



**Via Email to [R9LandSubmit@epa.gov](mailto:R9LandSubmit@epa.gov)**

January 29, 2019

Director, Land Division  
US Environmental Protection Agency, Region 9  
75 Hawthorne Street (LND-1)  
San Francisco, CA 94105

**Re: Evoqua Water Technologies – Parker, Arizona Facility  
USEPA ID No.: AZD 982 441 263  
Modification No. 001 – Class 1: Appendix IV – Waste Analysis Plan - Sulfur**

Dear Mr. Scott:

In accordance with 40 CFR 270.42(a), Evoqua Water Technologies LLC hereby submits a Class 1 permit modification notification to the Environmental Protection Agency, Region 9 for the Hazardous Waste Permit issued to its facility located at 2523 Mutahar Street in Parker, Arizona. This permit modification is classified as a Class 1 modification in 40 CFR 270.42 Appendix I, Sections A.4. which provide for “changes in the frequency of or procedures for monitoring, reporting, sampling, or maintenance activities by the permittee”.

This Class 1 permit modification is being submitted to address the requirements of Permit Condition I.K.3, which states:

*I.K.3 The Permittees shall submit to the Director a notice of a Class 1 Permit Modification with prior Director approval, or Class 2 or Class 3 Permit Modification, in accordance with 40 CFR § 270.42(a)(2) and Permit Condition I.G.7., with an accompanying revised Permit Attachment Section C and a revised Permit Attachment Appendix IV (Waste Analysis Plan) within 60 days after the final Permit is effective.*

*I.K.3. a. The Waste Analysis Plan shall include sampling and analysis for sulfur at the waste carbon feed. Sampling shall be performed every 4-6 hours (at least four times daily). Samples are to be composited every 15-20 days and sent to the laboratory for analysis.*

*I.K.3.b. The revised Waste Analysis Plan shall include a recommendation by the Permittees for a feed rate limit for sulfur in the spent carbon so that the Permittees can use this feed rate limit to demonstrate to the Agency that they will not exceed the sulfur oxides emission standard of 30 tons per consecutive 12-month period, which is the standard expressed in Table V-1 of Module V of this Permit. The Permittees’ recommended feed rate limit for sulfur in the spent carbon shall include the explanation and calculation(s) for demonstrating compliance with the 30 tons per consecutive 12-month period using sulfur content of the feed, carbon reactivation production rate, and hours of operation over the course of the year, minus a 90% presumed sulfur removal rate from the scrubber system.*

*I.K.3.c. Once the revised Waste Analysis Plan is incorporated into the Permit, the Permittees are not authorized to feed in the RF-2 spent activated carbon that contains sulfur in concentrations that will cause the Permittees to exceed the emission standard set forth in Module V, Table V-1.*

Permit Attachment Appendix IV and Section C of EWT's Part B Application have been modified as follows:

- Section 4.5 has been updated to include sulfur as a constituent and an explanation of the calculation for demonstrating compliance with 30 tons per year per consecutive 12-month period using the sulfur content of the feed
- Appendix IV has updated to reflect Revision 3, January 2019 on the cover page and the footers.
- Based on maximum spent carbon feed rate, maximum operating hours in a year the and a scrubber control efficiency of 90%, the maximum sulfur loading on the spent carbon cannot exceed 11,232 mg/kg.
- Update Table 4-1 to reflect the correct SW-846 Method for Halogen Content
- Update Table 4-3 to include Sulfur as a permit compliance rationale and test methods.
- Update Table 4-3 to reflect the correct method for Chlorine
- Changes to 9.1 and 9.2 that references the Subpart BB and Subpart CC Plan and instead only includes the location in the Part B where the plans are located.
- Changes in WAP drawing WAP-001 Revision 0 to Revision 1 and to add sulfur to the list of constituents being analyzed at the weigh belt sample location.
- Section C requires no modifications as it only references Appendix IV.

Pursuant to 40 CFR 270.42(a)(1), this modification does not require any other changes to applicable information previously submitted pursuant to 40 CFR 270.13 – 270.21, and 40 CFR 270.62 - .63 do not apply.

Posting Instructions for this modification:

Please replace existing Appendix IV cover page plus pages I through page 16 with the enclosed Appendix IV.

Notifications:

A Class 1 permit modification requires a notice to the Facility mailing list within 90 days of the date the change is put into effect. However, EPA has not yet supplied the mailing list to Evoqua and has instead provided a process in Permit Condition I.K.5 for EPA to itself send an initial notice to the mailing list with respect to a I.K.5 required amendment. No alternative notice provision is provided for a Permit Condition I.K.6 amendment.

Evoqua requests that EPA either (i) provide a copy of the Facility mailing list within a reasonable period of time so that Evoqua can provide the applicable notice of the I.K.6 change to those on the mailing list, or (ii) provide a reasonable alternative suggestion on how EPA would prefer to address the notice requirement.

Permit modifications will be posted at the follow electronic address:

<http://www.evoqua.com/en/about/service-locations/Pages/Parker-AZ-Permits.aspx>

*I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.*

Permittee

EVOQUA WATER TECHNOLOGIES LLC

By:   
Its: Rodney Aulick  
President  
Integrated Solutions + Services

*The Colorado River Indian Tribes certifies under penalty of law that it understands that this application is being submitted for the purpose of modifying a permit to operate a facility to receive, store, treat, recycle, repackage and subsequently transport hazardous waste. I understand fully that the Colorado River Indian Tribes, as the beneficial landowner pursuant to P.L. 88-302, and Evoqua Water Technologies LLC, the lessee of the land and owner of certain fixtures located thereon, are jointly and severally responsible for compliance with applicable provisions of RCRA, its implementing regulations and any permit modification approved pursuant to the application and those regulations.*

Co-Permittee

COLORADO RIVER INDIAN TRIBES

By:  **Acting**  
Its: Chairman

cc: Director, CRIT Environmental Protection Office

APPLICATION PAGES  
REDLINE

APPENDIX IV

**APPENDIX IV**  
**WASTE ANALYSIS PLAN**

**Evoqua Water Technologies**  
**2523 Mutahar Street**  
**Parker, Arizona 85344**  
**928-669-5758**

**~~March 2016~~ January 2019**  
**Revision 23**

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- A SPENT CARBON PROFILE FORM
- B INCOMING SPENT CARBON WASTE TALLY SHEET
- C EVOQUA WATER TECHNOLOGIES ON-SITE SCREENING PROCEDURES

Note that the appendices are included with the WAP for informational purposes, and represent examples of the types of information contained in these documents. The actual documents may be modified from time to time as deemed necessary by the facility, without changing the WAP.

## 1.0 INTRODUCTION

This Waste Analysis Plan has been prepared for the Evoqua Water Technologies (EWT) carbon reactivation facility located in Parker, Arizona. It is intended to comply with the waste analysis requirements found in 40 CFR Part 264.13 and 265.13. A description of the facility can be found in Section D of the facility's RCRA Part B permit application. This Waste Analysis Plan applies only to spent carbon that is classified as hazardous waste in accordance with 40 CFR Part 261.

The procedures and information that make up this document establish EWT's policy for the acceptance of spent carbon classified as hazardous waste and the analysis of spent carbon. The forms contained in this Waste Analysis Plan are offered to establish the general information to be documented. The format and wording of these forms may be changed from time to time without modifying the Waste Analysis Plan. EWT will provide copies of these forms to EPA as they are revised.

All records are retained in accordance with the recordkeeping requirements of 40 CFR 264.73. EWT's records retention requirements are summarized in Appendix XXI.

## 2.0 INFORMATION SUPPLIED BY HAZARDOUS WASTE GENERATORS

Spent carbon processed at the EWT facility will be received only after it is pre-approved for processing by EWT as described below.

