777 12th Street, Third Floor

SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT

Sacramento, CA 95814

BEST AVAILABLE CONTROL TECHNOLOGY & TOXIC BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION

DETERMINATION NO.:	129
DATE:	July 25, 2016
ENGINEER:	Felix Trujillo, Jr.
Category/General Equip Description:	Bulk Dry Material Storage & Handling (Conveying/Mixing/Blending/Milling/Bagging)
Equipment Specific Description:	Stucco Batch Plant
Equipment Size/Rating:	Minor Source BACT
Previous BACT Det. No.:	21

This BACT determination will update determination # 21 that was performed for a dry material storage, handling and bagging operation. The operation processed and bagged dry concrete mix to be sold in home improvement stores. This operation is similar as it processes a cement based product (stucco mix) that will also be sold in home improvement stores.

This BACT was determined under the project for A/Cs 24846 & 24847 (Omega Products Corp.).

BACT ANALYSIS

A: ACHIEVED IN PRACTICE (Rule 202, §205.1a)

The following control technologies are currently employed as BACT for dry material handling operations.

<table>
<tr><th>District/ Agency</th><th>Best Available Control Technology (BACT)/ Requirements</th></tr>
<tr><td>US EPA</td><td>
<u>BACT</u>
Source: EPA/ RACT/BACT/LEAR Clearinghouse

<table>
<tr><td colspan="2">Dry material storage, handling & bagging</td></tr>
<tr><td colspan="2"></td></tr>
<tr><td>VOC</td><td>No Standard</td></tr>
<tr><td>NOx</td><td>No Standard</td></tr>
<tr><td>SOx</td><td>No Standard</td></tr>
<tr><td>PM10</td><td>No Standard</td></tr>
<tr><td>PM2.5</td><td>No Standard</td></tr>
<tr><td>CO</td><td>No Standard</td></tr>
</table>

<u>Rule Requirements</u>
None
</td></tr>
</table>

<table>
<tr><th>District/ Agency</th><th>Best Available Control Technology (BACT)/ Requirements</th></tr>
<tr><td>ARB</td><td>
<u>BACT</u>
Source: ARB BACT Clearinghouse

<table>
<tr><td colspan="2">Bulk solid material handling and storage</td></tr>
<tr><td colspan="2"></td></tr>
<tr><td>VOC</td><td>No Standard</td></tr>
<tr><td>NOx</td><td>No Standard</td></tr>
<tr><td>SOx</td><td>No Standard</td></tr>
<tr><td>PM10</td><td>Baghouse controlling transfer and loading points</td></tr>
<tr><td>PM2.5</td><td>No Standard</td></tr>
<tr><td>CO</td><td>No Standard</td></tr>
</table>
(A) The BACT is from SMAQMD BACT Guideline #21.

This BACT determination was found to be the most stringent Achieved in Practice BACT determination published in the ARB clearinghouse. See Attachment A for more information.

<u>Rule Requirements</u>
None
</td></tr>
</table>

<table>
<tr><th>District/ Agency</th><th>Best Available Control Technology (BACT)/ Requirements</th></tr>
<tr><td>SMAQMD</td><td><u>BACT</u>

<table>
<tr><td colspan="2">Dry material hanlding</td></tr>
<tr><td>VOC</td><td>No Standard</td></tr>
<tr><td>NOx</td><td>No Standard</td></tr>
<tr><td>SOx</td><td>No Standard</td></tr>
<tr><td>PM10</td><td>99% control; APC baghouse controlling all emission points</td></tr>
<tr><td>PM2.5</td><td>No Standard</td></tr>
<tr><td>CO</td><td>No Standard</td></tr>
</table>

<u>Rule Requirements</u>
None</td></tr>
</table>

<table>
<tr><th>District/ Agency</th><th>Best Available Control Technology (BACT)/ Requirements</th></tr>
<tr><td>South Coast AQMD</td><td><u>BACT</u>

<table>
<tr><td colspan="2">From SCAQMD BACT Guidelines for Non Major Polluting Facilities, Page 17 – Other Dry Materials Handling</td></tr>
<tr><td>VOC</td><td>No Standard</td></tr>
<tr><td>NOx</td><td>No Standard</td></tr>
<tr><td>SOx</td><td>No Standard</td></tr>
<tr><td>PM10</td><td>Enclosed conveyors and baghouse</td></tr>
<tr><td>PM2.5</td><td>No Standard</td></tr>
<tr><td>CO</td><td>No Standard</td></tr>
</table>

<u>Rule Requirements</u>
None</td></tr>
</table>

<table>
<tr><th>District/ Agency</th><th>Best Available Control Technology (BACT)/ Requirements</th></tr>
<tr><td>San Diego County APCD</td><td><u>BACT</u>

