



KOOGLER & ASSOCIATES  
ENVIRONMENTAL SERVICES

4014 NW THIRTEENTH STREET  
GAINESVILLE, FLORIDA 32609  
904/377-5000 • FAX 377-7188

KA 173-94-04

March 31, 1995

Mr. A. A. Linero  
Florida Department of  
Environmental Protection  
Twin Towers Office Building  
2600 Blair Stone Road  
Tallahassee, Florida 32399-2400

Subject: BACT Determination for Fluorides  
U.S. Agri-Chemicals Corporation  
P205 PI 000 (AGC 000100) P. 111-112 MAP Plant

Dear Mr. Linero;

This is a follow up to Pradeep Raval's telephone conversation today with Mr. John Reynolds of your staff regarding the proposed fluoride-emissions limit for the above referenced MAP plant.

We concur with FDEP's position that adequate emission data are not available to assess the validity of the fluoride emission limit proposed as BACT for the MAP plant. As a result, USAC agrees with FDEP's proposal for a delayed BACT determination which would be based on the performance tests upon completion or construction of the MAP plant. It should be noted that USAC intends to require a manufacturer, upon selection, to design the MAP plant scrubber to meet the fluoride emission limit of 0.0417 pound per ton P205 input, as proposed in the application.

It is anticipated that the information herein concludes the technical review of the proposed project. We appreciate your efforts, as well as the efforts of Mr. Reynolds and Ms. Zhang for the prompt issuance of the Department's Technical Evaluation and draft permit.

If you have any questions, please call Pradeep Raval or me.

Very truly yours,

KOOGLER & ASSOCIATES

  
John B. Koogler, Ph.D., P.E.

JBK:par

c: Steve Susick, USAC



**KOOGLER & ASSOCIATES**  
**ENVIRONMENTAL SERVICES**  
4014 NW THIRTEENTH STREET  
GAINESVILLE, FLORIDA 32609  
904/377-5822 ■ FAX 377-7158

KA 173-94-04

March 20, 1995

**RECEIVED**

**MAR 31 1995**

**Bureau of  
Air Regulation**

Mr. A. A. Linero  
Florida Department of  
Environmental Protection  
Twin Towers Office Building  
2600 Blair Stone Road  
Tallahassee, Florida 32399-2400

Subject: Submittal of Additional Information  
U.S. Agri-Chemicals Corporation  
PSD-FL-222 (AC53-260190) Prilled MAP Plant

Dear Mr. Linero:

This is a follow up to our letter to you dated March 2, 1995, to provide additional information regarding ambient air quality modeling for particulate matter (PM10) emissions from the above referenced project.

The results of the ASI modeling, submitted to FDEP on March 2, 1995, and summarized herein (see Tables 1, 2 and 3) demonstrate that the predicted ambient air quality impact of particulate matter emissions from the proposed project are greater than significant for the 24-hour and annual periods in the Class II area; and, less than significant in the Class I area. Consequently, the proposed project is not expected to cause or significantly contribute to any exceedance of the allowable Class I area PSD increments, should such exceedances occur.

As the predicted particulate matter impacts from the proposed project were significant within the Class II area, additional modeling was required to determine compliance with the ambient air quality standards and allowable Class II area PSD increments.

#### Class II Area AAQS and PSD Increment Analysis

The Ambient Air Quality Standards (AAQS) Analysis and the Class II Area PSD Increment (PSD) Analysis was conducted to determine the combined ambient air impact of the proposed project and other nearby PM10 emitting sources.

The ASI modeling indicated that the predicted impacts from the proposed project would not be significant beyond a distance of 4000 meters from the plant. Accordingly, the receptor grid for this analysis included all the

receptors used in the ASI modeling, except for receptors beyond 4000 meters. Receptors rings at distances of 2500 and 3500 meters from the proposed project were added to the previous grid.

An inventory of particulate matter sources in the region was obtained from FDEP, and then updated based on current information in FDEP files (see letter presented in Attachment 1). For the purposes of this analysis, it was conservatively assumed that PM10 emissions are equal to TSP emissions listed in the inventory. The significant facilities to be included in the analysis were determined based on the standard "20 D Rule" approach.

A list of the significant facilities near the proposed project is presented in Table 4. The corresponding particulate matter sources at the significant facilities which contribute to the ambient air concentration and the PSD increment consumption/expansion in the Class II area are presented in Tables 5 and 6, respectively. Although the ISC model is not recommended for modeling sources beyond 50 kilometers, some of the borderline sources were included to be conservative.

The results of the AAQS and PSD analysis indicate that the maximum predicted 24-hour and annual period impacts for the Class II area are well below the standards, as shown in Tables 7 and 8, respectively. The modeling output is provided on disk (enclosed).

It should be noted that the predicted ambient air quality impacts, including a conservative background PM10 concentration level of 30 micrograms per cubic meter (for the Gibsonton area) representing the contribution of any non-modeled sources, is also well below the 24-hr and annual PM10 ambient air quality standard.

As you are aware, USAC is under considerable pressure to maintain the project schedule. Consequently, we are available to you at all times should any questions arise. We appreciate your kind assistance.

If you have any questions, please call Pradeep Raval or me.

Very truly yours,

KOGLER & ASSOCIATES

  
John B. Koogler, Ph.D., P.E.

JBK:par  
Enc.

c: Steve Susick, USAC

*J. Reynolds*  
*K. J. Lang*  
*A. Kessel, SWDist*

*J. Murphy, EPA*  
*G. Demayak, NPS*  
*J. Novak, Polk Co.*



TABLE 1  
 AIR QUALITY MODELING PARAMETERS  
 U. S. AGRI-CHEMICALS  
 POLK COUNTY, FLORIDA

Source	PM10 Emission (g/s)	Height (m)	Temp. (°K)	Velocity (m/s)	Diameter (m)
Tower/Cooler	24 3.02	43.10 21.95	332	14.37	2.74
Loadout	0.54	15.24	300	14.40	0.43

NOTE: Building wake effects were included in the modeling.



TABLE 2  
 SUMMARY OF PM10 SIGNIFICANT IMPACT ANALYSIS  
 CLASS II AREA

U. S. AGRI-CHEMICALS  
 POLK COUNTY, FLORIDA

METEOROLOGICAL DATA	PARTICULATE MATTER IMPACT ( $\mu\text{g}/\text{m}^3$ )	
	24-HOUR	ANNUAL
1987	16.08	1.25
1988	15.95	1.56
1989	20.43	2.02
1990	16.42	1.30
1991	16.38	1.53
Significant Impact (Rule 62-272, FAC)	5	1
Class II Increment (Rule 62-272, FAC)	30	17
Ambient Air Standard (Rule 62-272, FAC)	150	50

NOTE:

(1) The predicted impacts represent the highest-high impact.



TABLE 3  
 SUMMARY OF PM10 SIGNIFICANT IMPACT ANALYSIS  
 CLASS I AREA

U. S. AGRI-CHEMICALS  
 POLK COUNTY, FLORIDA

METEOROLOGICAL DATA	PARTICULATE MATTER IMPACT ( $\mu\text{g}/\text{m}^3$ )	
	24-HOUR	ANNUAL
1987	0.065	0.0022
1988	0.051	0.0033
1989	0.068	0.0043
1990	0.075	0.0022
1991	0.039	0.0019
Significant Impact (NPS guidelines)	0.27	0.08

NOTE:

- (1) The predicted impacts represent the highest-high impact.



