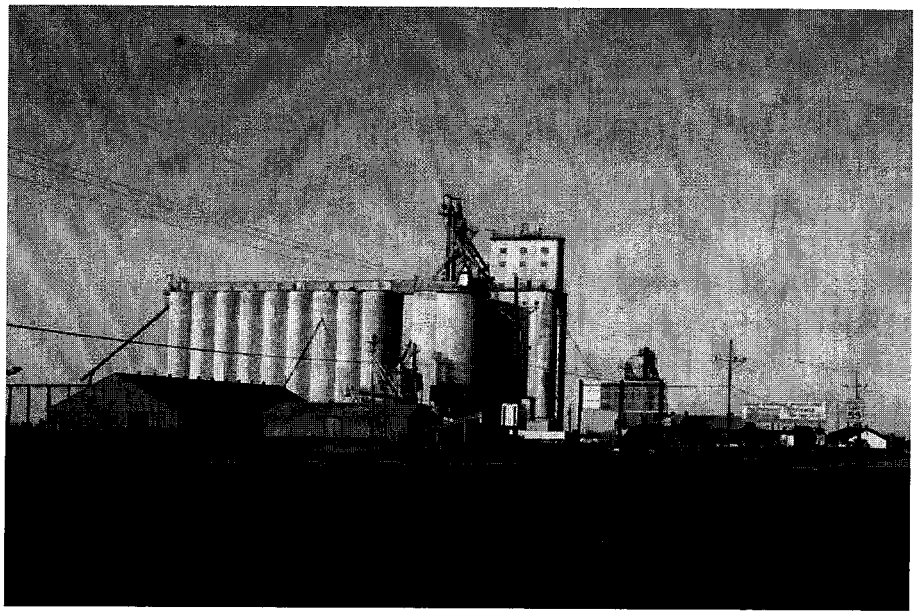

20.2.72.219.B(4)(b) NMAC
Significant Revision Application
(Revision #1 to Technical Revision Application dated August 29, 2008)

Gavilon Grain LLC dba Peavey Company
Animal Feed Manufacturing Facility and Grain Storage Elevator
Clovis, New Mexico

Date of Significant Revision Application: June 10, 2009

Prepared By
Tim D. Quarles
Senior Air Quality Engineer

Prepared By
Jamie Christopher
Senior Air Quality Engineer

AECOM Inc.
June 2009
Document No.: 13017-001-500

AECOM

Contents of Application

20.2.72.219.B(4)(b) NMAC Permit Application Forms

Mail Application To:		**For Department use only:**
New Mexico Environment Department Air Quality Bureau Permitting Section P.O. Box 26110 Santa Fe, NM 87502-0110 Phone (505) 827-1494 www.nmenv.state.nm.us/aqb		AIRS No.:

Universal Air Quality Permit Application

Use this application for NOI, NSR, or Title V sources.
Use this application for: the initial application, modifications, and renewals.

This application is being submitted as (check one):

Minor Source: ☐ **a NOI application** ☐ **a new 20.2.72 NMAC application** ☒ **a 20.2.72 NMAC revision or modification**
Title V Source: ☐ **Title V (new)** ☐ **Title V renewal** ☐ **Title V minor modification** ☐ **Title V significant modification**
PSD Major Source: ☐ **PSD major source (new)** ☐ **minor modification to a PSD source** ☐ **a PSD major modification**

Acknowledgements:
☐ I acknowledge that a pre-application meeting is available to me upon request
☐ $500 Permit Filing Fee enclosed (not required for Title V), Check No.: _____
☐ This facility meets the applicable requirements to register as a Small Business

Section 1 – Facility Information

Section 1-A: Company Information

1	Company name: Gavilon Grain, LLC dba Peavey Company		Date application notarized:
2	Facility name: West Clovis Animal Feed Manufacturing Facility and Grain Storage Elevator		SIC code (4 digits) [i]: 5153
3	Company mailing address: 505 East 1st Street, Clovis, NM 88101		
4	Company contact person: Rick Yabroff		Title: Director of Safety and Environmental
5	Phone No: (402)889-4153	Fax No: (402) 221-0388	E-mail: Rick.Yabroff@Gavilon.com
6	☐ Preparer ☒ Consultant name: Tim Quarles – AECOM, Inc. Address: 2048 Overland Ave, Suite 101, Billings, MT 59102		
7	Preparer/Consultant phone:406-652-7481		E-mail: tim.quarles@aecom.com

Section 1-B: Current Facility Status

1	Please provide the low level citation under which this application is being submitted: **20.2.72.219.B(4)(b) NMAC** (i.e. an example of an application for a new minor source would be 20.2.72.200.A NMAC, one example of a low level cite for a Technical Revision could be: 20.2.72.219.B.1.b NMAC, or a Title V acid rain cite would be: 20.2.70.200.C NMAC)
2	The facility status resulting from this application (Check one): ☒ This permitting action is for a new minor source or a modification (or revision) to a minor source. ☐ This permitting action is for a new synthetic minor source or a modification (or revision) to a synthetic minor source. ☐ This permitting action is creating a synthetic minor source from a 20.2.70 NMAC (Title V) major source. ☐ This permitting action is creating a synthetic minor source from a 20.2.74 NMAC (PSD) major source. ☐ This permitting action is creating a Title V major source (20.2.70 NMAC). ☐ This permitting action is creating a PSD major source (20.2.74 NMAC). ☐ This permitting action is a minor modification to a PSD major source (20.2.74 NMAC).

	☐ This permitting action is a major modification to a PSD major source (20.2.74 NMAC).		
3	Has this facility already been constructed? ☒Yes ☐No	If yes, is it currently operating in New Mexico? ☒Yes ☐No	
4	Is the plant currently shut down? ☐Yes ☒No	If yes, give month and year of shut down (MM/YY):	
5	Was this facility constructed before 1972 and continuously operated since 1972? ☒Yes ☐No		
6	Does this facility have a Title V operating permit (20.2.70 NMAC)? ☐Yes ☒No		If yes, the permit No. is: P-
7	Has this facility been issued a No Permit Required (NPR)? ☐Yes ☒No		If yes, the NPR No. is:
8	Has this facility been issued a Notice of Intent (NOI)? ☐Yes ☒No		If yes, the NOI No. is:
9	Does this facility have a construction permit (20.2.72 NMAC)? ☒Yes ☐No		If yes, the permit No. is: 2910
10	Is this facility registered under a General permit (GCP-1, GCP-2,)? ☐Yes ☒No		If yes, the registr. No. is:

Section 1-C: Facility Input Capacity & Production Rate

1	What is the facility's maximum input capacity, specify units (reference here and list capacities in Attachment N if more room is required)			
a	Current	Hourly: 55,000 bushels	Daily: 475,000 bushels	Annually: 21 million bushels
b	Proposed	Hourly: 55,000	Daily: 500,000 bushels	Annually: 21 million bushels
2	What is the facility's maximum production rate, specify units (reference here and list capacities in Attachment N, if more room is required)			
a	Current	Hourly: 55,000 bushels	Daily: 475,000 bushels	Annually: 21 million bushels
b	Proposed	Hourly: 55,000 bushels	Daily: 500,000 bushels	Annually: 21 million bushels

Section 1-D: Facility Location Information

1	Section: 15	Range: 35E	Township: 2N	County: Curry	Elevation (ft): 4321
2	UTM Zone: ☐ 12 or ☒ 13			Datum: ☐ NAD 27 ☒ NAD 83 ☐ WGS 84	
	UTM E (to nearest 10 meters): 660,452			UTM N (to nearest 10 meters): 3,808,291	
a	**AND** Latitude (deg., min., sec.): 34°, 24', 12.7"			Longitude (deg., min., sec.): 103°, 15', 15.6"	
3	Name and zip code of nearest New Mexico town: Clovis 88101				
4	Detailed Driving Instructions from nearest NM town (attach a road map if necessary): 3 miles west of Clovis on Hwy 60/84				
5	The facility is ___3_____ (distance) miles _west_____ (direction) of ___Clovis_____ (nearest town).				
6	Status of land at facility (check one): ☒ Private ☐ Indian/Pueblo ☐ Government				
7	List all municipalities, Indian tribes, and counties within a ten (10) mile radius (20.2.72.203.B.2 NMAC) of the property on which the facility is proposed to be constructed or operated: Cannon AFB, Roosevelt County				
8	Will the property on which the facility is proposed to be constructed or operated be closer than 50 km (31 miles) from other states, Bernalillo County, or a Class I area (see www.nmenv.state.nm.us/aqb/modeling/class1areas.html)? ☒ Yes ☐ No (20.2.72.206.A.7 NMAC) If yes, list all with corresponding distances: Texas ~20 km				
9	Distance, in meters, of plant site to nearest residence, school or occupied structure [ii]: ~50 m				
10	Is this a stationary portable source as defined in 20.2.72.7.X NMAC? ☐ Yes ☒ No				
11	Name nearest Class I area: Salt Creek, >100 km southwest				
12	Shortest distance from facility boundary to the boundary of the nearest Class I area (to the nearest 10 meters): 131.9 km				

Section 1-E: Proposed Operating Schedule (The 1-E.1 & 1-E.2 operating schedules may become conditions in the permit.)

1	Facility **maximum** operating ($\frac{hours}{day}$): 24	($\frac{days}{week}$):7	($\frac{weeks}{year}$): 52	($\frac{hours}{year}$): 8760			
2	Facility's maximum daily operating schedule (if less than 24 $\frac{hours}{day}$)? Start: N/A	☐AM ☐PM	End: N/A	☐AM ☐PM			
3	Month and year of anticipated start of construction: N/A						
4	Month and year of anticipated construction completion: N/A						
5	Month and year of anticipated startup of new or modified facility: N/A						
6	Will this facility operate at this site for more than one year? ☒ Yes ☐ No						

Section 1-F: Other Facility Information

1	Is this application in response to a Notice of Violation (NOV)? ☒ Yes ☐ No	
a	If yes, NOV date: 5/26/09	NOV Tracking No: GAV-3537-0801
2	Is air quality dispersion modeling being submitted with this application? ☒ Yes ☐ No	
3	Does this facility require an "Air Toxics" permit under 20.2.72.400 NMAC & 20.2.72.502, Tables A and/or B? ☐ Yes ☒ No	
4	Will this facility be a source of federal Hazardous Air Pollutants? ☒ Yes ☐ No	
a	If yes, list applicable subparts in 40 CFR 61 & 63: none are applicable	

Section 1-G: Title V Specific Information (Fill this section out only if this is a Title V application.)

1	Owner's Name: THIS SECTION NOT APPLICABLE	Owner's Phone:	
a	Owner's Mailing Address:		
2	Plant Mailing Address:		
a	Plant Phone:	Plant Fax:	
3	Plant Operator:	Operator Address:	
a	Plant Operator Phone:	Plant Operator Fax:	
4	Responsible Official[iii]:	Title:	Phone:
a	Res. Off. Address:	e-mail:	
5	Person to contact at site:	Title:	Phone:
6	Company Air Permit Contact:	e-mail:	Phone:
7	Company's State of Incorporation or Registration to do Business:		
8	Company's Corporate or Partnership Relationship to any other Air Quality Permittee [iv]:		
9	Name of Parent Company [v]:		
a	Address of Parent Company:		
10	Names of Subsidiary Companies [vi]:		

Section I-H – Submittal Requirements

A 20.2.73 NMAC (NOI), a 20.2.70 NMAC (Title V), a 20.2.72 NMAC (NSR), or 20.2.74 NMAC (NSR) application package shall consist of the following:

1) One hard copy **original signed and notarized application package** printed double sided 'head-to-toe' as we bind the document on top, not on the side; except Section 2 (landscape tables), which should be head-to-head. If 'head-to-toe printing' is not possible, print single sided. Please use numbered tab separators in the hard copy submittal(s) as this facilitates the review process.
2) If the application is for a NSR permit or permit modification, include one working hard copy for Department use.
3) The entire NOI or Permit application package, including the full modeling study, should be submitted electronically on compact disk(s) (CD). The base number of CD copies required is two, with additional copies as specified below.
4) If air dispersion modeling is required, include one additional electronic copy of the air dispersion modeling including the input and output files. The dispersion modeling *summary report only* should be submitted as hard copy(ies) unless otherwise indicated by the Bureau. The complete dispersion modeling study, including all input/output files, should be submitted electronically as part of the electronic submittal.
5) If subject to PSD review under 20.2.74 NMAC (PSD) include,
   a. one additional hard copy and one additional CD copy for US EPA,
   b. one additional hard copy and one additional CD copy for each federal land manager affected (NPS, USFS, FWS, USDI) and,
   c. one additional hard copy and one additional CD copy for each affected regulatory agency other than the Air Quality Bureau.

Electronic Submittal Format [in addition to the required hard copy(ies)]:

1) All required electronic documents shall be submitted in duplicate. One copy should be in a Microsoft Office compatible file format (Word, Excel, etc.) allowing us to access the text in the documents (copy & paste). Any documents that cannot be submitted in a Microsoft Office compatible format shall be saved as a PDF file from within the electronic document that created the file. If you are unable to provide Microsoft office compatible electronic files or internally generated PDF files of files (items that were not created electronically: i.e. brochures, maps, graphics, etc,), submit these items in hard copy format with the number of additional hard copies corresponding to the number of CD copies required.
2) It is preferred that this application form be submitted as 3 electronic files (2 MSWord docs: Universal Application section 1 and Universal Application section 3-19) and 1 Excel file of the tables (Universal Application section 2) on the CD(s). Please include as many of the 3-19 Sections as practical in a single MS Word electronic document. Create separate electronic file(s) if a single file becomes too large or if portions must be saved in a file format other than MS Word.
3) The electronic file names shall be a maximum of 25 characters long (including spaces, if any). The format of the electronic Universal Application shall be in the format: "A-3423-FacilityName". The "A" distinguishes the file as a application submittal, as opposed to other documents the Department itself puts into the database. Thus, all electronic application submittals should begin with "A-". Modifications to existing facilities should use the core permit number (i.e. '3423') the Department assigned to the facility as the next 4 digits. Use 'XXXX' for new facility applications. The format of any separate electronic submittals (additional submittals such as non-Word attachments, re-submittals, application updates) and Section document shall be in the format: "A-3423-9-description", where "9" stands for the section # (in this case Section 9-Public Notice). Please refrain, as much as possible, from submitting any scanned documents as this file format is extremely large, which uses up too much storage capacity in our database. Please take the time to fill out the header information throughout all submittals as this will identify any loose pages, including the Application Date (date submitted) & Revision # (0 for original, 1, 2, etc.; which will help keep track of subsequent partial update(s) to the original submittal. The footer information should not be modified by the applicant.

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[i] SIC codes are Standard Industrial Classification codes. Give SIC code for plant primary process.

[ii] State the distance, in meters, from the nearest plant boundary to the closet residence, school or other occupied structure. The plant boundary is the point at which public access to the plant is restricted. This restriction may be a fence, a wall etc.

[iii] "Responsible Official" as defined in 20.2.70.300.D.2 NMAC.

[iv] Please list the names of any companies that have operating (20.2.70 NMAC) permits and with whom the applicant for this permit has a corporate or partnership relationship.

[v] "Parent Company" means the primary name of the organization that owns the company to be permitted wholly or in part.

[vi] "Subsidiary Companies" means organizations, branches, divisions or subsidiaries, which are owned, wholly or in part, by the company to be permitted.

Table 2-A: Regulated Emission Sources

Unit and stack numbering must correspond throughout the application package. If applying for a NOI under 20.2.73 NMAC, equipment exemptions under 2.72.202 NMAC do not apply.

Unit Number[1]	Source Description	Manufacturer	Model #	Serial #	Maximum or Rated Capacity[3] (Specify Units)	Requested Permitted Capacity[3] (Specify Units)	Date of Manufacture or Reconstruction[2] / Date of Installation /Construction[2]	Controlled by Unit # / Emissions vented to Stack #	Source Classification Code (SCC)	For Each Piece of Equipment, Check One	Applicable State & Federal Regulation(s) (i.e. 20.2.X, JJJJ, ...)	Replacing Unit No.
1	Grain Cleaner	Unknown	Unknown	Unknown	70 ton/hr	70 ton/hr	Unknown / ~1985	C1 / 1	3-02-005-03	☒ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		N/A
2	Grain Flaker (24" x 56" roller)	Ferrel-Ross	Unknown	Unknown	25 ton/hr	25 ton/hr	Unknown / ~1998	C2 / 2	3-02-008-18	☒ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		N/A
3	Grain Flaker (24" x 48" roller)	PMS	Unknown	Unknown	20 ton/hr	20 ton/hr	Unknown / ~1995	C3 / 3	3-02-008-18	☒ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		N/A
4	Flaked Grain Loadout Conveyor (corn)	Unknown	Unknown	Unknown	50 ton/hr	50 ton/hr	Unknown / ~1985	N/A / N/A	3-02-008-03	☒ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		N/A
5	Flaked Grain Loadout Conveyor (milo)	Unknown	Unknown	Unknown	100 ton/hr	100 ton/hr	Unknown / 3/2003	N/A / N/A	3-02-008-03	☒ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		N/A
6	Boiler	Williams & Davis	600-777	9667	20.1 MMBtu/hr	26.4 MMBtu/hr	Unknown / ~1999/2000	N/A / 6	1-03-006-02	☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☒ Replacement Unit ☐ To Be Modified ☐ To be Replaced	NSPS Subpart Dc	6
7a	Grain Receiving Pit (Truck)	Unknown	Field Fab	Field Fab	5000 bu/hr-Total 7a/7b	5000 bu/hr-Total 7a/7b	Unknown / ~1970	N/A / N/A	3-02-005-50	☒ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		N/A
7b	Grain Receiving Pit (Truck)	Unknown	Field Fab	Field Fab	5000 bu/hr-Total 7a/7b	5000 bu/hr-Total 7a/7b	Unknown / ~1970	N/A / N/A	3-02-005-50	☒ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		N/A
8	Headhouse	Unknown	Field Fab	Field Fab	140 ton/hr	140 ton/hr	Unknown / ~1970	1 / N/A	3-02-005-30	☒ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		N/A
9	Storage Bin Vents (Main Elevator)	Unknown	Field Fab	Field Fab	N/A	N/A	Unknown / ~1970	1 / N/A	3-02-005-40	☒ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		N/A
10	Storage Bin Vents (Elevator Annex)	Unknown	Field Fab	Field Fab	N\A	N\A	Unknown / ~1970	1 / N/A	3-02-005-40	☒ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		N/A
11a	Whole Grain Loadout	Unknown	Field Fab	Field Fab	140 ton/hr	140 ton/hr	Unknown / ~1970	1 / N/A	3-02-005-60	☒ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		N/A
11b	Whole Grain Loadout	Unknown	Field Fab	Field Fab	420 ton/hr	420 ton/hr	Unknown / 6/2003	1 / N/A	3-02-005-60	☒ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		N/A
12	Grain Receiving Pit (Rail)	Unknown	Field Fab	Field Fab	50,000 bu/hr	50,000 bu/hr	Unknown / 6/2003	2 / N/A	3-02-008-02	☒ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		N/A
13	Hammermill #1	Unknown	Unknown	Unknown	20 ton/hr	20 ton/hr	Unknown / Unknown	C13 / 13	3-02-008-17	☒ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		N/A

Table 2-A: Regulated Emission Sources

Unit and stack numbering must correspond throughout the application package. If applying for a NOI under 20.2.73 NMAC, equipment exemptions under 2.72.202 NMAC do not apply.

Unit Number[1]	Source Description	Manufacturer	Model #	Serial #	Maximum or Rated Capacity[3] (Specify Units)	Requested Permitted Capacity[3] (Specify Units)	Date of Manufacture or Reconstruction[2] / Date of Installation /Construction[2]	Controlled by Unit # / Emissions vented to Stack #	Source Classification Code (SCC)	For Each Piece of Equipment, Check One	Applicable State & Federal Regulation(s) (i.e. 20.2.X, JJJJ, ...)	Replacing Unit No.
14	Hammermill #2	Unknown	Unknown	Unknown	20 ton/hr	20 ton/hr	Unknown Unknown	C14 14	3-02-008-17	☒ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		N/A
15	Ground Grain Loadout	Unknown	Unknown	Unknown	150 ton/hr	150 ton/hr	Unknown Unknown	1 N/A	3-02-008-03	☐ Existing (unchanged) ☐ To be Removed X New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		N/A
16	Ground Grain Receiving Pit (truck) at Temporary Rail Loadout	Unknown	Unknown	Unknown	100 ton/hr	100 ton/hr	Unknown Unknown	1 N/A	3-02-008-02	☐ Existing (unchanged) ☐ To be Removed X New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		N/A
17	Temporary Ground Grain Railcar Loadout	Unknown	Unknown	Unknown	100 ton/hr	100 ton/hr	N/A N/A	1 N/A	3-02-008-03	☐ Existing (unchanged) ☐ To be Removed X New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		N/A
18	DDG Loadout #1	Unknown	Unknown	Unknown	140 ton/hr	280 ton/hr	N/A N/A	4 N/A	3-02-008-03	☐ Existing (unchanged) ☐ To be Removed X New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		N/A
19	DDG Loadout #2	Unknown	Unknown	Unknown	140 ton/hr	280 ton/hr	N/A N/A	4 N/A	3-02-008-03	☐ Existing (unchanged) ☐ To be Removed X New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		N/A
20	DDG Outside Storage (estimated max area 700 x 700 ft by 15 ft high)	Unknown	Unknown	Unknown	500 ton/hr	500 ton/hr	N/A N/A	5 N/A	3-02-008-14/21	☐ Existing (unchanged) ☐ To be Removed X New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		N/A
21 *	DDG Outside Truck Loadout (front end loader)	Unknown	Unknown	Unknown	150 ton/hr	150 ton/hr	N/A N/A	4 N/A	3-02-008-03	☐ Existing (unchanged) ☐ To be Removed X New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		N/A
25 *	Truck Traffic	Unknown	Unknown	Unknown	N/A	N/A	N/A N/A	N/A N/A	3-02-008-14/21	☐ Existing (unchanged) ☐ To be Removed X New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		N/A
26a	DDG Barn - transfer to barn storage pile	Unknown	Unknown	Unknown	400.0 ton/hr	400.0 ton/hr	Unknown Unknown	7 N/A	3-02-008-04/14/21	☐ Existing (unchanged) ☐ To be Removed X New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		N/A
26b	DDG Barn - transfer to loadout reclaim pit	Unknown	Unknown	Unknown	200.0 ton/hr	200.0 ton/hr	Unknown Unknown	7 N/A	3-02-008-04/14/21	☐ Existing (unchanged) ☐ To be Removed X New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		N/A
27a	Whole Corn Barn - transfer to barn storge pile	Unknown	Unknown	Unknown	40.0 ton/hr	40.0 ton/hr	Unknown Unknown	8 N/A	3-02-008-04/14/21	☐ Existing (unchanged) ☐ To be Removed X New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		N/A
27b	Whole Corn Barn - transfer to reclaim pit	Unknown	Unknown	Unknown	60.0 ton/hr	60.0 ton/hr	Unknown Unknown	8 N/A	3-02-008-04/14/21	☐ Existing (unchanged) ☐ To be Removed X New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		N/A
28a	Ground Corn Barn - transfer to barn storage pile	Unknown	Unknown	Unknown	40.0 ton/hr	40.0 ton/hr	Unknown Unknown	8 N/A	3-02-008-04/14/21	☐ Existing (unchanged) ☐ To be Removed X New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		N/A

Table 2-A: Regulated Emission Sources

Unit and stack numbering must correspond throughout the application package. If applying for a NOI under 20.2.73 NMAC, equipment exemptions under 2.72.202 NMAC do not apply.

Unit Number[1]	Source Description	Manufacturer	Model #	Serial #	Maximum or Rated Capacity[3] (Specify Units)	Requested Permitted Capacity[3] (Specify Units)	Date of Manufacture or Reconstruction[2] / Date of Installation /Construction[2]	Controlled by Unit # / Emissions vented to Stack #	Source Classification Code (SCC)	For Each Piece of Equipment, Check One	Applicable State & Federal Regulation(s) (i.e. 20.2.X, JJJJ, ...)	Replacing Unit No.
28b	Ground Corn Barn - transfer to loadout reclaim pit	Unknown	Unknown	Unknown	150.0 ton/hr	150.0 ton/hr	Unknown / Unknown	8 / N/A	3-02-008-04/14/21	☐ Existing (unchanged) ☐ To be Removed X New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		N/A
29a	Flaked Corn Barn - transfer to barn storage pile	Unknown	Unknown	Unknown	45.0 ton/hr	45.0 ton/hr	Unknown / Unknown	7 / N/A	3-02-008-04/14/21	☐ Existing (unchanged) ☐ To be Removed X New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		N/A
29b	Flaked Corn Barn - transfer to loadout reclaim pit	Unknown	Unknown	Unknown	50.0 ton/hr	50.0 ton/hr	Unknown / Unknown	7 / N/A	3-02-008-04/14/21	☐ Existing (unchanged) ☐ To be Removed X New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		N/A
30a	Flaked Milo Barn - transfer to barn storage pile	Unknown	Unknown	Unknown	45.0 ton/hr	45.0 ton/hr	Unknown / Unknown	7 / N/A	3-02-008-04/14/21	☐ Existing (unchanged) ☐ To be Removed X New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		N/A
30b	Flaked Milo Barn - transfer to loadout reclaim pit	Unknown	Unknown	Unknown	100.0 ton/hr	100.0 ton/hr	Unknown / Unknown	7 / N/A	3-02-008-04/14/21	☐ Existing (unchanged) ☐ To be Removed X New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		N/A
31a	Fines Shed - transfer to barn storage pile	Unknown	Unknown	Unknown	0.2 ton/hr	0.2 ton/hr	Unknown / Unknown	7 / N/A	3-02-008-04/14/21	☐ Existing (unchanged) ☐ To be Removed X New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		N/A
31b	Fines Shed - loadout ground grain barn	Unknown	Unknown	Unknown	0.2 ton/hr	0.2 ton/hr	Unknown / Unknown	7 / N/A	3-02-008-04/14/21	☐ Existing (unchanged) ☐ To be Removed X New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		N/A

[1] Unit numbers must correspond to unit numbers in the previous permit unless a complete cross reference table of all units in both permits is provided.

[2] Specify dates required to determine regulatory applicability.

[3] To properly account for power conversion efficiencies, generator set rated capacity shall be reported as the rated capacity of the engine in horsepower, not the kilowatt capacity of the generator set.

• Emission sources (unit numbers) 22, 23, and 24 were associated with the emergency corn ground pile. The facility has removed the physical ability to load out corn to the emergency ground pile, therefore, these sources no longer exist. Hence the reason there is a gap in the numbering.

Table 2-B: Exempted Equipment OR Insignificant Activities[1]

List 20.2.70 NMAC Insignificant Activities and 20.2.72 NMAC Exempted Equipment on this table. If equipment listed on this table is exempt under 20 NMAC 2.72.202.B.5, list its emission rates in Table 2-A. Unit & stack numbering must be consistent throughout the application package. This table is applicable only if applying for a 20.2.70 NMAC or a 20.2.72 NMAC permit. 20.2.72.202 NMAC Exemptions do not apply to NOI facilities under 20.2.73 NMAC, per Exemptions Policy 02-012.00 (see http://www.nmenv.state.nm.us/aqb/permit/aqb_pol.html) for more details.

Unit Number	Source Description	Manufacturer	Model No.	Max Capacity	List Specific 20.2.72.202 NMAC Exemption (e.g. 20.2.72.202.B.5)	Date of Manufacture /Reconstruction	For Each Piece of Equipment, Check Onc
			Serial No.	Capacity Units	Insignificant Activity citation (e.g. IA List Item #1.a)	Date of Installation /Construction	
							☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
							☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
							☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
							☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
							☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
							☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
							☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
							☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
							☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
							☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
							☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
							☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
							☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
							☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced

[1] Insignificant activities exempted due to size or production rate are defined in 20.2.70.300.D.6, 20.2.70.7.Q NMAC, and the NMED/AQB List of Insignificant Activities, dated March 24, 2005. Emissions from these insignificant activities do not need to be reported, unless specifically requested. Activities in the NMED/AQB List of Trivial Activities, dated January 10, 1996 should not be listed in this or other elements/sections of this application.

Table 2-C: Emissions Control Equipment

Unit and stack numbering must correspond throughout the application package. Only list control equipment for TAPs if the TAP's maximum uncontrolled emissions rate is over its respective threshold as listed in 20.2.72 NMAC, Subpart V, Tables A and B.

Control Equipment Unit No.	Control Equipment Description	Date Installed	Controlled Pollutant(s)	Controlling Emissions for Unit Number(s)[1]	Efficiency (% Control by Weight)	Method used to Estimate Efficiency
MO-1, MO-8, MO-9, MO-10, M0-11, MO-15, MO-16, MO-17	White Mineral Oil	Unknown	PM	1, 8, 9, 10, 11, 11a, 11b, 15, 16, 17,	80%	NMED Agreement
C-1, C-2, C-3, C-13, C-14	Cyclone	Unknown	PM	1, 2, 3, 13, 14	50%	AP42
BD-12	Brock Dustmaster	Unknown	PM	12	90%	Manufacturer
MO&C-13, MO&C-14	White Mineral Oil and Cyclone Combination	Unknown	PM	13, 14	90%	NMED Agreement
CM-8, CM-19, CM-21	Coarse Material	Unknown	PM	18, 19, 21	0%	N/A
T-20	Tarp Covering	Unknown	PM	20	100%	NMED Agreement
AE-25	Asphalt Emulsifier / base course / calichi	Unknown	PM	25	90% / 80% / 60%	NMED Agreement
E-26, E-29, E-30, E-31	Enclosure	Unknown	PM	26, 29, 30, 31	30%	NMED Agreement
MO&E-27, MO&E-28	White Mineral Oil and Enclosure	Unknown	PM	27, 28	80% & 30%	NMED Agreement

[1] List each control device on a separate line. For each control device, list all emission units controlled by the control device.

Table 2-D: Maximum Uncontrolled Emissions (under normal operating conditions)

☐ **This Table was intentionally left blank because it would be identical to Table 2-E.**

Maximum Uncontrolled Emissions are the uncontrolled emissions at maximum capacity, prior to (in the absence of) pollution control equipment. Calculate the hourly emissions using the worst case hourly emissions for each pollutant. For each pollutant, calculate the annual emissions as if the facility were operating at maximum plant capacity without pollution controls for 8760 hours per year, unless otherwise approved by the Department. List Hazardous Air Pollutants (HAP) & Toxic Air Pollutants (TAPs) in Table 2-I. Unit & stack numbering must be consistent throughout the application package. For each unit with flashing, list tank-flashing emissions estimates as a separate line item (20.2.70.300.D.5 NMAC, 20.2.72.203.A.3 NMAC, 20.2.73.200.B.6, & 20.2.74.301 NMAC). Fill all cells in this tablewith the emission numbers or a "-" symbol. A "-" symbol indicates that emissions of this pollutant are not expected. Numbers shall be expressed with a minimum of two significant figures. If there are any significant figures to the left of a decimal point, there shall be no more than one significant figure to the right of the decimal point.

Unit No.	NOx		CO		VOC		SOx		TSP[2]		PM10[2]		PM2.5[2]		H_2S		Lead	
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
1	-	-	-	-	-	-	-	-	10.500	29.550	2.660	7.486	0.448	1.261	-	-	-	-
2, 3	-	-	-	-	-	-	-	-	13.500	59.100	6.750	29.550	1.137	4.977	-	-	-	-
4	-	-	-	-	-	-	-	-	0.165	0.756	0.040	0.183	0.007	0.031	-	-	-	-
5	-	-	-	-	-	-	-	-	0.330		0.080		0.013		-	-	-	-
6	2.59	11.34	2.17	9.52	0.14	0.62	0.0155	0.068	0.197	0.862	0.197	0.862	0.197	0.862	-	-	-	-
7a, 7b	-	-	-	-	-	-	-	-	2.380	2.380	0.350	0.350	0.059	0.059	-	-	-	-
8	-	-	-	-	-	-	-	-	8.540	17.080	4.760	9.520	0.812	1.624	-	-	-	-
9, 10	-	-	-	-	-	-	-	-	3.196	14.000	0.806	3.528	0.140	0.616	-	-	-	-
11a	-	-	-	-	-	-	-	-	0.462	0.046	0.112	0.011	0.019	0.002	-	-	-	-
11b	-	-	-	-	-	-	-	-	1.386	0.924	0.336	0.224	0.057	0.038	-	-	-	-
12	-	-	-	-	-	-	-	-	23.800	4.760	3.500	0.700	0.589	0.118	-	-	-	-
13, 14	-	-	-	-	-	-	-	-	5.360	23.477	2.680	11.738	0.452	1.977	-	-	-	-
15	-	-	-	-	-	-	-	-	0.495	0.578	0.120	0.140	0.020	0.024	-	-	-	-
16	-	-	-	-	-	-	-	-	1.700	0.298	0.250	0.044	0.042	0.007	-	-	-	-
17	-	-	-	-	-	-	-	-	0.330	0.058	0.080	0.014	0.013	0.002	-	-	-	-
18, 19	-	-	-	-	-	-	-	-	0.924	0.792	0.224	0.192	0.038	0.032	-	-	-	-
20	-	-	-	-	-	-	-	-	2.298	10.066	1.149	5.033	0.194	0.848	-	-	-	-
21	-	-	-	-	-	-	-	-	0.495	0.083	0.120	0.020	0.020	0.003	-	-	-	-
25	-	-	-	-	-	-	-	-	7.780	34.100	1.890	8.300	0.180	0.830	-	-	-	-
26a	-	-	-	-	-	-	-	-	1.320	0.396	0.320	0.096	0.040	0.012	-	-	-	-
26b	-	-	-	-	-	-	-	-	0.920	0.396	0.220	0.096	0.030	0.012	-	-	-	-
27a	-	-	-	-	-	-	-	-	0.132	0.190	0.032	0.046	0.004	0.006	-	-	-	-
27b	-	-	-	-	-	-	-	-	0.198	0.190	0.048	0.046	0.006	0.006	-	-	-	-
28a	-	-	-	-	-	-	-	-	0.132	0.578	0.032	0.140	0.004	0.018	-	-	-	-
28b	-	-	-	-	-	-	-	-	0.495	0.578	0.120	0.140	0.015	0.018	-	-	-	-
29a	-	-	-	-	-	-	-	-	0.149	0.325	0.036	0.079	0.005	0.010	-	-	-	-
29b	-	-	-	-	-	-	-	-	0.165	0.378	0.040	0.092	0.005	0.011	-	-	-	-
30a	-	-	-	-	-	-	-	-	0.149	0.325	0.036	0.079	0.005	0.010	-	-	-	-
30b	-	-	-	-	-	-	-	-	0.330	0.378	0.080	0.092	0.010	0.011	-	-	-	-
31a	-	-	-	-	-	-	-	-	0.001	0.003	0.000	0.001	0.000	0.000	-	-	-	-

Table 2-D: Maximum Uncontrolled Emissions (under normal operating conditions)

☐ **This Table was intentionally left blank because it would be identical to Table 2-E.**

Maximum Uncontrolled Emissions are the uncontrolled emissions at maximum capacity, prior to (in the absence of) pollution control equipment. Calculate the hourly emissions using the worst case hourly emissions for each pollutant. For each pollutant, calculate the annual emissions as if the facility were operating at maximum plant capacity without pollution controls for 8760 hours per year, unless otherwise approved by the Department. List Hazardous Air Pollutants (HAP) & Toxic Air Pollutants (TAPs) in Table 2-I. Unit & stack numbering must be consistent throughout the application package. For each unit with flashing, list tank-flashing emissions estimates as a separate line item (20.2.70.300.D.5 NMAC, 20.2.72.203.A.3 NMAC, 20.2.73.200.B.6, & 20.2.74.301 NMAC). Fill all cells in this tablewith the emission numbers or a "-" symbol. A "-" symbol indicates that emissions of this pollutant are not expected. Numbers shall be expressed with a minimum of two significant figures[1] If there are any significant figures to the left of a decimal point, there shall be no more than one significant figure to the right of the decimal point.

Unit No.	NOx		CO		VOC		SOx		TSP[2]		PM10[2]		PM2.5[2]		H_2S		Lead	
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
31b	-	-	-	-	-	-	-	-	0.001	0.003	0.000	0.001	0.000	0.000	-	-	-	-
Totals	2.59	11.34	2.17	9.52	0.14	0.62	0.02	0.07	87.83	202.65	27.07	78.80	4.56	13.43	-	-	-	-

[1] **Significant Figures Examples:** One significant figure – 0.03, 3, 0.3. Two significant figures – 0.34, 34, 3400, 3.4

[2] **Condensables:** Include condensable particulate matter emissions in particulate matter calculations.

Table 2-E: Requested Allowable Emissions

Unit & stack numbering must be consistent throughout the application package. For each unit with flashing, list tank-flashing emissions estimates as a separate line item (20.2.70.300.D.5 NMAC, 20.2.72.203.A.3 NMAC, 20.2.73.200.B.6, & 20.2.74.301 NMAC). Fill all cells in this tablewith the emission numbers or a "-" symbol. A "-" symbol indicates that emissions of this pollutant are not expected. Numbers shall be expressed with a minimum of two significant figures[1]. If there are any significant figures to the left of a decimal point, there shall be no more than one significant figure to the right of the decimal point. Please do not change the column widths on this table.

Unit No.	NOx		CO		VOC		SOx		TSP[2]		PM10[2]		PM2.5[2]		H_2S		Lead	
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
1	-	-	-	-	-	-	-	-	1.050	2.955	0.266	0.749	0.045	0.126	-	-	-	-
2	-	-	-	-	-	-	-	-	3.750	29.550	1.875	14.775	0.316	2.488	-	-	-	-
3	-	-	-	-	-	-	-	-	3.000		1.500		0.253		-	-	-	-
4	-	-	-	-	-	-	-	-	0.165	0.756	0.040	0.183	0.070	0.031	-	-	-	-
5	-	-	-	-	-	-	-	-	0.330		0.080		0.013		-	-	-	-
6	2.59	11.34	2.17	9.52	0.14	0.62	0.0155	0.068	0.197	0.862	0.197	0.862	0.197	0.862	-	-	-	-
7a, 7b	-	-	-	-	-	-	-	-	2.380	2.380	0.350	0.350	0.059	0.059	-	-	-	-
8	-	-	-	-	-	-	-	-	1.708	3.416	0.952	1.904	0.162	0.325	-	-	-	-
9, 10	-	-	-	-	-	-	-	-	0.640	2.800	0.162	0.706	0.028	0.124	-	-	-	-
11a	-	-	-	-	-	-	-	-	0.092	0.009	0.022	0.002	0.004	0.000	-	-	-	-
11b	-	-	-	-	-	-	-	-	0.277	0.185	0.067	0.045	0.011	0.008	-	-	-	-
12	-	-	-	-	-	-	-	-	2.380	0.476	0.350	0.070	0.059	0.012	-	-	-	-
13, 14	-	-	-	-	-	-	-	-	0.536	2.348	0.268	1.174	0.046	0.198	-	-	-	-
15	-	-	-	-	-	-	-	-	0.099	0.116	0.024	0.026	0.004	0.005	-	-	-	-
16	-	-	-	-	-	-	-	-	0.340	0.060	0.050	0.009	0.008	0.001	-	-	-	-
17	-	-	-	-	-	-	-	-	0.066	0.012	0.016	0.003	0.003	0.000	-	-	-	-
18, 19	-	-	-	-	-	-	-	-	0.924	0.792	0.224	0.192	0.038	0.032	-	-	-	-
20	-	-	-	-	-	-	-	-	0.000	0.000	0.000	0.000	0.000	0.000	-	-	-	-
21	-	-	-	-	-	-	-	-	0.495	0.083	0.120	0.020	0.020	0.003	-	-	-	-
25	-	-	-	-	-	-	-	-	0.870	3.810	0.210	0.930	0.020	0.090	-	-	-	-
26a	-	-	-	-	-	-	-	-	0.920	0.277	0.220	0.067	0.030	0.008	-	-	-	-
26b	-	-	-	-	-	-	-	-	0.650	0.277	0.160	0.067	0.020	0.008	-	-	-	-
27a	-	-	-	-	-	-	-	-	0.018	0.027	0.004	0.006	0.001	0.001	-	-	-	-
27b	-	-	-	-	-	-	-	-	0.028	0.027	0.007	0.006	0.001	0.001	-	-	-	-
28a	-	-	-	-	-	-	-	-	0.018	0.081	0.004	0.020	0.001	0.002	-	-	-	-
28b	-	-	-	-	-	-	-	-	0.069	0.081	0.017	0.020	0.002	0.002	-	-	-	-
29a	-	-	-	-	-	-	-	-	0.104	0.228	0.025	0.055	0.003	0.007	-	-	-	-
29b	-	-	-	-	-	-	-	-	0.116	0.264	0.028	0.064	0.004	0.008	-	-	-	-
30a	-	-	-	-	-	-	-	-	0.104	0.228	0.025	0.055	0.003	0.007	-	-	-	-
30b	-	-	-	-	-	-	-	-	0.231	0.264	0.056	0.064	0.007	0.008	-	-	-	-
31a	-	-	-	-	-	-	-	-	0.000	0.002	0.000	0.001	0.000	0.000	-	-	-	-

Table 2-E: Requested Allowable Emissions

Unit & stack numbering must be consistent throughout the application package. For each unit with flashing, list tank-flashing emissions estimates as a separate line item (20.2.70.300.D.5 NMAC, 20.2.72.203.A.3 NMAC, 20.2.73.200.B.6, & 20.2.74.301 NMAC). Fill all cells in this tablewith the emission numbers or a "-" symbol. A "-" symbol indicates that emissions of this pollutant are not expected. Numbers shall be expressed with a minimum of two significant figures[1]. If there are any significant figures to the left of a decimal point, there shall be no more than one significant figure to the right of the decimal point. Please do not change the column widths on this table.

Unit No.	NOx		CO		VOC		SOx		TSP[2]		PM10[2]		PM2.5[2]		H_2S		Lead	
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
31b	-	-	-	-	-	-	-	-	0.000	0.002	0.000	0.001	0.000	0.000	-	-	-	-
Totals	2.59	11.34	2.17	9.52	0.14	0.62	0.02	0.07	21.56	52.37	7.32	22.43	1.43	4.42	-	-	-	-

[1] **Significant Figures Examples**: One significant figure – 0.03, 3, 0.3. Two significant figures – 0.34, 34, 3400, 3.4

[2] **Condensables:** Include condensable particulate matter emissions in particulate matter calculations.

Table 2-F: Additional Emissions during Startup, Shutdown, and Routine Maintenance (SSM)[1]

Maximum Emissions during Startup, and Shutdown (20.2.72.203.A.3 NMAC), and Scheduled Maintenance (20.2.72.7.Y NMAC). In this table, only report SSM emissions in so far as they are greater than the corresponding Table 2-E emissions. For instance, if the short term steady-state Table 2-E emissions are 5 lb/hr and the SSM rate is 12 lb/hr, enter 7 lb/hr in the table below. If the annual steady-state Table 2-E emissions are 21.9 TPY, and the number of scheduled SSM events result in annual emissions of 31.9 TPY, enter 10.0 TPY in the table below. Refer to "Guidance for Submittal of Startup, Shutdown, Maintenance Emissions in Permit Applications (http://www.nmenv.state.nm.us/aqb/permit/app_form.html) for more detailed instructions.

Unit No.	NOx		CO		VOC		SOx		TSP[2]		PM10[2]		PM2.5[2]		H_2S		Lead	
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
Totals (tpy)																		

[1] **Significant Figures**: All emission data throughout this application shall be expressed with a minimum of two significant figures.

[2] **Condensables**: Include condensable particulate matter emissions in particulate matter calculations.

Table 2-G: Stack Exit and Fugitive Emission Rates for Special Stacks

Use this table to list stack emissions (requested allowable) from split and combined stacks. List Toxic Air Pollutants (TAPs) and Hazardous Air Pollutants (HAPs) in Table 2-I. List all fugitives that are associated with the normal, routine, and non-emergency operation of the facility. Include tank-flashing emissions estimates. Unit and stack numbering must correspond throughout the application package.

X I have elected to leave this table blank because this facility does not have any stacks/vents that split emissions from a single source or combine emissions from more than one source listed in table 2-A. Additionally, the emission rates of all stacks match the Requested allowable emission rates stated in Table 2-E.

Stack No.	Serving Unit Number(s) from Table 2-A	NOx		CO		VOC		SOx		TSP		PM10		PM2.5		☐ H_2S or ☐ Lead	
		lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
Totals (tons/yr):																	

Table 2-H: Stack Exit Conditions

Unit and stack numbering must correspond throughout the application package.

Stack Number	Serving Unit Number(s) from Table 2-A	Orientation (H-Horizontal V=Vertical)	Rain Caps (Yes or No)	Height Above Ground (ft)	Temp. (F)	Flow Rate (acfs)	Flow Rate (dscfs)	Moisture by Volume (%)	Velocity (ft/sec)	Inside Diameter or L x W (ft)
1	1	V	No	25	80	1000	unknown	unknown	203.7	2.5
2	2	V	No	25	80	1000	unknown	unknown	203.7	2.5
3	3	V	No	25	150	1000	unknown	unknown	203.7	2.5
6	6	V	Yes	20	400	unknown; modeled as capped	unknown	unknown	unknown; modeled as capped	1.2
13	13	V	Yes	20	ambient	unknown; modeled as capped	unknown	unknown	unknown; modeled as capped	1.0
14	14	V	Yes	20	ambient	unknown; modeled as capped	unknown	unknown	unknown; modeled as capped	1.0

Table 2-I: Stack Exit and Fugitive Emission Rates for HAPs and TAPs

List each HAP as it appears in Section 112 (b) of the 1990 CAAA. Refer to Table 2-E for instructions on use of the "-" symbol and on significant figures. For TAP, specify the name of the TAP as listed in 20.2.72.502 NMAC. 20.2.72.402.C NMAC lists sources that are exempt from the permitting requirements of 20.2.72.400-499. TAP should be reported using one more significant figure than the number of significant figures shown in the pph threshold corresponding to the substance found in 20.2.72.502 NMAC, Table A or B. Corresponding Section 6 calculations shall contain two more significant figures than the pph thresholds listed in Section 502, Tables A & B. Include tank-flashing emissions estimates of HAPs and TAPs in this table.

Stack No.	Unit No.(s)	Total HAPs		2-Methyl naphthalene X HAP or TAP		3-Methyl chloranthrene X HAP or TAP		7,12-Dimethylbenz(a) anthracene X HAP or TAP		Acenaphthene X HAP or TAP		Acenaphthylene X HAP or TAP		Anthracene X HAP or TAP		Benz(a)anthracene X HAP or TAP		Benzene X HAP or TAP	
		lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
	6	5.57E-05	2.44E-04	6.21E-07	2.72E-06	4.66E-08	2.04E-07	4.14E-07	1.81E-06	4.66E-08	2.04E-07	4.66E-08	2.04E-07	6.21E-08	2.72E-07	4.66E-08	2.04E-07	5.44E-05	2.38E-04
Totals:		5.57E-05	2.44E-04	6.21E-07	2.72E-06	4.66E-08	2.04E-07	4.14E-07	1.81E-06	4.66E-08	2.04E-07	4.66E-08	2.04E-07	6.21E-08	2.72E-07	4.66E-08	2.04E-07	5.44E-05	2.38E-04

Table 2-J: Fuel

Specify fuel characteristics and usage. Unit and stack numbering must correspond throughout the application package.

Unit No.	Fuel Type (No. 2 Diesel, Natural Gas, Coal, ...)	Specify Units				
		Lower Heating Value	Hourly Usage	Annual Usage	% Sulfur	% Ash
6	natural gas	1020	0.026 MMscf/hr	226.7 MMscf/yr	neg	neg

Table 2-K: Liquid Data for Tanks Listed in Table 2-L

For each tank, list the liquid(s) to be stored in each tank. If it is expected that a tank may store a variety of hydrocarbon liquids, enter "mixed hydrocarbons" in the Composition column for that tank and enter the corresponding data of the most volatile liquid to be stored in the tank. If tank is to be used for storage of different materials, list all the materials in the "All Calculations" attachment, run the newest version of TANKS on each, and use the material with the highest emission rate to determine maximum uncontrolled and requested allowable emissions rate. The permit will specify the most volatile category of liquids that may be stored in each tank. Include appropriate tank-flashing modeling input data. Use additional sheets if necessary. Unit and stack numbering must correspond throughout the application package.

Tank No.	SCC Code	Material Name	Composition	Liquid Density (lb/gal)	Vapor Molecular Weight (lb/lb*mol)	Average Storage Conditions		Max Storage Conditions	
						Temperature (°F)	True Vapor Pressure (psia)	Temperature (°F)	True Vapor Pressure (psia)
NA	NA	Mineral Oil	Mineral Oil	6.8 - 7.5	340 - 380	Ambient	0.0000008	Ambient	0.0000008
NA	NA	Mineral Oil	Mineral Oil	6.8 - 7.5	340 - 380	Ambient	0.0000008	Ambient	0.0000008

Table 2-L: Tank Data

Include appropriate tank-flashing modeling input data. Use an addendum to this table for unlisted data categories. Unit and stack numbering must correspond throughout the application package. Use additional sheets if necessary. See reference Table 2-L2. Note: 1.00 bbl = 10.159 M3 = 42.0 gal

Tank No.	Date Installed	Materials Stored	Seal Type (refer to Table 2-LR below)	Roof Type (refer to Table 2-LR below)	Capacity		Diameter (M)	Vapor Space (M)	Color (from Table VI-C)		Paint Condition (from Table VI-C)	Annual Throughput (gal/yr)	Turn-overs (per year)
					(bbl)	(M^3)			Roof	Shell			
NA	~2003	Mineral Oil	NA	FX	202	32	3.048	Varies	WH	WH	Good	~8500	1.00
NA	~2003	Mineral Oil	NA	FX	24	3.8	1.524	Varies	WH	WH	Good	~1000	1.00

Table 2-M: Materials Processed and Produced (Use additional sheets as necessary.)

Material Processed				Material Produced			
Description	Chemical Composition	Phase (Gas, Liquid, or Solid)	Quantity (specify units)	Description	Chemical Composition	Phase	Quantity (specify units)
NO MATERIALS PROCESSED OR PRODUCED [1]							

[1] Gavilon receives and ships 21 million bushels per year of grain, which includes 240,000 tons per year of DDG.

Table 2-N: CEM Equipment

Enter Continuous Emissions Measurement (CEM) Data in this table. If CEM data will be used as part of a federally enforceable permit condition, or used to satisfy the requirements of a state or federa regulation, include a copy of the CEM's manufacturer specification sheet in the Information Used to Determine Emissions attachment. Unit and stack numbering must correspond throughout the application package. Use additional sheets if necessary.

Stack No.	Pollutant(s)	Manufacturer	Model No.	Serial No.	Sample Frequency	Averaging Time	Range	Sensitivity	Accuracy

Table 2-O: Parametric Emissions Measurement Equipment

Unit and stack numbering must correspond throughout the application package. Use additional sheets if necessary.

Unit No.	Parameter/Pollutant Measured	Location of Measurement	Unit of Measure	Acceptable Range	Frequency of Maintenance	Nature of Maintenance	Method of Recording	Averaging Time

Section 3

Application Summary

The **Application Summary** shall include a brief description of the facility and its process, the type of permit application, the applicable regulation (i.e. 20.2.72.200.A.X, or 20.2.73 NMAC) under which the application is being submitted, and any air quality permit numbers associated with this site. If this facility is to be collocated with another facility, provide details of the other facility including permit number(s). In case of a revision or modification to a facility, provide the lowest level regulatory citation (i.e. 20.2.72.219.B.1.d NMAC) under which the revision or modification is being requested. Also describe the proposed changes from the original permit, how the proposed modification will effect the facility's operations and emissions, de-bottlenecking impacts, and changes to the facility's major/minor status (both PSD & Title V).

Routine or predictable emissions during Startup, Shutdown, and Maintenance (SSM): Provide an overview of how SSM emissions are accounted for in this application. Refer to "Guidance for Submittal of Startup, Shutdown, Maintenance Emissions in Permit Applications (http://www.nmenv.state.nm.us/aqb/permit/app_form.html) for more detailed instructions on SSM emissions.

The facility currently processes grain for agricultural use, as permitted by NSR Air Quality Permit No. 2910, issued October 28, 2003. This application is Revision #1 to our earlier Technical Revision Application dated August 29, 2008, and is for a Significant Revision as per 20.2.72.219.B(4)(b) NMAC and as requested by the NMED Air Quality Bureau in their letter to Gavilon dated October 1, 2008.

The proposed changes to the permit are listed below. These changes include those already noted in the application for a Technical Revision (the first 3 on the list), as well as required additional changes that were noted in 1) the NMED's recent inspections and 2) in a recent inspection by the facility's new owner, Gavilon Grain, LLC dba Peavey Company (Gavilon), and consultant AECOM. These changes include corrections to controls on heat-treated grains and changes to short term throughput limits to allow greater manufacturing flexibility to respond to changing demand for the various products manufactured at the facility. This is an addendum to the previously submitted permit application dated June 11, 2009 and October 5, 2009 addendum #1. This addendum #2 is being submitted at the request of NMED to prepare emission calculations for the facility grain handling barns and include these sources in the air quality impact analysis.

Gavilon is not requesting a change to the maximum facility throughput of 560,000 tons per year (21 million bushels per year).

Changes Noted in the Previous Technical Revision Application:

- Unit No. 6 – Boiler with heat input capacity of 20.1 MMBtu/hr: The facility requests a modification to this boiler consisting of replacing the boiler tube and shell assembly (now Williams & Davis boiler) while re-using the same burner, and correcting the burner heat input capacity to the Williams & Davis nameplate rating of 26.4 MMBtu/hr. The currently permitted 20.1 MMBtu/hr capacity rating is apparently a theoretical site-derated heat input capacity. Gavilon requests that the unit be permitted at the actual nameplate rating. It is also noted that the boiler is subject to NSPS Subpart Dc due to the apparent replacement by the previous owner of the facility's 200 hp Williams & Davis boiler with a Superior/Holman 600 hp boiler in 1999/2000, which is after the effective date of NSPS Subpart Dc. Therefore, applicable provisions of NSPS Subpart Dc will need to be noted in the permit.

- Unit No. 12 – Rail Receiving Pit with Brock Dustmaster (90% control): The facility requests the daily volume of material received by the rail shuttle be increased from 440,000 bushels per day to 475,000 bushels per day.

- Facility Wide – In addition to whole grains, the facility requests the permit include language that identifies material throughputs as including corn residuals which are also referred to as dried distillers grain (DDG). DDG is a product of ethanol extraction. The facility does not process the DDG. DDG is received, stored onsite, and then sold for animal feed. The material is brought in by rail and conveyed to an existing storage barn and stored either in the barn or moved outside and stored outside in covered piles. It is then transferred to distribution trucks by frontend loader. The handling of DDG does not increase facility throughput as it replaces throughput of other grains. It is also a much coarser material than the existing grains it replaces, and therefore generates little emissions. White mineral oil is not applied to DDG. The facility will receive as much as 50,000 tons per year DDG.

Changes to Throughputs and Controls:

- Correction to white mineral oil controls on heat-treated grains – The current permit incorrectly attributes 80% control efficiency for white mineral oil usage on handling of grains that will be heat treated in the flaking process. The reference to 80% control from mineral oil application should be removed. These include the following sources:
  - Units 2 & 3 – Grain Flakers (includes flaker dryers with cyclone controls)
  - Units 4 & 5 – Flaked Grain Loadout Conveyors
- Unit No. 1, 2, 3 – Grain Cleaner and two Flakers. Increase total flaker throughput to 394,000 tons of grain per year and 25 and 20 tons per hour for Flaker Units 2 and 3, respectively, and add cyclone control to grain cleaner. The facility desires the flexibility to divert more facility whole grain throughput to produce flaked feed if the feed market changes.
- Unit No. 7a and 7b – Truck Receiving Pits. Increase truck receiving volume from 28,000 tons per year to 280,000 tons per year to allow for flexibility for additional receipts by truck rather than rail. Limit grain receiving to 2,800 tons per day. Eliminate distinction between hopper and straight truck receipts. All receipts are assumed worst-case to be received by straight truck for purposes of calculating emissions and estimating ambient impacts, even though the facility has historically received and will continue to receive most grain by hopper truck.
- Unit No. 8 – Headhouse. Limit daily grain receiving to 2,800 tons per day.
- Unit No. 9 – Storage Bin Vents Main Elevator. Increase allowable throughput for Main Elevator to 560,000 tons per year to match Annex Bin Vent throughput. This does not change total facility throughput of 560,000 tons per year.
- Unit No. 13 and 14 – Hammermills. Increase allowable throughput for hammermills to 20 tons per hour each and 350,400 tons per year total. The facility desires the flexibility to divert more facility whole grain throughput to produce ground grain feed if the feed market changes.

New Sources:

- Add Unit No. 15 – Ground corn truck loadout conveyor – this conveyor loads ground corn from the ground corn storage barn located on the east end of the facility. Capacity is 150 tons per hour (tph) and 350,400 tons per year (tpy).
- Add Unit No. 16 – Ground corn truck unloading pit at railcar portable loadout conveyor – a truck unloading pit is located at the railcar portable loadout conveyor. Ground corn from the hammermills is loaded into hopper trucks and transported over to this pit for loadout to railcars. Capacity is 100 tph and 35,000 tpy.
- Add Unit No. 17 – Portable railcar loadout conveyor – a portable railcar loadout conveyor is located on the west end of the facility for ground corn. Capacity is 100 tph and 35,000 tpy.
- Add Unit No. 18 and 19 – DDG Truck Loadout Conveyor #1 and #2 – as part of the handling of DDG, two truck loadout stations are utilized on the south side of the DDG storage barn. Capacity of each is 240,000 tpy and 140 tph.
- Add Unit No. 20 – DDG outside temporary storage pile – the facility will occasionally require DDG to be stored outside when inside barn storage is full. As much as 50,000 tpy could be stored at the facility with a total area of approximately 11.25 acres. The DDG stored outside will be tarped, except a small area will be exposed either when truck unloading from the DDG storage barn is occurring or during loadout by truck.
- Add Unit No. 21 – DDG truck loadout at outside storage pile – DDG is loaded onto trucks by front end loader at the outside storage pile. Capacity is 150 tph and 50,000 tpy.
- Add Unit No. 25 – truck traffic. Trucks unload grains and load products.
- Add Unit No. 26 (26a & 26b) – DDG Barn – transfer to barn storage pile and transfer to loadout reclaim pit. Capacity is 400 tph for 26a and 200 tph for 26b, and 240,000 tpy each.
- Add Unit No. 27 (27a & 27b) – Whole Corn Barn - transfer to barn storage pile and transfer to loadout reclaim pit. Capacity is 40 tph for 27a and 60 tph for 27b, and 115,000 tpy each.
- Add Unit No. 28 (28a & 28b) – Ground Corn Barn - transfer to barn storage pile and transfer to loadout reclaim pit. Capacity is 40 tph for 28a and 150 tph for 28b, and 350,400 tpy each.
- Add Unit No. 29 (29a & 29b) – Flaked Corn Barn - transfer to barn storage pile and transfer to loadout reclaim pit. Capacity is 45 tph and 197,000 tpy for 29a and 50 tph and 229,000 tpy for 29b.
- Add Unit No. 30 (30a & 30b) – Flaked Milo Barn - transfer to barn storage pile and transfer to loadout reclaim pit. Capacity is 45 tph and 197,000 tpy for 30a and 100 tph and 229,000 tpy for 30b.

- Add Unit No. 31 (31a & 31b) – Fines Shed – transfer to barn storage pile and loadout to ground grain barn. Capacity is 0.20 tph and 1,825 tpy each.

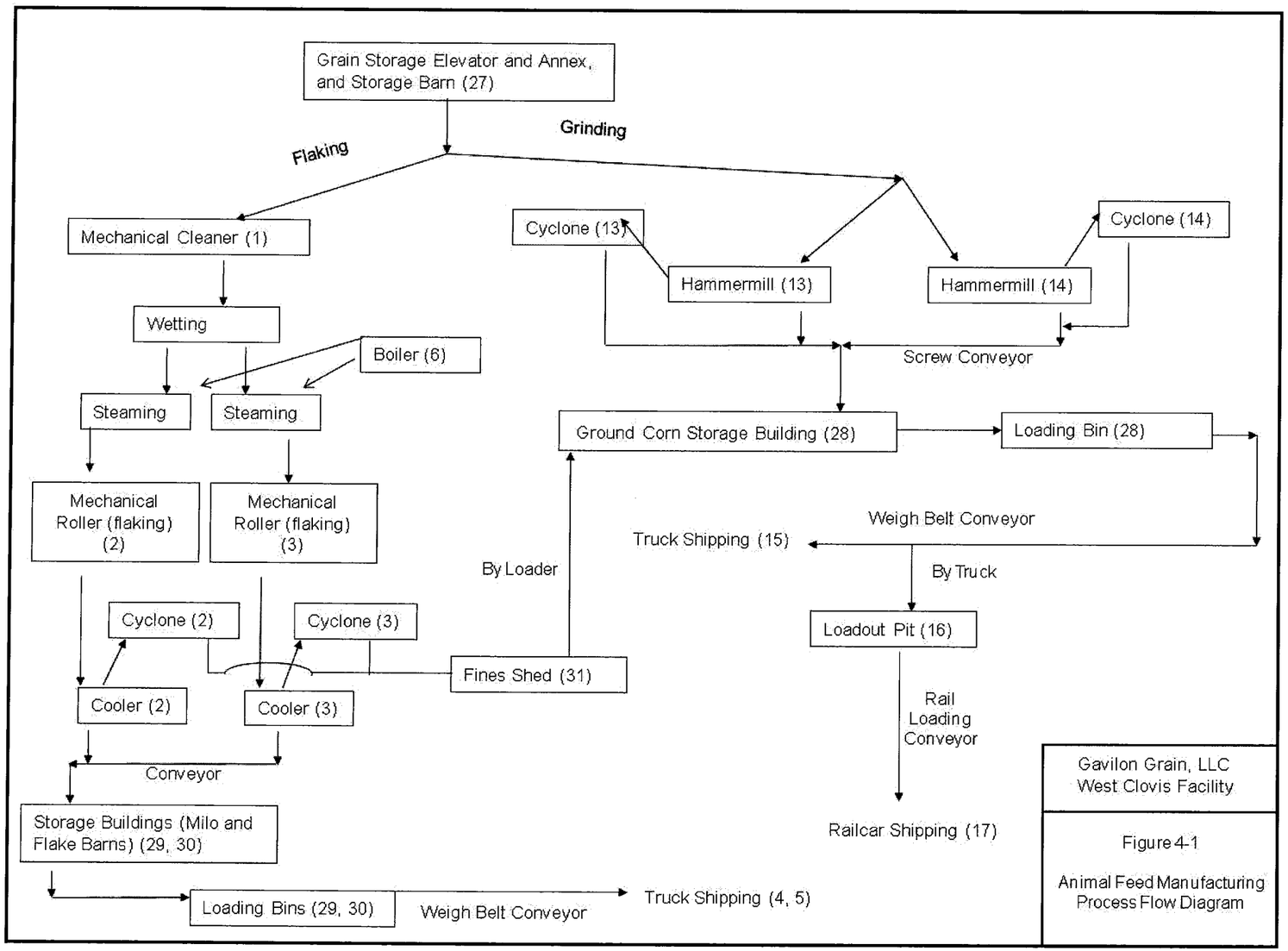
Overview of SSM Emissions:

Due to the nature of the facility, emissions during routine or predictable startup, shutdown, and scheduled maintenance are not expected to vary significantly from routine operation emissions. Section 14 of the June 2009 permit application addresses the facility's procedures for emissions mitigation.

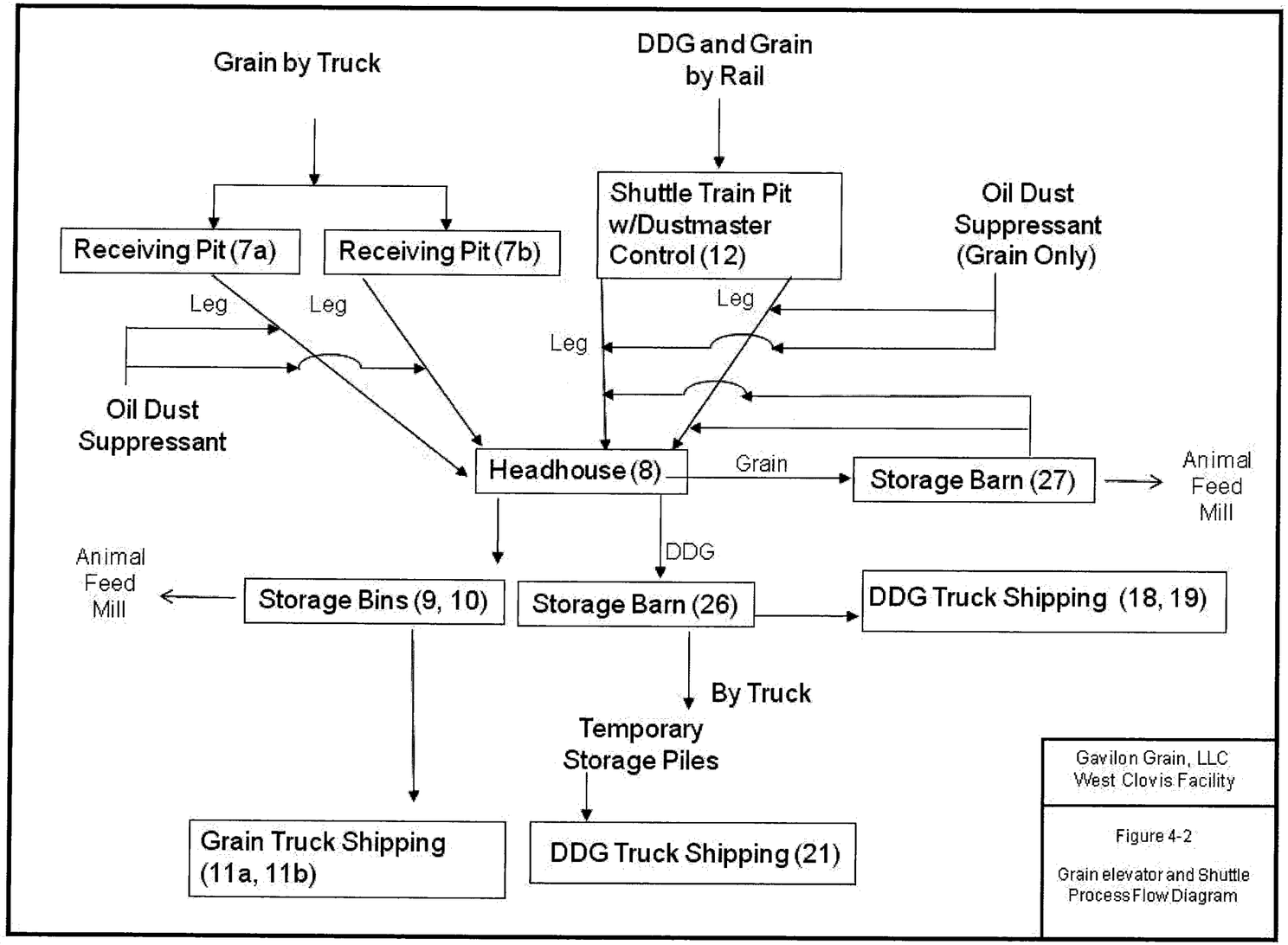
Section 4

Process Flow Sheet

A **process flow sheet** and/or block diagram indicating the individual equipment, all emission points and types of control applied to those points. The unit numbering system should be consistent throughout this application.



Source ID	Description
1	Flaker Grain Cleaner
2	Grain Flaker (24" x 56" roller)
3	Grain Flaker (24" x 48" roller)
4	Flaked grain load out conveyor (corn)
5	Flaked grain load out conveyor (milo)
6	Boiler
7a	Grain receiving pit (truck)
7b	Grain receiving pit (truck)
8	Headhouse (includes enclosed cleaner)
9	Storage bin vents (main elevator)
10	Storage bin vents (elevator annex)
11a	whole grain load out station (truck)
11b	whole grain load out station (truck)
12	Grain receiving pit (rail)
13	Hammermill
14	Hammermill
15	Ground grain load out
16	Ground grain receiving pit (truck) at temporary rail load out
17	Temporary ground grain railcar load out
18	DDG load out conveyor
19	DDG load out conveyor
21	DDG outside truck load out (front end loader)
26	DDG Storage Barn
27	Whole Grain Storage Barn
28	Ground Corn Barn
29	Flaked Corn Barn
30	Flaked Milo Barn
31	Fines Shed



Source ID	Description
1	Flaker Grain Cleaner
2	Grain Flaker (24" x 56" roller)
3	Grain Flaker (24" x 48" roller)
4	Flaked grain load out conveyor (corn)
5	Flaked grain load out conveyor (milo)
6	Boiler
7a	Grain receiving pit (truck)
7b	Grain receiving pit (truck)
8	Headhouse (includes enclosed cleaner)
9	Storage bin vents (main elevator)
10	Storage bin vents (elevator annex)
11a	whole grain load out station (truck)
11b	whole grain load out station (truck)
12	Grain receiving pit (rail)
13	Hammermill
14	Hammermill
15	Ground grain load out
16	Ground grain receiving pit (truck) at temporary rail load out
17	Temporary ground grain railcar load out
18	DDG load out conveyor
19	DDG load out conveyor
21	DDG outside truck load out (front end loader)
26	DDG Storage Barn
27	Whole Grain Storage Barn
28	Ground Corn Barn
29	Flaked Corn Barn
30	Flaked Milo Barn
31	Fines Shed

Section 5

Plot Plan Drawn To Scale

A **plot plan drawn to scale** showing emissions points, structures, tanks, and fences of property owned, leased, or under direct control of the applicant. The unit numbering system should be consistent throughout this application.