<table>
<tr><td colspan="2">From SDCAPCD NSR Requirements for BACT, Page 3-7 – Bulk Terminal Grain and Dry Chemical Transfer and Storage</td></tr>
<tr><td>VOC</td><td>No Standard</td></tr>
<tr><td>NOx</td><td>No Standard</td></tr>
<tr><td>SOx</td><td>No Standard</td></tr>
<tr><td>PM10</td><td>99% control, storage, conveyors, elevators all vented to baghouse</td></tr>
<tr><td>PM2.5</td><td>No Standard</td></tr>
<tr><td>CO</td><td>No Standard</td></tr>
</table>
(A) The SDCAPD has a BACT trigger level of 10 lb/day. Therefore, the applicant may choose to limit the PE from the equipment to less than 10 lb/day in lieu of meeting the stated BACT requirement.

<u>Rule Requirements</u>
None</td></tr>
</table>

<table>
<tr><th>District/ Agency</th><th>Best Available Control Technology (BACT)/ Requirements</th></tr>
<tr><td>Bay Area AQMD</td><td><u>BACT</u>

<table>
<tr><td colspan="2">From BAAQMD BACT Guidelines</td></tr>
<tr><td>VOC</td><td>No Standard</td></tr>
<tr><td>NOx</td><td>No Standard</td></tr>
<tr><td>SOx</td><td>No Standard</td></tr>
<tr><td>PM10</td><td>No Standard</td></tr>
<tr><td>PM2.5</td><td>No Standard</td></tr>
<tr><td>CO</td><td>No Standard</td></tr>
</table>
<u>Rule Requirements</u>
None</td></tr>
</table>

<table>
<tr><td>District/ Agency</td><td>Best Available Control Technology (BACT)/ Requirements</td></tr>
<tr><td>San Joaquin Valley APCD</td><td><u>BACT</u>

<table>
<tr><td colspan="2">From SJVAPCD BACT Guideline 8.4.1 – Dry Material Storage and Conveying Operation, 100 tons/day</td></tr>
<tr><td>VOC</td><td>No Standard</td></tr>
<tr><td>NOx</td><td>No Standard</td></tr>
<tr><td>SOx</td><td>No Standard</td></tr>
<tr><td>PM10</td><td>Storage, augers, elevators, conveyors all enclosed and vented to a fabric filter baghouse</td></tr>
<tr><td>PM2.5</td><td>No Standard</td></tr>
<tr><td>CO</td><td>No Standard</td></tr>
</table>

<table>
<tr><td colspan="2">From SJVAPCD BACT Guideline 8.4.3 – Dry Material Handling Operation – Mixing, Blending, Milling or Storage</td></tr>
<tr><td>VOC</td><td></td></tr>
<tr><td>NOx</td><td></td></tr>
<tr><td>SOx</td><td></td></tr>
<tr><td>PM10</td><td>Mixer, augers, elevators, conveyors all enclosed and vented to a fabric filter baghouse, or equivalent (99% or greater control efficiency)</td></tr>
<tr><td>PM2.5</td><td></td></tr>
<tr><td>CO</td><td></td></tr>
</table>

<u>Rule Requirements</u>
None</td></tr>
</table>

The following control technologies have been identified and are ranked based on stringency:

SUMMARY OF ACHIEVED IN PRACTICE CONTROL TECHNOLOGIES	
VOC	No Standard
NOx	No Standard
SOx	No Standard
PM10	All emissions points enclosed and vented to a baghouse (99 % control)
PM2.5	No Standard
CO	No Standard

The following control technologies have been identified as the most stringent, achieved in practice control technologies:

BEST CONTROL TECHNOLOGIES ACHIEVED		
Pollutant	**Standard**	**Source**
VOC	No Standard	
NOx	No Standard	
SOx	No Standard	
PM10	1) All emission points enclosed and vented to a 99% efficient fabric filter baghouse	SMAQMD (BACT)/SCAQMD (BACT)/SJVAPCD (BACT)/ARB
PM2.5	No Standard	
CO	No Standard	

B. TECHNOLOGICALLY FEASIBLE AND COST EFFECTIVE (Rule 202, §205.1.b.):

Technologically Feasible Alternatives:

Any alternative basic equipment, fuel, process, emission control device or technique, singly or in combination, determined to be technologically feasible by the Air Pollution Control Officer. As fabric filters are generally considered to achieve the highest level of particulate control for processes that they may be applied to, and since the achieved in practice BACT determination has been determined to be the use of a 99% efficient fabric filter, no additional technologies were analyzed as technologically feasible.

C. SELECTION OF BACT:

Based on the fact that no other technologically feasible control technologies were identified as being more appropriate with a higher level of control efficiency than a fabric filter for particulate control for this application, BACT for PM10 will be the highest level of control that has been achieved in practice that used this technology. As PM2.5 is a subset of PM10, BACT for PM2.5 will be set to the same standard as is set for PM10.