**TABLE 4**  
**CLASS II AREA**  
**SIGNIFICANT PM-10**  
**EMITTING FACILITIES (20 D)**

SO2 "20 D" SOURCE INVENTORY FOR U S AGRI-CHEMICALS Facility	UTM		PM (tpy)	DIST FROM SITE TO USAC (KM)	20 x D	INCLUDE MODELING
	East	North				
APAC-Florida, Inc.	347.1	3027.3	163	80.5	1,610.7	NO
APAC-Florida, Inc.	347.1	3027.3	163	80.5	1,610.7	NO
Adams Packing Association	421.7	3104.2	144.0	35.7	713.2	NO
Agrico Chemical	400.0	3061.0	84.0	17.9	357.8	NO
Agrico Chemical Co	362.1	3076.1	195.0	54.4	1,087.3	NO
Agrico Chemical Co Pierce*	403.7	3079.0	840.0	15.9	317.0	YES
Agrico Chemical Co South Pierce*	407.5	3071.5	1,096.0	8.9	177.2	YES
Alcoa	416.8	3116.0	446	47.0	940.1	NO
Alcoa	416.8	3116.0	446	47.0	940.1	NO
Alcoma Packing - Lake Wales	451.6	3085.5	263	39.2	784.8	NO
Alcoma Packing - Lake Wales	451.6	3085.5	263	39.2	784.8	NO
Allsun Products	413.5	3093.8	318.0	24.9	498.5	NO
Alumax Extrusions	385.6	3097.0	172.0	41.3	826.6	NO
Amcon Concrete	364.0	3075.0	39.0	52.3	1,046.9	NO
Amcon Concrete	358.4	3090.2	3.0	61.4	1,227.6	NO
Amcon Products	364.6	3092.8	32.0	56.6	1,132.9	NO
American Orange Corp	429.8	3047.3	181.0	25.7	514.3	NO
Amoco Oil	357.8	3092.0	9.0	62.6	1,251.6	NO
Artstrech Chemical Corp	411.7	3085.9	7.0	17.4	348.8	NO
Asgrow Florida Company	388.6	3104.6	5.0	44.9	898.5	NO
Aubumdale Cogeneration*	420.8	3103.3	161.0	34.6	826.0	NO
Bay Concrete	365.0	3084.0	3.0	53.2	1,063.2	NO
Bay Concrete	365.1	3093.8	37.0	56.6	1,132.4	NO
Bio-Medical Service Corp of GA	413.9	3081.3	46.0	12.5	249.6	NO
Bordo Citrus Product Inc	427.8	3097.5	13.0	30.8	616.9	NO
Brannen Prestress Co.	353.7	3016.5	100	81.5	1,629.4	NO
Brannen Prestress Co.	353.7	3016.5	100	81.5	1,629.4	NO
C & M Products Co	405.5	3079.1	162.0	14.6	291.4	NO
C F Industries Bonnie Mine Rd*	408.4	3082.4	1,319.0	15.4	308.1	YES
C&M Products	405.5	3079.1	37	14.6	291.4	NO
C&M Products	405.5	3079.1	37	14.6	291.4	NO
C-Cure of Florida	388.0	3098.7	21.0	42.2	844.3	NO
CF Industries	388.0	3116.0	84	54.7	1,094.2	NO
CF Industries	388.0	3116.0	84	54.7	1,094.2	NO
CF Industries - Bartow	408.4	3082.4	790	15.4	308.1	YES
CF Industries - Bartow	408.4	3082.4	790	15.4	308.1	YES
CSX Transportation Inc.	361.0	3089.0	404.0	58.5	1,170.5	NO
Cargill	358.1	3091.7	22.0	62.2	1,243.8	NO
Cargill Fertilizer Inc. (Gardiner)	362.9	3082.2	932.0	54.7	1,094.3	NO
Cargill/Nutrena Feed Division	360.8	3095.8	21.0	61.4	1,227.2	NO
Cast Metals Corp	368.8	3094.6	8.0	53.7	1,073.9	NO
Cast-Crete Corp of Florida	371.9	3099.2	11.0	53.4	1,069.0	NO
Central Florida Hot-Mix	412.5	3097.7	19.0	28.9	578.3	NO
Central Phosphates Inc.	359.1	3089.8	26.0	60.6	1,211.7	NO
Chapman Contracting	356.8	3068.4	4.0	59.2	1,184.1	NO
Chevron Asphalt Inc.	358.2	3092.0	4.0	62.2	1,244.2	NO
Citrus Hill Mfg	447.9	3068.3	66.0	31.9	638.2	NO
Citrus World	441.0	3087.3	601.0	31.0	619.6	NO
City Of Tampa Dept.	364.0	3089.5	48.0	55.9	1,117.9	NO
Coca Cola	421.6	3103.7	387.0	35.1	703.0	NO
Comco of America	361.4	3086.9	9.0	57.5	1,149.2	NO
Commercial Metals Inc	358.5	3088.3	108.0	60.7	1,213.1	NO
Conserv Inc.*	398.7	3084.2	1,598.0	23.0	460.6	YES
Consolidated Minerals Inc	393.8	3096.3	1.0	35.2	703.7	NO
Consolidated Minerals Inc. Plant City	393.8	3096.3	756.0	35.2	703.7	YES
Couch Construction Co	364.3	3098.1	45.0	59.3	1,186.5	NO
Couch Construction Company	362.1	3096.7	26.0	60.6	1,212.0	NO
Crown Door Company	362.1	3092.5	13.0	58.8	1,176.0	NO
David J. Joseph Co.	364.0	3092.9	123.0	57.2	1,144.6	NO
David J. Joseph Co.	364.0	3092.9	123	57.2	1,144.6	NO
David J. Joseph Co.	364.0	3092.9	123	57.2	1,144.6	NO
Delta Asphalt	372.1	3105.4	72.0	57.0	1,140.6	NO
Driggers Concrete	360.0	3065.9	21.0	56.1	1,121.7	NO
ER Carpenter	397.0	3131.5	55	65.3	1,306.5	NO
ER Carpenter	397.0	3131.5	55	65.3	1,306.5	NO
Earl Massey	440.4	3103.4	39	42.2	843.5	NO
Earl Massey	440.4	3103.4	39	42.2	843.5	NO
Eastern Association Terminal	360.2	3088.9	534.0	59.2	1,184.8	NO
Eastern Electric Apparatus Repair Co	366.6	3092.0	21.0	54.5	1,089.8	NO
Eger Concrete Eastside Dr N	410.5	3102.5	11.0	33.9	679.0	NO
Eger Concrete Lake Ida & 5th St	428.1	3102.0	49.0	35.1	703.0	NO
Ennis Drum Service Inc	422.5	3102.5	4.0	34.1	682.5	NO
Ery Juice Inc	399.0	3101.8	117.0	36.9	738.9	NO