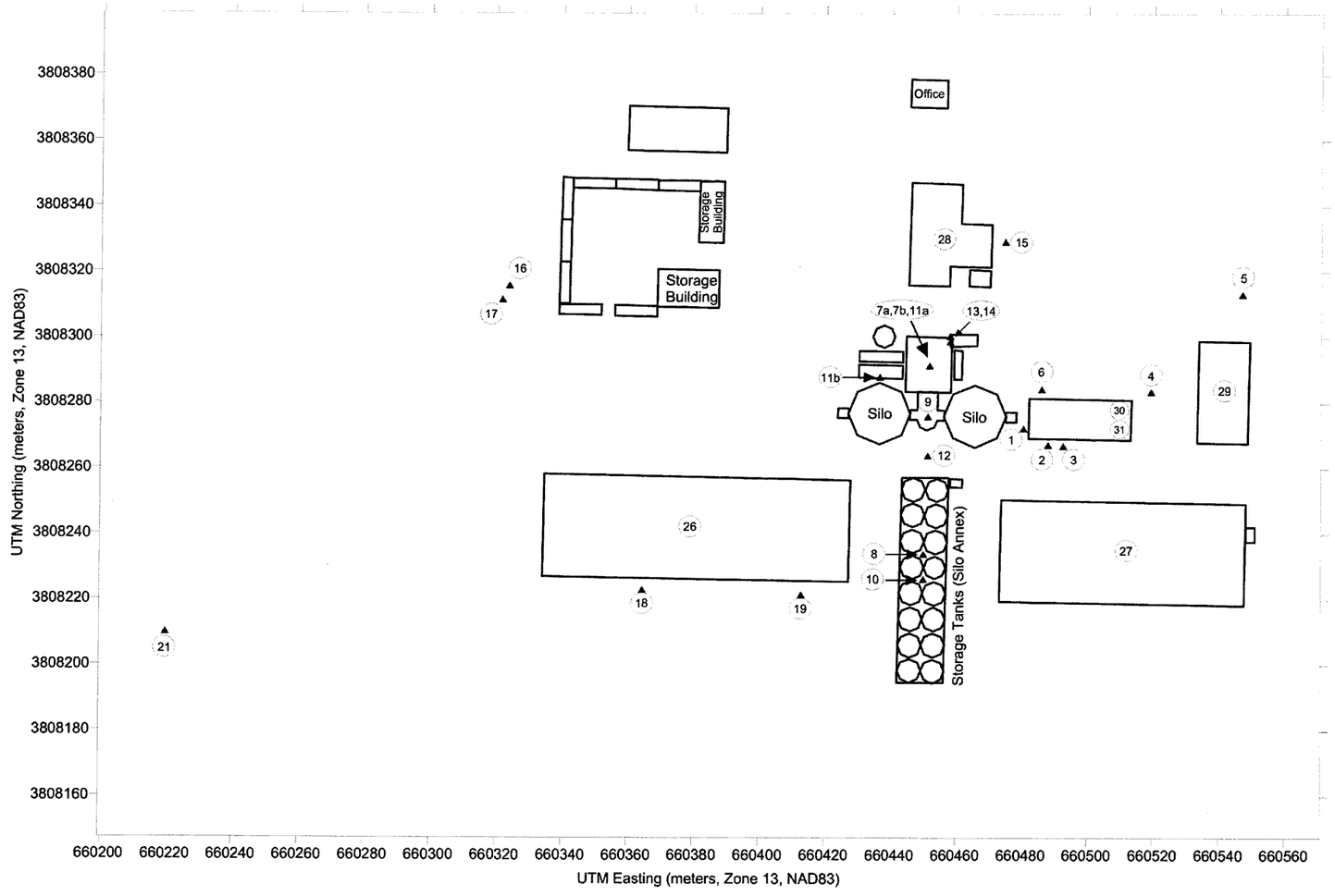


FIGURE 5-1
EMISSION POINTS AND BUILDING LOCATIONS

Source ID	Description
1	Flaker Grain Cleaner
2	Grain Flaker (24" x 56" roller)
3	Grain Flaker (24" x 48" roller)
4	Flaked grain load out conveyor (corn)
5	Flaked grain load out conveyor (milo)
6	Boiler
7a	Grain receiving pit (truck)
7b	Grain receiving pit (truck)
8	Headhouse (includes enclosed cleaner)
9	Storage bin vents (main elevator)
10	Storage bin vents (elevator annex)
11a	whole grain load out station (truck)
11b	whole grain load out station (truck)
12	Grain receiving pit (rail)
13	Hammermill
14	Hammermill
15	Ground grain load out
16	Ground grain receiving pit (truck) at temporary rail load out
17	Temporary ground grain railcar load out
18	DDG load out conveyor
19	DDG load out conveyor
21	DDG outside truck load out (front end loader)
26	DDG Storage Barn
27	Whole Grain Storage Barn
28	Ground Corn Barn
29	Flaked Corn Barn
30	Flaked Milo Barn
31	Fines Shed

Section 6

All Calculations

Show all calculations used to determine both the hourly and annual controlled and uncontrolled emission rates. All calculations shall be performed keeping a minimum of three significant figures. Document the source of each emission factor used (if an emission rate is carried forward and not revised, then a statement to that effect is required). If identical units are being permitted and will be subject to the same operating conditions, submit calculations for only one unit and a note specifying what other units to which the calculations apply. All formulas and calculations used to calculate emissions must be submitted. The "Calculations" tab in the UA2 has been provided to allow calculations to be linked to the emissions tables. Add additional "Calc" tabs as needed. If the UA2 or other spread sheets are used, all calculation spread sheet(s) shall be submitted electronically in Microsoft Excel compatible format so that formulas and input values can be checked. Format all spread sheets and calculations such that the reviewer can follow the logic and verify the input values. Define all variables. If calculation spread sheets are not used, provide the original formulas with defined variables. Additionally, provide subsequent formulas showing the input values for each variable in the formula. All calculations, including those calculations are imbedded in the Calc tab of the UA2 portion of the application, the printed Calc tab(s), should be submitted under this section.

Tank Flashing Calculations: The information provided to the AQB shall include a discussion of the method used to estimate tank-flashing emissions, relative thresholds (i.e., NOI, permit, or major source (NSPS, PSD or Title V)), accuracy of the model, the input and output from simulation models and software, all calculations, documentation of any assumptions used, descriptions of sampling methods and conditions, copies of any lab sample analysis.

SSM Calculations: It is the applicant's responsibility to provide an estimate of SSM emissions or to provide justification for not doing so. In this Section, provide emissions calculations for Startup, Shutdown, and Routine Maintenance (SSM) emissions listed in the Section 2 SSM Table and the rational for why the others are reported as zero (or left blank in the SSM Table). Refer to "Guidance for Submittal of Startup, Shutdown, Maintenance Emissions in Permit Applications (http://www.nmenv.state.nm.us/aqb/permit/app_form.html) for more detailed instructions on calculating SSM emissions. If SSM emissions are greater than those reported in the Section 2, Requested Allowables Table, modeling may be required to ensure compliance with the standards whether the application is NSR or Title V. Refer to the Modeling Section of this application for more guidance on modeling requirements.

This Section describes the methods used to estimate the maximum hourly and annual uncontrolled and potential emission rate for the facility. The facility is an animal feed manufacturing operation. The facility is applying for a construction permit to make certain changes described above in Section 3. Emission control systems will be used to reduce maximum uncontrolled emission rates from the facility. Mineral oil is applied to incoming grain delivered by railcar except DDG. The facility is requesting hourly, daily, and annual material throughput limits for both existing and proposed operations to limit potential emission below the major source thresholds of the Prevention of Significant Deterioration (PSD) and Title V permitting programs and to ensure that operations do not cause exceedances of applicable ambient concentration thresholds.

Existing and proposed operations emit total suspended particulate (TSP) and particulate matter with an aerodynamic diameter less than 10 microns (PM10) and less than 2.5 microns (PM2.5). The animal feed manufacturing operation includes a 26.4 MMBtu/hr natural gas-fired boiler that is also a source of nitrogen oxides, carbon monoxide, volatile organic compounds, and sulfur dioxide.

In this Section, grain throughputs are presented in both bushels and tons, since equipment may be rated in either of those units. The standard conversion for grain is 35.7 bushels/ton.

Spreadsheets summarizing all of the calculations described herein are included at the end of this Section.

Animal Feed Manufacturing Operation

Most of the grain throughput is manufactured into animal feed – either ground grain or flaked grain feed suitable for dairy cattle, making this the primary operation at the facility.

Flaked Grain. Whole grain – corn or milo – is transferred by chute and/or conveyor from storage bins through a mechanical cleaner (70 tons per hour, and 394,000 tons per year maximum throughput. A cyclone control is being added), then wetted and

fed to two steam chests for softening. Softened grain is gravity-fed from the steam chests to two mechanical rollers, which crush the hull and produce flaked grain. Steam is provided by a small natural gas-fired boiler. The flaked grain is passed through two coolers (25 and 20 tons per hour, and 394,000 tons per year maximum throughput), then transported via covered belt conveyors to enclosed storage buildings. The flaked grain is picked up from the storage floor by Bobcat loader and placed in the loading bin of a weigh-belt conveyor, which empties the flaked feed into trucks (50 and 100 tons per hour, and 458,000 tons per year maximum throughput) for transport to dairy farms.

Emission points in the flaked animal feed manufacturing operation include the grain cleaner, the rollers (flakers), the boiler, and flaked feed truck loading. Emission factors for these processes (except the boiler) were found in EPA's Compilation of Emission Factors, AP-42, Section 9.9.1 – Grain Elevators and Processes. Emission factors for the boiler were found in AP-42, Section 1.4. The maximum uncontrolled and potential emission rate for the grain cleaner was calculated based on the maximum rated capacity of the cleaner – 70 tons per hour – and a maximum throughput of 394,000 tons per year. The maximum uncontrolled and potential emission rate for the flaking process was calculated based on the maximum rated capacity of the flaker/coolers – 25 and 20 tons per hour, and a requested maximum limit of 394,000 tons per year. Emissions from the truck loadout operations were estimated based on the maximum rated capacity of the conveyors – 50 and 100 tons per hour – and a total annual throughput of 458,000 tons per year. Since flaked feed is stored prior to shipping, more flaked feed can be shipped than is produced in a year.

Ground Grain. Whole grain is transferred by chute and/or conveyor from storage bins to either of two hammermills (20 tons per hour each, and 350,000 tons per year maximum throughput) which grind the whole grain into a ground feed product. Emissions are controlled by cyclones. The ground product is then transported via covered belt conveyors to an enclosed storage building. The ground grain is picked up from the storage floor by Bobcat loader and placed in the loading bin of a weigh-belt conveyor, which empties the ground grain feed into trucks (150 tons per hour and 350,000 tons per year maximum throughput) for transport to dairy farms. A portion of the ground grain loaded out to truck is also transported over to a truck loadout pit and rail loading conveyor at the facility (100 tons per hour and 35,000 tons per year maximum capacity) for transfer to rail for customers requiring receipt of ground feed via railcar.

Emission points in the ground animal feed manufacturing operation include the two hammermills, ground feed truck loading, truck unloading pit at the rail loading station, and rail loadout. Emission factors for these processes were found in EPA's AP-42, Section 9.9.1 – Grain Elevators and Processes. The maximum uncontrolled and potential emission rates for each source were calculated based on the maximum rated capacities and maximum annual throughputs listed in the paragraph above.

Emissions for grain cleaning, flaking, grain grinding, and flaked grain and ground grain loading were calculated as follows:

Emissions (tons/yr) = throughput (tons/yr) x EF (lb/ton) / 2000 (lb/ton)

Emissions for the boiler were calculated using the following equation:

Emissions (tons/yr) = Natural gas use (MMscf/yr) x EF (lb/MMscf) / 2000 (lb/ton)

Natural gas use was calculated from the boiler rating using a value of 1,020 Btu/scf for natural gas, as recommended by AP-42, and the following equation:

Natural Gas Use (MMscf/yr) = Rating (MMBtu/hr x 10^6 (Btu/MMTtu) x 8,760 hr/yr) / 1,020 (Btu/scf) x 10^6 (scf/MMscf)

All emission factors, throughputs and emissions are shown in the spreadsheets included at the end of this Section.

Grain Receiving and Storage

Grain shipments are received via two truck receiving pits and a shuttle train unloading pit. Most of the facility's incoming grain is received by rail. All DDG (50,000 tons per year) is received by rail. A small portion of the facility's incoming grain is received by truck, with truck receipts concentrated during the harvest season. Approximately 85 percent of grain received by trucks is delivered in hopper trucks and 15 percent in straight trucks. Emissions from truck unloading are estimated using the grain receiving emission factors for animal feed mills which does not distinguish between the two truck types.

Two legs with a combined capacity of 140 tons per hour (280,000 tons per year maximum throughput) transport the grain received by truck to a headhouse at the top of the elevator, from which the grain can be directed to several storage bins. Two legs with a combined capacity of 1,400 tons per hour (560,000 tons per year) transport the grain and/or DDG received by rail to the headhouse at the top of the elevator, also from which the grain can be directed to storage bins. From the bins, the grain can be directed via two

gravity-fed chutes to trucks (140 and 420 tons per hour, and 28,000 and 560,000 tons per year) for transport to area feedlots/dairies, or alternatively to a storage barn, or to an outside ground storage area (1,400 tons per hour and 168,000 tons per year) located to the south of the grain storage bins.

Mineral oil is currently applied to grain received by rail before entering the enclosed bucket elevators, or legs. During normal operations, all truck and rail receiving bins will be full and the unloading will be in choked-flow mode, minimizing dust emissions from grain receiving operations. A second mineral oil application system will be installed at the truck receiving pits in a similar fashion. In addition, a Brock Dustmaster grain receiving bin dust control system is also employed on the rail unloading hopper. All grain received is routed through an enclosed cleaner.

Shuttle Unloader

The shuttle train unloading facility unloads each shuttle within 15 hours of arrival using a 7,313-foot rail loop and a rail hopper car receiving bin located adjacent to the elevator. Rail cars are positioned above the receiving bin and the hopper doors open to allow grain to fill the pit. During normal operations, the bin will be full and the unloading will be in choked-flow mode, minimizing dust emissions. A Brock Dust master grain receiving bin dust control system is also employed on the shuttle unloader; to ensure unloading occurs in choked-flow mode. Two enclosed drag conveyors located in a tunnel connecting the receiving pit to the elevator transport the grain from the receiving pit to the inlet of two enclosed bucket conveyors, or legs. The legs transport up to 50,000 bushels of grain per hour to an enclosed distributor located approximately 150 feet above ground level. From the distributor, grain can be gravity-fed through enclosed ductwork – with an option to route the grain through an enclosed cleaner – to several of the existing vented storage bins. From the bins, the grain can be transported to the animal feed manufacturing process or can be loaded to trucks through the 420 tons/hour truck loadout system.

Particulate matter emission points in the shuttle unloader system include the receiving bin, storage bin vents, and truck loadout system. Emission factors for these processes were found in AP-42 Section 9.9.1

A Brock Dustmaster grain receiving pit dust control system (90% control) is used on the rail receiving pit (shuttle unloader). Mineral oil (80% control) will be sprayed on all grain received at the Clovis West facility. Mineral oil spray has been shown to reduce emissions from all downstream grain handling operations by 90 to 99%. AP-42 indicates that oil spray has an effectiveness of 60 to 80%. For this application, Gavilon requests that 80% control efficiency be allowed as is in the existing permit and as has been demonstrated in industry tests.

Truck Traffic

Fugitive particulate matter emissions from truck traffic have been quantified. Results and a description of the procedures used to calculate truck traffic emissions have been provided to Coleman Smith of the NMED in an Addendum dated October 5, 2009. Please refer to the Addendum for calculation methodologies.

Storage Barns

Fugitive particulate matter emissions from storage barns have been quantified. Results and descriptions of the procedures used to calculate these emissions have been provided to Sandy Spon of the NMED in an Addendum #2 dated April 2010. Please refer to the Addendum #2 for calculation methodologies.

Table 1
Gavilon Peavey Grain West - Clovis, NM
Current Permitted Potential to Emit Emissions Calculations

Unit No.		Source Description	Operating Hours	Current Permitted Rate		Emission Factor			Emissions Control & Efficiency		Controlled Emission Rates					
				Hour	Annual	PM	PM_{10}	$PM_{2.5}$			PM	PM_{10}	$PM_{2.5}$	PM	PM_{10}	$PM_{2.5}$
1	GRNCLN_1	Flaker Grain Cleaner [a]	8,760 hr/yr	70 ton/hr	219,000 ton/yr	0.150 lb/ton	0.0380 lb/ton	0.0064 lb/ton	80 %	white mineral oil	2.10 lb/hr	0.53 lb/hr	0.09 lb/hr	3.29 tpy	0.83 tpy	0.14 tpy
2	FLAKR_2	Grain Flaker (24" x 56" roller) [1, 2, b]	8,760 hr/yr	20 ton/hr	219,000 ton/yr	0.150 lb/ton	0.075 lb/ton	0.0126 lb/ton	0 %	50% for cyclone - already in emission factor	3.00 lb/hr	1.50 lb/hr	0.25 lb/hr	16.43 tpy	8.21 tpy	1.38 tpy
3	FLAKR_3	Grain Flaker (24" x 48" roller) [1, 2, b]	8,760 hr/yr	16 ton/hr		0.150 lb/ton	0.075 lb/ton	0.0126 lb/ton	0 %		2.40 lb/hr	1.20 lb/hr	0.20 lb/hr			
4	FLKFD_4	Flaked Grain Loadout Conveyor (corn) [1, 2, c]	8,760 hr/yr	50 ton/hr	458,000 ton/yr	0.0033 lb/ton	0.0008 lb/ton	0.0001 lb/ton	0 %	no control	0.17 lb/hr	0.04 lb/hr	0.01 lb/hr	0.76 tpy	0.18 tpy	0.03 tpy
5	FLKFD_5	Flaked Grain Loadout Conveyor (milo) [1, 2, c]	8,760 hr/yr	100 ton/hr		0.0033 lb/ton	0.0008 lb/ton	0.0001 lb/ton	0 %	no control	0.33 lb/hr	0.08 lb/hr	0.01 lb/hr			
6	BOIL_6	Boiler [d]	8,760 hr/yr	20.1 MMBtu/hr	175,848 MMBtu/yr	0.0075 lb/MMBtu	0.0075 lb/MMBtu	0.0075 lb/MMBtu	0 %	no control	0.15 lb/hr	0.15 lb/hr	0.15 lb/hr	0.66 tpy	0.66 tpy	0.66 tpy
7a	TRKREC_7a	Grain Receiving Pit (Truck) [3, e]	8,760 hr/yr	140 ton/hr	28,000 ton/yr	0.180 lb/ton	0.059 lb/ton	0.0100 lb/ton	0 %	no control	25.20 lb/hr	8.26 lb/hr	1.40 lb/hr	2.52 tpy	0.83 tpy	0.14 tpy
7b	TRKREC_7b	Grain Receiving Pit (Truck) [3, e]	8,760 hr/yr						0 %							
8	HEAD_8	Headhouse (includes enclosed cleaner) [f]	8,760 hr/yr	140 ton/hr	28,000 ton/yr	0.061 lb/ton	0.034 lb/ton	0.0058 lb/ton	80 %	white mineral oil	1.71 lb/hr	0.95 lb/hr	0.16 lb/hr	0.17 tpy	0.10 tpy	0.02 tpy
9	BVMN_9	Storage Bin Vents (main elevator) [g]	8,760 hr/yr	N/A	28,000 ton/yr	0.025 lb/ton	0.0063 lb/ton	0.0011 lb/ton	80 %	white mineral oil	0.02 lb/hr	0.00 lb/hr	0.00 lb/hr	0.07 tpy	0.02 tpy	0.00 tpy
10	BVMN_10	Storage Bin Vents (elevator annex) [g]	8,760 hr/yr	N/A	560,000 ton/yr	0.025 lb/ton	0.0063 lb/ton	0.0011 lb/ton	80 %	white mineral oil	0.32 lb/hr	0.08 lb/hr	0.01 lb/hr	1.40 tpy	0.35 tpy	0.06 tpy
11a	TRK_11a	Whole Grain Loadout [h]	8,760 hr/yr	140 ton/hr	28,000 ton/yr	0.086 lb/ton	0.029 lb/ton	0.0049 lb/ton	80 %	white mineral oil	2.41 lb/hr	0.81 lb/hr	0.14 lb/hr	0.24 tpy	0.08 tpy	0.01 tpy
11b	TRK_11b	Whole Grain Loadout [h]	8,760 hr/yr	420 ton/hr	560,000 ton/yr	0.086 lb/ton	0.029 lb/ton	0.0049 lb/ton	80 %	white mineral oil	7.22 lb/hr	2.44 lb/hr	0.41 lb/hr	4.82 tpy	1.62 tpy	0.27 tpy
12	SHUT_12	Grain Receiving Pit (Rail) [i]	8,760 hr/yr	1,400 ton/hr	560,000 ton/yr	0.032 lb/ton	0.0078 lb/ton	0.0013 lb/ton	90 %	Brock Dustmaster 90% control	4.48 lb/hr	1.09 lb/hr	0.18 lb/hr	0.90 tpy	0.22 tpy	0.04 tpy
13		Hammermill [2, 4, j]	8,760 hr/yr	10 ton/hr	175,200 ton/yr	0.134 lb/ton	0.067 lb/ton	0.0113 lb/ton	90 %	white mineral oil and cyclone combination	0.13 lb/hr	0.07 lb/hr	0.01 lb/hr	1.17 tpy	0.59 tpy	0.10 tpy
14		Hammermill [2, 4, j]	8,760 hr/yr	10 ton/hr		0.134 lb/ton	0.067 lb/ton	0.0113 lb/ton	90 %	white mineral oil and cyclone combination	0.13 lb/hr	0.07 lb/hr	0.01 lb/hr			
										Total	**49.77**	**17.27**	**3.04**	**32.41**	**13.69**	**2.85**

1 No mineral oil control - grain is heated and as a result, mineral oil removed. 80% control in permit is incorrect. Cyclone controls only for the flaker.

2 Emission factor for $PM_{2.5}$ is scaled to the ratio of $PM_{2.5}$ to PM_{10} of 17% based on flaker grain cleaner emission factors from Table 9.9.1-1

3 We have not distinguished between truck types. The worst case emission factor was used (straight trucks).

4 The hammermills are controlled via cyclone. The control efficiency is already accounted for in the emission factor. However, in addition to the cyclone control, an additional 80% control is added for the application of mineral oil, which accounts for 90% total control. Therefore the controlled emission factor is multiplied by 2 to account for the 50% control of cyclone to represent an uncontrolled emission factor.

Source of Emission Factors

a Emission factor (EF) from AP42 Section 9.9.1, Table 9.9.1-1: Grain cleaning (cyclone controlled). EF multiplied by 2 because 50% controlled assumed for cyclone.

b EF from AP42 Section 9.9.1, Table 9.9.1-2: Grain milling - Flaker (cyclone controlled).

c EF from AP42 Section 9.9.1, Table 9.9.1-2: Feed shipping.

d EF from AP42 Section 1.4, Table 1.4-2.

e EF from AP42 Section 9.9.1, Table 9.9.1-1: Grain receiving - straight truck.

f EF from AP42 Section 9.9.1, Table 9.9.1-1: Headhouse.

g EF from AP42 Section 9.9.1, Table 9.9.1-1: Storage bin (vent).

h EF from AP42 Section 9.9.1, Table 9.9.1-1: Grain Shipping - truck.

i EF from AP42 Section 9.9.1, Table 9.9.1-1: Grain receiving - railcar.

j EF from AP42 Section 9.9.1, Table 9.9.1-2: Grain milling - hammermill (cyclone controlled).

Sample Emission Calculations

(lb / ton) (ton / hr) [(100 - % control) / 100] = lb/hr
(lb / ton) (ton / yr) (ton / 2000 lb) [(100 - % control) / 100] = tpy

(lb / MMBtu) (MMBtu / hr) [(100 - % control) / 100] = lb/hr
(lb / MMBtu) (MMBtu / yr) [(100 - % control) / 100] = tpy

Table 1a

Gavilon Peavey Grain West - Clovis, NM

Current Permitted Gaseous Emissions Calculations for Boiler

Boiler Data			
Make	Superior / Holman	**Hours of Operation**	8,760 hr/yr
Duty (Input)	20.10 MMBtu/hr	**Fuel Consumption**	0.0197 MMscf/hr
Heating Value of Natural Gas [1]	1,020 Btu/scf	**Fuel Consumption**	172.62 MMscf/yr

Pollutant	Emission Factors	Short-term		Annual	
		lb/hr	g/sec	tpy	g/sec
NO_x [2]	100.0 lb/MMscf	1.97	0.2483	8.63	0.2483
CO [2]	84.0 lb/MMscf	1.66	0.2086	7.25	0.2086
VOC [2]	5.5 lb/MMscf	0.11	0.0137	0.47	0.0137
SO_2 [2]	0.6 lb/MMscf	0.0118	0.0015	0.0518	0.0015

[1] Natural gas heating value is from AP42 Section 1.4 Natural Gas Combustion

[2] Emission factors are from AP42 Section 1.4, Tables 1.4-1 & 1.4-2.

Sample Calculations:

(MMBtu / hr) / (Btu / scf) = MMscf / hr

(lb / MMscf) (MMscf / hr) = lb / hr

(MMBtu / hr) / (Btu / scf) (8,760 hr / yr) = MMscf / yr

(lb / MMscf) (MMscf / yr) (ton / 2,000 lb) = tpy

Table 2
Gavilon Peavey Grain West - Clovis, NM
Requested Permit Limits - Potential to Emit Emissions Calculations

Unit No.		Source Description	Operating Hours	New Requested Permit Rate		Emission Factor			Uncontrolled Emission Rates						Emissions Control & Efficiency [4, 5]		Controlled Emission Rates						Controlled Emission Rates for Modeling					
				Hour	Annual	PM	PM_{10}	$PM_{2.5}$	PM	PM_{10}	$PM_{2.5}$	PM	PM_{10}	$PM_{2.5}$			PM	PM_{10}	$PM_{2.5}$	PM	PM_{10}	$PM_{2.5}$	Short-term PM	Short-term PM_{10}	Short-term $PM_{2.5}$	Annual PM	Annual PM_{10}	Annual $PM_{2.5}$
1	GRNCLN_1	Flaker Grain Cleaner [a]	8,760 hr/yr	70 ton/hr	394,000 ton/yr	0.075 lb/ton	0.0190 lb/ton	0.0032 lb/ton	10.50 lb/hr	2.66 lb/hr	0.45 lb/hr	29.55 tpy	7.49 tpy	1.26 tpy	80 %	white mineral oil + cyclone @ 50% already in emission factor	1.050 lb/hr	0.266 lb/hr	0.045 lb/hr	2.955 tpy	0.749 tpy	0.126 tpy	0.1323 g/s	0.0335 g/s	0.0056 g/s	0.0850 g/s	0.0215 g/s	0.0036 g/s
2	FLAKR_2	Grain Flaker (24" x 56" roller) [1, 2, b]	8,760 hr/yr	25 ton/hr	394,000 ton/yr	0.150 lb/ton	0.075 lb/ton	0.0126 lb/ton	7.50 lb/hr	3.75 lb/hr	0.63 lb/hr	59.10 tpy	29.55 tpy	4.98 tpy	0 %	50% for cyclone - already in emission factor	3.750 lb/hr	1.875 lb/hr	0.316 lb/hr	29.55 tpy	14.78 tpy	2.488 tpy	0.4725 g/s	0.2362 g/s	0.0398 g/s	0.4250 g/s	0.2125 g/s	0.0358 g/s
3	FLAKR_3	Grain Flaker (24" x 48" roller) [1, 2, b]	8,760 hr/yr	20 ton/hr		0.150 lb/ton	0.075 lb/ton	0.0126 lb/ton	6.00 lb/hr	3.00 lb/hr	0.51 lb/hr				0 %		3.000 lb/hr	1.500 lb/hr	0.253 lb/hr				0.3780 g/s	0.1890 g/s	0.0318 g/s	0.4250 g/s	0.2125 g/s	0.0358 g/s
4	FLKFD_4	Flaked Grain Loadout Conveyor (corn) [1, 2, c]	8,760 hr/yr	50 ton/hr	458,000 ton/yr	0.0033 lb/ton	0.0008 lb/ton	0.0001 lb/ton	0.17 lb/hr	0.04 lb/hr	0.01 lb/hr	0.76 tpy	0.18 tpy	0.03 tpy	0 %	no control	0.165 lb/hr	0.040 lb/hr	0.007 lb/hr	0.756 tpy	0.183 tpy	0.031 tpy	0.0208 g/s	0.0050 g/s	0.0008 g/s	0.0109 g/s	0.0026 g/s	0.0004 g/s
5	FLKFD_5	Flaked Grain Loadout Conveyor (milo) [1, 2, c]	8,760 hr/yr	100 ton/hr		0.0033 lb/ton	0.0008 lb/ton	0.0001 lb/ton	0.33 lb/hr	0.08 lb/hr	0.01 lb/hr				0 %	no control	0.330 lb/hr	0.080 lb/hr	0.013 lb/hr				0.0416 g/s	0.0101 g/s	0.0017 g/s	0.0109 g/s	0.0026 g/s	0.0004 g/s
6	BOIL_6	Boiler [d]	8,760 hr/yr	26.4 MMBtu/hr	231,264 MMBtu/yr	0.0075 lb/MMBtu	0.0075 lb/MMBtu	0.0075 lb/MMBtu	0.20 lb/hr	0.20 lb/hr	0.20 lb/hr	0.86 tpy	0.86 tpy	0.86 tpy	0 %	no control	0.197 lb/hr	0.197 lb/hr	0.197 lb/hr	0.862 tpy	0.862 tpy	0.862 tpy	0.0248 g/s	0.0248 g/s	0.0248 g/s	0.0248 g/s	0.0248 g/s	0.0248 g/s
7a	TRKREC_7a	Grain Receiving Pit (Truck) [e]	8,760 hr/yr	140 ton/hr	280,000 ton/yr	0.017 lb/ton	0.0025 lb/ton	0.0004 lb/ton	2.38 lb/hr	0.35 lb/hr	0.06 lb/hr	2.38 tpy	0.35 tpy	0.06 tpy	0 %	no control	2.380 lb/hr	0.350 lb/hr	0.059 lb/hr	2.380 tpy	0.350 tpy	0.059 tpy	0.1499 g/s	0.0220 g/s	0.0037 g/s	0.0342 g/s	0.0050 g/s	0.0008 g/s
7b	TRKREC_7b	Grain Receiving Pit (Truck) [e]	8,760 hr/yr																				0.1499 g/s	0.0220 g/s	0.0037 g/s	0.0342 g/s	0.0050 g/s	0.0008 g/s
8	HEAD_8	Headhouse (includes enclosed cleaner) [f]	8,760 hr/yr	140 ton/hr	560,000 ton/yr	0.061 lb/ton	0.034 lb/ton	0.0058 lb/ton	8.54 lb/hr	4.76 lb/hr	0.81 lb/hr	17.08 tpy	9.52 tpy	1.62 tpy	80 %	white mineral oil	1.708 lb/hr	0.952 lb/hr	0.162 lb/hr	3.416 tpy	1.904 tpy	0.325 tpy	0.2152 g/s	0.1199 g/s	0.0205 g/s	0.0983 g/s	0.0548 g/s	0.0093 g/s
9	BVMN_9	Storage Bin Vents (main elevator) [g]	8,760 hr/yr	N/A	560,000 ton/yr	0.025 lb/ton	0.0063 lb/ton	0.0011 lb/ton	1.60 lb/hr	0.40 lb/hr	0.07 lb/hr	7.00 tpy	1.76 tpy	0.31 tpy	80 %	white mineral oil	0.320 lb/hr	0.081 lb/hr	0.014 lb/hr	1.400 tpy	0.353 tpy	0.062 tpy	0.0403 g/s	0.0101 g/s	0.0018 g/s	0.0403 g/s	0.0101 g/s	0.0018 g/s
10	BVMN_10	Storage Bin Vents (elevator annex) [g]	8,760 hr/yr	N/A	560,000 ton/yr	0.025 lb/ton	0.0063 lb/ton	0.0011 lb/ton	1.60 lb/hr	0.40 lb/hr	0.07 lb/hr	7.00 tpy	1.76 tpy	0.31 tpy	80 %	white mineral oil	0.320 lb/hr	0.081 lb/hr	0.014 lb/hr	1.400 tpy	0.353 tpy	0.062 tpy	0.0403 g/s	0.0101 g/s	0.0018 g/s	0.0403 g/s	0.0101 g/s	0.0018 g/s
11a	TRK_11a	Whole Grain Loadout [c]	8,760 hr/yr	140 ton/hr	28,000 ton/yr	0.0033 lb/ton	0.0008 lb/ton	0.0001 lb/ton	0.46 lb/hr	0.11 lb/hr	0.02 lb/hr	0.05 tpy	0.01 tpy	0.00 tpy	80 %	white mineral oil	0.092 lb/hr	0.022 lb/hr	0.004 lb/hr	0.009 tpy	0.002 tpy	0.000 tpy	0.0116 g/s	0.0028 g/s	0.0005 g/s	0.0003 g/s	0.0001 g/s	0.0000 g/s
11b	TRK_11b	Whole Grain Loadout [c]	8,760 hr/yr	420 ton/hr	560,000 ton/yr	0.0033 lb/ton	0.0008 lb/ton	0.0001 lb/ton	1.39 lb/hr	0.34 lb/hr	0.06 lb/hr	0.92 tpy	0.22 tpy	0.04 tpy	80 %	white mineral oil	0.277 lb/hr	0.067 lb/hr	0.011 lb/hr	0.185 tpy	0.045 tpy	0.008 tpy	0.0349 g/s	0.0085 g/s	0.0014 g/s	0.0053 g/s	0.0013 g/s	0.0002 g/s
12	SHUT_12	Grain Receiving Pit (Rail) [e]	8,760 hr/yr	1,400 ton/hr	560,000 ton/yr	0.017 lb/ton	0.0025 lb/ton	0.0004 lb/ton	23.80 lb/hr	3.50 lb/hr	0.59 lb/hr	4.76 tpy	0.70 tpy	0.12 tpy	90 %	Brock Dustmaster 90% control	2.380 lb/hr	0.350 lb/hr	0.059 lb/hr	0.476 tpy	0.070 tpy	0.012 tpy	0.2999 g/s	0.0441 g/s	0.0074 g/s	0.0137 g/s	0.0020 g/s	0.0003 g/s
13		Hammermill [2, 3, h]	8,760 hr/yr	20 ton/hr	350,400 ton/yr	0.134 lb/ton	0.067 lb/ton	0.0113 lb/ton	2.68 lb/hr	1.34 lb/hr	0.23 lb/hr	23.48 tpy	11.74 tpy	1.98 tpy	90 %	white mineral oil and cyclone combination	0.268 lb/hr	0.134 lb/hr	0.023 lb/hr	2.348 tpy	1.174 tpy	0.198 tpy	0.0338 g/s	0.0169 g/s	0.0028 g/s	0.0338 g/s	0.0169 g/s	0.0028 g/s
14		Hammermill [2, 3, h]	8,760 hr/yr	20 ton/hr		0.134 lb/ton	0.067 lb/ton	0.0113 lb/ton	2.68 lb/hr	1.34 lb/hr	0.23 lb/hr				90 %	white mineral oil and cyclone combination	0.268 lb/hr	0.134 lb/hr	0.023 lb/hr				0.0338 g/s	0.0169 g/s	0.0028 g/s	0.0338 g/s	0.0169 g/s	0.0028 g/s
15	GRDGRN_A	Ground Grain Loadout [2, c]	8,760 hr/yr	150.0 ton/hr	350,400 ton/yr	0.0033 lb/ton	0.0008 lb/ton	0.0001 lb/ton	0.50 lb/hr	0.12 lb/hr	0.02 lb/hr	0.58 tpy	0.14 tpy	0.02 tpy	80 %	white mineral oil	0.099 lb/hr	0.024 lb/hr	0.004 lb/hr	0.116 tpy	0.028 tpy	0.005 tpy	0.0125 g/s	0.0030 g/s	0.0005 g/s	0.0033 g/s	0.0008 g/s	0.0001 g/s
16	GRDTRK_B	Ground Grain Receiving Pit (truck) at Temporary Rail Loadout [2, e]	8,760 hr/yr	100.0 ton/hr	35,000 ton/yr	0.0170 lb/ton	0.0025 lb/ton	0.0004 lb/ton	1.70 lb/hr	0.25 lb/hr	0.04 lb/hr	0.30 tpy	0.04 tpy	0.01 tpy	80 %	white mineral oil	0.340 lb/hr	0.050 lb/hr	0.008 lb/hr	0.060 tpy	0.009 tpy	0.001 tpy	0.0428 g/s	0.0063 g/s	0.0011 g/s	0.0017 g/s	0.0003 g/s	0.0000 g/s
17	GRDRAL_C	Temporary Ground Grain Railcar Loadout [2, c]	8,760 hr/yr	100.0 ton/hr	35,000 ton/yr	0.0033 lb/ton	0.0008 lb/ton	0.0001 lb/ton	0.33 lb/hr	0.08 lb/hr	0.01 lb/hr	0.06 tpy	0.01 tpy	0.00 tpy	80 %	white mineral oil	0.066 lb/hr	0.016 lb/hr	0.003 lb/hr	0.012 tpy	0.003 tpy	0.0005 tpy	0.0083 g/s	0.0020 g/s	0.0003 g/s	0.0003 g/s	0.0001 g/s	0.0000 g/s
18	DDGTRK_D	DDG Loadout #1 [2, c]	8,760 hr/yr	140.0 ton/hr	240,000 ton/yr	0.0033 lb/ton	0.0008 lb/ton	0.0001 lb/ton	0.46 lb/hr	0.11 lb/hr	0.02 lb/hr	0.40 tpy	0.10 tpy	0.02 tpy	0 %	coarse material	0.462 lb/hr	0.112 lb/hr	0.019 lb/hr	0.396 tpy	0.096 tpy	0.016 tpy	0.0582 g/s	0.0141 g/s	0.0024 g/s	0.0114 g/s	0.0028 g/s	0.0005 g/s
19	DDGTRK_E	DDG Loadout #2 [2, c]	8,760 hr/yr	140.0 ton/hr	240,000 ton/yr	0.0033 lb/ton	0.0008 lb/ton	0.0001 lb/ton	0.46 lb/hr	0.11 lb/hr	0.02 lb/hr	0.40 tpy	0.10 tpy	0.02 tpy	0 %	coarse material	0.462 lb/hr	0.112 lb/hr	0.019 lb/hr	0.396 tpy	0.096 tpy	0.016 tpy	0.0582 g/s	0.0141 g/s	0.0024 g/s	0.0114 g/s	0.0028 g/s	0.0005 g/s
20	DDGPIL_F	DDG outside storage (estimated max area 700 x 700 ft by 15 ft high) [2, i]	11.25 acres	500.0 ton/hr	50,000 ton/yr	4.9 lb/day/acre	2.5 lb/day/acre	0.4 lb/day/acre	2.30 lb/hr	1.15 lb/hr	0.19 lb/hr	10.07 tpy	5.03 tpy	0.85 tpy	100 %	tarp covering	0.000 lb/hr	0.000 lb/hr	0.000 lb/hr	0.000 tpy	0.000 tpy	0.0000 tpy	0.0000 g/s	0.0000 g/s	0.0000 g/s	0.0000 g/s	0.0000 g/s	0.0000 g/s
21	DDGTRK_G	DDG outside truck loadout (front end loader) [2, i]	8,760 hr/yr	150.0 ton/hr	50,000 ton/yr	0.0033 lb/ton	0.0008 lb/ton	0.0001 lb/ton	0.50 lb/hr	0.12 lb/hr	0.02 lb/hr	0.08 tpy	0.02 tpy	0.00 tpy	0 %	coarse material	0.495 lb/hr	0.120 lb/hr	0.020 lb/hr	0.083 tpy	0.020 tpy	0.003 tpy	0.0624 g/s	0.0151 g/s	0.0025 g/s	0.0024 g/s	0.0006 g/s	0.0001 g/s
25		Truck Traffic Fugitive Dust Emissions [i]	8,760 hr/yr			j	j	j	7.78 lb/hr	1.89 lb/hr	0.18 lb/hr	34.10 tpy	8.30 tpy	0.83 tpy	various	see Application Addendum	0.87 lb/hr	0.21 lb/hr	0.02 lb/hr	3.81 tpy	0.93 tpy	0.09 tpy	0.1097 g/s	0.0268 g/s	0.0026 g/s	0.1097 g/s	0.0268 g/s	0.0026 g/s
26		DDG Barn [6]	8,760 hr/yr																									
26a		DDG Barn - transfer to barn storage pile		400.0 ton/hr	240,000 ton/yr	0.0033 lb/ton	0.0008 lb/ton	0.0001 lb/ton	1.320 lb/hr	0.320 lb/hr	0.040 lb/hr	0.396 tpy	0.096 tpy	0.012 tpy	0 %	30 %	0.924 lb/hr	0.224 lb/hr	0.028 lb/hr	0.277 tpy	0.067 tpy	0.008 tpy	k	k	k	k	k	k
26b		DDG Barn - transfer to loadout reclaim pit		280.0 ton/hr	240,000 ton/yr	0.0033 lb/ton	0.0008 lb/ton	0.0001 lb/ton	0.924 lb/hr	0.224 lb/hr	0.028 lb/hr	0.396 tpy	0.096 tpy	0.012 tpy	0 %	30 %	0.647 lb/hr	0.157 lb/hr	0.020 lb/hr	0.277 tpy	0.067 tpy	0.008 tpy	k	k	k	k	k	k
27		Whole Corn Barn [6]	8,760 hr/yr																									
27a		Whole Corn Barn - transfer to barn storage pile		40.0 ton/hr	115,000 ton/yr	0.0033 lb/ton	0.0008 lb/ton	0.0001 lb/ton	0.132 lb/hr	0.032 lb/hr	0.004 lb/hr	0.190 tpy	0.046 tpy	0.006 tpy	80 %	30 %	0.018 lb/hr	0.004 lb/hr	0.001 lb/hr	0.027 tpy	0.006 tpy	0.001 tpy	k	k	k	k	k	k
27b		Whole Corn Barn - transfer to reclaim pit		60.0 ton/hr	115,000 ton/yr	0.0033 lb/ton	0.0008 lb/ton	0.0001 lb/ton	0.198 lb/hr	0.048 lb/hr	0.006 lb/hr	0.190 tpy	0.046 tpy	0.006 tpy	80 %	30 %	0.028 lb/hr	0.007 lb/hr	0.001 lb/hr	0.027 tpy	0.006 tpy	0.001 tpy	k	k	k	k	k	k
28		Ground Corn Barn [6]	8,760 hr/yr																									
28a		Ground Corn Barn - transfer to barn storage pile		40.0 ton/hr	350,400 ton/yr	0.0033 lb/ton	0.0008 lb/ton	0.0001 lb/ton	0.132 lb/hr	0.032 lb/hr	0.004 lb/hr	0.578 tpy	0.140 tpy	0.018 tpy	80 %	30 %	0.018 lb/hr	0.004 lb/hr	0.001 lb/hr	0.081 tpy	0.020 tpy	0.002 tpy	k	k	k	k	k	k
28b		Ground Corn Barn - transfer to loadout reclaim pit		150.0 ton/hr	350,400 ton/yr	0.0033 lb/ton	0.0008 lb/ton	0.0001 lb/ton	0.495 lb/hr	0.120 lb/hr	0.015 lb/hr	0.578 tpy	0.140 tpy	0.018 tpy	80 %	30 %	0.069 lb/hr	0.017 lb/hr	0.002 lb/hr	0.081 tpy	0.020 tpy	0.002 tpy	k	k	k	k	k	k
29		Flaked Corn Barn [6]	8,760 hr/yr																									
29a		Flaked Corn Barn - transfer to barn storage pile		45.0 ton/hr	197,000 ton/yr	0.0033 lb/ton	0.0008 lb/ton	0.0001 lb/ton	0.149 lb/hr	0.036 lb/hr	0.005 lb/hr	0.325 tpy	0.079 tpy	0.010 tpy	0 %	30 %	0.104 lb/hr	0.025 lb/hr	0.003 lb/hr	0.228 tpy	0.055 tpy	0.007 tpy	k	k	k	k	k	k
29b		Flaked Corn Barn - transfer to loadout reclaim pit		50.0 ton/hr	229,000 ton/yr	0.0033 lb/ton	0.0008 lb/ton	0.0001 lb/ton	0.165 lb/hr	0.040 lb/hr	0.005 lb/hr	0.378 tpy	0.092 tpy	0.011 tpy	0 %	30 %	0.116 lb/hr	0.028 lb/hr	0.004 lb/hr	0.264 tpy	0.064 tpy	0.008 tpy	k	k	k	k	k	k
30		Flaked Milo Barn [6]	8,760 hr/yr																									
30a		Flaked Milo Barn - transfer to barn storage pile		45.0 ton/hr	197,000 ton/yr	0.0033 lb/ton	0.0008 lb/ton	0.0001 lb/ton	0.149 lb/hr	0.036 lb/hr	0.005 lb/hr	0.325 tpy	0.079 tpy	0.010 tpy	0 %	30 %	0.104 lb/hr	0.025 lb/hr	0.003 lb/hr	0.228 tpy	0.055 tpy	0.007 tpy	k	k	k	k	k	k
30b		Flaked Milo Barn - transfer to loadout reclaim pit		100.0 ton/hr	229,000 ton/yr	0.0033 lb/ton	0.0008 lb/ton	0.0001 lb/ton	0.330 lb/hr	0.080 lb/hr	0.010 lb/hr	0.378 tpy	0.092 tpy	0.011 tpy	0 %	30 %	0.231 lb/hr	0.056 lb/hr	0.007 lb/hr	0.264 tpy	0.064 tpy	0.008 tpy	k	k	k	k	k	k
31		Fines Shed [6]	8,760 hr/yr																									
31a		Fines Shed - loading to barn storage pile		0.2 ton/hr	1,825 ton/yr	0.0033 lb/ton	0.0008 lb/ton	0.0001 lb/ton	0.001 lb/hr	0.000 lb/hr	0.000 lb/hr	0.003 tpy	0.001 tpy	0.000 tpy	0 %	30 %	0.000 lb/hr	0.000 lb/hr	0.000 lb/hr	0.002 tpy	0.001 tpy	0.000 tpy	k	k	k	k	k	k
31b		Fines Shed - loadout to ground grain barn		0.2 ton/hr	1,825 ton/yr	0.0033 lb/ton	0.0008 lb/ton	0.0001 lb/ton	0.001 lb/hr	0.000 lb/hr	0.000 lb/hr	0.003 tpy	0.001 tpy	0.000 tpy	0 %	30 %	0.000 lb/hr	0.000 lb/hr	0.000 lb/hr	0.002 tpy	0.001 tpy	0.000 tpy	k	k	k	k	k	k
								Total	87.83	27.07	4.56	202.65	78.80	13.42		Total	21.56	7.32	1.36	52.36	22.43	4.42						

Table 2

Gavilon Peavey Grain West - Clovis, NM

Requested Permit Limits - Potential to Emit Emissions Calculations

[1] No mineral oil control - grain is heated and as a result, mineral oil removed. 80% control in permit is incorrect. Cyclone controls only for the flaker.

[2] Emission factor for $PM_{2.5}$ is scaled to the ratio of $PM_{2.5}$ to PM_{10} of 17% based on flaker grain cleaner emission factors from Table 9.9.1-1

[3] The hammermills are controlled via cyclone. The control efficiency is already accounted for in the emission factor. However, in addition to the cyclone control, an additional 80% control is added for the application of mineral oil, which accounts for 90% total control. Therefore the controlled emission factor is multiplied by 2 to account for the 50% control of cyclone to represent an uncontrolled emission factor.

[4] For barns, enclosure control efficiency 30% included in PTE for all barn enclosures, per NMED guidance (Sandy Spoon email 03/18/2010). 80% control for oil.

[5] whole corn barn and ground corn barn uncontrolled includes 80% control for oil required by the permit to be applied to incoming grain

[6] rate of flaked corn and milo transfer to barns is limited by permit to total flaker limit of 394,000 tons per year; or 197,000 tons per year each for flaked corn and flaked milo
ground corn transfers are limited by permit to total hammermill capacity and ground grain loadout limit of 350,400 tons per year
rate of DDG loadout is limited by the capacity of equipment and DDG flow characteristics. DDG loadout by rail is slower than corn loadout
rate of fines production is assumed 5 tons per day maximum; 2 tons per day is typical
whole corn barn holds 11,500 tons and is generally filled once or twice a year. Annual capacity assumes the barn is filled 10 times per year.

Source of Emission Factors

[a] Emission factor (EF) from AP42 Section 9.9.1, Table 9.9.1-1: Grain cleaning (cyclone controlled). EF multiplied by 2 for uncontrolled emissions because 50% controlled assumed for cyclone.

[b] EF from AP42 Section 9.9.1, Table 9.9.1-2: Grain milling - Flaker (cyclone controlled).

[c] EF from AP42 Section 9.9.1, Table 9.9.1-2: Feed shipping.

[d] EF from AP42 Section 1.4, Table 1.4-2.

[e] EF from AP42 Section 9.9.1, Table 9.9.1-2: Animal Feed Mills - Grain receiving.

[f] EF from AP42 Section 9.9.1, Table 9.9.1-1: Headhouse.

[g] EF from AP42 Section 9.9.1, Table 9.9.1-1: Storage bin (vent).

[h] EF from AP42 Section 9.9.1, Table 9.9.1-2: Grain milling - hammermill (cyclone controlled).

[i] From Air Pollution Engineering Manual Section 4 - Fugitive Emissions, Storage-Pile Wind Erosion Equation 4

$E = 1.7 * (s/1.5) * [(365 - p)/(235)] * (f/15) = 4.9$ lb/day/acre

2.0 % = s - silt content % assumed

60 days = p - number of days w/≥ 0.01 inch of precipitation per year (from Figure 13.2.2-1 of AP42)

25.0 % = f - percentage of time that the unobstructed wind speed exceeds 12 mph - assumed

[i] Truck Traffic Emissions from AP42 Section 13.2.2. See Addendum for calculation details

[k] See Addendum for modeled emission rates

Sample Emission Calculations

	Uncontrolled	
Grain Flakers & Hammermills	(lb / ton) (ton / hr) / [(100 - 50) / 100] = lb/hr	
	(lb / ton) (ton / yr) (ton / 2000 lb) / [(100 - 50) / 100] = tpy	
Boiler	(lb / MMBtu) (MMBtu / hr) [(100 - % control) / 100] = lb/hr	
	(lb / MMBtu) (MMBtu / yr) [(100 - % control) / 100] = tpy	

	Uncontrolled	
All Other Sources (except flakers, hammermills & boilers)	(lb / ton) (ton / hr) = lb/hr	
	(lb / ton) (ton / yr) (ton / 2000 lb) = tpy	

Controlled	Controlled
(lb / ton) (ton / hr) [(100 - % control) / 100] = lb/hr	(lb / MMBtu) (MMBtu / hr) [(100 - % control) / 100] = lb/hr
(lb / ton) (ton / yr) (ton / 2000 lb) [(100 - % control) / 100] = tpy	(lb / MMBtu) (MMBtu / yr) [(100 - % control) / 100] = tpy

Table 2a

Gavilon Peavey Grain West - Clovis, NM

Requested Permit Limits Gaseous Emissions Calculations for Boiler

Boiler Data			
Make	Superior / Holman	**Hours of Operation**	8,760 hr/yr
Duty (Input)	26.40 MMBtu/hr	**Fuel Consumption**	0.0259 MMscf/hr
Heating Value of Natural Gas [1]	1,020 Btu/scf	**Fuel Consumption**	226.73 MMscf/yr

Pollutant	Emission Factors	Short-term		Annual	
		lb/hr	g/sec	tpy	g/sec
NO_x [2]	100.0 lb/MMscf	2.59	0.3261	11.34	0.3261
CO [2]	84.0 lb/MMscf	2.17	0.2739	9.52	0.2739
VOC [2]	5.5 lb/MMscf	0.14	0.0179	0.62	0.0179
SO_2 [2]	0.6 lb/MMscf	0.0155	0.0020	0.0680	0.0020

[1] Natural gas heating value is from AP42 Section 1.4 Natural Gas Combustion

[2] Emission factors are from AP42 Section 1.4, Tables 1.4-1 & 1.4-2.

Sample Calculations:

(MMBtu / hr) / (Btu / scf) = MMscf / hr

(lb / MMscf) (MMscf / hr) = lb / hr

(MMBtu / hr) / (Btu / scf) (8,760 hr / yr) = MMscf / yr

(lb / MMscf) (MMscf / yr) (ton / 2,000 lb) = tpy

Table 2b

Gavilon Peavey Grain West - Clovis, NM

HAP Emissions Calculations for Boiler

Boiler Data			
Make	Superior / Holman	**Hours of Operation**	8,760 hr/yr
Duty (Input)	26.40 MMBtu/hr	**Fuel Consumption**	0.0259 MMscf/hr
Heating Value of Natural Gas [1]	1,020 Btu/scf	**Fuel Consumption**	226.73 MMscf/yr

Pollutant	Type [1]	Emission Factor (lb/MMscf) [2]	Emission Rates One Boiler		
			(lb/hr)	(lbs/yr)	(tpy)
2-Methylnaphthalene	HAP	2.4E-05	6.21E-07	5.44E-03	2.72E-06
3-Methylchloranthrene	HAP	1.8E-06	4.66E-08	4.08E-04	2.04E-07
7,12-Dimethylbenz(a)anthracene	HAP	1.6E-05	4.14E-07	3.63E-03	1.81E-06
Acenaphthene	HAP	1.8E-06	4.66E-08	4.08E-04	2.04E-07
Acenaphthylene	HAP	1.8E-06	4.66E-08	4.08E-04	2.04E-07
Anthracene	HAP	2.4E-06	6.21E-08	5.44E-04	2.72E-07
Benz(a)anthracene	HAP	1.8E-06	4.66E-08	4.08E-04	2.04E-07
Benzene	HAP	2.1E-03	5.44E-05	4.76E-01	2.38E-04
Benzo(a)pyrene	HAP	1.2E-06	3.11E-08	2.72E-04	1.36E-07
Benzo(b)fluoranthene	HAP	1.8E-06	4.66E-08	4.08E-04	2.04E-07
Benzo(g,h,i)perylene	HAP	1.2E-06	3.11E-08	2.72E-04	1.36E-07
Benzo(k)fluoranthene	HAP	1.8E-06	4.66E-08	4.08E-04	2.04E-07
Chrysene	HAP	1.8E-06	4.66E-08	4.08E-04	2.04E-07
Dibenzo(a,h)anthracene	HAP	1.2E-06	3.11E-08	2.72E-04	1.36E-07
Dichlorobenzene	HAP	1.2E-03	3.11E-05	2.72E-01	1.36E-04
Fluoranthene	HAP	3.0E-06	7.76E-08	6.80E-04	3.40E-07
Fluorene	HAP	2.8E-06	7.25E-08	6.35E-04	3.17E-07
Formaldehyde	HAP	7.5E-02	1.94E-03	1.70E+01	8.50E-03
Hexane	HAP	1.8E+00	4.66E-02	4.08E+02	**2.04E-01**
Indeno(1,2,3-cd)pyrene	HAP	1.8E-06	4.66E-08	4.08E-04	2.04E-07
Naphthalene	HAP	6.1E-04	1.58E-05	1.38E-01	6.92E-05
Phenanathrene	HAP	1.7E-05	4.40E-07	3.85E-03	1.93E-06
Pyrene	HAP	5.0E-06	1.29E-07	1.13E-03	5.67E-07
Toluene	HAP	3.4E-03	8.80E-05	7.71E-01	3.85E-04

Boiler Total HAPs	**0.21 tpy**
Maximum Individual HAP	**0.20 tpy**

Notes:

[1] Type = HAP for Hazardous Air Pollutant.

[2] Emission factors from AP-42, Section 1.4, Table 1.4-3 (7/98).

Sample Calculations:

(MMBtu / hr) / (Btu / scf) = MMscf / hr

(MMBtu / hr) / (Btu / scf) (8,760 hr / yr) = MMscf / yr

(lb / MMscf) (MMscf / hr) = lb / hr

(lb / MMscf) (MMscf / yr) = lb / yr

(lb / MMscf) (MMscf / yr) (ton / 2,000 lb) = tpy

Table 3
Gavilon Peavey Grain West - Clovis, NM
Net Emissions Increase / Decrease for Requested Changes

Unit No.		Source Description	Current Permitted Emission Rates						New Requested Emission Rates						Net Increase / Decrease					
			PM	PM_{10}	$PM_{2.5}$	PM	PM_{10}	$PM_{2.5}$	PM	PM_{10}	$PM_{2.5}$	PM	PM_{10}	$PM_{2.5}$	PM	PM_{10}	$PM_{2.5}$	PM	PM_{10}	$PM_{2.5}$
1	GRNCLN_1	Flaker Grain Cleaner	2.10 lb/hr	0.53 lb/hr	0.09 lb/hr	3.29 tpy	0.83 tpy	0.14 tpy	1.050 lb/hr	0.266 lb/hr	0.045 lb/hr	2.955 tpy	0.749 tpy	0.126 tpy	(1.05 lb/hr)	(0.27 lb/hr)	(0.04 lb/hr)	(0.33 tpy)	(0.08 tpy)	(0.01 tpy)
2	FLAKR_2	Grain Flaker (24" x 56" roller)	3.00 lb/hr	1.50 lb/hr	0.25 lb/hr	16.43 tpy	8.21 tpy	1.38 tpy	3.750 lb/hr	1.875 lb/hr	0.316 lb/hr	29.550 tpy	14.775 tpy	2.488 tpy	0.75 lb/hr	0.38 lb/hr	0.06 lb/hr	13.13 tpy	6.56 tpy	1.11 tpy
3	FLAKR_3	Grain Flaker (24" x 48" roller)	2.40 lb/hr	1.20 lb/hr	0.20 lb/hr				3.000 lb/hr	1.500 lb/hr	0.253 lb/hr				0.60 lb/hr	0.30 lb/hr	0.05 lb/hr			
4	FLKFD_4	Flaked Grain Loadout Conveyor (corn)	0.17 lb/hr	0.04 lb/hr	0.01 lb/hr	0.76 tpy	0.18 tpy	0.03 tpy	0.165 lb/hr	0.040 lb/hr	0.007 lb/hr	0.756 tpy	0.183 tpy	0.031 tpy	0.00 lb/hr	0.00 lb/hr	0.00 lb/hr	0.00 tpy	0.00 tpy	0.00 tpy
5	FLKFD_5	Flaked Grain Loadout Conveyor (milo)	0.33 lb/hr	0.08 lb/hr	0.01 lb/hr				0.330 lb/hr	0.080 lb/hr	0.013 lb/hr				0.00 lb/hr	0.00 lb/hr	0.00 lb/hr			
6	BOIL_6	Boiler	0.15 lb/hr	0.15 lb/hr	0.15 lb/hr	0.66 tpy	0.66 tpy	0.66 tpy	0.197 lb/hr	0.197 lb/hr	0.197 lb/hr	0.862 tpy	0.862 tpy	0.862 tpy	0.05 lb/hr	0.05 lb/hr	0.05 lb/hr	0.21 tpy	0.21 tpy	0.21 tpy
7a	TRKREC_7a	Grain Receiving Pit (Truck)	25.20 lb/hr	8.26 lb/hr	1.40 lb/hr	2.52 tpy	0.83 tpy	0.14 tpy	2.380 lb/hr	0.350 lb/hr	0.059 lb/hr	2.380 tpy	0.350 tpy	0.059 tpy	(22.82 lb/hr)	(7.91 lb/hr)	(1.34 lb/hr)	(0.14 tpy)	(0.48 tpy)	(0.08 tpy)
7b	TRKREC_7b	Grain Receiving Pit (Truck)																		
8	HEAD_8	Headhouse (includes enclosed cleaner)	1.71 lb/hr	0.95 lb/hr	0.16 lb/hr	0.17 tpy	0.10 tpy	0.02 tpy	1.708 lb/hr	0.952 lb/hr	0.162 lb/hr	3.416 tpy	1.904 tpy	0.325 tpy	0.00 lb/hr	0.00 lb/hr	0.00 lb/hr	3.25 tpy	1.81 tpy	0.31 tpy
9	BVMN_9	Storage Bin Vents (main elevator)	0.02 lb/hr	0.00 lb/hr	0.00 lb/hr	0.07 tpy	0.02 tpy	0.00 tpy	0.320 lb/hr	0.081 lb/hr	0.014 lb/hr	1.400 tpy	0.353 tpy	0.062 tpy	0.30 lb/hr	0.08 lb/hr	0.01 lb/hr	1.33 tpy	0.34 tpy	0.06 tpy
10	BVMN_10	Storage Bin Vents (elevator annex)	0.32 lb/hr	0.08 lb/hr	0.01 lb/hr	1.40 tpy	0.35 tpy	0.06 tpy	0.320 lb/hr	0.081 lb/hr	0.014 lb/hr	1.400 tpy	0.353 tpy	0.062 tpy	0.00 lb/hr	0.00 lb/hr	0.00 lb/hr	0.00 tpy	0.00 tpy	0.00 tpy
11a	TRK_11a	Whole Grain Loadout	2.41 lb/hr	0.81 lb/hr	0.14 lb/hr	0.24 tpy	0.08 tpy	0.01 tpy	0.092 lb/hr	0.022 lb/hr	0.004 lb/hr	0.009 tpy	0.002 tpy	0.000 tpy	(2.32 lb/hr)	(0.79 lb/hr)	(0.13 lb/hr)	(0.23 tpy)	(0.08 tpy)	(0.01 tpy)
11b	TRK_11b	Whole Grain Loadout	7.22 lb/hr	2.44 lb/hr	0.41 lb/hr	4.82 tpy	1.62 tpy	0.27 tpy	0.277 lb/hr	0.067 lb/hr	0.011 lb/hr	0.185 tpy	0.045 tpy	0.008 tpy	(6.95 lb/hr)	(2.37 lb/hr)	(0.40 lb/hr)	(4.63 tpy)	(1.58 tpy)	(0.27 tpy)
12	SHUT_12	Grain Receiving Pit (Rail)	4.48 lb/hr	1.09 lb/hr	0.18 lb/hr	0.90 tpy	0.22 tpy	0.04 tpy	2.380 lb/hr	0.350 lb/hr	0.059 lb/hr	0.476 tpy	0.070 tpy	0.012 tpy	(2.10 lb/hr)	(0.74 lb/hr)	(0.12 lb/hr)	(0.42 tpy)	(0.15 tpy)	(0.02 tpy)
13		Hammermill	0.13 lb/hr	0.07 lb/hr	0.01 lb/hr	1.17 tpy	0.59 tpy	0.10 tpy	0.268 lb/hr	0.134 lb/hr	0.023 lb/hr	2.348 tpy	1.174 tpy	0.198 tpy	0.13 lb/hr	0.07 lb/hr	0.01 lb/hr	1.17 tpy	0.59 tpy	0.10 tpy
14		Hammermill	0.13 lb/hr	0.07 lb/hr	0.01 lb/hr				0.268 lb/hr	0.134 lb/hr	0.023 lb/hr				0.13 lb/hr	0.07 lb/hr	0.01 lb/hr			
15	GRDGRN_A	Ground Grain Loadout							0.099 lb/hr	0.024 lb/hr	0.004 lb/hr	0.116 tpy	0.028 tpy	0.005 tpy	0.10 lb/hr	0.02 lb/hr	0.00 lb/hr	0.12 tpy	0.03 tpy	0.00 tpy
16	GRDTRK_B	Ground Grain Receiving Pit (truck) at Temporary Rail Loadout							0.340 lb/hr	0.050 lb/hr	0.008 lb/hr	0.060 tpy	0.009 tpy	0.001 tpy	0.34 lb/hr	0.05 lb/hr	0.01 lb/hr	0.06 tpy	0.01 tpy	0.00 tpy
17	GRDRAL_C	Temporary Ground Grain Railcar Loadout							0.066 lb/hr	0.016 lb/hr	0.003 lb/hr	0.012 tpy	0.003 tpy	0.000 tpy	0.07 lb/hr	0.02 lb/hr	0.00 lb/hr	0.01 tpy	0.00 tpy	0.00 tpy
18	DDGTRK_D	DDG Loadout #1							0.462 lb/hr	0.112 lb/hr	0.019 lb/hr	0.396 tpy	0.096 tpy	0.016 tpy	0.46 lb/hr	0.11 lb/hr	0.02 lb/hr	0.40 tpy	0.10 tpy	0.02 tpy
19	DDGTRK_E	DDG Loadout #2							0.462 lb/hr	0.112 lb/hr	0.019 lb/hr	0.396 tpy	0.096 tpy	0.016 tpy	0.46 lb/hr	0.11 lb/hr	0.02 lb/hr	0.40 tpy	0.10 tpy	0.02 tpy
20	DDGPIL_F	DDG outside storage (estimated max area 700 x 700 ft by 15 ft high)							0.000 lb/hr	0.000 lb/hr	0.000 lb/hr	0.000 tpy	0.000 tpy	0.000 tpy	0.00 lb/hr	0.00 lb/hr	0.00 lb/hr	0.00 tpy	0.00 tpy	0.00 tpy
21	DDGTRK_G	DDG outside truck loadout (front end loader)							0.495 lb/hr	0.120 lb/hr	0.020 lb/hr	0.083 tpy	0.020 tpy	0.003 tpy	0.50 lb/hr	0.12 lb/hr	0.02 lb/hr	0.08 tpy	0.02 tpy	0.00 tpy
22																				
23																				
24																				
25		Truck Traffic Fugitive Dust Emissions [a]	a	a	a	a	a	a	0.870 lb/hr	0.210 lb/hr	0.020 lb/hr	3.810 tpy	0.930 tpy	0.090 tpy	0.870 lb/hr	0.210 lb/hr	0.020 lb/hr	3.810 tpy	0.930 tpy	0.090 tpy
26		DDG Barn	a	a	a	a	a	a	1.571 lb/hr	0.381 lb/hr	0.048 lb/hr	0.554 tpy	0.134 tpy	0.017 tpy	1.571 lb/hr	0.381 lb/hr	0.048 lb/hr	0.554 tpy	0.134 tpy	0.017 tpy
27		Whole Corn Barn	a	a	a	a	a	a	0.046 lb/hr	0.011 lb/hr	0.001 lb/hr	0.053 tpy	0.013 tpy	0.002 tpy	0.046 lb/hr	0.011 lb/hr	0.001 lb/hr	0.053 tpy	0.013 tpy	0.002 tpy
28		Ground Corn Barn	a	a	a	a	a	a	0.088 lb/hr	0.021 lb/hr	0.003 lb/hr	0.162 tpy	0.039 tpy	0.005 tpy	0.088 lb/hr	0.021 lb/hr	0.003 lb/hr	0.162 tpy	0.039 tpy	0.005 tpy
29		Flaked Corn Barn	a	a	a	a	a	a	0.219 lb/hr	0.053 lb/hr	0.007 lb/hr	0.492 tpy	0.119 tpy	0.015 tpy	0.219 lb/hr	0.053 lb/hr	0.007 lb/hr	0.492 tpy	0.119 tpy	0.015 tpy
30		Flaked Milo Barn	a	a	a	a	a	a	0.335 lb/hr	0.081 lb/hr	0.010 lb/hr	0.492 tpy	0.119 tpy	0.015 tpy	0.335 lb/hr	0.081 lb/hr	0.010 lb/hr	0.492 tpy	0.119 tpy	0.015 tpy
31		Fines Shed	a	a	a	a	a	a	0.001 lb/hr	0.000 lb/hr	0.000 lb/hr	0.004 tpy	0.001 tpy	0.000 tpy	0.001 lb/hr	0.000 lb/hr	0.000 lb/hr	0.004 tpy	0.001 tpy	0.000 tpy
		Total	**49.8 lb/hr**	**17.3 lb/hr**	**3.0 lb/hr**	**32.4 tpy**	**13.7 tpy**	**2.9 tpy**	**21.6 lb/hr**	**7.3 lb/hr**	**1.4 lb/hr**	**52.4 tpy**	**22.4 tpy**	**4.4 tpy**	**-28.2 lb/hr**	**-10.0 lb/hr**	**-1.7 lb/hr**	**20.0 tpy**	**8.7 tpy**	**1.6 tpy**

Section 7

Information Used To Determine Emissions

Information Used to Determine Emissions shall include the following:

- ☐ If manufacturer data are used, include specifications for emissions units and control equipment, including control efficiencies specifications and sufficient engineering data for verification of control equipment operation, including design drawings, test reports, and design parameters that affect normal operation.
- ☐ If test data are used, include a copy of the complete test report. If the test data are for an emissions unit other than the one being permitted, the emission units must be identical. Test data may not be used if any difference in operating conditions of the unit being permitted and the unit represented in the test report significantly effect emission rates.
- ☐ If the most current copy of AP-42 is used, reference the section and date located at the bottom of the page. Include a copy of the page containing the emissions factors, and clearly mark the factors used in the calculations.
- ☐ If an older version of AP-42 is used, include a complete copy of the section.
- ☐ If an EPA document or other material is referenced, include a complete copy.
- ☐ Fuel specifications sheet.
- ☐ If computer models are used to estimate emissions, include an input summary (if available) and a detailed report, and a disk containing the input file(s) used to run the model. For tank-flashing emissions, include a discussion of the method used to estimate tank-flashing emissions, relative thresholds (i.e., permit or major source (NSPS, PSD or Title V)), accuracy of the model, the input and output from simulation models and software, all calculations, documentation of any assumptions used, descriptions of sampling methods and conditions, copies of any lab sample analysis.

This Section contains the following:

1. EPA AP-42, Section 9.9-1 and 1.4. (See discussion, next page)

2. The 90% control efficiency for the Brock Dustmaster grain receiving pit dust control system is carried forward from the facility's previous submittals that were approved by the NMED and is not included herein. This information was provided previously to the NMED in the facility's Construction Permit application dated June 30, 2003 to document the 90% control assigned in the facility's current permit.

3. Information describing mineral oil spray and documenting its 80% effectiveness in controlling dust emissions in grain handling operations is carried forward from the facility's previous submittals that were approved by the NMED and is not included herein. This information was provided in the facility's Construction Permit application dated June 30, 2003 and in later transmittals to the NMED dated July 18, 2003 and July 28, 2003 responding to NMED comments to document the 80% control assigned in the facility's current permit.

4. Information describing the de minimis level of mineral oil mist emissions is carried forward from the facility's previous submittals that were approved by the NMED and is not included herein. This information was provided in response to comments dated July 18, 2003 and July 28, 2003 on the facility's Construction Permit application dated June 30, 2003.