The prospective generator (originator) of a source of spent carbon will begin the approval process by making application to EWT using a Spent Carbon Profile Form (SCPF). The generator will complete the SCPF in accordance with the guidance supplied with each form. The information supplied by the generator must be from analysis of a sample which is representative of the spent carbon being profiled. An example of a SCPF can be found in Appendix A.

Section 3 of the SCPF provides space for the generator to provide a specific description of the process generating the spent carbon including constituents being treated. A copy of the analytical data must be included with the SCPF.

EWT will perform a completeness review on each SCPF. Should any deficiencies be found, EWT will work with the generator to ensure the SCPF is complete before proceeding with the pre-acceptance process.

In order to ensure proper storage and treatment of the spent carbon, at a minimum, the pre-acceptance parameters listed in Table 4-1 will be determined for all samples before final profile approval is given. Table 4-1 also lists the rationale for the analyses chosen as well as the analytical methods to be used. EWT will make a determination of what additional analyses, if any, will be performed based on the information supplied on the SCPF. As part of the profiling process, the generator must make a determination and indicate in the space provided on the SCPF that based on analytical data of the waste stream and/or their knowledge of the process producing the spent carbon whether the spent carbon is a hazardous waste as defined by 40 CFR Part 261. In all cases where a determination has been made that the spent carbon is a RCRA hazardous waste, the generator is required to provide analytical data for characterization.

Based on the information supplied on the SCPF and the results of the spent carbon analysis, the generator's spent carbon will either be approved or rejected for treatment at the Parker facility. The decision to approve or reject a generator's spent carbon will be made by EWT plant management. The generator will be advised of the determination. If the spent carbon is approved for treatment, the spent carbon will be assigned a spent carbon approval number.

The generator is required to submit a revised SCPF (including appropriate analytical data) whenever there is reason to believe that the nature of the spent carbon has changed (e.g., from process or operational modifications). At a minimum, each generator must submit an updated SCPF and current analytical data at least every two years. Analytical data submitted with the profile information must be no more than 6 months old.

In the case where EWT discovers that a shipment of spent carbon exhibits a significant discrepancy from the waste profile information, the generator will be required to re-

characterize the waste and may also be required to develop a new waste profile (including appropriate analytical data), before the shipment will be accepted for treatment.

### 3.0 PROCEDURES USED TO INSPECT SPENT CARBON RECEIVED

Upon arrival at the facility, each load will be inspected by a Material Handler or other qualified person to ensure the material is spent carbon and that the quantity of spent carbon agrees with the quantity stated on each manifest. For loads of containerized spent carbon, the drums or other containers will be counted to ensure that the quantity agrees with the manifest. Each container will be checked to ensure that a correctly completed hazardous waste label is present and that the label agrees with the contents stated on the manifest. After the quantity check, samples of the containerized spent carbon will be obtained as described in Section 5.

Bulk shipments will also be inspected. The manways or "domes" will be opened and the depth of the carbon will be visually inspected. The estimated quantity or volume in the truck will be compared with the quantity listed on the Hazardous Waste Manifest. After the quantity check, samples of the tank contents will be obtained as described in Section 5.

In the event further testing is required to make a decision or characterize the spent carbon, the facility may temporarily store the material pending analytical results.

An Incoming Spent Carbon Tally Sheet/On-Site Screening Report (see Appendix B) will be completed for each load by a Material Handler or other qualified person. This form will be filed and maintained as part of the facility's Operating Record.

## **4.0 CONFIRMATION OF COMPOSITION OF SPENT CARBON RECEIVED**

As discussed in Section 2 of this document, the spent carbon generator is required to provide certain characterization and analytical data to SWT, prior to waste acceptance at the facility. Analytical data to be provided by the generator, including the rationale for the analysis, and the appropriate analytical methods, are described in Table 4-1.

The remainder of this section describes how facility personnel confirm that the materials received correspond to the pre-acceptance data supplied by the generator, and how facility personnel sample and analyze the incoming materials to confirm compliance with feed rate restrictions on the carbon reactivation unit. The locations within the facility and the carbon reactivation process where samples are collected are shown schematically in Figure 4-1.

### **4.1 CONTAINERIZED SPENT CARBON**

Each container of spent carbon will be opened by a Material Handler or other qualified person, and the contents of the container will be visually inspected for foreign matter. The general appearance of the carbon will be observed. As described in the sampling procedure (see Section 5) representative samples will be obtained. A composite of the spent carbon samples from each load from each generator, or a single sample if only one container was received from the generator, will be subjected to the on-site screening tests listed in Table 4-2.

### **4.2 BULK SPENT CARBON**

Each bulk load of spent carbon will be sampled by a Material Handler or other qualified person, as described in Section 5. Representative samples of the bulk load will be obtained as described in the sampling procedure in Section 5.0. The samples will be visually inspected for general appearance and the presence of foreign matter. A composite of the spent carbon samples will be subjected to the on-site screening tests listed in Table 4-2.

### **4.3 ON-SITE SCREENING**

The composite samples obtained from each load from each generator's containerized spent carbon shipment and from bulk loads will be subjected to the on-site screening analyses listed in Table 4-2. EWT's procedures for on-site screening are provided in Appendix C to the WAP. The results of the analyses will be recorded on the Incoming Spent Carbon Waste Tally Sheet and On-Site Screening Report (see Appendix B) by trained personnel and reviewed by plant management. If the spent carbon is accepted, the spent carbon will be transferred into a designated storage tank or container storage area.

If, based on the visual inspection and the on-site screening analyses, the spent carbon is different than that described on the customer Spent Carbon Profile Form and/or the

Hazardous Waste Manifest, the generator will be notified of the discrepancy. If the discrepancy cannot be immediately resolved, the spent carbon may be retained on-site while the investigation of the discrepancy continues. If the discrepancy cannot be resolved, the spent carbon will be rejected and directed back to the generator or an alternate facility per generator direction. If the discrepancy cannot be resolved within 15 days, EWT will notify EPA as required by 40 CFR 264.72(b) and (c).

#### 4.4 RATIONALE FOR ANALYSES SELECTED FOR ON-SITE SCREENING

The rationale for the analysis selected to be performed as part of the on-site screening is given in Table 4-2.

#### 4.5 ANALYSES PERFORMED FOR PERMIT COMPLIANCE

The RF-2 carbon reactivation furnace conducted a Performance Demonstration Test and established feed rate limits for the following constituents as a result of that test:

- Mercury
- Semi volatile metals (cadmium, lead)
- Low volatility metals (arsenic, beryllium, chromium)
- Total chlorine/chloride
- Sulfur-

In order to continuously demonstrate compliance with ~~these the mercury, SVM, LVM and chorine~~ feed rate limits, the most recent analytical results (designated as the “analysis of record”) are recorded in the process computer system. A rolling average feed rate of each regulated constituent is computed and recorded based on the analysis of record and the measured mass feed rate of spent activated carbon.

In order to demonstrate compliance with SO<sub>2</sub> emission limits of 30 tons per year, the average monthly results for sulfur will be used to calculate the 12-month rolling average.

The following formula will be used:

$$\frac{(\text{Feed Rate} \times \text{Operating Hours} \times (64/32) \times \% \text{ Sulfur} \times (1-.90))}{2000} = \text{SO}_2 \text{ Tons/Year}$$

Based on maximum spent carbon feed rate, maximum operating hours in a year and a scrubber control efficiency of 90%, the maximum sulfur loading on the spent carbon cannot exceed 11,232 mg/kg.

A grab sample of the feed spent activated carbon is collected four times daily (twice each shift) when the process is operating. These samples are collected by the process operators from the weigh belt. The four daily grab samples are stored in the on-site laboratory. At the end of each approximately 15 to 20 day period (selected such that the samples will not exceed the 28 day holding time for Hg analysis), the samples

collected from that time period are combined and then sub-sampled to form a composite feed sample. This composite is analyzed using the methods described in Table 4-3.