**TABLE 4**  
**CLASS II AREA**  
**SIGNIFICANT PM-10 EMITTING FACILITIES (20 D)**  
**(CONTINUED)**

SO2 "20 D" SOURCE INVENTORY FOR U S AGRI-CHEMICALS Facility	UTM		PM (tpy)	DIST FROM SITE TO USAC (KM)	20 x D	INCLUDE MODELING
	East	North				
Ero Industres	427.5	3095.6	33.0	29.0	579.6	NO
Estech	411.5	3074.2	311.0	6.9	137.5	YES
Estech-Duette Phosphate Mine	388.9	3047.2	750.0	34.8	695.6	YES
Ewell ind Bonnie Mine Rd	407.7	3080.9	96.0	14.5	290.2	NO
Ewell ind S Florida Ave	406.3	3092.9	348.0	25.8	515.9	NO
Ewell Industries	367.1	3092.7	19.0	54.3	1,086.8	NO
Ewell Industries	367.0	3092.8	13.0	54.5	1,089.5	NO
FMC Corp/Citrus Machinery Division	409.8	3102.6	9.0	34.2	734.0	NO
FPC Bayboro	338.8	3071.3	2526	77.2	1,544.7	YES
FPC Bayboro	338.8	3071.3	2526	77.2	1,544.7	YES
FPC Intercession City 7EA Turbine (#180)	446.3	3126.0	108	64.6	1,291.1	NO
FPC Intercession City 7EA Turbine (#180)	446.3	3126.0	108	64.6	1,291.1	NO
FPC-Bartow	342.4	3082.6	9244	74.8	1,496.9	YES
FPC-Bartow	342.4	3082.6	9244	74.8	1,496.9	YES
Farmland Industries Green Bay Plant*	409.5	3080.1	1,486.0	12.9	257.3	YES
Florida Brick & Clay Co	384.9	3097.1	26.0	41.9	838.3	NO
Florida Crushed Stone	358.9	3088.4	20.0	60.3	1,206.1	NO
Florida Distillers Company	421.4	3102.9	2.0	34.3	686.5	NO
Florida Fence Post	409.2	3039.9	6.0	29.9	597.7	NO
Florida Institute of Phosphate Research	415.0	3085.8	4.0	16.8	336.6	NO
Florida M & M	362.2	3066.2	21.0	53.9	1,077.5	NO
Florida Mega-Mix	364.5	3093.4	22.0	57.0	1,139.8	NO
Florida Mining & Materials Alabama Lane	420.8	3103.4	40.0	34.7	694.7	NO
Florida Petroleum	360.9	3094.0	16.0	60.5	1,210.1	NO
Florida Power & Light*	367.2	3054.1	40,179.0	51.0	1,020.5	YES
Florida Precast Concrete	360.4	3094.2	132.0	61.0	1,220.9	NO
Florida Privatization Inc	418.3	3048.0	281.0	21.1	422.5	NO
Florida Rock Industries	416.8	3085.8	57.0	16.8	336.4	NO
Florida Rock Industries	363.9	3093.5	8.0	57.6	1,151.5	NO
Florida Rock Industries	428.0	3105.2	55.0	38.1	762.7	NO
Florida Rock Industry	365.8	3085.0	21.0	52.7	1,053.8	NO
Florida Rock Industry	362.3	3097.5	20.0	60.8	1,215.9	NO
Florida Steel Corp	364.6	3092.8	144.0	56.6	1,132.9	NO
Florida Tile	405.4	3102.4	309.0	35.0	700.8	NO
GAF Building Materials Corp	362.2	3087.2	57.0	56.8	1,135.9	NO
GNB Inc. (PAC CHL)	361.8	3088.3	25.0	57.5	1,150.7	NO
Gardner Asphalt Corp	360.8	3093.3	5.0	60.3	1,206.2	NO
Gardinier	415.3	3063.3	175.0	5.7	114.9	YES
Garrison Stevedoring	357.8	3091.7	182.0	82.5	1,249.4	NO
Gaylord Container Corp	366.3	3092.3	108.0	54.9	1,097.8	NO
General Chemical Corp	359.9	3092.3	30.0	60.7	1,214.9	NO
Glen-Mar Concrete Products	363.2	3093.3	22.0	58.1	1,162.5	NO
Gold Bond Building Products	347.3	3082.7	117	70.1	1,401.1	NO
Gold Bond Building Products	347.3	3082.7	117	70.1	1,401.1	NO
Golden Triangle Asphalt	333.8	3086.1	1274	84.0	1,679.2	NO
Golden Triangle Asphalt	333.8	3086.1	1274	84.0	1,679.2	NO
Graves Enterprises Riverview	363.1	3085.3	350.0	55.4	1,107.1	NO
Griffin Industries	364.1	3096.4	4.0	58.7	1,173.8	NO
Gulf Coast Lead Company	364.0	3093.5	17.0	57.5	1,149.7	NO
Gulf Coast Metals	364.7	3093.6	13.0	56.9	1,137.9	NO
H & S Properties	360.3	3093.2	9.0	60.7	1,214.6	NO
Hardee Memorial Hospital	419.2	3046.7	1.0	22.5	450.6	NO
Hardee Power Station Ft. Green Springs*	404.8	3057.4	1,251.0	16.1	322.5	YES
Haynes Funeral Home Plant City	388.1	3100.3	6.0	41.9	838.6	NO
High Performance Finishers	428.0	3096.0	12.0	29.5	590.9	NO
Hillsborough Animal Control Center	368.5	3092.7	11.0	53.1	1,061.7	NO
Hillsborough Co Resource Recovery	368.2	3092.7	172.0	53.4	1,067.1	NO
Hillsborough Co. Animal Control Center	364.9	3093.5	16.0	56.7	1,133.4	NO
Holly Hill	441.0	3115.4	145.3	52.7	1,054.1	NO
Holly Hill	441.0	3115.4	145.3	52.7	1,054.1	NO
Holman Inc.	359.3	3087.1	54.0	59.5	1,190.4	NO
Holnam Inc.	359.5	3087.3	55.0	59.4	1,187.8	NO
Hull Materials, Inc.	399.4	3070.6	13.0	16.7	333.5	NO
Humana Hospital	429.9	3076.7	1.0	15.9	317.8	NO
Humana Hospital	373.3	3093.4	4.0	49.2	983.6	NO
Hydro Conduit Corp	363.8	3093.5	2.0	57.7	1,153.3	NO
IMC Ft. Lonesome*	389.6	3067.9	678.0	26.4	528.5	YES
IMC Kingsford	398.2	3075.7	422.0	19.0	380.4	YES
IMC Noralyn Mine*	414.7	3080.3	1,689.0	11.4	227.5	YES
IMC Port Sutton Terminal	360.1	3087.5	442.0	56.9	1,177.6	NO
IMC Fertilizer New Wales	396.7	3079.4	1,430.0	21.9	438.5	YES
IMC Fertilizer Prairie	402.9	3087.0	288.0	22.3	445.2	NO
IMC Fertilizer Rainbow Division	402.3	3085.8	88.0	21.7	433.6	NO



