25. *Table 10, Ecological Receptors and Exposure Pathways to be Evaluated in the Ecological Risk Assessment, Canals, Aqueducts, Main Drain, Double-crested Cormorant (page 81).* Please identify how the sediment ingesting bird pathway will be evaluated. Please provide additional information on the determination that "surface water ingestion is minimal" for the cormorant.

26. *Table 10, Ecological Receptors and Exposure Pathways to be Evaluated in the Ecological Risk Assessment, Canals, Aqueducts, Main Drain, Aquatic Community (page 81).* Please provide rationale for not including depositional areas and associated sediment pathways in this Risk Assessment Workplan.

27. *Selection of Chemicals for Evaluation (page 82, section 5.2.1).* Please explain the rationale for not including the NOAA Effects Range Low and Effects Range Median as potential screening benchmarks for sediments.

28. *Toxicity Assessment (page 83, section 5.2.3).* Please provide the proposed criteria and methodology for developing toxicity reference values.

29. *Toxicity Assessment (page 83, section 5.2.3) and Table 11, Toxic Equivalency Factors for PCDDs/PCDFs for the Ecological Risk Assessment (page 84).* Please describe how the evaluation of PCDDs/PCDFs will be conducted.

30. *Risk Estimation and Description (page 85, section 5.2.4).* Please provide expanded detail

on the process that "will be explored" should the proposed hazard quotients/hazard indices be exceeded.

31. *Uncertainty Analysis (page 85, section 5.2.5).* Please expand on the text explanation of how uncertainty related to the ecological risk assessment will be addressed. As one example, please identify whether or not Monte Carlo simulation will also be performed in the ecological risk assessment. This section references methods outlined in section 4.5.2 for the human health risk assessment.

32. *Uncertainty Analysis (page 85, section 5.2.5).* Please explain how coplanar PCBs will be evaluated in the ecological risk assessment.

33. *Uncertainty Analysis (page 85, section 5.2.5).* Please describe how unidentified organic compounds and tentatively identified compounds will be evaluated in the ecological risk assessment.