Following receipt of the feed composite sample analyses, the data are entered into a spreadsheet where the most recent 12 months of analytical results are averaged. When each new analytical result is entered, the 12 month average is updated. The most recent 12 month average result is designated as the “analysis of record” for purposes of calculating the constituent feed rate values used for permit compliance demonstration.

While EWT’s contract laboratory matrix spike recovery results are routinely within the method limits, EPA has expressed concern that analyte recovery may be problematic in activated carbon samples. EWT has agreed to review the results of matrix spike recoveries for the regulatory compliance analyses (metals and total chlorine) and to adjust the analytical result using the spike recovery if the recovery falls below the method limits. The following equation will be used if such analytical result adjustment is needed:

$$C_{corr} = C_{unc} \times \text{Recovery}$$

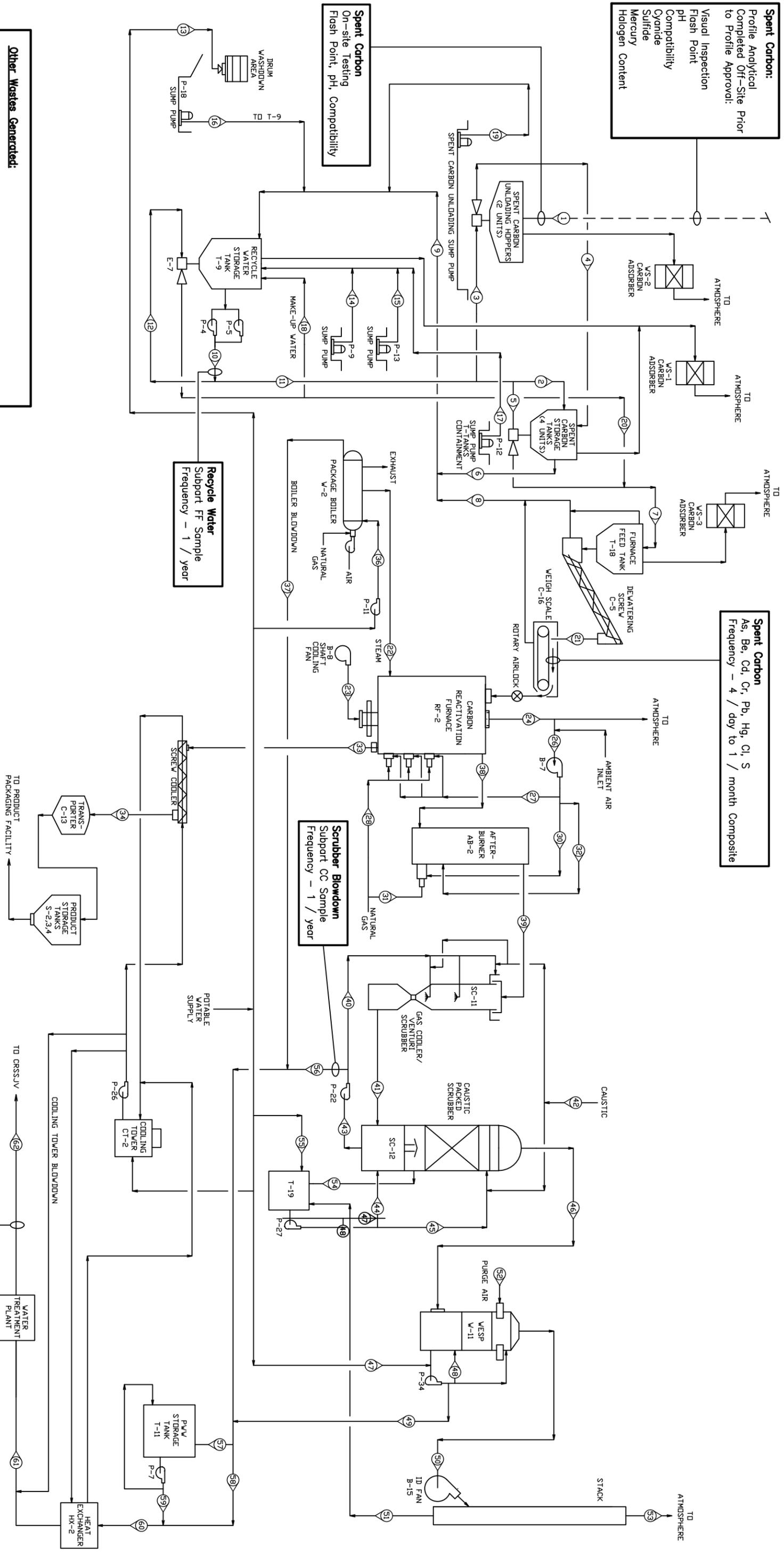
Where:

$C_{corr}$  = Corrected analytical result  
 $C_{unc}$  = Uncorrected analytical result

**Spent Carbon:**  
 Profile Analytical Completed Off-Site Prior to Profile Approval:  
 Visual Inspection  
 Flash Point  
 pH  
 Compatibility  
 Cyanide  
 Sulfide  
 Mercury  
 Halogen Content

**Spent Carbon**  
 On-site Testing  
 Flash Point, pH, Compatibility

**Spent Carbon**  
 As, Be, Cd, Cr, Pb, Hg, Cl, S  
 Frequency - 4 / day to 1 / month Composite



**Other Wastes Generated:**

- Misc. Debris - Weekly - All Waste Codes Facility has received. Not Currently Tested Put in 90 day bin for incineration
- WWTP Filter Press Cake - All Waste Codes Facility has received. Not Currently Tested Put in 90 day bin for incineration

**NOTES:**

- THIS DRAWING INCLUDES COMPONENTS OF THE FACILITY THAT ARE EXEMPT FROM PERMITTING UNDER VARIOUS PROVISIONS OF RCRA. DATA RELATED TO THESE COMPONENTS IS PROVIDED FOR INFORMATIONAL PURPOSES AND EASE OF REVIEW ONLY, AND THEY ARE NOT INTENDED TO BECOME REGULATED COMPONENTS OF THE HAZARDOUS WASTE FACILITY.

**Wastewater Discharge**  
 POTW COD/TSS Sample  
 Frequency - 2 / month

**Wastewater Discharge**  
 CWT Sample  
 Frequency - 2 / year

**Wastewater Discharge**  
 POTW TTO Sample  
 Frequency - 1 / year

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NO.	JBE	JBE	APP	NAME CHANGED, ADD SULFUR	5/4/16
1	DWN	CK'D		REVISIONS	DATE
<b>CBE CHAVOND-BARRY ENGINEERING CORP.</b>					
400 Route 518 • P.O. Box 205 • Blawieburg, New Jersey 08504					
2523 MITAHAR STREET, PARKER, AZ 85344					
EVOQUA WATER TECHNOLOGIES					
SAMPLE LOCATIONS					
DRAWN	DATE	CHECKED	DATE	APPROVED	DATE
JBE	7/6/11	KEM	7/7/11		
SCALE	DWG. NO.	WAP-001		REV.	1
NDNF					

TABLE 4-1  
SUMMARY OF PRE-ACCEPTANCE ANALYTICAL PARAMETERS, RATIONALE, AND TEST METHODS

PARAMETER	RATIONALE	METHODS	USES
Visual Inspection	Verify that the material is spent carbon, and used to identify the obvious presence or absence of free liquid and/or debris, coloration, and whether the spent carbon is a vapor phase or liquid phase carbon, etc. The initial characterization of a particular spent carbon will be used for comparison against each subsequent load of that same spent carbon received at the facility.	Visual Inspection	Pre-acceptance
Flash-point (1)	Indicates whether the free liquid or solid portion of the spent carbon exhibits the characteristics of ignitability. This information is used to determine the storage requirements for the spent carbon prior to treatment. Liquids with a flash point <140°F will not be accepted into the facility.	SW-846 Method 1010M, 1010, or ASTM D3278	Pre-acceptance
pH (2)	Identifies materials that have the potential to corrode pipes, tanks and ancillary equipment.	SW-846 Method 9041, 9040, or 9045 depending on free moisture in sample	Pre-acceptance
Compatibility	Identifies materials that have the potential to be incompatible.	ASTM D5058 (Method C) or IM-101S	Pre-acceptance
Cyanide	Identifies potentially reactive spent carbon. Spent carbon with reactive cyanide >250ppm will not be accepted at the facility.	SW-846 Method 9010	Pre-acceptance
Sulfide	Identifies potentially reactive spent carbon. Spent carbon with reactive sulfide >500ppm will not be accepted at the facility.	SW-846 Method 9030	Pre-acceptance
Mercury	Process information.	SW-846 Method 7471 (Cold Vapor Technique)	Pre-acceptance
Halogen Content	Process information.	SW-846 Method 5050 (bomb combustion) SW-846 Method <del>9029</del> <del>9252A</del> or <del>9056</del>	Pre-acceptance