**TABLE 4**  
**CLASS II AREA**  
**SIGNIFICANT PM-10 EMITTING FACILITIES (20 D)**  
**(CONTINUED)**

SO2 *20 D* SOURCE INVENTORY FOR U S AGRI-CHEMICALS Facility	UTM		PM (tpy)	DIST FROM SITE TO USAC (KM)	20 x D	INCLUDE MODELING
	East	North				
IMC/Uranium Recovery C F Industries*	408.4	3082.8	1,071.0	15.8	315.1	YES
Imperial Phosphate Ltd.	404.8	3069.5	162.0	11.2	224.2	NO
International Paper Company	421.7	3104.3	8.0	35.8	715.1	NO
International Salt Company	358.2	3090.2	21.0	61.6	1,231.3	NO
John Carlos Florida	428.2	3104.1	29.0	36.6	731.0	NO
Johnson Controls Battery Group, Inc.	359.9	3102.5	156	65.3	1,306.8	NO
Johnson Controls Battery Group, Inc.	359.9	3102.5	156	65.3	1,306.8	NO
Kaiser Aluminum	408.3	3085.5	106.0	18.2	364.2	NO
Kaplan Industries	418.3	3079.3	53.0	10.6	211.1	NO
Keamey Development Company	368.7	3094.8	21.0	53.9	1,077.6	NO
Kimmins Recycling Corporation	360.4	3093.1	66.0	60.6	1,212.0	NO
LaFarge Corp.	357.7	3090.6	1,221.0	62.2	1,243.5	NO
LaFarge Corp.	358.3	3092.8	51.0	62.4	1,248.3	NO
Laidlaw Environmental Services Inc	424.7	3091.9	9.0	24.5	489.9	NO
Lakeland City Electric & Utilities	404.0	3105.3	8.0	38.2	764.6	NO
Lakeland City Power Larsen Power Station*	409.3	3102.8	107.0	34.5	734.0	NO
Lakeland City Power McIntosh Power Statio	409.2	3106.1	15,138.0	37.7	754.4	YES
Lehigh Portland Cement Co	361.3	3086.9	7.0	57.6	1,151.1	NO
Lehigh Portland Cement Co Port Sutton	360.7	3086.8	18.0	58.1	1,161.9	NO
Lehigh Portland Cement Comp Pt Sutton	360.7	3086.8	15.0	58.1	1,161.9	NO
Leisey Shell Corp	352.7	3064.8	20.0	63.4	1,268.8	NO
Lykes Pasco Packing	412.4	3096.5	48.0	27.7	554.7	NO
MacDill AFB	355.0	3080.6	2.0	62.1	1,241.9	NO
Macasphalt	423.1	3101.5	70.0	33.3	665.3	NO
Manatee Scrap Processing	366.9	3053.8	108.0	51.4	1,028.0	NO
Manna Pro Corporation	364.7	3092.6	16.0	56.5	1,129.4	NO
Marathon Petroleum Company	362.2	3087.2	13.0	56.8	1,135.9	NO
Metals & Materials Recycling	386.5	3097.4	1.0	40.9	819.0	NO
Mobil Mining & Minerals Big Four Mine	394.7	3069.6	68.0	21.3	426.2	NO
Mobil Mining & Minerals SR 676	398.5	3085.1	990.0	23.8	475.6	YES
Mobil-Electrophos Division*	405.6	3079.4	544.0	14.7	294.2	YES
Monier Roof Tile	414.0	3102.5	44.0	33.6	671.2	NO
National Portland Cement Co. of FL	346.4	3058.4	186	70.4	1,408.1	NO
National Portland Cement Co. of FL	346.4	3058.4	186	70.4	1,408.1	NO
Nitram	362.5	3089.0	218.0	57.1	1,142.3	NO
North American Salt Co	362.4	3085.7	5.0	56.1	1,122.8	NO
Orange Co of Florida	418.7	3083.6	119.0	14.8	297.0	NO
Orlando Utilities Station #1	483.5	3116.0	84	82.3	1,645.0	NO
Orlando Utilities Station #1	483.5	3116.0	84	82.3	1,645.0	NO
Orlando Utilities Station #2	483.5	3150.6	375	105.9	2,118.0	NO
Orlando Utilities Station #2	483.5	3150.6	375	105.9	2,118.0	NO
Ott-Laughlin	427.8	3099.7	1.0	32.9	657.8	NO
Owens-Brockway Glass Container	423.4	3102.3	189.0	34.1	682.2	NO
Packaging Corp of America	423.4	3102.8	38.0	34.6	692.0	NO
Pakhoed Dry Bulk Terminals	360.8	3087.3	483	58.2	1,163.1	NO
Pakhoed Dry Bulk Terminals	360.8	3087.3	483	58.2	1,163.1	NO
Paktank Florida	360.8	3087.3	178.0	58.2	1,163.1	NO
Palm Harbor Homes	391.8	3101.5	22.0	40.5	810.4	NO
Pavers Incorporated	414.0	3098.2	479.0	29.3	585.4	NO
Pavex Corp	413.0	3086.2	44.0	17.5	349.2	NO
Pembroke Materials Inc	420.4	3075.2	12.0	7.6	152.1	NO
Pinellas Co. Resource Recovery Facility	335.2	3084.1	329	82.2	1,644.0	NO
Pinellas Co. Resource Recovery Facility	335.2	3084.1	329	82.2	1,644.0	NO
Purina Mills	402.0	3087.0	88.0	22.8	456.1	NO
Quikrete of Florida	412.8	3099.0	253.0	30.2	603.4	NO
R & L Metals	363.6	3093.0	5.0	57.6	1,152.7	NO
R C Martin Concrete Products	368.6	3092.1	28.0	52.7	1,054.6	NO
R V Shulenburg	362.5	3097.3	6.0	60.5	1,210.5	NO
Reed Minerals Division	362.2	3085.5	70.0	56.3	1,125.5	NO
Resource Recovery of America Inc	401.8	3085.8	10.0	22.0	439.9	NO
Reynolds Aluminum Recycling	362.7	3097.5	14.0	60.4	1,208.8	NO
Ridge Cogeneration*	416.7	3100.4	414.0	31.4	738.0	NO
Ridge Pallets Inc	419.1	3078.1	96.0	9.6	192.3	NO
Ridge Pallets Inc.	418.6	3084.1	165.0	15.3	306.4	NO
Rinker Cenccon Corp	412.4	3099.0	159.0	30.2	604.3	NO
Rinker Materials Corp	364.9	3084.4	8.0	53.4	1,067.4	NO
Rinker Materials Corp.	392.2	3100.0	14.0	39.1	781.6	NO
Rinker Materials Corporation	363.2	3098.1	22.0	60.3	1,205.8	NO
Royster Co	362.8	3098.4	18.0	60.8	1,215.7	NO
Royster Company	406.8	3085.1	1,393.0	18.5	370.9	YES
S I Lime Co Division of Longview Lime	362.9	3084.7	48.0	55.4	1,107.4	NO
Sani-Med Inc.	359.6	3079.9	16.0	57.4	1,148.9	NO
Schering Berlin Polymers	410.7	3098.9	30.0	30.4	607.3	NO