BACT For Bulk Dry Material Handling & Storage		
Pollutant	**Standard**	**Source**
VOC	No Standard	
NOx	No Standard	
SOx	No Standard	
PM10	1) All emission points enclosed and vented to a 99% efficient fabric filter baghouse	SMAQMD (BACT)/SCAQMD (BACT)/SJVAPCD (BACT)
PM2.5 (A)	Equivalent to PM10 control standards	SMAQMD (BACT)/SCAQMD (BACT)/SJVAPCD (BACT)
CO	No Standard	

(A) The control of PM 2.5 is considered equivalent to the control of PM 10.

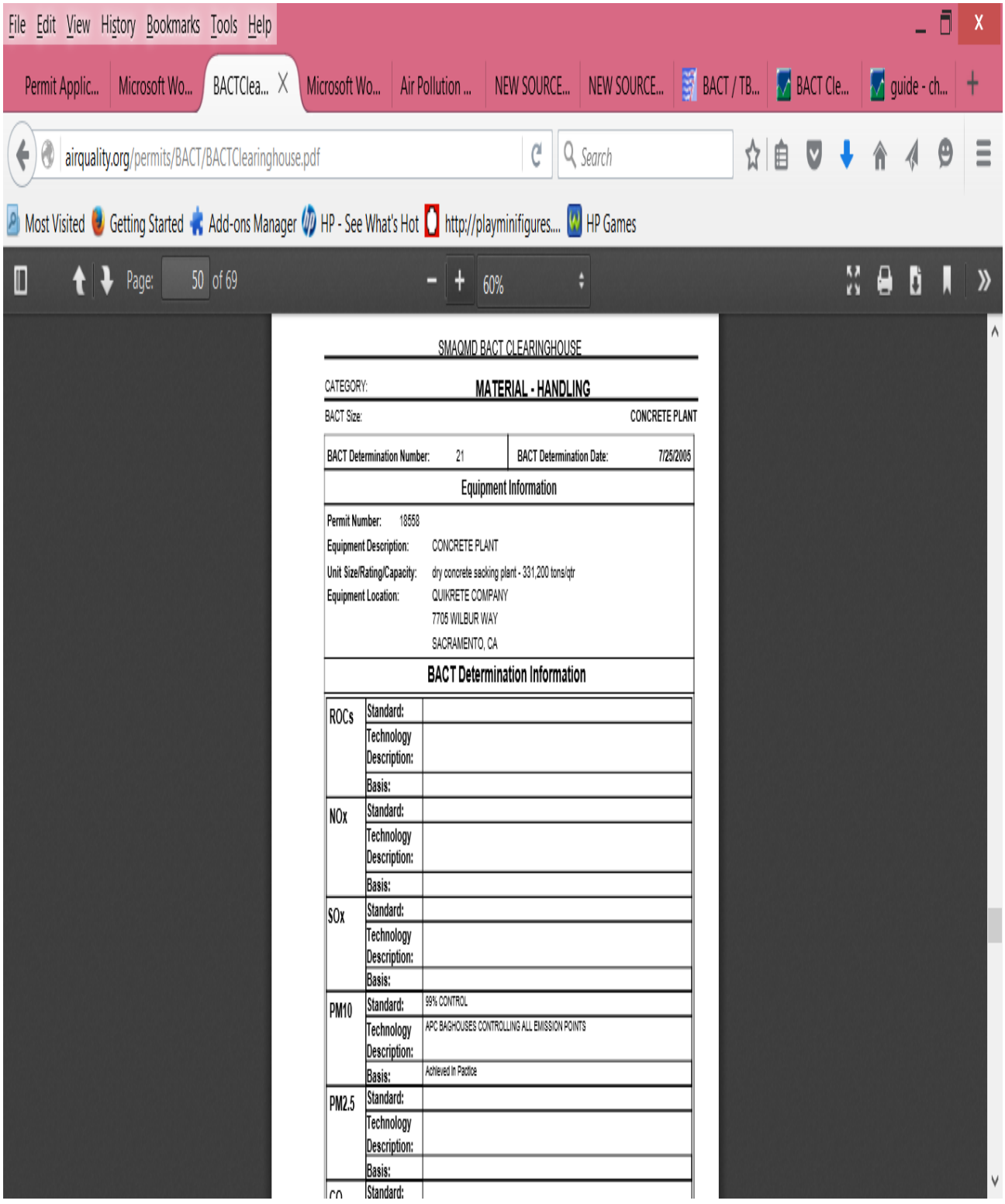
D. SELECTION OF T-BACT:

Toxics are in the form of PM matter. The control of particulate matter through meeting the BACT standard will also control toxics found in the PM. Therefore meeting the BACT controls for the control of PM will be considered equivalent to meeting T-BACT requirements.