Notes:

1. If fingerprinting with an open flame is positive then run one of the methods.
2. Analysis performed on free liquids retained in incoming spent carbon samples or on a 1:1 mixture of the incoming vapor phase carbon sample and deionized water. Initial screening is performed using Method 9041. Should Method 9041 indicate the sample is potentially corrosive, Method 9040 or Method 9045 is used for final confirmation that a material is corrosive.
3. All method numbers are shown without suffix. The latest promulgated method will be used.
4. SW-846 refers to *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*, USEPA, latest update. ASTM refers to *Annual Book of ASTM Standards*, ASTM International.

Table 4-2  
SUMMARY OF ON-SITE SCREENING ANALYTICAL PARAMETERS, RATIONALE AND TEST METHODS

PARAMETER	RATIONALE	METHODS	USES
Visual Inspection	Verify that the material is spent carbon, and used to identify the obvious presence or absence of free liquid and/or debris, coloration, and whether the spent carbon is a vapor phase or liquid phase carbon.	Visual	On-site screening; Must conform to physical description on profile
Ignitability(1)	Indicates whether the carbon will support a flame at ambient conditions. This information is used to determine the storage requirements for the spent carbon prior to treatment, and to verify ignitability information provided by the generator.	Open ignition in controlled environment	On-site screening; Diluted sample must not support combustion
pH	Identifies materials that have the potential to corrode pipes, tanks and ancillary equipment.	Add DI water 1:1 and check pH using test strips. (Reference: EPA Method 9041M/9045M)	On-site screening; Must be within range on profile
Compatibility	Identifies materials that have the potential to be incompatible with water.	ASTM D5058 (Test Method C – Water Compatibility) or IM-101S	On-site screening; Must not show adverse reaction with water

Notes:

(1) Fingerprinting is conducted by applying a flame to the carbon sample in a controlled environment. If the carbon supports a flame under these conditions, the sample is mixed 1:1 with deionized water and the procedure is repeated. The test is positive if the diluted sample supports combustion above the water surface.

Method numbers are shown without suffix. The latest promulgated methods will be used.

SW-846 refers to *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*, USEPA, latest update.  
ASTM refers to *Annual Book of ASTM Standards*, ASTM International.

TABLE 4-3  
SUMMARY OF PERMIT COMPLIANCE ANALYTICAL PARAMETERS, RATIONALE, AND TEST METHODS

PARAMETER	RATIONALE & FREQUENCY	METHODS	USES
Arsenic, Beryllium, Cadmium, Chromium, Lead	Demonstrate compliance with RF-2 constituent feed rate limits. Four daily samples combined and sub-sampled into ~15 to 20 day composite. Analysis of each composite to form 12-month rolling average.	SW-846 Method 3050 (acid digestion) SW-846 Method 6010 (ICP)	Calculation of constituent feed rate; comparison to permit limit.
Mercury	Demonstrate compliance with RF-2 constituent feed rate limits. Four daily samples combined and sub-sampled into ~15 to 20 day composite. Analysis of each composite to form 12-month rolling average.	SW-846 Method 3050 (acid digestion) SW-846 Method 7471 (CVAAS)	Calculation of constituent feed rate; comparison to permit limit.
<u>Sulfur</u>	<u>Demonstrate compliance with RF-2 constituent feed rate limits. Four daily samples combined and sub-sampled into ~15 to 20 day composite. Analysis of each composite to form 12-month rolling average.</u>	<u>EPA Method 5050/9056A</u>	<u>Comparison to maximum permitted sulfur loading on spent carbon.</u>
Total chlorine	Demonstrate compliance with RF-2 constituent feed rate limits. Four daily samples combined and sub-sampled into ~15 to 20 day composite. Analysis of each composite to form 12-month rolling average.	SW-846 Method 5050 (bomb combustion) SW-846 Method <u>90569252A</u>	Calculation of constituent feed rate; comparison to permit limit.

Note: method numbers are shown without suffix. The latest promulgated methods will be used.

SW-846 refers to *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*, USEPA, latest update.

## 5.0 PROCEDURES USED TO OBTAIN A REPRESENTATIVE SAMPLE OF SPENT CARBON

Sampling of spent carbon will be employed as part of the on-site screening process and permit compliance as described below.

### 5.1 BULK LOADS

A representative sample of each bulk load will be obtained using either a shovel or scoop. The sampling instrument will be rinsed with water after every sampling event. The sample from each bulk shipment will be taken to the laboratory for screening analyses.

### 5.2 CONTAINERS

Each container will be opened for the purpose of inspection and sampling. The lid or top on each container will be left loosely in place unless sampling or inspection of the container is actually occurring. A Material Handler or another designated employee will obtain one sample from each randomly selected container using the following selection strategy.

1. The number of containers chosen for random selection from each spent carbon generator will equal the square root plus one of the total shipped by the generator in each load. Thus, if a generator shipped one container, that container would be sampled. If a generator shipped sixteen containers, five would be sampled. If the square root is not an integer, it will be rounded to the next highest number. The waste tally sheet and EWT internal labels are generated by computer and perform the random sampling calculations. Printed tally sheets and labels designate which containers are to be sampled.
2. If any container contains a spent carbon which either is visually different from the profiled spent carbon, or a composite of the individual samples fails the on-site screening process described in Section 4, each container from that spent carbon generator may be sampled and subjected to the on-site screening analyses listed in Table 4-2.

Each representative sample will be obtained using the appropriate adaptation of the general methodology listed in ASTM Standard D346. The sample will be placed in clean sample jars, covered with an appropriate lid, and immediately taken to the facility laboratory for analysis. A label will be placed on each jar, indicating the profile number and the date of the sample. After sampling, the lid will be replaced on each container and it will be sealed if it is going to be stored. A composite sample will be analyzed from each load of spent carbon received from each generator. The composite sample will be prepared by combining equal amounts of carbon from each grab sample that was collected from the randomly selected containers in the load.

### **5.3 CARBON FEED**

Four times daily, the access cover of the weigh belt will be opened for the purpose of sampling. An operator or another designated employee will obtain one grab sample of the feed carbon, and place the sample into a clean sample jar.

At the end of each day, the four grab samples will be stored in the on-site laboratory.

At the end of each approximately 15 to 20 day period, the daily feed samples will be opened and an equal amount will be removed from each jar and placed into a clean sample jar, to form a carbon feed composite sample.

A label will be placed on the composite sample jar, indicating the date range of the sample, and the sample will be sent to an off-site laboratory for the analyses listed in Table 4-3.

### **5.4 MAINTAINING AND DECONTAMINATING SAMPLING EQUIPMENT**

Equipment used to obtain representative samples will be inspected as per the facility's inspection schedule to ensure it is in proper working order. Sampling equipment will be decontaminated by rinsing with water after each sampling event.

### **5.5 SAMPLING QA/QC PROCEDURES**

Sampling equipment is decontaminated between sampling events or is disposed of to minimize the possibility of cross contamination. The equipment is decontaminated using a method appropriate to the type of material sampled. For example, scoops are generally rinsed with water to remove solids. New sampling equipment that is known to be clean will not be decontaminated prior to use.