**TABLE 4**  
**CLASS II AREA**  
**SIGNIFICANT PM-10 EMITTING FACILITIES (20 D)**  
**(CONCLUDED)**

SO2 "20 D" SOURCE INVENTORY FOR U S AGRI-CHEMICALS Facility	UTM		PM (tpy)	DIST FROM SITE TO USAC (KM)	20 x D	INCLUDE MODELING
	East	North				
Scrapall Inc.	359.4	3093.1	31.0	61.5	1,230.3	NO
Seminole Fertilizer (W R Grace)*	409.8	3086.7	2,760.0	18.8	375.1	YES
South Bay Hospital	365.3	3065.1	18.0	50.8	1,017.0	NO
Southeastern Galvanizing Division	368.5	3094.5	21.0	53.9	1,078.2	NO
Southeastern Wire	368.3	3094.5	21.0	54.1	1,081.8	NO
Southern Culvert	391.5	3085.0	17.0	35.7	714.5	NO
Southern Mill Creek Products Inc.	362.8	3097.7	6.0	60.4	1,209.0	NO
Southern Prestressed	363.2	3098.4	2.0	60.4	1,208.7	NO
Southport Stevedore	358.5	3081.8	30.0	61.9	1,237.1	NO
Speedling, Inc.	354.1	3062.2	19.0	62.3	1,245.4	NO
Standard Sand & Silica	441.5	3118.2	286	55.4	1,108.3	NO
Standard Sand & Silica	441.5	3118.2	286	55.4	1,108.3	NO
Stauffer Chemical Company	365.3	3093.6	9.0	56.4	1,127.1	NO
Stilwell Foods of Florida	389.8	3098.9	2.0	39.8	795.1	NO
Sulfur Terminals Co	358.0	3090.0	9.0	61.7	1,233.7	NO
Sulfuric Acid Trading Company	349.0	3081.5	1204	68.2	1,363.1	NO
Sulfuric Acid Trading Company	349.0	3081.5	1204	68.2	1,363.1	NO
Sun Pac Foods	422.7	3092.6	62.0	24.5	490.7	NO
Surfacing Products of America	347.5	3037.6	153	75.4	1,507.1	NO
Surfacing Products of America	347.5	3037.6	153	75.4	1,507.1	NO
TECO Big Bend*	361.9	3075.0	7,897.0	54.4	1,088.6	YES
TECO Gannon	360.0	3087.5	5,857.0	59.0	1,179.5	YES
TECO Hooker's Point	358.0	3091.0	1,231.0	62.0	1,240.6	NO
TECO Polk	402.5	3067.4	438	13.6	271.9	YES
TECO Polk	402.5	3067.4	438	13.6	271.9	YES
Tampa Armature Works	365.6	3091.7	13.0	55.3	1,105.5	NO
Tampa Bay Crematory	372.9	3090.7	10.0	48.3	965.1	NO
Tampa Bay Stevedores Inc	358.3	3088.6	24.0	60.9	1,218.8	NO
Tampa City McKay Bay Refuse-to-Energy	360.0	3091.9	344.0	60.5	1,210.0	NO
Tampa Sand & Material	360.1	3092.2	17.0	60.5	1,210.5	NO
Tarmac Florida	362.8	3098.4	23.0	60.8	1,215.7	NO
Tarmac Florida Hialeah	362.8	3097.0	36.0	60.1	1,202.4	NO
The Florida Brewery	422.8	3104.7	121.0	36.3	726.8	NO
The Gibson-Homans	385.5	3094.8	21.0	56.7	1,134.2	NO
The Mancini Packing Company	421.4	3040.8	1.0	28.7	574.2	NO
Treasure Isle Inc.	378.0	3096.9	11.0	47.1	942.8	NO
Triangle Pacific Corp	413.3	3098.8	6.0	29.9	598.4	NO
Tropicana Products, Inc.	346.8	3040.9	969	74.7	1,493.8	NO
Tropicana Products, Inc.	346.8	3040.9	969	74.7	1,493.8	NO
US Agri-Chemicals Hwy 60	413.2	3086.3	443.0	17.5	350.5	YES
US Agri-Chemicals Hwy 630*	416.0	3069.0	1,071.0	0.0	0.0	YES
Union Camp Corp	402.0	3102.0	47.0	35.8	716.9	NO
Union Oil Company of California	358.0	3089.1	14.0	61.4	1,227.7	NO
Universal Waste & Transit	364.9	3093.7	7.0	56.8	1,135.1	NO
Unocal Chemical Division	358.4	3088.4	15.0	60.8	1,215.6	NO
Verlite Co	363.0	3098.1	64.0	60.5	1,209.3	NO
Vigoro Industries Inc.	427.9	3097.4	136.0	30.8	615.8	NO
W R Bonasal Co	363.6	3098.1	19.0	59.9	1,198.8	NO
W R Grace & Co	360.2	3093.0	11.0	60.7	1,214.8	NO
Wachula City Power	418.4	3047.0	21.0	22.1	442.6	NO
Westcon	375.3	3092.8	21.0	47.1	943.0	NO
Weyerhaeuser Co	362.8	3098.3	25.0	60.7	1,214.7	NO
Zipperer S. Agape Mortuary Services	363.0	3064.7	21.0	53.2	1,063.5	NO

**TABLE 5  
PM-10 FAAQS INVENTORY**

F A A Q S INVENTORY FOR U S AGRICHEMICALS Facility	UTM		PM (g/s)	Height (m)	Temper- ature (K)	Velocity (m/s)	Diameter (m)
	East	North					
	Agrico Chemical Co Pierce	403.7	3079.0	1.90	10.36	298.0	5.92
Agrico Chemical Co Pierce	403.7	3079.0	1.90	27.43	298.0	3.60	0.98
Agrico Chemical Co Pierce	403.7	3079.0	1.90	27.43	298.0	4.79	0.70
Agrico Chemical Co Pierce	403.7	3079.0	1.90	24.69	298.0	4.15	2.13
Agrico Chemical Co Pierce	403.7	3079.0	3.17	24.69	298.0	3.69	2.13
Agrico Chemical Co Pierce	403.7	3079.0	3.92	28.96	683.0	14.75	1.77
Agrico Chemical Co Pierce	403.7	3079.0	4.46	24.38	316.3	5.76	3.05
Agrico Chemical Co Pierce	403.7	3079.0	5.04	24.38	320.8	21.25	2.44
Agrico Chemical Co South Pierce	407.5	3071.5	0.03	16.15	298.0	1.72	0.46
Agrico Chemical Co South Pierce	407.5	3071.5	0.03	20.73	298.0	2.87	0.46
Agrico Chemical Co South Pierce	407.5	3071.5	0.03	29.26	298.0	1.15	0.40
Agrico Chemical Co South Pierce	407.5	3071.5	0.23	19.81	300.2	88.45	0.49
Agrico Chemical Co South Pierce	407.5	3071.5	0.26	19.81	310.2	5.48	0.49
Agrico Chemical Co South Pierce	407.5	3071.5	0.43	38.10	319.1	15.84	1.07
Agrico Chemical Co South Pierce	407.5	3071.5	0.55	26.82	307.4	9.24	0.91
Agrico Chemical Co South Pierce	407.5	3071.5	3.02	38.10	327.4	14.55	3.05
Agrico Chemical Co South Pierce	407.5	3071.5	4.00	3.05	344.1	20.69	0.55
Agrico Chemical Co South Pierce	407.5	3071.5	4.12	30.48	306.3	6.87	1.22
Agrico Chemical Co South Pierce	407.5	3071.5	4.32	18.29	323.0	9.70	0.30
Agrico Chemical Co South Pierce	407.5	3071.5	4.40	42.67	304.7	10.66	2.74
Agrico Chemical Co South Pierce	407.5	3071.5	5.07	24.38	296.9	7.80	3.35
Agrico Chemical Co South Pierce	407.5	3071.5	5.07	24.38	295.2	7.23	3.35
C F Industries Bonnie Mine Rd	408.4	3082.4	0.12	30.48	299.7	5.95	0.76
C F Industries Bonnie Mine Rd	408.4	3082.4	0.83	62.79	338.6	6.51	2.13
C F Industries Bonnie Mine Rd	408.4	3082.4	1.27	16.76	298.0	9.01	1.37
C F Industries Bonnie Mine Rd	408.4	3082.4	1.38	10.97	588.6	13.45	0.76
C F Industries Bonnie Mine Rd	408.4	3082.3	1.50	62.79	333.0	6.69	2.13
C F Industries Bonnie Mine Rd	408.4	3082.4	1.76	19.81	298.0	15.36	1.22
C F Industries Bonnie Mine Rd	408.4	3082.4	2.45	36.58	333.0	17.17	2.29
C F Industries Bonnie Mine Rd	408.4	3082.4	4.95	41.45	333.0	18.05	2.83
C F Industries Bonnie Mine Rd	408.4	3082.4	5.10	42.67	298.0	21.73	0.76
C F Industries Bonnie Mine Rd	408.4	3082.4	5.10	36.88	338.6	18.76	1.83
C F Industries Bonnie Mine Rd	408.4	3082.4	5.12	41.15	298.0	7.92	1.52
C F Industries Bonnie Mine Rd	408.4	3082.4	5.44	35.66	338.6	11.31	2.44
C F Industries Bonnie Mine Rd	408.4	3082.4	15.27	42.70	298.0	21.60	0.80
Conserv Inc.	398.7	3084.2	0.20	55.47	310.8	2.97	0.43
Conserv Inc.	398.7	3084.2	0.29	8.23	533.0	13.74	0.61
Conserv Inc.	398.7	3084.2	0.43	11.89	533.0	8.91	0.98
Conserv Inc.	398.7	3084.2	0.63	63.09	330.2	21.12	0.43
Conserv Inc.	398.7	3084.2	0.63	63.09	330.2	21.12	0.43
Conserv Inc.	398.7	3084.2	0.63	54.56	338.6	14.37	0.18
Conserv Inc.	398.7	3084.2	1.18	15.85	321.9	20.18	0.76
Conserv Inc.	398.7	3084.2	1.18	24.38	327.4	23.81	1.07
Conserv Inc.	398.7	3084.2	1.18	21.95	360.8	31.08	0.98
Conserv Inc.	398.7	3084.2	1.38	63.09	333.0	51.22	0.27
Conserv Inc.	398.7	3084.2	4.43	24.69	327.4	3.77	2.29
Conserv Inc.	398.7	3084.2	4.92	12.80	310.8	10.60	1.22
Conserv Inc.	398.7	3084.2	28.91	45.72	349.7	10.31	2.29
Consolidated Minerals Plant City	393.8	3096.3	0.03	15.24	294.1	20.70	0.15
Consolidated Minerals Plant City	393.8	3096.3	0.03	21.34	298.0	12.58	0.18
Consolidated Minerals Plant City	393.8	3096.3	0.06	29.57	298.0	13.58	0.30
Consolidated Minerals Plant City	393.8	3096.3	0.06	3.05	338.6	18.19	0.24
Consolidated Minerals Plant City	393.8	3096.3	0.09	14.02	298.0	17.97	0.18
Consolidated Minerals Plant City	393.8	3096.3	0.09	21.34	298.0	31.89	0.37
Consolidated Minerals Plant City	393.8	3096.3	0.12	6.10	605.2	20.21	0.37
Consolidated Minerals Plant City	393.8	3096.3	0.12	15.85	298.0	19.14	0.43
Consolidated Minerals Plant City	393.8	3096.3	0.12	16.46	298.0	19.14	0.43
Consolidated Minerals Plant City	393.8	3096.3	0.14	20.42	298.0	11.50	0.46
Consolidated Minerals Plant City	393.8	3096.3	0.17	32.61	298.0	33.69	0.37
Consolidated Minerals Plant City	393.8	3096.3	0.20	16.46	298.0	19.96	0.55
Consolidated Minerals Plant City	393.8	3096.3	0.20	13.72	349.7	14.17	0.55
Consolidated Minerals Plant City	393.8	3096.3	0.20	17.37	298.0	28.75	0.46
Consolidated Minerals Plant City	393.8	3096.3	0.26	24.69	315.2	9.05	0.82
Consolidated Minerals Plant City	393.8	3096.3	0.26	18.90	298.0	24.95	0.55
Consolidated Minerals Plant City	393.8	3096.3	0.66	9.75	295.8	10.76	0.46
Consolidated Minerals Plant City	393.8	3096.3	0.86	30.48	319.1	0.01	0.91
Consolidated Minerals Plant City	393.8	3096.3	0.89	10.36	327.4	19.16	0.82
Consolidated Minerals Plant City	393.8	3096.3	1.64	46.33	300.2	9.61	1.77
Consolidated Minerals Plant City	393.8	3096.3	1.67	30.48	338.0	11.98	1.37
Consolidated Minerals Plant City	393.8	3096.3	1.76	24.38	319.1	6.20	1.68
Consolidated Minerals Plant City	393.8	3096.3	1.76	46.33	295.2	11.16	1.77
Consolidated Minerals Plant City	393.8	3096.3	1.76	46.33	299.7	12.14	1.77
Consolidated Minerals Plant City	393.8	3096.3	1.90	45.72	313.0	18.34	1.77