REVIEWED BY: _____ **DATE:** _____

APPROVED BY:  **DATE:** 7/22/16

Appendix A - Statewide BACT Determination



SMAQMD BACT CLEARINGHOUSE

CATEGORY: **MATERIAL - HANDLING**

BACT Size: CONCRETE PLANT

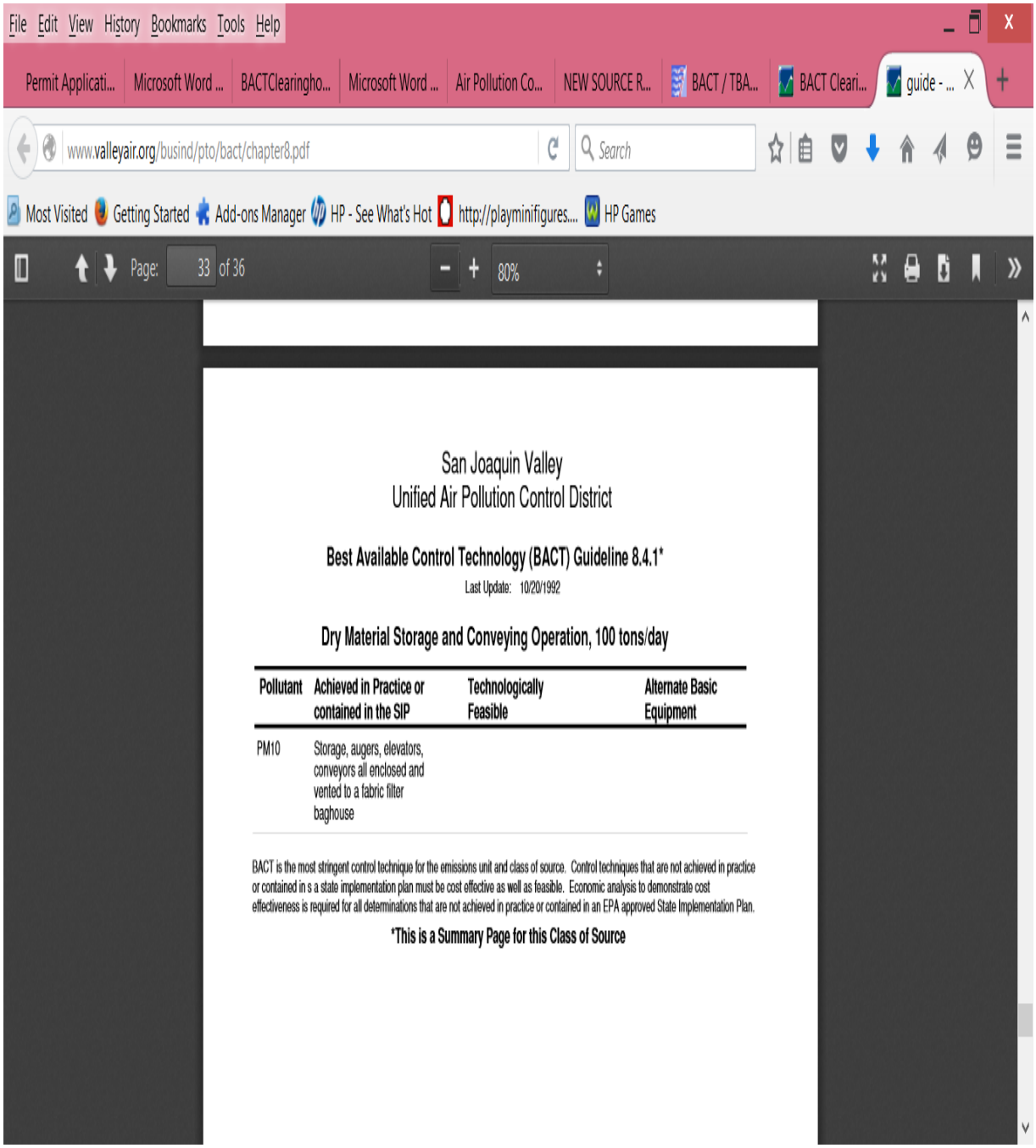
BACT Determination Number:	21	BACT Determination Date:	7/25/2005

Equipment Information

Permit Number: 18558
Equipment Description: CONCRETE PLANT
Unit Size/Rating/Capacity: dry concrete sacking plant - 331,200 tons/qtr
Equipment Location: QUIKRETE COMPANY
7705 WILBUR WAY
SACRAMENTO, CA

BACT Determination Information

ROCs	Standard:	
	Technology Description:	
	Basis:	
NOx	Standard:	
	Technology Description:	
	Basis:	
SOx	Standard:	
	Technology Description:	
	Basis:	
PM10	Standard:	99% CONTROL
	Technology Description:	APC BAGHOUSES CONTROLLING ALL EMISSION POINTS
	Basis:	Achieved In Practice
PM2.5	Standard:	
	Technology Description:	
	Basis:	
CO	Standard:	