## 6.0 METHODS TO ENSURE COMPATIBILITY WITH HANDLING METHODS

The spent carbon testing procedures outlined in this Waste Analysis Plan have been developed with cognizance of the spent carbon storage and handling procedures at the Parker facility. The facility is designed to safely store, transfer and reactivate spent carbon, which is contaminated with wastes that are toxic and/or ignitable. The Parker facility takes the necessary precautions to prevent the accidental ignition of ignitable spent carbon. As shown in Table 4-1, the facility pre-acceptance procedures include compatibility testing to identify materials that have the potential to be incompatible. The facility will not receive spent carbon which is characterized by the generator as reactive or corrosive, or spent carbon identified by waste codes which are not authorized for receipt at the facility.

## **7.0 METHODS TO ENSURE WASTE ANALYSIS PLAN IS KEPT UP-TO-DATE**

The Plant Manager, Environmental Health and Safety Specialist or another designated person shall review the Waste Analysis Plan at least every two calendar years to determine if it is in compliance with current RCRA regulations and otherwise meets the needs of the facility. A statement that the plan was reviewed will be maintained in the permanent files at the facility.

If the WAP is revised as a result of the review process, a copy of the revised document will be provided to EPA.

## 8.0 LAND DISPOSAL RESTRICTION NOTIFICATION FORMS

Generators of spent carbon that is restricted from land disposal pursuant to 40 CFR 268 will be required to provide appropriate documentation.

At the time of spent carbon receipt, EWT will receive and review the forms, which must accompany the first shipment of spent carbon that is subject to land ban restrictions. EWT will file the completed forms with the Treatment Storage and Disposal copy of the hazardous waste manifest as part of the facility operating record.

## 9.0 SPECIAL PROCEDURAL REQUIREMENTS

This section provides discussion on special procedural requirements applicable to the facility. These include 40 CFR 264 Subpart BB and Subpart CC applicability.

### 9.1 Subpart BB

~~In accordance with the requirements of 40 CFR 264 Subpart BB, the Waste Analysis Plan is to contain determinations on the applicability of the 40 CFR 264 Subpart BB requirements. The Subpart BB regulations are applicable to equipment that contains or contacts hazardous wastes with organic concentrations of at least ten (10) percent by weight.~~

~~The Subpart BB regulations further define equipment as being in light liquid service, gas/vapor service, and heavy liquid service. The facility Subpart BB Compliance Plan is included/located in Appendix XIX of the Part B PermitApplication.~~

### 9.2 Subpart CC

~~The EWT Parker facility manages all tanks and containers regulated by the requirements of Subpart CC as specified in Section O. The Subpart CC Compliance Plan is located in Appendix XVI of the Part B Permit. The carbon absorber change out schedules are based on engineering calculations found in 40 CFR, Subpart FF Compliance Plan.~~

### 9.3 Wastes Generated On-Site

EWT generates several regulated waste streams as part of its operations. These include debris, filter cake from the wastewater treatment operations, used personnel protective equipment, and spent activated carbon used for tank vent control in compliance with Subpart CC and FF. Of these wastes, all are manifested and sent off site for disposal, with the exception of the spent activated carbon used for tank vent control. This spent activated carbon is similar to the spent carbon received at the EWT facility, as it is derived from the treatment and storage of those carbon streams, and is treated by EWT in the same manner as the spent carbon received from off-site.

APPLICATION PAGES  
CLEAN

APPENDIX IV

**APPENDIX IV**  
**WASTE ANALYSIS PLAN**

**Evoqua Water Technologies**  
**2523 Mutahar Street**  
**Parker, Arizona 85344**  
**928-669-5758**

**January 2019**  
**Revision 3**

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- A SPENT CARBON PROFILE FORM
- B INCOMING SPENT CARBON WASTE TALLY SHEET
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Note that the appendices are included with the WAP for informational purposes, and represent examples of the types of information contained in these documents. The actual documents may be modified from time to time as deemed necessary by the facility, without changing the WAP.

## **1.0 INTRODUCTION**

This Waste Analysis Plan has been prepared for the Evoqua Water Technologies (EWT) carbon reactivation facility located in Parker, Arizona. It is intended to comply with the waste analysis requirements found in 40 CFR Part 264.13 and 265.13. A description of the facility can be found in Section D of the facility's RCRA Part B permit application. This Waste Analysis Plan applies only to spent carbon that is classified as hazardous waste in accordance with 40 CFR Part 261.

The procedures and information that make up this document establish EWT's policy for the acceptance of spent carbon classified as hazardous waste and the analysis of spent carbon. The forms contained in this Waste Analysis Plan are offered to establish the general information to be documented. The format and wording of these forms may be changed from time to time without modifying the Waste Analysis Plan. EWT will provide copies of these forms to EPA as they are revised.

All records are retained in accordance with the recordkeeping requirements of 40 CFR 264.73. EWT's records retention requirements are summarized in Appendix XXI.

## **2.0 INFORMATION SUPPLIED BY HAZARDOUS WASTE GENERATORS**

Spent carbon processed at the EWT facility will be received only after it is pre-approved for processing by EWT as described below.

The prospective generator (originator) of a source of spent carbon will begin the approval process by making application to EWT using a Spent Carbon Profile Form (SCPF). The generator will complete the SCPF in accordance with the guidance supplied with each form. The information supplied by the generator must be from analysis of a sample which is representative of the spent carbon being profiled. An example of a SCPF can be found in Appendix A.

Section 3 of the SCPF provides space for the generator to provide a specific description of the process generating the spent carbon including constituents being treated. A copy of the analytical data must be included with the SCPF.

EWT will perform a completeness review on each SCPF. Should any deficiencies be found, EWT will work with the generator to ensure the SCPF is complete before proceeding with the pre-acceptance process.

In order to ensure proper storage and treatment of the spent carbon, at a minimum, the pre-acceptance parameters listed in Table 4-1 will be determined for all samples before final profile approval is given. Table 4-1 also lists the rationale for the analyses chosen as well as the analytical methods to be used. EWT will make a determination of what additional analyses, if any, will be performed based on the information supplied on the SCPF. As part of the profiling process, the generator must make a determination and indicate in the space provided on the SCPF that based on analytical data of the waste stream and/or their knowledge of the process producing the spent carbon whether the spent carbon is a hazardous waste as defined by 40 CFR Part 261. In all cases where a determination has been made that the spent carbon is a RCRA hazardous waste, the generator is required to provide analytical data for characterization.

Based on the information supplied on the SCPF and the results of the spent carbon analysis, the generator's spent carbon will either be approved or rejected for treatment at the Parker facility. The decision to approve or reject a generator's spent carbon will be made by EWT plant management. The generator will be advised of the determination. If the spent carbon is approved for treatment, the spent carbon will be assigned a spent carbon approval number.

The generator is required to submit a revised SCPF (including appropriate analytical data) whenever there is reason to believe that the nature of the spent carbon has changed (e.g., from process or operational modifications). At a minimum, each generator must submit an updated SCPF and current analytical data at least every two years. Analytical data submitted with the profile information must be no more than 6 months old.

In the case where EWT discovers that a shipment of spent carbon exhibits a significant discrepancy from the waste profile information, the generator will be required to re-

characterize the waste and may also be required to develop a new waste profile (including appropriate analytical data), before the shipment will be accepted for treatment.

### **3.0 PROCEDURES USED TO INSPECT SPENT CARBON RECEIVED**

Upon arrival at the facility, each load will be inspected by a Material Handler or other qualified person to ensure the material is spent carbon and that the quantity of spent carbon agrees with the quantity stated on each manifest. For loads of containerized spent carbon, the drums or other containers will be counted to ensure that the quantity agrees with the manifest. Each container will be checked to ensure that a correctly completed hazardous waste label is present and that the label agrees with the contents stated on the manifest. After the quantity check, samples of the containerized spent carbon will be obtained as described in Section 5.