**TABLE 5**  
**PM-10 FAAQS INVENTORY**  
**(CONTINUED)**

F A A Q S INVENTORY FOR U S AGRICHEMICALS Facility	UTM		PM (g/s)	Height (m)	Temper- ature (K)	Velocity (m/s)	Diameter (m)
	East	North					
Consolidated Minerals Plant City	393.8	3096.3	2.10	46.33	298.0	13.17	1.77
Consolidated Minerals Plant City	393.8	3096.3	4.40	24.38	308.0	79.21	1.37
Estech	411.5	3074.2	0.95	10.97	315.8	11.11	0.34
Estech	411.5	3074.2	1.27	14.63	311.9	11.43	0.34
Estech	411.5	3074.2	1.27	10.97	311.9	7.83	0.34
Estech	411.5	3074.2	1.58	18.90	338.6	11.58	2.04
Estech	411.5	3074.2	3.89	18.29	334.1	6.24	3.05
Estech-Duette Phosphate Mine	388.9	3047.2	7.20	18.29	318.0	30.31	0.85
Estech-Duette Phosphate Mine	388.9	3047.2	7.20	18.29	342.4	14.86	2.87
Estech-Duette Phosphate Mine	388.9	3047.2	7.20	38.10	321.3	30.24	1.07
Farmland Industries Green Bay Plant	409.5	3080.1	0.06	12.19	366.3	0.03	0.61
Farmland Industries Green Bay Plant	409.5	3080.1	0.09	12.19	366.3	0.03	0.61
Farmland Industries Green Bay Plant	409.5	3080.1	0.09	12.19	366.3	0.03	0.61
Farmland Industries Green Bay Plant	409.5	3080.1	0.09	12.19	366.3	2.67	0.61
Farmland Industries Green Bay Plant	409.5	3080.1	0.66	30.48	349.7	8.70	2.29
Farmland Industries Green Bay Plant	409.5	3080.1	0.66	30.48	351.9	9.74	2.29
Farmland Industries Green Bay Plant	409.5	3080.1	2.94	39.32	326.9	12.41	2.29
Farmland Industries Green Bay Plant	409.5	3080.1	2.94	56.39	338.0	5.17	1.52
Farmland Industries Green Bay Plant	409.5	3080.1	3.22	39.32	327.4	7.47	2.29
Farmland Industries Green Bay Plant	409.5	3080.1	3.22	39.62	311.9	5.66	1.22
Farmland Industries Green Bay Plant	409.5	3080.1	3.31	50.29	298.0	8.86	0.70
Farmland Industries Green Bay Plant	409.5	3080.1	3.40	39.32	327.4	6.84	2.29
Farmland Industries Green Bay Plant	409.5	3080.1	3.43	26.82	349.7	19.09	0.73
Farmland Industries Green Bay Plant	409.5	3080.1	3.80	39.32	319.1	10.66	2.13
Farmland Industries Green Bay Plant	409.5	3080.1	3.80	39.93	298.0	9.92	2.44
Farmland Industries Green Bay Plant	409.5	3080.1	4.46	27.43	305.2	5.48	0.91
Farmland Industries Green Bay Plant	409.5	3080.1	6.62	35.05	349.7	22.72	0.67
Florida Power & Light	367.2	3054.1	108.93	152.10	425.8	23.61	7.99
Florida Power & Light	367.2	3054.1	108.93	152.10	425.8	23.98	7.92
Hardee Power Station Ft. Green Springs	404.8	3057.3	14.38	22.86	389.0	23.90	4.88
IMC Ft. Lonesome	389.6	3067.9	3.14	38.10	339.1	16.80	2.44
IMC Ft. Lonesome	389.6	3067.9	3.17	38.10	339.1	15.16	2.44
IMC Ft. Lonesome	389.6	3067.9	6.45	45.72	316.3	8.43	0.82
IMC Ft. Lonesome	389.6	3067.9	6.77	22.86	314.7	17.33	0.85
IMC Fertilizer Kingsford	398.2	3075.7	0.14	17.68	310.8	15.23	0.58
IMC Fertilizer Kingsford	398.2	3075.7	0.78	10.67	296.9	10.35	0.76
IMC Fertilizer Kingsford	398.2	3075.7	3.25	21.34	346.9	14.52	2.13
IMC Fertilizer Kingsford	398.2	3075.7	3.51	18.29	316.3	19.66	0.76
IMC Fertilizer Kingsford	398.2	3075.7	4.46	32.31	308.0	20.70	0.76
IMC Fertilizer New Wales	396.7	3079.4	0.06	30.48	311.9	12.58	0.55
IMC Fertilizer New Wales	396.7	3079.4	0.12	30.48	299.7	54.62	0.46
IMC Fertilizer New Wales	396.7	3079.4	0.17	33.53	316.3	13.86	0.43
IMC Fertilizer New Wales	396.7	3079.4	0.20	5.49	313.6	9.70	0.30
IMC Fertilizer New Wales	396.7	3079.4	0.20	26.21	299.7	16.50	0.21
IMC Fertilizer New Wales	396.7	3079.4	0.35	32.61	338.6	15.84	1.07
IMC Fertilizer New Wales	396.7	3079.4	0.43	18.29	313.6	9.70	0.30
IMC Fertilizer New Wales	396.7	3079.4	0.43	13.72	313.6	9.70	0.30
IMC Fertilizer New Wales	396.7	3079.4	0.43	26.52	438.6	86.24	0.46
IMC Fertilizer New Wales	396.7	3079.4	0.43	32.00	313.6	42.69	0.30
IMC Fertilizer New Wales	396.7	3079.4	0.43	26.52	438.6	86.24	0.46
IMC Fertilizer New Wales	396.7	3079.4	0.43	34.14	313.6	10.35	0.30
IMC Fertilizer New Wales	396.7	3079.4	0.43	17.37	352.4	22.96	0.40
IMC Fertilizer New Wales	396.7	3079.4	0.43	5.18	380.2	38.27	0.40
IMC Fertilizer New Wales	396.7	3079.4	0.43	32.61	313.6	20.96	0.55
IMC Fertilizer New Wales	396.7	3079.4	0.43	19.81	352.4	14.37	0.46
IMC Fertilizer New Wales	396.7	3079.4	0.43	34.14	313.6	10.35	0.30
IMC Fertilizer New Wales	396.7	3079.4	0.43	35.97	313.6	10.35	0.30
IMC Fertilizer New Wales	396.7	3079.4	0.43	31.70	313.6	21.48	0.49
IMC Fertilizer New Wales	396.7	3079.4	0.43	35.66	313.6	38.81	0.30
IMC Fertilizer New Wales	396.7	3079.4	0.43	18.29	313.6	16.17	0.30
IMC Fertilizer New Wales	396.7	3079.4	0.46	19.81	313.6	51.75	0.30
IMC Fertilizer New Wales	396.7	3079.4	0.58	28.65	352.4	10.78	1.83
IMC Fertilizer New Wales	396.7	3079.4	0.60	12.19	315.2	20.12	0.91
IMC Fertilizer New Wales	396.7	3079.4	0.66	7.62	333.0	10.49	1.31
IMC Fertilizer New Wales	396.7	3079.4	0.78	51.82	316.3	1.97	1.52
IMC Fertilizer New Wales	396.7	3079.4	0.81	12.19	299.7	9.39	0.27
IMC Fertilizer New Wales	396.7	3079.4	1.78	52.12	316.3	17.97	1.83
IMC Fertilizer New Wales	396.7	3079.4	1.78	52.12	316.3	17.97	1.83
IMC Fertilizer New Wales	396.5	3079.0	1.93	40.54	333.0	21.43	1.22
IMC Fertilizer New Wales	396.7	3079.4	2.13	21.64	299.7	10.35	0.30
IMC Fertilizer New Wales	396.5	3079.3	2.53	40.54	313.6	1.01	0.91
IMC Fertilizer New Wales	396.7	3079.4	3.34	52.43	313.6	15.97	1.37
IMC Fertilizer New Wales	396.5	3079.0	3.60	40.54	313.6	15.18	2.13