Table 9.9.1-1. PARTICULATE EMISSION FACTORS FOR GRAIN ELEVATORS[a]

Emission Source	Type of Control	Filterable[b]					
		PM	EMISSION FACTOR RATING	PM-10[c]	EMISSION FACTOR RATING	PM-2.5[d]	EMISSION FACTOR RATING
Grain receiving (SCC 3-02-005-05)							
Straight truck (SCC 3-02-005-51)	None	0.18[e]	E	0.059[f]	E	0.010[g]	E
Hopper truck (SCC 3-02-005-52)	None	0.035[e]	E	0.0078[f]	E	0.0013[g]	E
Railcar (SCC 3-02-005-53)	None	0.032[f]	E	0.0078[f]	E	0.0013[g]	E
Barge (SCC 3-02-005-54)							
Continuous barge unloader (SCC 3-02-005-56)	None	0.029[h]	E	0.0073[j]	E	0.0019[j]	E
Marine leg (SCC 3-02-005-57)	None	0.15[h]	E	0.038[j]	E	0.0050[j]	E
Ships (SCC 3-02-005-55)	None	0.15[k]	E	0.038[k]	E	0.0050[k]	E
Grain cleaning (SCC 3-02-005-03)							
Internal vibrating (SCC 3-02-005-37)	Cyclone	0.075[m]	E	0.019[n]	E	0.0032[g]	E
Grain drying (SCC 3-02-005-04)							
Column dryer (SCC 3-02-005-27)	None	0.22[p]	E	0.055[n]	E	0.0094[g]	E
Rack dryer (SCC 3-02-005-28)	None	3.0[p]	E	0.75[n]	E	0.13[g]	E
	Self-cleaning screens (<50 mesh)	0.47[p]	E	0.12[n]	E	0.020[g]	E
Headhouse and grain handling (SCC 3-02-005-30) (legs, conveyors, belts, distributor, scale, enclosed cleaners, etc.)	None	0.061[f]	E	0.034[f]	E	0.0058[g]	E
Storage bin (vent) (SCC 3-02-005-40)	None	0.025[q]	E	0.0063[n,q]	E	0.0011[g,q]	E

Table 9.9.1-2. PARTICULATE EMISSION FACTORS FOR GRAIN PROCESSING FACILITIES[a]

Type of Facility/ Emission Source	Type of Control	Filterable[b]				Condensible PM[c]			
		PM	EMISSION FACTOR RATING	PM-10[d]	EMISSION FACTOR RATING	Inorganic	Organic	Total	EMISSION FACTOR RATING
Animal feed mills									
Grain receiving (SCC 3-02-008-02)	None	0.017[e]	E	0.0025[e]	E				
Grain cleaning (SCC 3-02-008-07)	Cyclone	(f)		(f)					
Storage	None	ND		ND					
Grain milling (SCC 3-02-008-15)									
Hammermill (SCC 3-02-008-17)	Cyclone	0.067[h]	E	(g)					
	Baghouse	0.012[j]	E	(y)					
Flaker (SCC 3-02-008-18)	Cyclone	0.15[k]	E	(g)					
Grain cracker (SCC 3-02-008-19)	Cyclone	0.024[k]	E	(g)					
Mixer	None	ND		ND					
Conditioning	None	ND		ND					
Pelletizing									
Pellet cooler[m] (SCC 3-02-008-16)	Cyclone	0.36[n]	E	(g)		--	--	0.059[p]	E
	High efficiency cyclone[r]	0.15[q]	E	(g)					
Feed shipping (SCC 3-02-008-03)	None	0.0033[e]	E	0.0008[s]	E				
Wheat flour mills									
Grain receiving (SCC 3-02-007-31)	None	(f)		(f)					
Grain handling (SCC 3-02-007-32) (legs, belts, etc.)	None	(f)		(f)					

Table 1.4-1. EMISSION FACTORS FOR NITROGEN OXIDES (NO_x) AND CARBON MONOXIDE (CO) FROM NATURAL GAS COMBUSTION[a]

Combustor Type (MMBtu/hr Heat Input) [SCC]	NO_x[b]		CO	
	Emission Factor ($lb/10^6$ scf)	Emission Factor Rating	Emission Factor ($lb/10^6$ scf)	Emission Factor Rating
Large Wall-Fired Boilers (>100) [1-01-006-01, 1-02-006-01, 1-03-006-01]				
Uncontrolled (Pre-NSPS)[c]	280	A	84	B
Uncontrolled (Post-NSPS)[c]	190	A	84	B
Controlled - Low NO_x burners	140	A	84	B
Controlled - Flue gas recirculation	100	D	84	B
Small Boilers (<100) [1-01-006-02, 1-02-006-02, 1-03-006-02, 1-03-006-03]				
Uncontrolled	100	B	84	B
Controlled - Low NO_x burners	50	D	84	B
Controlled - Low NO_x burners/Flue gas recirculation	32	C	84	B
Tangential-Fired Boilers (All Sizes) [1-01-006-04]				
Uncontrolled	170	A	24	C
Controlled - Flue gas recirculation	76	D	98	D
Residential Furnaces (<0.3) [No SCC]				
Uncontrolled	94	B	40	B

[a] Reference 11. Units are in pounds of pollutant per million standard cubic feet of natural gas fired. To convert from $lb/10^6$ scf to $kg/10^6$ m^3, multiply by 16. Emission factors are based on an average natural gas higher heating value of 1,020 Btu/scf. To convert from $1b/10^6$ scf to lb/MMBtu, divide by 1,020. The emission factors in this table may be converted to other natural gas heating values by multiplying the given emission factor by the ratio of the specified heating value to this average heating value. SCC = Source Classification Code. ND = no data. NA = not applicable.

[b] Expressed as NO_2. For large and small wall fired boilers with SNCR control, apply a 24 percent reduction to the appropriate NO_x emission factor. For tangential-fired boilers with SNCR control, apply a 13 percent reduction to the appropriate NO_x emission factor.

[c] NSPS=New Source Performance Standard as defined in 40 CFR 60 Subparts D and Db. Post-NSPS units are boilers with greater than 250 MMBtu/hr of heat input that commenced construction modification, or reconstruction after August 17, 1971, and units with heat input capacities between 100 and 250 MMBtu/hr that commenced construction modification, or reconstruction after June 19, 1984.

TABLE 1.4-2. EMISSION FACTORS FOR CRITERIA POLLUTANTS AND GREENHOUSE GASES FROM NATURAL GAS COMBUSTION[a]

Pollutant	Emission Factor ($lb/10^6$ scf)	Emission Factor Rating
CO_2[b]	120,000	A
Lead	0.0005	D
N_2O (Uncontrolled)	2.2	E
N_2O (Controlled-low-NO_X burner)	0.64	E
PM (Total)[c]	7.6	D
PM (Condensable)[c]	5.7	D
PM (Filterable)[c]	1.9	B
SO_2[d]	0.6	A
TOC	11	B
Methane	2.3	B
VOC	5.5	C

[a] Reference 11. Units are in pounds of pollutant per million standard cubic feet of natural gas fired. Data are for all natural gas combustion sources. To convert from $lb/10^6$ scf to $kg/10^6$ m^3, multiply by 16. To convert from $lb/10^6$ scf to lb/MMBtu, divide by 1,020. The emission factors in this table may be converted to other natural gas heating values by multiplying the given emission factor by the ratio of the specified heating value to this average heating value. TOC = Total Organic Compounds. VOC = Volatile Organic Compounds.

[b] Based on approximately 100% conversion of fuel carbon to CO_2. $CO_2[lb/10^6 scf] = (3.67)(CON)(C)(D)$, where CON = fractional conversion of fuel carbon to CO_2, C = carbon content of fuel by weight (0.76), and D = density of fuel, $4.2x10^4$ $lb/10^6$ scf.

[c] All PM (total, condensible, and filterable) is assumed to be less than 1.0 micrometer in diameter. Therefore, the PM emission factors presented here may be used to estimate PM_{10}, $PM_{2.5}$ or PM_1 emissions. Total PM is the sum of the filterable PM and condensible PM. Condensible PM is the particulate matter collected using EPA Method 202 (or equivalent). Filterable PM is the particulate matter collected on, or prior to, the filter of an EPA Method 5 (or equivalent) sampling train.

[d] Based on 100% conversion of fuel sulfur to SO_2. Assumes sulfur content is natural gas of 2,000 grains/10^6 scf. The SO_2 emission factor in this table can be converted to other natural gas sulfur contents by multiplying the SO_2 emission factor by the ratio of the site-specific sulfur content (grains/10^6 scf) to 2,000 grains/10^6 scf.

TABLE 1.4-3. EMISSION FACTORS FOR SPECIATED ORGANIC COMPOUNDS FROM NATURAL GAS COMBUSTION[a]

CAS No.	Pollutant	Emission Factor ($lb/10^6$ scf)	Emission Factor Rating
91-57-6	2-Methylnaphthalene[b,c]	2.4E-05	D
56-49-5	3-Methylchloranthrene[b,c]	<1.8E-06	E
	7,12-Dimethylbenz(a)anthracene[b,c]	<1.6E-05	E
83-32-9	Acenaphthene[b,c]	<1.8E-06	E
203-96-8	Acenaphthylene[b,c]	<1.8E-06	E
120-12-7	Anthracene[b,c]	<2.4E-06	E
56-55-3	Benz(a)anthracene[b,c]	<1.8E-06	E
71-43-2	Benzene[b]	2.1E-03	B
50-32-8	Benzo(a)pyrene[b,c]	<1.2E-06	E
205-99-2	Benzo(b)fluoranthene[b,c]	<1.8E-06	E
191-24-2	Benzo(g,h,i)perylene[b,c]	<1.2E-06	E
205-82-3	Benzo(k)fluoranthene[b,c]	<1.8E-06	E
106-97-8	Butane	2.1E+00	E
218-01-9	Chrysene[b,c]	<1.8E-06	E
53-70-3	Dibenzo(a,h)anthracene[b,c]	<1.2E-06	E
25321-22-6	Dichlorobenzene[b]	1.2E-03	E
74-84-0	Ethane	3.1E+00	E
206-44-0	Fluoranthene[b,c]	3.0E-06	E
86-73-7	Fluorene[b,c]	2.8E-06	E
50-00-0	Formaldehyde[b]	7.5E-02	B
110-54-3	Hexane[b]	1.8E+00	E
193-39-5	Indeno(1,2,3-cd)pyrene[b,c]	<1.8E-06	E
91-20-3	Naphthalene[b]	6.1E-04	E
109-66-0	Pentane	2.6E+00	E
85-01-8	Phenanathrene[b,c]	1.7E-05	D

TABLE 1.4-3. EMISSION FACTORS FOR SPECIATED ORGANIC COMPOUNDS FROM NATURAL GAS COMBUSTION (Continued)

CAS No.	Pollutant	Emission Factor ($lb/10^6$ scf)	Emission Factor Rating
74-98-6	Propane	1.6E+00	E
129-00-0	Pyrene[b, c]	5.0E-06	E
108-88-3	Toluene[b]	3.4E-03	C

[a] Reference 11. Units are in pounds of pollutant per million standard cubic feet of natural gas fired. Data are for all natural gas combustion sources. To convert from $lb/10^6$ scf to $kg/10^6$ m^3, multiply by 16. To convert from $1b/10^6$ scf to lb/MMBtu, divide by 1,020. Emission Factors preceeded with a less-than symbol are based on method detection limits.

[b] Hazardous Air Pollutant (HAP) as defined by Section 112(b) of the Clean Air Act.

[c] HAP because it is Polycyclic Organic Matter (POM). POM is a HAP as defined by Section 112(b) of the Clean Air Act.

[d] The sum of individual organic compounds may exceed the VOC and TOC emission factors due to differences in test methods and the availability of test data for each pollutant.

Dust Control in the City

Device eliminates most dust emissions from receiving pit.

At ADM Milling Co.'s flour mill in North Kansas City, MO, dust control is more than just a safety program to prevent explosions or something for the comfort of the employees. It's part of being a good neighbor.

The huge 20,000-cwt.-per-day mill sits in the middle of a major metropolitan area. Several fast food restaurants line State Highway 210 along the north side of the plant. A heavily traveled interstate highway borders the west side. Just beyond the interstate on Highway 210 is a large apartment complex. Any deficiencies in dust control are likely to be noticed very quickly.

According to Plant Manager Thaddeus "Ted" Bownik, as of 1996, ADM Milling had achieved control of potential dust emissions from the plant through the use of conventional baghouse filters. The only place plantwide lacking some sort of control system was the busy rail receiving pits along the west side of the plant.

Most grain coming to ADM Milling at North Kansas City arrives by rail. When operating at capacity, workers unload an average of 20 to 25 railcars a day of wheat, taking in roughly 85,000 bushels per day. Bucket elevator legs carry grain to storage or to the cleaning house at a rate of 10,000 bph.

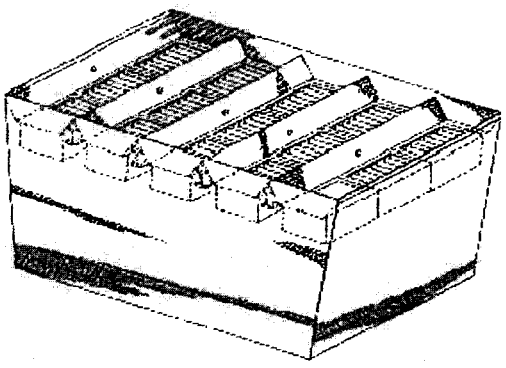
Louver Solution

Engineers at ADM Milling's engineering division in Salina, KS, looked at a number of different options for dust control at the receiving pits. Putting in a baghouse filter would be expensive and difficult to site, given the amount of space available in the plant's cramped "railyard."

Heavy-duty steel louvers installed in receiving pits control the flow of grain into the pits and trap dust inside.

Instead, the engineers decided to try out a new device, the Dustmaster system from ABC Industries, Mendota, IL (800-245-0361).

The Dustmaster system involves rows of heavy steel louvers installed 6 inches below the pit grate cover, which seal the entire receiving pit. When a railcar is unloaded, pneumatically operated cylinders open *only* the louvers directly beneath the unloading area. The rest of the louvers covering the pit during unloading remain closed, blanketing the pit during unloading and physically keeping dust in the pit.



Schematic of Dustmaster dust control system in a receiving pit.

The manufacturer claims the system can control up to 96% of receiving pit dust emissions, a figure Bownik confirms, without slowing down unloading, and is quieter and 50% less expensive than vacuum-operated dust control systems.

"We liked it because it was easy to install," says Mill Superintendent Mike Huerter. "There was no additional horsepower involved, no fans, no ductwork, no big filter, and no aspiration required."

Since the installation of the Dustmaster on the plant's wheat receiving pits, Bownik reports, technicians from the Environmental Protection Agency have monitored air quality around the plant, including the area of the receiving pits, and found it to be well within state and federal guidelines for particulate matter.

Ed Zdrojewski, editor

Reprinted from the July/August/September 1997 MILLING JOURNAL

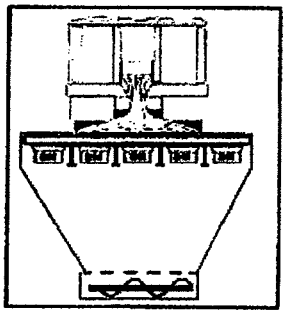
BROCK

DUSTMASTER

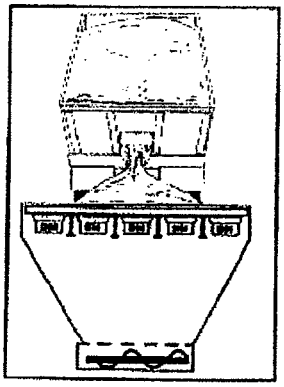
The DUSTMASTER System was designed and constructed by Ken Kearney, product specialist of ABC Industries. Control of dust is accomplished with electrical and pneumatic control of louvers in units that are installed between the I-beams and below the grate in the pit. The concept of the DUSTMASTER system is to choke-load to control the dust. Mineral oil or air are not required.

Both the technique and the concept of choke loading / sealing are patented in the U.S. and foreign countries by ABC Industries.

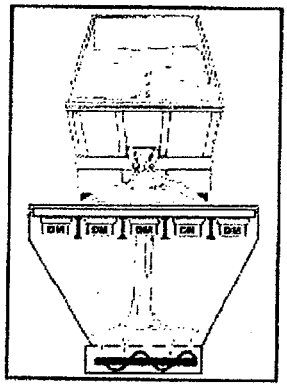
Dustmaster



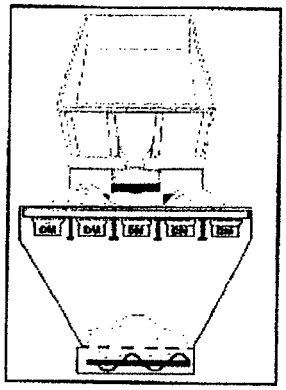
1. When the unloading vehicle rolls onto the receiving pit, the DUSTMASTER louvers are in the closed position. As the vehicle begins to unload, the louvers remain in the closed position until the material reaches a choke load position.



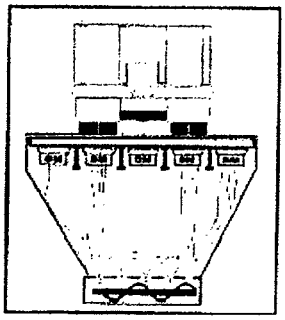
2. When the DUSTMASTER is choke-loaded, it instantly opens only louvers in the middle of the product pile. This allows the material to enter the receiving pit by falling through the pile without slowing the unloading time.



3. The open DUSTMASTER louvers allow material to flow into the hopper, at the same rate as a pit without the DUSTMASTER.



4. When material stops flowing from the unloading vehicle, sensors trigger the opening of all louvers, allowing material piled over previously closed louvers to fall into the receiving hopper.



5. Once the vehicle leaves the receiving area, the DUSTMASTER louvers automatically close, awaiting the next unloading sequence.

ADVANTAGES

The key advantages of the DUSTMASTER are:

* Eliminates up to 96% of receiving pit dust. These results were tested and approved by the Illinois Environmental Protection Agency (IEPA) in 1993.

* Reduces shrinkage. This can pay for the DUSTMASTER in as little as three months (see table).

* Low capital costs. Costs are 50% less than air vacuum systems.

* Does not slow down unloading time.

* No building doors required. Tested to work outside of enclosures by Illinois Environmental Protection Agency (IEPA).

* Low operating costs. No large fans to operate, easy maintenance of the system.

* Safe and quiet.

* Custom fit for any material and pit size.

* 100% guaranteed by ABC.

PERFORMANCE TESTING AND APPROVALS

Initial testing of the DUSTMASTER system was conducted at the Assumption Co-op in Pana, Illinois by Frank and Cowles, Inc. (FCI) for the Illinois Grain & Feed Association of Illinois and the Illinois Environmental Protection Agency (IEPA). The final testing of the DUSTMASTER was conducted by FCI at the Schuyler-Brown ES. grain elevator.

The Schuyler-Brown ES. - Camden facility obtained an Illinois Environmental Protection Agency (IEPA) construction permit which allowed installation of the DUSTMASTER system as an emission control device.

TEST RESULTS

The Illinois Environmental Protection Agency (IEPA) specified the standards of review for approving a dust suppression system at a grain handling facility. They are as follows.

* The dust suppression system must control at least 90% of the total particulate dust as compared to the amount of dust emitted; with no controls, and

* The dust suppression system must not allow a dust cloud which exceeds 30% opacity to exit the dump pit area.

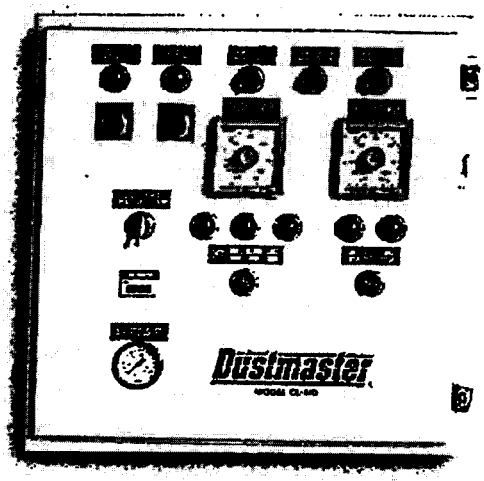
The FCI test concluded that the DUSTMASTER system passed both the particulate and opacity standard by a comfortable margin. *The actual dust control was measured to be 96%.*

The device also demonstrated excellent system reliability during the test despite very cold temperatures.

Dustmaster

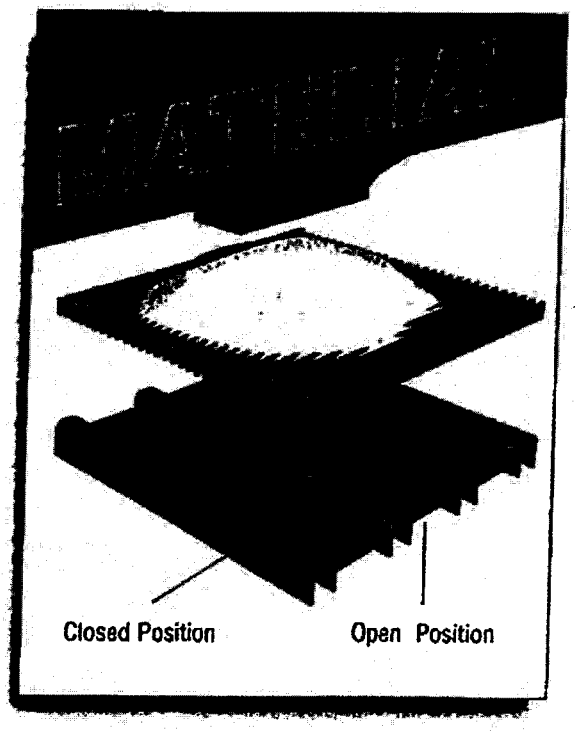
DUSTMASTER

RECEIVING PIT DUST CONTROL



Simple Design

The DUSTMASTER® uses a simple, common-sense patented-design concept that keeps the dust with the material unloaded. Powered by a small air compressor, the DUSTMASTER controls up to 96% of receiving pit dust emissions. By controlling the drop-distance from the unloading vehicle to the pit and blanketing the entire pit, dust is held with the material. The DUSTMASTER eliminates the need for receiving pit aspiration.



How It Works

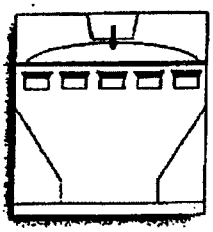
Rows of heavy steel louvers installed eight inches below the pit grate cover and seal the entire pit. Within seconds after a vehicle begins unloading, only the louvers directly beneath the unloading area open. The delayed open allows unloaded material to pile-up close to the discharge spout, reducing the dust created from dropping material. The rest of the DUSTMASTER louvers remain closed, blanketing the pit during unloading, physically keeping dust with the material as it moves through the pit.

Automatic open and close functions are controlled by a single air compressor. Sensor switches trigger the opening of a louver section within each row. Pneumatic cylinders open and close the sections within each row of DUSTMASTER louvers. The DUSTMASTER automatically knows how many louvers to open to control dust and allow material flow.

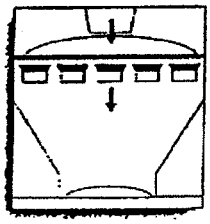
In field tests at multiple commercial facilities conducted with the Illinois EPA, the DUSTMASTER has proven to handle up to 96% of receiving pit dust emissions. It effectively meets all state and federal EPA standards for controlling receiving pit dust emissions.

Dustmaster®

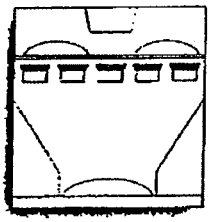
UNLOADING SEQUENCE



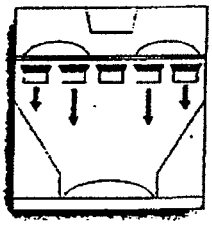
1 When the unloading vehicle rolls onto the receiving pit, DUSTMASTER louvers are in the closed position. As the vehicle begins to unload, the DUSTMASTER louvers are still in the closed position.



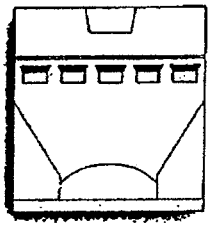
2 When the material is close to the unloading spout, it triggers the sensors, opening only the louvers directly beneath the piled material.



3 The open DUSTMASTER louvers allow material to flow into the hopper, at the same rate as a pit without the DUSTMASTER.



4 When material stops flowing from the unloading vehicle, sensors trigger the opening of all louvers, allowing material piled over previously closed louvers to fall in the receiving hopper.



5 Once the vehicle leaves the receiving area, the DUSTMASTER louvers automatically close, awaiting the next unloading sequence.

Costs

DUSTMASTER capital and installation costs are 50% less than receiving pit vacuum/aspiration systems. Operational energy needs are a faction of vacuum systems. There are no motors to power-up, only a simple air compressor.

Payback

While the DUSTMASTER offers a cleaner work environment, reduced labor in clean-up at the pit and better public relations with your neighbors, the bottom line is always the payback period. Direct payback comes in the form of savings from reduced shrinkage.

For example: Assume a receiving pit at a commercial grain facility has an annual throughput of 3 million bushels of corn (84,000 tons). Only 0.1% shrink is contributed to losses at the receiving pit. With those assumptions, the DUSTMASTER would provide a savings of 3,000 bushels (84 tons) or approximately $12,000 each year. The dustier the commodity, or more expensive, such as ingredients, chemicals, or minerals, the greater the payback from an installed DUSTMASTER.

Speed & Ease of Use

DUSTMASTER-fitted pits easily handle material at the same capacity rates as pits without the DUSTMASTER. It will not slow down unloading or affect unloading capacity. Custom built louvers, based on your pit size and beam placement, cover the entire pit. Automatic sensors open only the appropriate louvers directly under the material flow. The simple design concept makes the DUSTMASTER easy to operate. Using sensors and timers, it is virtually automatic. There are no complicated computer monitors or LED panels to program, read or manipulate.

ABC INDUSTRIES, P.O. Box 266, Mendota, IL 61342, U.S.A., Tel: (815) 539.6721 / Fax: (815) 539.5255

State of Illinois
ENVIRONMENTAL PROTECTION AGENCY

Mary A. Gade, Director

2200 Churchill Road, Springfield, IL 62794-9276

217/785-2113

April 12, 1994

Mr. Jim Frank
Frank & Cowles Inc.
7226 N. Walnut Street
Springfield, IL 62707

Dear Jim:

This letter responds to your letter of April 4, 1994, in which you requested the Agency's interpretation of Section 212.462(b)(1)(D) and Section 212.462(b)(2) as they apply to choke loading control systems.

It is the Agency's determination that choke loading control systems will comply with the above mentioned Section 212.462(b)(2) rule and the Agency will approve operating permits for this type of system without an enclosed dump pit. However, all grain handling facilities are still subject to Section 212.301 which pertains to fugitive emissions beyond the property line.

The Agency also suggests that when choke loading control systems are installed, you may want to consider a shalter or cover to protect the device from the elements and to assure proper operation.

If you have any questions, please feel free to contact Don Hanko at the number indicated above.

Sincerely,

Donald E. Sutton

Donald E. Sutton, P.E.
Manager, Permit Section
Division of Air Pollution

DH:DES:tc

cc: FOS Regional Managers

ABC Industries
P.O. Box 266, Mendota, Illinois U.S.A. 61342 Ph: 815/539.6721 Fax: 815/539.5255

Todd Hammond
ConAgra, Inc.
11 ConAgra DR.
Suite 5032
Omaha, NE 68102

10/3/00

It was good visiting with on the phone yesterday. Enclosed you will find information on the Dustmaster that you requested. If you more info please call me at –
Ph 800/245-0361 ext 104
Also, if needed, I will meet with you and the Wisconsin EPA.

Thank you.

Sincerely,

Ken Kearney

Dust Control in the City

Device eliminates most dust emissions from receiving pit.

At ADM Milling Co.'s flour mill in North Kansas City, MO, dust control is more than just a safety program to prevent explosions or something for the comfort of the employees. It's part of being a good neighbor.

The huge 20,000-cwt.-per-day mill sits in the middle of a major metropolitan area. Several fast food restaurants line State Highway 210 along the north side of the plant. A heavily traveled interstate highway borders the west side. Just beyond the interstate on Highway 210 is a large apartment complex. Any deficiencies in dust control are ''kely to be noticed very quickly.

According to Plant Manager Thaddeus "Ted" Bownik, as of 1996, ADM Milling had achieved control of potential dust emissions from the plant through the use of conventional baghouse filters. The only place plantwide lacking some sort of control system was the busy rail receiving pits along the west side of the plant.

Most grain coming to ADM Milling at North Kansas City arrives by rail. When operating at capacity, workers unload an average of 20 to 25 railcars a day of wheat, taking in roughly 85,000 bushels per day. Bucket elevator legs carry grain to storage or to the cleaning house at a rate of 10,000 bph.

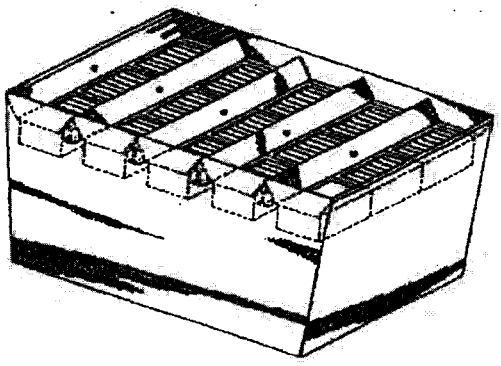
Louver Solution

Engineers at ADM Milling's engineering division in Salina, KS, looked at a number of different options for dust control at the receiving pits. Putting in a baghouse filter would be expensive and dif- ·lt to site, given the amount of ·ce available in the plant's cramped "railyard."

Heavy-duty steel louvers installed in receiving pits control the flow of grain into the pits and trap dust inside.

Instead, the engineers decided to try out a new device, the Dustmaster system from ABC Industries, Mendota, IL (800-245-0361).

The Dustmaster system involves rows of heavy steel louvers installed 6 inches below the pit grate cover, which seal the entire receiving pit. When a railcar is unloaded, pneumatically operated cylinders open *only* the louvers directly beneath the unloading area. The rest of the louvers covering the pit during unloading remain closed, blanketing the pit during unloading and physically keeping dust in the pit.



Schematic of Dustmaster dust control system in a receiving pit.

The manufacturer claims the system can control up to 96% of receiving pit dust emissions, a figure Bownik confirms, without slowing down unloading, and is quieter and 50% less expensive than vacuum-operated dust control systems.

"We liked it because it was easy to install," says Mill Superintendent Mike Huerter. "There was no additional horsepower involved, no fans, no ductwork, no big filter, and no aspiration required."

Since the installation of the Dustmaster on the plant's wheat receiving pits, Bownik reports, technicians from the Environmental Protection Agency have monitored air quality around the plant, including the area of the receiving pits, and found it to be well within state and federal guidelines for particulate matter.

Ed Zdrojewski, editor

RECEIVING PIT DUST CONTROL

In evaluating the options on receiving pit dust control the following issues should be considered:

Question #1. Has the device been approved by the EPA for receiving pit dust control and what is the percent control emissions?

Answer—The Dustmaster went through a series of test's in 1993 conducted by Frank & Cowels, Inc., Springfield, Illinois along with the Illinois Environmental Protection Agency. The device passed all test's in late 1993 and received IEPA approval in late February, 1994. (See attached letter A) The Dustmaster is IEPA approved for 90% receiving pit dust control. On December 27,1993, the Dustmaster controlled 96.8% of dust emissions with choke load conditions. (See attached letter B)

Question #2. Does the Dustmaster do a good job controlling dust with Rail & Truck Hopper unloading?

Answer—The Dustmaster does an excellent job on any hopper unloading that creates a choke load condition. In our IEPA test's, the choke unloading received 96.8% dust control. (This was Truck unloading)

Question #3. What about the ease of installation? In existing pits, the amount of concrete and structural steel cutting and removal will be required? What about new designed pits?

Answer—In most cases, it makes no difference on installing a Dustmaster into existing pits or new constructed pits. There is no concrete removed or structural steel cut when installing a Dustmaster. Sometimes there is a savings to design new pits to fit the Dustmaster. It normally takes two to three days to install a Dustmaster system. (12' X 12' grate area Receiving Pit)

Question #4. What about the cost's to install a dust control system?

Answer—To install a Dustmaster System, it normally cost about 10% to 15%of the list price.

Question # 5. What are the operating cost's to run the dust control system? (Electricity and Maintenance?)

Answer-----The Dustmaster is a louver system that louvers are installed a few inches below the Pit Grate. The louvers are operated by small pneumatic air cylinders . (very small amount of compressed air to operate the system- 80 psi) The electricity to operate is 110 volt with a very small amount of use. THE DUSTMASTER HAS NO BIG AIR VACUUM MOTORS. The Dustmaster works only with the louver system. (It operates with such a small amount of electricity it is difficult to measure.)

Question #6. What about the maintenance on the system?

Answer-------With the design of the Dustmaster, very little maintenance is required.

Question # 7. What is the longevity of the Receiving Pit dust control system?

Answer-------The Dustmaster louvers are manufactured with abrasion resistant steel. (Should last many years)

Question #8. Is the system easy to operate?

Answer-------The Dustmaster system is easy to operate. Set it once on hopper unloading and it is completely automatic.

Question #9. Is the Device safe to operate?

Answer-------The Dustmaster is very safe to operate. The louvers are installed 6 to 8 inches below the pit grate. (Difficult for an employee to reach).
The electric product sensor that is installed in one of the louver sections is intrinsically safe. (No chance for a dust explosion).

Question #10. Does the system slow down the unloading time?

Answer-------The Dustmaster does not slow down the unloading time. The Device was designed and field tested to not slow the unloading time.

Question #11. What about the disposition of dust?

Answer------The Dustmaster's design keeps the dust with the Product.

-Question #12. How much savings is there by installing a dust control system and keeping the dust with the Product? (Less Shrinkage)

Answer------This savings will vary by product, Cost of material, amount of dust in material, what type of Dust Control System and the cost's to operate it. With the Dustmaster , research test's have proven, in some cases, that you can pay for it in less than two years.

Question #13. What is the noise level produced by the system?

Answer------The Dustmaster system makes very little noise.

Question #14. Am I required, by the EPA, to have an enclosure over my receiving pit with quick closing doors?

Answer------With the Dustmaster, with the choke load design, neither is required. It is approved to be installed on an open Receiving Pit. (See attachment C)

Question #15. What about the Electrical Control Panel?

Answer------The Dustmaster Control Panel is custom built for each job. All electrical components are UL approved. We will build the Control Panel to the Customer specifications.

State of Illinois
ENVIRONMENTAL PROTECTION AGENCY

Mary A. Gade, Director

2200 Churchill Road, Springfield, IL 62794-9276

217-782-7326

February 10, 1994

A

Mr. James Frank
Frank & Cowles
7226 N. Walnut
Springfield, Illinois 62707

Dear Jim:

This letter is to advise you that the Illinois Environmental Protection Agency has completed its review of the Frank & Cowles,Inc. report entitled "Air Emission Testing of the Dustmaster", dated January 18, 1994. The IEPA has found the report complete and concurs with its findings.

As the report indicates the Dustmaster system as installed and tested at the Schuyler-Brown F.S. grain elevator located in Camden,Illinois met or exceeded the test protocol limits the IEPA established for the system. Specifically, the Dustmaster met the following standards during tests:

1. The Dustmaster controlled at least 90% of particulate matter emissions under all test conditions.

2. At no time did the opacity readings from the controlled dump pit exceed 30%.

In conclusion, if properly designed and installed, the IEPA will accept the Dustmaster system as an equivalent compliance system for control of particulate matter emissions at a major dump-pit area in accordance with Section 212.462(b)(2) of Title 35:Subtitle B,Chapter I of the Illinois Pollution Control Board Rules and Regulations.

The tests at the Schuyler-Brown F.S. facility have also revealed that when oil is applied in conjunction with the Dustmaster, dust at the loadout was reduced considerably. We recommend that the Dustmaster be equipped

with the oil option in order to provide a cleaner environment for employees and the public.

Having approved the test report and the Dustmaster System, the IEPA is now in a position to issue construction and operating permits for the device. In that regard, on February 4, 1994, the Bureau issued the first such state operating permit involving a Dustmaster to this grain elevator.

My staff has enjoyed working with you, Mr. Kearney, and the Grain and Feed Association on this rather unique project. Please feel free to contact Don Sutton, Permit Section Manager at (217)782-2113, if you have any questions or need additional information.

Sincerely,

Bharat Mathur, Chief
Bureau of Air

BM:DES:lj

State of Illinois
ENVIRONMENTAL PROTECTION AGENCY

Mary A. Gade, Director

2200 Churchill Road, Springfield, IL 62794-9276

217/785-2113

C

April 12, 1994

Mr. Jim Frank
Frank & Cowles Inc.
7226 N. Walnut Street
Springfield, IL 62707

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If you have any questions, please feel free to contact Don Hanko at the number indicated above.

Sincerely,

Donald E. Sutton

Donald E. Sutton, P.E.
Manager, Permit Section
Division of Air Pollution

DH:DES:tc

cc: FOS Regional Managers

State of Wisconsin
Department of Natural Resources

CONTROL EQUIPMENT MISCELLANEOUS AIR POLLUTION CONTROL PERMIT APPLICATION

Form 4530-110 11-93

Information attached? Y (y/n)

SEE INSTRUCTIONS ON REVERSE SIDE

1. Facility name: ConAgra – Evansville	2. Facility identification number: 88888888
3. Stack identification number: S04a, S04b	4. Unit identification number: P04
5. Control device number: C04	

6. Manufacturer and model number: ABC, Dustmaster

7. Date of installation: New

8. Describe in detail the device in use. Attach a diagram of the system. Attached? ____
See Form 4530-135

9. List the pollutants to be controlled by this equipment and the expected control efficiency for each pollutant on the table below.
☒ Documentation is attached?

[illegible]	Inlet pollutant concentration		[illegible]	Outlet pollutant concentration		[illegible]
	gr/acf	ppmv		gr/acf	ppmv	
PM/PM-10			100%			90%

10. Discuss how the collected material will be handled for reuse or disposal.
Collected material is re-entrained in product flow.

11. Prepare a malfunction prevention and abatement plan (if required under s. NR 439.11) for this pollution control system. Please include the following:

a. Identification of the individuals(s), by title, responsible for inspecting, maintaining and repairing this device.
b. Operation variables such as temperature that will be monitored in order to detect a malfunction or breakthrough, the correct operating range of these variables, and a detailed description of monitoring or surveillance procedures that will be used to show compliance.
c. What type of monitoring equipment will be provided (temperature sensors, pressure sensors, CEMs).
d. An inspection schedule and items or conditions that will be inspected.
e. A listing of materials and spare parts that will be maintained in inventory.
f. Is this plan available for review? Plan will be available for review prior to facility startup.

FOOD GRADE MINERAL OIL APPLICATION FOR DUST CONTROL

Paul Seider, Lyondell-Citgo, Lee's Summit, MO

Introduction

Why control grain dust?

We all know the answer, because its very explosive. Those who work directly with grain or are associated in any way with the grain industry know this. Because of the high number of secondary grain dust explosions and the consequences of them in the late 70's, the industry was motivated to a renewed and continued search for economical dust control options. During this time period I lived and worked in Nebraska and had a business acquaintance, a young father of three girls, who was killed in such an explosion at Tamora, NE.

Dust Control Options

Two common mechanical systems are cyclone collectors and baghouses. Various forms of each have been used for years. I don't know much about them, except that they're effective, and are expensive compared to oil add systems.

Vegetable oil can be used. It also can be effective, and the equipment and installation cost is low. However, there are operational problems with the various vegetable oils due to pour point for flowability in cold weather, and rancidity concerns.

Food grade quality white mineral oil is another option. The Food and Drug Administration approved it for this application 17 years ago in 1982. It's not a new idea. A fellow at our company used to say its "not rocket science." As far back as 1908, water and oil were used to suppress dust on highways. A couple gentleman, Moen and Dalquist, were granted a patent in 1952 for the process of applying an oil-water emulsion to grain.1. Lab and industrial scale research tests, as well as actual operational use, have demonstrated the effectiveness of using small quantities of mineral oil to reduce airborne grain dust concentrations inside conveying equipment and work areas, sometimes reaching 90% effectiveness.2. The principle for oil additives is simple and straightforward: the oil adheres and absorbs grain particles to the grain with a minute amount of it.

Advantages of Mineral Oil

I believe the best advantage of it is the reduction of airborne dust and so a lessened likelihood of secondary grain dust explosions. It is particularly effective in the control of the smallest grain particles which are the most volatile. I am not aware of an elevator that uses mineral oil that has had a secondary explosion of dust. I am aware of an

1, 2. Oils and Lecithin as Dust Suppression Additives in Commercially Handled Corn, Soybeans and Wheat: Efficacy of Treatments and Effects on Grain Quality. OAC-86-037 Conducted by Dr. F. S. Lai et al. U. S. Department of Agriculture, Manhattan, KS. National Grain and Feed Association Fire and Explosion Research Report

elevator that uses mineral oil that had a fire but did not have the secondary grain dust explosion.

It's a low cost dust control option that will help grain handlers live with agencies like the EPA and it's enforcement of Title V of the Clean Air Act, and OSHA's no more than 1/8 inch of dust in specified priority housekeeping areas of a grain elevator. Also to meet local, county, or state environmental requirements.

Other advantages of it: a low pour point so that it's easy to use year round, and is inert so that rancidity and odor is not a problem. The equipment and installation costs are the lowest of the dust control options. Because the dust stays with the grain stream and is sold as grain, shrink is reduced. Less labor is required for housekeeping and contributes to a cleaner and healthier work environment appreciated by the employees. Electrical savings are achieved if mechanical systems can be shut down. Insurance companies are reviewing the process to determine positive effects on insurability and premiums. Bin and silo walls clean themselves as they are filled and unloaded with treated grain. And grain drying equipment shows a slight improvement in operating efficiency because of less dust accumulation.

What is Food Grade White Mineral Oil?

It's a generic name for an oil that meets purity specifications set by the U. S. FDA. Officially, it's their regulations 21 CFR 172.878. Only oils that meet these requirements are "grain safe" and can be used to suppress dust on grain bound for human consumption. They are a mixture of liquid hydrocarbons, essentially paraffinic and naphthenic in nature obtained from petroleum. For an oil to meet these requirements it must be odorless, colorless, and tasteless. I won't bore you here with the test requirements in regard to readily carbonizable substances, sulfur compounds, and UV absorbance. The hand out lists them.

The typical viscosity of them for this application is less than that of a 5 weight motor oil. Experiments with heavier oils have been held with oils up to a 30 weight. They work in controlling dust but get too thick in winter weather.

Pour points of these oils range from -30° F to plus 15° F. The lower the pour point the lower the temperature at which the oil will flow.

They are refined in two ways: the acid treat process and the two stage hydrogenation process. Acid treatment has been used since the turn of the century. The oil is reacted with sulfuric acid or oleum with the aromatic components forming sulfonic acids. The acids are neutralized and then extracted with alcohol. The remaining oil is stripped of alcohol and finished by filtering over bauxite or clay. Two stage hydrotreatment is newer and more environmentally acceptable. High pressure hydrogen is used to remove aromatics, sulfur, and nitrogen compounds. Vitamin E is usually added as a stabilizer with both methods.

Effect of Oil Additives on Grain Quality

Studies and actual operating conditions have found little or no impact on quality, storability, and end-user properties of the grain to which it is applied.

As regards storability, reports vary by location. Dust is retained on the grain for three to seven turns, and is controlled for up to 12 months.

Some end-user millers and malters have expressed a preference for untreated grain. I suspect this number decreases every year.

Tests have shown that there is an initial change in test weight immediately after the application of oil. This effect has been isolated to the fact that grain particles hold dust, thereby changing the flow and compaction characteristics in test equipment. However, the test weight returns to the original value within about a six month time frame. Most experts believe that the change is only on paper and is a result of a quirk in the test method for obtaining weight.

Application of the Oil

Apply it as soon as possible prior to the first elevation. Strategic placement of the applicators, and the amount of oil applied is important. It is critical to get good mixture of the oil and grain in an area of turbulence. Or where the grain stream is in suspension and allows for deep penetration of the oil. The oil is sprayed, not misted.

Good application points are: in the area between the dump pit and the receiving leg, at a transition point or discharge of a conveying belt, or into a screw auger. Directly on the grain stream on a conveyor belt is done in the field, and is effective. But no "tumbling" of the grain is accomplished till the transfer point. Time required for full permeation of the grain and oil commonly varies from 20 to 70 seconds and is dependent on effective initial application, oil viscosity, and ambient temperature.

As for how much to apply, FDA permits up to 200 ppm (1.7 gallons per 1,000 bushels) by weight on grain destined for human consumption, and 600 ppm for grain destined for animal feed. Generally, the amount applied should vary with the dustiness of the grain and the facility. Research tests and actual experience in elevators have shown that 2 to 6 quarts per 1,000 bushels will provide adequate dust control.

Oil Application and Storage Equipment

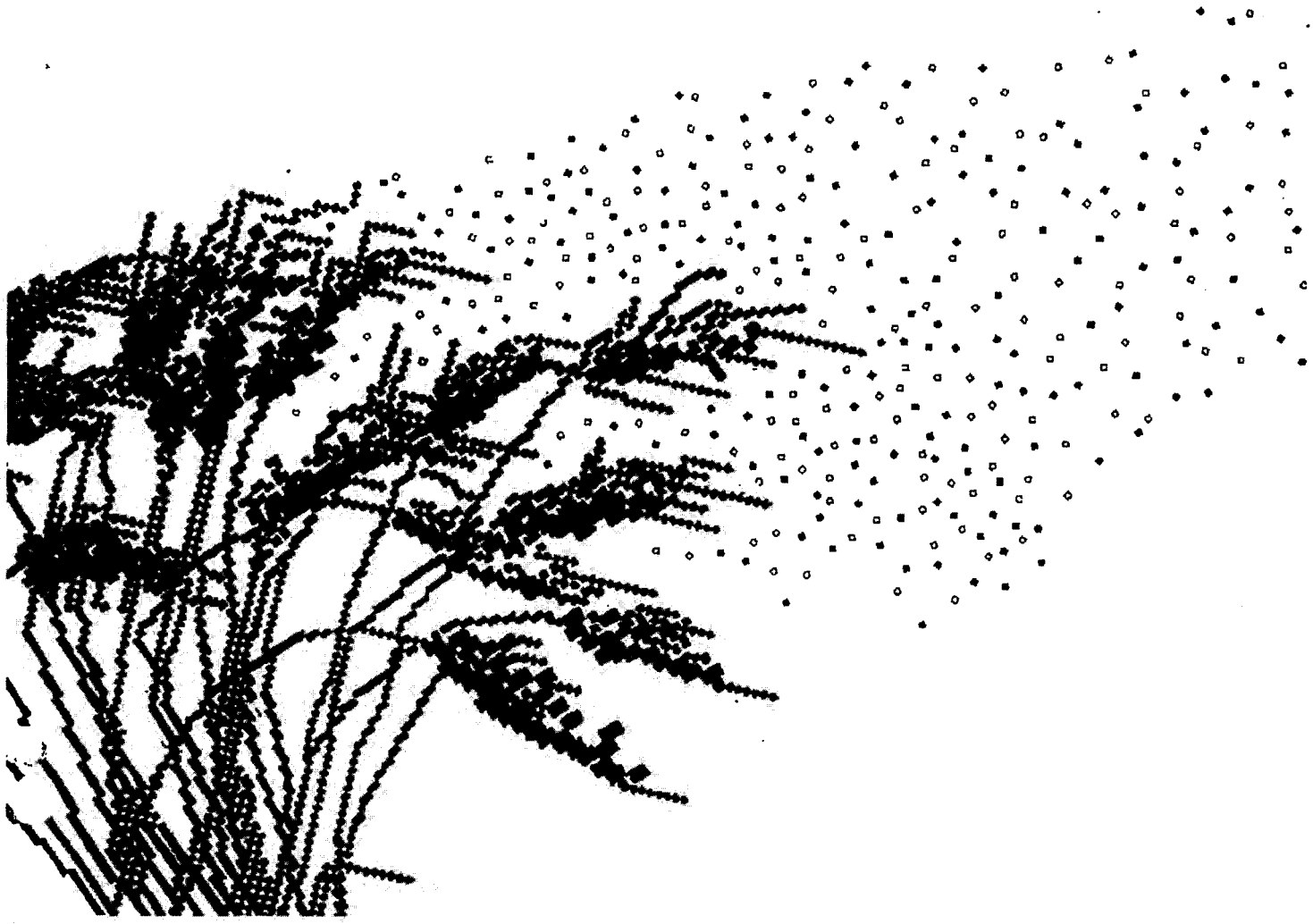
The storage tank is very important to ensure that the oil retain it's food grade integrity. If it's steel, it should be lined with a food grade protective coating, such as Plasite 7133. If it's of any other material, consult with the manufacturer that it's approved for food grade mineral oil. When painted a flat black it will collect the maximum amount of solar heat available. The internal draw-off level of the tank should be about ten inches from the bottom to avoid any possible "tank bottoms" and water. We recommend a water drain valve, and the top vent should be protected with a desiccant filter to eliminate "breathed in" moisture.

Other key parts of the application system is the piping, pump, pressure regulator, spray nozzles, inline heater, and flow meter.

Summary

In summary, it's a low cost dust control option that works. Go to an elevator that uses oil and have them tell you about it.

Oil-Additive Grain Dust Suppression



Amoco White Mineral Oils for Grain Dust Suppression

Oil-additive control of several dust-related problems in the grain industry.

- Reduces risk of fires and explosions
- Improves working conditions for grain industry personnel
- Reduces emissions to the surrounding community

Cost-effective solutions to improve facility profitability

- Grain dust stays with the grain and is sold as grain
- Affords the possibility of minimizing operation of expensive mechanical dust control systems
- Dust disposal problems are reduced
- Maintenance expenses are reduced
- Housekeeping costs are reduced
- Low capital investment
- Simple, easy system operation
- Oil applied is sold at grain prices
- Insurance costs may be reduced
- An attractive alternative to costly mechanical systems to assist compliance with stringent OSHA regulations

Foreward

This booklet is designed to familiarize you with the subject of oil-additive dust suppression. It's not meant to be a textbook—full of facts and figures. Its purpose is to give you a broad understanding of oil-additive dust suppression—how effective it is, what kind of equipment you need, what are the side-effects, what are the differences between the different kinds of oils you can buy. That kind of thing. If it raises as many questions in your mind as it answers, that's okay, too. At least it will give you a good starting point for thinking about oil-additive dust suppression. For those who simply don't have the time to read everything there is to read about the subject, this booklet will provide a strong foundation for making intelligent decisions regarding grain dust control.

So, without further ado, turn the page and let's get started.

Chapter 1 Oil-Additive Grain Dust Suppression

Introduction

For the last 200 years or so, the grain industry has been faced with an explosive problem—grain dust. It is virtually impossible to handle grain without generating dust or dealing with dust that has already been generated somewhere else. And grain dust, in the right concentration, forms an explosive mixture with air. The Occupational Health and Safety Administration (OSHA) estimates that between 1974 and 1984, there were over 200 explosions at mills and grain elevators in the U.S., resulting in over 600 deaths and injuries. For grain elevators, that's an incidence rate of 0.058 per 100 full-time workers—*from explosions alone*. Grain dust is not just a nuisance; it's a *danger*.

The Recipe for an Explosion

Any firefighter will tell you that there are four ingredients necessary to create an explosion:

1) fuel,
2) oxygen,
3) an ignition source, and
4) containment.

Take away the last ingredient, and the most you've got is a fire. Take away any of the first three, and you don't even have that. The key, then, to making an elevator secure from the danger of explosion is to control these four ingredients.

Two of the ingredients—oxygen and containment—are virtually beyond the control of the average grain elevator operator. Containment is one reason grain elevators exist in the first place. And unless you can locate your elevator on the moon, (which would be a questionable move at best, considering the cost of freight) oxygen is likely to be nearby.

Ignition sources, on the other hand, can be controlled. An effective and well-managed safety program, for example, can identify and correct most of the ignition source problems in a grain elevator well before they become hazards. Hot bearings, misaligned belts, dangerous electrical systems—these are all things that can be located and fixed. Even static electricity, which has reared its ugly head as the cause of many an elevator explosion, can be controlled. For one thing, you can purchase static-resistant conveyor belts.

Which brings us to the fuel of elevator explosions—grain dust. Unfortunately, it's something that just can't be gotten rid of. Grain dust is created by the breakdown of the grain particles, themselves. If you handle grain, you generate dust. Period. The trick, then, is not to try to eliminate it, but to control it and keep it tame. It turns out, there are several ways to do that.

So important is grain dust as an explosion ingredient that OSHA has included a special paragraph on "housekeeping" in its final rule on safety at grain handling facilities. The paragraph is specifically aimed at keeping dust levels low in certain priority areas of the grain elevator.

Housekeeping

In the 12/31/87 issue of the Federal Register (Vol. 52, No. 251), OSHA published its final rule on safety at grain handling facilities. Paragraph "I" of the final rule concerns "housekeeping." Its most significant feature is the definition of the "1/8-inch action level rule." That rule states that dust levels shall not be allowed to exceed 1/8 inch in "priority areas" before some action must be taken on the part of the elevator operator. "Priority areas" are defined as:

1) floor areas within 35 feet of inside bucket elevators,
2) floors of enclosed areas containing grinding equipment, and
3) floors of enclosed areas containing grain dryers located inside the facility.

In other words, if your bucket elevator is enclosed to at least 20 feet above ground level, and the dust near its base accumulates to the level of 1/8 inch—somebody better start pushing a broom.

The best way to keep that broom (and its associated manpower cost) in the corner, of course, is to keep dust levels from ever reaching 1/8 inch. As OSHA says, "The best approach for handling the 1/8 inch action level is for the grain elevator operator to implement measures to prevent dust accumulations from reaching 1/8 inch in the first place."

Ultimately, OSHA is concerned with dust in the air, not on the ground. The purpose of the housekeeping provision is to keep the airborne dust levels at concentrations below the "lower explosive limit" (LEL). Some people also call this number the "minimum explosive concentration" (MEC). It is generally agreed, among those who know, that the LEL for grain dust is about 1.0 to 1.5 grams of dust per cubic foot of air. In fact, according to the OSHA regulation, if you can demonstrate that your airborne dust concentration is consistently less than 25 percent of the LEL, then there are certain equipment-related parts of the overall regulation you can ignore.

Three Methods of Dust Control

But how do you go about doing that? Basically, there are three methods at your disposal:

1) passive,
2) pneumatic (dust collection), and
3) oil-additive (dust suppression).

Let's look at each of them in a little detail.

Passive

For the most part, "passive" dust control simply means plugging the leaks—repairing holes in spouting, casings, conveying systems, augers, and the like. It also means slowing down conveyor belts, removing obstructions in the grain stream, and cutting down on needless dust generation. It's referred to as a "passive" method, because you're not really doing anything directly to the dust. Unfortunately, the passive method is limited in its usefulness. If you plug all the leaks and slow down the belts and you still have fugitive dust accumulations, it's time to search out another method. You can't plug leaks that don't exist.

Pneumatic Dust Collection and Aspiration

Pneumatic dust control systems use large fans and filters to ventilate the elevator and collect the dust in cyclones and filter bags. For years, pneumatic dust collection and aspiration was the only active method available to control dust. Its main drawbacks are that it requires a large capital investment, and that the equipment is difficult to maintain and expensive to operate—especially when energy costs are high. And, once you have the fugitive dust in hand (or, rather, in the filter bags), you have to get rid of it. About the only thing it's really good for, though, is animal feed. That means its salvage value is very low—typically only $10 to $25 per ton.

On top of that, pneumatic systems don't always operate as they were intended to. When OSHA published its final rule, it noted about pneumatic systems, "It is important that the system be *designed properly* and *installed properly*." (Italics OSHA's). And in the appendix to the rule, OSHA states, ". . . the installation of a poorly designed pneumatic dust collection system has fostered a false sense of security and has often led to an inappropriate reduction in manual housekeeping." In short, you have to really watch yourself when you're installing a pneumatic system, or it will end up being a big waste of time.

Oil-Additive Dust Suppression

It has been known for a long time that a good way to control dust is to suppress it (i.e. keep it attached to the grain) rather than collect it. One of the first U.S. patents pertaining to the use of oil to control grain dust was issued in 1952. Since that time, grain industry researchers have discovered that edible oils do an outstanding job of suppressing grain dust. Edible oils are those approved by the Food and Drug Administration (FDA) for direct contact with food. They include vegetable oils, like soybean oil and rapeseed oil, and they also include *white mineral oil*. In fact, the type of oil specified in the 1952 patent is white mineral oil. Since 1984, the FDA has allowed white mineral oil, at concentrations up to 200 parts per million (ppm), to be used as a grain dust suppressant.

No matter which type of oil you use for dust suppression, though, the basic principle is always the same—change the surface properties of the grain particles so that the dust will adhere instead of floating off into the air.

Oil makes the grain dust stick to itself and to the grain particles, that's all. As it turns out, that's enough. Oil-additive dust suppression has several advantages over pneumatic dust collection. For instance:

1) the capital equipment costs are low,
2) it requires only enough energy to power a small pump,
3) dust that would ordinarily be lost to shrinkage is retained on the grain, and
4) the oil that's applied to the grain stays put and is sold at grain prices.

When OSHA published its final rule, it said of oil-additive dust suppression, "Tests performed using this method have shown that the oil treatment is very effective in reducing accumulations of dust in the work areas." And field experience over the last several years has borne this out.

With this in mind, let's take a closer look at oil-additive grain dust suppression. (That's a literary way of saying, "turn the page.")

Chapter 2 Oil-Additive Dust Suppression

First of All, What is Grain Dust?

That depends on what you mean. Corn dust is different than wheat dust, and neither are really similar to soybean dust. Furthermore, some "grain" dust is just mineral matter from the fields. That's why some dusts are more explosive than others.

The photographs below show the surfaces of a corn kernel (left) and a soybean (right), magnified about

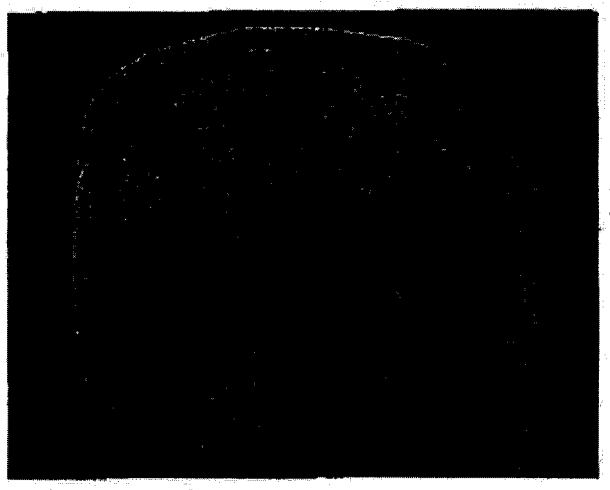
1,000 times. Notice the difference in the type of dust that appears on the surface. The soybean dust exists as small fragments of the soybean. It looks as though you could tear off any size chunk of the bean at all and call it a dust particle. Each of the corn dust particles, on the other hand, is similar in shape to the others, and they're all about the same size—about 600 millionths of an inch in diameter. Not only that, the corn kernel, itself, is filled with them. What are they? Corn starch—the stuff you use to thicken gravy. As long as they stay attached to the kernel, they're no trouble at all. But when they're airborne, they constitute one of the most serious threats an elevator operator can face (second only to an angry farmer or a new government regulation). Of all the grain dusts in the world, corn dust is probably the most explosive. It has a very high surface area, a very small fundamental particle size, and it burns almost completely when ignited.

This is not to say that corn dust, or any other dust, is explosive in all concentrations. As we said before, it is generally agreed that you need about 1.0 to 1.5 grams of dust per cubic foot of air before you can create an explosion.

Unfortunately, thanks to the containment part of the explosion recipe, the LEL is not that hard to reach in grain elevators. Containment confines the grain dust, allowing it to reach explosive concentrations, and containment also provides the pressure buildup which turns a fire into an explosion.

The Principle of Dust Suppression

Oil-additive dust suppression works by making the surface of the grain particles sticky to grain dust. The photographs below illustrate how effective the process is.



e photograph on the left shows the surface of an untreated corn kernel, magnified 80 times. The photograph on the right shows another corn kernel treated with 200 ppm white mineral oil. Notice how much more dust has adhered to the treated kernel than has adhered to the untreated kernel. This illustrates the difference oil-treatment makes. The oil affects the surface properties of the grain, making them slightly rougher and also stickier to grain dust particles. The roughness and stickiness give the dust particles places to adhere, resulting in less airborne dust in the atmosphere surrounding the grain.

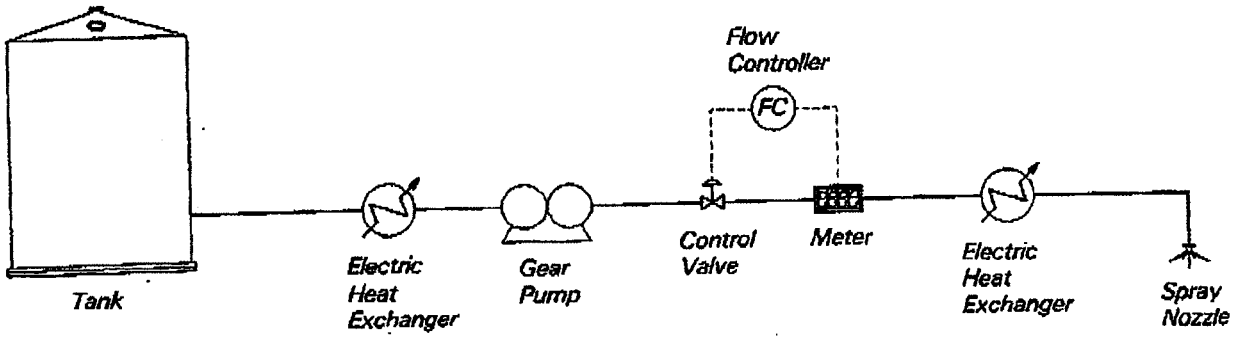
On a large scale, the effects can be dramatic. The photographs below show a barge being loaded with corn both before and after oil treatment. Notice the difference in the air surrounding the spout. Notice also the difference in the color and appearance of the grain. It is quite common for oil-treated grain to be richer and shinier in color than untreated grain. How much dust reduction can you expect from oil-additive dust suppression? How about *90 to 99 percent.* That may sound exaggerated, but a study published in 1986 by the National Grain and Feed Association showed that oil-additive dust suppression reduced airborne dust levels by one to two orders of magnitude. That's scientist talk for 90 to 99 percent.

The Components of an Oil-Additive Dust Suppression System

So then, what kind of equipment do you really need to suppress grain dust with oil? Very simple equipment, really. In a nutshell, you need:

1) a storage tank,
2) a pump,
3) a method of heating the oil,
4) a metering system, and
5) a spray nozzle.

The following figure shows the basic configuration of dust suppression oil application system. Let's go through it, component by component.



Storage Tank

Whether you need a storage tank or not really depends on the size of your operation. If your elevator is very small, and your turnover ratio is fairly low, then you can probably get by without one. The FDA allows the use of white mineral oil for dust control up to the level of 200 ppm on grain. That's about 1.5 gallons per thousand bushels. If your facility processes a million bushels in a year, then you could use as much as 1,500 gallons of white mineral oil. If you don't mind handling 55-gallon drums, then you don't need a storage tank.

Facilities that handle 2 million bushels or more each year generally opt to include a storage tank in their dust control system. For one thing, it makes taking oil delivery easier. And in many cases, it allows them to take advantage of the cost breaks associated with buying in bulk.

If you choose to install a storage tank, it should be heated or in some way protected from the weather (e.g. buried). No matter which dust suppression oil you use, it is important to keep it warm in the winter. Even oils with low pour points should be kept heated during cold weather so that they can be applied evenly and consistently to the grain stream.

The storage tank should be located as close to the pump and nozzle as is possible to eliminate the need for long stretches of tubing to and from the pump.

Pump

Typically, a ¼-hp motor and pump is all that's needed to supply oil to a single application point. Some pre-packaged oil application systems use a ½-hp motor and use the same pump to supply oil to two separate nozzles. The pump itself is usually a positive-displacement type, like a gear pump, with an internal or external pressure bypass loop. The pump must be durable and, beyond that, its materials of construction must be compatible with different types of oils.

Method of Heating the Oil

Most pre-packaged oil application systems include an inline heater in the pump module. This heater helps maintain consistent oil viscosity and, hence, consistent flow through the flow control valve. The heater should be electrically or electronically protected from overheating the oil.

The oil distribution system from the tank and to the nozzle, should also be heated in some way. Some pre-packaged systems use inline heaters for this application; some heat-trace the distribution lines with heat tape. In either case, the oil must be kept warm throughout the system when it's being applied.

Metering System

One of the most important components of an oil application package is its metering system. The system must hold its flow rate setting reliably and consistently and must give the operator an accurate idea of just how much oil is actually being applied to the grain.

There are, basically, two methods of metering oil in an oil application system. One uses a metering valve to control oil flow; the other uses a pressure control valve.

The "metering valve" system uses the pump to generate a constant pressure at the inlet to a metering valve. The valve is designed to hold its position accurately for long periods of time. This type of system tends to hold its setpoint very well and almost always includes a flowmeter to indicate how much oil is actually flowing through the valve.

The other type of metering system utilizes a pressure control valve, instead of a metering valve, to control oil flow to the nozzle. It assumes that, if the pressures upstream of the valve is constant, and the pressure downstream of the valve is known, then the flow through the valve is also known. These types of systems usually include a chart of some kind, rather than a flowmeter, to indicate to the operator the relationship between outlet pressure and oil flow rate.

Pressure control valve systems are no less reliable than those which use metering valves, but they tend to drift more easily and require a greater degree of operator involvement to maintain a given oil flow rate.

Spray Nozzle

The type of spray nozzle you need depends, to a large extent, on the specific design of your elevator. The nozzle should apply oil evenly to the entire grain stream and should be equipped with a check valve to ensure that oil is applied only when needed. It is unnecessary, and usually undesirable, to employ an atomizing spray nozzle, which uses air to turn the oil into a fine mist. Atomizing nozzles do not apply the oil any more evenly than ordinary nozzles, and they often create an unwanted oil fog around the application point.

General Application System Wisdom

Aside from a few extraneous components (suction screens, pressure gauges, switches, indicators, and the like), these items are all you really need to create an effective oil application system. They are available in convenient, pre-packaged units from at least two suppliers in the U.S., and each of those suppliers has the expertise to install and troubleshoot them.

As simple as the system seems (say that five times quickly), it pays to have someone with experience tailor their package to your needs. Sometimes one or two tricks of the trade can save you a bundle in aspirin and stress seminars. When you're shopping around for a supplier, ask them straight and pointed questions like:

—"Do you recommend heat tape or inline heaters?"

—"Do you use a metering valve or a pressure control valve?"

—"Does your system make two application points share the same pump?"

—"How long have you been in business?"

—"Do you have any references?"

—"What's this whole thing going to cost me?"
(Well, you get the picture.)

A Final Note

No matter which type of system you use, you can't afford not to get the most out of it. To do that, you should apply the oil as far upstream in your process as you can, and definitely before the first transfer point. A general rule of thumb for oil-additive dust suppression is:

You don't get much dust suppression until the grain mixes.

In other words, don't expect much in the way of dust suppression until the grain tumbles through a transfer point. Oil-additive dust suppression relies on coating as many grain particles as possible with oil, and that won't happen until they mix around.

Also, you're money ahead if you can apply the oil while the grain is in freefall, rather than on a conveyor belt or auger. If you just can't do that, for some reason, don't worry; it doesn't mean you're a bad person. Just remember:

Anything you can do to maximize the contact of the oil with the grain will help.

Enough said. Let's go on.

Chapter 3 Dust Suppression Oils

Okay. So now your system is installed and you're ready to fill the tank. What kind of oil do you buy?

Basically, there are two kinds of oil you can use for dust suppression. (Three, really, but we'll get picky later.) The two oils are: soybean oil and white mineral oil. Let's take a look at each of them and find out what makes them different.

Soybean Oil

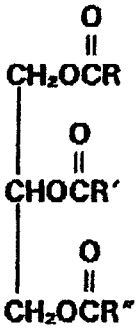
First, soybean oil. Soybean oil, not surprisingly, is derived from soybeans. It looks and smells pretty much like any vegetable oil. It's a golden liquid at room temperature, and it has a fixed viscosity of about 150 SUS at 100 °F. ("SUS" stands for Saybolt Universal Seconds. It's an antique way of reporting viscosity values, but it's still in wide use in many industries. The thicker a liquid is, the higher its Saybolt viscosity is. That's all there really is to understanding it.)

As a liquid, soybean oil has a high "viscosity index" (VI), which means that its viscosity doesn't change much with temperature. In other words, it doesn't thin out as it warms up. At low temperatures, however, d by that we mean 40 °F) it becomes very difficult ump, let alone spray.

Molecular Structure

(Skip this section, if this kind of stuff freaks you out.)

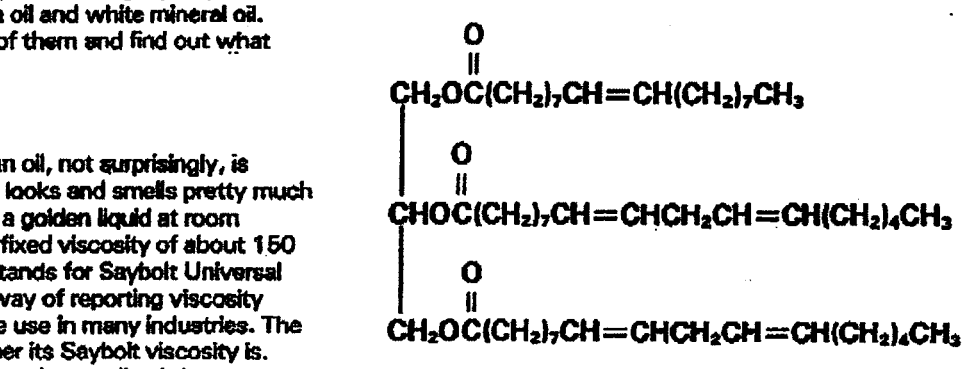
Soybean oil is comprised mostly of molecules called "triglycerides." Another name for them is "triacylglycerols." Triglycerides are the major component in most vegetable oils. They look like this,



Triglyceride R, R', R" = same or different fatty chains

where the "C"s represent carbon atoms, the "H"s represent hydrogen atoms, and the "O"s represent oxygen atoms. The "R"s here represent long combinations of carbon, hydrogen, and oxygen atoms, called "long-chain fatty acids." Why represent them with the er "R"? No reason. It's just simpler than writing the nole thing out every time.