Bulk shipments will also be inspected. The manways or "domes" will be opened and the depth of the carbon will be visually inspected. The estimated quantity or volume in the truck will be compared with the quantity listed on the Hazardous Waste Manifest. After the quantity check, samples of the tank contents will be obtained as described in Section 5.

In the event further testing is required to make a decision or characterize the spent carbon, the facility may temporarily store the material pending analytical results.

An Incoming Spent Carbon Tally Sheet/On-Site Screening Report (see Appendix B) will be completed for each load by a Material Handler or other qualified person. This form will be filed and maintained as part of the facility's Operating Record.

## **4.0 CONFIRMATION OF COMPOSITION OF SPENT CARBON RECEIVED**

As discussed in Section 2 of this document, the spent carbon generator is required to provide certain characterization and analytical data to SWT, prior to waste acceptance at the facility. Analytical data to be provided by the generator, including the rationale for the analysis, and the appropriate analytical methods, are described in Table 4-1.

The remainder of this section describes how facility personnel confirm that the materials received correspond to the pre-acceptance data supplied by the generator, and how facility personnel sample and analyze the incoming materials to confirm compliance with feed rate restrictions on the carbon reactivation unit. The locations within the facility and the carbon reactivation process where samples are collected are shown schematically in Figure 4-1.

### **4.1 CONTAINERIZED SPENT CARBON**

Each container of spent carbon will be opened by a Material Handler or other qualified person, and the contents of the container will be visually inspected for foreign matter. The general appearance of the carbon will be observed. As described in the sampling procedure (see Section 5) representative samples will be obtained. A composite of the spent carbon samples from each load from each generator, or a single sample if only one container was received from the generator, will be subjected to the on-site screening tests listed in Table 4-2.

### **4.2 BULK SPENT CARBON**

Each bulk load of spent carbon will be sampled by a Material Handler or other qualified person, as described in Section 5. Representative samples of the bulk load will be obtained as described in the sampling procedure in Section 5.0. The samples will be visually inspected for general appearance and the presence of foreign matter. A composite of the spent carbon samples will be subjected to the on-site screening tests listed in Table 4-2.

### **4.3 ON-SITE SCREENING**

The composite samples obtained from each load from each generator's containerized spent carbon shipment and from bulk loads will be subjected to the on-site screening analyses listed in Table 4-2. EWT's procedures for on-site screening are provided in Appendix C to the WAP. The results of the analyses will be recorded on the Incoming Spent Carbon Waste Tally Sheet and On-Site Screening Report (see Appendix B) by trained personnel and reviewed by plant management. If the spent carbon is accepted, the spent carbon will be transferred into a designated storage tank or container storage area.

If, based on the visual inspection and the on-site screening analyses, the spent carbon is different than that described on the customer Spent Carbon Profile Form and/or the

Hazardous Waste Manifest, the generator will be notified of the discrepancy. If the discrepancy cannot be immediately resolved, the spent carbon may be retained on-site while the investigation of the discrepancy continues. If the discrepancy cannot be resolved, the spent carbon will be rejected and directed back to the generator or an alternate facility per generator direction. If the discrepancy cannot be resolved within 15 days, EWT will notify EPA as required by 40 CFR 264.72(b) and (c).

#### 4.4 RATIONALE FOR ANALYSES SELECTED FOR ON-SITE SCREENING

The rationale for the analysis selected to be performed as part of the on-site screening is given in Table 4-2.

#### 4.5 ANALYSES PERFORMED FOR PERMIT COMPLIANCE

The RF-2 carbon reactivation furnace conducted a Performance Demonstration Test and established feed rate limits for the following constituents as a result of that test:

- Mercury
- Semi volatile metals (cadmium, lead)
- Low volatility metals (arsenic, beryllium, chromium)
- Total chlorine/chloride
- Sulfur

In order to continuously demonstrate compliance with the mercury, SVM, LVM and chlorine feed rate limits, the most recent analytical results (designated as the “analysis of record”) are recorded in the process computer system. A rolling average feed rate of each regulated constituent is computed and recorded based on the analysis of record and the measured mass feed rate of spent activated carbon.

In order to demonstrate compliance with SO<sub>2</sub> emission limits of 30 tons per year, the average monthly results for sulfur will be used to calculate the 12-month rolling average.

The following formula will be used:

$$(\text{Feed Rate} \times \text{Operating Hours} \times (64/32) \times \% \text{ Sulfur} \times (1-.90)) / 2000 = \text{SO}_2 \text{ Tons/Year}$$

Based on maximum spent carbon feed rate, maximum operating hours in a year and a scrubber control efficiency of 90%, the maximum sulfur loading on the spent carbon cannot exceed 11,232 mg/kg.

A grab sample of the feed spent activated carbon is collected four times daily (twice each shift) when the process is operating. These samples are collected by the process operators from the weigh belt. The four daily grab samples are stored in the on-site laboratory. At the end of each approximately 15 to 20 day period (selected such that the samples will not exceed the 28 day holding time for Hg analysis), the samples collected from that time period are combined and then sub-sampled to form a composite

feed sample. This composite is analyzed using the methods described in Table 4-3.

Following receipt of the feed composite sample analyses, the data are entered into a spreadsheet where the most recent 12 months of analytical results are averaged. When each new analytical result is entered, the 12 month average is updated. The most recent 12 month average result is designated as the “analysis of record” for purposes of calculating the constituent feed rate values used for permit compliance demonstration.

While EWT’s contract laboratory matrix spike recovery results are routinely within the method limits, EPA has expressed concern that analyte recovery may be problematic in activated carbon samples. EWT has agreed to review the results of matrix spike recoveries for the regulatory compliance analyses (metals and total chlorine) and to adjust the analytical result using the spike recovery if the recovery falls below the method limits. The following equation will be used if such analytical result adjustment is needed:

$$C_{corr} = C_{unc} \times \frac{100}{\text{Spike Recovery \%}}$$

Where:

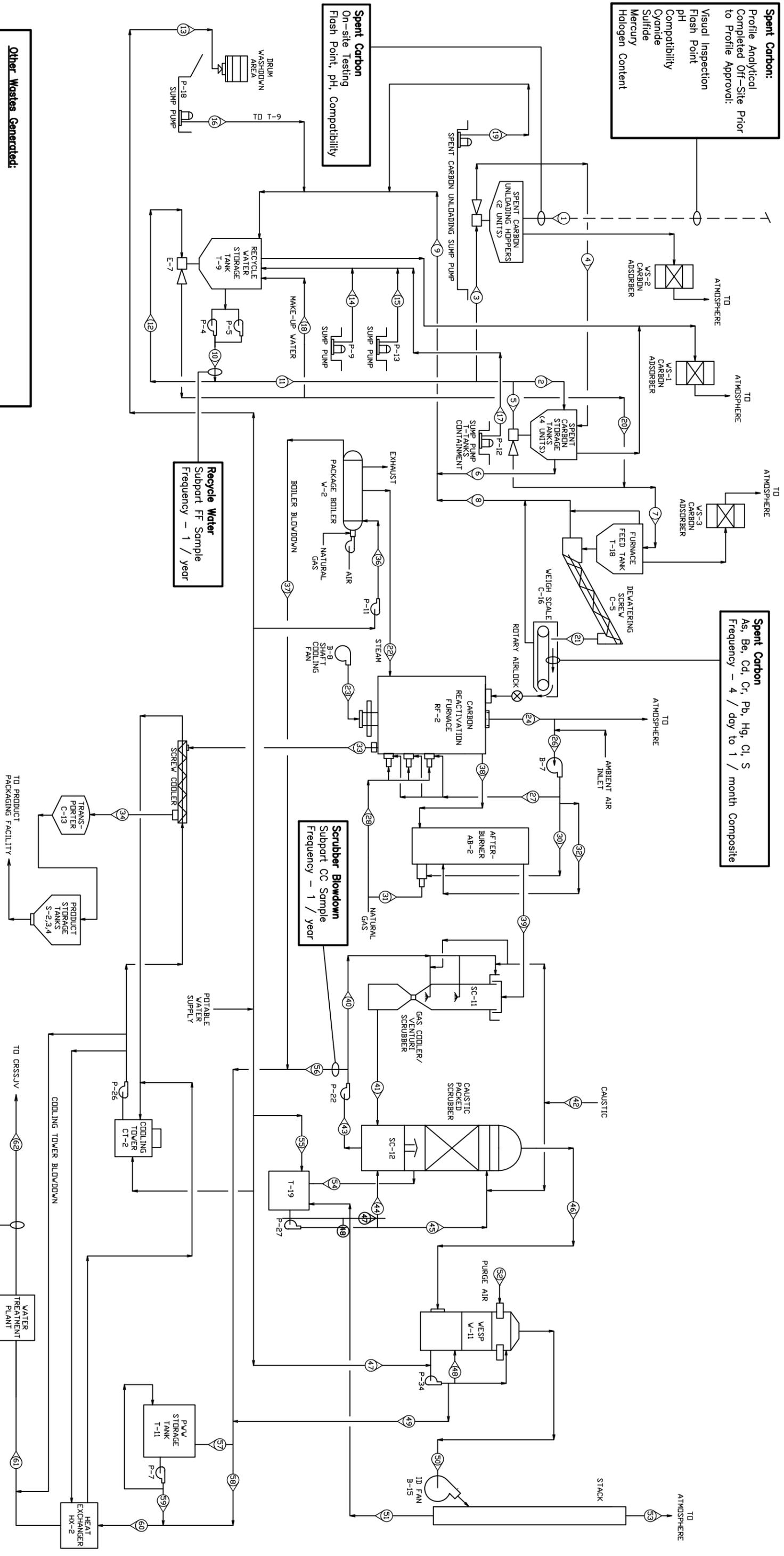
$C_{corr}$  = Corrected analytical result

$C_{unc}$  = Uncorrected analytical result

**Spent Carbon:**  
 Profile Analytical Completed Off-Site Prior to Profile Approval:  
 Visual Inspection  
 Flash Point  
 pH  
 Compatibility  
 Cyanide  
 Sulfide  
 Mercury  
 Halogen Content

**Spent Carbon**  
 On-site Testing  
 Flash Point, pH, Compatibility

**Spent Carbon**  
 As, Be, Cd, Cr, Pb, Hg, Cl, S  
 Frequency - 4 / day to 1 / month Composite



**Other Wastes Generated:**

- Misc. Debris - Weekly - All Waste Codes Facility has received. Not Currently Tested Put in 90 day bin for incineration
- WWTP Filter Press Cake - All Waste Codes Facility has received. Not Currently Tested Put in 90 day bin for incineration

**NOTES:**

- THIS DRAWING INCLUDES COMPONENTS OF THE FACILITY THAT ARE EXCEPT FROM PERMITTING UNDER VARIOUS PROVISIONS OF RCRA. DATA RELATED TO THESE COMPONENTS IS PROVIDED FOR INFORMATIONAL PURPOSES AND EASE OF REVIEW ONLY, AND THEY ARE NOT INTENDED TO BECOME REGULATED COMPONENTS OF THE HAZARDOUS WASTE FACILITY.

**Wastewater Discharge**  
 POTW COD/TSS Sample  
 Frequency - 2 / month

**Wastewater Discharge**  
 CWT Sample  
 Frequency - 2 / year

**Wastewater Discharge**  
 POTW TTO Sample  
 Frequency - 1 / year

NO.	JBE	JBE	APP	NAME CHANGED, ADD SULFUR	5/4/16
1	DWN	CK'D		REVISIONS	DATE
<b>CBE CHAVOND-BARRY ENGINEERING CORP.</b>					
400 Route 518 • P.O. Box 205 • Blawieburg, New Jersey 08504					
2523 MITAHAR STREET, PARKER, AZ 85344					
EVOQUA WATER TECHNOLOGIES					
SAMPLE LOCATIONS					
SCALE	DWG. NO.	DATE	CHECKED	DATE	APPROVED
NDNF	WAP-001	7/6/11	KEM	7/7/11	
REV.					
					1

TABLE 4-1  
SUMMARY OF PRE-ACCEPTANCE ANALYTICAL PARAMETERS, RATIONALE, AND TEST METHODS

PARAMETER	RATIONALE	METHODS	USES
Visual Inspection	Verify that the material is spent carbon, and used to identify the obvious presence or absence of free liquid and/or debris, coloration, and whether the spent carbon is a vapor phase or liquid phase carbon, etc. The initial characterization of a particular spent carbon will be used for comparison against each subsequent load of that same spent carbon received at the facility.	Visual Inspection	Pre-acceptance
Flash-point (1)	Indicates whether the free liquid or solid portion of the spent carbon exhibits the characteristics of ignitability. This information is used to determine the storage requirements for the spent carbon prior to treatment. Liquids with a flash point <140°F will not be accepted into the facility.	SW-846 Method 1010M, 1010, or ASTM D3278	Pre-acceptance
pH (2)	Identifies materials that have the potential to corrode pipes, tanks and ancillary equipment.	SW-846 Method 9041, 9040, or 9045 depending on free moisture in sample	Pre-acceptance
Compatibility	Identifies materials that have the potential to be incompatible.	ASTM D5058 (Method C) or IM-101S	Pre-acceptance
Cyanide	Identifies potentially reactive spent carbon. Spent carbon with reactive cyanide >250ppm will not be accepted at the facility.	SW-846 Method 9010	Pre-acceptance
Sulfide	Identifies potentially reactive spent carbon. Spent carbon with reactive sulfide >500ppm will not be accepted at the facility.	SW-846 Method 9030	Pre-acceptance
Mercury	Process information.	SW-846 Method 7471 (Cold Vapor Technique)	Pre-acceptance
Halogen Content	Process information.	SW-846 Method 5050 (bomb combustion) SW-846 Method 9252A	Pre-acceptance

Notes:

1. If fingerprinting with an open flame is positive then run one of the methods.
2. Analysis performed on free liquids retained in incoming spent carbon samples or on a 1:1 mixture of the incoming vapor phase carbon sample and deionized water. Initial screening is performed using Method 9041. Should Method 9041 indicate the sample is potentially corrosive, Method 9040 or Method 9045 is used for final confirmation that a material is corrosive.
3. All method numbers are shown without suffix. The latest promulgated method will be used.
4. SW-846 refers to *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*, USEPA, latest update. ASTM refers to *Annual Book of ASTM Standards*, ASTM International.

Table 4-2  
SUMMARY OF ON-SITE SCREENING ANALYTICAL PARAMETERS, RATIONALE AND TEST METHODS

PARAMETER	RATIONALE	METHODS	USES
Visual Inspection	Verify that the material is spent carbon, and used to identify the obvious presence or absence of free liquid and/or debris, coloration, and whether the spent carbon is a vapor phase or liquid phase carbon.	Visual	On-site screening; Must conform to physical description on profile
Ignitability(1)	Indicates whether the carbon will support a flame at ambient conditions. This information is used to determine the storage requirements for the spent carbon prior to treatment, and to verify ignitability information provided by the generator.	Open ignition in controlled environment	On-site screening; Diluted sample must not support combustion
pH	Identifies materials that have the potential to corrode pipes, tanks and ancillary equipment.	Add DI water 1:1 and check pH using test strips. (Reference: EPA Method 9041M/9045M)	On-site screening; Must be within range on profile
Compatibility	Identifies materials that have the potential to be incompatible with water.	ASTM D5058 (Test Method C – Water Compatibility) or IM-101S	On-site screening; Must not show adverse reaction with water

Notes:

(1) Fingerprinting is conducted by applying a flame to the carbon sample in a controlled environment. If the carbon supports a flame under these conditions, the sample is mixed 1:1 with deionized water and the procedure is repeated. The test is positive if the diluted sample supports combustion above the water surface.