**TABLE 5  
PM-10 FAAQS INVENTORY  
(CONTINUED)**

F A A Q S INVENTORY FOR U S A G R I - C H E M I C A L S		UTM		PM	Height	Temper- ature	Velocity	Diameter
Facility		East	North	(g/s)	(m)	(K)	(m/s)	(m)
IMC Fertilizer	New Wales	396.5	3079.2	3.63	40.54	315.2	18.87	1.83
IMC Fertilizer	New Wales	396.5	3079.1	4.26	40.54	316.3	20.66	1.83
IMC Fertilizer	New Wales	396.8	3079.4	4.64	52.43	321.9	13.14	2.44
IMC Fertilizer	Noralyn Mine	414.7	3080.3	0.35	8.23	296.9	4.85	0.61
IMC Fertilizer	Noralyn Mine	414.7	3080.3	1.27	16.46	319.1	19.40	0.30
IMC Fertilizer	Noralyn Mine	414.7	3080.3	1.90	13.11	303.0	18.11	0.61
IMC Fertilizer	Noralyn Mine	414.7	3080.3	1.90	8.23	302.4	16.17	0.61
IMC Fertilizer	Noralyn Mine	414.7	3080.3	1.90	8.23	302.4	16.17	0.61
IMC Fertilizer	Noralyn Mine	414.7	3080.3	2.39	7.32	316.3	8.09	0.61
IMC Fertilizer	Noralyn Mine	414.7	3080.3	3.22	7.62	296.9	11.50	0.46
IMC Fertilizer	Noralyn Mine	414.7	3080.3	3.83	11.58	333.0	7.17	0.58
IMC Fertilizer	Noralyn Mine	414.7	3080.3	3.83	11.58	333.0	7.17	0.58
IMC Fertilizer	Noralyn Mine	414.7	3080.3	4.35	41.15	288.6	16.75	0.85
IMC Fertilizer	Noralyn Mine	414.7	3080.3	4.38	23.17	394.1	17.30	1.98
IMC Fertilizer	Noralyn Mine	414.7	3080.3	4.40	45.72	310.8	15.84	1.07
IMC Fertilizer	Noralyn Mine	414.7	3080.3	4.72	16.76	341.3	8.82	2.83
IMC Fertilizer	Noralyn Mine	414.7	3080.3	4.98	7.32	316.3	8.09	0.61
IMC Fertilizer	Noralyn Mine	414.7	3080.3	5.21	11.58	333.0	7.17	0.58
IMC/Uranium Recovery	C F Industries	408.4	3082.8	0.12	15.24	313.6	8.09	0.61
IMC/Uranium Recovery	C F Industries	408.4	3082.8	0.12	30.48	299.7	5.95	0.76
IMC/Uranium Recovery	C F Industries	408.4	3082.8	0.40	27.43	299.7	16.50	0.21
IMC/Uranium Recovery	C F Industries	408.4	3082.8	0.63	25.91	296.9	11.64	0.15
IMC/Uranium Recovery	C F Industries	408.4	3082.8	1.47	30.48	321.9	12.98	0.55
IMC/Uranium Recovery	C F Industries	408.4	3082.8	2.42	27.43	299.7	16.50	0.21
IMC/Uranium Recovery	C F Industries	408.4	3082.8	5.82	18.29	302.4	9.50	1.07
IMC/Uranium Recovery	C F Industries	408.4	3082.8	23.90	25.91	296.9	11.64	0.15
Lakeland City Power	McIntosh Power Station	409.2	3106.1	0.12	6.10	652.4	23.54	0.79
Lakeland City Power	McIntosh Power Station	409.2	3106.1	0.12	6.10	652.4	23.54	0.79
Lakeland City Power	McIntosh Power Station	409.2	3106.1	0.58	10.97	791.3	0.39	2.80
Lakeland City Power	McIntosh Power Station	409.2	3106.1	12.41	45.72	419.1	23.96	2.74
Lakeland City Power	McIntosh Power Station	409.2	3106.1	14.05	47.55	402.4	21.29	3.17
Lakeland City Power	McIntosh Power Station	409.2	3106.1	40.82	76.20	349.7	32.85	4.88
Mobil Mining & Minerals	SR 676	398.4	3085.3	0.06	24.08	349.7	14.64	0.24
Mobil Mining & Minerals	SR 676	398.4	3085.1	0.14	4.57	312.4	16.50	0.43
Mobil Mining & Minerals	SR 676	398.4	3085.3	0.72	3.96	521.9	2.12	0.76
Mobil Mining & Minerals	SR 676	398.4	3085.2	1.12	30.48	338.6	19.02	1.10
Mobil Mining & Minerals	SR 676	398.4	3085.3	1.38	12.19	344.1	11.83	1.07
Mobil Mining & Minerals	SR 676	398.4	3085.2	1.41	24.38	326.9	11.68	0.49
Mobil Mining & Minerals	SR 676	398.4	3085.2	1.55	24.38	326.9	11.68	0.49
Mobil Mining & Minerals	SR 676	398.4	3085.3	1.96	25.91	299.7	14.54	1.68
Mobil Mining & Minerals	SR 676	398.2	3085.0	3.11	25.91	338.6	16.10	2.29
Mobil Mining & Minerals	SR 676	398.5	3085.1	4.55	24.38	344.1	12.65	2.29
Mobil Mining & Minerals	SR 676	398.5	3085.1	5.50	24.38	344.1	12.65	2.29
Mobil Mining & Minerals	SR 676	398.3	3085.1	7.00	25.91	296.9	19.40	1.52
Mobil-Electrophos Division		405.6	3079.4	1.93	18.29	321.9	14.34	0.76
Mobil-Electrophos Division		405.6	3079.4	2.42	25.60	321.9	25.77	1.07
Mobil-Electrophos Division		405.6	3079.4	3.63	29.26	306.9	7.70	2.13
Mobil-Electrophos Division		405.6	3079.4	3.71	15.24	308.0	18.73	0.91
Mobil-Electrophos Division		405.6	3079.4	15.95	30.48	319.1	12.34	1.31
Royster Company		406.8	3085.1	1.93	22.56	308.0	3.80	1.07
Seminole Fertilizer	(W R Grace)	409.8	3086.7	0.03	24.38	327.4	0.00	3.51
Seminole Fertilizer	(W R Grace)	409.8	3086.7	0.06	7.92	366.3	0.12	0.30
Seminole Fertilizer	(W R Grace)	409.8	3086.7	0.06	10.36	366.3	0.12	0.30
Seminole Fertilizer	(W R Grace)	409.8	3086.7	0.06	6.10	366.3	17.46	0.30
Seminole Fertilizer	(W R Grace)	409.8	3086.7	0.06	7.92	366.3	0.12	0.30
Seminole Fertilizer	(W R Grace)	409.8	3086.7	0.06	9.45	366.3	0.03	0.61
Seminole Fertilizer	(W R Grace)	409.8	3086.7	0.09	17.98	317.4	9.70	0.61
Seminole Fertilizer	(W R Grace)	409.8	3086.7	0.09	30.48	260.8	15.52	1.52
Seminole Fertilizer	(W R Grace)	409.8	3086.7	0.12	10.67	305.2	9.98	0.55
Seminole Fertilizer	(W R Grace)	409.8	3086.7	0.12	10.67	305.2	9.98	0.55
Seminole Fertilizer	(W R Grace)	409.8	3086.7	0.12	10.67	305.2	9.98	0.55
Seminole Fertilizer	(W R Grace)	409.8	3086.7	0.26	12.80	307.4	9.41	1.16
Seminole Fertilizer	(W R Grace)	409.8	3086.7	0.43	30.48	300.2	9.70	0.61
Seminole Fertilizer	(W R Grace)	409.8	3086.7	0.43	16.15	301.9	4.19	0.67
Seminole Fertilizer	(W R Grace)	409.8	3086.7	0.46	30.48	324.7	9.70	0.61
Seminole Fertilizer	(W R Grace)	409.8	3086.7	0.52	14.02	296.9	8.09	0.61
Seminole Fertilizer	(W R Grace)	409.8	3086.7	0.58	20.73	294.1	2.46	0.52
Seminole Fertilizer	(W R Grace)	409.8	3086.7	0.58	16.15	294.1	20.21	0.12
Seminole Fertilizer	(W R Grace)	409.8	3086.7	0.58	14.02	298.0	15.16	0.24
Seminole Fertilizer	(W R Grace)	409.8	3086.7	0.63	27.43	296.9	11.37	0.98
Seminole Fertilizer	(W R Grace)	409.8	3086.7	0.63	30.48	294.1	13.20	2.13
Seminole Fertilizer	(W R Grace)	409.8	3086.7	0.75	21.34	299.7	21.27	1.28
Seminole Fertilizer	(W R Grace)	409.8	3086.7	0.81	16.15	299.7	7.68	0.67