In soybean oil, the "R" groups usually represent substances called "oleic acid" and "linoleic acid." If you were to draw out the structure of a typical soybean oil molecule, it would look like this.



Soybean oil molecule

(See why we use the "R"s?)

The important thing to notice here is that soybean oil molecules contain oxygen and that they contain carbon-carbon double bonds. Why is this important? Because carbon-carbon double bonds are much less stable than carbon-carbon single bonds. They react much more readily with air in a process called "oxidation." What does oxidation mean? In this case, it means rancidity.

That's why soybean oil begins to smell after a while when exposed to the atmosphere. Oxygen in the air attacks the carbon atoms on either side of the double bonds, forming resins, "carboxylate" ions, and things that, generally, don't smell too good.

When the triglyceride molecule, itself, breaks down—because of heat or age or both—the "R" groups, together with the other carbon atom and the two oxygen atoms, break away from the molecular backbone. They form what are called "free" (as in "liberated") fatty acids. The soybean oil that is sold for dust suppression is usually highly-refined oil that is very low in its initial concentration of free fatty acids.

Before we continue, please note that there is no specific government-imposed limit on the amount of soybean oil that can be applied to a grain stream for dust control. All the government says is, "apply just enough to do the job."

White Mineral Oils

Now, let's get picky. Basically, there are two types of white mineral oil. One is called "paraffinic"; the other is called "naphthenic." On the molecular level, the differences between them are slight; but they're large enough to affect the way they behave on the everyday level, where you and I live. To understand those differences, we need a little background information.

A Little Background Information

White mineral oils have been around for a long time. The Russians invented them back at the end of the nineteenth century. They are available in many different viscosities and have a wide spectrum of uses in American industry—from baby oils and laxatives to polystyrene plasticizers and baking lubricants. Grain dust suppression is simply a new verse for an old song.

White mineral oils begin life as "base" oils—the same stuff used to make motor oil for your car. The difference is that, unlike motor oils, white mineral oils are subjected to severe chemical processes with names like "solvent extraction," "desulfurization," "denitrogenation," "acid treating," "hydrofinishing," and so on. The purpose of these processes is to remove all the potentially-harmful components in the oil and render them clear and clean.

The U.S. government is very particular about white oil purity. In order to be considered "food-grade" and "edible," white oils must pass a number of stringent test to guarantee that they won't harm anyone. These tests are outlined by the U.S. Pharmacopeia (USP) and the National Formulary (NF), and are set down as law in the Code of Federal Regulations (CFR). The only real difference between USP and NF specifications is that the U.S. Pharmacopeia concerns itself with heavy (high viscosity) oils, and the National Formulary concerns itself with light (low viscosity) oils. Other than that, their purity tests are pretty much the same.

Sometimes, however, it's not enough just to pass the government tests; you have to answer to a higher court. That's why Amoco White Mineral Oil is inspected and certified by the Kosher Overseers Association of America. This is not to imply that they will aid you in your quest for spiritual truth, but they can't hurt.

In general, though, when you buy white mineral oil for dust control, it should be colorless (like water), odorless, and it should carry with it a "certificate of analysis" which guarantees that it passes government tests for purity.

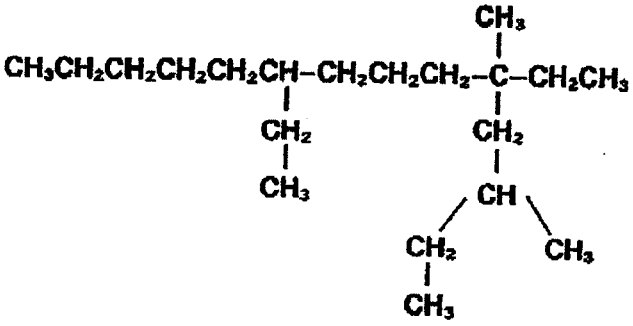
This leads us to an important point:

Not all white mineral oil is "food-grade." There is such a thing as "technical grade" white mineral oil, and its purity tests are not nearly as stringent. It is quite useful in a number of important industries, *but the grain industry is not one of them.* The FDA approves the use of only food-grade white mineral oil on grain meant for human consumption. *Whenever you receive a shipment of white oil, ask to see a certificate of analysis.*

(So there.)

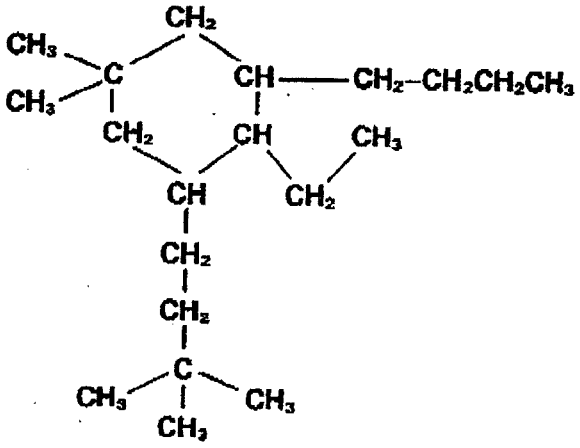
Molecular Structure

Basically, there are two types of molecular structures that appear in white mineral oil. One is called a "paraffin" molecule, and the other is called a "naphthene" molecule.



$C_{20}H_{42}$

Paraffinic–Saturated Open Chain



$C_{20}H_{38}$

Naphthenic–Saturated, one or more rings

Notice that these molecules contain only carbon and hydrogen—no oxygen. That's why they're called "hydrocarbons." Notice, also, that they do *not* contain carbon-carbon double bonds. This is what makes them more stable than vegetable oils. The carbon-carbon single bonds which are characteristic of white mineral oils are much less likely to cause oxidation than are the carbon-carbon double bonds of vegetable oils. Consequently, white mineral oils won't react with air as easily as vegetable oils.

Even so, most white oil manufacturers add an "antioxidant" to help stop the few oxidation reactions that do occur. Some manufacturers use BHT and BHA as antioxidants. These substances are approved by the FDA for use in materials that don't ordinarily come into contact with food. The more-responsible white oils manufacturers use a substance called "tocopherol" to prevent oxidation. You know tocopherol by its common drug-store name—"Vitamin E." Not only is it safe, it's good for your skin. (But there isn't really enough in white oil to get rid of your wrinkles and change your life.)

Of the two types of white oil molecules, by the way, paraffinic molecules are the less likely to oxidize. That's why paraffinic white oils don't need as much antioxidant to achieve the same level of stability as do naphthenic white oils.

Composition

From the way they're named, it would make sense if "paraffinic" oils contained only paraffin molecules and "naphthenic" oils contained only naphthenic molecules. It would make sense, but it wouldn't be true. As it turns out, both paraffinic and naphthenic white mineral oils contain a combination of paraffins and naphthenes. A typical paraffinic white mineral oil may contain 35 percent paraffins and 65 percent naphthenes. Likewise, a typical naphthenic white mineral oil may contain 10 percent paraffins and 90 percent naphthenes. It is only the differences in concentration that make them behave differently.

Physical Characteristics

Long-chain paraffinic molecules have a more-common name—"wax." They make up the candles you burn during those intimate dinners with your spouse and the crayons your children eat. Their presence in a white mineral oil is both a blessing and a curse. It's a blessing from the standpoint that paraffinic molecules give an oil good viscosity stability with temperature; a paraffinic white oil will usually have a VI in excess of 100. It's a curse, because the wax molecules tend to crystallize at low temperatures and cause some difficulties in handling white mineral oils.

Naphthenic white oils, because they contain fewer paraffins, have fewer wax-like molecules in them. Therefore, they possess lower pour points than paraffinic oils. On the other hand, they do not possess the viscosity stability of paraffinic molecules. They tend to thin out quickly as the temperature rises. And, even though they are more easily pourable at low temperatures, they are also very thick. The VI for a typical naphthenic white oil is in the range of 80-95.

Naphthenic white oils also interact much more strongly with certain materials, like butyl rubber, than do paraffinic white oils. Specifically, naphthenic white oils tend to swell and soften such materials and reduce their tensile strength much more so than do paraffinic white oils.

Confused?

Don't be. There are really only four characteristics of dust suppression oils that you need to be concerned with:

1) viscosity,
2) viscosity stability,
3) oxidation stability, and
4) pour point.

It would really be handy if someone, someday, would compare them side-by-side in an easy-to-read table like the one below. Maybe someday, someone will.

Comparison of Oils

Property	Soybean Oil	Naphthenic White Oil	Paraffinic White Oil
Viscosity at 100°F	Single, About 150 SUS	Wide range, 50 to 350* SUS	Wide range, 50 to 350* SUS
Vis. Stability	High	Low	Moderate
Oxid. Stability	Low	Moderate	High
Pour Point	20 to 40°F	-30 to -10°F	5 to 20°F

*many viscosity grades available

In a perfect universe, there would be no adverse effects associated with using oil-additives for grain dust suppression. Also, all peoples of the world would live at peace, and your checkbook would balance at the end of any given month. Unfortunately, this is not a perfect universe, and there is one drawback to using oil for dust suppression—a loss in grain test weight. There are also some major-league advantages, however, which more than balance out. Let's take a look at each.

Test Weight

Let's get this one out of the way before we go on. This is the *one* major disadvantage of using oil for dust suppression:

Oil usually causes a loss in test weight.

Now, let's talk about what we mean by that.

Using oil for dust suppression will reduce the test weight of your grain (downstream of the application point) by as much as 0.5 percent to 1.5 percent. *The oil does not actually reduce the density of the grain. It only reduces the test weight.* Why? Because the oil affects the surface of the grain particles. For one thing, it makes them hold onto the dust. This, in turn, affects the way they flow through the test-weight funnel and the way they pack in the one-quart test weight container. It makes them come to rest in the container before they reach efficient packing orientations. Consequently, they don't pack as tightly and, when you level off the one-quart container, it weighs less than it ordinarily would. The result? An *apparent* loss in grain density.

If you're oiling grain that has a healthy test weight—well above the grade limit—this effect is of no great concern to you. It's only when you're operating close to a grade test weight boundary that you need to think about it. Even then, there is a closely-guarded, mystical secret that can help you minimize the effect. What is it? Just this:

The thinner the white mineral oil you use for dust suppression, the less of a test weight loss you'll experience.

(Don't tell anybody.)

In most cases, you should try to buy white mineral oil with a viscosity of about 50 SUS. If you can get a price break on something with a higher viscosity, and it's the middle of Summer, think about it—but consider yourself warned. Your test weight loss will increase.

Buying a low-viscosity oil will not eliminate your test weight loss, but it will minimize it.

Initial grain test weight loss from oil addition is not permanent. Nor is it the same for all types of grain. Corn, wheat, and milo respond differently than soybeans to oil-additive dust suppression. Soybeans, for instance, sometimes experience no test weight loss at all. And it is even possible, under certain circumstances, to increase soybean test weight with the addition of oil. That mostly depends on their history—where they've been, who put oil on before you did, and how much oil they used. Corn, on the other hand, almost always experiences an immediate test weight loss upon oil application. However, it also begins to recover its test weight almost immediately. Some studies indicate that, within six months to a year, corn test weight is completely recovered.

As a final note, let's just say that test weight loss and dust suppression are like "love and marriage"—you usually can't have one without the other, but there are ways of getting around it.

Grade

There is no significant effect of dust suppression oils on any grading factor other than test weight. Moisture? Foreign materials? Virtually unaffected.

Odor

The studies that exist concerning the effect of dust suppression oils on grain odor don't completely agree. One says there is no detrimental effect of any dust suppression oil on odor. Another found an objectional odor on a sample treated with white mineral oil and left to sit for three months. Still another found that, no matter how long samples sit, there is no effect of the oil on odor except for samples treated with soybean oil at very high concentrations.

Grain odor is a function of a lot of things, including the grain itself. The long and the short of it is, if you apply a food-grade oil properly, you've got nothing to worry about.

Handling Properties

About the only handling property that dust suppression oil affects is flowability. Why does it affect flowability? For the same reason it affects test weight loss—because it changes the surface properties of the particles. A study done by the National Grain and Feed Association found that oil treatment increases the angle of repose and decreases grain flow rates. For corn, the decrease can be as much as 2 to 6 percent. Like test weight, the effect on flowability and angle of repose changes with time.

Flammability

There is no significant effect of dust suppression oil on the flammability of the grain, itself. Oil doesn't make grain easier to burn, and it doesn't make it harder to burn. It doesn't affect it at all.

Explosivity

Oil-additive treatment has only a slight affect on the explosivity of grain dust. Fortunately, the effect is in the right direction. The 1986 NGFA study showed that dust treated with soybean oil was slightly less explosive than untreated dust and that dust treated with mineral oil was even less explosive than that.

Insect Repellancy

Now, here's an interesting one. Did you know that some dust suppression oils affect the ability of your grain to repell bugs? You do now. Soybean oil doesn't seem to have much of an effect, but white mineral oil, even after six months, shows a small residual effect (it still works) repelling the granary weevil from wheat.

Dust suppression oil has also been known to kill annoying spiders in the area surrounding the oil application point, probably by suffocation. It does not seem to have much impact, however, on insect larvae.

Conveyor Belting

If you've been in the grain industry for any length of time, you've probably heard a rumor about white mineral oil deteriorating conveyor belts at a large export elevator in Louisiana. The stories say that the top cover of the belt was becoming soft and tearing away and that bubbles of oil were appearing in the belt.

Well, some of the facts of the story are true, but the conclusions of the rumor are not. It turns out that the only parts of the belt which the white oil could directly contact—the edges—were in perfect shape. They showed no signs of deterioration whatsoever. All of the deterioration took place in the center of the belt, where the grain rode. But, in order to contact this area of the belt, the white oil (at six thousandths of an ounce per bushel) would have had to filter down through more than a foot of grain in less than four minutes. Get serious!

A close investigation of the situation showed that the bubbles in the conveyor belt were filled with *a vegetable oil, not white mineral oil.* In short, the belt had been damaged by natural oils from conveyed materials. Natural oils can be very hazardous to belt materials that have not been designed to resist it. White oil, on the other hand, is not as aggressive. In fact, it's a built-in component of some rubber compounds.

Summary

What's the point of this chapter? Simple. Oil-additive dust suppression affects grain. If it didn't, there would be no point in using it in the first place. Most of the effects are beneficial; one is marginally detrimental. As the next chapter shows, however, the good effects outweigh the bad where it counts—on the bottom line.

Chapter 5 **Economics**

Now, let's get down to brass tacks. How is oil-additive dust suppression going to affect your elevator's pocketbook?

Every elevator is different, of course, and the economics of oil-additive dust control will vary from location to location. But it's safe to say that, in virtually every situation, *oil-additive dust control will save you money.* How?

—by assisting you to comply with OSHA's new housekeeping regulations at minimum capital investment.

—by creating the possible opportunity to shut down parts of existing pneumatic dust collection systems.

—by allowing you to sell (at grain prices) dust that would otherwise be lost to shrinkage.

—by reducing your housekeeping manpower costs.

—by helping you to avoid insurance premium hikes associated with operating a dusty elevator, to name just a few.

It is not uncommon for elevator operators to claim energy savings of 25 percent after the installation of an oil-additive dust suppression system, simply by virtue of the fact that they were able to shut down certain pieces of pneumatic equipment. Neither is it unreasonable to imagine that savings due to recovered shrinkage could amount to *one cent per bushel.* It depends on your situation. In any event, oil-additive dust suppression represents an effective and cost-efficient way to control grain dust. One way or another, it is likely to save you money.

Here's an example:

Example Economics Calculation

Let's make the following assumptions:

1. Your elevator processes 10,000,000 bushels of grain per year;

2. The grain has an average market value of $2.50/bushel;

3. Grain handling through your facility generates 0.1 percent dust (a commonly used number);

4. Oil-additive dust suppression recovers all the dust that would be generated without it (actual recoveries in the mid-90 percent range are common);

5. Dust has a salvage value of $10/ton;

6. The price of oil is $2.35/gal. (This will vary depending on delivery and whether it is purchased in bulk or drum quantities. Ask your Amoco representative.);

7. You apply 1.5 gallons of oil per 1,000 bushels (maximum cost);

8. Your test weight is 60 lbs. per bushel.

The following worksheet (part 1) shows how to calculate the net effect of oil-additive treatment on your product values. The savings due to manpower, electricity, capital investment (vs. a mechanical system), etc. are not included here. These costs will vary greatly from facility to facility. Part 2 is provided for these numbers. But the point is clear: Minor extra product-related costs may be incurred with an oil-additive dust suppression system. (Some facilities may be able to show an actual *reduction* in these expenses!) However, significant other savings in facility expenses are certain, and these savings can overwhelm product-related economics depending on the facility and the grain handled.

Try *your* hand at calculating your savings. It's fun!

Example Economics Calculation

Economics of oil-additive dust suppression (Part I)

Yearly oil consumption: A = _____ bu throughput/yr. × _____ gal./1000 bu ÷ 1000 = _____ gals./yr.

Yearly oil cost: B = (A) _____ gals./yr. × $_____/gal. = $_____/yr.

Yearly dust generation: C = _____ bu throughput/yr. × 0.001 = _____ bu dust/yr.

Dust sold as dust: D = (C) _____ bu dust/yr. × _____ lb. grain/bu ÷ 2000 lb./ton × $_____/ton = $_____/yr.
(Note: D could be a debit instead of a credit if you have to pay to dispose of dust)

Dust sold as grain via oil-additive application: E = (C) _____ bu dust/yr. × $_____/bu. = $_____/yr.

Oil product sold as grain: F = (A) _____ gals/yr. × 7 lbs. oil/gal. ÷ _____ lb. grain/bu × $_____/bu. = $_____/yr.

Total costs related to product values: B + D − E − F = $_____/yr. if you get credit for your dust now.

or B − D − E − F = $_____/yr. if you must pay for dust disposal.

Example
Economics of oil-additive dust suppression (Part I)

Yearly oil consumption: A = 10,000,000 bu throughput/yr. × 1.5 gal./1000 bu ÷ 1000 = 15,000 gals./yr.

Yearly oil cost: B = (A) 15,000 gals./yr. × $ 2.35 /gal. = 32,250 /yr. = $ 35,250 /yr.

Yearly dust generation: C = 10,000,000 bu throughput/yr. × 0.001 = 10,000 bu dust/yr.

Dust sold as dust: D = (C) 10,000 bu dust/yr. × 60 lb. grain/bu ÷ 2000 lb./ton × $ 10 /ton = $ 3,000 /yr.
(Note: D could be a debit instead of a credit if you have to pay to dispose of dust)

Dust sold as grain via oil-aditive application: E = (C) 10,000 bu dust/yr. × $ 2.50 /bu. = $ 25,000 /yr.

Oil product sold as grain: F = (A) 15,000 gals/yr. × 7 lbs. oil/gal. ÷ 60 lb. grain½bu × $ 2.50 /bu. = $ 4,375 /yr.

Total costs related to product values: B + D − E − F = $ 5,875 /yr. if you get credit for your dust now.

or B − D − E − F = $_____/yr. if you must pay for dust disposal.

Economics of oil-additive dust suppression (Part 2)

1. Total costs related to
   product values (from Part 1; watch out! might be negative!: $_____/yr.
2. Dust collection equipment
   electrical power savings: _____ hours of operation/yr. x _____ hp x 0.7457 kw-hr./hp-hr.
   x $_____/kw-hr. = $_____/yr.
3. Labor savings-housekeeping: $_____/yr.
4. Labor savings—maintenance: $_____/yr.
5. Reduction in insurance premium: $_____/yr.
6. Other miscellaneous savings: $_____/yr.

Total (add up 2-6 and subtract 1; or add 1 if it's negative): $_____/yr.

Epilogue

The purpose of this booklet has been to give you some background information on the whole area of oil-additive dust control. We hope you've found it informative and interesting.

Somewhere in this booklet, you'll find the name and phone number of someone who can give you price and delivery information for Amoco White Mineral Oil. That person can probably also recommend a supplier for oil-additive equipment. Give them a call.

At Amoco, we're trying to make your job easier by keeping you informed and helping you put the whole oil-additive package together. If you have questions, call your Amoco representative. We're here to help.

Amoco Oil Company
200 East Randolph Drive
Chicago, Illinois 60601

24-9000 (8/88)
8/88 Category VIII
400-9-40023
PI-442

MINERAL OIL

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Attention: the data below are typical values and do not constitute a specification.

Color: Colorless
Physical State: Liquid
Odor: Petroleum odor
pH: NA
Vapor Pressure: <0.01 mmHg @ 100 °F
Vapor Density (Air = 1): >1
Boiling Point: >500 °F (>260 C)
Solubility: Soluble in hydrocarbons; insoluble in water
Freezing Point: NA
Melting Point: NA
Specific Gravity: 0.85 @ 25 °C / 25 °C
Viscosity: 17.5 cSt - 39.0 cSt @ 40 °C (Min)

SECTION 10 STABILITY AND REACTIVITY

Chemical Stability: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.
Incompatibility With Other Materials: May react with strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.
Hazardous Decomposition Products: None known (None expected)
Hazardous Polymerization: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

IMMEDIATE HEALTH EFFECTS
Eye Irritation: The eye irritation hazard is based on evaluation of data for similar materials or product components.
Skin Irritation: The skin irritation hazard is based on evaluation of data for similar materials or product components.
Skin Sensitization: The skin sensitization hazard is based on evaluation of data for similar materials or product components.
Acute Dermal Toxicity: The acute dermal toxicity hazard is based on evaluation of data for similar materials or product components.
Acute Oral Toxicity: The acute oral toxicity hazard is based on evaluation of data for similar materials or product components.
Acute Inhalation Toxicity: The acute inhalation toxicity hazard is based on evaluation of data for similar materials or product components.

SECTION 12 ECOLOGICAL INFORMATION

ECOTOXICITY
The toxicity of this material to aquatic organisms has not been evaluated. Consequently, this material should be kept out of sewage and drainage systems and all bodies of water.

ENVIRONMENTAL FATE
This material is not expected to be readily biodegradable. This material is considered inherently biodegradable. This material is not expected to present any environmental problems other than those associated with oil spills. See Section 6

Section 8

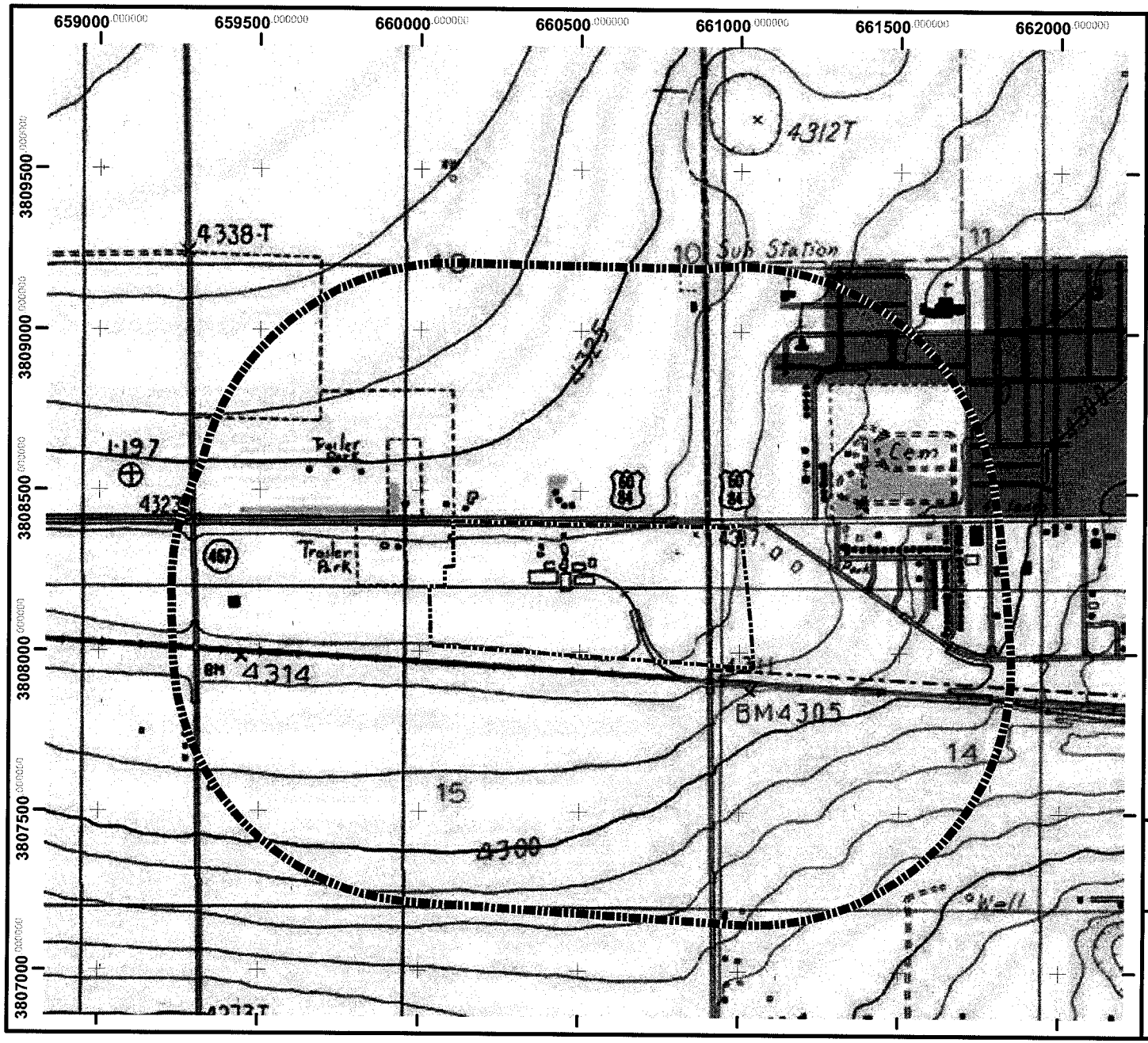
Map(s)

Map(s): Provide a 7.5 minute topographic quadrangle map showing the exact location of the source. A second, more detailed site layout map of the facility may be required to show all the following information. The map(s) shall also include the following:

The UTM or Longitudinal coordinate system on both axes	An indicator showing which direction is north
A minimum radius around the plant of 0.8km (0.5 miles)	Haul roads (for access, raw material, and product)
Topographic features of the area	Facility property boundaries
The name of the map(s)	The area which will be restricted to public access
A graphical scale	The facility layout (and for crushers & asphalt plants provide the perimeter of the area of operations)

To save paper and to standardize the application format, delete this sentence, and begin your submittal for this Section on this page.

X:\0Projects\13017_001_Gavilon_Clovis\Figures\NotSpecified_Figures\Fig8_1_ProjectLocation_24KTopo.mxd
6/10/2009 @ 5:18:25 PM



Legend

- Half-mile Buffer
- Property Boundary

USGS 24K Quads:
Clovis and Portair

N

750 375 0 750
Feet
200 150 100 50 0 200 400
Meters

The Gavilon Group LLC
West Clovis Facility

Figure 8-1

Project Location

Section 9

Proof of Public Notice

(for NSR applications submitting under 20.2.72 or 20.2.74 NMAC)

☒ **I have read the AQB "Guidelines for Public Notification for Air Quality Permit Applications"**

Documentary Proof of applicant's public notice

(20.2.72.203.A.14 NMAC)

Per the Guidelines for Public Notification document mentioned above, include.

☒ A copy of the certified letter receipts with post marks (or documentary proof of certified mailing from commercial postage software);also include a copy of the property tax record mailing list (20.2.72.203.B NMAC).	☒ A list of the places where the public notice has been posted in at least four publicly accessible and conspicuous places, including the proposed or existing facility entrance. (e.g: post office, library, grocery, etc.)
☒ A sample of the letters sent to the owners of record.	☒ A sample and verification of the local postings.
☒ A sample of the letters sent to counties, municipalities, and Indian tribes. Included in the letter to owners of record.	☒ A copy of the public service announcement (PSA) sent to a local radio station and documentary proof of submittal.
☒ A table of the different groups' notices and to whom the notices were sent in each group.	☒ A copy of the display ad and its affidavit of publication. When appropriate, this shall be printed in both English and Spanish.
☒ A copy of the classified or legal ad and its affidavit of publication. When appropriate, this shall be printed in both English and Spanish.	☒ A map indicating the boundaries of the property on which the facility is located and all municipalities, counties, and Indian Tribes located within a 10 mile radius.

Table of the different groups' notices and to whom the notices were sent in each group

Groups who received notices	Individual(s) who received notices
Owners of record	Individuals shown on Property Tax Record list received from Curry County Assessor's Office
Counties, Municipalities, and Indian Tribes	Charlene Hardin – Roosevelt County Manager Lance A. Pyle – Curry County Manager City of Clovis City Hall No tribes within the 10 mile radius
Freedom Newspapers of New Mexico	
Public Notice posted: Clovis Chamber of Commerce Curry County Courthouse Clovis City Office	
KTQM Radio	ktqm@plateautel.net

ENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

. Article Addressed to:

Joseph O. Dice Jr.
1351 US Hwy 60-84
Clovis, NM 88101

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X Joe Dice ☐ Agent ☐ Addressee

B. Received by (Printed Name) C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

USPS - NORTHWEST STATION CLOVIS NM 88101 JUL 20 2009

3. Service Type
☑ Certified Mail ☐ Express Mail
☐ Registered ☒ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? (Extra Fee) ☐ Yes

. Article Number
(Transfer from service label) 7000 1670 0003 4352 3562

S Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

ENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

. Article Addressed to:

Dale L Moorman
PO Box 5309
Clovis, NM 88102

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X ☐ Agent ☐ Addressee

B. Received by (Printed Name) C. Date of Delivery

USPS CLOVIS NM 88101 NORTHWEST STATION JUL 20 2009

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☑ Certified Mail ☐ Express Mail
☐ Registered ☒ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? (Extra Fee) ☒ Yes

. Article Number

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Victor & Viola Cano
1350 US Hwy 60-84
Clovis, NM 88101

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X ☐ Agent ☐ Addressee

B. Received by (Printed Name) C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☒ Certified Mail ☐ Express Mail
☐ Registered ☒ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? (Extra Fee) ☐ Yes

2. Article Number
(Transfer from service label) 7000 1670 0003 4352 3609

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Conway Oil Co
PO Drawer 1908
Clovis, NM 88102

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X ☐ Agent ☐ Addressee

B. Received by (Printed Name) C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

JUL 2 2009 CLOVIS NM

3. Service Type
☒ Certified Mail ☐ Express Mail
☐ Registered ☒ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? (Extra Fee) ☐ Yes

2. Article Number
(Transfer from service label) 7000 1670 0003 4352 3593

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

SENDER: COMPLETE THIS SECTION

Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
Print your name and address on the reverse so that we can return the card to you.
Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Mike Coffman
Coffman Willie Mae Trust
150 Coots Ln
Cave City, AR 72521

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X ☐ Agent ☐ Addressee

B. Received by (Printed Name) C. Date of Delivery
Jan Coffman 7/23/09

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☐ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? (Extra Fee) ☐ Yes

2. Article Number
(Transfer from service label) 7000 1670 0003 4352 3555

ENDER: COMPLETE THIS SECTION

- Complete Items 1, 2, and 3. Also complete Item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

. Article Addressed to:

Giese Realty Investment
PO Box 518
Clovis, NM 88101

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X Kasey Johnson ☐ Agent ☐ Addressee

B. Received by (Printed Name) Kasey Johnson | C. Date of Delivery 7-21-09

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☒ Certified Mail ☐ Express Mail
☐ Registered ☒ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? (Extra Fee) ☐ Yes

. Article Number
(Transfer from service label) 7000 1670 0003 4352 3524

S Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

ENDER: COMPLETE THIS SECTION

- Complete Items 1, 2, and 3. Also complete Item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

. Article Addressed to:

Craig Jonson
1344 US Hwy 60-84
Clovis, NM 88101

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X ☐ Agent ☐ Addressee

B. Received by (Printed Name) | C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☒ Certified Mail ☐ Express Mail
☐ Registered ☒ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? (Extra Fee) ☐ Yes

Article Number
(Transfer from service label) 7000 1670 0003 4352 3586

S Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

ENDER: COMPLETE THIS SECTION

Complete Items 1, 2, and 3. Also complete Item 4 if Restricted Delivery is desired.
Print your name and address on the reverse so that we can return the card to you.
Attach this card to the back of the mailpiece, or on the front if space permits.

Article Addressed to:

Ms Jaunita Carpenter
Billynns Gun Shop
1320 US Hwy 60-84
Clovis, NM 88101

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X ☐ Agent ☐ Addressee

B. Received by (Printed Name) | C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☒ Certified Mail ☐ Express Mail
☐ Registered ☒ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? (Extra Fee) ☐ Yes

Article Number
(Transfer from service label) 7000 1670 0003 4352 3579

3 Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

ENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

. Article Addressed to:

City Hall
City of Clovis
321 N Connelly
Clovis NM 88101

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X [signature] ☐ Agent ☐ Addressee

B. Received by (Printed Name) Viola Reyes | C. Date of Delivery 7-20

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☒ Certified Mail ☐ Express Mail
☐ Registered ☒ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? (Extra Fee) ☐ Yes

Article Number
(Transfer from service label) 7099 3220 0006 3919 3414

S Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

ENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

. Article Addressed to:

Charlene Harain
Roosevelt County Manager
109 W 1st St #B6
Portales, NM 88130

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X Tammy A Lee ☐ Agent ☐ Addressee

B. Received by (Printed Name) Tammy A. Lee | C. Date of Delivery 7/20/09

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☐ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? (Extra Fee) ☐ Yes

. Article Number
(Transfer from service label)

S Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

ENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

. Article Addressed to:

Donald & Norma Hovde
PO Box 192
Melrose, NM 88124

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X [signature] ☐ Agent ☒ Addressee

B. Received by (Printed Name) NORMA HOVDE | C. Date of Delivery 7-21-09

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☒ No

3. Service Type
☒ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? (Extra Fee) ☐ Yes

Article Number
(Transfer from service label) 7099 3220 0006 3919 3445

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Bank of Clovis, Custodian
Craig Johnson
300 Main St
Clovis, NM 88101

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X [signature] ☐ Agent ☐ Addressee

B. Received by (Printed Name) | C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☒ Certified Mail ☐ Express Mail
☐ Registered ☒ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? (Extra Fee) ☐ Yes

2. Article Number
(Transfer from service label) 7000 1670 0003 4352 3531

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Ms Betty C King
2180 Curry Rd D
Texico, NM 88135

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X [signature] ☒ Agent ☐ Addressee

B. Received by (Printed Name) Michael Sandoval | C. Date of Delivery 7-20-09

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☒ Certified Mail ☐ Express Mail
☐ Registered ☒ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? (Extra Fee) ☐ Yes

2. Article Number
(Transfer from service label) 7008 1670 0003 4351 8186

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

SENDER: COMPLETE THIS SECTION

Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
Print your name and address on the reverse so that we can return the card to you.
Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Lance A Pyle
Curry County Manager
Curry County
700 N Main Street
Suite 10
Clovis, NM 88101

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X Arlie Mitchell ☐ Agent ☐ Addressee

B. Received by (Printed Name) Arlie Mitchell | C. Date of Delivery 7/20/07

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☒ Certified Mail ☐ Express Mail
☐ Registered ☒ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? (Extra Fee) ☐ Yes

2. Article Number
(Transfer from service label) 7099 3220 0006 3919 3438

ENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Town & Country Food Store
PO Box 9036
Corpus Christi, TX 78469

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X [signature] ☐ Agent ☐ Addressee

B. Received by (Printed Name) [illegible] C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☒ Certified Mail ☐ Express Mail
☐ Registered ☒ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? (Extra Fee) ☐ Yes

Article Number
(Transfer from service label) 7000 1670 0003 4351 8193

S Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

ENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Burlington Northern Santa Fe
PO Box 961089
Ft Worth, TX 76161

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X [signature] ☐ Agent ☐ Addressee

B. Received by (Printed Name) C. Date of Delivery 7-17-09

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

JUL 17 2009

3. Service Type
☒ Certified Mail ☐ Express Mail
☐ Registered ☒ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? (Extra Fee) ☐ Yes

Article Number
(Transfer from service label) 7000 1670 0003 4352 3548

S Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

ENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Sierra West of Clovis
PO Box 2013
Clovis, NM 88101

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X [signature] ☐ Agent ☐ Addressee

B. Received by (Printed Name) JAMES M. WHITTINGTON C. Date of Delivery 7-30-09

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☒ Certified Mail ☐ Express Mail
☐ Registered ☒ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? (Extra Fee) ☒ Yes

Article Number
(Transfer from service label) 7008 3230 0002 6886 8023

S Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

FAX

Curry County Assessor's Office
Randy J. Williams, Assessor
700 Main St. Suite 6
Clovis, NM 88101

Date 6-19-09

Number of pages including cover sheet ____

To: Karen Sable

Phone

Fax Phone 406-652-7485

CC:

From: Carolyn

Phone (575) 763-5731

Fax Phone (575) 763-8097

REMARKS:

☐ Urgent ☐ For your review ☐ Reply ASAP ☐ Please comment

Property Tax Record Mailing List

Neighbors within 100 Feet

Sierra West of Clovis, LLC
PO Box 2013
Clovis, NM 88101

Mr. Dale L. Moorman
PO Box 5309
Clovis, NM 88102

Ms. Betty C. King
2180 Curry Rd D
Texico, NM 88135

Donald & Norma Hovde
PO Box 192
Melrose, NM 88124

Victor & Viola Cano
1350 US Hwy 60-84
Clovis, NM 88101

Conway Oil Co.
Po Drawer 1908
Clovis, NM 88102

Craig Johnson
1344 US Hwy 60-84
Clovis, NM 88101

Ms Jaquita Carpenter
Billynns Gun Shop
1320 US Hwy 60-84
Clovis, NM 88101

Mr. Joseph O. Dice Jr.
1351 US Hwy 60-84
Clovis, NM 88101

Mr. Mike Coffman
Coffman Willie Mae Trust
150 Coots Ln
Cave City, AR 72521

Burlington Northern Santa Fe
Po Box 961089
Fort Worth, TX 76161

ConAgra Foods Inc.
Elven Conagra Drive 11-160
Omaha, Ne 68102

Bank of Clovis, Custodian
Craig Johnson
300 Main ST
Clovis, NM 88101

Giese Realty Investment Co.
Po Box 581
Clovis, NM 88101

Town & Country Food Stores
PO Box 9036
Corpus Christi, TX 78469

Municipalities and Counties (Same)

City of Clovis
City Hall
321 N Connelly
Clovis, NM 88101
(575)769-7828

Roosevelt County
Charlene Hardin - Manager
109 W 1st St #B6
Portales, NM 88130
(575)356-5307

Curry County
Lance A. Pyle-Curry County Manager
700 North Main Street, Suite #10
Clovis, NM 88101
(505) 763-6016

General Posting of Notices – Certification

I, Jeff Stevens, the undersigned, certify that on July 13, 2009, I posted a true and correct copy of the attached Public Notice in the following publicly accessible and conspicuous places in the City of Clovis of Curry County, State of New Mexico on the following dates:

1. Facility Entrance, July 13, 2009
2. Clovis City Office, July 13, 2009
3. Clovis Chamber of Commerce, July 13, 2009
4. Curry County Court House, July 13, 2009

Signed this 5th day of August, 2009

Jeffrey L Stevens
Signature

8/5/2009
Date

Jeffrey Stevens
Printed Name

Superintendant, Gavilon Grain, LLC dba Peavey Company – Clovis, NM
Title

Notice

Air Quality Permit Application

Gavilon Grain, LLC dba Peavey Company announces its intent to apply to the New Mexico Environment Department for an air quality permit for the modification of its animal feed manufacturing facility in Clovis, NM. The date of application submittal to the Air Quality Bureau was on June 12, 2009. This notice is a requirement according to New Mexico air quality regulations.

The exact location for the proposed facility known as Gavilon Grain, LLC dba Peavey Company – West Clovis is 1327 US-60/US-83 Clovis, NM 88101, approximately 3 miles west of Clovis, NM.

The modifications requested primarily consist of changes to product line throughputs that allow greater operational flexibility. The changes requested will allow the facility to respond to changing demand for the various products manufactured at the facility as long as the maximum facility throughput is not exceeded. These changes do not affect the current maximum facility throughput of 21 million bushels per year. The modification also includes the addition of several existing sources at the facility that were previously not included in the facility's permit. The proposed modification consists of the following: an increase in the allowable daily volume of grain received by the rail shuttle unloading facility from 440,000 bushels per day to 475,000 bushels per day; an increase in total flaker throughput from 219,000 to 394,000 bushels per year, and from 20 and 16 tons per hour to 25 and 20 tons per hour for Flaker Units 2 and 3 respectively; the addition of cyclone control to the flaker grain cleaner; an increase in truck receiving volume from 28,000 tons per year to 280,000 tons per year and eliminate the current permit distinction between straight truck and hopper truck receipts; an increase in the allowable throughput for the main elevator from 28,000 to 560,000 tons per year to match the annex bin vent throughput and clarify facility's current allowable throughput of 21 million bushels per year; an increase in throughputs of the two hammermills from 10 to 20 tons per hour each and from 175,200 tons per year total to 350,400 tons per year total; replacement of the facility's boiler shell and tubes, and correction of the boiler capacity from 20.1 to 26.4 million btu per hour, inclusion of corn residuals (dried distillers grain) as one of the materials handled and stored at the facility; addition of ground corn truck loadout conveyor with a capacity of 150 tons per hour and 350,400 tons per year; addition of ground corn truck unloading pit and railcar portable loadout conveyor with a capacity of 100 tons per hour and 35,000 tons per year; addition of two dried distillers grain truck loadout conveyors with a capacity of 140 tons per hour and 240,000 tons per year; addition of an outside storage pile of dried distillers grain with a capacity of 50,000 tons per year that is controlled via a tarp except for the area being loaded or unloaded; addition of dried distillers grain truck loadout with a capacity of 150 tons per hour and 50,000 tons per year; addition of emergency outside storage of whole grain with a capacity of 700 tons per hour, 8 hours per day, and 168,000 tons per year; addition of truck reclaim of outside emergency whole grain storage with a capacity of 150 tons per hour and 168,000 tons per year, and addition of flaker cyclone grain fines handling system with a capacity of 5 tons per day. The requested modification also corrects an incorrect reference to mineral oil control of flaked grain.

This facility estimates its maximum quantities of any regulated air contaminated to be 4 pounds per hour (pph) and 12 tons per year (tpy) of oxides of nitrogen, 4 pph and 10 tpy of carbon monoxide, 30 pph and 55 tpy of total suspended particulate, 14 pph and 24 tpy of particulate matter less than 10 microns, 3 pph and 6 tpy of particulate matter less than 2.5 microns, 0.1 pph and 0.05 tpy of sulfur dioxide, 0.2 pph and 0.5 tpy of volatile organic compounds, and 0.1 pph and

0.3 tpy of hazardous and toxic air pollutants (primarily hexane). These emission estimates could change slightly during the course of the Department's review of the application.

The maximum operating schedule of the plant will be 24 hours per day, 7 days a week and 52 weeks per year. The standard operating schedule varies throughout the year but will be less than full time.

The owner and/or operator of the Plant is:
Gavilon Grain, LLC dba Peavey Company
Eleven ConAgra Drive 11-160
Omaha, NE 68102

Questions and comments regarding this notice may be directed to:

Program Manager, Permit Section
New Mexico Environment Department
Air Quality Bureau
1301 Siler Road, Building B
Santa Fe, New Mexico 87507-3113
Phone: (505) 476-4300 or 1-800-224-7009
Fax: (505) 476-4375

GAVILON SM
GRAIN

July 14, 2009

Lance A. Pyle - Curry County Manager
Curry County
700 North Main Street
Suite 10
Clovis, NM 88101

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Dear Neighbor/County or Municipal Official;

According to New Mexico air quality regulations, Gavilon Grain, LLC dba Peavey Company announces its intent to apply to the New Mexico Environment Department for an air quality permit for the modification of its animal feed manufacturing facility in Clovis, NM. The date of application submittal to the Air Quality Bureau was on June 12, 2009. This notice is a requirement according to New Mexico air quality regulations.

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The maximum operating schedule of the plant will be 24 hours per day, 7 days a week and 52 weeks per year. The standard operating schedule varies throughout the year but will be less than full time.

If you have any comments about the construction or operation of the above facility, and want your comments to be made as part of the permit review process, you must submit your comments in writing to the address below:

Program Manager, Permit Section
New Mexico Environment Department
Air Quality Bureau
1301 Siler Road, Building B
Santa Fe, New Mexico 87507-3113
(505) 476-4300

Other comments and questions may be submitted verbally.

Please refer to the company name and site name, as used in this notice or send a copy of this notice along with your comments, since the Department may not have received the permit application at the time of this notice. Once the Department has performed a preliminary review of the application and its air quality impacts, another notice will be published in the legal section of the newspaper.

Sincerely,

Rick Yabroff, Director of Safety and Environmental
Gavilon Grain, LLC dba Peavey Company
11 ConAgra Drive
11-160 Omaha, NE 68102

Submittal of Public Service Announcement – Certification

I, Rick Yabroff, the undersigned, certify that on **July 14, 2009,** I submitted a public service announcement to **KTQM Radio Station** that serves the City of **Clovis, Curry** County, New Mexico, in which the source is or is proposed to be located and that KTQM **DID NOT RESPOND THAT IT WOULD NOT AIR THE ANNOUNCEMENT.**

Signed this 5 day of August, ____.

Signature

8/5/2009
Date

Rick Yabroff
Printed Name

Gavilon Grain, LLC, Director of Safety and Environmental
Title

Yabroff, Rick (Gavilon)

From: ktqm [ktqm@plateautel.net]
Sent: Tuesday, July 14, 2009 5:03 PM
To: Yabroff, Rick (Gavilon)
Subject: Read: Public Service Announcement
Attachments: ATT2031302.txt

This is a receipt for the mail you sent to <KTQM@plateautel.net> at 7/14/2009 11:47 AM

This receipt verifies that the message has been displayed on the recipient's computer at 7/14/2009 3:03 PM

Yabroff, Rick (Gavilon)

From: Yabroff, Rick (Gavilon)
Sent: Tuesday, July 14, 2009 1:47 PM
To: 'KTQM@plateautel.net'
Cc: Yabroff, Rick (Gavilon)
Subject: Public Service Announcement

Dear KTQM (99.9 FM Clovis, NM),

In accordance with New Mexico's Guidelines for Public Notification for Air Quality Permit Applications, I am submitting a Public Service Announcement regarding our proposed air permit application.

Thanks,

Public Service Announcement_Cl...

Rick Yabroff
The Gavilon Group, LLC
Phone: (402) 889-4153
Fax: (402) 221-0388

Public Service Announcement
Notice of Air Quality Permit Application

Gavilon Grain, LLC dba Peavey Company announces its intent to apply to the New Mexico Environment Department for an air quality permit for the modification of its animal feed manufacturing facility in Clovis, NM. The date of application submittal to the Air Quality Bureau was on June 12, 2009. This notice is a requirement according to New Mexico air quality regulations.

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The public notice is posted at:

- Clovis City Hall
- Clovis/Curry County Chamber of Commerce
- Curry County Court House

Questions and comments regarding this notice may be directed to the New Mexico Environment Department, Air Quality Bureau - Permit Section at 1-800-224-7009.

Display Ad

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The owner and/or operator of the Plant is:
Gavilon Grain, LLC dba Peavey Company
Eleven ConAgra Drive 11-160
Omaha, NE 68102

If you have any comments about the construction or operation of the above facility, and want your comments to be made as part of the permit review process, you must submit your comments in writing to the address below:

Program Manager, Permit Section
New Mexico Environment Department
Air Quality Bureau
1301 Siler Road, Building B
Santa Fe, New Mexico 87507-3113
(505) 476-4300

Other comments and questions may be submitted verbally.

Please refer to the company name and site name, as used in this notice or send a copy of this notice along with your comments, since the Department may not have received the permit application at the time of this notice. Once the Department has performed a preliminary review of the application and its air quality impacts, another notice will be published in the classified or legal section of the newspaper.

Display Ad

Notificación de Solicitud de Permiso de Calidad de Aire

Gavilon Grain, LLC dba Peavey Company anuncia su intención de presentar una solicitud al Departamento de Medio Ambiente de New Mexico para un permiso de calidad de aire para las modificaciones de su planta de alimento animal en Clovis, NM. La fecha de la presentación de la solicitud a la Oficina de Calidad de Aire fue Junio 12, 2009. Esta notificación es un requisito del reglamento de calidad de aire de New Mexico.

La ubicación exacta de la planta propuesta conocida como The Gavilon Grain, LLC dba Peavey Company – West Clovis es 1327 US-60/US-83 Clovis, NM 88101, aproximadamente 3 millas al oeste de Clovis, NM.

Las modificaciones solicitadas consisten principalmente de cambios al proceso de línea de productos los que permitirán mayor flexibilidad operacional. Los cambios solicitados permitirán responder a los cambios en demanda para los varios productos manufacturados en la planta, siempre que la producción máxima no se exceda. Estos cambios no afectarán a la producción máxima de 21 millones de bushels por año. Las modificaciones también incluyen la adición de varias fuentes ya existentes en la planta las cuales no estaban incluidas en el permiso existente. Las modificaciones propuestas constan de lo siguiente: un aumento en el volumen diario permitido de granos recibidos en la instalación de descarga de ferrocarril de 440.000 bushels por año a 475.000 bushels por año; un aumento en la capacidad del "productor de migas" ("flaker") de 219.00 a 394.000 bushels por año, y de 20 a 19 toneladas por hora a 25 y 20 toneladas por hora para las unidades Flaker 2 y 3, respectivamente ; la adición de control de ciclón al limpiador de granos del "flaker"; un aumento en la capacidad permisible de recepción por medio de camiones de 28.000 toneladas por año a 280.000 toneladas por año y la eliminación de la diferenciación en el permiso actual entre camiones regulares y camiones tolva; en la capacidad permisible para el depósito de granos de 28.000 a 560.000 toneladas por año en coincidencia con la capacidad del venteo del depósito anexo y para clarificar la producción permisible de 21 millones de bushels por año.; un aumento en la capacidad de los dos molinos de martillo desde 10 hasta 20 toneladas por hora cada una y de 175.200 toneladas por año a 350.400 toneladas por año; reemplazo de las tuberías y exterior de las calderas, y la corrección de la capacidad de las calderas de 20,1 a 26,4 millones de btu; la adición de residuales de maíz (grano seco de destilación) como uno de los granos manejados y almacenados en la planta; la adición de una cinta transportadora para la descarga de maíz molido de los camiones con una capacidad de 150 toneladas por hora y 350.400 toneladas por año; la adición de una fosa de descarga de maíz molido y una cinta transportadora portátil para la descarga del ferrocarril con una capacidad de 100 toneladas por hora y 35.000 toneladas por año; la adición de de dos cintas transportadoras para grano seco de destilación con una capacidad de 140 toneladas por hora y 240.000 toneladas por año; la adición de un montículo de almacenamiento para grano seco de destilación con capacidad de 50.000 toneladas por año controlada por medio de una lona excepto donde se está cargando o descargando; la adición de una descarga para grano seco de destilación para camiones con una capacidad de 150 toneladas por hora y 50.000 toneladas por año; la adición de un depósito exterior de emergencia para grano completo con capacidad de 700 toneladas por hora, 8 horas diarias y 168.000 toneladas por año; la adición de un punto de recuperación para camiones para el depósito exterior de emergencia con capacidad de 150 toneladas por hora y 168.000 toneladas por año; y la adición de un sistema de manejo de polvos del ciclón del "flaker" con capacidad de 5 toneladas por día. La modificación solicitada también corrige una referencia incorrecta al control de granos en migas por medio de aceites minerales.

Para esta planta se estima una cantidad máxima de contaminantes de aire reglamentados de 4 libras por hora (pph) y 12 toneladas por años (tpy) de óxidos de nitrógeno, 4 pph y 10 tpy de monóxido de carbono, 14 pph y 24 tpy de partículas de menos de 10 micrómetros, 3 pph y 6 tpy de partículas de menos de 2.5 micrómetros, 0,1 y 0,05 tpy de dióxido de azufre, 0,2 y 0,5 tpy de compuestos orgánicos volátiles, 30 pph y 55 tpy de partículas totales en suspensión , y 0,1 y 0,3 tpy de contaminantes de aire peligrosos y tóxicos (principalmente el hexano). Estas

estimaciones de la emisión podían cambiar levemente durante el curso de la revisión de esta aplicación por parte del Departamento.

El cronograma de operaciones máximo será de 24 horas diarios, 7 días a la semana, y 52 semanas anuales. El cronograma estándar varía a través del año, pero será menor al máximo.

El dueño y operador de la planta es:
Gavilon Grain, LLC dba Peavey Company
Eleven ConAgra Drive 11-160
Omaha, NE 68102

Si usted tiene comentarios en relación a la construcción y operación de la instalación arriba mencionada, y quiere que su comentario forme parte del proceso de revisión de este permiso, por favor someta sus observaciones por escrito a la siguiente dirección:

Gerente de Programa, Sección de Permisos
Departamento Ambiental de New Mexico
Oficina de Calidad de Aire
1301 Siler Road, Building B
Santa Fe, New Mexico 87507-3113
(505) 476-4300

Otras preguntas y comentarios pueden ser sometidos verbalmente.

Ya que el Departamento podría no haber recibido el formato de aplicación para el momento de esta notificación, se requiere indicar el nombre de la compañía y la ubicación del sitio, tal como han sido identificados en esta notificación. Si lo prefiere, puede adjuntar una copia de esta notificación a sus comentarios. Un segundo aviso será publicado en los clasificados o en la sección legal del diario toda vez que el Departamento haya realizado la revisión preliminar de la aplicación así como evaluado los impactos a la calidad del aire.

AFFIDAVIT OF LEGAL PUBLICATION

LEGAL # 6006

Copy of Publication
ATTACHED
2 Pages

STATE OF NEW MEXICO
COUNTY OF CURRY:

The undersigned, being duly sworn, says:
That she is a Legal Clerk of
The Clovis News Journal, a daily
Newspaper of general circulation,
published in English at Clovis,
said county and state, and that the
hereto attached

Notice of Air Quality
Permit Application

was published in said Clovis News Journal,
a daily newspaper duly
qualified for that purpose within
the meaning of Chapter 167 of the
1937 Session Laws of the State of
New Mexico for 1 consecutive
days/weeks on the same days as follows:

First Publication: July 21, 2009
Second Publication:
Third Publication:
Fourth Publication:
Fifth Pulication
Sixth Publication
Seventh Publication

Subscribed and sworn to before me
July 21, 2009

Notary Public

OFFICIAL SEAL
LESLIE NAGY
NOTARY PUBLIC - STATE OF NEW MEXICO
My commission expires:

My Commission Expires: May 24, 2011

Pg 1

Legal 6006
July 21, 2009

Notice of Air Quality Permit Application

Gavilon Grain, LLC dba Peavey Company announces its intent to apply to the New Mexico Environment Department for an air quality permit for the modification of its animal feed manufacturing facility in Clovis, NM.

The date of application submittal to the Air Quality Bureau was on June 12, 2009. This notice is a requirement according to New Mexico air quality regulations.

The exact location for the proposed facility known as Gavilon Grain, LLC dba Peavey Company - West Clovis is 1327 US-60/US-83, Clovis, NM 88101; approximately 3 miles west of Clovis, NM.

The modifications requested primarily consist of changes to product line throughputs that allow greater operational flexibility. The changes requested will allow the facility to respond to changing demand for the various products manufactured at the facility as long as the maximum facility throughput is not exceeded. These changes do not affect the current maximum facility throughput of 21 million bushels per year. The modification also includes the addition of several existing sources at the facility that were previously not included in the facility's permit. The proposed modification consists of the following: an increase in the allowable daily volume of grain received by the rail shuttle unloading facility from 440,000 bushels per day to 475,000 bushels per day; an increase in total flaker throughput from 219,000 to 394,000 bushels per year, and from 20 and 16 tons per hour to 25 and 20 tons per hour for Flaker Units 2 and 3 respectively; the addition of cyclone control to the flaker grain cleaner; an increase in truck receiving volume from 28,000 tons per year to 280,000 tons per year and eliminate the current permit distinction between straight truck and hopper truck receipts; an increase in the allowable throughput for the main elevator from 28,000 to 560,000 tons per year to match the annex bin vent throughput and clarify facility's current allowable throughput of 21 million bushels per year; an increase in throughputs of the two hammermills from 10 to 20 tons per hour each and from 175,200 tons per year total to 350,400 tons per year total; replacement of the facility's boiler shell and tubes, and correction of the boiler capacity from 20.1 to 26.4 million btu per hour, inclusion of corn residuals (dried distillers grain) as one of the materials handled and stored at the facility; addition of ground corn truck loadout conveyor with a capacity of 150 tons per hour and 350,400 tons per year; addition of ground corn truck unloading pit and railcar portable loadout conveyor with a capacity of 100 tons per hour and 35,000 tons per year; addition of two dried distillers grain truck loadout conveyors with a capacity of 140 tons per hour and 240,000 tons per year; addition of an outside storage pile of dried distillers grain with a capacity of 50,000 tons per year that is controlled via a tarp except for the area being loaded or unloaded; addition of dried distillers grain truck loadout with a capacity of 150 tons per hour and 50,000 tons per year; addition of emergency outside storage of whole grain with a capacity of 700 tons per hour, 8 hours per day, and 168,000 tons per year; addition of truck reclaim of outside emergency whole grain storage with a capacity of 150 tons per hour and 168,000 tons per year, and addition of flaker cyclone grain fines handling system with a capacity of 5 tons per day. The requested modification also corrects an incorrect reference to mineral oil control of flaked grain.

This facility estimates its maximum quantities of any regulated air contaminated to be 4 pounds per hour (pph) and 12 tons per year (tpy) of oxides of nitrogen; 4 pph and 10 tpy of carbon monoxide, 30 pph and 55 tpy of total suspended particulate, 4 pph and 24 tpy of particulate matter less than 10 microns, 3 pph and 6 tpy of particulate matter less than 2.5 microns, 0.1 pph and 0.05 tpy of sulfur dioxide, 0.2 pph and 0.5 tpy of volatile organic compounds, and 0.1 pph and 0.3 tpy of hazardous and toxic air pollutants (primarily hexane). These emission estimates could change slightly during the course of the Department's review of the application.

The maximum operating schedule of the plant will be 24 hours per day, 7 days a week and 52 weeks per year. The standard operating schedule varies throughout the year but will be less than full time.

The owner and/or operator of the Plant is:
Gavilon Grain, LLC dba Peavey Company
Elevan ConAgra Drive 11-160
Omaha, NE 68102

If you have any comments about the construction or operation of the above facility, and want your comments to be made as part of the permit review process, you must submit your comments in writing to the address below:

Program Manager,
Permit Section
New Mexico Environment Department
Air Quality Bureau
1301 Siler Road,
Building B
Santa Fe, New Mexico 87507-3113
(505)476-4300
Other comments and questions may be submitted verbally.

Please refer to the company name and site name, as used in this notice or send a copy of this notice along with your comments, since the Department may not have received the permit application at the time of this notice. Once the Department has performed a preliminary review of the application and its air quality impacts, another notice will be published in the classified or legal section of the newspaper.

Notificación de Solicitud de Permiso de Calidad de Aire

Gavilon Grain, LLC dba Peavey Company anuncia su intención de presentar una solicitud al Departamento de Medio Ambiente de New Mexico para un permiso de calidad de aire para las modificaciones de su planta de alimento animal en Clovis, NM. La fecha de la presentación de la solicitud a la Oficina de Calidad de Aire fue Junio 12, 2009. Esta notificación es un requisito del reglamento de calidad de aire de New Mexico.

La ubicación exacta de la planta propuesta conocida como The Gavilon Grain, LLC dba Peavey Company - West Clovis as 1327 US-60/US-83 Clovis, NM 88101, aproximadamente 3 millas al oeste de Clovis, NM.

Las modificaciones solicitadas consisten principalmente de cambios al proceso de línea de productos los que permitirán mayor flexibilidad operacional. Los cambios solicitados permitirán responder a los cambios en demanda para los varios productos manufacturados en la planta, siempre que la producción máxima no se exceda. Estos cambios no afectarán a la producción máxima de 21 millones de bushels por año. Las modificaciones también incluyen la adición de varias fuentes ya existentes en la planta las cuales no estaban incluidas en el permiso existente. Las modificaciones propuestas constan de lo siguiente: un aumento en el volumen diario permitido de granos recibidos en la instalación de descarga de ferrocarril de 440,000 bushels por año a 475,000 bushels por año; un aumento en la capacidad del "producto de migas" ("flaker") de 219,00 a 394,000 bushels por año, y de 20 a 19 toneladas por hora a 25 y 20 toneladas por hora para las unidades Flaker 2 y 3 respectivamente; la adición de control de ciclón al limpiador de granos del "flaker"; un aumento en la capacidad permisible de recepción por medio de camiones de 28,000 toneladas por año a 280,000 toneladas por año y la eliminación de la diferenciación en el permiso actual entre camiones regulares y camiones tolva; en la capacidad permisible para el depósito de granos de 28,000 a 560,000 toneladas por año en coincidencia con la capacidad del vertedero del depósito anexo y para clarificar la producción permisible de 21 millones de bushels por año; un aumento en la capacidad de los dos molinos de martillo desde 10 hasta 20 toneladas por hora cada una y de 175,200 toneladas por año a 350,400 toneladas por año; reemplazo de las tuberías y exterior de las calderas, y la corrección de la capacidad de las calderas de 20,1 a 26,4 millones de btu; la adición de residuales de maíz (grano seco de destilación) como uno de los granos manejados y almacenados en la planta; la adición de

Cont. Pag 2

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Gavilon

una cinta transportadora para la descarga de maíz molido de los camiones con una capacidad de 150 toneladas por hora y 350,400 toneladas por año; la adición de una fosa de descarga de maíz molido y una cinta transportadora portátil para la descarga del ferrocarril con una capacidad de 100 toneladas por hora y 35,000 toneladas por año; la adición de de dos cintas transportadoras para grano seco de destilación con una capacidad de 140 toneladas por hora y 240,000 toneladas por año; la adición de un montículo de almacenamiento para grano seco de destilación con capacidad de 50,000 toneladas por año controlada por medio de una lona excepto donde se está cargando o descargando; la adición de una descarga para grano seco de destilación para camiones con una capacidad de 150 toneladas por hora y 50,000 toneladas por año; la edición de un depósito exterior de emergencia para grano completo con capacidad de 700 toneladas por hora, 8 horas diarias y 168,000 toneladas por año; la adición de un punto de recuperación para camiones para el depósito exterior de emergencia con capacidad de 150 toneladas por hora y 168,000 toneladas por año; y la adición de un sistema de manejo de polvos del ciclón del "baker" con capacidad de 5 toneladas por día. La modificación solicitada también corrige una referencia incorrecta al control de granos en vuelo potencial de aceites minerales.

Para esta planta se estima una cantidad máxima de contaminantes de aire reglamentados de 4 libras por hora (pph) y 12 toneladas por años (tpy) de óxidos de nitrógeno, 4 pph y 10 tpy de monóxido de carbono, 14 pph y 24 tpy de partículas de menos de 10 micrómetros, 3 pph y 6 tpy de partículas de menos de 2.5 micrómetros, 0.1 y 0.05 tpy de dióxido de azufre, 0.2 y 0.5 tpy de compuestos orgánicos volátiles, 80 pph y 55 tpy de partículas totales en suspensión, y 0.1 y 0.3 tpy de contaminantes de aire peligrosos y tóxicos (principalmente el hexano). Estas estimaciones de la emisión podían cambiar levemente durante el curso de la revisión de esta aplicación por parte del Departamento.

El cronograma de operaciones máximo será de 24 horas diarias, 7 días a la semana, y 52 semanas anuales. El cronograma estándar varía a través del año, pero será menor al máximo.

El dueño y operador de la planta es:
Gavilon Grain, LLC dba Peavey Company
Eleven ConAgra Drive 11-16D
Omaha, NE 68102

Si usted tiene comentarios en relación a la construcción y operación de la instalación arriba mencionada, y quiere que su comentario forme parte del proceso de revisión de este permiso, por favor someta sus observaciones por escrito a la siguiente dirección:

Gerente de Programa,
Sección de Permisos
Departamento Ambiental de New Mexico
Oficina de Calidad de Aire
1301 Siler Road, Building B
Santa Fe, New Mexico 87507-3113
(505)476-4300

Otras preguntas y comentarios pueden ser sometidos verbalmente.

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AFFIDAVIT OF LEGAL PUBLICATION

DISPLAY AD

Copy of Publication

Attached
2 pages

STATE OF NEW MEXICO
COUNTY OF CURRY:

The undersigned, being duly sworn, says:
That she is a Legal Clerk of
The Clovis News Journal, a daily
Newspaper of general circulation,
published in English at Clovis,
said county and state, and that the
hereto attached

NOTICE OF AIR QUALITY
PERMIT APPLICATION

was published in said Clovis News Journal,
a daily newspaper duly
qualified for that purpose within
the meaning of Chapter 167 of the
1937 Session Laws of the State of
New Mexico for 1 consecutive
days/weeks on the same days as follows:

First Publication: July 21, 2009
Second Publication:
Third Publication:
Fourth Publication:
Fifth Pulication
Sixth Publication
Seventh Publication

Subscribed and sworn to before me
July 21, 2009

Notary Public

OFFICIAL SEAL
DEBBIE NAGY
NOTARY PUBLIC - STATE OF NEW MEXICO
My commission expires:

My Commission Expires: May 24, 2011

Pg 1
2N087

Notice of Air Quality Permit Application

Gavilon Grain, LLC dba Peavey Company announces its intent to apply to the New Mexico Environment Department for an air quality permit for the modification of its animal feed manufacturing facility in Clovis, NM. The date of application submittal to the Air Quality Bureau was on June 12, 2009. This notice is a requirement according to New Mexico air quality regulations.

The exact location for the proposed facility known as Gavilon Grain, LLC dba Peavey Company - West Clovis is 1327 US-60/US-84 Clovis, NM 88101, approximately 3 miles west of Clovis, NM.

The modifications requested primarily consist of changes to product line throughputs that allow greater operational flexibility. The changes requested will allow the facility to respond to changing demand for the various products manufactured at the facility as long as the maximum facility throughput is not exceeded. These changes do not affect the current maximum facility throughput of 21 million bushels per year. The modification also includes the addition of several existing sources at the facility that were previously not included in the facility's permit. The proposed modification consists of the following: an increase in the allowable daily volume of grain received by the rail shuttle unloading facility from 440,000 bushels per day to 475,000 bushels per day; an increase in total flaker throughput from 219,000 to 394,000 bushels per year, and from 20 and 16 tons per hour to 25 and 20 tons per hour for Flaker Units 2 and 3 respectively; the addition of cyclone control to the flaker grain cleaner; an increase in truck receiving volume from 28,000 tons per year to 280,000 tons per year and eliminate the current permit distinction between straight truck and hopper truck receipts; an increase in the allowable throughput for the main elevator from 28,000 to 560,000 tons per year to match the annex bin vent throughput and clarify facility's current allowable throughput of 21 million bushels per year; an increase in throughputs of the two hammermills from 10 to 20 tons per hour each and from 175,200 tons per year total to 350,400 tons per year total; replacement of the facility's boiler shell and tubes, and correction of the boiler capacity from 20:1 to 26.4 million btu per hour, inclusion of corn residuals (dried distillers grain) as one of the materials handled and stored at the facility; addition of ground corn truck loadout conveyor with a capacity of 150 tons per hour and 350,400 tons per year; addition of ground corn truck unloading pit and railcar portable loadout conveyor with a capacity of 100 tons per hour and 85,000 tons per year; addition of two dried distillers grain truck loadout conveyors with a capacity of 140 tons per hour and 240,000 tons per year; addition of an outside storage pile of dried distillers grain with a capacity of 50,000 tons per year that is controlled via a tarp except for the area being loaded or unloaded; addition of dried distillers grain truck loadout with a capacity of 150 tons per hour and 50,000 tons per year; addition of emergency outside storage of whole grain with a capacity of 700 tons per hour, 8 hours per day, and 168,000 tons per year; addition of truck reclaim of outside emergency whole grain storage with a capacity of 150 tons per hour and 168,000 tons per year; and addition of flaker cyclone grain fines handling system with a capacity of 5 tons per day. The requested modification also corrects an incorrect reference to mineral oil control of flaked grain.

This facility estimates its maximum quantities of any regulated air contaminated to be 4 pounds per hour (pph) and 12 tons per year (tpy) of oxides of nitrogen, 4 pph and 10 tpy of carbon monoxide, 30 pph and 55 tpy of total suspended particulate, 14 pph and 24 tpy of particulate matter less than 10 microns, 3 pph and 6 tpy of particulate matter less than 2.5 microns, 0.1 pph and 0.05 tpy of sulfur dioxide, 0.2 pph and 0.5 tpy of volatile organic compounds, and 0.1 pph and 0.9 tpy of hazardous and toxic air pollutants (primarily hexane). These emission estimates could change slightly during the course of the Department's review of the application.

The maximum operating schedule of the plant will be 24 hours per day, 7 days a week and 52 weeks per year. The standard operating schedule varies throughout the year but will be less than full time.

The owner and/or operator of the Plant is:
Gavilon Grain, LLC dba Peavey Company
Eleven ConAgra Drive 11-160
Omaha, NE 68102

If you have any comments about the construction or operation of the above facility, and want your comments to be made as part of the permit review process, you must submit your comments in writing to the address below:

Program Manager, Permit Section
New Mexico Environment Department
Air Quality Bureau
1301 Siler Road, Building B
Santa Fe, New Mexico 87507-3113
(505)476-4300
Other comments and questions may be submitted verbally.