San Joaquin Valley
Unified Air Pollution Control District

Best Available Control Technology (BACT) Guideline 8.4.1*

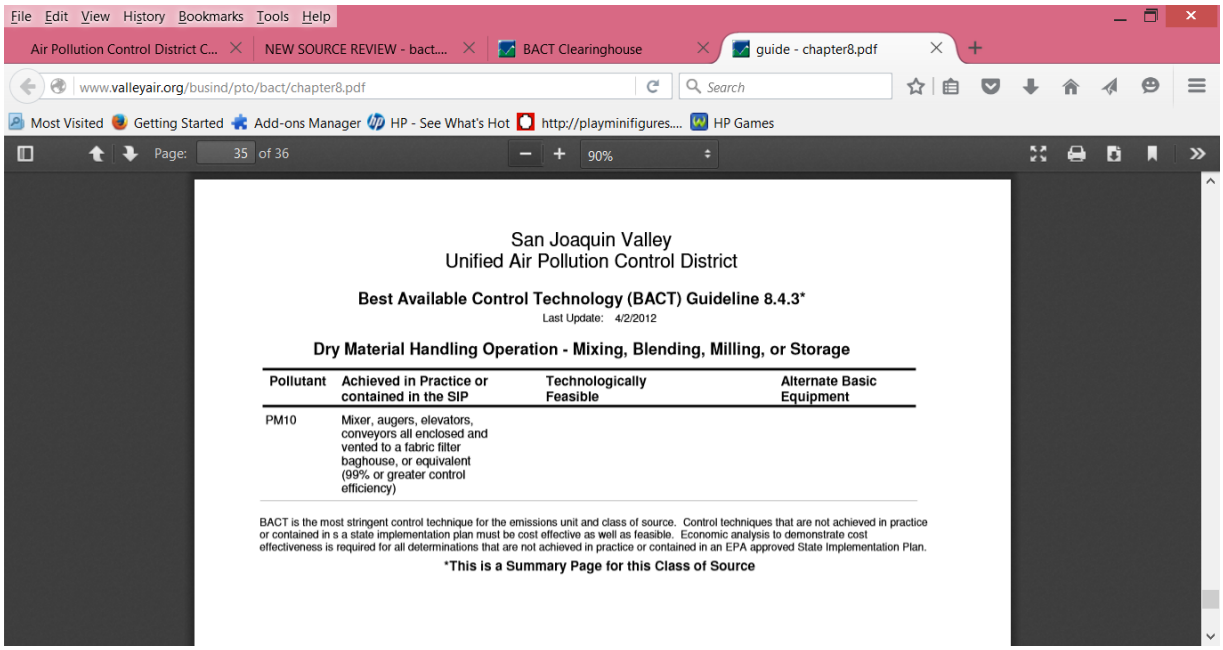
Last Update: 10/20/1992

Dry Material Storage and Conveying Operation, 100 tons/day

Pollutant	Achieved in Practice or contained in the SIP	Technologically Feasible	Alternate Basic Equipment
PM10	Storage, augers, elevators, conveyors all enclosed and vented to a fabric filter baghouse		

BACT is the most stringent control technique for the emissions unit and class of source. Control techniques that are not achieved in practice or contained in s a state implementation plan must be cost effective as well as feasible. Economic analysis to demonstrate cost effectiveness is required for all determinations that are not achieved in practice or contained in an EPA approved State Implementation Plan.

***This is a Summary Page for this Class of Source**



San Joaquin Valley
Unified Air Pollution Control District

Best Available Control Technology (BACT) Guideline 8.4.3*

Last Update: 4/2/2012

Dry Material Handling Operation - Mixing, Blending, Milling, or Storage

Pollutant	Achieved in Practice or contained in the SIP	Technologically Feasible	Alternate Basic Equipment
PM10	Mixer, augers, elevators, conveyors all enclosed and vented to a fabric filter baghouse, or equivalent (99% or greater control efficiency)		

BACT is the most stringent control technique for the emissions unit and class of source. Control techniques that are not achieved in practice or contained in s a state implementation plan must be cost effective as well as feasible. Economic analysis to demonstrate cost effectiveness is required for all determinations that are not achieved in practice or contained in an EPA approved State Implementation Plan.