Method numbers are shown without suffix. The latest promulgated methods will be used.

SW-846 refers to *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*, USEPA, latest update.  
ASTM refers to *Annual Book of ASTM Standards*, ASTM International.

TABLE 4-3  
SUMMARY OF PERMIT COMPLIANCE ANALYTICAL PARAMETERS, RATIONALE, AND TEST METHODS

PARAMETER	RATIONALE & FREQUENCY	METHODS	USES
Arsenic, Beryllium, Cadmium, Chromium, Lead	Demonstrate compliance with RF-2 constituent feed rate limits. Four daily samples combined and sub-sampled into ~15 to 20 day composite. Analysis of each composite to form 12-month rolling average.	SW-846 Method 3050 (acid digestion) SW-846 Method 6010 (ICP)	Calculation of constituent feed rate; comparison to permit limit.
Mercury	Demonstrate compliance with RF-2 constituent feed rate limits. Four daily samples combined and sub-sampled into ~15 to 20 day composite. Analysis of each composite to form 12-month rolling average.	SW-846 Method 3050 (acid digestion) SW-846 Method 7471 (CVAAS)	Calculation of constituent feed rate; comparison to permit limit.
Sulfur	Demonstrate compliance with RF-2 constituent feed rate limits. Four daily samples combined and sub-sampled into ~15 to 20 day composite. Analysis of each composite to form 12-month rolling average.	EPA Method 5050/9056A	Comparison to maximum permitted sulfur loading on spent carbon.
Total chlorine	Demonstrate compliance with RF-2 constituent feed rate limits. Four daily samples combined and sub-sampled into ~15 to 20 day composite. Analysis of each composite to form 12-month rolling average.	SW-846 Method 5050 (bomb combustion) SW-846 Method 9252A	Calculation of constituent feed rate; comparison to permit limit.

Note: method numbers are shown without suffix. The latest promulgated methods will be used.

SW-846 refers to *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*, USEPA, latest update.

## **5.0 PROCEDURES USED TO OBTAIN A REPRESENTATIVE SAMPLE OF SPENT CARBON**

Sampling of spent carbon will be employed as part of the on-site screening process and permit compliance as described below.

### **5.1 BULK LOADS**

A representative sample of each bulk load will be obtained using either a shovel or scoop. The sampling instrument will be rinsed with water after every sampling event. The sample from each bulk shipment will be taken to the laboratory for screening analyses.

### **5.2 CONTAINERS**

Each container will be opened for the purpose of inspection and sampling. The lid or top on each container will be left loosely in place unless sampling or inspection of the container is actually occurring. A Material Handler or another designated employee will obtain one sample from each randomly selected container using the following selection strategy.

1. The number of containers chosen for random selection from each spent carbon generator will equal the square root plus one of the total shipped by the generator in each load. Thus, if a generator shipped one container, that container would be sampled. If a generator shipped sixteen containers, five would be sampled. If the square root is not an integer, it will be rounded to the next highest number. The waste tally sheet and EWT internal labels are generated by computer and perform the random sampling calculations. Printed tally sheets and labels designate which containers are to be sampled.
2. If any container contains a spent carbon which either is visually different from the profiled spent carbon, or a composite of the individual samples fails the on-site screening process described in Section 4, each container from that spent carbon generator may be sampled and subjected to the on-site screening analyses listed in Table 4-2.

Each representative sample will be obtained using the appropriate adaptation of the general methodology listed in ASTM Standard D346. The sample will be placed in clean sample jars, covered with an appropriate lid, and immediately taken to the facility laboratory for analysis. A label will be placed on each jar, indicating the profile number and the date of the sample. After sampling, the lid will be replaced on each container and it will be sealed if it is going to be stored. A composite sample will be analyzed from each load of spent carbon received from each generator. The composite sample will be prepared by combining equal amounts of carbon from each grab sample that was collected from the randomly selected containers in the load.

### **5.3 CARBON FEED**

Four times daily, the access cover of the weigh belt will be opened for the purpose of sampling. An operator or another designated employee will obtain one grab sample of the feed carbon, and place the sample into a clean sample jar.

At the end of each day, the four grab samples will be stored in the on-site laboratory.

At the end of each approximately 15 to 20 day period, the daily feed samples will be opened and an equal amount will be removed from each jar and placed into a clean sample jar, to form a carbon feed composite sample.

A label will be placed on the composite sample jar, indicating the date range of the sample, and the sample will be sent to an off-site laboratory for the analyses listed in Table 4-3.

### **5.4 MAINTAINING AND DECONTAMINATING SAMPLING EQUIPMENT**

Equipment used to obtain representative samples will be inspected as per the facility's inspection schedule to ensure it is in proper working order. Sampling equipment will be decontaminated by rinsing with water after each sampling event.

### **5.5 SAMPLING QA/QC PROCEDURES**

Sampling equipment is decontaminated between sampling events or is disposed of to minimize the possibility of cross contamination. The equipment is decontaminated using a method appropriate to the type of material sampled. For example, scoops are generally rinsed with water to remove solids. New sampling equipment that is known to be clean will not be decontaminated prior to use.

## **6.0 METHODS TO ENSURE COMPATIBILITY WITH HANDLING METHODS**

The spent carbon testing procedures outlined in this Waste Analysis Plan have been developed with cognizance of the spent carbon storage and handling procedures at the Parker facility. The facility is designed to safely store, transfer and reactivate spent carbon, which is contaminated with wastes that are toxic and/or ignitable. The Parker facility takes the necessary precautions to prevent the accidental ignition of ignitable spent carbon. As shown in Table 4-1, the facility pre-acceptance procedures include compatibility testing to identify materials that have the potential to be incompatible. The facility will not receive spent carbon which is characterized by the generator as reactive or corrosive, or spent carbon identified by waste codes which are not authorized for receipt at the facility.

## **7.0 METHODS TO ENSURE WASTE ANALYSIS PLAN IS KEPT UP-TO-DATE**

The Plant Manager, Environmental Health and Safety Specialist or another designated person shall review the Waste Analysis Plan at least every two calendar years to determine if it is in compliance with current RCRA regulations and otherwise meets the needs of the facility. A statement that the plan was reviewed will be maintained in the permanent files at the facility.

If the WAP is revised as a result of the review process, a copy of the revised document will be provided to EPA.

## **8.0 LAND DISPOSAL RESTRICTION NOTIFICATION FORMS**

Generators of spent carbon that is restricted from land disposal pursuant to 40 CFR 268 will be required to provide appropriate documentation.

At the time of spent carbon receipt, EWT will receive and review the forms, which must accompany the first shipment of spent carbon that is subject to land ban restrictions. EWT will file the completed forms with the Treatment Storage and Disposal copy of the hazardous waste manifest as part of the facility operating record.

## **9.0 SPECIAL PROCEDURAL REQUIREMENTS**

This section provides discussion on special procedural requirements applicable to the facility. These include 40 CFR 264 Subpart BB and Subpart CC applicability.

### **9.1 Subpart BB**

The facility Subpart BB Compliance Plan is located in Appendix XIX of the Part B Permit

### **9.2 Subpart CC**

The Subpart CC Compliance Plan is located in Appendix XVI of the Part B Permit

### **9.3 Wastes Generated On-Site**

EWT generates several regulated waste streams as part of its operations. These include debris, filter cake from the wastewater treatment operations, used personnel protective equipment, and spent activated carbon used for tank vent control in compliance with Subpart CC and FF. Of these wastes, all are manifested and sent off site for disposal, with the exception of the spent activated carbon used for tank vent control. This spent activated carbon is similar to the spent carbon received at the EWT facility, as it is derived from the treatment and storage of those carbon streams, and is treated by EWT in the same manner as the spent carbon received from off-site.