Please refer to the company name and site name, as used in this notice or send a copy of this notice along with your comments, since the Department may not have received the permit application at the time of this notice. Once the Department has performed a preliminary review of the application and its air quality impacts, another notice will be published in the classified or legal section of the newspaper.

Notificación de Solicitud de Permiso de Calidad de Aire

Gavilon Grain, LLC dba Peavey Company anuncia su intención de presentar una solicitud al Departamento de Medio Ambiente de New Mexico para un permiso de calidad de aire para las modificaciones de su planta de alimento animal en Clovis, NM. La fecha de la presentación de la solicitud a la Oficina de Calidad de Aire fue Junio 12, 2009. Esta notificación es un requisito del reglamento de calidad de aire de New Mexico.

La ubicación exacta de la planta propuesta conocida como The Gavilon Grain, LLC dba Peavey Company - West Clovis es 1327 US-60/US-84 Clovis, NM 88101, aproximadamente 3 millas al oeste de Clovis, NM.

Cont. Page 2

Pg 2.

Las modificaciones solicitadas consisten principalmente de cambios al proceso de línea de productos los que permitirán mayor flexibilidad operacional. Los cambios solicitados permitirán responder a los cambios en demanda para los varios productos manufacturados en la planta, siempre que la producción máxima no se exceda. Estos cambios no afectarán a la producción máxima de 21 millones de bushels por año. Las modificaciones también incluyen la adición de varias fuentes ya existentes en la planta las cuales no estaban incluidas en el permiso existente. Las modificaciones propuestas constan de lo siguiente: un aumento en el volumen diario permitido de granos recibidos en la instalación de descarga de ferrocarril de 440.000 bushels por año a 475.000 bushels por año; un aumento en la capacidad del "productor de migas" ("flaker") de 219.00 a 394.000 bushels por año, y de 20 a 19 toneladas por hora a 25 y 20 toneladas por hora para las unidades Flaker 2 y 3, respectivamente; la adición de control de ciclón al limpiador de granos del "flaker"; un aumento en la capacidad permisible de recepción por medio de camiones de 28.000 toneladas por año a 280.000 toneladas por año y la eliminación de la diferenciación en el permiso actual entre camiones regulares y camiones tolva; en la capacidad permisible para el depósito de granos de 28.000 a 560.000 toneladas por año en coincidencia con la capacidad del venteo del depósito anexo y para clarificar la producción permisible de 21 millones de bushels por año; un aumento en la capacidad de los dos molinos de martillo desde 10 hasta 20 toneladas por hora cada una y de 175.200 toneladas por año a 350.400 toneladas por año; reemplazo de las tuberías y exterior de las calderas, y la corrección de la capacidad de las calderas de 20.1 a 26.4 millones de btu; la adición de residuales de maíz (grano seco de destilación) como uno de los granos manejados y almacenados en la planta; la adición de una cinta transportadora para la descarga de maíz molido de los camiones con una capacidad de 150 toneladas por hora y 350.400 toneladas por año; la adición de una fosa de descarga de maíz molido y una cinta transportadora portátil para la descarga del ferrocarril con una capacidad de 100 toneladas por hora y 35.000 toneladas por año; la adición de de dos cintas transportadoras para grano seco de destilación con una capacidad de 140 toneladas por hora y 240.000 toneladas por año; la adición de un montículo de almacenamiento para grano seco de destilación con capacidad de 50.000 toneladas por año controlado por medio de una toma excepto donde se está cargando o descargando; la adición de una descarga para grano seco de destilación para camiones con una capacidad de 150 toneladas por hora y 60.000 toneladas por año; la adición de un depósito exterior de emergencia para grano completo con capacidad de 700 toneladas por hora, 8 horas diarias y 168.000 toneladas por año; la adición de un punto de recuperación para camiones para el depósito exterior de emergencia con capacidad de 150 toneladas por hora y 168.000 toneladas por año; y la adición de un sistema de manejo de polvos del ciclón del "flaker" con capacidad de 5 toneladas por día. La modificación solicitada también corrige una referencia incorrecta al control de granos en migas por medio de aceites minerales.

por hora y 168.000 toneladas por año; y la adición de un sistema de manejo de polvos del ciclón del "flaker" con capacidad de 5 toneladas por día. La modificación solicitada también corrige una referencia incorrecta al control de granos en migas por medio de aceites minerales.

Para esta planta se estima una cantidad máxima de contaminantes de aire reglamentados de 4 libras por hora (pph) y 12 toneladas por años (tpy) de óxidos de nitrógeno, 4 pph y 10 tpy de monóxido de carbono, 14 pph y 24 tpy de partículas de menos de 10 micrómetros, 3 pph y 6 tpy de partículas de menos de 2.5 micrómetros, 0,1 y 0,05 tpy de dióxido de azufre, 0,2 y 0,5 tpy de compuestos orgánicos volátiles, 30 pph y 55 tpy de partículas totales en suspensión, y 0,1 y 0,3 tpy de contaminantes de aire peligrosos y tóxicos (principalmente el hexano). Estas estimaciones de la emisión podían cambiar levemente durante el curso de la revisión de esta aplicación por parte del Departamento.

El cronograma de operaciones máximo será de 24 horas diarios, 7 días a la semana, y 52 semanas anuales. El cronograma estándar varía a través del año, pero será menor al máximo.

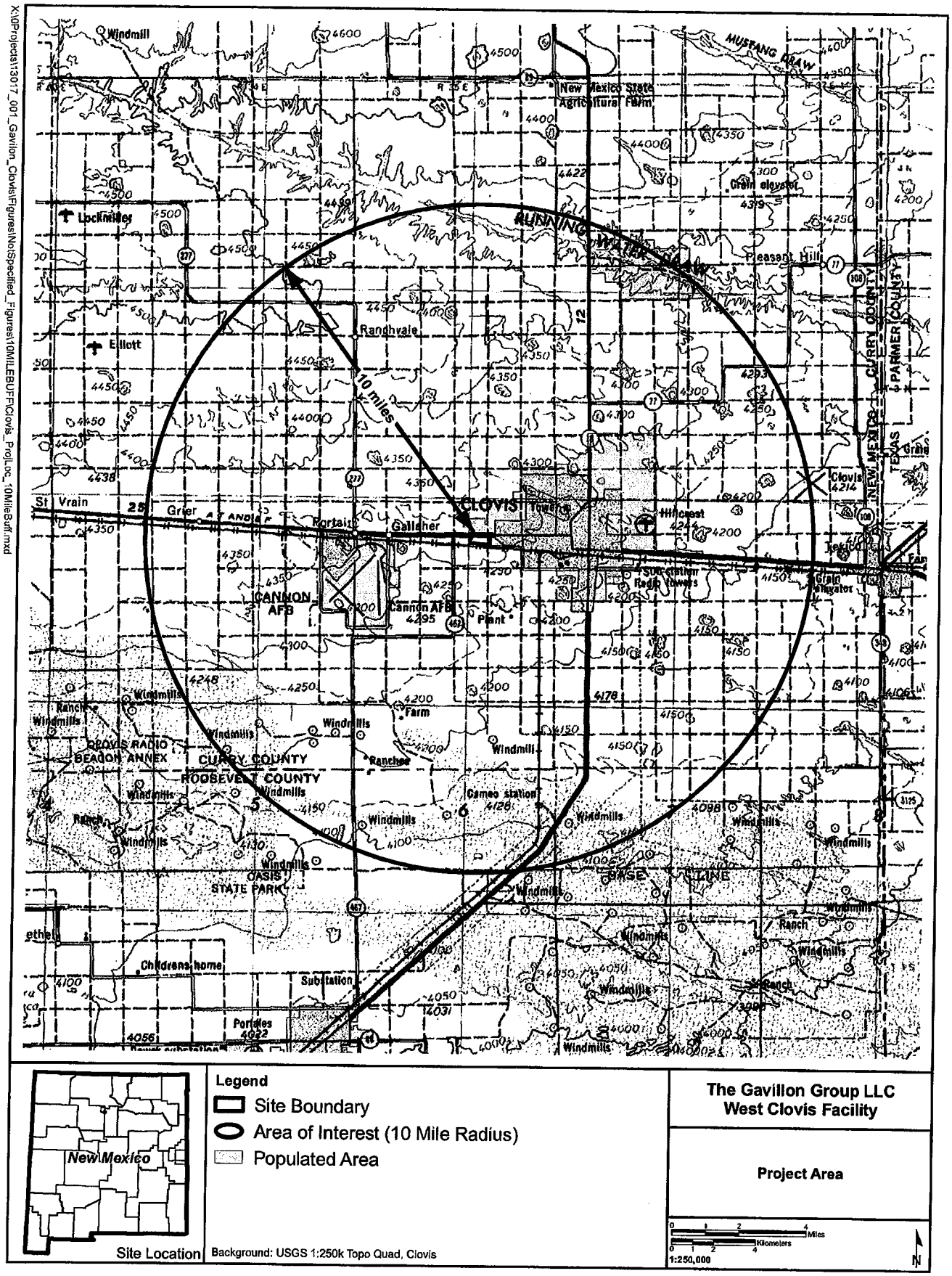
El dueño y operador de la planta es:
Gavilon Grain, LLC dba Peavey Company
Eleven ConAgra Drive 11-160
Omaha, NE 68102

Si usted tiene comentarios en relación a la construcción y operación de la instalación arriba mencionada, y quiere que su comentario forme parte del proceso de revisión de este permiso, por favor someta sus observaciones por escrito a la siguiente dirección:

Gerente de Programa, Sección de Permisos
Departamento Ambiental de New Mexico
Oficina de Calidad de Aire
1301 Siler Road, Building B
Santa Fe, New Mexico 87507-3113
(505)476-4300

Otras preguntas y comentarios pueden ser sometidos verbalmente.

Ya que el Departamento podría no haber recibido el formato de aplicación para el momento de esta notificación, se requiere indicar el nombre de la compañía y la ubicación del sitio, tal como han sido identificados en esta notificación. Si lo prefiere, puede adjuntar una copia de esta notificación a sus comentarios. Un segundo aviso será publicado en los clasificados o en la sección legal del diario toda vez que el Departamento haya realizado la revisión preliminar de la aplicación así como evaluado los impactos a la calidad del aire.



Site Location

Legend

- Site Boundary
- Area of Interest (10 Mile Radius)
- Populated Area

Background: USGS 1:250k Topo Quad, Clovis

The Gavilon Group LLC
West Clovis Facility

Project Area

0 1 2 4 Miles
0 1 2 4 Kilometers
1:250,000

N

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Section 10

Written Description of the Routine Operations of the Facility

A written description of the routine operations of the facility. Include a description of how each piece of equipment will be operated, how controls will be used, and the fate of both the products and waste generated. For modifications and/or revisions, explain how the changes will affect the existing process. In a separate paragraph describe the major process bottlenecks that limit production. The purpose of this description is to provide sufficient information about plant operations for the permit writer to determine appropriate emission sources.

This Section describes the routine operations of the Clovis West facility.

The facility is applying to make a number of changes to the facility. These changes, described in detail in Section 3, briefly include:

- The addition of dried distillers grain (DDG) receiving, handling, and shipping. DDG will not undergo any processing at the facility;
- Increases to maximum throughputs for a number of sources to allow more operational flexibility within the facility, although the facility's overall capacity will not change;
  Addition of ground corn truck loadout, ground corn truck unloading pit and railcar loadout, two DDG truck loadouts, DDG outside storage pile and truck loadout.

Animal Feed Manufacturing Operations

More than half the grain throughput of the Clovis West facility is manufactured into flaked or ground grain feed suitable for dairy cattle, making this the primary operation at the facility. Currently, more than 75% of the facility throughput is manufactured into flaked or ground grain.

Whole grain – corn or milo – is transferred by chute and/or conveyor from storage bins in the associated grain elevator to either the flaking operation or the grinding operation. DDG, also a feed product, is received by railcar, stored, and shipped via truck without undergoing processing.

In the flaking operation, whole grain is sent through a mechanical cleaner, then wetted and fed to two steam chests for softening. Softened grain is gravity-fed from the steam chests to two mechanical rollers, which crush the hull and produce flaked grain. Steam for the flaking operation is provided by a small natural gas-fired boiler. The flaked grain is passed through two coolers controlled by cyclone dust collectors, then transported via covered belt conveyors to enclosed storage buildings. The flaked grain is picked up from the storage floor by Bobcat loader and placed in the loading bin of a weigh-belt conveyor, which empties the flaked feed into trucks for transport to dairy farms.

In the grinding operation, whole grain is routed to one of two hammermills which grind the whole grain into a ground feed product. Hammermill emissions are controlled by cyclones. The ground product is then transported via covered belt conveyors to an enclosed storage building. The ground grain is picked up from the storage floor by Bobcat loader and placed in the loading bin of a weigh-belt conveyor, which empties the ground grain feed into trucks for transport to dairy farms. A portion of the ground grain loaded out to truck is also transported over to a truck loadout pit and rail loading conveyor at the facility for transfer to rail for customers requiring receipt of ground feed via railcar.

Grain Elevator

The existing grain elevator supports the animal feed manufacturing operation and also provides storage for shipment of whole grains to area feedlots or dairies that produce their own flaked feed. The elevator receives grain (including dried distillers grain or DDG) shipments via two truck receiving pits and a shuttle train unloading pit. Most of the facility's incoming grain is received by rail. All DDG is received by rail. A small portion of the facility's incoming grain is received by truck, with truck receipts concentrated during the harvest season. Most incoming grain is received by rail. Of the grain received by truck, 85 percent of grain received by trucks is delivered in hopper trucks and 15 percent in straight trucks.

Two legs (enclosed bucket elevators) transport the grain received by truck to a headhouse at the top of the elevator, from which the grain can be directed to several storage bins. Another two legs transport the grain and/or DDG received by rail to the headhouse at the top of the elevator, also from which the grain can be directed to storage bins. From the bins, the grain can be diverted

unprocessed directed via two gravity-fed chutes to trucks for transport to area feedlots/dairies, or alternatively to storage barns or to two temporary outside ground storage areas located to the south (corn) and west (DDG) of the grain storage bins.
Mineral oil is currently applied to grain received by rail before entering the legs. A second mineral oil application system will be installed at the truck receiving pits in a similar fashion. During normal operations, all truck and rail receiving bins will be full and the unloading will be in choked-flow mode, minimizing dust emissions from grain receiving operations. In addition, a Brock Dustmaster grain receiving bin dust control system is also employed on the rail unloading hopper. All grain received is routed through an enclosed cleaner at the top of the elevator.

SECTION 11

PSD Applicability Determination for All Sources

(submitting under 20.2.70, 20.2.72, 20.2.74 NMAC)

A PSD applicability determination for all sources. For sources applying for a significant permit revision, apply the applicable requirements of 20.2.74 NMAC to determine whether this facility is a major or minor PSD source, and whether this modification is a major or a minor PSD modification. It may be helpful to refer to the procedures for Determining the Net Emissions Change at a Source as specified by Table A-5 (Page A.45) of the EPA New Source Review Workshop Manual to determine if the revision is subject to PSD review.

A. This facility is a minor source before and after this modification.

B. **This facility is not one of the listed 20.2.74.501 Table I – PSD Source Categories. The "project" emissions** for this modification are not significant. Emissions do not exceed the significant emission rates (CO – 100 tpy, NOx – 40 tpy, SO2 – 40 tpy, PM – 25 tpy, VOC – 40 tpy) listed in 40 CFR 52.21, and Curry County New Mexico is currently designated as "Attainment" for all criteria pollutants. **The "project" emissions listed below only result from changes described in this permit application (thus no emissions from other [revisions or modifications, past or future] to this facility. Emissions changes for all sources affected by the listed changes have been included and are discussed in the application. The project emissions (before netting) for this project are as follows:**

   a. **NOx: 11.34 TPY**
   b. **CO: 9.52 TPY**
   c. **VOC: 0.62 TPY**
   d. **SOx: 0.068 TPY**
   e. **PM: 48.25 TPY**

C. **Netting** is not required (project is not significant).

D. **BACT** is not required as this application is a minor modification.

Section 12

Special Requirements for a PSD Application

(submitting under 20.2.70, 20.2.72, 20.2.74 NMAC)

This Section does not apply as the modification is not subject to PSD review.

Prior *to Submitting a PSD application*, the permittee shall:

- ☐ Submit the BACT analysis for review prior to submittal of the application. No application will be ruled complete until the final determination regarding BACT is made, as this determination can ultimately affect information to be provided in the application. A pre-application meeting is recommended to discuss the requirements of the BACT analysis.
- ☐ Submit a modeling protocol prior to submitting the permit application.
- ☐ Submit the monitoring exemption analysis protocol prior to submitting the application.

For PSD applications, the permittee shall also include the following in Section M:

- ☐ Documentation containing an analysis on the impact on visibility.
- ☐ Documentation containing an analysis on the impact on soil.
- ☐ Documentation containing an analysis on the impact on vegetation, including state and federal threatened and endangered species.
- ☐ Documentation containing an analysis on the impact on water consumption and quality.
- ☐ Documentation that the federal land manager of a Class I area within 100 km of the site has been notified and provided a copy of the application, including the BACT and modeling results. The name of any Class I Federal area located within one hundred (100) kilometers of the facility.

This Section does not apply as the modification is not subject to PSD review.

Section 13

Discussion Demonstrating Compliance with Each Applicable State & Federal Regulation

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Provide a discussion demonstrating compliance with applicable state & federal regulation. If there is a state or federal regulation for your facility's source category that does not apply to your facility, but seems on the surface that it should apply, a discussion is in order. Examples of regulatory requirements that may or may not apply to your facility include 40 CFR 60 Subpart OOO (crushers), 40 CFR 63 Subpart HHH (HAPs), or 20.2.74 NMAC (PSD major sources). It is not necessary to provide a discussion of every non-applicable regulation, but if there is questionable applicability, explain why it does not apply.

If this application includes any proposed exemptions from otherwise applicable requirements, provide a narrative explanation of these proposed exemptions. These exemptions are from specific applicable requirements, which are spelled out in the requirements themselves, not exemptions from 20.2.70 NMAC or 20.2.72 NMAC.

20.2.72 NMAC – Construction Permits: The Clovis West facility is required to obtain a permit pursuant to. This application is the Clovis facility's demonstration of compliance with that requirement. In addition, the facility is subject to the following state and federal regulations:

40 CFR 60 Subpart Dc, Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units: One 600-hp (26.4 MMBtu/hr) boiler is used as part of the animal feed manufacturing operations. The boiler is subject to NSPS Subpart Dc due to the apparent replacement by the previous owner of the facility's 200 hp Williams & Davis boiler with a Superior/Holman 600 hp boiler in 1999/2000, which is after the effective date of NSPS Subpart Dc. Therefore, NSPS Subpart Dc is applicable.

20.2.7 NMAC – Excess Emissions During Malfunction, Startup, Shutdown, or Scheduled Maintenance: The requirements apply to the operation of all process equipment at the facility. Section 14 of this permit application addresses the facility's procedures for complying with the provisions of this regulation.

20.2.61.112 NMAC – Smoke and Visible Emissions: This Part applies to operation of diesel-powered locomotives during unloading of shuttle trains. Any issues involving compliance with this requirement are expected to be related to equipment malfunction; Section 14 of this permit application addresses procedures for compliance with this requirement.

20.2.61.109 NMAC – Stationary Combustion Equipment: This Part applies to owners or operators of stationary combustion equipment, however, stationary combustion equipment which is regulated by any other Part of Chapter 2 which specifically limits particulate emissions is exempted from this Part. 20.2.77 NMAC incorporates by reference the federal New Source Performance Standards. The 26.4 MMBtu/hr boiler is regulated under 40 CFR 60 Subpart Dc, however, because the boiler burns natural gas, there are no particulate matter limits. Therefore 20.2.61.109 NMAC applies to the boiler.

Potentially Applicable Requirements: Several other potentially applicable requirements **do not apply** to the facility as described below.

20.2.74 NMAC – Prevention of Significant Deterioration (PSD): The Clovis West facility has requested federally-enforceable annual throughput limits in the initial construction permit application, and does so with this modification request as well. As a result, the potential to emit (PTE) of all pollutants emitted from the facility is below the 100 ton/yr major source threshold, and increases due to this modification request are not significant.

20.2.72.502 NMAC – Construction Permits (HAP): Trace amounts of hazardous air pollutants (HAP) and toxic air pollutants (TAP) are emitted by the boiler at the stationary source; the PTE of HAP is below the 25 ton/yr major source threshold of the federal Title III program and no TAP is emitted in quantities exceeding the applicable screening threshold in 20.2.72 NMAC Section 502, Tables A and B.

20.2.33 NMAC – Gas Burning Equipment – Nitrogen Dioxide: The provisions of this Part apply to gas burning equipment, including boilers, with a heat input greater than 1,000,000 MMBtu/hr. The 26.4 MMBtu/hr does not exceed the applicability threshold of 20.2.33 NMAC, which therefore does not apply to the boiler.

40 CFR 60 Subpart DD - Standards of Performance for Grain Elevators: This Subpart was reviewed for potential applicability to the facility. This subpart is applicable to "each affected facility at any grain terminal elevator or any grain storage elevator, except as provided under Section 60.304(b)." 40 CFR 60.301(c) defines grain terminal elevator as "any grain elevator which has a permanent storage capacity of more than 88,100 cubic meters (ca. 2.5 million US bushels), except those located at animal food manufacturers, pet food manufacturers, cereal manufacturers, breweries, and livestock feedlots." 40 CFR 60.301(b) defines grain elevator as "any plant of installation at which grain is unloaded, handled, cleaned, dried, stored or loaded." 40 CFR 60.301(f) defines grain storage elevator as "any grain elevator located at any wheat flour mill, wet corn mill, dry corn mill (human consumption), rice mill, or soybean oil extraction plant which has a permanent grain storage capacity of 35,200 m^3 (ca. 1 million bushels)."

The permanent storage capacity at the facility, including concrete storage silos and storage inside other buildings on the site, is approximately 2.8 million bushels. While this storage capacity meets the definition of grain elevator (and thus grain terminal elevator), the Clovis West Facility is an animal food manufacturer[1], and therefore exempt from the Standard per the definition of grain terminal elevator. In addition, the Clovis West facility does not conduct any of the operations specified in the definition of a grain storage elevator. Therefore, Subpart DD does not apply to the Clovis West facility.

[1] While operated as the Peavey Company, Mr. Dallas Safriet of US EPA was consulted and confirmed that the grain flaking operation meets the EPA definition of "animal food manufacturer."

Section 14

Operational Plan to Mitigate Emissions

(submitting under 20.2.70, 20.2.72, 20.2.74 NMAC)

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1. Provide an **Operational Plan to Mitigate Emissions** defining the measures to be taken to mitigate source emissions during malfunction, startup, or shutdown (20.2.70.302.E.2 NMAC and 20.2.72.203.A.5 NMAC).

2. Provide a **Plan of Work Practices** to minimize emissions during routine or predictable startup, shutdown, and scheduled maintenance (SSM). This submittal may be a summary of the one required by 20.2.7.14 NMAC. Each emissions unit or operation with SSM emissions must be addressed by this plan or have SSM emissions identified in Table 2-F.

Gavilon Grain, LLC dba Peavey Company operates the West Clovis animal feed manufacturing and grain elevator facility in Clovis, NM. The facility receives whole grain and dried distillers grain (DDG) primarily by rail, with a smaller amount received by truck. The products are stored and whole grain is typically flaked or ground before being shipped to area agricultural operations.

Due to the nature of the facility, emissions during routine or predictable startup, shutdown, and scheduled maintenance are not expected to vary significantly from routine operation emissions. Particulate emissions control systems include the Brock Dustmaster, cyclones and mineral oil application. These systems will be periodically inspected and Gavilon will cease operations as soon as safely possible if a malfunction of a control system is discovered.

Gaseous emissions occur only from the small 600 hp natural gas-fired boiler. Emissions during startup and shutdown are expected to increase slightly from normal operations, but are of short duration. The boiler is normally operated continuously so startup and shutdown emissions are minimized. If operators observe or suspect a malfunction of the boiler and excess emissions, it will be shut down and the cause of the excess emission and malfunction determined before the boiler is brought back online. All routine or predictable startup, shutdown, and scheduled maintenance will be scheduled to the extent possible to occur at a time and in such a way as to minimize emissions.

Emissions from the diesel powered shuttle trains must not exceed 20% opacity for any period greater than ten seconds when operating below 8,000 feet elevation (exception: when emissions are a direct result of a cold engine start-up). The elevation in Clovis is approximately 4,300 feet. Diesel-powered locomotives are only operated on site during the unloading of shuttle trains. Any issues involving compliance with this requirement are expected to be related to equipment malfunction. If operators observe or suspect a malfunction of a locomotive engine and excess emissions, the engine owner will be notified.

This Plan also identifies several potential dust sources and describes Best Management Practices (BMPs) which are implemented to control dust and minimize the impact on downwind residents during routine operations.

Potential Dust Sources and BMPs

Three types of products are handled at this facility: whole grain (corn), DDG, and flaked and ground corn products. These products are all typically shipped by truck and are considered a potential source of dust along with the truck traffic. Each potential dust source is discussed below along with the BMPs applicable to that potential source.

Whole Grain

The whole grain typically received, handled, and shipped is corn. Most of the whole grain is received by rail although some whole grain may be received by truck. Dust emissions from whole grain received by rail is controlled by a Brock Dustmaster system which is designed to ensure dust emissions are minimized by controlling louvers on the loading pit to maintain a choked-feed status. Truck unloading pits are located in partial enclosures, and most whole grain is received in hopper trucks, both of which act to minimize dust emissions from unloading operations.

Whole grain is a potential dust source and so edible mineral oil is applied to all whole grain which is received at the facility. The generally accepted dust control factor for mineral oil is 80%. This method of dust control is effective for all handling of the grain after the oil is applied. This includes internal handling, and loading into trucks. The only source of dust from whole grain that has not been oiled is dumping the grain from rail cars or trucks. Dust is managed during rail and truck dumping by regulating the flow of grain and monitoring wind conditions to minimize dust generation. All trucks which receive whole grain are tarped before pulling away from the loadout area.

Ground Corn
Whole corn is processed with hammermills to make ground corn. Dust emissions from the hammermills are controlled by cyclones and baghouses. The hammermills are not operated if the cyclones or baghouses are not functioning correctly. When ground corn is loaded into trucks, a sock is used so that the product drops directly into the bed of the truck. All trucks which receive ground corn are tarped before leaving the loadout area.

Flaked Corn and Milo
Whole corn is also processed with two flakers and coolers to produce flaked corn. Dust emissions from the flakers/coolers are controlled by cyclones. While mineral oil was applied to the whole corn before flaking, it is presumed to be of limited effectiveness due to the steam treatment of the grain to be flaked. The flaked material is transported to storage barns via enclosed conveyors to minimize emissions. When the flaked corn and milo is loaded into trucks, a sock is used so that the product drops directly into the bed of the truck. All trucks which receive flaked corn are tarped before leaving the loadout area.

Grain Handling
All conveyors and ducts are enclosed and are routinely inspected for leaks. The ground corn downspouts have telescoping down spouts which reduce potential dust emissions. Employee and driver suggestions are encouraged to identify ways to reduce potential dust generation.

Traffic
Truck traffic going to the facility to drop off or pick up products can generate dust. Some of the traffic routes within the facility are paved and some are not. The truck traffic areas that are not paved are treated with a dust suppressant. The dust suppressant is applied on an as needed basis.

Monitoring and Recordkeeping
The dust control measures which are applied at the facility are monitored for effectiveness to ensure that uncontrolled dust emissions do not occur. The following operating parameters are monitored on a regular basis:

• **Mineral oil application** – the quantity of mineral oil which is applied to the whole grain received by rail is monitored and recorded on a daily basis along with the amount of grain treated. The application rate is adjusted to stay at approximately 1.5 gallons per 1000 bushels. The application rate is determined by periodically noting the tank oil level before and after receipt of a known amount of grain. A written record is kept of these measurements.

• **Hammermill operation** –The hammermills are not operated when the cyclone dust collectors are not operating.

• **Outside whole grain handling** – when the windspeed is high enough to cause nuisance-level dust emissions, whole grain will not be handled except in emergency situations.

• **Truck traffic area dust suppression** – a chemical dust suppressant will be applied to the truck traffic areas on an as needed basis. Application of the chemical dust suppressant will be recorded on a log.

Auditing
The monitoring and recordkeeping activities described in this Dust Control Plan will be annually reviewed by the Corporate Environmental Director, his designee, or an outside consultant.

Section 15

Alternative Operating Scenarios

(submitting under 20.2.70, 20.2.72, 20.2.74 NMAC)

Alternative Operating Scenarios: Provide all information required by the department to define alternative operating scenarios. This includes process, material and product changes; facility emissions information; air pollution control equipment requirements; any applicable requirements; monitoring, recordkeeping, and reporting requirements; and compliance certification requirements. Please ensure applicable Tables in this application are clearly marked to show alternative operating scenario.

No alternative operating scenarios are requested.

Section 16

Air Dispersion Modeling

(submitting under 20.2.72 and 20.2.74 NMAC)

An air quality **dispersion modeling** demonstration (if applicable) as outlined in the Air Quality Bureau's Dispersion Modeling Guidelines. If air dispersion modeling has been waived for this permit application, attach the AQB Modeling Section modeling waver documentation.

This section describes the dispersion modeling performed for the West Clovis facility. Details pertaining to the modeling methods are provided in the modeling protocol submitted by AECOM Environment to the NMED on June 2, 2009. The modeling protocol includes data and regulatory references.

I. Applicant and consultant information.

a. Name of facility and company: Gavilon West Clovis Animal Feed Manufacturing Facility (facility) operated by Gavilon Grain, LLC dba Peavey Company.

b. Permit number: NSR Air Quality Permit No. 2910, issued October 28, 2003

c. Contact name, phone number, and e-mail address for the Bureau to call with modeling questions:
Patrick McKean, AECOM Environment
970-493-8878
Patrick.mckean@aecom.com

II. Facility and operations description

a. Narrative summary of the purpose of the proposed permit revisions:
The facility currently processes grain for animal feed manufacturing, as permitted by NSR Air Quality Permit No. 2910, issued October 28, 2003. This application is Revision #1 to the earlier Technical Revision Application dated August 29, 2008, and is for a Significant Revision as per 20.2.72.219.B(4)(b) New Mexico Administrative Code (NMAC) and as requested by the NMED Air Quality Bureau in their letter to Gavilon dated October 1, 2008.

The proposed changes to the permit include those already noted in the application for a Technical Revision, as well as additional changes listed in Section 3.

b. Brief physical description of the location:
The existing facility is located approximately 2 kilometers (km) west of Clovis, New Mexico. The Universe Transverse Mercator (UTM) Zone 13, North American Datum 1983 (NAD83) coordinates of the approximate center of the facility main production area are 660,451.7 meters East, and 3,808,291.4 meters North. The facility elevation is approximately 4,321 feet above mean sea level.

c. Duration of time that the facility will be located at this location: this facility is permanent.

d. A map showing the UTM coordinates and the location of the facility, on-site buildings, emission points, and property boundary are provided in Figures 7-1 and 5-1.

III. Modeling requirements description

a. List of pollutants at this facility requiring NAAQS and/or NMAAQS modeling:
Based on estimated project emissions, the proposed modifications result in a minor increase in emissions of NOx, CO, SO2, and PM including total suspended particulates (TSP), PM with an aerodynamic diameter less than 10 micrometers (PM10), and PM with an aerodynamic diameter less than 2.5 micrometers (PM2.5). In accordance with 20.2.72.203(A)(4) NMAC, air quality modeling is required for the proposed permit modifications. The proposed emissions of NOX, CO, and PM are in excess of 1 lb/hr for point sources, and 0.1 lb/hr for fugitive sources, per NMED Air Dispersion Modeling Guidelines, Section 2.3.1. The proposed SO2 emissions are less than these thresholds. Therefore, dispersion modeling is required for NOX, CO, and PM to demonstrate compliance with NAAQS and NMAAQS.

b. AQCR facility is located in and resulting list of pollutants requiring PSD increment modeling, and distance to nearest Class I area:

While the project is not subject to review under EPA PSD regulations, compliance with the Class II PSD increments is required for NO2 and PM10 since the facility is located in AQCR 155 where the minor source baseline dates have been triggered (March 16, 1988 for NO2 and February 20, 1979 for PM10). The nearest Class I area is Salt Creek Wilderness Area and is over 100 km from the facility; therefore a Class I Area impact analysis is not required.

c. List of State Air Toxics pollutants requiring modeling:
The proposed emissions of air toxics from natural gas combustion at the facility do not exceed the emission thresholds in 20.2.72.502 NMAC; therefore toxics modeling is not required.

d. PSD, NSPS, and NESHAP applicability:
As shown in Section 13, PSD and NESHAP requirements are not applicable to this facility. NSPS Subpart Dc is applicable to the boiler. There are no additional modeling requirements triggered by these regulations.

e. Federal attainment status: The area surrounding the facility has been classified as attainment for all pollutants.

f. Any special modeling requirements: None.

IV. Modeling inputs

a. General modeling approach:

i. Selection of the appropriate dispersion model for use in the analysis is based on the available meteorological input data, the physical characteristics of the sources that are to be simulated, the land use designation in the vicinity of the facility, and the complexity of the nearby terrain.

AECOM used the current version of the EPA-approved AERMOD modeling system to meet the dispersion modeling requirements for this analysis. Current version numbers of the AERMOD model and pre processors that were used include AERMAP version 09040, and AERMOD version 07026.

Meteorological pre-processors are not listed because the NMED provided AERMOD-ready meteorological data, as discussed in this Section. AERMOD is recommended for use in modeling multi-source emissions, and can account for plume downwash, stack tip downwash, and point, area, and volume sources. AERMOD also has the ability to model impacts at both simple (below stack height) and complex (terrain heights above the height of the stack) terrain receptors.

ii. Model input options were set to their regulatory default values. Regulatory default values include:

- Stack-tip Downwash.
- Model Accounts for Elevated Terrain Effects.
- Use Calms Processing Routine.
- Allow Missing Data.
- No Exponential Decay.

Consistent with previous modeling of the facility, rural dispersion coefficients were used in the AERMOD model.

iii. Ambient NO2 impacts were estimated using the Ambient Ratio Method (ARM), as recommended in NMED's Modeling Guidelines. The ARM accounts for atmospheric conversion of NO to NO2 by assuming that a fraction of emitted NOx is converted to NO2. The New Mexico Modeling Guidelines recommend that predicted annual and 24-hour NOx impacts be scaled using the Fixed Rate Conversion Technique values of 0.75 and 0.4, respectively. The ARM scaling factors were applied prior to comparing all modeled NOx impacts to any standards or thresholds, including the NMAAQS, NAAQS, PSD increments, and Significant Impact Levels (SILs).

iv. Background PM concentrations are provided in the table below:

Background PM Concentrations

Pollutant	Averaging Period	Background Concentration [1] ($\mu g/m^3$)
TSP	24-hour and Annual	26.6
PM_{10}	24-hour and Annual	20.0
$PM_{2.5}$	24-hour and Annual	7.3

[1] Data from NMED Modeling Guidelines.

b. Meteorological data:
Five consecutive years of AERMOD-ready meteorological data were used in this analysis. The meteorological data files for the period 2001 through 2005 were provided by NMED in AERMOD compatible format. The hourly surface observations were collected at Clovis Municipal Airport, New Mexico, located approximately 16 kilometers east-northeast of the facility, shown in Figure 16-1. The surface observations were combined with upper air data collected at Amarillo, Texas. A meteorological representativeness analysis was not required for this application by the NMED.

c. Receptor and terrain discussion:
The same ambient air boundary that was modeled previously was used in this analysis. The location of the ambient air boundary is shown in Figure 16-2, referenced in UTM Zone 13 NAD83 coordinates.

Cartesian receptor grids were defined using UTM Zone 13 NAD83 coordinates. Several receptor grids of varying resolution were defined for the Radius of Impact (ROI) analysis. The grids consisted of a set of nested receptors placed at:

50-m resolution along the facility ambient air boundary (fenceline).
50-m resolution extending from the fenceline to 500 m from the fenceline.
100-m resolution extending from 500 m to 1 km from the fenceline.
500-m resolution extending from 1 km to 5 km from the fenceline.
1,000-m resolution extending from 5 km to 10 km from the fenceline.

Figures showing the proposed receptor grids overlaid onto topographic maps are shown in Figures 16-2 and 16-3.

For refined impact analyses, the ROI receptor grids defined above were limited to include only those receptors within the ROI for each pollutant. Since there are no formal SILs for PM2.5, the entire ROI receptor set was used for refined PM2.5 impact analyses.

In accordance with the modeling protocol, refined receptor grids were not required outside the 50-m resolution grids. For areas outside the 50-m grid that exceeded 75 percent of an ambient air quality standard or PSD increment, the facility was determined to not significantly contribute to these impacts.

Receptor elevation and critical hill height data were obtained from United States Geological Survey (USGS) National Elevation Data (NED) using the AERMAP terrain processor. Although use of NED data differs from guidance received from the NMED, the latest version of the AERMOD Implementation Guide recommends the use of NED data. The terrain in the modeling domain is generally flat; however AERMOD was run using the default elevated terrain option. To ensure that the correct critical hill height for each receptor is chosen, NED data provided to AERMAP covered the entire receptor grid, plus a sufficient buffer to ensure correct critical hill heights are identified.

d. Emission sources:

i. Facility source descriptions:

Facility sources include point PM sources (natural gas-fired boiler and cyclones), fugitive PM sources [grain load out, grain and dried distillers grain (DDG) receiving via truck and rail, headhouse and bin vents, and emergency/temporary outside storage piles], and gaseous emissions (NOx, SO2, and CO) from a small natural gas-fired boiler. Emissions calculations are provided in Section 2. Below is a description of the various source release parameters for each source. It is assumed that all facility sources consume PSD increment. In reality, some sources were installed prior to the baseline dates; however for conservatism, all facility sources are assumed to consume PSD increment.

Stack parameters for the boiler are based on site observations of the boiler stack and engineering judgment. Cyclone stack parameters are based on site observations and information provided by Gavilon. The stacks for the boiler and hammermill cyclones are capped, while the grain flaker and grain cleaner cyclones are not capped. For capped stacks subject to building downwash, EPA guidance was followed, where the velocity is set to 0.001 meters per second (m/s) and the physical stack diameter was used. For stacks that exhaust emissions at the ambient temperature, the input temperature to AERMOD was set to 0.0 Kelvin.

All point sources are assumed to operate at the proposed maximum hourly and annual throughput rates. The table below presents the modeled stack parameters for point sources.

Source ID	Description	Stack Height (m)	Exhaust Temp. (K)	Exhaust Velocity (m/s)	Stack Diameter (m)
1	Flaker Grain Cleaner	7.62	299.8	62.09	0.76
2	Grain Flaker (24" x 56" roller)	7.62	299.8	62.09	0.76
3	Grain Flaker (24" x 48" roller)	7.62	338.7	62.09	0.76
6	Boiler	6.10	477.6	0.001	0.36
13	Hammermill	6.10	0.0	0.001	0.30
14	Hammermill	6.10	0.0	0.001	0.30

All fugitive PM sources were modeled as volume sources. Details pertaining to the methodology for determining volume source dimensions are included in the modeling protocol. All fugitive sources were assumed to operate at the proposed maximum hourly and annual throughput rates. The table below presents the modeled volume source release parameters.

Wind erosion from storage piles are not required to be modeled, per NMED Modeling Guidelines, Section 5.3.1. The "transfer of whole grain from elevator to temporary ground pile" source (Source ID 22) will be limited to 8 hours per day operation. Following guidance from the NMED, this source was modeled over three separate 8-hour periods from midnight to 8am, 8am to 4pm, and 4pm to midnight in the ROI analysis. The worst-case period was used to define the ROI for PM, and was used in the refined PM short-term impact analyses. Annual averaging periods used the annual throughput rates for each source.

Source ID	Description	Release Height (m)	Initial Sigma-Y (m)	Initial Sigma-Z (m)
4	Flaked grain load out conveyor (corn)	19.03	24.79	17.70
5	Flaked grain load out conveyor (milo)	19.03	24.69	17.70
7a	Grain receiving pit (truck)	19.03	24.79	17.70
7b	Grain receiving pit (truck)	19.03	24.79	17.70
8	Headhouse (includes enclosed cleaner)	19.03	24.79	17.70
9	Storage bin vents (main elevator)	19.03	24.79	17.70
10	Storage bin vents (elevator annex)	19.03	24.79	17.70
11a	whole grain load out station (truck)	19.03	24.79	17.70
11b	whole grain load out station (truck)	19.03	24.79	17.70
12	Grain receiving pit (rail)	19.03	24.79	17.70
15	Ground grain load out	19.03	24.79	17.70
16	Ground grain receiving pit (truck) at temporary rail load out	19.03	24.79	17.70
17	Temporary ground grain railcar load out	19.03	24.79	17.70
18	DDG load out conveyor	19.03	24.60	17.70
19	DDG load out conveyor	19.03	24.79	17.70
21	DDG outside truck load out (front end loader)	3.66	2.13	1.70

ii. Surrounding sources:
An off-site source inventory was obtained from the NMED. The source inventory includes sources within 65 km of the facility within the State of New Mexico. Per guidance from the NMED, an inventory of sources in Texas is not required for this application.

Emissions and stack parameters from the NMED-provided inventory were used directly. Emissions listed in the "gs" (maximum gram per second rates) columns of the "merged" inventory were used. For determining compliance with the PSD increments, the "PSD" emission rates in the "merged" inventory were used. The maximum gram per second rates were used for all short-term averaging periods, while the maximum gram per second rates were scaled by the annual operating hours listed in the "merged" inventory for the annual averaging periods.

Facility sources were removed from the inventory prior to running any refined impact analyses. In consultation with Gavilon employees at the West Clovis facility, several sources listed in the "merged"

inventory obtained from the NMED appear to be duplicates of the West Clovis facility. These erroneous sources are located a few km west of the West Clovis facility. Since these sources listed in the NMED inventory appear erroneous, they were removed from the inventory prior to running any refined impact analyses. The surrounding source inventory is provided on CD-ROM accompanying this application.

e. Building downwash:
Facility sources and structures were obtained from an electronic plot plan and digitized in UTM Zone 13 NAD83 coordinates. The effects of plume downwash were considered for all project point sources. Direction-specific building dimensions were calculated using the current version of the USEPA-approved Building Profile Input Program (BPIPPRM Version 04274).

Only permanent structures (i.e., buildings) were included in the plume building downwash analysis. Specifically, temporary storage piles were not considered to be structures that may produce plume downwash. The base elevation of all structures and sources were obtained by running the AERMAP terrain processor for each source using NED data. Structure base elevations were set equal to the base elevation of the source that is associated with each structure. Given the flat and evenly graded terrain within the facility boundary, all source and structure base elevations were assumed to be the same.

A simplified plot plan of the facility showing the location of all structures and point sources used in the plume downwash calculations is provided in Figure 16-4. Dimensions of facility structures used in the downwash calculations can be obtained from the electronic BPIPPRM input file included with this application.

V. Modeling file descriptions
A list of all electronic modeling files can be found at the end of this Section, following the figures.

VI. Modeling results

a. ROI analysis:
Details regarding the methodology for determining the ROI for each pollutant are provided in the modeling protocol. The maximum short-term PM impacts occurred when Source ID 22 was operated from midnight to 8am local time. The table below presents the results of the ROI analysis:

Pollutant	Averaging Period	UTM Easting (m)	UTM Northing (m)	Maximum Project-Only Impact [3] ($\mu g/m^3$)	SIL ($\mu g/m^3$)	Exceeds SIL?	ROI (km)
NO2	24-Hour [1]	660467.19	3808397.25	15.00	5	Yes	0.3
	Annual [2]	660467.19	3808397.25	5.83	1	Yes	0.4
PM10	24-Hour	660567.19	3808394.75	44.93	5	Yes	4.1
	Annual	660467.19	3808397.25	5.50	1	Yes	0.6
TSP	24-Hour	660567.19	3808394.75	118.26	5	Yes	7.5
	Annual	660467.19	3808397.25	12.13	1	Yes	1.2
CO	1-Hour	660500.00	3808400.00	130.26	2000	No	n/a
	8-Hour	660500.00	3808400.00	66.53	500	No	n/a

[1] Assumes 40% conversion of NOx-to-NO2, per NMED Modeling Guidelines.
[2] Assumes 75% conversion of NOx-to-NO2, per NMED modeling Guidelines.
[3] All impacts are high-1st-high for comparison to SILs.

Significant concentration isopleths due to all facility sources for each pollutant that exceeded a SIL are provided in Figures 16-5 through 16-10. The pollutant-specific ROI is shown in each figure. Refined analyses were required only for NO2 and PM, and only for those receptors falling inside the ROI for each pollutant. The only exception was PM2.5, where refined impact analyses included the entire ROI analysis receptor set. The maximum short-term PM impacts for the ROI analyses occurred when Source ID 22 was operated from midnight to 8am local time, and this operating period was used for all refined PM impacts below.

b. Refined analyses:
i. Conversion of gaseous pollutants from $\mu g/m^3$ to ppm:

The table below shows the conversion of model-predicted NOx impacts following guidance provided in the NMED Modeling Guidelines:

Pollutant	MW (g/g-mol)	Averaging Period	Model-Predicted [1,2] µg/m^3	Calculated [2] ppm
NO2	46.00	24-hour	15.85	0.010
	46.00	annual	6.44	0.004

[1] Assumes 40% conversion of 24-hour NOx-to-NO2, per NMED Modeling Guidelines.
[2] Assumes 75% conversion of annual NOx-to-NO2, per NMED modeling Guidelines.
[3] Equation from NMED Modeling Guidelines, page 15

Equation: 4.533E-05 * [Conc. (ug/m3) * T (R) / MW (g/g-mol)] * 10^[z*1.598E-05)]

Where: Average Summer T = 530R.
Site Elevation = 4,321 feet above sea level.

ii. Cumulative NAAQS and NMAAQS results:
Details regarding the methodology for determining the cumulative NAAQS and NMAAQS impacts for each pollutant that exceeded a SIL are provided in the modeling protocol. The table below presents the results of the cumulative NAAQS and NMAAQS analysis:

Pollutant	Averaging Period [1]	UTM Easting (m)	UTM Northing (m)	Maximum Model-Predicted Impact [4]	Background Concentration [5]	Total Predicted Impact	NMAAQS or NAAQS [6]	Exceeds Standard?[7]
NO2	24-Hour [2]	660450.00	3808400.00	0.010 ppm	n/a	0.010 ppm	0.10 ppm	No
	Annual [3]	660467.19	3808397.25	0.004 ppm	n/a	0.004 ppm	0.50 ppm	No
PM10	24-Hour	662000.00	3804400.00	130.6 µg/m^3	20.0 µg/m^3	150.6 µg/m^3	150 µg/m^3	Yes
PM2.5	24-Hour	655500.00	3804900.00	97.7 µg/m^3	7.3 µg/m^3	105.0 µg/m^3	35 µg/m^3	Yes
	Annual	655500.00	3804900.00	11.3 µg/m^3	7.3 µg/m^3	18.6 µg/m^3	15 µg/m^3	Yes
TSP	24-Hour	655000.00	3804900.00	837.0 µg/m^3	26.6 µg/m^3	863.6 µg/m^3	150 µg/m^3	Yes
	Annual	660467.19	3808397.25	12.5 µg/m^3	26.6 µg/m^3	39.1 µg/m^3	60 µg/m^3	No

[1] All averaging periods are highest-first-high modeled impacts, except 24-hour PM10 (highest-sixth-high) and 24-hour PM2.5 (highest-eighth-high).
[2] Assumes 40% conversion of NOx-to-NO2, per NMED Modeling Guidelines.
[3] Assumes 75% conversion of NOx-to-NO2, per NMED modeling Guidelines.
[4] Includes correction for elevation for gaseous pollutants, per NMED Modeling Guidelines. Impact is due to all modeled sources.
[5] Background not required for gaseous pollutants, per NMAQB FAQs on their website.
[6] Most stringent standard.
[7] The Gavilon-facility sources are shown to not significantly contribute to all modeled exceedances in the following sections.

Model-predicted impact plots due to all modeled sources for each pollutant that exceeded the NAAQS/NMAAQS are provided in Figures 16-11 through 16-14. The figures do not include background concentrations. Source culpability analyses that demonstrate that the facility does not significantly contribute to the model-predicted PM exceedances are provided later in this Section. NO2 impacts were below the NAAQS and NMAAQS, therefore no further analysis was required.

iii. Cumulative PSD Class II increment results:
Details regarding the methodology for determining the cumulative PSD Class II increment impacts for each pollutant that exceeded a SIL are provided in the modeling protocol. The table below presents the results of the cumulative PSD Class II increment analysis:

Pollutant	Averaging Period [1]	UTM Easting (m)	UTM Northing (m)	Maximum Model-Predicted Impact [3]	PSD Class II Increment	Exceeds Increment?[4]
NO2	Annual [2]	660467.19	3808397.25	6.4 µg/m^3	25 µg/m^3	No
PM10	24-Hour	662000.00	3804400.00	130.6 µg/m^3	30 µg/m^3	Yes
	Annual	660467.19	3808397.25	5.6 µg/m^3	17 µg/m^3	No

[1] All averaging periods are highest-first-high modeled impacts, except 24-hour PM10 (highest-sixth-high).
[2] Assumes 75% conversion of NOx-to-NO2, per NMED modeling Guidelines.
[3] Impact is due to all modeled sources. No elevation correction is required for increment analysis.
[4] The Gavilon-facility sources are shown to not significantly contribute to all modeled exceedances in the following subsections.

A model-predicted impact plot due to all modeled sources for 24-hour PM10, which exceeded the increment, is provided in Figure 16-15. A source culpability analysis that demonstrates that the facility does not significantly contribute to the model-predicted PM10 increment exceedances is provided below. NO2 impacts were below the PSD increment, therefore no further analysis was required.

iv. Culpability analyses for Cumulative PM NAAQS and NMAAQS exceedances:
As shown in Figures 16-11, 16-12, and 16-13, refined modeling clearly shows facility significant impact isopleths do not overlap modeled NAAQS/NMAAQS exceedance isopleths for 24-hour PM10, annual PM2.5 and 24-hour PM2.5. , Detailed culpability analyses were not conducted for these pollutants and averaging times. When facility significant impact isopleths overlap modeled NAAQS/NMAAQS exceedance isopleths, as shown in Figure 16-14, additional culpability analyses were conducted, as described below.

Two methodologies were used to conduct source culpability analyses for receptors where the NAAQS or NMAAQS were exceeded. In summary, these methods show either, 1) facility sources did not significantly contribute to the modeled exceedances, or 2) the standards were not exceeded on days when the facility produced a significant impact in the violation area. The two methods are described below:

Method 1: Shows that facility sources did not significantly contribute to modeled exceedances. This method consisted of running AERMOD for receptors located where the ROI and exceedance isopleths overlap for each pollutant. For PM10 and TSP exceedances using Method 1, there was only a single day at each receptor where the NAAQS or NMAAQS was exceeded. It was demonstrated on these days that facility sources did not significantly contribute to the modeled exceedances.

The table below presents UTM coordinates for each receptor in the Method 1 NAAQS/NMAAQS culpability analyses:

Pollutant	Averaging Period	Receptor No.	UTM Easting (m)	UTM Northing (m)
TSP	24-Hour	1	656000.00	3806900.00
	24-Hour	2	661500.00	3804900.00

Method 2: For receptors located where the ROI and exceedance isopleths overlap for each pollutant, the AERMOD output was analyzed to determine the number of days at each exceedance receptor when the facility produced a significant impact. On days when facility-only impacts were significant, AERMOD was re-run on these days and the NAAQS or NMAAQS was re-calculated. It was demonstrated that on these days, the re-calculated modeled impacts were below the applicable standards.

The table below presents UTM coordinates for each receptor in the Method 2 NAAQS/NMAAQS culpability analyses:

Pollutant	Averaging Period	Receptor No.	UTM Easting (m)	UTM Northing (m)	Model Date (YYMMDD)
TSP	24-Hour	3	661500.00	3804400.00	011224
		3	661500.00	3804400.00	010131
		4	662000.00	3804400.00	010121
		4	662000.00	3804400.00	030226

The table below presents the results of Method 1 culpability analyses:

Pollutant	Averaging Period	Receptor No.	Maximum Model-Predicted Impact at Exceedance Receptor [1] ($\mu g/m^3$)	Off-Site Source Contribution ($\mu g/m^3$)	Gavilon Contribution ($\mu g/m^3$)	Significant Impact Level [2] ($\mu g/m^3$)	Does Gavilon Significantly Contribute to Exceedance?
TSP	24-Hour	1	236.2	236.2	0.02	5	No
	24-Hour	2	170.2	170.0	0.1	5	No

[1] Includes all modeled sources at receptors within Gavilon ROI that show an exceedence in the refined analysis. For PM10 and TSP, there was only 1 day at each receptor with a modeled NAAQS/NMAAQS exceedance. AERMOD was run for each receptor and day when a NAAQS exceedance was predicted, and source culpability analyses were performed for each exceedance.
[2] The significance levels for PM2.5 are the lowest levels proposed by EPA. The final significance levels for PM2.5 are not expected until February 2010. Proposed significance levels for PM2.5 are via Bob Paine of AECOM via e-mail 5/27/09.
[3] For PM2.5 24-hr culpability analyses, the results are not paired in time; therefore the off-site source and Gavilon contributions do not total the maximum overall impact. This analysis shows that at the peak exceedance receptors, Gavilon's maximum highest 1st high impacts are insignificant, even though the total modeled highest-8th-high impact exceeds the standards.

The table below presents the results of Method 2 NAAQS/NMAAQS culpability analyses:

Pollutant	Averaging Period	Receptor No.	Maximum Model-Predicted Impact at Exceedance Receptor [1] ($\mu g/m^3$)	Off-Site Source Contribution ($\mu g/m^3$)	Gavilon Contribution ($\mu g/m^3$)	Background Concentration ($\mu g/m^3$)	Total Predicted Impact ($\mu g/m^3$)	NMAAQS or NAAQS [2] ($\mu g/m^3$)	Does Total Impact Exceed Standard?
TSP	24-Hour	3	15.3	9.4	5.8	26.6	41.9	150	No
		3	19.0	14.0	5.1	26.6	45.6	150	No
		4	8.5	2.5	5.9	26.6	35.1	150	No
		4	67.8	62.6	5.2	26.6	94.4	150	No

[1] Includes all modeled sources at receptors within Gavilon ROI that show an exceedance in the refined analyses. There were only 2 days when Gavilon sources produced a significant impact at each exceedance receptor. AERMOD was re-run for each day at each receptor when Gavilon had a significant impact at the NAAQS/NMAAQS exceedance receptor.
[2] Most stringent standard.

v. Culpability analyses for cumulative 24-hour PM10 increment exceedances:
The same methodology used for the NAAQS/NMAAQS Method 2 culpability analysis was used to demonstrate that the Gavilon facility does not significantly contribute to modeled exceedances.

The table below presents UTM coordinates for each receptor in the 24-hour PM10 Method 2 increment culpability analysis:

Pollutant	Averaging Period	Receptor No.	UTM Easting (m)	UTM Northing (m)	Model Date (YYMMDD)
PM10	24-Hour	1	660000.00	3809900.00	010802

The table below presents the results of 24-hour PM10 Method 2 increment culpability analysis:

Pollutant	Averaging Period	Receptor No.	Maximum Model-Predicted Impact at Exceedance Receptor [1] ($\mu g/m^3$)	Off-Site Source Contribution ($\mu g/m^3$)	Gavilon Contribution ($\mu g/m^3$)	PSD Class II Increment ($\mu g/m^3$)	Does Total Impact Exceed Increment?
PM10	24-Hour	1	7.6	4.6	3.0	30	No

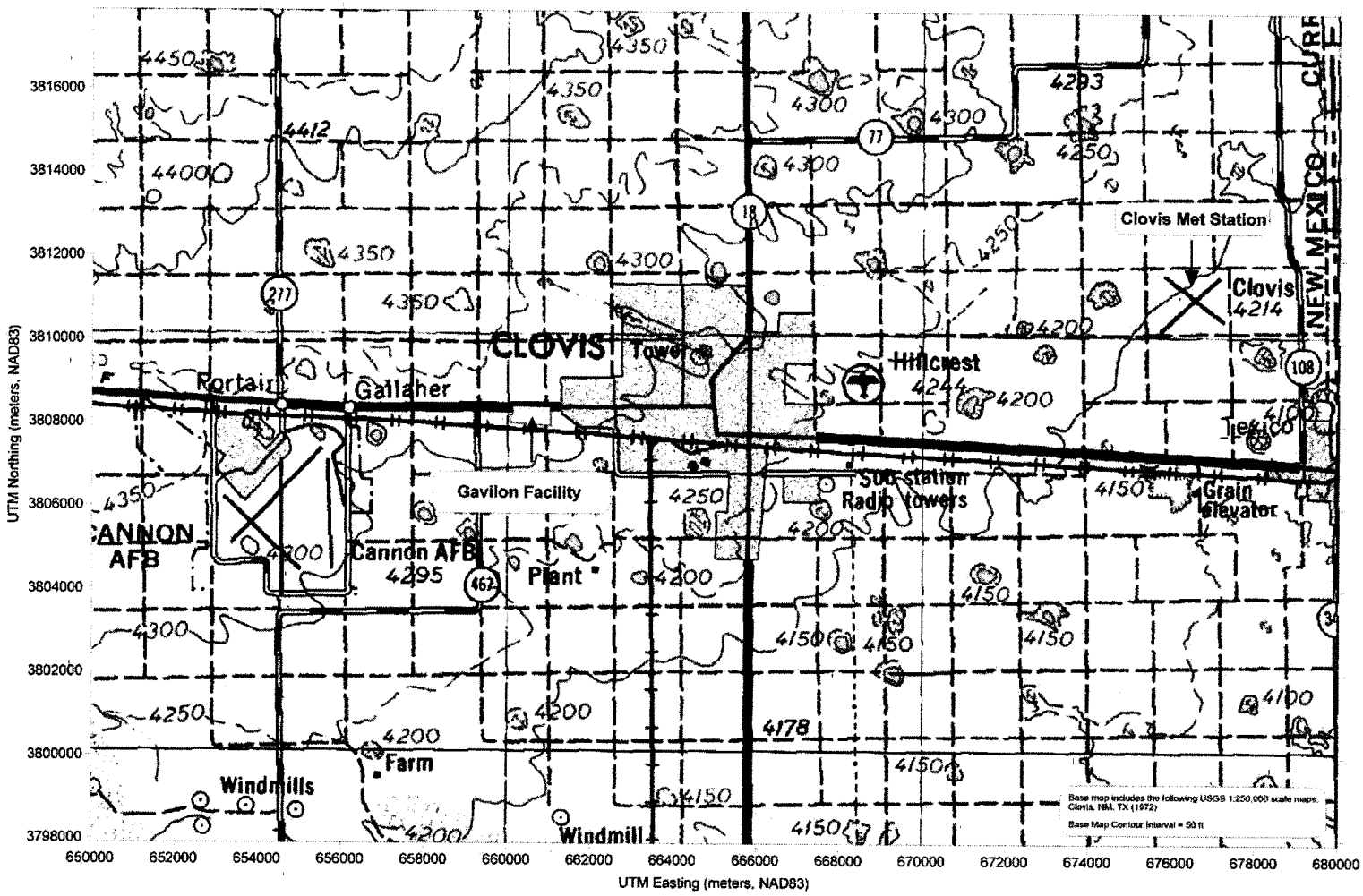
[1] Includes all off-site sources plus Gavilon sources at modeled increment exceedance receptor within Gavilon ROI. There was only 1 day when Gavilon sources produced a significant impact at the exceedance receptor. AERMOD was run for the day when Gavilon had a significant impact at the increment exceedance receptor. The increment was assessed only on the day when Gavilon was significant. Impacts are highest 1st high results, which is a conservative assessment of the increment.

VII. Summary and conclusions

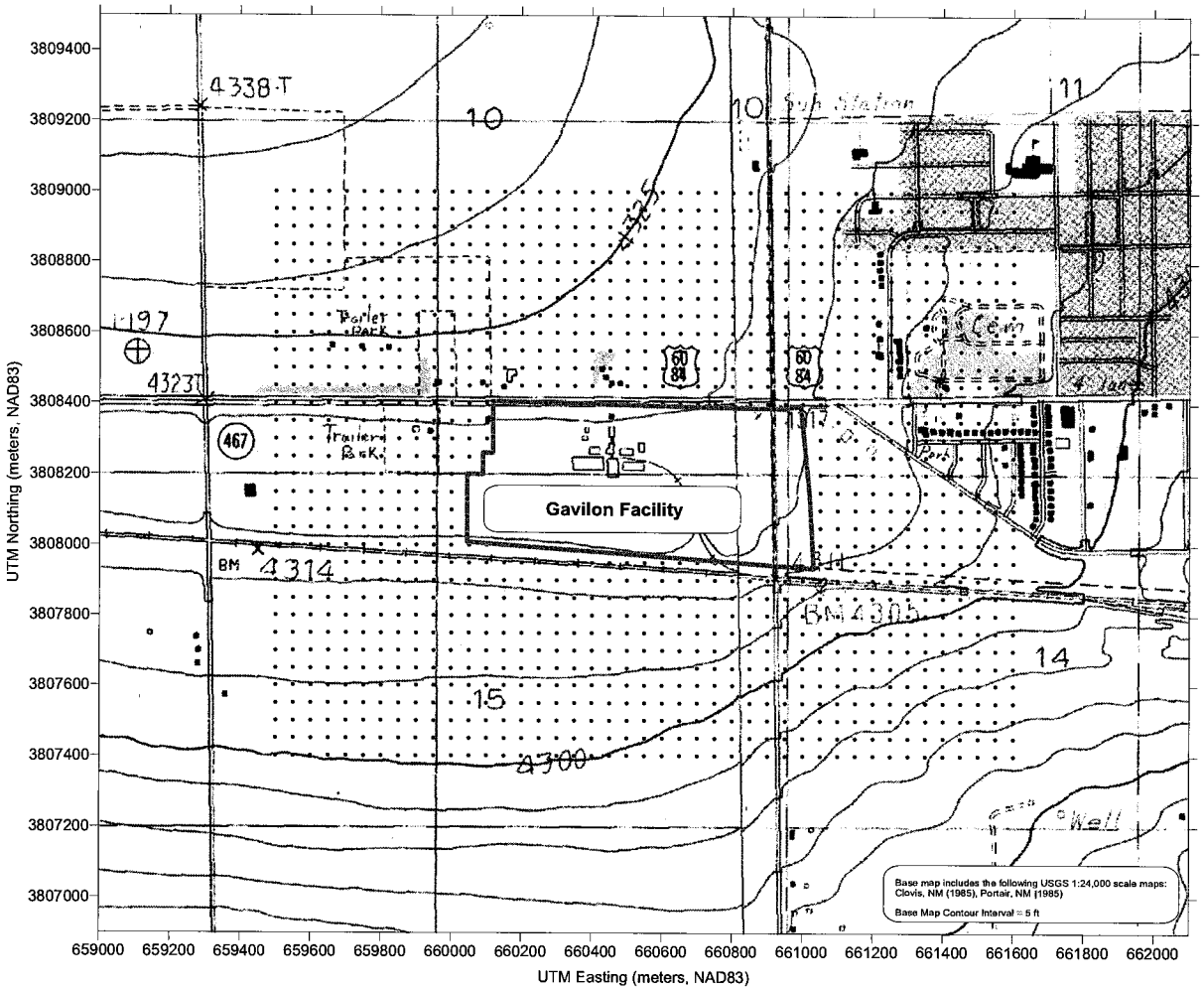
The air quality dispersion modeling conducted for this application was performed in accordance to NMED and EPA guidelines, as described in the modeling protocol. Maximum proposed potential emissions from the facility did not exceed the Class II significant impact levels for CO; therefore no further analysis was required for CO. Maximum proposed potential emissions from the facility exceeded the Class II significant impact levels for NO2, PM10, and TSP; therefore refined impact analyses were conducted for these pollutants. There are no formal significant impact levels for PM2.5, and as such, an ROI analysis was not conducted, but refined impact analyses were conducted for PM2.5.

Refined impacts showed model-predicted exceedances of the 24-hour PM10 and TSP ambient air quality standards, PM2.5 ambient air quality standards, and 24-hour PM10 increment. The modeled exceedances were primarily due to off-site sources. It was shown, via source culpability analysis, that facility sources did not cause or contribute to these modeled exceedances.

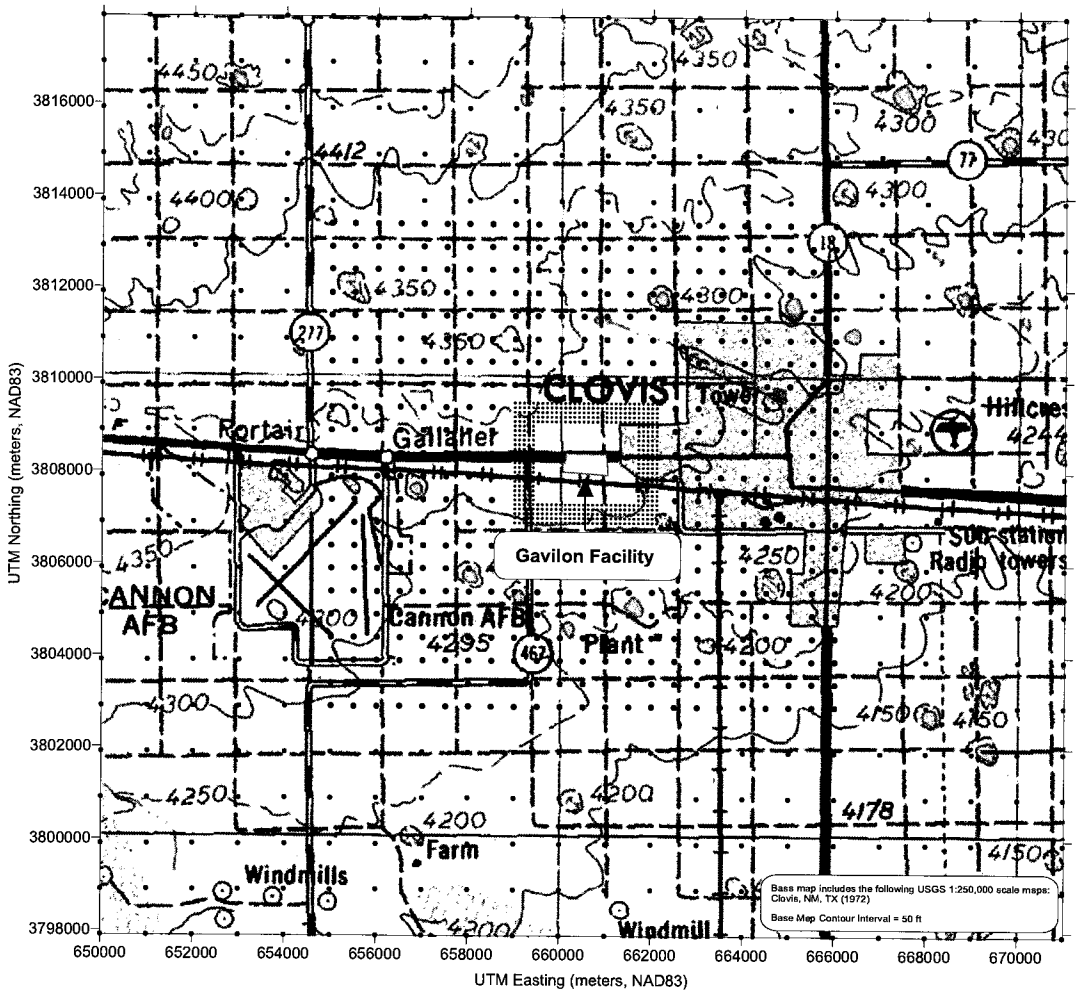
The modeling requirements stipulated by 20.2.72.203(A)(4) NMAC have been met.