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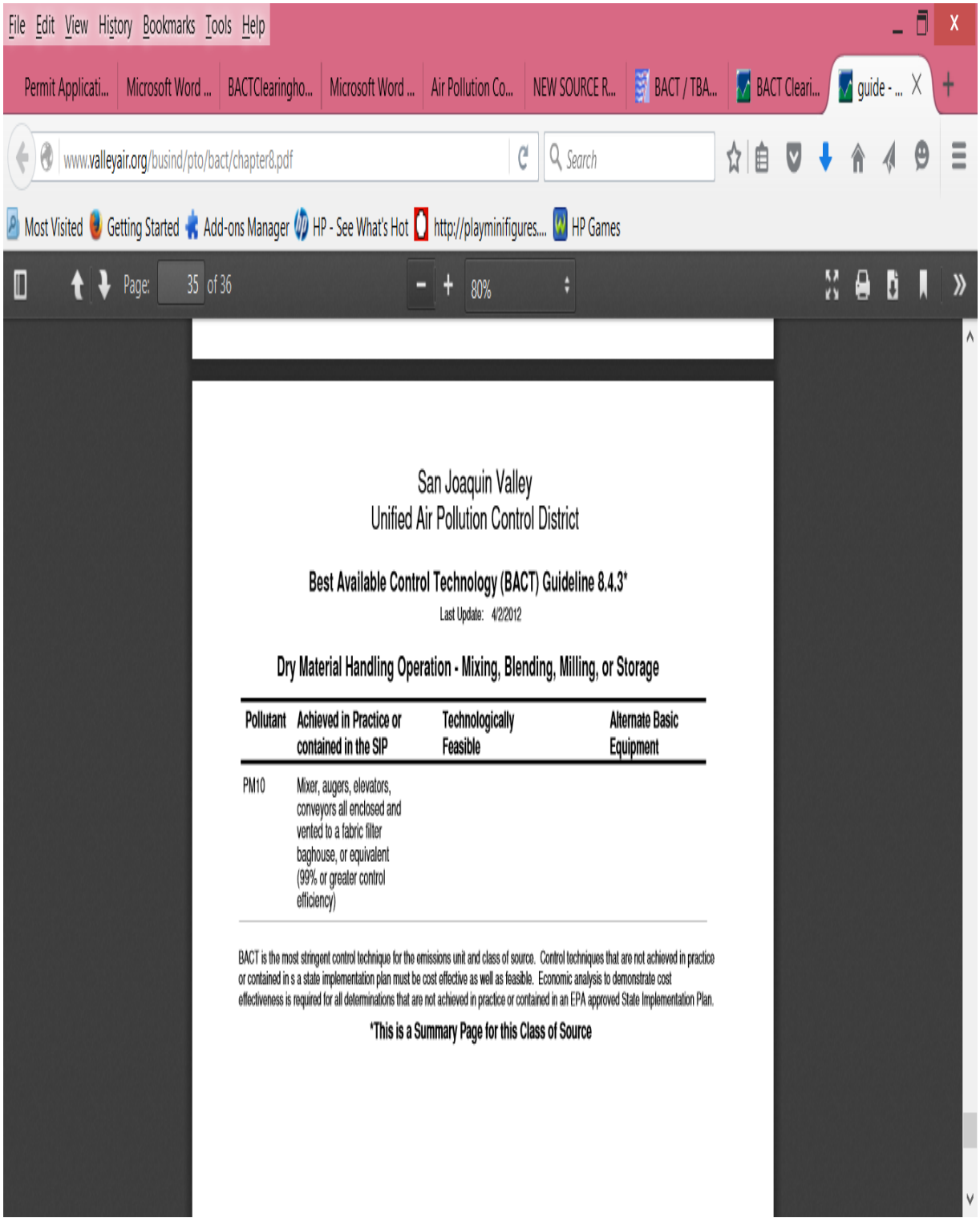

San Joaquin Valley
Unified Air Pollution Control District

Best Available Control Technology (BACT) Guideline 8.4.3*

Last Update: 4/2/2012

Dry Material Handling Operation - Mixing, Blending, Milling, or Storage

Pollutant	Achieved in Practice or contained in the SIP	Technologically Feasible	Alternate Basic Equipment
PM10	Mixer, augers, elevators, conveyors all enclosed and vented to a fabric filter baghouse, or equivalent (99% or greater control efficiency)		