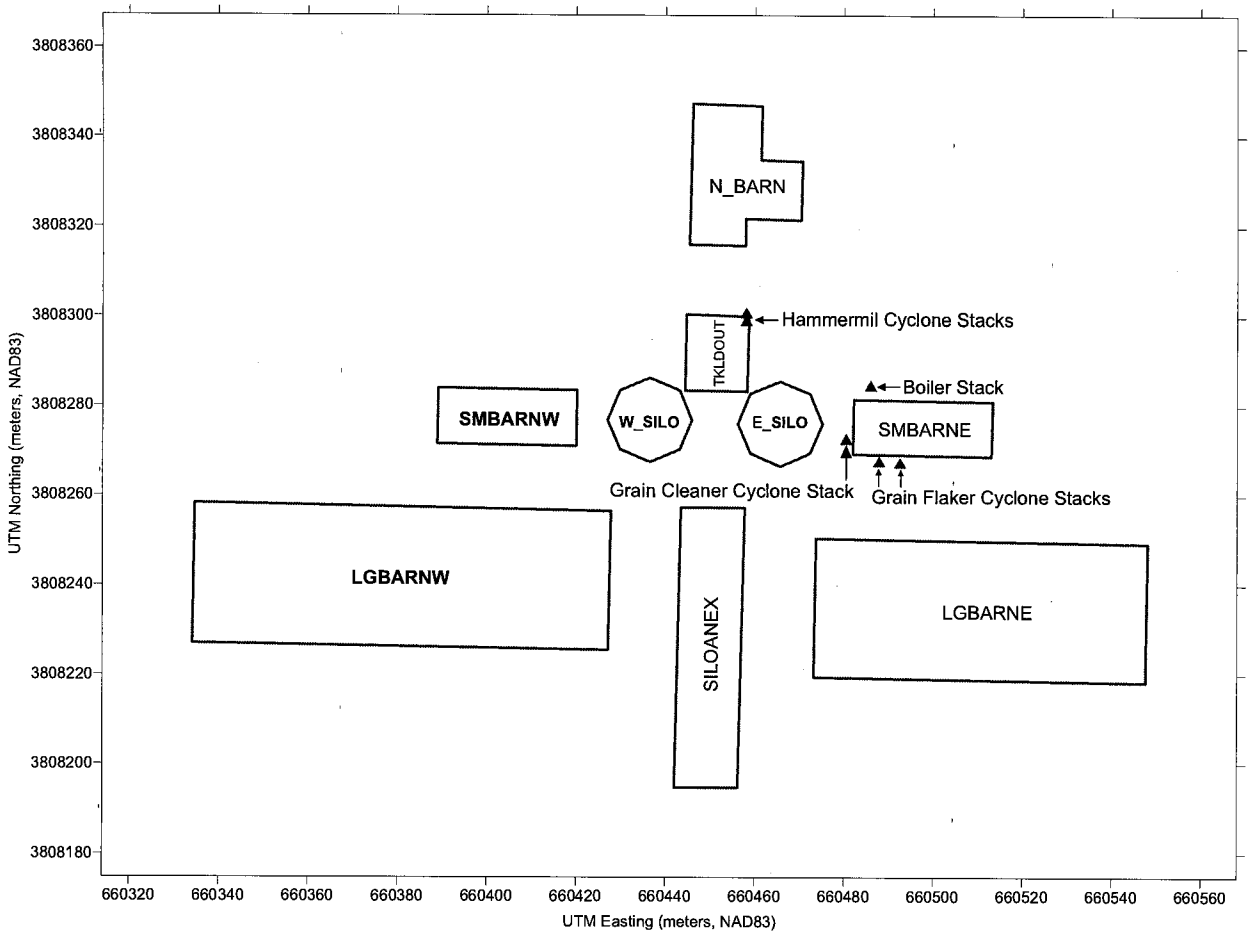
THE GAVILON GROUP LLC WEST CLOVIS FACILITY MINOR SOURCE PERMIT APPLICATION	AREA MAP OF FACILITY AND AIRPORT METEOROLOGICAL STATION
Date: 06/09/2009	FIGURE 16-1



THE GAVILON GROUP LLC WEST CLOVIS FACILITY MINOR SOURCE PERMIT APPLICATION	AMBIENT AIR BOUNDARY AND NEAR FIELD RECEPTOR GRID
Date: 06/09/2009	FIGURE 16-2



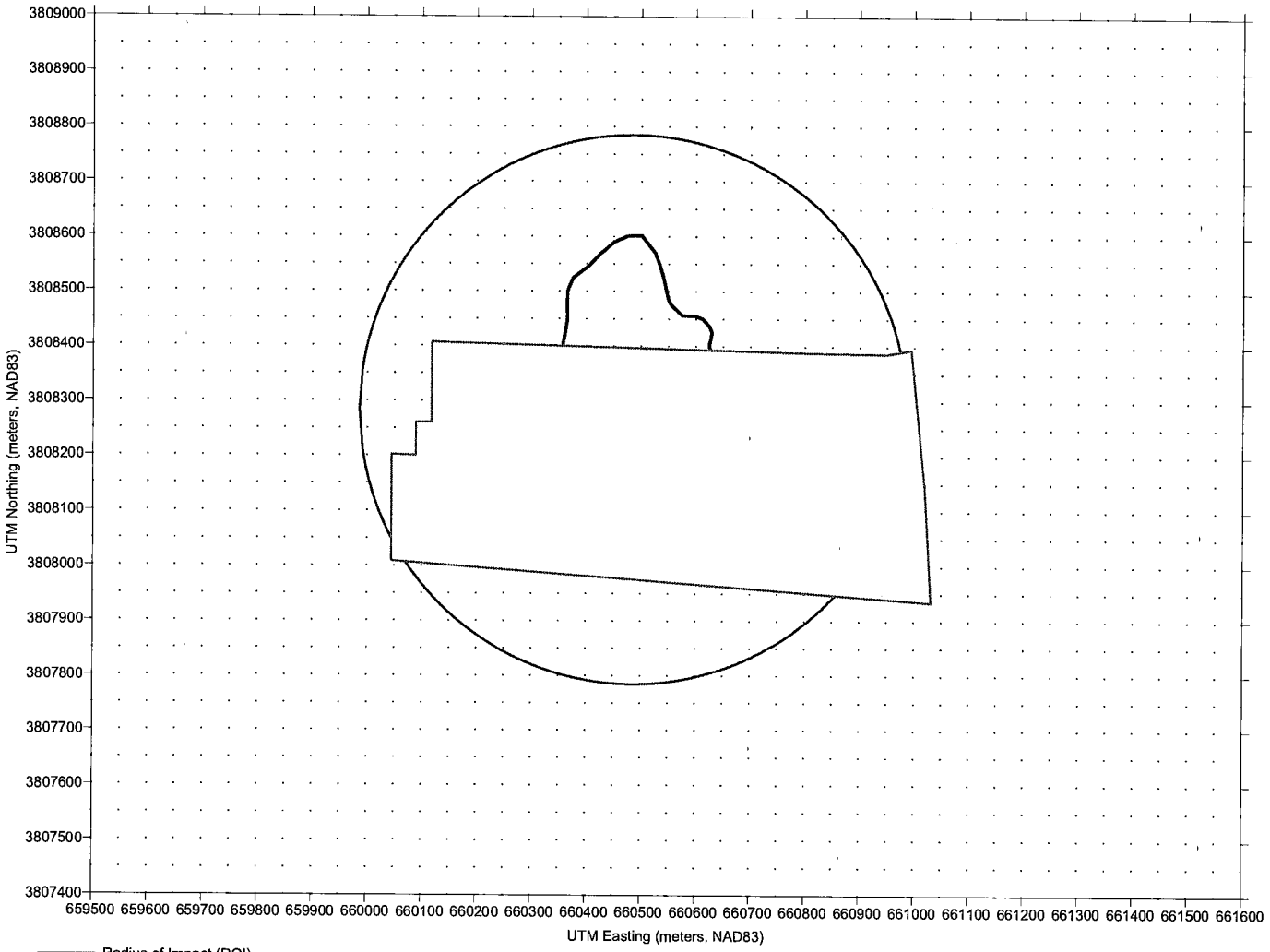
THE GAVILON GROUP LLC WEST CLOVIS FACILITY MINOR SOURCE PERMIT APPLICATION	FAR FIELD RECEPTOR GRID
Date: 06/09/2009	FIGURE 16-3



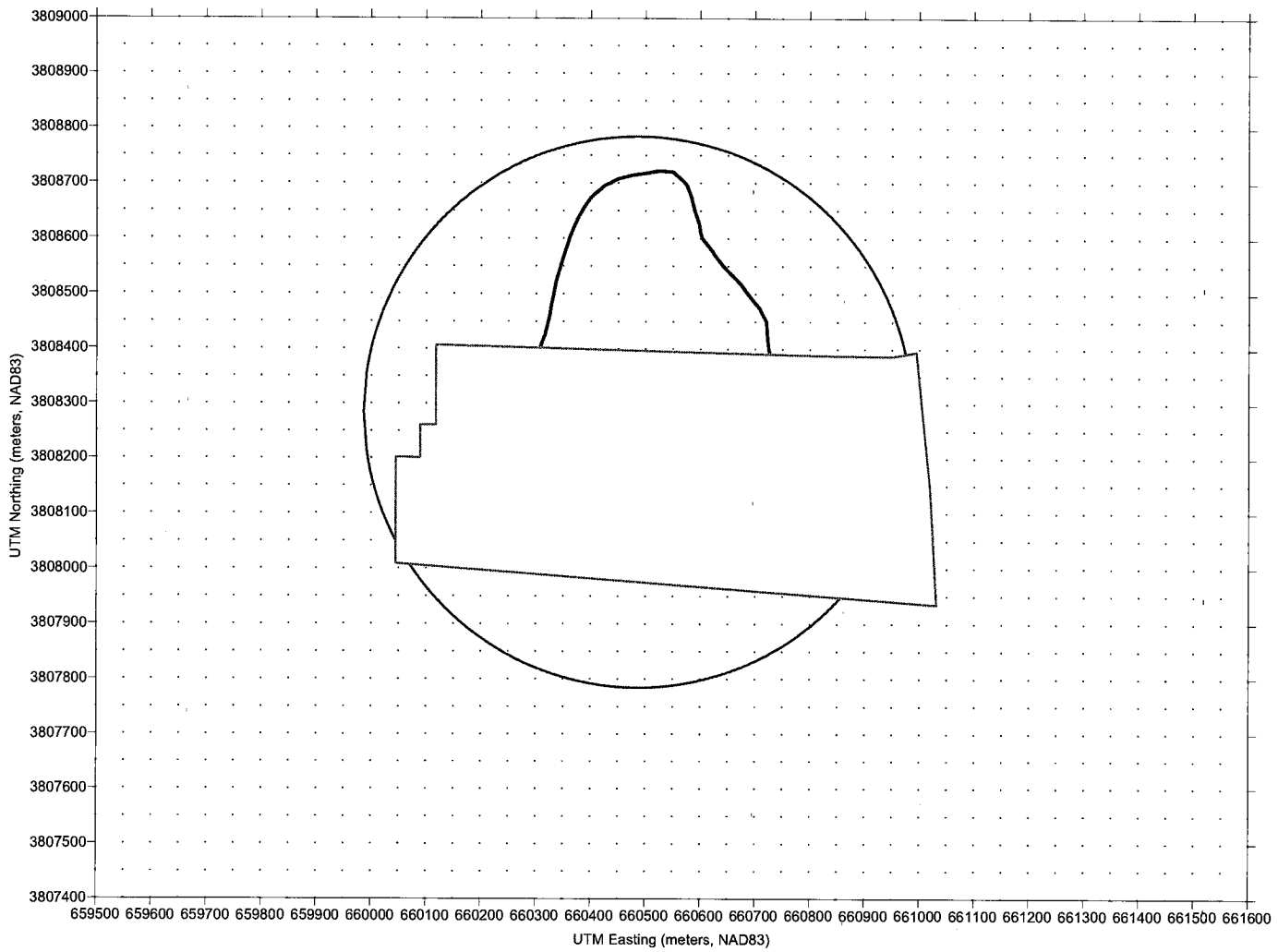
Legend:

Building ID	Ht. Above Grade (ft.)	Description
LGBARNW	40.2	DDG Storage
SMBARNW	18.3	Grain Storage
W_SILO	124.9	Main Storage Silo
E_SILO	124.9	Main Storage Silo
TKLDOUT	145.0	Truck Receving/Loudout
N_BARN	30.0	Ground Grain Storage
SMBARNE	18.3	Grain Storage
LGBARNE	40.2	Grain Storage
SILOANEX	124.9	Silo Annex (Grain Storage)

THE GAVILON GROUP LLC WEST CLOVIS FACILITY MINOR SOURCE PERMIT APPLICATION	SIMPLIFIED SITE PLAN USED FOR PLUME DOWNWASH
Date: 06/09/2009	FIGURE 16-4



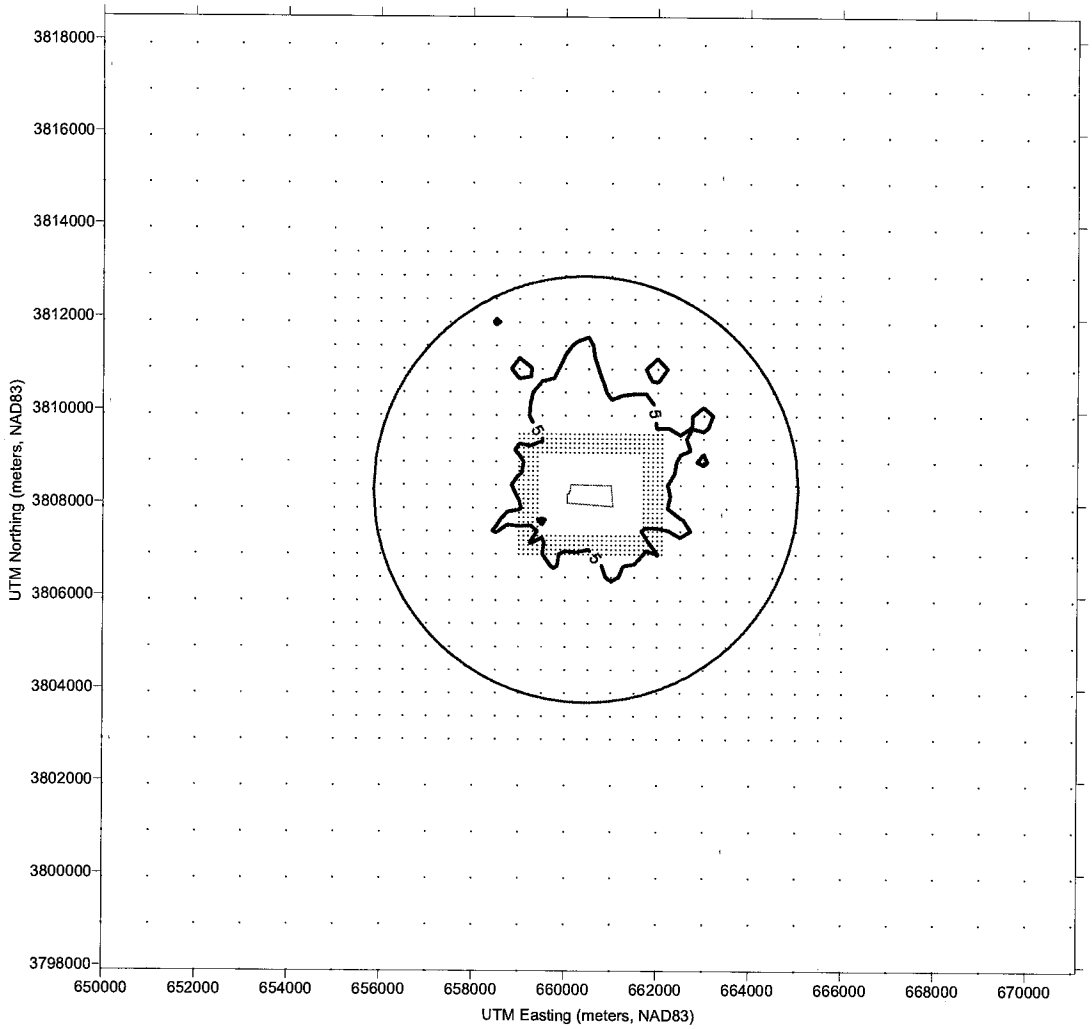
THE GAVILON GROUP LLC WEST CLOVIS FACILITY MINOR SOURCE PERMIT APPLICATION	24-Hour NO_2 Model-Predicted Significant Concentration Isopleth (5 $\mu g/m^3$) (Includes ARM of 40%)
Date: 06/09/2009	FIGURE 16-5



Radius of Impact (ROI)

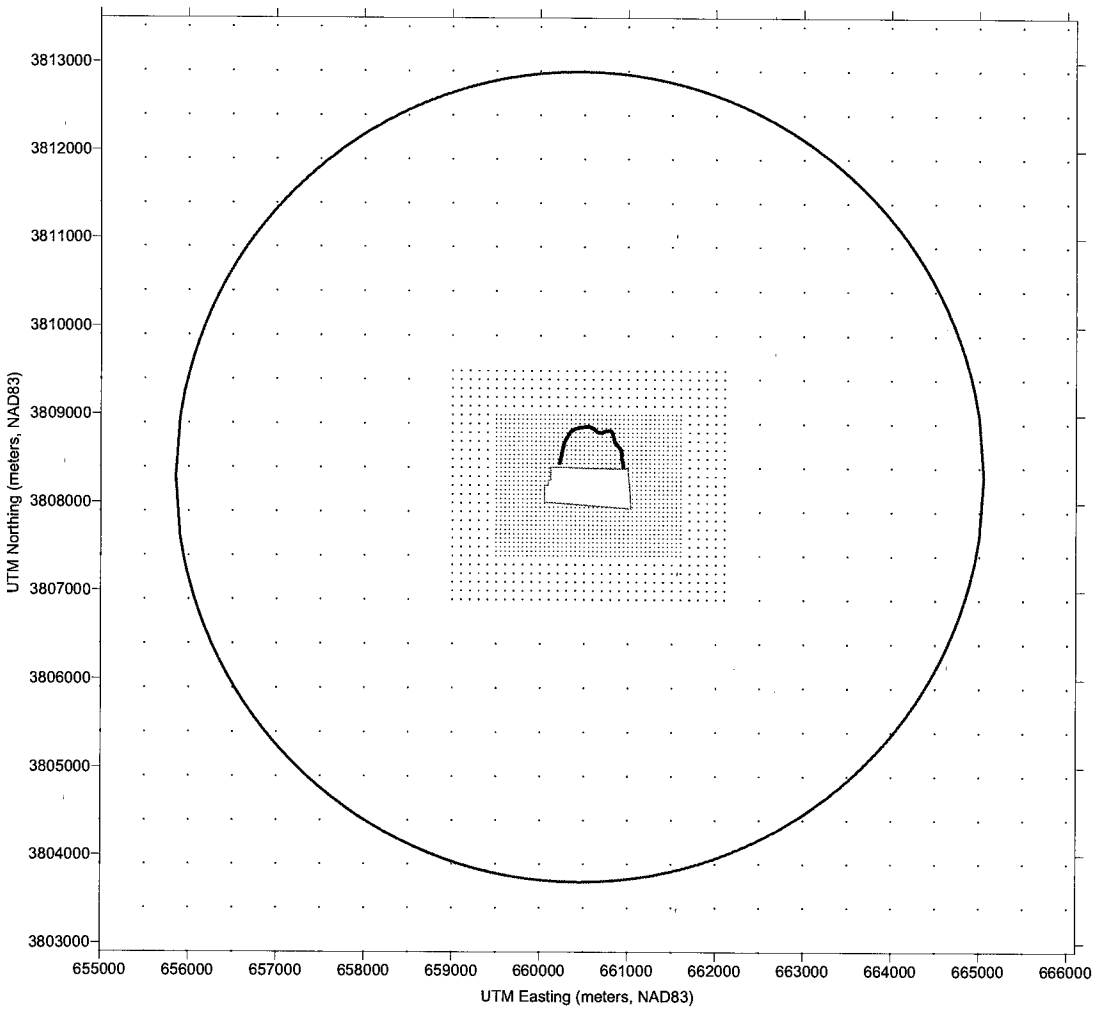
Gavilon Significant Impact Isopleth

THE GAVILON GROUP LLC WEST CLOVIS FACILITY MINOR SOURCE PERMIT APPLICATION	Annual NO_2 Model-Predicted Significant Concentration Isopleth (1 $\mu g/m^3$) (Includes ARM of 75%)
Date: 06/09/2009	FIGURE 16-6



Gavilon Significant Impact Isopleth
Radius of Impact (ROI)

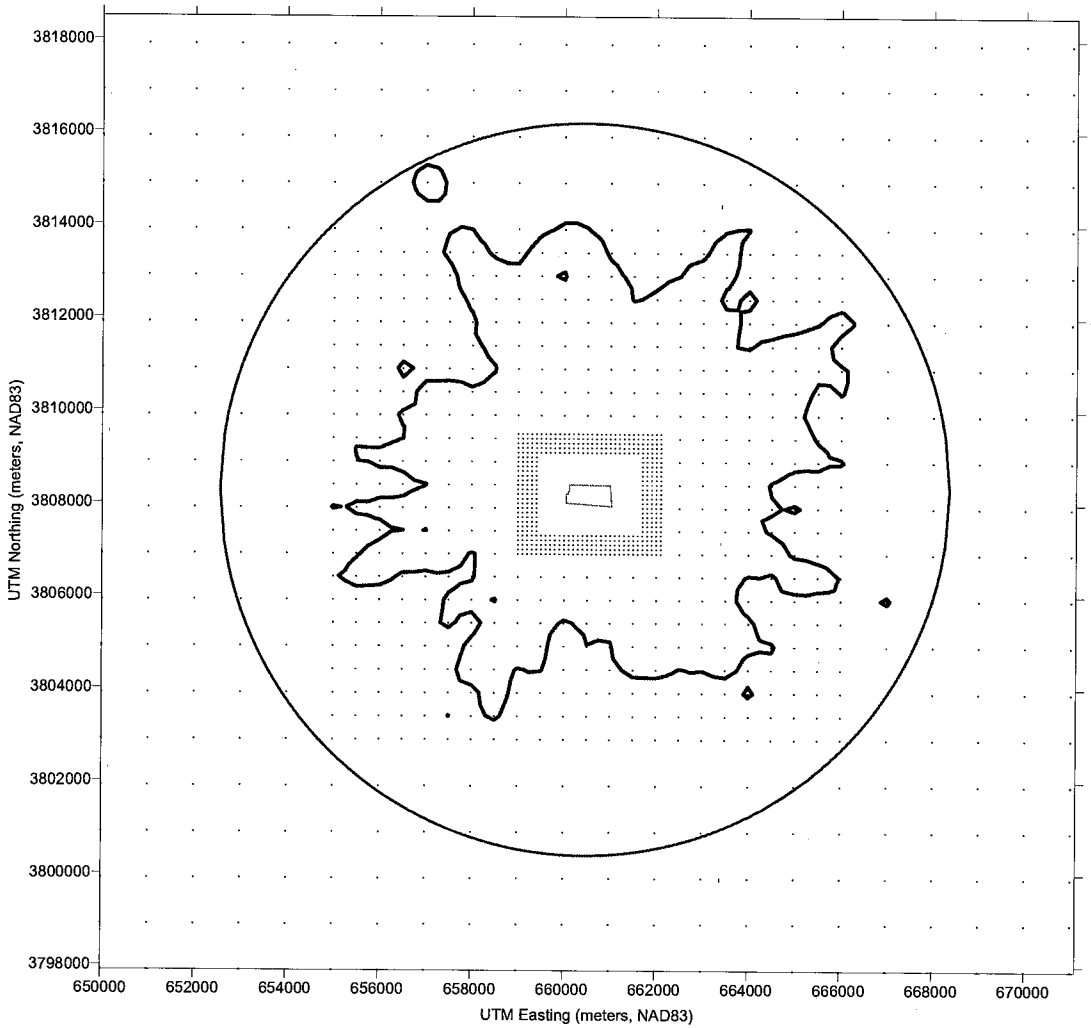
THE GAVILON GROUP LLC WEST CLOVIS FACILITY MINOR SOURCE PERMIT APPLICATION	24-Hour PM_{10} Model-Predicted Significant Concentration Isopleth (5 $\mu g/m^3$)
Date: 06/09/2009	FIGURE 16-7



Radius of Impact (ROI)

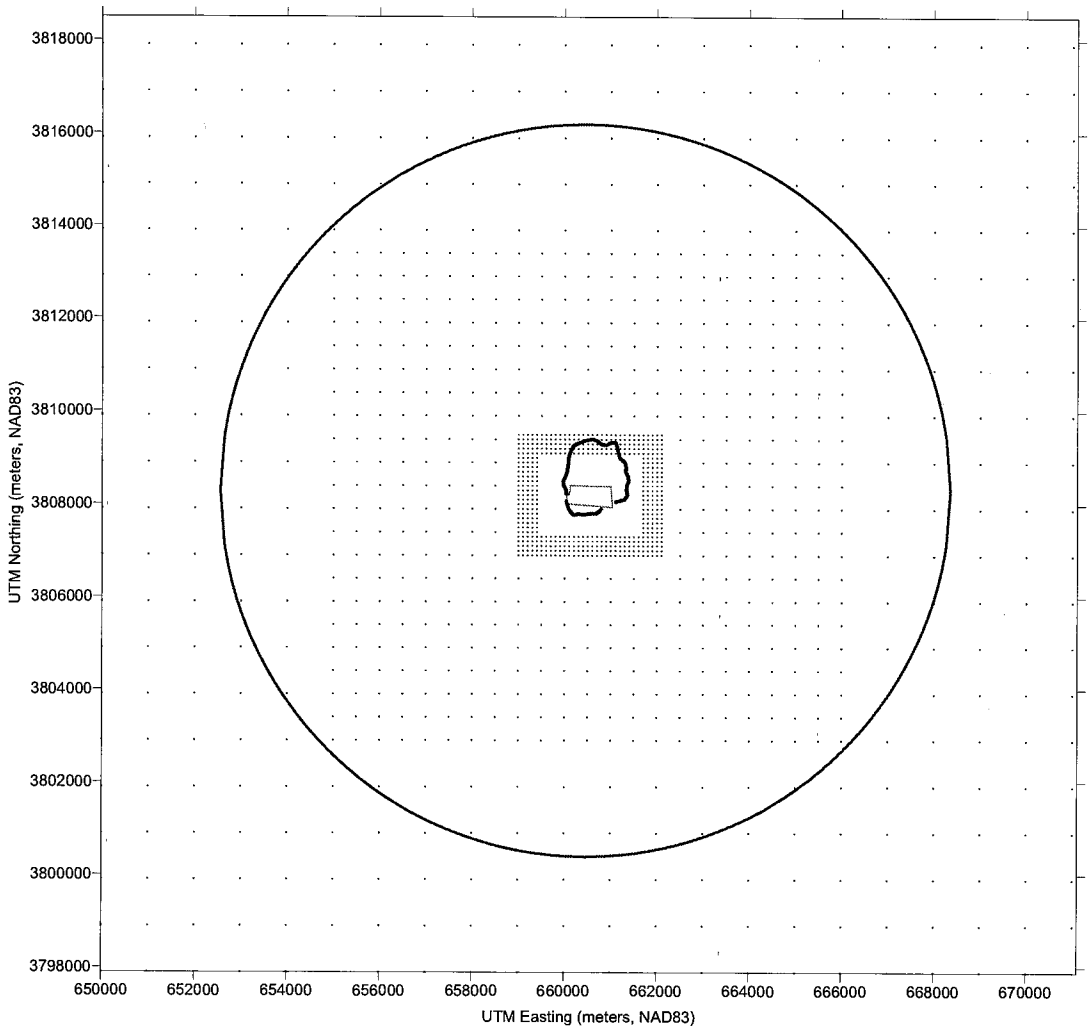
Gavilon Significant Impact Isopleth

THE GAVILON GROUP LLC WEST CLOVIS FACILITY MINOR SOURCE PERMIT APPLICATION	Annual PM_{10} Model-Predicted Significant Concentration Isopleth (1 $\mu g/m^3$)
Date: 06/09/2009	FIGURE 16-8



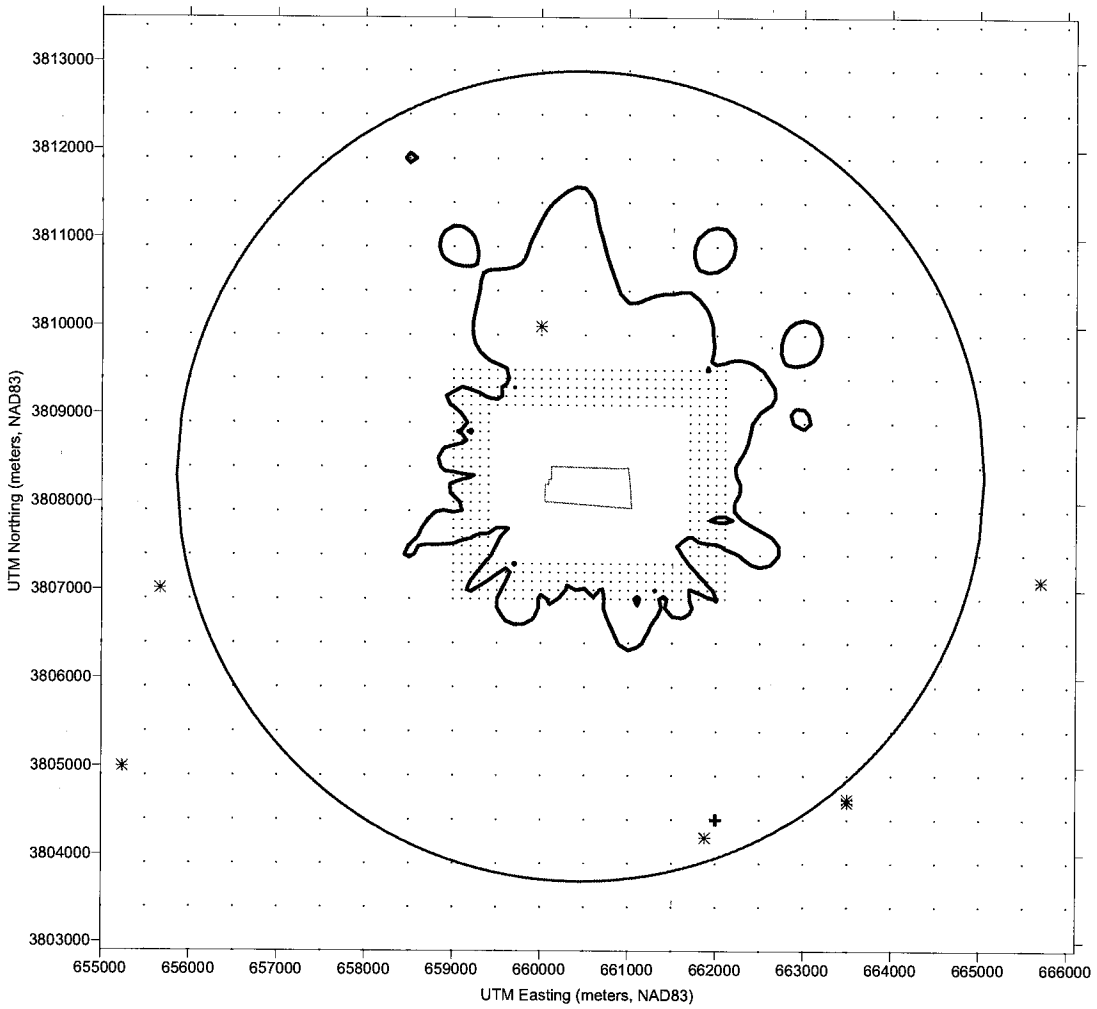
Radius of Impact (ROI)
Gavilon Significant Impact Isopleth

THE GAVILON GROUP LLC WEST CLOVIS FACILITY MINOR SOURCE PERMIT APPLICATION	24-Hour TSP Model-Predicted Significant Concentration Isopleth (5 $\mu g/m^3$)
Date: 06/09/2009	FIGURE 16-9



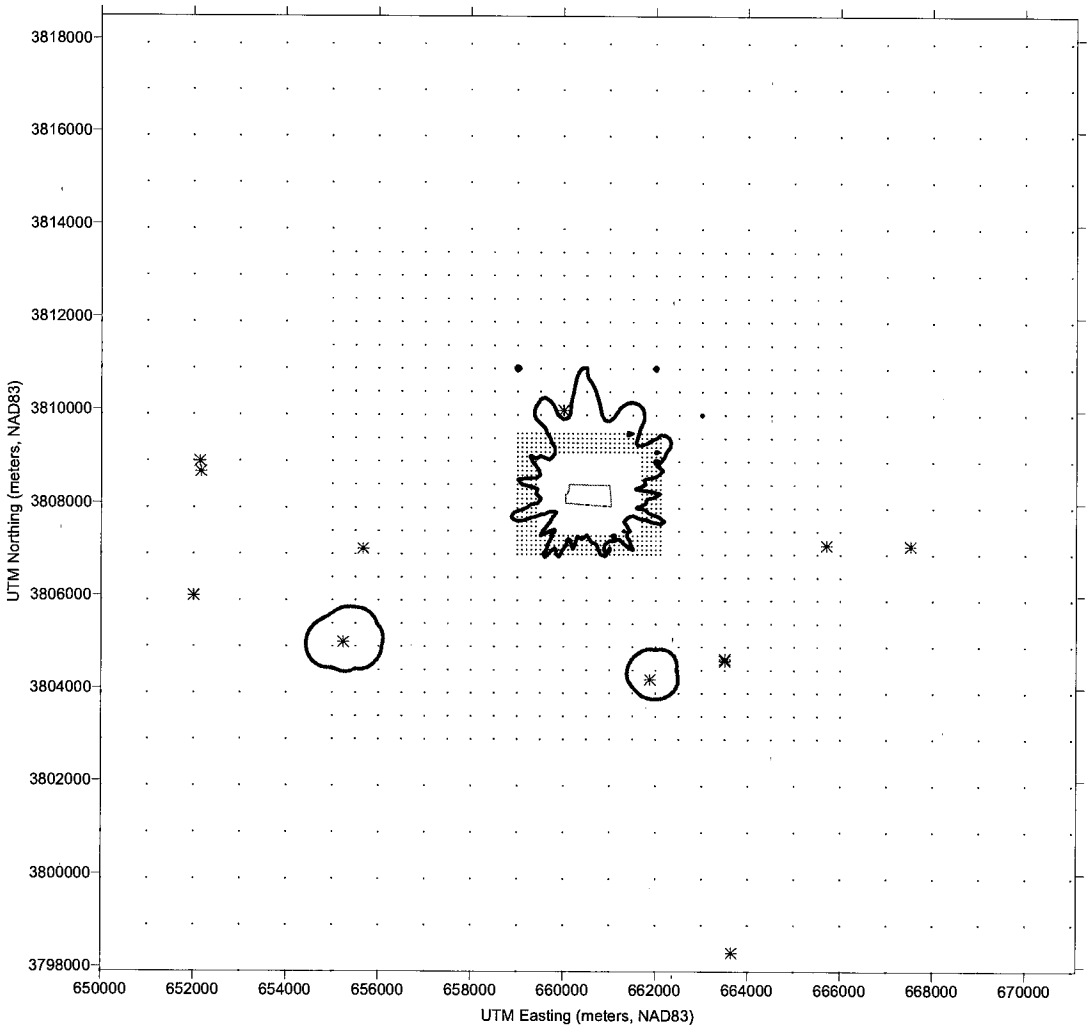
Radius of Impact (ROI)
Gavilon Significant Impact Isopleth

THE GAVILON GROUP LLC WEST CLOVIS FACILITY MINOR SOURCE PERMIT APPLICATION	24-Hour TSP Model-Predicted Significant Concentration Isopleth (1 $\mu g/m^3$)
Date: 06/09/2009	FIGURE 16-10



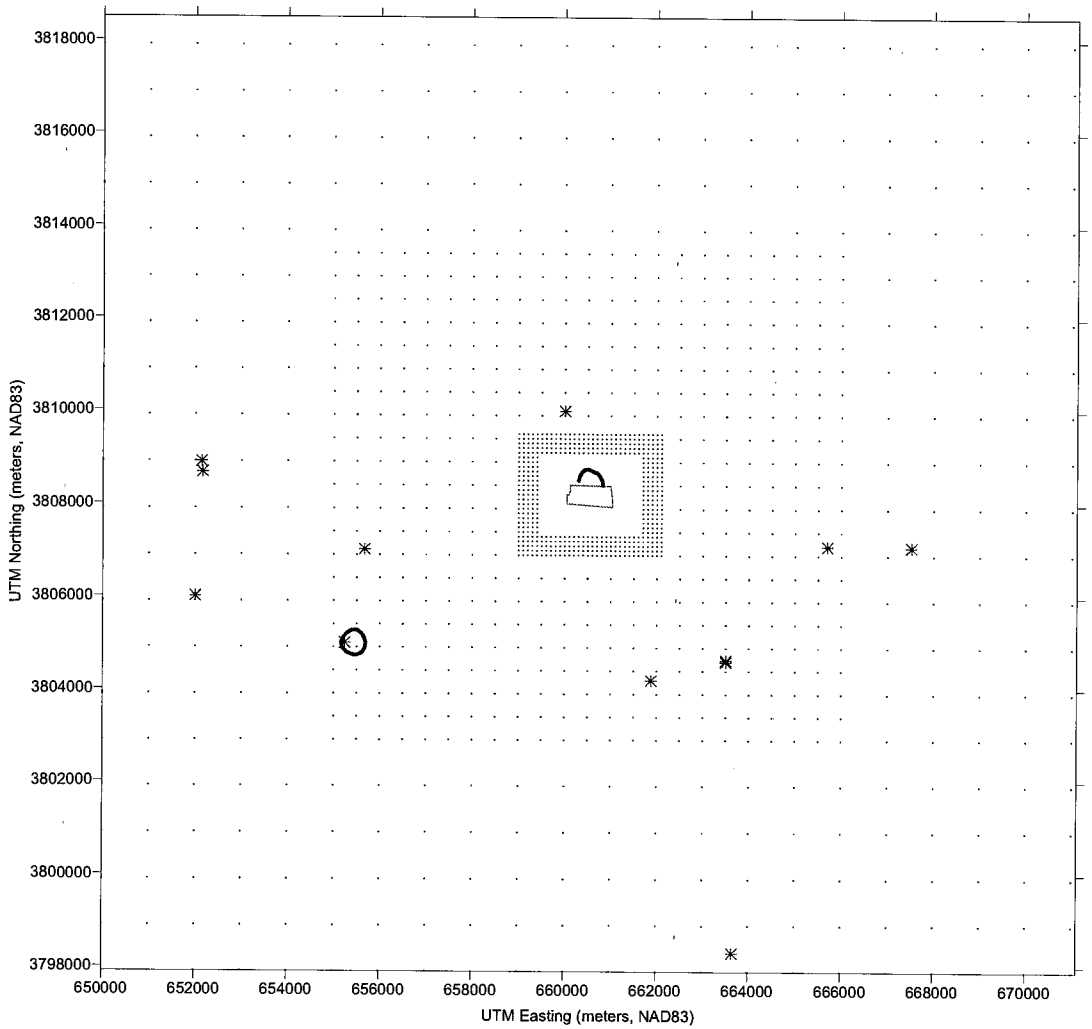
✚ Maximum Impact Location
Gavilon Significant Impact Isopleth
Radius of Impact (ROI)
✳ Off-Site Source within Receptor Grid

THE GAVILON GROUP LLC WEST CLOVIS FACILITY MINOR SOURCE PERMIT APPLICATION	24-Hour PM_{10} Model-Predicted Significant Concentration Isopleths and NAAQS Exceedance Receptor
Date: 06/09/2009	FIGURE 16-11



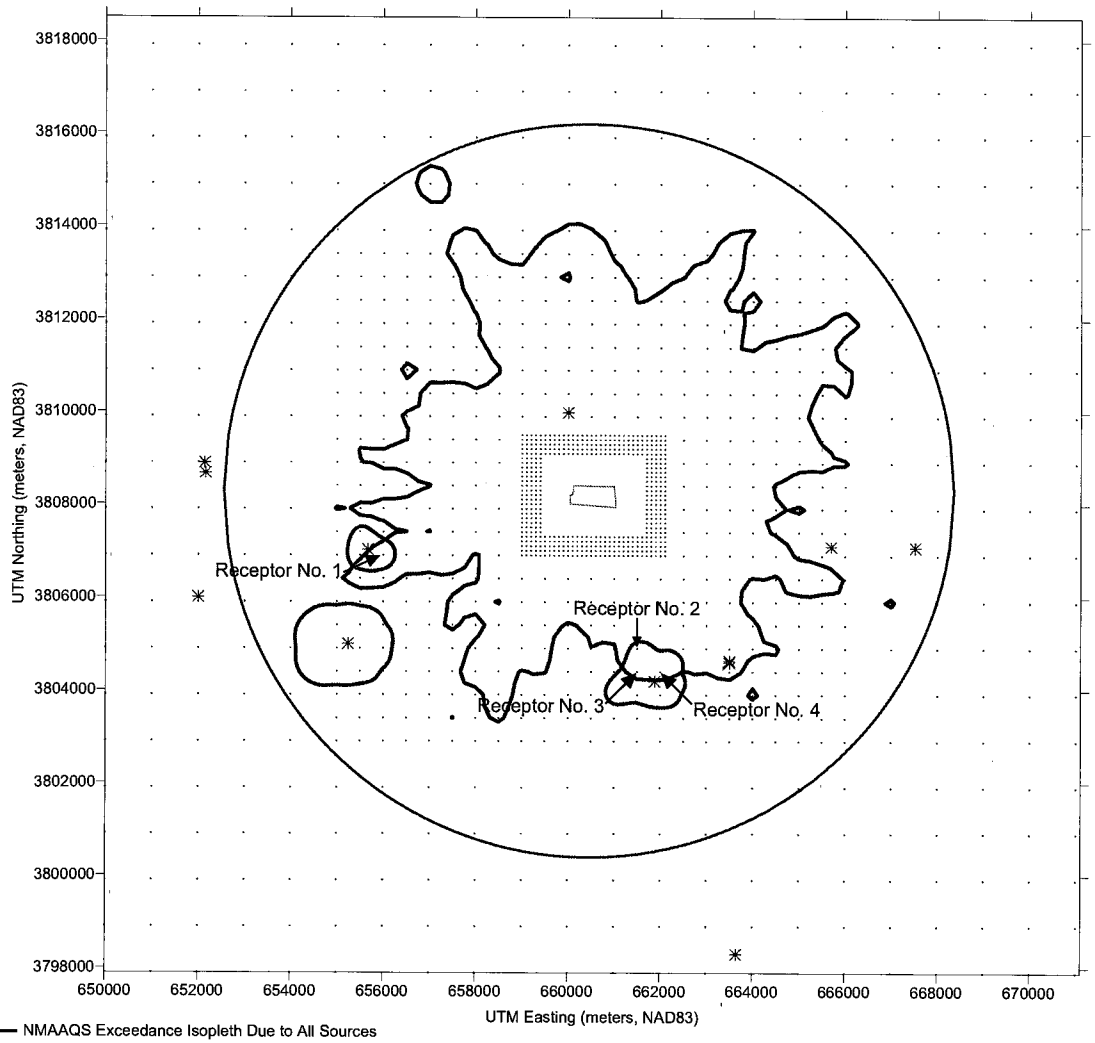
NAAQS Exceedance Isopleth Due to All Sources
Gavilon Significant Impact Isopleth
Off-Site Source within Receptor Grid

THE GAVILON GROUP LLC WEST CLOVIS FACILITY MINOR SOURCE PERMIT APPLICATION	24-Hour $PM_{2.5}$ Model-Predicted Significant and NAAQS Exceedance Concentration Isopleths
Date: 06/09/2009	FIGURE 16-12



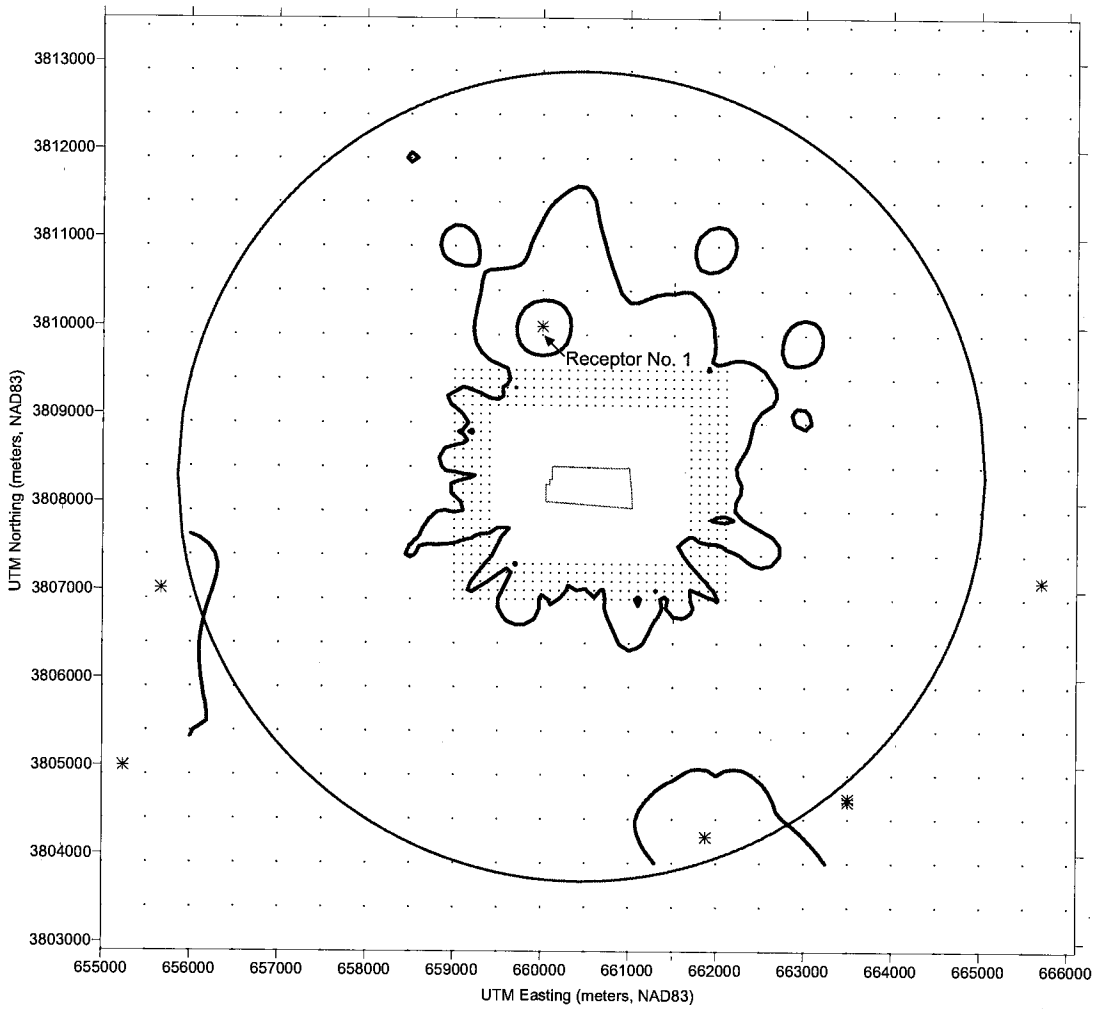
NAAQS Exceedance Isopleth Due to All Sources
Gavilon Significant Impact Isopleth
Off-Site Source within Receptor Grid

THE GAVILON GROUP LLC WEST CLOVIS FACILITY MINOR SOURCE PERMIT APPLICATION	Annual $PM_{2.5}$ Model-Predicted Significant and NAAQS Exceedance Concentration Isopleths
Date: 06/09/2009	FIGURE 16-13



NMAAQS Exceedance Isopleth Due to All Sources
Radius of Impact (ROI)
Gavilon Significant Impact Isopleth
Off-Site Source within Receptor Grid

THE GAVILON GROUP LLC WEST CLOVIS FACILITY MINOR SOURCE PERMIT APPLICATION	24-Hour TSP Model-Predicted Significant and NMAAQS Exceedance Concentration Isopleths
Date: 06/09/2009	FIGURE 16-14



Increment Exceedance Isopleth Due to All Sources
Gavilon Significant Impact Isopleth
Radius of Impact (ROI)
✳ Off-Site Source

THE GAVILON GROUP LLC WEST CLOVIS FACILITY MINOR SOURCE PERMIT APPLICATION	24-Hour PM_{10} Model-Predicted Significant and Increment Exceedance Concentration Isopleths
Date: 06/09/2009	FIGURE 16-15

Gavilon Grain, LLC dba Peavey Company
Modeling Archive for Class II Impact Analyses

KEY TO FILES ON CD-ROM

June 2009

This document summarizes the content of the Gavilon Grain, LLC dba Peavey Company Class II Modeling CD-ROM. The CD-ROM contains various directories, as described below.

Directory: \AERMAP- consists of AERMAP I/O files and files containing gridded data for datum conversions.

Files:

*.LAS/LOS	:Gridded data files (available as part of the AERMAP download on the EPA SCRAM Web page)
AERMAP.EXE	:AERMAP (Version 09040) executable
82763272.zip	:Consists of National Elevation Data (NED) file used in AERMAP processing.
*.INP	:AERMAP input file
*.OUT	:AERMAP output files
Clovis.ROU	:AERMAP receptor file used for ROI runs
Clovis.SOU	:AERMAP source elevation file used to obtain source base elevations

Files in subdirectory:

*.ROU	:Receptors extracted from the Clovis.ROU file specific to each listed pollutant's ROI. These grids were used in the refined analyses for each listed pollutant.

Directory: \MET_DATA - consists of NMED-provided AERMOD-ready meteorological data files for 2001-2005. There are individual SFC and PFL files for each year used for annual averaging period modeling, as well as combined 5-year SFC and PFL files used for short-term averaging period modeling.

Directory: \BPIP- consists of BPIP-PRIME I/O files for facility point sources.

BPIPPRM.EXE :BPIP-PRIME (Version 04274) executable

Subdirectory "Gaseous" Files:

Clovis.*	:BPIP-PRIME I/O files, where * = BPI (input), OUT/SUM (output files)
Gas.wak	:Building downwash parameters INCLUDE file used for all gaseous pollutant AERMOD model runs. NOTE: does not include the Grain Cleaner cyclone (Source ID 1) as a point source (see subdirectory "Particulate" below for explanation).

Subdirectory "Particulate" Files:

Clovis.*	:BPIP-PRIME I/O files, where * = BPI (input), OUT/SUM (output files)
pm_includes_GRNCLN1.wak	:Building downwash parameters INCLUDE file used for all particulate matter AERMOD model runs. The Grain Cleaner cyclone (Source ID 1) source was added after the initial "Gaseous" pollutant BPIP runs were

made, since Gavilon has agreed to install a cyclone on Source ID 1. This input file is identical to the "Gaseous" BPIP input file except it contains Source ID 1, and is the final complete BPIP file.

Directory: \AERMOD– consists of AERMOD model runs in various subdirectories.

File:

aermod_07026_EPA_src_Intel_compiled.exe	:Intel-compiled AERMOD (Version 07026) executable

Subdirectory "common_inputs" Files:

Files in this subdirectory were used by various AERMOD runs using the INCLUDED keyword. Files are stored here to reduce redundancy in directories described later in this section of the README file.

ALL_PM10_increm.grp	:AERMOD INCLUDE PM10 increment source group file containing both facility and off-site sources
Gavilon_gas.grp	:AERMOD INCLUDE gaseous pollutant source group file for only facility sources
Gavilon_PM10_increm.grp	:AERMOD INCLUDE PM10 increment source group file containing only facility sources
Gavilon_PM_NAAQS.grp	:AERMOD INCLUDE PM NAAQS source group file containing only facility sources
offsite_srcs.grp	:AERMOD INCLUDE file with source group for all off-site sources
Gavilon.ROU	:ROI receptor grid
NOXROI.ROU	:NOx refined impact receptor grid – only contains receptors within the NOx ROI
PM10ROI.ROU	:PM10 refined impact receptor grid – only contains receptors within the PM10 ROI
TSPROI.ROU	:TSP refined impact receptor grid – only contains receptors within the TSP ROI
gas.wak	:Building downwash parameters INCLUDE file used for all gaseous pollutant AERMOD model runs. See details in BPIP file summary.
pm_includes_GRNCLN1.wak	:Building downwash parameters INCLUDE file used for all particulate matter AERMOD model runs. See details in BPIP file summary.

Subdirectory "ROI" Files:

ROI Summary.xls	:Excel spreadsheet summarizing the ROI analyses. Contains PLOTFILE output and performs distance to ROI calculations based on a central facility coordinate.

Subdirectories and files under "ROI" directory:

Directory: ppp_tt	:Pollutant and averaging period subdirectories, where ppp – pollutant (i.e., CO, NOx, etc.) and tt = averaging period (i.e., ST = short-term and AN = annual).
*.inp	:AERMOD input file
*.out	:AERMOD output file
*.PLT	:AERMOD PLOTFILE
*.src	:AERMOD INCLUDE source input files for each pollutant for facility sources

For PM10 and TSP runs, there are 3 additional subdirectories, one for each "shift" for which Source ID 22 was modeled. These are not true working shifts but rather 3 separate periods around the 24-hour clock when Source ID 22 was modeled. "1st_shift" = Source ID 22 running from midnight to 8am, "2nd_shift" = Source ID 22 running from 9am to 4pm, and "3rd_shift" = Source ID 22 running from 5pm to midnight.

PM10 and TSP ROI runs showed that the "1st_shift" produced the highest impact, and this time period was used for Source ID 22 for all refined PM impact analyses.

Subdirectory "Refined" Files:

Subdirectories and files under "Refined" directory:

Directory: ppp_tt :Pollutant and averaging period subdirectories, where ppp – pollutant (i.e., CO, NOx, etc.) and tt = averaging period (i.e., ST = short-term and AN = annual).

There are additional subdirectories separating the increment and NAAQS/NMAAQS runs, as needed. For annual NOx, a single set of runs was made for increment and NAAQS/NMAAQS analyses.

*.inp :AERMOD input file
*.out :AERMOD output file
*.PLT :AERMOD PLOTFILE
*.src :AERMOD INCLUDE source input files for each pollutant for facility sources and off-site sources. Off-site source files have the word "OFFSITE" appended to the file name.

For PM10 24-hour increment and TSP NMAAQS analyses, culpability runs for each receptor requiring additional analysis, are provided in subdirectories for the respective runs. The culpability runs are numbered by receptor, as presented in Section 16. Please read the headers in each AERMOD file for details.

Directory: \Offsite Inventory– consists of NMED-provided off-site inventory.

Files:

Neighboring_Sources.xls :Complete inventory
Neighboring_Sources_Merged.xls :"Merged" inventory for which NMED recommended be used for modeling
Neighboring_Sources_Merged_AECOM formatted.xls: "Merged" inventory for which NMED recommended be used for modeling; there are additional worksheets used to prepare the off-site inventory AERMOD source inputs for off-site sources.

AECOM

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October 5, 2009

Coleman A. Smith, Ph.D.
Air Quality Bureau, New Source Review
New Mexico Environment Department
1301 Siler Road, Bldg. B
Santa Fe, NM 87507

Subject: **Addendum to the Significant Revision Application for Permit Number 2910M1 for the West Clovis Animal Feed Manufacturing Facility**

Dear Dr. Smith:

On behalf of Gavilon Grain, LLC (Gavilon), AECOM Environment is submitting this addendum to the Significant Revision Application for Permit Number 2910M1 for the West Clovis Animal Feed Manufacturing Facility. This addendum is being submitted in response to the following data requests received from the New Mexico Environment Department (NMED):

- Estimation of Truck Traffic Particulate Emissions, and
- Inclusion of Truck Traffic Emissions in Dispersion Modeling Analysis

In addition to addressing the items listed above in this addendum, AECOM has also revised the way some of the emission sources listed in the permit application submitted on June 11, 2009 were modeled. This addendum includes emission calculations for truck traffic, an overview of the proposed dispersion modeling revisions, and a presentation of the revised dispersion modeling results demonstrating compliance with ambient air quality standards and increments. We are submitting under separate cover the digital dispersion modeling input and output files on CD.

This addendum presents proposed revisions to particulate matter sources only; the combustion source at the facility (natural gas-fired boiler, Source ID 6) remains unchanged.

Estimation of Truck Traffic Particulate Emissions

NMED requested that Gavilon quantify the fugitive particulate (PM, PM_{10}, and $PM_{2.5}$) emissions resulting from the truck traffic on the unpaved roads within the facility boundary. The total emissions of PM, PM_{10}, and $PM_{2.5}$ from the truck traffic on the unpaved roads is 3.81 tpy, 0.93 tpy, and 0.09 tpy respectively.

The Clovis unpaved haul roads are controlled via three different methods consisting of asphalt emulsifier within the plant area itself, base course along the western edge of the buildings leading back to the DDG storage pile area, and calichi which is used in the DDG storage and unloading/loading area. In addition, the truck traffic routes vary depending on what material is being loaded or unloaded (grain received onsite, flaked grain hauled offsite, ground grain hauled offsite, and DDG hauled offsite). However, the only truck traffic that travels on the base course and calichi sections within the facility is the truck traffic associated with DDG only. Based on the routes trucks take, a series of volume sources were created for modeling, and are shown in Attachment C (Figures C-1 through C-4). These routes and the daily and annual tonnages loaded and unloaded were utilized to calculate the vehicle miles traveled, by dividing the annual and daily tonnage hauled by the average truck capacity. Emissions were not calculated for the portions of the routes in the vicinity of the scales since the vehicle speed is minimal in these areas.

Each type of material being unloaded or loaded was broken into separate emissions calculations representing the amount of material hauled daily and annually and along specified truck traffic routes for specific vehicle use profiles/activities as follows:

Vehicle Use Profile

- Grain Received Onsite;
- Flaked Grain Hauled Offsite;
- Ground Grain Hauled Offsite;
- DDG Plant Segment (asphalt emulsifier)
- DDG Basecourse Segment
- DDG Calichi Segment

The emissions were calculated based on the different sections of unpaved road and per the amount and type of material received/hauled, as each vehicle use profile follows a specific traffic pattern within the facility. The total vehicle miles traveled (VMT) per vehicle use profile were calculated and this value was used in conjunction with the emission factor derived from AP-42, 13.2.2, 11/06, Equation 1a as follows:

$$(k) * \left[\frac{s}{12}\right]^{a} * \left[\frac{W}{3}\right]^{b} * \left[\frac{365 - P}{365}\right] = E$$

Where: E = Emission Factor (lb/VMT)
k = Particle size multiplier, dimensionless (4.9 for PM, 1.5 for PM_{10}, 0.15 for $PM_{2.5}$)
a = Empirical constant, dimensionless (0.7 for PM, and 0.9 for PM_{10} and $PM_{2.5}$)
b = Empirical constant, dimensionless (0.45 for all particulate matter)
s = Surface material silt content in % (3.9%)
see http://www.epa.gov/ttn/chief/ap42/ch13/related/c13s02-2.html);
W = Mean vehicle weight in tons (30 tons)
P = Number of days/year that the precipitation was greater than 0.01 inches (60)

The resulting PM, PM_{10}, and $PM_{2.5}$ emission factors are as follows:

$$(4.9) * \left[\frac{3.9}{12}\right]^{0.7} * \left[\frac{30}{3}\right]^{0.45} * \left[\frac{365 - 60}{365}\right] = \mathbf{5.25\ lb\ PM/VMT}$$

$$(1.5) * \left[\frac{3.9}{12}\right]^{0.9} * \left[\frac{30}{3}\right]^{0.45} * \left[\frac{365 - 60}{365}\right] = \mathbf{1.28\ lb\ PM10/VMT}$$

$$(0.15) * \left[\frac{3.9}{12}\right]^{0.9} * \left[\frac{30}{3}\right]^{0.45} * \left[\frac{365 - 60}{365}\right] = \mathbf{0.13\ lb\ PM2.5/VMT}$$

The emission factor was multiplied by the respective VMT for each vehicle use profile and the associated control efficiency provided by the NMED for each section of road. For asphalt emulsifier, a control efficiency of 90% was used; for base course, a control efficiency of 80% was used; and for the calichi, a control efficiency of 60% was used. Detailed emission calculations are provided in Table 1 located in Attachment A. An example calculation follows:

(1.28 lb/PM_{10}/VMT) * (5.8 VMT/day) ÷ (17 hr/day) * (100 - 90) / (100) = **0.044 lb/hr**

(1.28 lb/PM_{10}/VMT) * (5.8 VMT/day) * (100 - 90) / (100) = **0.75 lb/day**

(1.28 lb/PM_{10}/VMT) * (2,993 VMT/yr) ÷ (2000 lb/ton) * (100 - 90) / (100) = **0.19 tpy**

Overview of Proposed Revisions

A listing of the proposed revisions to the permit application is provided below:

- Removal of emergency ground pile sources from modeling;
- Addition of truck traffic emissions from unpaved roads to the modeling; and
- Refinement of modeled operating scenarios and associated adjustments to some stationary source emission rates.

Each of these items is discussed below.

Refinement of Modeled Operating Scenarios

AECOM has refined the operating scenarios included in the modeling analyses to account for physical limitations created when a shuttle train is onsite. Two operating scenarios are now included in the 24-hour average modeling analyses, as follows:

- "Train" Operating Scenario: When a train is on-site delivering product, DDG stationary sources (Source IDs 18, 19, and 21) and DDG haul trucks cannot operate. Grain receiving by truck (Source IDs 7a/7b and grain receiving haul trucks) is also limited when a train is on-site due to physical and personnel limitations and so truck traffic and Source IDs 7a/7b throughputs have been reduced by half. All other stationary sources, including flaked and ground grain haul trucks, are operating at their proposed maximum limits.
- "No Train" Operating Scenario: When there is no train (Source ID 12) on-site, emissions from Source ID 12 are zero, and all other stationary sources and haul trucks are operating at their proposed limits.

It takes up to 17 hours to unload a train. For modeling the 24-hour averaging period for particulate matter, it is assumed that either the "Train" or "No Train" scenario occurs for the entire 24-hour period. A description of the modeling methods for these scenarios is provided in the Revised Dispersion Modeling section of this addendum letter.

Revised Dispersion Modeling

Dispersion modeling has been revised to account for the additions and revisions outlined in this addendum. Since there are no revisions proposed to the natural gas-fired boiler, no changes to the gaseous pollutant modeling (NO_X, SO_2, and CO) are proposed in this addendum. All other aspects of the modeling methods, emission rates, and release parameters for particulate matter are unchanged from the June 11 permit application, except to refine the daily operating scenarios, as described below. The revised modeling shows that Gavilon sources to do not cause or contribute to a violation of an ambient air quality standard or PSD increment.

"Train" Operating Scenario for 24-Hour Averaging Period:

- Source IDs 18, 19, and 21 are not modeled;
- DDG haul trucks are not modeled; and
- Source IDs 7a, 7b, and the grain receiving haul trucks are modeled at ½ their emission rates presented in the June 11 application, as supplemented by data in **Attachment A** of this addendum. Modeling lower emissions accounts for reduced operations that must occur for these sources when the train is on-site due to physical and personnel limitations.

"No Train" Operating Scenario for 24-Hour Averaging Period:

- Source ID 12 is not modeled;
- The initial sigma-z parameter for the DDG front end loader (Source ID 21) was corrected to 3.04 meters to be consistent with the release height submitted in the June 11 permit application;
- The DDG front end loader (Source 21) does not operate between 8pm and 4am local time; and
- All other sources are operating at their proposed emission rates presented in the June 11 application, as supplemented by data in **Attachment A** of this addendum.

Sources that have changed or been added since the June 11 permit application are provided in **Attachment B**. Modeled 24-hour emission rates for each scenario are provided in **Tables B-1** to **B-2**. For the annual averaging period, all sources were modeled at their proposed emission rates presented in **Attachment A**. Modeled annual emission rates are provided in **Table B-3**. Modeled release parameters provided in **Table B-4. Figures C-1** through **C-4** in **Attachment C** show the volume source locations for each modeled road segment where emissions occur. A description of the haul road volume source release parameters is provided below:

- Location: centered on each haul road segment;
- Adjusted haul road width: estimated right-of-way width + 6 meters, per NMED modeling guidelines. Right-of-way estimated to be 30 feet wide.
- Initial σ_y: (adjusted haul road width)/2.15 ;
- Release height: height of a typical haul truck (12 feet); and
- Initial σ_z: (2 X height of a typical haul truck)/2.15 .

The truck deliveries of grain, truck exports of finished product, and the DDG front end loader (Source ID 21) do not operate continuously on the plant property. Grain receiving trucks are only on-site between 7am and midnight local time, with no truck deliveries taking place between midnight and 7am local time. The bulk of the exported product (DDG, flaked grain, and ground grain) truck traffic occurs between 4am and 8pm local time. The number of export product trucks at night is not zero, but is a very small number of trucks on the order of three or four trucks during the 8pm to 4am period. The DDG front end loader does not operate

- Adjusted haul road width: estimated right-of-way width + 6 meters, per NMED modeling guidelines. Right-of-way estimated to be 30 feet wide.
- Initial σ_y: (adjusted haul road width)/2.15 ;
- Release height: height of a typical haul truck (12 feet); and
- Initial σ_z: (2 X height of a typical haul truck)/2.15 .

The truck deliveries of grain, truck exports of finished product, and the DDG front end loader (Source ID 21) do not operate continuously on the plant property. Grain receiving trucks are only on-site between 7am and midnight local time, with no truck deliveries taking place between midnight and 7am local time. The bulk of the exported product (DDG, flaked grain, and ground grain) truck traffic occurs between 4am and 8pm local time. The number of export product trucks at night is not zero, but is a very small number of trucks on the order of three or four trucks during the 8pm to 4am period. The DDG front end loader does not operate during nighttime hours from 8pm to 4am local time. These non-continuous schedules were included in the modeling as described below.

To account for the non-continuous operating schedule of these sources, the HROFDY keyword was used in AERMOD. The grain receiving haul truck segment (Source ID GRNREC) and DDG front end loader (Source ID 21) use HROFDY switches "0" and "1" along with the maximum hourly emission rate for each volume source. The other haul truck segments (Source IDs DDGPLT, DDGBAS, DDGCAL, FLKGRN, and GRNDGR) use HROFDY switches "0.04" for operations between 8pm and 4am, and "1.48" for operations between 4am and 8pm, along with the daily emission rate for each volume source. The HROFDY switches and emission rates used in AERMOD ensure that the daily particulate emissions presented in **Attachment A** are accurately modeled over each 24-hour period in the model. The HROFDY values for the DDG front end loader and each road segment are listed below, for each hour of the day in AERMOD (hours 01 through 24, respectively):

21: 0 0 0 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 0 0 0 0
GRNREC: 0 0 0 0 0 0 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
DDGPLT: 0.04 0.04 0.04 0.04 1.48 1.48 1.48 1.48 1.48 1.48 1.48 1.48 1.48 1.48 1.48 1.48 1.48 1.48 1.48 1.48 0.04 0.04 0.04 0.04
DDGBAS: 0.04 0.04 0.04 0.04 1.48 1.48 1.48 1.48 1.48 1.48 1.48 1.48 1.48 1.48 1.48 1.48 1.48 1.48 1.48 1.48 0.04 0.04 0.04 0.04
DDGCAL: 0.04 0.04 0.04 0.04 1.48 1.48 1.48 1.48 1.48 1.48 1.48 1.48 1.48 1.48 1.48 1.48 1.48 1.48 1.48 1.48 0.04 0.04 0.04 0.04
FLKGRN: 0.04 0.04 0.04 0.04 1.48 1.48 1.48 1.48 1.48 1.48 1.48 1.48 1.48 1.48 1.48 1.48 1.48 1.48 1.48 1.48 0.04 0.04 0.04 0.04
GRNDGN: 0.04 0.04 0.04 0.04 1.48 1.48 1.48 1.48 1.48 1.48 1.48 1.48 1.48 1.48 1.48 1.48 1.48 1.48 1.48 1.48 0.04 0.04 0.04 0.04

The value of 0.04 was derived based on the fact that only a few trucks operate on these road segments between 8pm and 4am, and the bulk of the truck traffic occurs between 4am and 8pm. The value of 0.04 was calculated by dividing the expect number of trucks (three trucks) at night, by the total number truck trips in a given day (82 trucks). Using the HROFDY switch of 1.48 for the remaining hours of the day appropriately simulates a higher emission rate from 4am to 8pm, and also ensures that the daily emission rate is modeled correctly in AERMOD.

Revised modeling results are described below and should replace the particulate matter results sections of Section 16(VI) of the June 11 permit application.

Summary of Facility-Only Impacts:

Tables B-5 and **B-6** provide a summary of the near-field impacts, where the Gavilon facility sources have their maximum impact, compared to the NAAQS/NMAAQS and PSD increments, respectively. The impacts in these tables include off-site sources and background concentrations, as applicable. The results in these tables clearly show that emissions due to the Gavilon West Clovis facility sources do not exceed any the NAAQS/NMAAQS or PSD increments

Radius of Impact (ROI), NAAQS/NMAAQS, and PSD increment refined modeling analysis results are discussed below. For many of the pollutants and averaging periods in these analyses, there are model-

predicted impacts when off-site sources are included in the refined modeling; however, we discuss below that Gavilon facility sources do not significantly contribute to these modeled-exceedances.

Revised ROI Results:

Table B-7 provides a summary of the ROI results. Significant concentration isopleths due to facility sources for each pollutant that exceeded a Significant Impact Level (SIL) are included in the Refined Analysis section of this addendum. Maximum Gavilon-only TSP and PM_{10} impacts exceeded the 24-hour and annual SILs; therefore a refined analysis was performed for all particulate matter species (TSP, PM_{10}, and $PM_{2.5}$). The maximum ROI was 5.2 km for 24-hour TSP.

Revised NAAQS/NMAAQS Impact Analysis Results:

Table B-8 provides a summary of the revised NAAQS/NMAAQS impact analysis results. Annual TSP impacts were below the NMAAQS, whereas 24-hour TSP, PM_{10}, and $PM_{2.5}$ impacts exceeded the NAAQS/NMAAQS due to emissions from off-site sources not related to the Gavilon facility. Model-predicted impact plots for each pollutant that exceeded the NAAQS/NMAAQS are provided in **Figures C-5** through **C-8**. The figures do not include background concentrations. Source culpability analyses which demonstrate that the facility does not significantly contribute to the model-predicted exceedances are provided below.

As shown in **Figures C-5** through **C-7**, refined modeling clearly shows facility significant impact isopleths do not overlap modeled NAAQS/NMAAQS exceedance isopleths for 24-hour PM_{10}, annual $PM_{2.5}$, and 24-hour $PM_{2.5}$. Detailed culpability analyses were not conducted for these pollutants and averaging times since the figures demonstrate that Gavilon sources do not significantly contribute to the modeled exceedances. When facility significant impact isopleths overlap modeled NAAQS/NMAAQS exceedance isopleths, as shown in for 24-hour TSP (**Figure C-8**), additional culpability analyses were conducted.

For receptors located where the ROI and exceedance isopleths overlap, the AERMOD output was analyzed to determine which days during the 5-year meteorology period the facility produced a significant impact. At the 24-hour TSP exceedance receptor shown in **Figure C-8**, there was only one day (January 21, 2001) when Gavilon exceeded the 24-hour TSP SIL. AERMOD was re-run for this day and the total air quality impact was re-calculated. **Table B-9** presents the NMAAQS analysis results on January 21, 2001. As shown in **Table B-9**, the predicted impact is well below the NMAAQS. Gavilon facility sources did not significantly contribute to any other model-predicted exceedances of the 24-hour TSP NMAAQS.

Revised PSD Increment Analysis Results:

Table B-10 provides a summary of the revised PSD increment impact analysis results. Annual PM_{10} impacts were below the increment, whereas 24-hour PM_{10} impacts exceeded the increment due to emissions from off-site sources not related to the Gavilon facility. A model-predicted impact plot for 24-hour PM_{10} is provided in **Figure C-9**. This figure clearly shows that the facility significant impact isopleth does not overlap modeled increment exceedance isopleths. As such, detailed a culpability analysis was not conducted for 24-hour PM_{10} increment since **Figure C-9** demonstrates that Gavilon sources do not significantly contribute to the modeled exceedances.

Summary and Conclusions:

The air quality dispersion modeling conducted for this addendum was performed as described in the modeling protocol and June 11, 2009 permit application. Maximum proposed potential emissions from the facility, including the revisions provided in this addendum, exceeded the Class II significant impact levels for PM_{10} and TSP; therefore refined impact analyses were conducted for these pollutants. There are no formal significant impact levels for $PM_{2.5}$, and as such, an ROI analysis was not conducted, but refined impact analyses were conducted for $PM_{2.5}$.

Refined impact analyses showed that Gavilon sources do not cause or contribute to a violation of an ambient air quality standard or PSD increment. There were model-predicted exceedances of the 24-hour PM_{10} and TSP ambient air quality standards, $PM_{2.5}$ ambient air quality standards, and 24-hour PM_{10} increment; however, the exceedances were due to off-site sources. It was shown, via plotting the modeled exceedance isopleths with the Gavilon significant impact isopleths, as well as a detailed source culpability analysis for 24-hour TSP, that Gavilon sources did not cause or contribute to these modeled exceedances.

Closing

AECOM and Gavilon very much appreciate your efforts in processing this permit application. Please let us know if there is anything we can do to assist you in the completeness determination for this revision to permit number 2910M1. In addition, please do not hesitate to call and/or email me with any additional questions or data requests. Any modeling questions should be forwarded to Patrick McKean.

Sincerely,

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Attachments

Attachment A

Unpaved Road Emission Calculations

Table 1
Gavilon Grain, LLC (dba Peavey Company) - Shelburn, Indiana
Fugitive Dust Emissions - Unpaved Haul Roads - Potential to Emit

Vehicle Use Profile	Tons Received/Hauled			Truck Weights			Round Trip	Trips		Vehicle Miles Traveled	
	Annual	Daily	hr/day	Empty	Full	Capacity	Distance	Annually	Daily	Annually	Daily
Grain Received Onsite	280,000 tpy	543 tpd	17 hr/day	17.5 tons	42.5 tons	25.0 tons	0.27 miles	11,200 trips/yr	22 trips/day	2,993 vmt/yr	5.8 vmt/day
Flaked Grain Hauled Off	357,000 tpy	978 tpd	24 hr/day	17.5 tons	42.5 tons	25.0 tons	0.45 miles	14,280 trips/yr	39 trips/day	6,478 vmt/yr	17.7 vmt/day
Ground Grain Hauled Off	153,000 tpy	419 tpd	24 hr/day	17.5 tons	42.5 tons	25.0 tons	0.28 miles	6,120 trips/yr	17 trips/day	1,730 vmt/yr	4.7 vmt/day
DDG plant segment	50,000 tpy	137 tpd	24 hr/day	17.5 tons	42.5 tons	25.0 tons	0.39 miles	2,000 trips/yr	5 trips/day	783 vmt/yr	2.1 vmt/day
DDG basecourse segment	50,000 tpy	137 tpd	24 hr/day	17.5 tons	42.5 tons	25.0 tons	0.34 miles	2,000 trips/yr	5 trips/day	671 vmt/yr	1.8 vmt/day
DDG Calichi Segment	50,000 tpy	137 tpd	24 hr/day	17.5 tons	42.5 tons	25.0 tons	0.15 miles	2,000 trips/yr	5 trips/day	298 vmt/yr	0.8 vmt/day

EF Parameters	PM	PM_{10}	$PM_{2.5}$	Source
k = particle size multiplier	4.90	1.50	0.15	AP-42 Table 13.2.2-2
s = silt content of road surface	3.9 %	3.9 %	3.9 %	See http://www.epa.gov/ttn/chief/ap42/ch13/related/c13s02-2.html 4th bullet down. For New Mexico, the silt content is 3.9%
a = empirical constant	0.70	0.90	0.90	AP-42 Table 13.2.2-2
W = weight of truck	30.0 tons	30.0 tons	30.0 tons	Avg. weight of Vehicle
b = empirical constant	0.45	0.45	0.45	AP-42 Table 13.2.2-2
p = # of days with precipitation/yr	60	60	60	AP-42 Figure 13.2.2-1
E= Emission Factor (lbs/VMT):	**5.25 lb/vmt**	**1.28 lb/vmt**	**0.13 lb/vmt**	**$E = k * (s/12)^a * (W/3)^b * [(365 - p)/(365)]$**

Vehicle Use Profile	Uncontrolled Emission Rates			Dust Control		Controlled Emission Rates					
	PM	PM_{10}	$PM_{2.5}$	Type	Efficiency	PM		PM_{10}		$PM_{2.5}$	
Grain Received Onsite	1.80 lb/hr	0.44 lb/hr	0.04 lb/hr	Asphalt Emulsifier	90.0 %	0.180 lb/hr	0.0226 g/sec	0.044 lb/hr	0.0055 g/sec	0.004 lb/hr	0.0006 g/sec
	30.5 lb/day	7.5 lb/day	0.7 lb/day			3.05 lb/day	0.0160 g/sec	0.75 lb/day	0.0039 g/sec	0.07 lb/day	0.0004 g/sec
	7.9 tpy	1.9 tpy	0.19 tpy			0.79 tpy	0.0226 g/sec	0.19 tpy	0.0055 g/sec	0.02 tpy	0.0006 g/sec
Flaked Grain Hauled Off	3.89 lb/hr	0.95 lb/hr	0.09 lb/hr	Asphalt Emulsifier	90.0 %	0.389 lb/hr	0.0490 g/sec	0.095 lb/hr	0.0120 g/sec	0.009 lb/hr	0.0012 g/sec
	93.3 lb/day	22.8 lb/day	2.3 lb/day			9.33 lb/day	0.0490 g/sec	2.28 lb/day	0.0120 g/sec	0.23 lb/day	0.0012 g/sec
	17.0 tpy	4.2 tpy	0.42 tpy			1.70 tpy	0.0490 g/sec	0.42 tpy	0.0120 g/sec	0.04 tpy	0.0012 g/sec
Ground Grain Hauled Off	1.04 lb/hr	0.25 lb/hr	0.03 lb/hr	Asphalt Emulsifier	90.0 %	0.104 lb/hr	0.0131 g/sec	0.025 lb/hr	0.0032 g/sec	0.003 lb/hr	0.0003 g/sec
	24.9 lb/day	6.1 lb/day	0.6 lb/day			2.49 lb/day	0.0131 g/sec	0.61 lb/day	0.0032 g/sec	0.06 lb/day	0.0003 g/sec
	4.5 tpy	1.1 tpy	0.11 tpy			0.45 tpy	0.0131 g/sec	0.11 tpy	0.0032 g/sec	0.01 tpy	0.0003 g/sec
DDG plant segment	0.47 lb/hr	0.11 lb/hr	0.01 lb/hr	Asphalt Emulsifier	90.0 %	0.047 lb/hr	0.0059 g/sec	0.011 lb/hr	0.0014 g/sec	0.001 lb/hr	0.0001 g/sec
	11.3 lb/day	2.8 lb/day	0.3 lb/day			1.13 lb/day	0.0059 g/sec	0.28 lb/day	0.0014 g/sec	0.03 lb/day	0.0001 g/sec
	2.1 tpy	0.5 tpy	0.05 tpy			0.21 tpy	0.0059 g/sec	0.05 tpy	0.0014 g/sec	0.01 tpy	0.0001 g/sec
DDG basecourse segment	0.40 lb/hr	0.10 lb/hr	0.01 lb/hr	Base Course	80.0 %	0.081 lb/hr	0.0101 g/sec	0.020 lb/hr	0.0025 g/sec	0.002 lb/hr	0.0002 g/sec
	9.7 lb/day	2.4 lb/day	0.2 lb/day			1.93 lb/day	0.0101 g/sec	0.47 lb/day	0.0025 g/sec	0.05 lb/day	0.0002 g/sec
	1.8 tpy	0.4 tpy	0.04 tpy			0.35 tpy	0.0101 g/sec	0.09 tpy	0.0025 g/sec	0.01 tpy	0.0002 g/sec
DDG Calichi Segment	0.18 lb/hr	0.04 lb/hr	0.00 lb/hr	Calichi	60.0 %	0.072 lb/hr	0.0090 g/sec	0.017 lb/hr	0.0022 g/sec	0.002 lb/hr	0.0002 g/sec
	4.3 lb/day	1.0 lb/day	0.1 lb/day			1.72 lb/day	0.0090 g/sec	0.42 lb/day	0.0022 g/sec	0.04 lb/day	0.0002 g/sec
	0.8 tpy	0.2 tpy	0.02 tpy			0.31 tpy	0.0090 g/sec	0.08 tpy	0.0022 g/sec	0.01 tpy	0.0002 g/sec
					Totals	**3.81 tpy**	**0.87 lb/hr**	**0.93 tpy**	**0.21 lb/hr**	**0.09 tpy**	**0.02 lb/hr**

Attachment B

Revised Dispersion Modeling Tables

Table B-1 – 24-Hour Modeled Emission Rates for "Train" Operating Scenario

Source ID [1]	Description/ Number of Volume Sources	TSP (g/s/vol.)	PM_{10} (g/s/vol.)	$PM_{2.5}$ (g/s/vol.)
7a	Grain receiving pit (truck)/ 1 volume	7.500E-02	1.103E-02	1.857E-03
7b	Grain receiving pit (truck)/ 1 volume	7.500E-02	1.103E-02	1.857E-03
GRNRECx	Grain Received Onsite/ 22 volumes	5.140E-04	1.257E-04	1.257E-05
DDGPLTx	DDG Plant Segment/ 37 volumes	n/a	n/a	n/a
DDGBASx	DDG Basecourse Segment/ 31 volumes	n/a	n/a	n/a
DDGCALx	DDG Calichi Segment/ 15 volumes	n/a	n/a	n/a
FLKGRNx	Flake Grain Hauled Offsite/ 43 volumes	1.139E-03	2.784E-04	2.784E-05
GRNDGRx	Ground Grain Hauled Offsite/ 28 volumes	4.670E-04	1.142E-04	1.142E-05

[1] The "x" in the Source ID represents the volume source number.

Table B-2 – 24-Hour Modeled Emission Rates for "No Train" Operating Scenario

Source ID [1]	Description/ Number of Volume Sources	TSP (g/s/vol.)	PM_{10} (g/s/vol.)	$PM_{2.5}$ (g/s/vol.)
7a	Grain receiving pit (truck)/ 1 volume	1.499E-01	2.205E-02	3.714E-03
7b	Grain receiving pit (truck)/ 1 volume	1.499E-01	2.205E-02	3.714E-03
GRNRECx	Grain Received Onsite/ 22 volumes	1.028E-03	2.514E-04	2.514E-05
DDGPLTx	DDG Plant Segment/ 37 volumes	1.599E-04	3.910E-05	3.910E-06
DDGBASx	DDG Basecourse Segment/ 31 volumes	3.272E-04	8.000E-05	8.000E-06
DDGCALx	DDG Calichi Segment/ 15 volumes	6.011E-04	1.470E-04	1.470E-05
FLKGRNx	Flake Grain Hauled Offsite/ 43 volumes	1.139E-03	2.784E-04	2.784E-05
GRNDGRx	Ground Grain Hauled Offsite/ 28 volumes	4.670E-04	1.142E-04	1.142E-05

[1] The "x" in the Source ID represents the volume source number.

Table B-3 – Annual Modeled Emission Rates

Source ID [1]	Description/ Number of Volume Sources	TSP (g/s/vol.)	PM_{10} (g/s/vol.)	$PM_{2.5}$ (g/s/vol.)
7a	Grain receiving pit (truck)/ 1 volume	3.423E-02	5.034E-03	8.479E-04
7b	Grain receiving pit (truck)/ 1 volume	3.423E-02	5.034E-03	8.479E-04
GRNRECx [2]	Grain Received Onsite/ 22 volumes	1.451E-03	3.549E-04	3.549E-05
DDGPLTx	DDG Plant Segment/ 37 volumes	1.599E-04	3.910E-05	3.910E-06
DDGBASx	DDG Basecourse Segment/ 31 volumes	3.272E-04	8.000E-05	8.000E-06
DDGCALx	DDG Calichi Segment/ 15 volumes	6.011E-04	1.470E-04	1.470E-05
FLKGRNx	Flake Grain Hauled Offsite/ 43 volumes	1.139E-03	2.784E-04	2.784E-05
GRNDGRx	Ground Grain Hauled Offsite/ 28 volumes	4.670E-04	1.142E-04	1.142E-05

[1] The "x" in the Source ID represents the volume source number.
[2] Grain receiving modeled annual emission rate is higher than the 24-hour rate to ensure that the proposed annual emission rates presented in **Attachment A** are accurately simulated in AERMOD using the HROFDY switches described in this addendum.

Table B-4 – Modeled Release Parameters

Source ID	Description/ Number of Volume Sources	Release Height (m)	Initial Sigma-Y (m)	Initial Sigma-Z (m)
7a	Grain receiving pit (truck)/ 1 volume	19.03	24.79	17.70
7b	Grain receiving pit (truck)/ 1 volume	19.03	24.79	17.70
GRNREC	Grain Received Onsite/ 22 volumes	4.00	7.04	3.26
DDGPLT	DDG Plant Segment/ 37 volumes	4.00	7.04	3.26
DDGBAS	DDG Basecourse Segment/ 31 volumes	4.00	7.04	3.26
DDGCAL	DDG Calichi Segment/ 15 volumes	4.00	7.04	3.26
FLKGRN	Flake Grain Hauled Offsite/ 43 volumes	4.00	7.04	3.26
GRNDGR	Ground Grain Hauled Offsite/ 28 volumes	4.00	7.04	3.26

Table B-5 – NAAQS/NMAAQS Impact Analysis Near Gavilon Property Line

Pollutant	Averaging Period [1]	Maximum Model-Predicted Impact [2] ($\mu g/m^3$)	Operating Scenario	Background Concentration ($\mu g/m^3$)	Total Predicted Impact ($\mu g/m^3$)	NMAAQS or NAAQS [3] ($\mu g/m^3$)	Exceeds Standard?
PM_{10}	24-Hour	28.7	Train	20.0	48.7	150	No
	24-Hour	29.2	No Train	20.0	49.2	150	No
$PM_{2.5}$	24-Hour	6.3	Train	7.3	13.6	35	No
	24-Hour	6.3	No Train	7.3	13.6	35	No
	Annual	1.7	n/a	7.3	9.0	15	No
TSP	24-Hour	98.8	Train	26.6	125.4	150	No
	24-Hour	109.2	No Train	26.6	135.8	150	No
	Annual	18.9	n/a	26.6	45.5	60	No

[1] All averaging periods are highest-first-high modeled impacts, except 24-hour PM_{10} (highest-sixth-high) and 24-hour $PM_{2.5}$ (highest-eighth-high).

[2] Maximum predicted impact occurs on the Gavilon fenceline.

[3] Most stringent standard.

Table B-6 – PSD Increment Impact Analysis Near Gavilon Property Line

Pollutant	Averaging Period [1]	Maximum Model-Predicted Impact [2] ($\mu g/m^3$)	Operating Scenario	PSD Class II Increment ($\mu g/m^3$)	Exceeds Increment?
PM_{10}	24-Hour	28.7	Train	30	No
	24-Hour	29.2	No Train	30	No
	Annual	7.3	n/a	17	No

[1] All averaging periods are highest-first-high modeled impacts, except 24-hour PM10 (highest-sixth-high).

[2] Maximum predicted impact occurs on the Gavilon fenceline.

Table B-7 – Revised ROI Impacts

Pollutant	Averaging Period	UTM Easting (m)	UTM Northing (m)	Maximum Project-Only Impact [1] ($\mu g/m^3$)	Operating Scenario	SIL ($\mu g/m^3$)	Exceeds SIL?	ROI (km)
PM_{10}	24-Hour	660517	3808396	33.81	No Train	5	Yes	1.9
	Annual	660467	3808397	7.01	n/a	1	Yes	0.7
TSP	24-Hour	660550	3808400	104.13	No Train	5	Yes	5.2
	Annual	660467	3808397	18.59	n/a	1	Yes	1.3

[1] All impacts are high-1st-high for comparison to SILs.

Table B-8 – Revised NAAQS/NMAAQS Impact Analysis

Pollutant	Averaging Period [1]	UTM Easting (m)	UTM Northing (m)	Maximum Model-Predicted Impact [2] ($\mu g/m^3$)	Operating Scenario	Background Concentration ($\mu g/m^3$)	Total Predicted Impact ($\mu g/m^3$)	NMAAQS or NAAQS [3] ($\mu g/m^3$)	Exceeds Standard? [4]
PM_{10}	24-Hour	655500	3804900	432.9	No Train	20.0	452.9	150	Yes
$PM_{2.5}$	24-Hour	655500	3804900	97.7	No Train	7.3	105.0	35	Yes
	Annual	655500	3804900	11.3	n/a	7.3	18.6	15	Yes
TSP	24-Hour	655000	3804900	837.0	No Train	26.6	863.6	150	Yes
	Annual	660467	3808397	18.9	n/a	26.6	45.5	60	No

[1] All averaging periods are highest-first-high modeled impacts, except 24-hour PM_{10} (highest-sixth-high) and 24-hour $PM_{2.5}$ (highest-eighth-high).

[2] Impact due to all modeled sources.

[3] Most stringent standard.

[4] The Gavilon-facility sources are shown to not significantly contribute to any modeled exceedances, as described in this addendum.

Table B-9 – 24-Hour TSP Culpability Analysis Results

Pollutant	Averaging Period [1]	UTM Easting (m)	UTM Northing (m)	Maximum Model-Predicted Impact [2] ($\mu g/m^3$)	Operating Scenario	Background Concentration ($\mu g/m^3$)	Total Predicted Impact ($\mu g/m^3$)	NMAAQS or NAAQS [3] ($\mu g/m^3$)	Exceeds Standard?
TSP	24-Hour	662000	3804400	8.2	No Train	26.6	34.8	150	No

[1] Highest-first-high modeled impacts.

[2] Impact due to all modeled sources.

[3] Most stringent standard.

Table B-10 – Revised PSD Increment Impact Analysis

Pollutant	Averaging Period [1]	UTM Easting (m)	UTM Northing (m)	Maximum Model-Predicted Impact [2] ($\mu g/m^3$)	Operating Scenario	PSD Class II Increment ($\mu g/m^3$)	Exceeds Increment? [3]
PM_{10}	24-Hour	655500	3804900	432.9	No Train	30	Yes
	Annual	655500	3804900	11.3	n/a	17	No

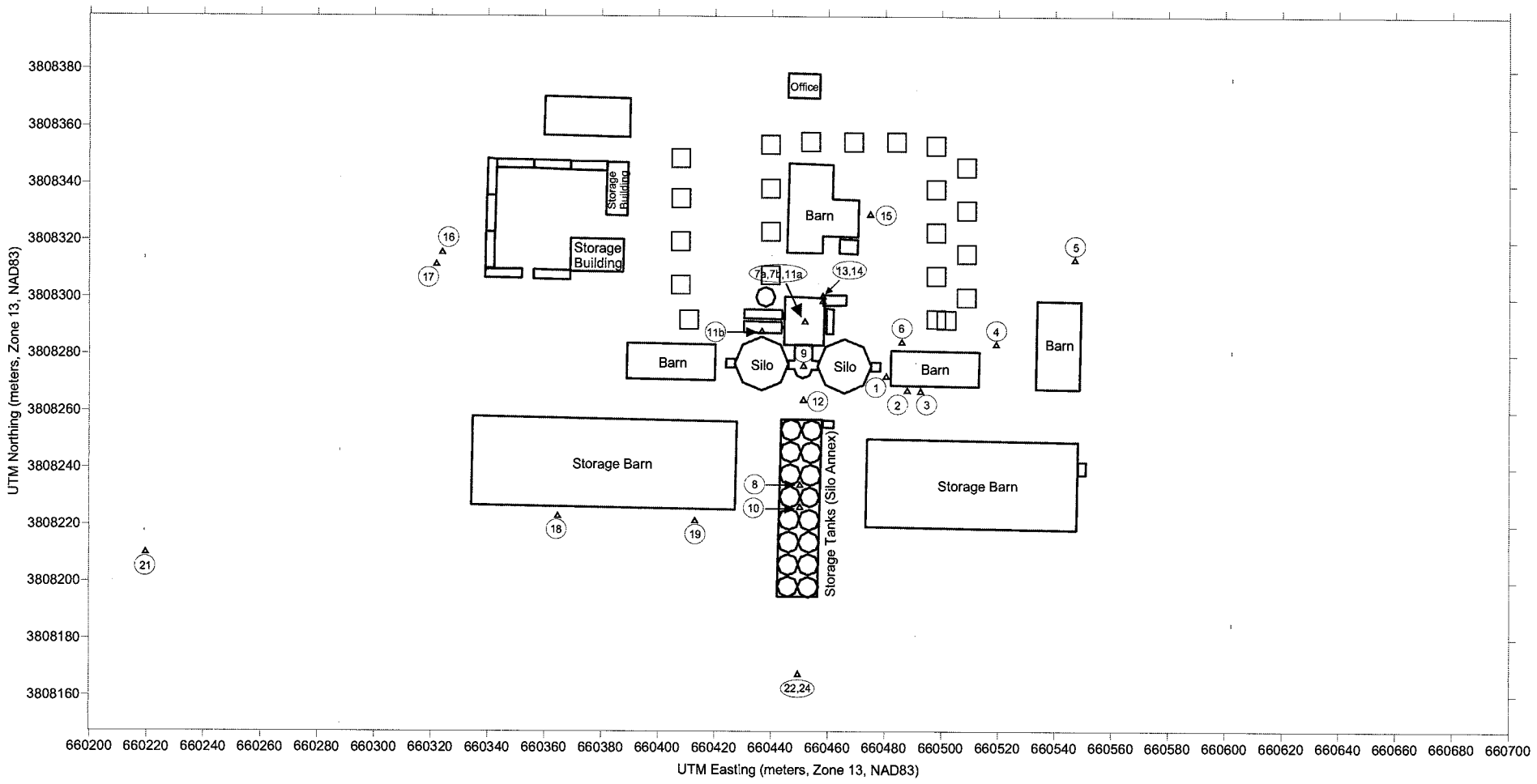
[1] All averaging periods are highest-first-high modeled impacts, except 24-hour PM_{10} (highest-sixth-high).

[2] Impact due to all modeled sources.

[3] The Gavilon-facility sources are shown to not significantly contribute to any modeled exceedances, as described in this addendum.

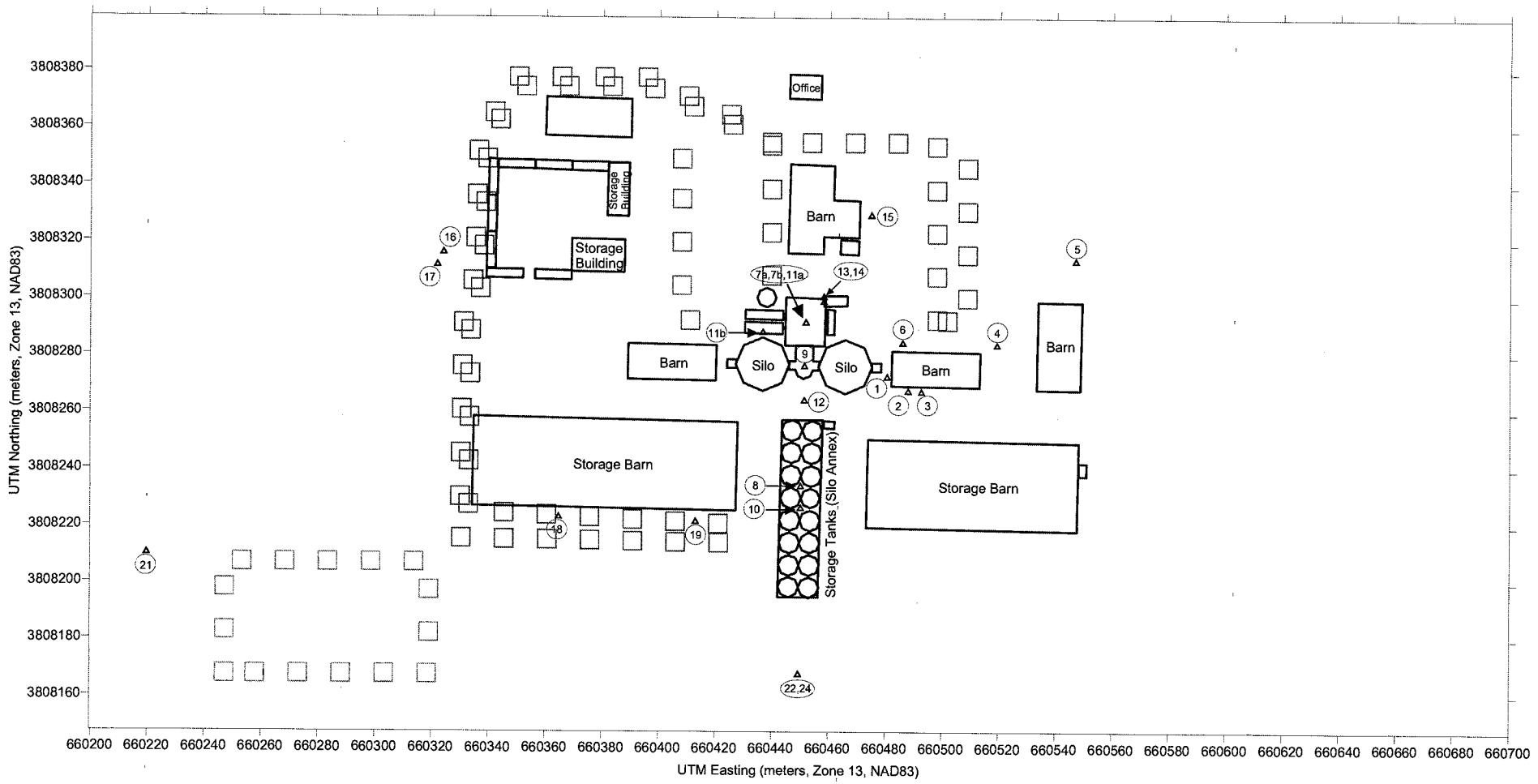
Attachment C

Revised Dispersion Modeling Figures



☐ = Grain Receiving Segment

THE GAVILON GROUP LLC WEST CLOVIS FACILITY MINOR SOURCE PERMIT APPLICATION	EMISSION POINTS AND BUILDING LOCATIONS GRAIN RECEIVING ROAD SOURCES
Date: 09/29/2009	FIGURE C-1

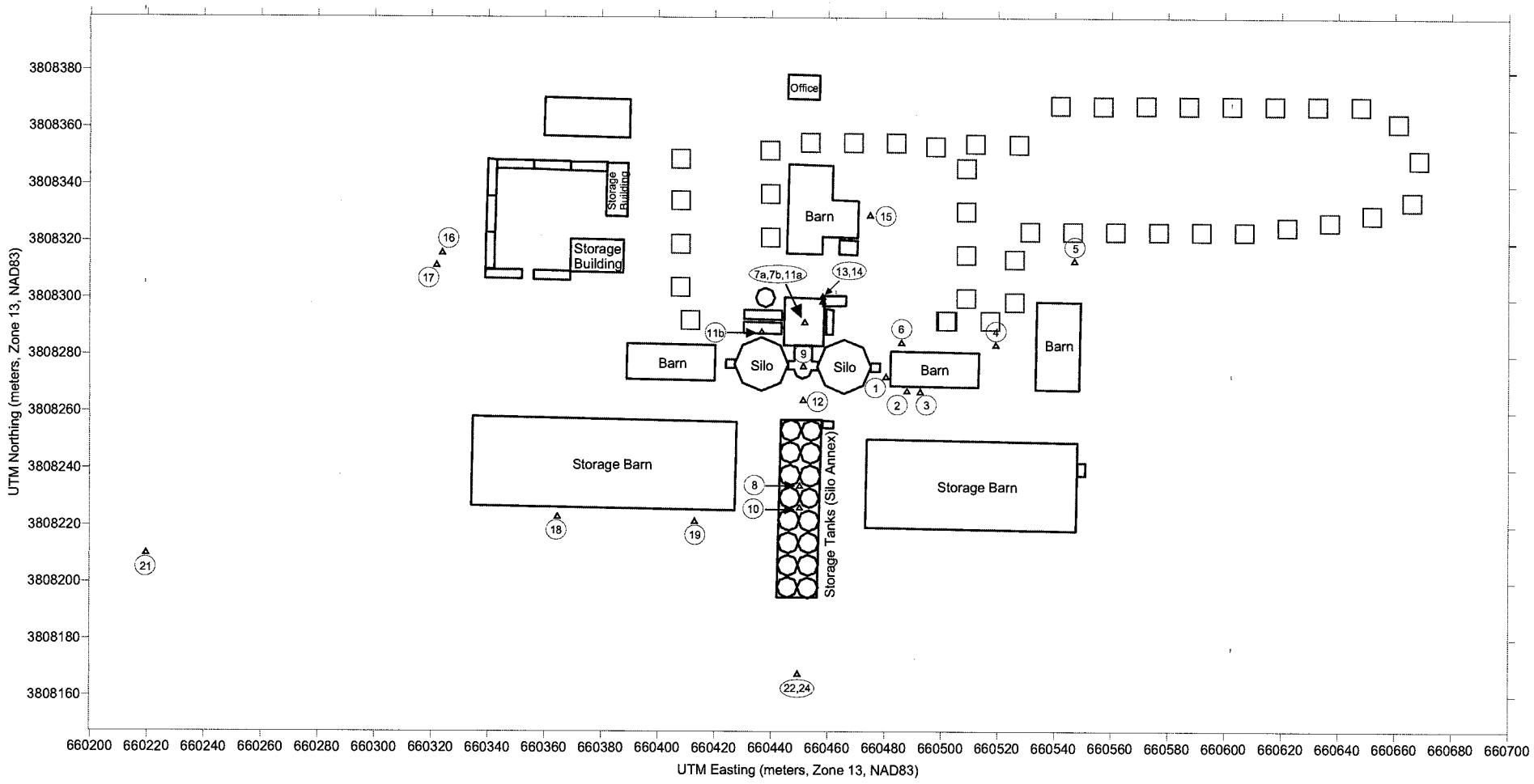


☐ = DDG Plant Segment

☐ = DDG Basecourse Segment

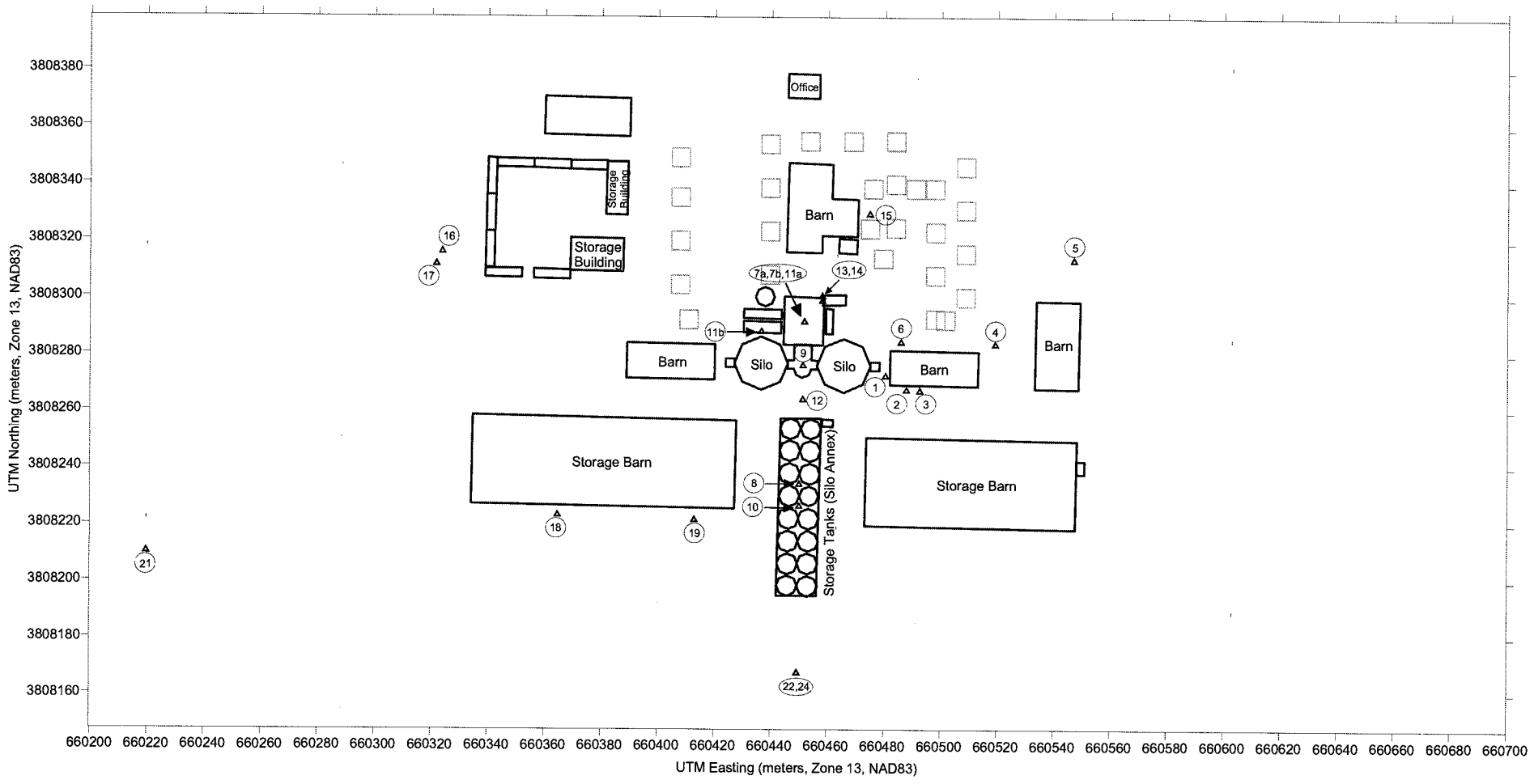
☐ = DDG Calichi Segment

THE GAVILON GROUP LLC WEST CLOVIS FACILITY MINOR SOURCE PERMIT APPLICATION	EMISSION POINTS AND BUILDING LOCATIONS DDG ROAD SOURCES
Date: 09/29/2009	FIGURE C-2

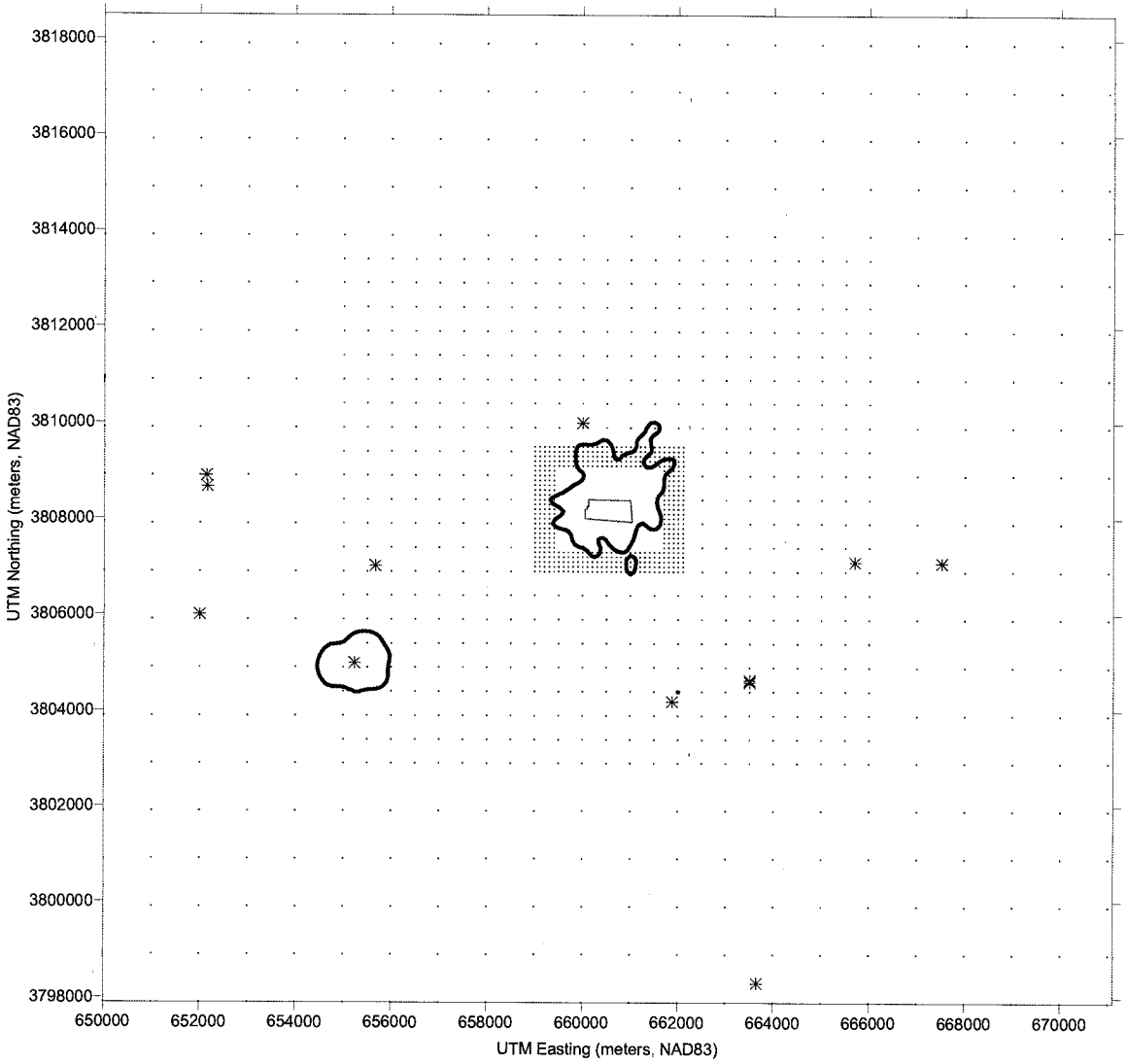


☐ = Flaked Grain Export Segment

THE GAVILON GROUP LLC WEST CLOVIS FACILITY MINOR SOURCE PERMIT APPLICATION	EMISSION POINTS AND BUILDING LOCATIONS FLAKED GRAIN ROAD SOURCES
Date: 09/29/2009	FIGURE C-3

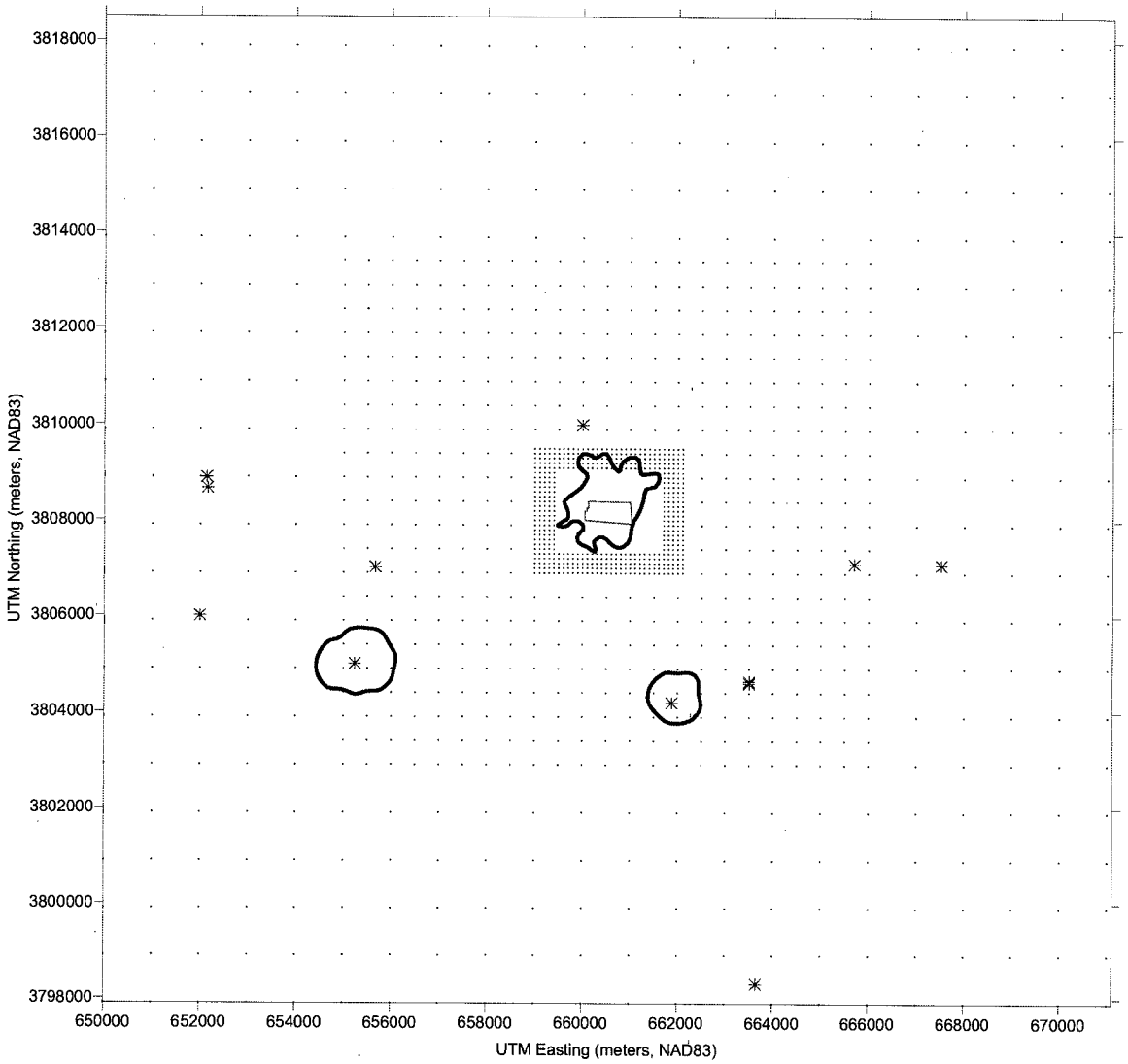


THE GAVILON GROUP LLC WEST CLOVIS FACILITY MINOR SOURCE PERMIT APPLICATION	EMISSION POINTS AND BUILDING LOCATIONS GROUND GRAIN EXPORT ROAD SOURCES
Date: 09/29/2009	FIGURE C-4



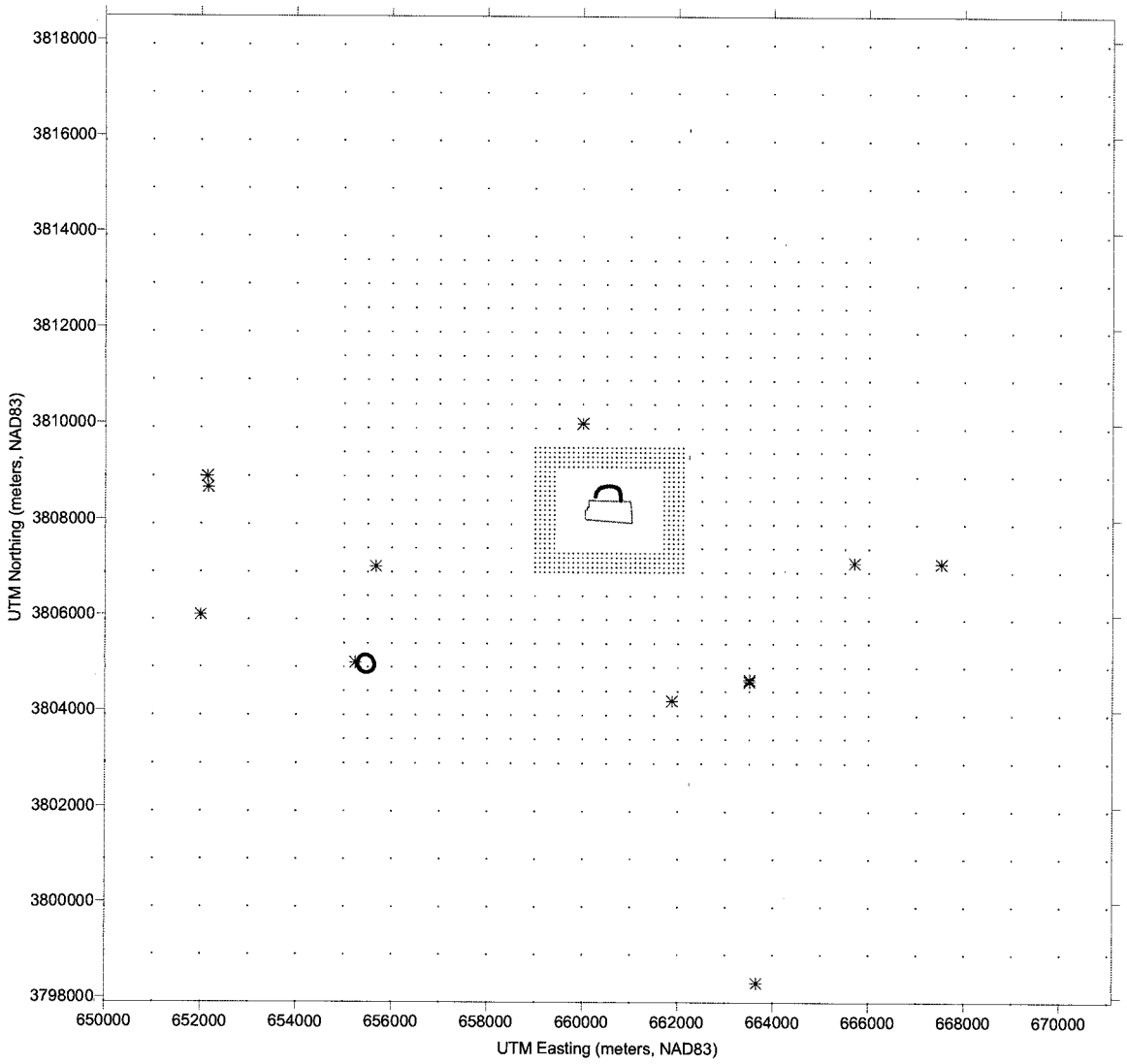
NAAQS Exceedance Isopleth Due to All Sources
Gavilon Significant Impact Isopleth
Off-Site Source

THE GAVILON GROUP LLC CLOVIS FACILITY MINOR SOURCE PERMIT APPLICATION	24-Hour PM_{10} Model-Predicted Significant and NAAQS Exceedance Concentration Isopleths
Date: 10/05/2009	FIGURE C-5



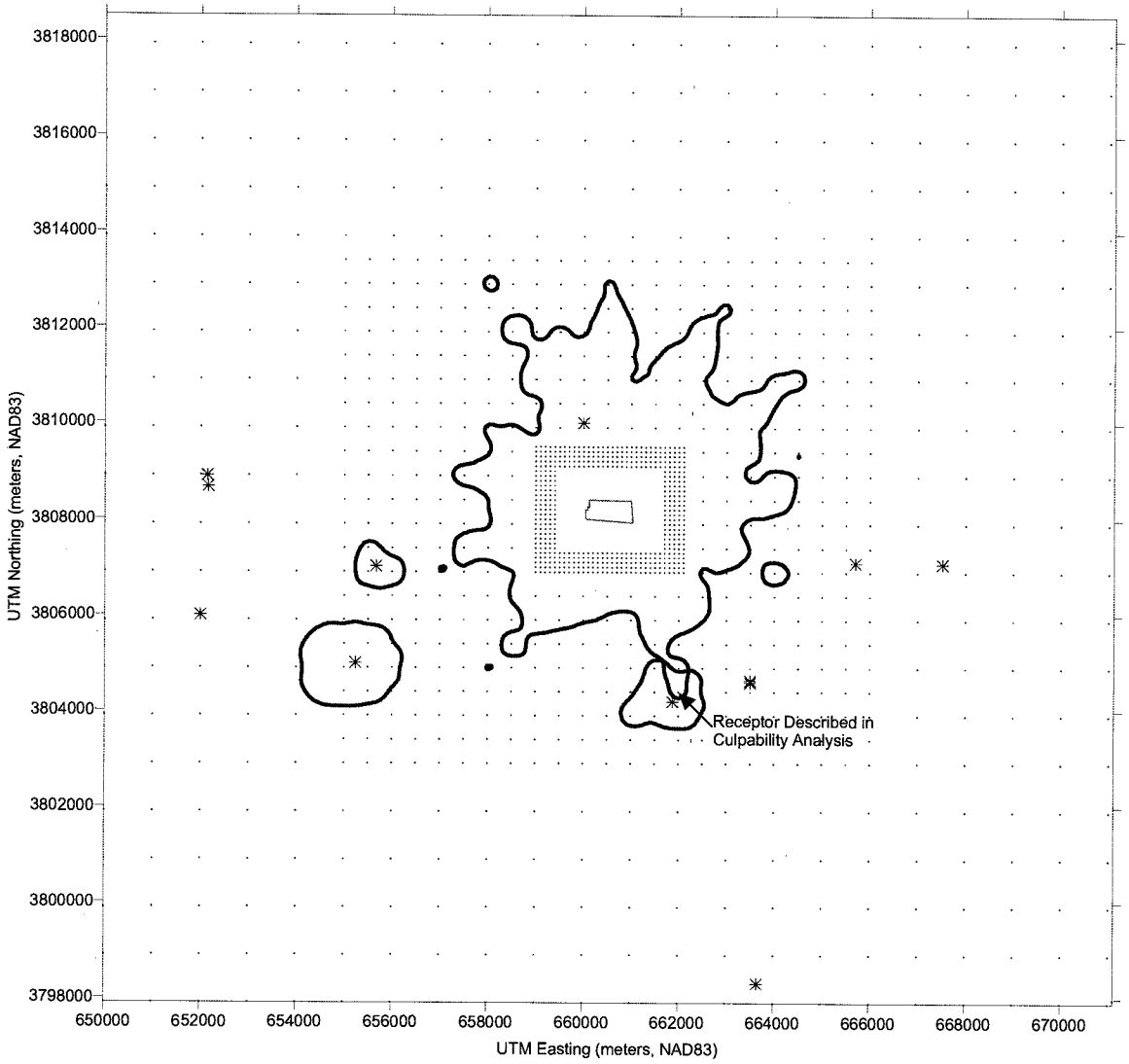
NAAQS Exceedance Isopleth Due to All Sources
Gavilon Significant Impact Isopleth
Off-Site Source

THE GAVILON GROUP LLC CLOVIS FACILITY MINOR SOURCE PERMIT APPLICATION	24-Hour $PM_{2.5}$ Model-Predicted Significant and NAAQS Exceedance Concentration Isopleths
Date: 10/05/2009	FIGURE C-6



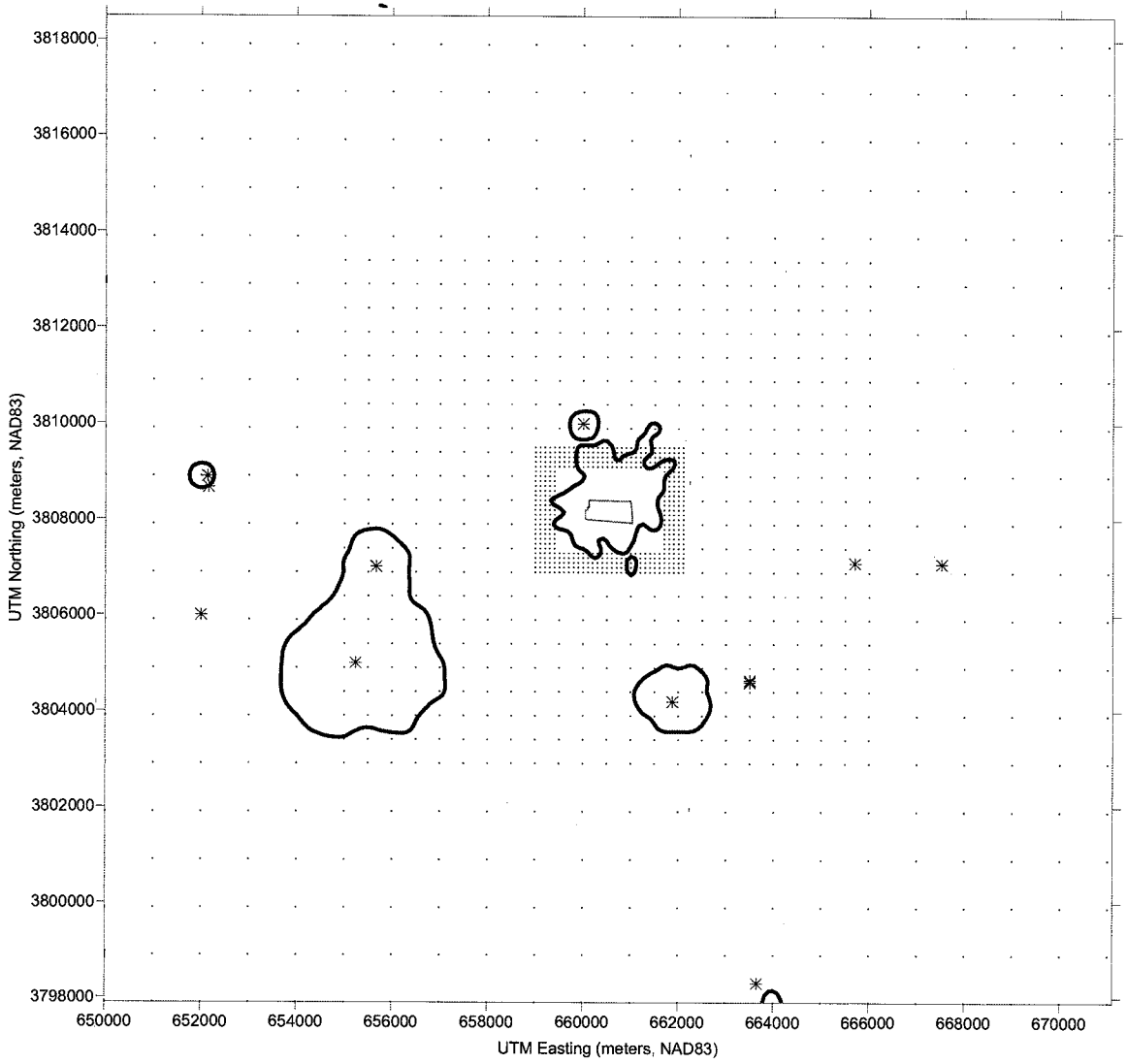
NAAQS Exceedance Isopleth Due to All Sources
Gavilon Significant Impact Isopleth
Off-Site Source

THE GAVILON GROUP LLC CLOVIS FACILITY MINOR SOURCE PERMIT APPLICATION	Annual $PM_{2.5}$ Model-Predicted Significant and NAAQS Exceedance Concentration Isopleths
Date: 10/05/2009	FIGURE C-7



NAAQS Exceedance Isopleth Due to All Sources
Gavilon Significant Impact Isopleth
Off-Site Source

THE GAVILON GROUP LLC CLOVIS FACILITY MINOR SOURCE PERMIT APPLICATION	24-Hour TSP Model-Predicted Significant and NAAQS Exceedance Concentration Isopleths
Date: 10/05/2009	FIGURE C-8



Increment Exceedance Isopleth Due to All Sources
Gavilon Significant Impact Isopleth
Off-Site Source

THE GAVILON GROUP LLC CLOVIS FACILITY MINOR SOURCE PERMIT APPLICATION	24-Hour PM_{10} Model-Predicted Significant and Increment Exceedance Concentration Isopleths
Date: 10/05/2009	FIGURE C-9

AECOM
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Fort Collins, CO 80525

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April 20, 2010

Ms. Sandy Spon
New Mexico Environment Department - Air Quality Bureau
Permits Section - New Source Review
1301 Siler Road, Building B
Santa Fe, New Mexico 87507-3113

Subject: **Addendum 2 to the Significant Revision Application for Permit Number 2910M1 for the West Clovis Animal Feed Manufacturing Facility**

Dear Ms. Spon:

On behalf of Gavilon Grain, LLC (Gavilon), AECOM Environment (AECOM) is submitting this addendum to the Significant Revision Application for Permit Number 2910M1 for the West Clovis Animal Feed Manufacturing Facility. This addendum is being submitted in response to the data request received from the New Mexico Environment Department (NMED) to prepare emission calculations for the facility grain handling barns and include these sources in the air quality impact analysis.

In addition to addressing NMED's data request, AECOM has also revised the way some of the emission sources were modeled to include some operational limits. This addendum is intended to supplement the emission calculations to include the barns and provide updated particulate matter dispersion modeling listed in the permit application submitted on June 11, 2009, and the first addendum submitted on October 5, 2009. This addendum includes emission calculations for barns, an overview of the proposed dispersion modeling revisions, and a presentation of the revised dispersion modeling results demonstrating compliance with particulate matter ambient air quality standards and increments. We are also submitting the electronic modeling files on CD with this addendum.

This addendum presents proposed revisions to particulate matter sources only; the combustion source at the facility (natural gas-fired boiler, Source ID 6) remains unchanged. In accordance with the updated NMED modeling guidance released this month, 1-hour NO_2 modeling is not required for this facility.

Estimation of Grain Handling Barn Particulate Emissions

As stated previously, NMED requested that Gavilon quantify the fugitive particulate (TSP/PM, PM_{10}, and $PM_{2.5}$) emissions associated with the facility grain storage barns. After several conversations and e-mail exchanges between NMED, AECOM, and Gavilon, NMED came up with the preferred method(s) for quantifying the emissions from the storage barns as well as a NMED approved emission correction factor (a.k.a "control efficiency factor") that can be used in the potential to emit (PTE) calculations. This was necessary because the six storage barns are inherent to the process of material transfer and loadout activities. NMED provided Gavilon the following two options to select from for the emission correction factors to be used in the storage barn emission calculations:

1. PTE calculations based on 30% emission correction factor for all partly enclosed structures (i.e., buildings with 3-sides and a roof but with access doors that remain open at all times for safety and operational purposes) and for loadout operations in the fines shed (equipped with a door as of 3-18-10). An additional 60% emission correction factor (for a total of 90%) can be used for the fines shed only during periods when the door is completely closed and there is no loadout occurring. All the storage buildings must be included as sources in the modeling analysis.

2. PTE calculations based on 90% control efficiency factor for all partly enclosed structures and for the fines shed. Under this scenario, the permit would include conditions that require "no visible emissions" from all storage barns and the fines shed. The permit will include conditions for monitoring and recordkeeping requirements.

As shown in **Table A-1**, Gavilon has elected to base our emissions calculations for the storage barns using the first option. However, we have only used the 30% emission correction factor and have not used the additional 60% emission correction factor for the fines shed during periods when the door is completely closed and there is no loadout. The total emissions of TSP/PM, PM_{10}, and $PM_{2.5}$ from the storage barns using the 30% emission correction factor is 1.76 tpy, 0.43 tpy, and 0.05 tpy respectively. **Table A-1** provides the detailed emissions calculations broken down per storage barn.

Overview of Proposed Revisions

A listing of the proposed revisions to the permit application is provided below:

- Addition of grain handling barns to the emissions inventory and dispersion modeling; and
- Implementation of operational limits in the modeling for the Grain Receiving Pit and the Headhouse.

Emissions for the grain handling barns were prepared as described above. In addition to adding particulate emissions from the barns, AECOM has incorporated an operational limit for the Grain Receiving Pit and the Headhouse. This limit reflects the fact that the facility does not receive grain by truck during the nighttime hours from midnight to 4:00am. A description of the modeling methods used to incorporate this limit is provided below.

Revised Dispersion Modeling

Dispersion modeling has been revised to account for the additions and revisions outlined in this addendum. The modeling conforms to the recently revised NMED modeling guidance (dated April 2010). In light of the recent USEPA Memorandum dated March 23, 2010 (Modeling Procedures for Demonstrating Compliance with $PM_{2.5}$ NAAQS), AECOM contacted Dr. Sufi Mustafa to clarify NMED's procedure for modeling $PM_{2.5}$ for minor sources [phone conversation between Patrick McKean (AECOM) and Sufi Mustafa (NMED) on April 13, 2010]. Dr. Mustafa clarified that modeled impacts for $PM_{2.5}$ should reflect the 98^{th} percentile, or highest-eighth-high value. This modeled impact should be added to the background $PM_{2.5}$ concentration provided in NMED's modeling guidance and compared to the NAAQS. In addition, Dr. Mustafa clarified that if the facility shows compliance with the 24-hour and annual TSP ambient air quality standards, then the 7-day and 30-day TSP standards are assumed to be in compliance. Modeling results and comparisons to standards are discussed later in this addendum.

The grain handling barns were modeled as volume sources. Barn volume source dimensions were calculated using the same methodology described in the Modeling Protocol submitted to the NMED on June 2, 2009. Modeled 24-hour and annual emission rates for each barn are provided in **Tables B-1** and **B-2** of this addendum. Modeled barn release parameters are provided in **Table B-3**.

The digitized buildings for the downwash analysis, which was used to estimate facility volume source dimensions, has been updated to remove a barn that was shown located just west of the western main silo (Figure 16-4 in the June 11, 2009 application). This barn was removed from the site in the past and should not have been shown in the June 11, 2009 application. An additional barn (Flaked Corn Barn) was added to the revised site plan provided in **Figure C-1**. **Figure C-2** shows all modeled source locations and all structures at the facility.

Since there are no revisions proposed to the natural gas-fired boiler, no changes to the gaseous pollutant modeling (NO_X, SO_2, and CO) are needed in this addendum. All other aspects of the modeling methods, emission rates, and release parameters for particulate matter are unchanged from the June 11, 2009 permit application and October 5, 2009 addendum, except to refine the operating limits for the Grain Receiving Pit and the Headhouse, as described below.

To account for the non-continuous operating schedule of the Grain Receiving Pit and the Headhouse, the HROFDY keyword was used in AERMOD. The Grain Receiving Pit (Source IDs 7a and 7b) and the Headhouse (Source ID 8) use HROFDY switches "0" and "1" along with the maximum hourly emission rate for each volume source for each hour of the day in AERMOD (hours 01 through 24, respectively), as listed below:

7a: 0 0 0 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
7b: 0 0 0 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
8: 0 0 0 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1

The maximum hourly emission rates for the Grain Receiving Pit and the Headhouse used in AERMOD were based on 140 ton/hour of grain received, as provided in the June 11, 2009 permit application. By limiting these sources to 20 hour/day of operation in the model, daily grain receiving is limited to 2,800 ton/day.

Revised modeling results are described below and should replace the particulate matter results sections of Section 16(VI) of the June 11, 2009 permit application and the October 5, 2009 addendum.

Summary of Near-Field Impacts on or Adjacent to the Gavilon Facility:

Tables B-4 and **B-5** provide a summary of the near-field impacts, where the facility sources have their maximum impact, compared to the NAAQS/NMAAQS and PSD increments, respectively. The impacts in these tables include off-site sources and background concentrations, as applicable. The results in these tables clearly show that emissions due to the Gavilon West Clovis facility sources do not exceed any the NAAQS/NMAAQS or PSD increments

Radius of Impact (ROI), NAAQS/NMAAQS, and PSD increment refined modeling analysis results are discussed below. For many of the pollutants and averaging periods in these analyses, there are model-predicted exceedances when off-site sources are included in the refined modeling; however, we discuss below that Gavilon facility sources do not significantly contribute to these modeled exceedances.

Revised ROI Results:

Table B-6 provides a summary of the ROI results. Maximum Gavilon-only TSP, PM_{10}, and $PM_{2.5}$ impacts exceeded the 24-hour and annual SILs; therefore a refined analysis was performed for all particulate matter species (TSP, PM_{10}, and $PM_{2.5}$). The maximum ROI was 5.2 km for 24-hour TSP. Concentration isopleths of the radii of impact for each pollutant and averaging period are provided in Figures **C-3** through **C-8**.

Revised NAAQS/NMAAQS Impact Analysis Results:

Table B-7 provides a summary of the revised NAAQS/NMAAQS impact analysis results. Annual TSP impacts were below the NMAAQS, whereas 24-hour TSP, PM_{10}, and $PM_{2.5}$ impacts exceeded the NAAQS/NMAAQS due to emissions from off-site sources not related to the Gavilon facility. Model-predicted impact plots for each pollutant that exceeded the NAAQS/NMAAQS are provided in **Figures C-9** through **C-12**. The figures do not include background concentrations. Source culpability analyses which demonstrate that the facility does not significantly contribute to the model-predicted exceedances are provided below.

As shown in **Figures C-9** through **C-11**, refined modeling clearly shows facility significant impact isopleths do not overlap modeled NAAQS/NMAAQS exceedance isopleths for 24-hour PM_{10}, annual $PM_{2.5}$, and 24-hour $PM_{2.5}$. Detailed culpability analyses were not conducted for these pollutants and averaging times since the figures demonstrate that Gavilon sources do not significantly contribute to the modeled exceedances. When facility significant impact isopleths overlap modeled NAAQS/NMAAQS exceedance isopleths, as shown in for 24-hour TSP (**Figure C-12**), additional culpability analyses were conducted.

For receptors located where the ROI and exceedance isopleths overlap for 24-hour TSP, the AERMOD output was analyzed to determine which days during the 5-year meteorology period the facility produced a significant impact. At the 24-hour TSP exceedance receptor shown in **Figure C-12**, there was only one day (January 21, 2001) when Gavilon exceeded the 24-hour TSP SIL. AERMOD was re-run for this day and the total air quality impact was re-calculated. **Table B-8** presents the NMAAQS analysis results on January 21, 2001. As shown in **Table B-8**, the predicted impact is well below the NMAAQS. Gavilon facility sources did not significantly contribute to any other model-predicted exceedances of the 24-hour TSP NMAAQS.

Revised PSD Increment Analysis Results:

Table B-9 provides a summary of the revised PSD increment impact analysis results. Annual PM_{10} impacts were below the increment, whereas 24-hour PM_{10} impacts exceeded the increment due to emissions from off-site sources not related to the Gavilon facility. A model-predicted impact plot for 24-hour PM_{10} increment is provided in **Figure C-13**. This figure clearly shows that the facility significant impact isopleth does not overlap modeled increment exceedance isopleths. As such, a detailed culpability analysis was not conducted for 24-hour PM_{10} increment since **Figure C-13** demonstrates that Gavilon sources do not significantly contribute to the modeled exceedances.

Summary and Conclusions:

The air quality dispersion modeling conducted for this addendum was performed as described herein, as well as the Modeling Protocol, June 11, 2009 permit application, and October 5, 2009 addendum. Maximum proposed potential emissions from the facility, including the revisions provided in this

addendum, exceeded the Class II significant impact levels for TSP, PM_{10}, and $PM_{2.5}$; therefore refined impact analyses were conducted for these pollutants.

Refined impact analyses showed that Gavilon sources do not cause or contribute to a violation of an ambient air quality standard or PSD increment. There were model-predicted exceedances of the 24-hour PM_{10} and TSP ambient air quality standards, $PM_{2.5}$ ambient air quality standards, and 24-hour PM_{10} increment; however, the exceedances were due to off-site sources. It was shown, via plotting the modeled exceedance isopleths with the Gavilon significant impact isopleths, as well as a detailed source culpability analysis for 24-hour TSP, that Gavilon sources did not cause or contribute to these modeled exceedances.

A Readme file describing the contents of the CD with electronic modeling files is provided in **Attachment D.**

Closing

AECOM and Gavilon very much appreciate your efforts in processing this permit application. Please let us know if there is anything we can do to assist you in the completeness determination for this revision to permit number 2910M1. In addition, please do not hesitate to call and/or email me with any additional questions or data requests. Any modeling questions should be forwarded to Patrick McKean.

Sincerely,

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Gi-Dong Kim, NMED

Attachments

Attachment A

Grain Handling Barn Emission Calculations

Table A-1 – Fugitive Dust Emissions from Storage Barns – Detailed Emissions Calculations

Unit No.	Source Description	Operating Hours	Process Rate [b]		Emission Factor			Potential Emission Rates						Emissions Control & Efficiency [c]	
			Hour	Annual	PM	PM_{10}	$PM_{2.5}$	PM	PM_{10}	$PM_{2.5}$	PM	PM_{10}	$PM_{2.5}$		
26	DDG Barn	8,760 hr/yr													
	DDG Barn - transfer to barn storage pile		400.0 ton/hr	240,000 ton/yr	0.0033 lb/ton	0.0008 lb/ton	0.0001 lb/ton	0.92 lb/hr	0.22 lb/hr	0.03 lb/hr	0.277 tpy	0.067 tpy	0.008 tpy	0 %	30 % enclosure
	DDG Barn - transfer to loadout reclaim pit		280.0 ton/hr	240,000 ton/yr	0.0033 lb/ton	0.0008 lb/ton	0.0001 lb/ton	0.65 lb/hr	0.16 lb/hr	0.02 lb/hr	0.277 tpy	0.067 tpy	0.008 tpy	0 %	30 % enclosure
27	Whole Corn Barn [a]	8,760 hr/yr													
	Whole Corn Barn - transfer to barn storage pile		40.0 ton/hr	115,000 ton/yr	0.0033 lb/ton	0.0008 lb/ton	0.0001 lb/ton	0.018 lb/hr	0.004 lb/hr	0.001 lb/hr	0.027 tpy	0.006 tpy	0.001 tpy	80 % oil	30 % enclosure
	Whole Corn Barn - transfer to reclaim pit		60.0 ton/hr	115,000 ton/yr	0.0033 lb/ton	0.0008 lb/ton	0.0001 lb/ton	0.028 lb/hr	0.007 lb/hr	0.001 lb/hr	0.027 tpy	0.006 tpy	0.001 tpy	80 % oil	30 % enclosure
28	Ground Corn Barn [a]	8,760 hr/yr													
	Ground Corn Barn - transfer to barn storage pile		40.0 ton/hr	350,400 ton/yr	0.0033 lb/ton	0.0008 lb/ton	0.0001 lb/ton	0.018 lb/hr	0.004 lb/hr	0.001 lb/hr	0.081 tpy	0.020 tpy	0.002 tpy	80 % oil	30 % enclosure
	Ground Corn Barn - transfer to loadout reclaim pit		150.0 ton/hr	350,400 ton/yr	0.0033 lb/ton	0.0008 lb/ton	0.0001 lb/ton	0.069 lb/hr	0.017 lb/hr	0.002 lb/hr	0.081 tpy	0.020 tpy	0.002 tpy	80 % oil	30 % enclosure
29	Flaked Corn Barn	8,760 hr/yr													
	Flaked Corn Barn - transfer to barn storage pile		45.0 ton/hr	197,000 ton/yr	0.0033 lb/ton	0.0008 lb/ton	0.0001 lb/ton	0.104 lb/hr	0.025 lb/hr	0.003 lb/hr	0.228 tpy	0.055 tpy	0.007 tpy	0 %	30 % enclosure
	Flaked Corn Barn - transfer to loadout reclaim pit		50.0 ton/hr	229,000 ton/yr	0.0033 lb/ton	0.0008 lb/ton	0.0001 lb/ton	0.116 lb/hr	0.028 lb/hr	0.004 lb/hr	0.264 tpy	0.064 tpy	0.008 tpy	0 %	30 % enclosure
30	Flaked Milo Barn	8,760 hr/yr													
	Flaked Milo Barn - transfer to barn storage pile		45.0 ton/hr	197,000 ton/yr	0.0033 lb/ton	0.0008 lb/ton	0.0001 lb/ton	0.104 lb/hr	0.025 lb/hr	0.003 lb/hr	0.228 tpy	0.055 tpy	0.007 tpy	0 %	30 % enclosure
	Flaked Milo Barn - transfer to loadout reclaim pit		100.0 ton/hr	229,000 ton/yr	0.0033 lb/ton	0.0008 lb/ton	0.0001 lb/ton	0.231 lb/hr	0.056 lb/hr	0.007 lb/hr	0.264 tpy	0.064 tpy	0.008 tpy	0 %	30 % enclosure
31	Fines Shed	8,760 hr/yr													
	Fines Shed - loading to barn storage pile		0.2 ton/hr	1,825 ton/yr	0.0033 lb/ton	0.0008 lb/ton	0.0001 lb/ton	0.000 lb/hr	0.000 lb/hr	0.000 lb/hr	0.002 tpy	0.001 tpy	0.000 tpy	0 %	30 % enclosure
	Fines Shed - loadout to ground grain barn		0.2 ton/hr	1,825 ton/yr	0.0033 lb/ton	0.0008 lb/ton	0.0001 lb/ton	0.000 lb/hr	0.000 lb/hr	0.000 lb/hr	0.002 tpy	0.001 tpy	0.000 tpy	0 %	30 % enclosure
							Total	**2.26 lb/hr**	**0.55 lb/hr**	**0.07 lb/hr**	**1.76 tpy**	**0.43 tpy**	**0.05 tpy**		

[a] whole corn barn and ground corn barn uncontrolled includes 80% control for oil required by the permit to be applied to incoming grain

[b] rate of flaked corn and milo transfer to barns is limited by permit to total flaker limit of 394,000 tons per year; or 197,000 tons per year each for flaked corn and flaked milo

rate of flaked corn and milo transfer to loadout reclaim pit is limited by permit to 458,000 tons per year total; or 229,000 tons per year each for flaked corn and flaked milo

ground corn transfers are limited by permit to total hammermill capacity and ground grain loadout limit of 350,400 tons per year

rate of DDG loadout is limited by the capacity of equipment and DDG flow characteristics. DDG loadout by rail is slower than corn loadout

rate of fines production is assumed 5 tons per day maximum; 2 tons per day is typical

whole corn barn holds 11,500 tons and is generally filled once or twice a year. Annual capacity assumes the barn is filled 10 times per year.