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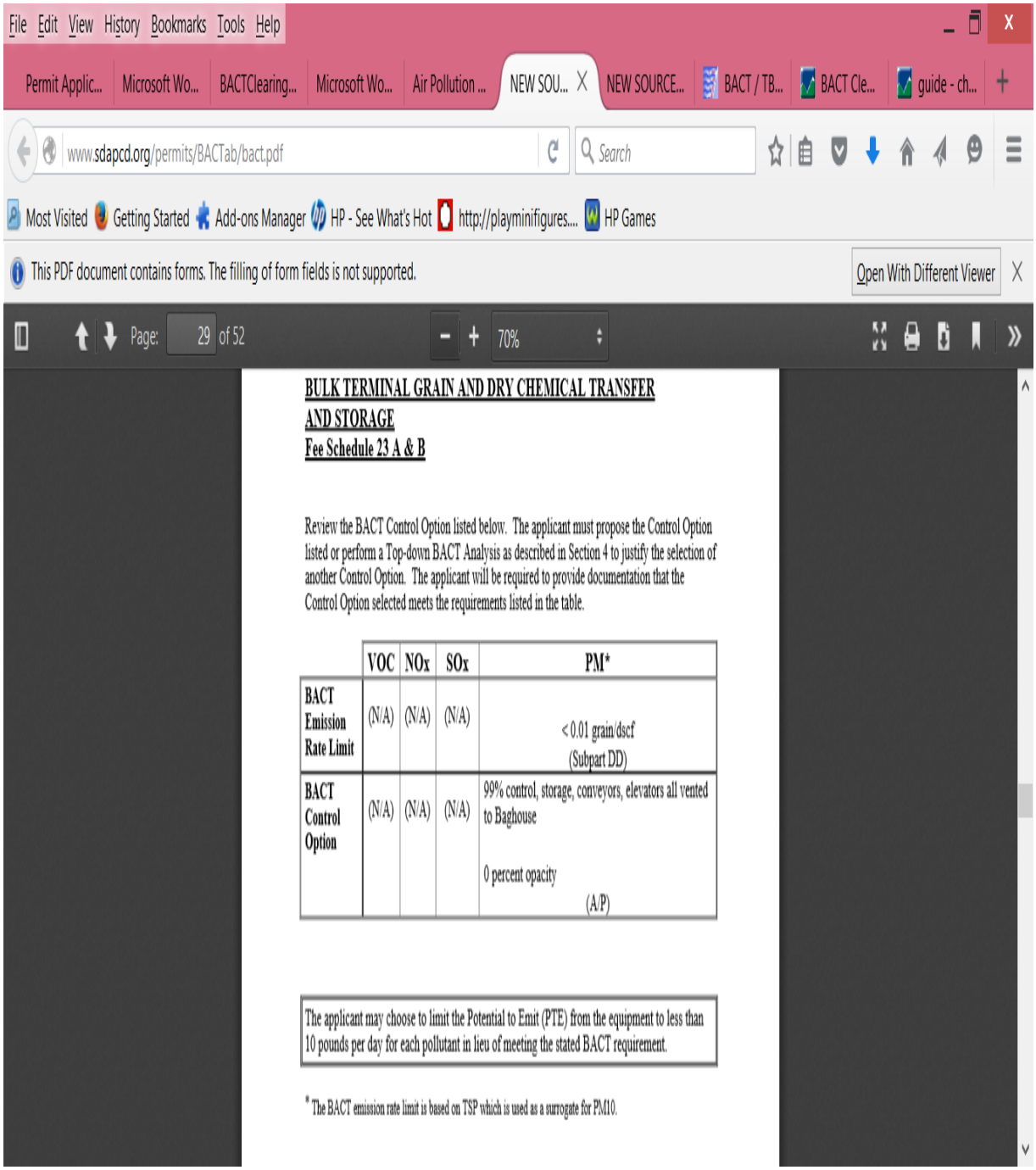