[c] enclosure control efficiency 30% included in PTE for all barn enclosures, per NMED guidance (Sandy Spon e-mail 3/18/10). 80% control for oil.

Note that barn storage pile emissions were estimated to be 0.0 as EPA's equation used to calculate emissions includes multiplication by the percent of time that unobstructed wind exceeds 12 miles per hour which is zero percent in a barn.

Attachment B

Revised Dispersion Modeling Tables

Table B-1 – 24-Hour Modeled Emission Rates for Added Sources (Barns)

Source ID [1]	Description	TSP (g/s)	PM_{10} (g/s)	$PM_{2.5}$ (g/s)
26	DDG Barn	1.979E-01	4.798E-02	5.997E-03
27	Whole Corn Barn	5.821E-03	1.411E-03	1.764E-04
28	Ground Corn Barn	1.106E-02	2.681E-03	3.352E-04
29	Flaked Corn Barn	2.765E-02	6.703E-03	8.379E-04
30	Flaked Milo Barn	4.220E-02	1.023E-02	1.279E-03
31	Fines Shed	1.213E-04	2.940E-05	3.675E-06

[1] Emissions for each barn, as shown in Attachment A, are combined into a single source for each barn. Source IDs 7a, 7b, and 8 are not shown in this table because the modeled 24-hour emission rates for these sources were unchanged compared to the June 11, 2009 permit application (Source ID 8) and October 5, 2009 addendum (Source IDs 7a and 7b).

Table B-2 – Annual Modeled Emission Rates for Added Sources (Barns) and Revised Grain Receiving Operations (Truck Pits and Headhouse)

Source ID [1]	Description	TSP (g/s)	PM_{10} (g/s)	$PM_{2.5}$ (g/s)
7a	Grain Receiving Pit (Truck)	4.108E-02	6.041E-03	1.017E-03
7b	Grain Receiving Pit (Truck)	4.108E-02	6.041E-03	1.017E-03
8	Headhouse	1.179E-01	6.573E-02	1.121E-02
26	DDG Barn	1.595E-02	3.866E-03	4.833E-04
27	Whole Corn Barn	1.528E-03	3.705E-04	4.631E-05
28	Ground Corn Barn	4.657E-03	1.129E-03	1.411E-04
29	Flaked Corn Barn	1.415E-02	3.431E-03	4.289E-04
30	Flaked Milo Barn	1.415E-02	3.431E-03	4.289E-04
31	Fines Shed	1.213E-04	2.940E-05	3.675E-06

[1] Emissions for each barn, as shown in Attachment A, are combined into a single source for each barn. Grain receiving modeled annual emission rates (Source IDs 7a, 7b, and 8) are higher than the annual ton/year rates (converted to grams/second) provided in Attachment A to ensure that the proposed annual emission rates presented in Attachment A are accurately simulated in AERMOD using the HROFDY switches described in this addendum.

Table B-3 – Modeled Release Parameters for Barns

Source ID	Description	Release Height (m)	Initial Sigma-Y (m)	Initial Sigma-Z (m)
26	DDG Barn	19.03	22.81	17.70
27	Whole Corn Barn	19.03	22.65	17.70
28	Ground Corn Barn	19.03	24.79	17.70
29	Flaked Corn Barn	19.03	24.79	17.70
30	Flaked Milo Barn	19.03	24.79	17.70
31	Fines Shed	19.03	24.79	17.70

Table B-4 – NAAQS/NMAAQS Impact Analysis Near Gavilon Property Line

Pollutant	Averaging Period [1]	Maximum Model-Predicted Impact [2] ($\mu g/m^3$)	Operating Scenario	Background Concentration ($\mu g/m^3$)	Total Predicted Impact ($\mu g/m^3$)	NMAAQS or NAAQS [3] ($\mu g/m^3$)	Exceeds Standard?
PM_{10}	24-Hour	29.6	Train	20.0	49.6	150	No
	24-Hour	29.9	No Train	20.0	49.9	150	No
$PM_{2.5}$	24-Hour	6.2	Train	7.3	13.5	35	No
	24-Hour	6.2	No Train	7.3	13.5	35	No
	Annual	1.8	n/a	7.3	9.1	15	No
TSP	24-Hour	107.1	Train	26.6	133.7	150	No
	24-Hour	115.2	No Train	26.6	142.5	150	No
	Annual	19.4	n/a	26.6	46.0	60	No

[1] All averaging periods are highest-first-high modeled impacts, except 24-hour PM_{10} (highest-sixth-high) and 24-hour $PM_{2.5}$ (highest-eighth-high).
[2] Maximum predicted impact occurs on or just north of the Gavilon fenceline; includes off-site sources.
[3] Most stringent standard.

Table B-5 – PSD Increment Impact Analysis Near Gavilon Property Line

Pollutant	Averaging Period [1]	Maximum Model-Predicted Impact [2] ($\mu g/m^3$)	Operating Scenario	PSD Class II Increment ($\mu g/m^3$)	Exceeds Increment?
PM_{10}	24-Hour	29.5	Train	30	No
	24-Hour	29.9	No Train	30	No
	Annual	7.4	n/a	17	No

[1] All averaging periods are highest-first-high modeled impacts, except 24-hour PM_{10} (highest-sixth-high).
[2] Maximum predicted impact occurs on or just north of the Gavilon fenceline; includes off-site sources.

Table B-6 – Revised ROI Impacts

Pollutant	Averaging Period	UTM Easting [1] (m)	UTM Northing [1] (m)	Maximum Project-Only Impact [2] ($\mu g/m^3$)	Operating Scenario	SIL ($\mu g/m^3$)	Exceeds SIL?	ROI (km)
$PM_{2.5}$	24-Hour	660450.0	3808400.0	7.3	Train	1.17	Yes	1.4
	Annual	660467.2	3808397.2	1.6	n/a	0.3	Yes	0.5
PM_{10}	24-Hour	660567.2	3808394.8	34.7	No Train	5	Yes	1.9
	Annual	660467.2	3808397.2	7.1	n/a	1	Yes	0.7
TSP	24-Hour	660567.2	3808394.8	111.1	No Train	5	Yes	5.2
	Annual	660467.2	3808397.2	19.1	n/a	1	Yes	1.3

[1] UTMs are in USGS UTM coordinates, NAD83 zone 13
[2] All impacts are high-1st-high for comparison to SILs.

Table B-7 – Revised NAAQS/NMAAQS Impact Analysis

Pollutant	Averaging Period [1]	UTM Easting (m) [2]	UTM Northing (m) [2]	Maximum Model-Predicted Impact [3] ($\mu g/m^3$)	Operating Scenario	Background Concentration ($\mu g/m^3$)	Total Predicted Impact ($\mu g/m^3$)	NMAAQS or NAAQS [4] ($\mu g/m^3$)	Exceeds Standard? [5]
PM_{10}	24-Hour	655500	3804900	432.9	No Train	20.0	452.9	150	Yes
$PM_{2.5}$	24-Hour	655500	3804900	97.7	No Train	7.3	105.0	35	Yes
	Annual	655500	3804900	11.3	n/a	7.3	18.6	15	Yes
TSP	24-Hour	655000	3804900	837.0	No Train	26.6	863.6	150	Yes
	Annual	660467	3808397	19.4	n/a	26.6	46.0	60	No

[1] All averaging periods are highest-first-high modeled impacts, except 24-hour PM_{10} (highest-sixth-high) and 24-hour $PM_{2.5}$ (highest-eighth-high).

[2] UTMs are in USGS UTM coordinates, NAD83 zone 13

[3] Impact due to all modeled sources.

[4] Most stringent standard.

[5] The Gavilon-facility sources are shown to not significantly contribute to any modeled exceedances, as described in this addendum.

Table B-8 – 24-Hour TSP Culpability Analysis Results

Pollutant	Averaging Period [1]	UTM Easting (m) [2]	UTM Northing (m) [2]	Maximum Model-Predicted Impact [3] ($\mu g/m^3$)	Operating Scenario	Background Concentration ($\mu g/m^3$)	Total Predicted Impact ($\mu g/m^3$)	NMAAQS or NAAQS [4] ($\mu g/m^3$)	Exceeds Standard?
TSP	24-Hour	662000	3804400	9.0	No Train	26.6	35.6	150	No

[1] Highest-first-high modeled impacts.

[2] UTMs are in USGS UTM coordinates, NAD83 zone 13

[3] Impact due to all modeled sources.

[4] Most stringent standard.

Table B-9 – Revised PSD Increment Impact Analysis

Pollutant	Averaging Period [1]	UTM Easting (m) [2]	UTM Northing (m) [2]	Maximum Model-Predicted Impact [3] ($\mu g/m^3$)	Operating Scenario	PSD Class II Increment ($\mu g/m^3$)	Exceeds Increment? [4]
PM_{10}	24-Hour	655500	3804900	432.9	No Train	30	Yes
	Annual	655500	3804900	11.3	n/a	17	No

[1] All averaging periods are highest-first-high modeled impacts, except 24-hour PM_{10} (highest-sixth-high).

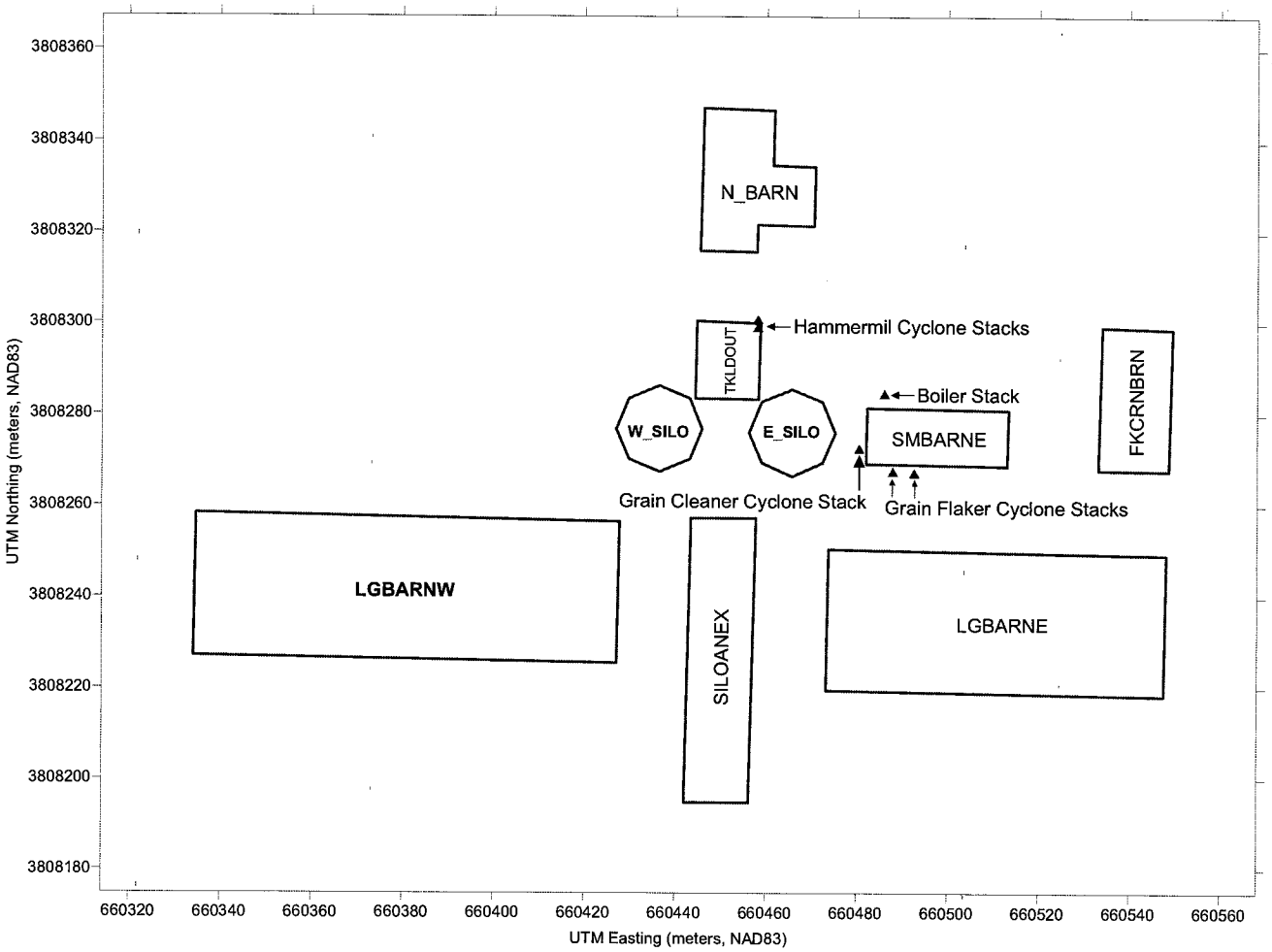
[2] UTMs are in USGS UTM coordinates, NAD83 zone 13

[3] Impact due to all modeled sources.

[4] The Gavilon-facility sources are shown to not significantly contribute to any modeled exceedances, as described in this addendum.

Attachment C

Revised Dispersion Modeling Figures



Legend:

Building ID	Ht. Above Grade (ft.)	Description
LGBARNW	40.2	DDG Storage
W_SILO	124.9	Main Storage Silo
E_SILO	124.9	Main Storage Silo
TKLDOUT	145.0	Truck Receving/Loudout
N_BARN	30.0	Ground Grain Storage
SMBARNE	18.3	Grain Storage
LGBARNE	40.2	Grain Storage
SILOANEX	124.9	Silo Annex (Grain Storage)
FKCRNBRN	18.3	Flaked Corn Barn

THE GAVILON GROUP LLC WEST CLOVIS FACILITY MINOR SOURCE PERMIT APPLICATION	Digitized Site Plan with BPIP Buildings and Point Sources
Date: 04/16/2010	FIGURE C-1

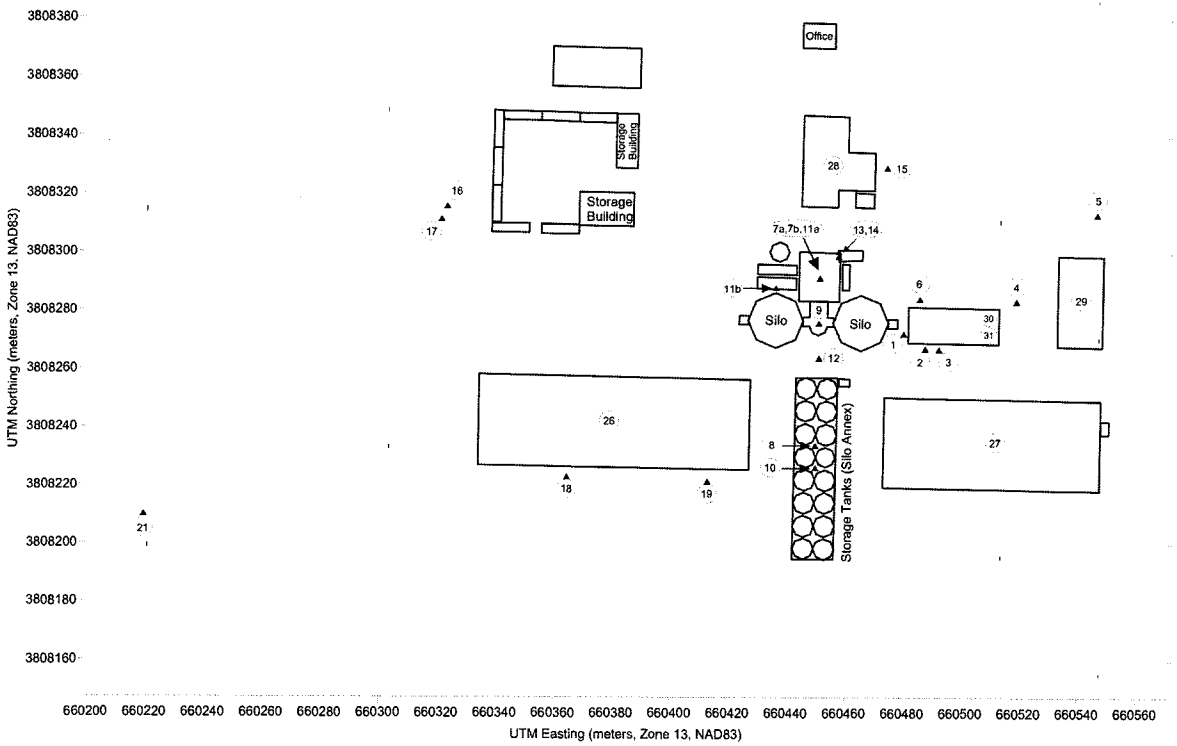
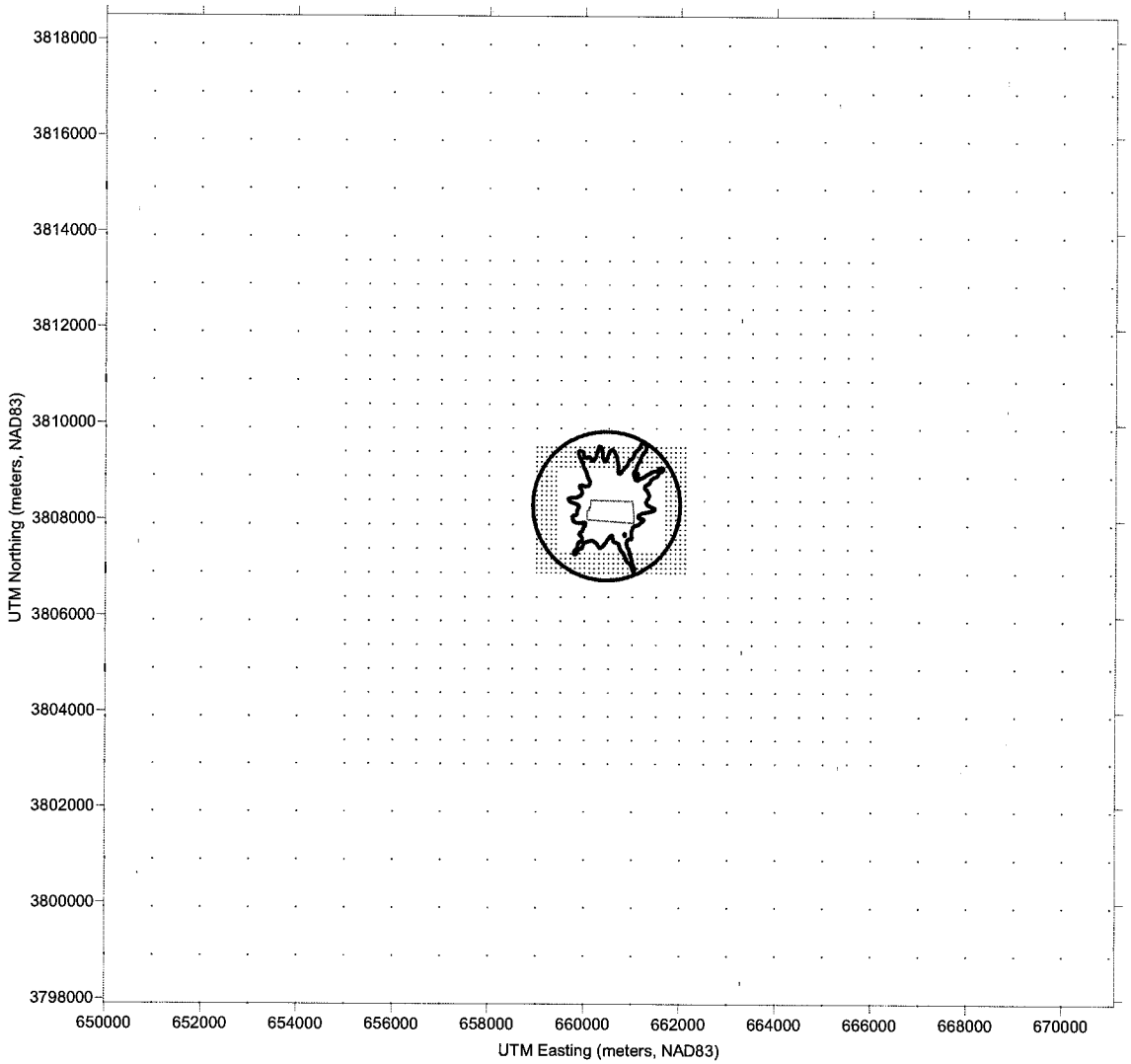


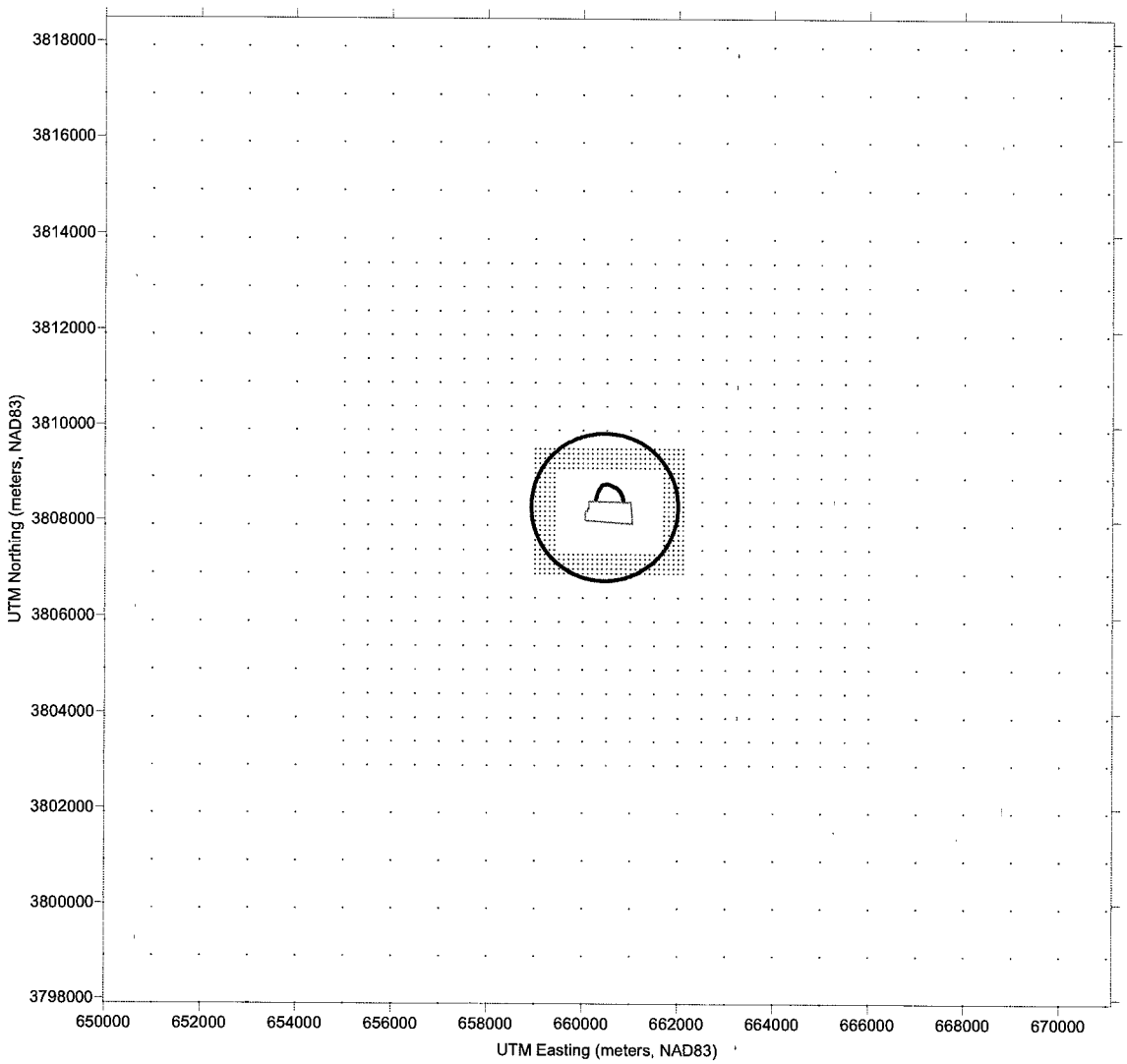
FIGURE C-2
EMISSION SOURCE AND BUILDING LOCATIONS

Source ID	Description
1	Flaker Grain Cleaner
2	Grain Flaker (24" x 56" roller)
3	Grain Flaker (24" x 48" roller)
4	Flaked grain load out conveyor (corn)
5	Flaked grain load out conveyor (milo)
6	Boiler
7a	Grain receiving pit (truck)
7b	Grain receiving pit (truck)
8	Headhouse (includes enclosed cleaner)
9	Storage bin vents (main elevator)
10	Storage bin vents (elevator annex)
11a	whole grain load out station (truck)
11b	whole grain load out station (truck)
12	Grain receiving pit (rail)
13	Hammermill
14	Hammermill
15	Ground grain load out
16	Ground grain receiving pit (truck) at temporary rail load out
17	Temporary ground grain railcar load out
18	DDG load out conveyor
19	DDG load out conveyor
21	DDG outside truck load out (front end loader)
26	DDG Storage Barn
27	Whole Grain Storage Barn
28	Ground Corn Barn
29	Flaked Corn Barn
30	Flaked Milo Barn
31	Fines Shed



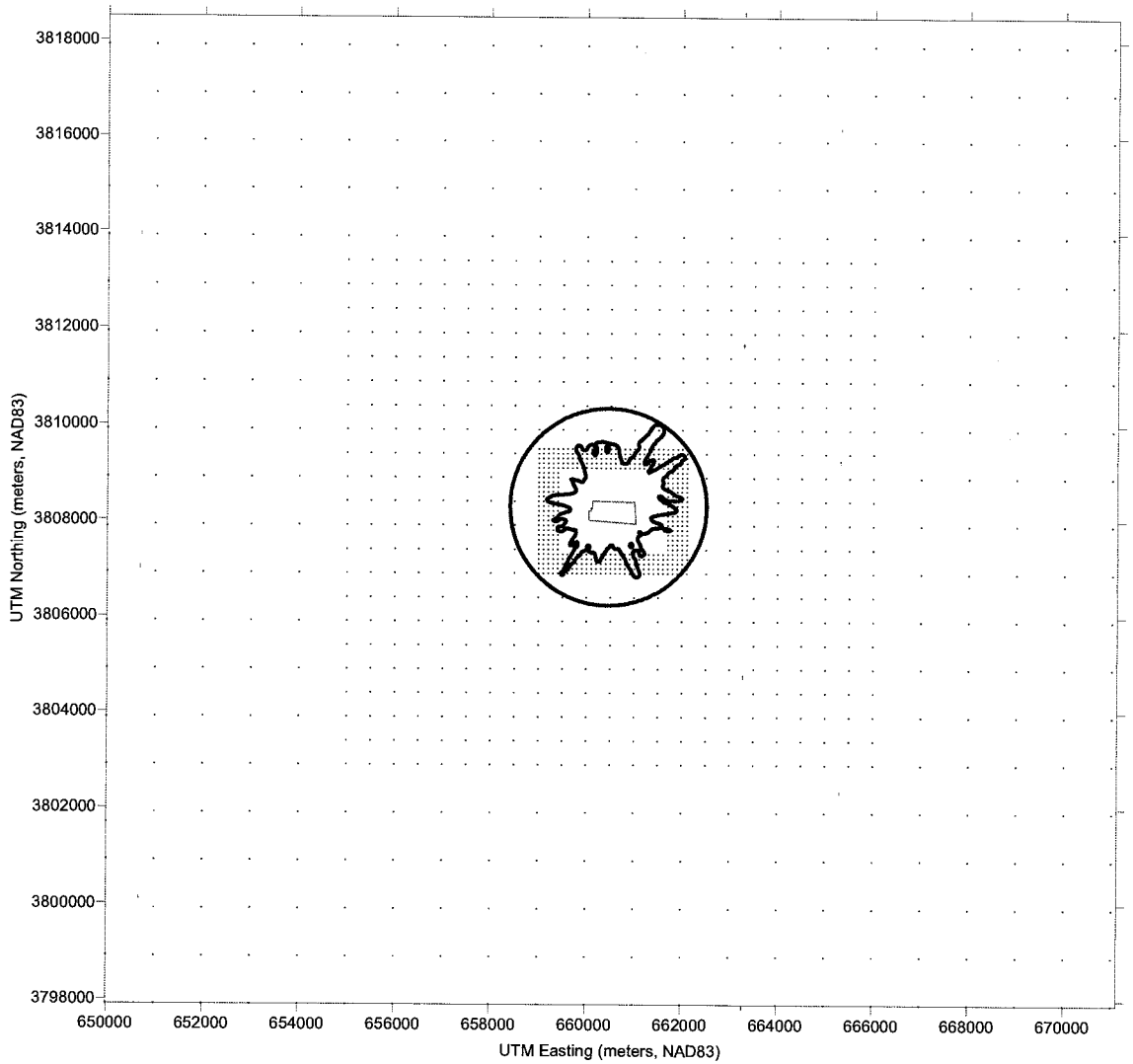
Gavilon Significant Impact Isopleth
Radius of Impact (ROI)

THE GAVILON GROUP LLC WEST CLOVIS FACILITY MINOR SOURCE PERMIT APPLICATION	24-Hour $PM_{2.5}$ Model-Predicted Significant Concentration Isopleth (1.17 $\mu g/m^3$)
Date: 04/16/2010	FIGURE C-3



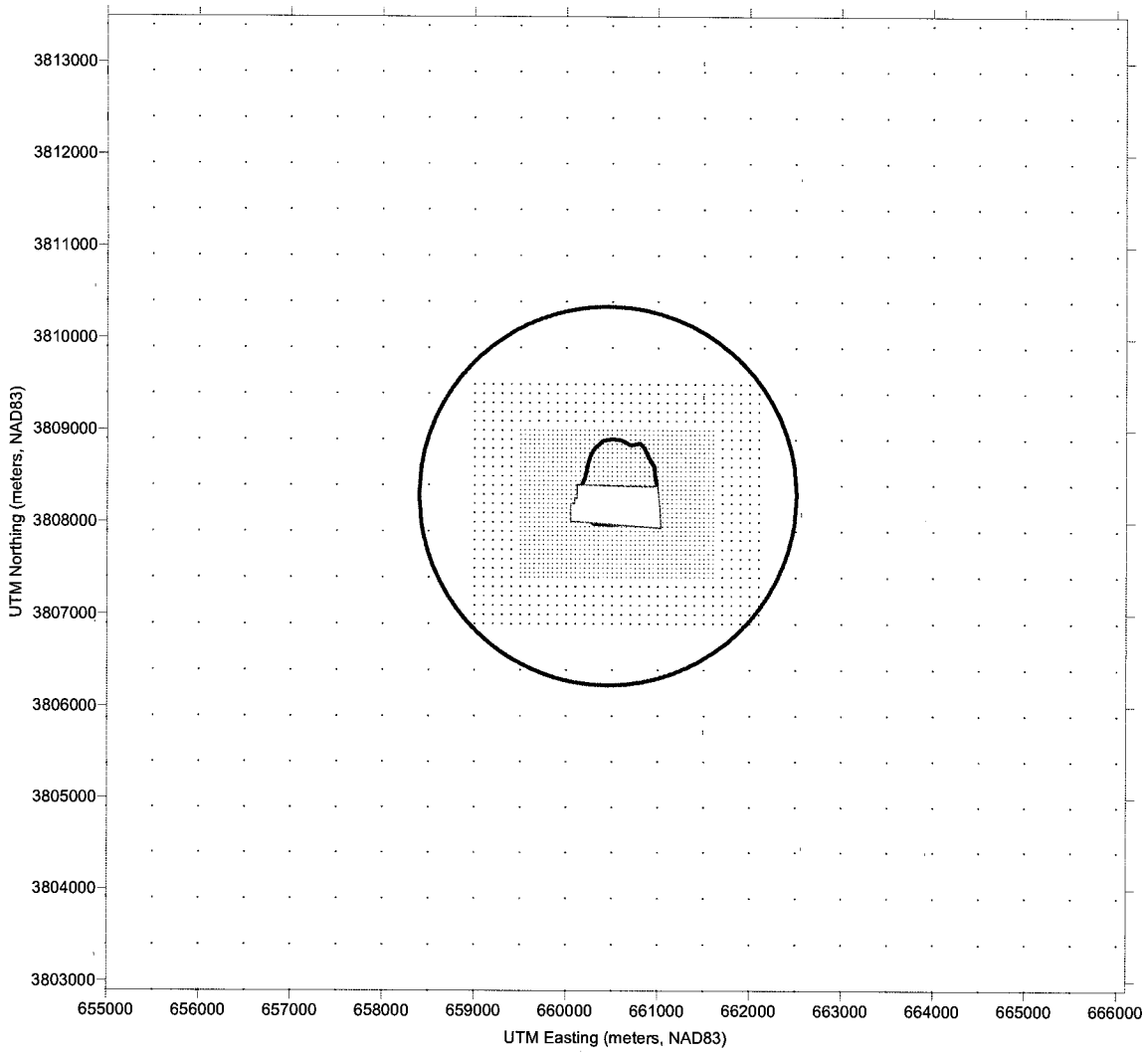
Gavilon Significant Impact Isopleth
Radius of Impact (ROI)

THE GAVILON GROUP LLC WEST CLOVIS FACILITY MINOR SOURCE PERMIT APPLICATION	Annual $PM_{2.5}$ Model-Predicted Significant Concentration Isopleth (0.3 $\mu g/m^3$)
Date: 04/16/2010	FIGURE C-4



Gavilon Significant Impact Isopleth
Radius of Impact (ROI)

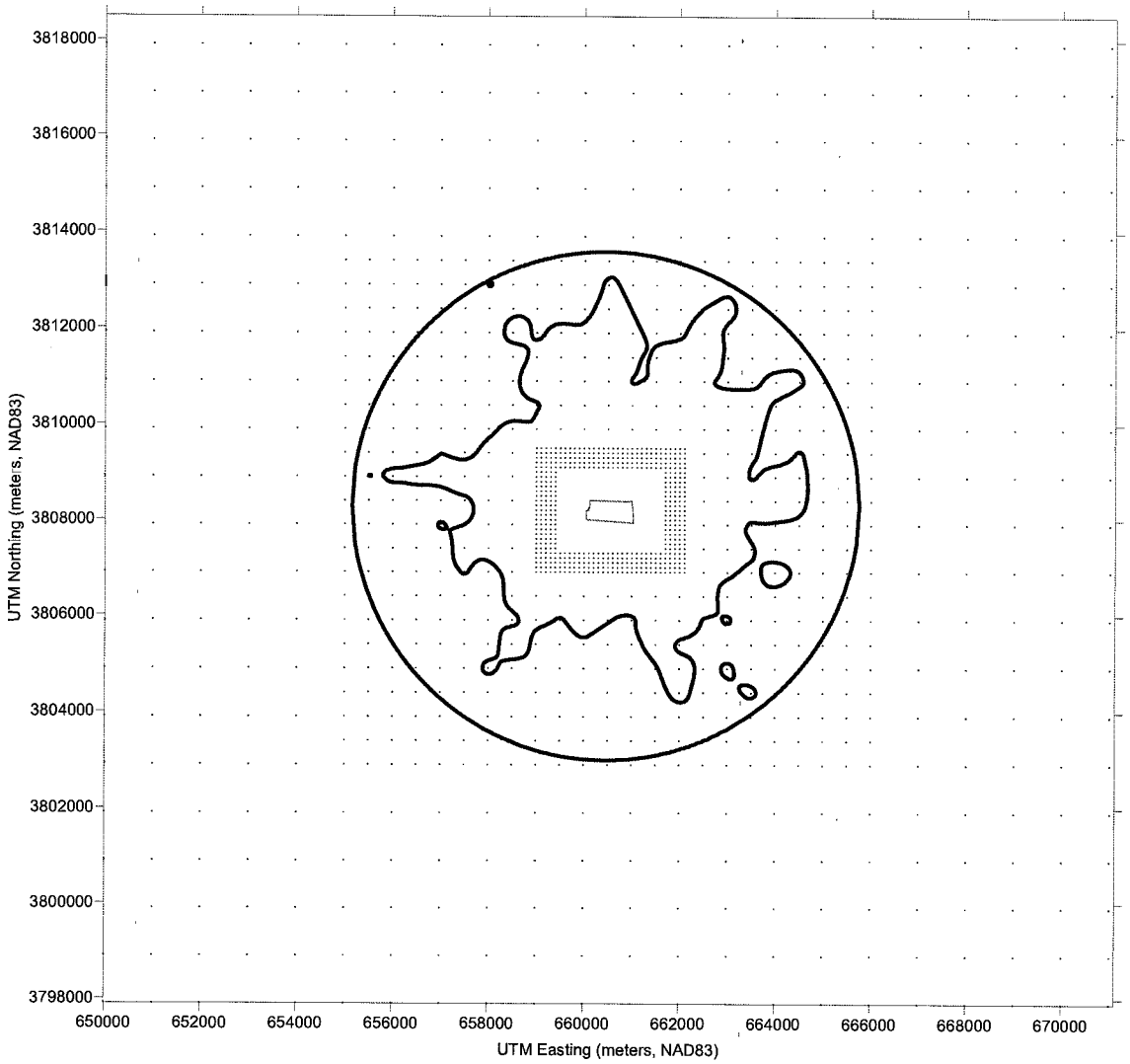
THE GAVILON GROUP LLC WEST CLOVIS FACILITY MINOR SOURCE PERMIT APPLICATION	24-Hour PM_{10} Model-Predicted Significant Concentration Isopleth (5 $\mu g/m^3$)
Date: 04/16/2010	FIGURE C-5



Radius of Impact (ROI)

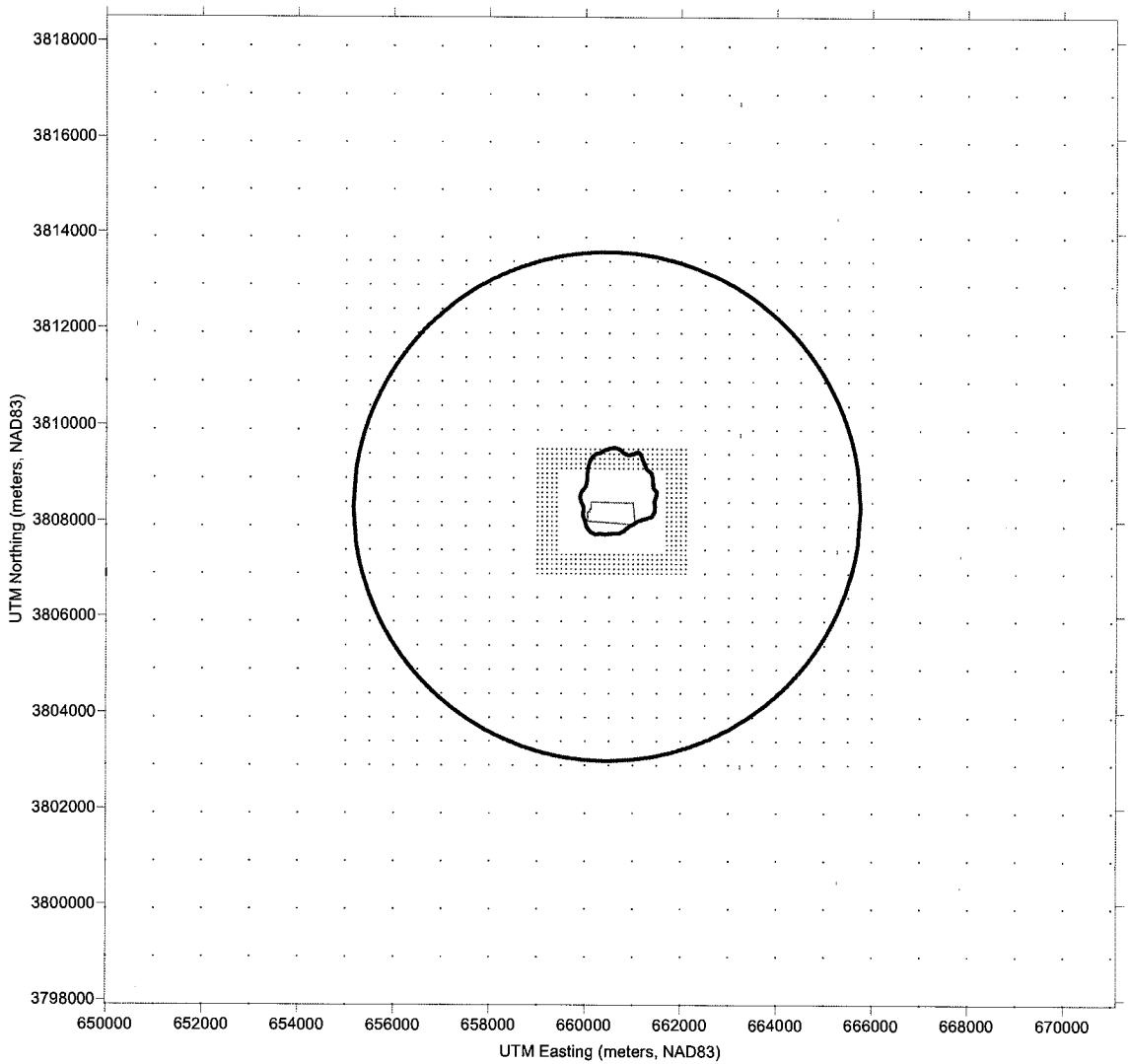
Gavilon Significant Impact Isopleth

THE GAVILON GROUP LLC WEST CLOVIS FACILITY MINOR SOURCE PERMIT APPLICATION	Annual PM_{10} Model-Predicted Significant Concentration Isopleth (1 $\mu g/m^3$)
Date: 04/16/2010	FIGURE C-6



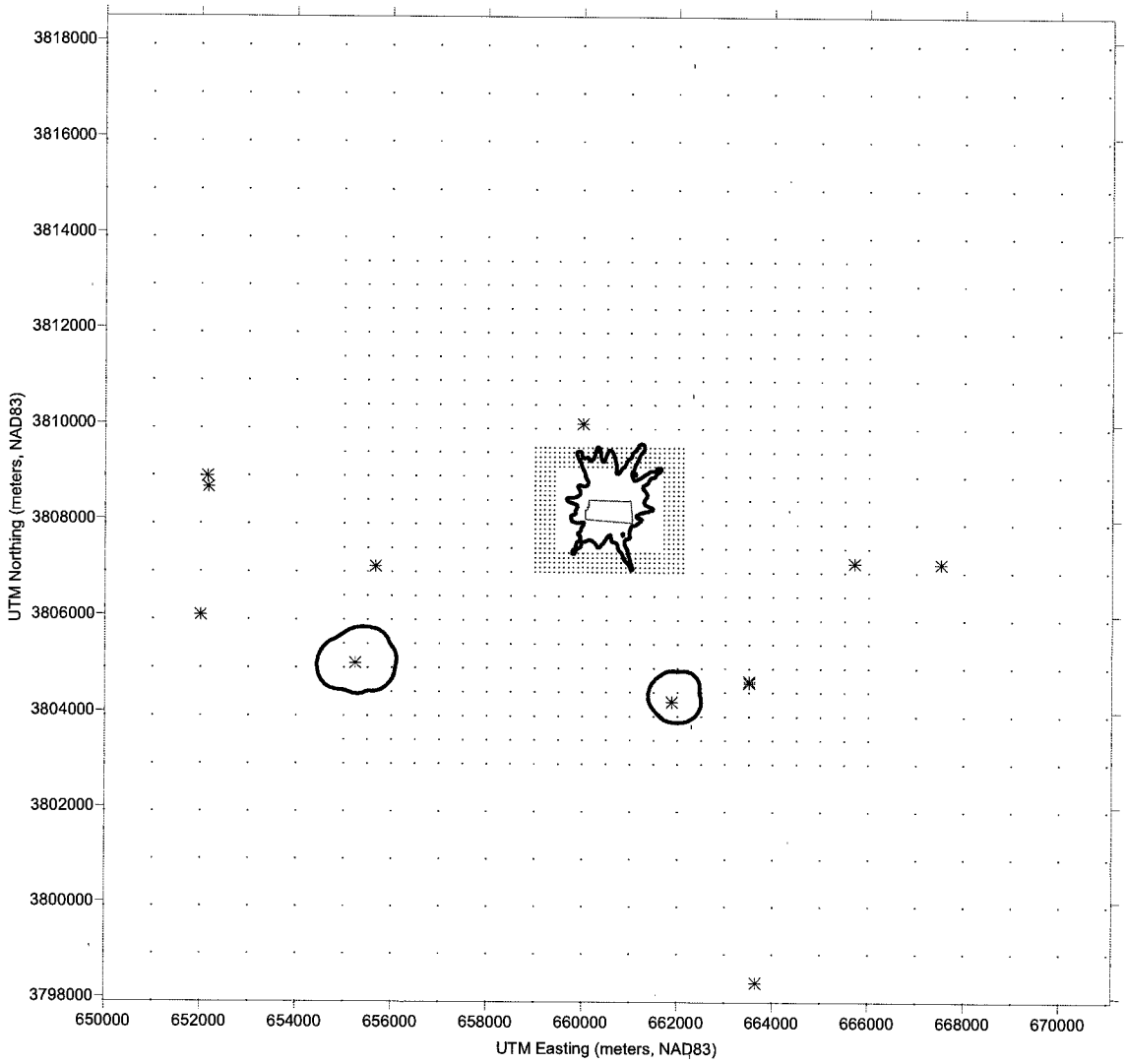
Radius of Impact (ROI)
Gavilon Significant Impact Isopleth

THE GAVILON GROUP LLC WEST CLOVIS FACILITY MINOR SOURCE PERMIT APPLICATION	24-Hour TSP Model-Predicted Significant Concentration Isopleth (5 $\mu g/m^3$)
Date: 04/16/2010	FIGURE C-7



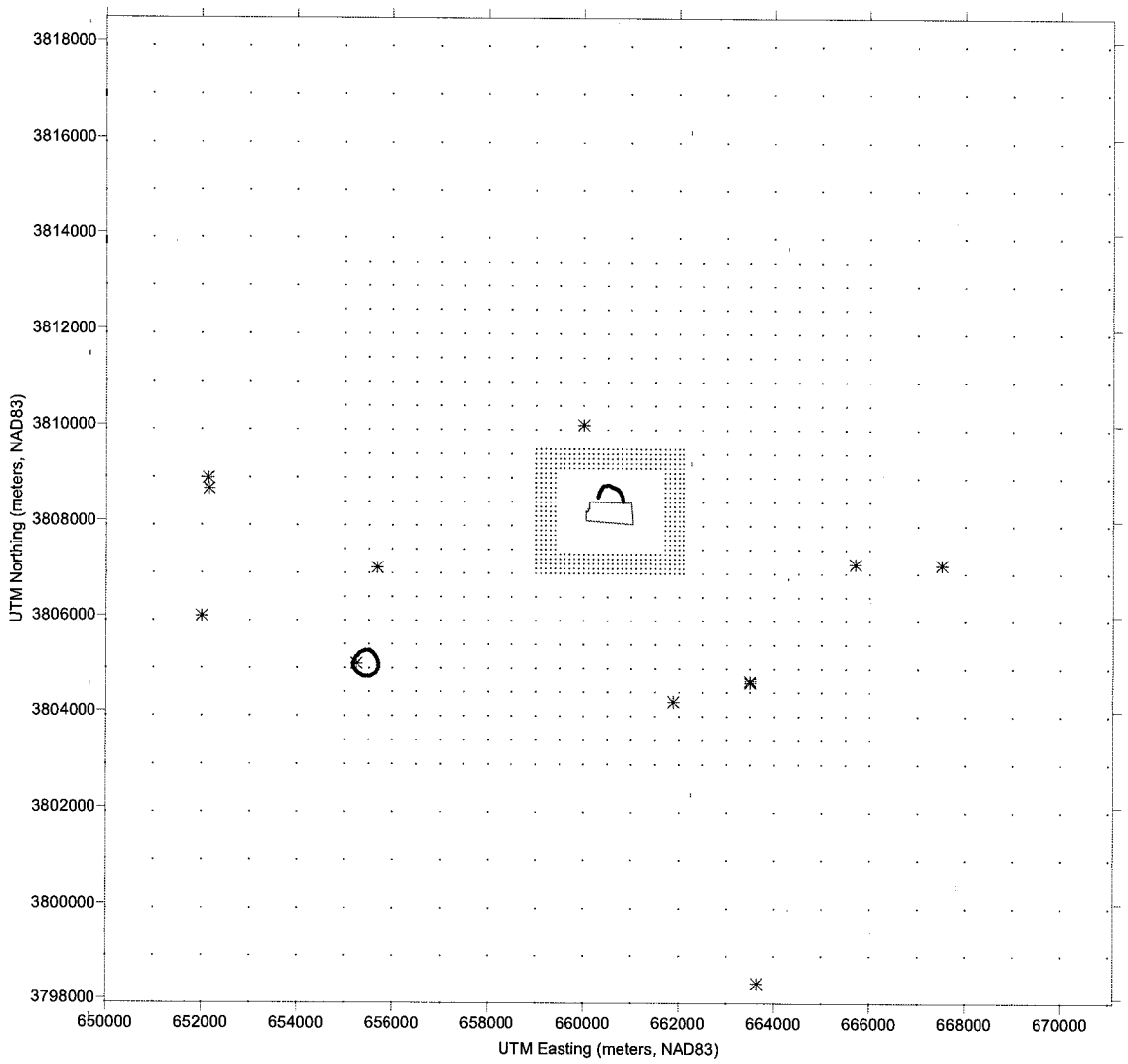
Radius of Impact (ROI)
Gavilon Significant Impact Isopleth

THE GAVILON GROUP LLC WEST CLOVIS FACILITY MINOR SOURCE PERMIT APPLICATION	Annual TSP Model-Predicted Significant Concentration Isopleth (1 $\mu g/m^3$)
Date: 04/16/2010	FIGURE C-8



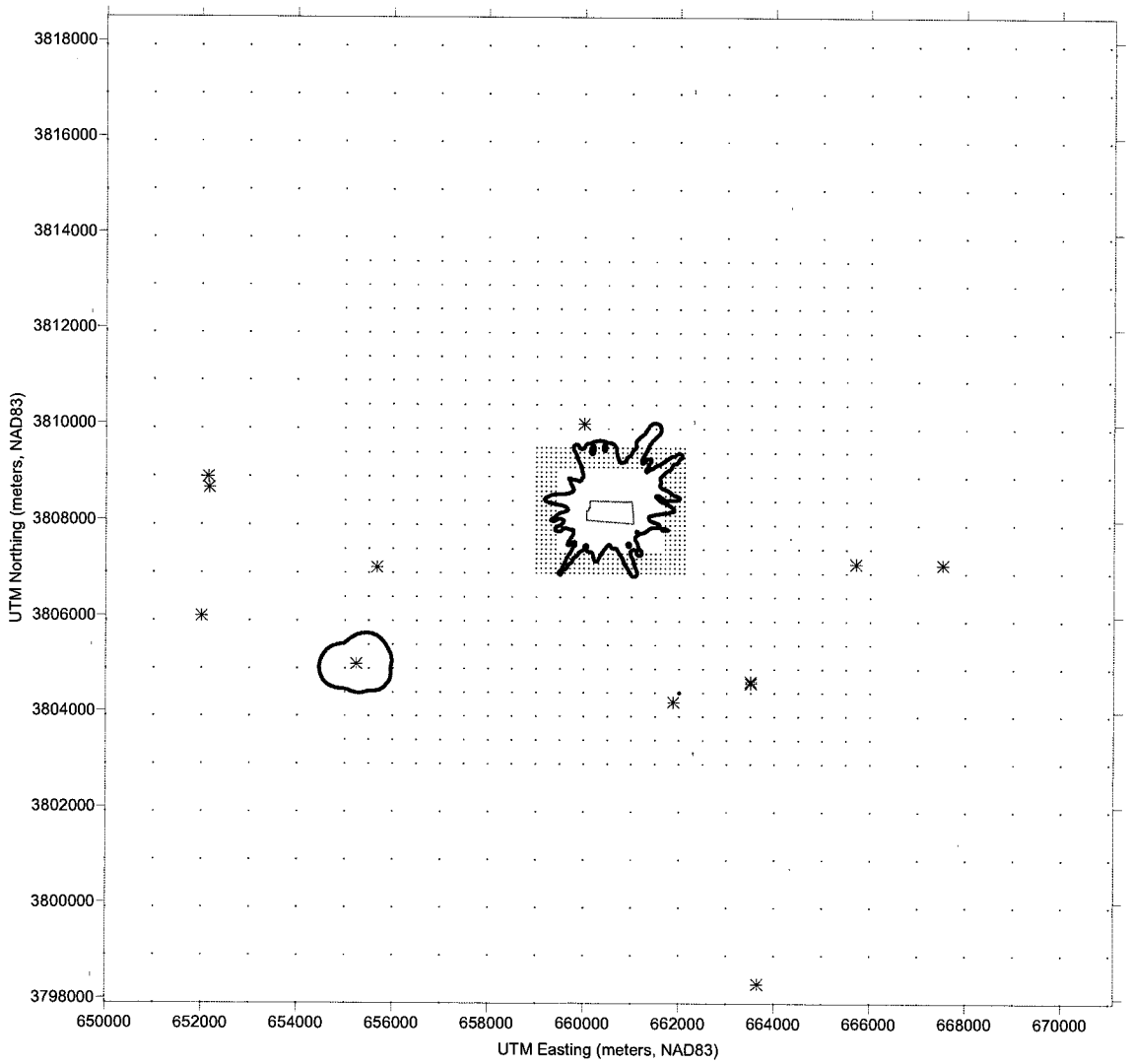
NAAQS Exceedance Isopleth Due to All Sources
Gavilon Significant Impact Isopleth
Off-Site Source

THE GAVILON GROUP LLC WEST CLOVIS FACILITY MINOR SOURCE PERMIT APPLICATION	24-Hour $PM_{2.5}$ Model-Predicted Significant and NAAQS Exceedance Concentration Isopleths
Date: 04/16/2010	FIGURE C-9



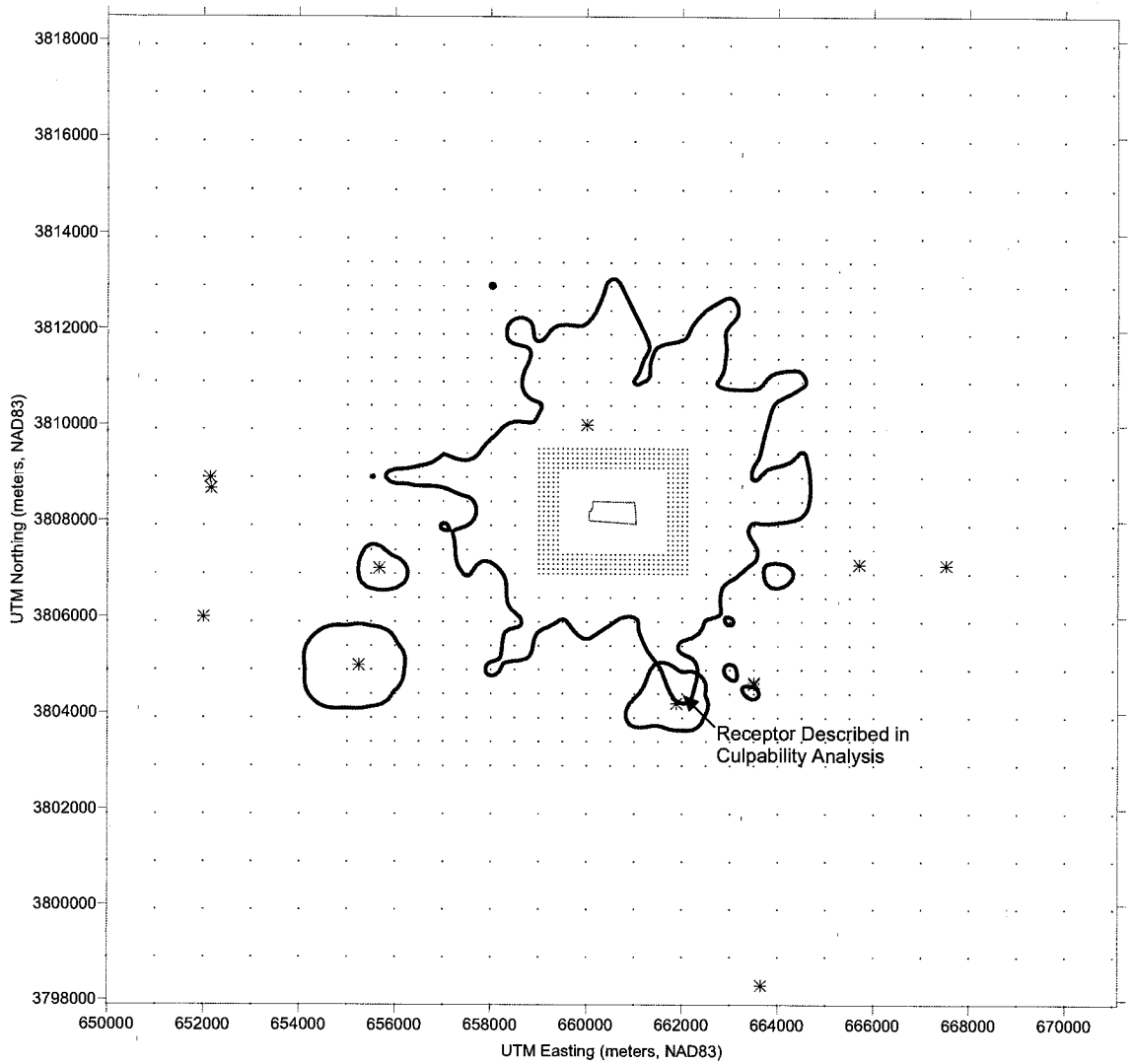
NAAQS Exceedance Isopleth Due to All Sources
Gavilon Significant Impact Isopleth
Off-Site Source

THE GAVILON GROUP LLC WEST CLOVIS FACILITY MINOR SOURCE PERMIT APPLICATION	Annual $PM_{2.5}$ Model-Predicted Significant and NAAQS Exceedance Concentration Isopleths
Date: 04/16/2010	FIGURE C-10



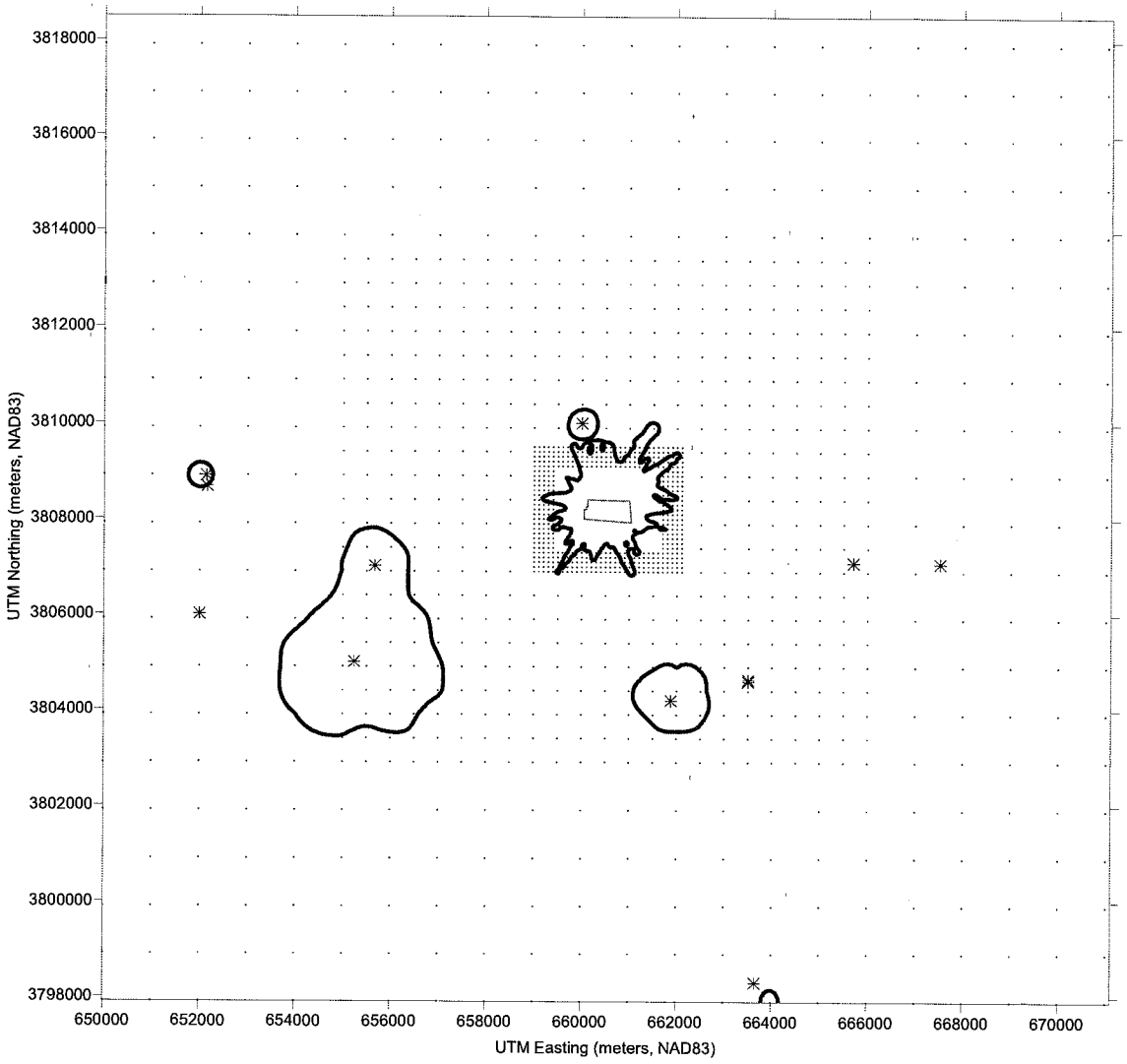
NAAQS Exceedance Isopleth Due to All Sources
Gavilon Significant Impact Isopleth
✳ Off-Site Source

THE GAVILON GROUP LLC WEST CLOVIS FACILITY MINOR SOURCE PERMIT APPLICATION	24-Hour PM_{10} Model-Predicted Significant and NAAQS Exceedance Concentration Isopleths
Date: 04/16/2010	FIGURE C-11



NMAAQS Exceedance Isopleth Due to All Sources
Gavilon Significant Impact Isopleth
Off-Site Source

THE GAVILON GROUP LLC WEST CLOVIS FACILITY MINOR SOURCE PERMIT APPLICATION	24-Hour TSP Model-Predicted Significant and NMAAQS Exceedance Concentration Isopleths
Date: 04/16/2010	FIGURE C-12



Increment Exceedance Isopleth Due to All Sources
Gavilon Significant Impact Isopleth
✳ Off-Site Source

THE GAVILON GROUP LLC WEST CLOVIS FACILITY MINOR SOURCE PERMIT APPLICATION	24-Hour PM_{10} Model-Predicted Significant and Increment Exceedance Concentration Isopleths
Date: 04/16/2010	FIGURE C-13

Attachment D

Readme File Contents

Gavilon Grain, LLC dba Peavey Company
Modeling Archive for Class II Impact Analyses –Addendum 2

KEY TO FILES ON CD-ROM

April 20, 2010

This document summarizes the content of the Gavilon Grain, LLC dba Peavey Company Class II Modeling CD-ROM. The CD-ROM contains various directories, as described below.

Directory: \Executable– consists of BPIP and AERMOD model PC executables.

File:

AERMOD.EXE	:AERMOD (Version 09292) executable from USEPA website
BPIPPRM.EXE	:BPIP-PRIME (Version 04274) executable from USEPA website

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Directory: \BPIP- consists of BPIP-PRIME I/O files for all facility sources. Downwash for point sources was used in AERMOD; downwash parameters for volume sources were used to estimate initial sigma-y and sigma-z parameters.

BPIPPRM.EXE	:BPIP-PRIME (Version 04274) executable

Files:

Clovis.*	:BPIP-PRIME I/O files, where * = BPI (input), OUT/SUM (output files)

Directory: \AERMOD– consists of AERMOD model runs in various subdirectories. These runs are refined runs, which include source groupings to specify the Gavilon-only impacts for comparison to the SILs and determination of ROIs, except 24-hour $PM_{2.5}$. For 24-hour $PM_{2.5}$, the SIL/ROI runs were made separately in their own subfolder and uses H1H impacts rather than H8H for the NAAQS comparison.

File:

ROI Summary.xlsx	:Excel spreadsheet summarizing the ROI analyses. Contains PLOTFILE output and performs distance to ROI calculations based on a central facility coordinate.

Subdirectories and files:

Directory: ppp_tt	:Pollutant and averaging period subdirectories, where ppp – pollutant (i.e., TSP, PM10, etc.) and tt = averaging period (i.e., ST = short-term and AN = annual).
Directory: NOTRAIN	:For short-term (24-hr) averaging periods, there are separate AERMOD runs for the "no train" (NOTRAIN) operating scenario.
Directory: TRAIN	For short-term (24-hr) averaging periods, there are separate AERMOD runs for the "train" (TRAIN) operating scenario.

Note: All sources are run in the annual averaging period runs; therefore there are no separate subfolders for the "no train" and "train scenarios.

*.inp	:AERMOD input file
*.out	:AERMOD output file

*.PLT :AERMOD PLOTFILE

For the TSP 24-hour NMAAQS analyses, culpability runs for the receptor requiring additional analysis, is provided in a subdirectory under TSP_ST\NOTRAIN\.Please read the headers in each AERMOD file for details.

Directory: \MET DATA - consists of NMED-provided AERMOD-ready meteorological data files for 2001-2005. There are individual SFC and PFL files for each year used for annual averaging period modeling, as well as combined 5-year SFC and PFL files used for short-term averaging period modeling.

Files:

CVNyy.* :AERMOD surface (*.sfc) and profile (*.pfl) files for individual years (used in annual runs), where yy = year (i.e., 01 = 2001)

CVN0105.* : AERMOD surface (*.sfc) and profile (*.pfl) files for the entire 5-year period (used in short-term runs)

Section 17

Compliance Test History

(submitting under 20.2.70, 20.2.72, 20.2.74 NMAC)

To show compliance with existing NSR permits conditions, you must submit a compliance test history. The table below provides an example.

No compliance testing has been requested.

Section 18

Requirements for Title V Program

This Section is not applicable as the facility is not subject to Title V.

Section 19

Other Relevant Information

☐ Section O **Other relevant information**. Use this Section to clarify any part in the application that you think needs explaining. Reference the section, table, column, and/or field. Include any additional text, tables, calculations or clarifying information.

To save paper and to standardize the application format, delete this sentence, and begin your submittal for this Section on this page.

Certification

Company Name: Gavilon Grain LLC dba Peavey Company West

I, Rick Yabroff, hereby certify that the information and data submitted in this application are true and as accurate as possible, to the best of my knowledge and professional expertise and experience.

Signed this 8 day of June, 2009, upon my oath or affirmation, before a notary of the State of Nebraska.

*Signature — Date: 6-8-2009

Rick Yabroff
Printed Name

Director of Safety & Environmental
Title

Scribed and sworn before me on this 8 day of June, 2009.

My authorization as a notary of the State of Nebraska expires on the 11 day of July, 2009.

Beth R. Robinson
Notary's Signature — Date: 6-8-09

Beth R. Robinson
Notary's Printed Name

GENERAL NOTARY-State of Nebraska
BETH R. ROBINSON
My Comm. Exp. July 11, 2009

*For Title V applications, the signature must be of the Responsible Official.