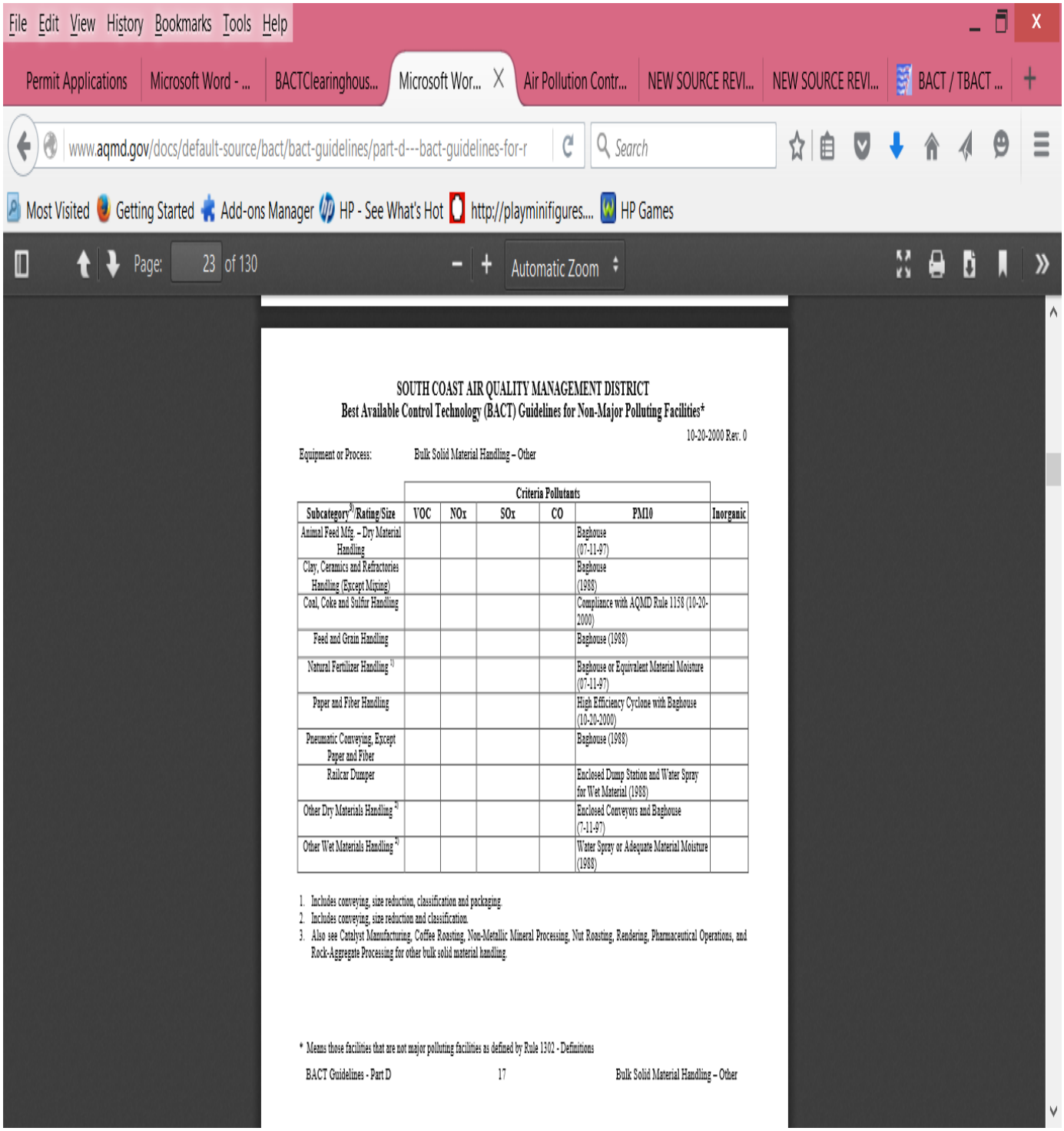
BULK TERMINAL GRAIN AND DRY CHEMICAL TRANSFER AND STORAGE
Fee Schedule 23 A & B

Review the BACT Control Option listed below. The applicant must propose the Control Option listed or perform a Top-down BACT Analysis as described in Section 4 to justify the selection of another Control Option. The applicant will be required to provide documentation that the Control Option selected meets the requirements listed in the table.

	VOC	NOx	SOx	PM*
BACT Emission Rate Limit	(N/A)	(N/A)	(N/A)	< 0.01 grain/dscf (Subpart DD)
BACT Control Option	(N/A)	(N/A)	(N/A)	99% control, storage, conveyors, elevators all vented to Baghouse 0 percent opacity (A/P)

The applicant may choose to limit the Potential to Emit (PTE) from the equipment to less than 10 pounds per day for each pollutant in lieu of meeting the stated BACT requirement.

* The BACT emission rate limit is based on TSP which is used as a surrogate for PM10.



SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
Best Available Control Technology (BACT) Guidelines for Non-Major Polluting Facilities*

10-20-2000 Rev. 0

Equipment or Process: Bulk Solid Material Handling – Other

	Criteria Pollutants					
Subcategory[3]/Rating/Size	VOC	NOx	SOx	CO	PM10	Inorganic
Animal Feed Mfg. – Dry Material Handling					Baghouse (07-11-97)	
Clay, Ceramics and Refractories Handling (Except Mixing)					Baghouse (1988)	
Coal, Coke and Sulfur Handling					Compliance with AQMD Rule 1158 (10-20-2000)	
Feed and Grain Handling					Baghouse (1988)	
Natural Fertilizer Handling [1]					Baghouse or Equivalent Material Moisture (07-11-97)	
Paper and Fiber Handling					High Efficiency Cyclone with Baghouse (10-20-2000)	
Pneumatic Conveying, Except Paper and Fiber					Baghouse (1988)	
Railcar Dumper					Enclosed Dump Station and Water Spray for Wet Material (1988)	
Other Dry Materials Handling [2]					Enclosed Conveyors and Baghouse (7-11-97)	
Other Wet Materials Handling [2]					Water Spray or Adequate Material Moisture (1988)	

1. Includes conveying, size reduction, classification and packaging.
2. Includes conveying, size reduction and classification.
3. Also see Catalyst Manufacturing, Coffee Roasting, Non-Metallic Mineral Processing, Nut Roasting, Rendering, Pharmaceutical Operations, and Rock-Aggregate Processing for other bulk solid material handling.

* Means those facilities that are not major polluting facilities as defined by Rule 1302 - Definitions