**TABLE 5**  
**PM-10 FAAQS INVENTORY**  
**(CONCLUDED)**

F A A Q S INVENTORY FOR U S AGRI-CHEMICALS Facility	UTM		PM (g/s)	Height (m)	Temper- ature (K)	Velocity (m/s)	Diameter (m)
	East	North					
Seminole Fertilizer (W R Grace)	409.8	3086.7	1.27	15.24	294.1	8.02	0.34
Seminole Fertilizer (W R Grace)	409.9	3087.0	1.30	60.96	346.9	28.46	1.52
Seminole Fertilizer (W R Grace)	409.9	3087.0	1.35	60.96	341.3	24.58	1.52
Seminole Fertilizer (W R Grace)	409.8	3086.7	1.38	22.56	305.2	9.98	0.55
Seminole Fertilizer (W R Grace)	409.8	3086.7	1.38	24.38	299.7	17.90	0.52
Seminole Fertilizer (W R Grace)	409.9	3087.0	1.73	45.72	304.1	9.32	2.04
Seminole Fertilizer (W R Grace)	409.8	3086.7	1.93	16.76	298.0	17.42	1.07
Seminole Fertilizer (W R Grace)	409.8	3086.7	1.93	16.76	294.1	17.42	1.07
Seminole Fertilizer (W R Grace)	409.8	3086.7	1.93	16.76	294.1	17.42	1.07
Seminole Fertilizer (W R Grace)	409.9	3087.0	2.82	40.23	316.3	26.40	2.13
Seminole Fertilizer (W R Grace)	409.8	3086.7	3.17	24.38	313.6	16.63	2.01
Seminole Fertilizer (W R Grace)	409.8	3086.7	3.22	24.38	294.1	8.38	0.76
Seminole Fertilizer (W R Grace)	409.9	3087.0	3.34	60.96	346.9	28.46	1.52
Seminole Fertilizer (W R Grace)	409.8	3086.0	3.77	15.24	333.0	17.29	2.04
Seminole Fertilizer (W R Grace)	409.8	3086.0	3.77	15.24	333.0	17.29	2.04
Seminole Fertilizer (W R Grace)	409.8	3086.7	3.77	30.18	330.2	16.21	2.29
Seminole Fertilizer (W R Grace)	409.8	3086.7	33.60	30.48	324.7	13.40	2.04
TECO Big Bend	361.9	3075.0	0.03	42.37	333.0	18.19	0.49
TECO Big Bend	361.9	3075.0	0.06	54.56	298.6	21.04	0.52
TECO Big Bend	361.9	3075.0	0.06	54.56	298.6	21.04	0.52
TECO Big Bend	361.9	3075.0	0.06	54.56	298.6	21.04	0.52
TECO Big Bend	361.9	3075.0	0.66	31.09	394.1	16.04	0.76
TECO Big Bend	361.9	3075.0	2.10	34.44	394.1	123.77	0.27
TECO Big Bend	361.9	3075.0	4.17	10.67	816.3	15.17	4.57
TECO Big Bend	361.7	3075.2	4.17	22.86	770.8	18.74	4.27
TECO Big Bend	361.7	3075.5	4.17	22.86	770.8	18.74	4.27
TECO Big Bend	361.8	3075.0	50.44	149.35	404.7	13.02	7.32
TECO Big Bend	361.9	3075.0	50.96	149.35	404.7	13.74	7.32
TECO Big Bend	362.0	3075.0	51.97	149.35	410.2	14.47	7.32
TECO Big Bend	361.9	3075.0	54.61	149.35	341.9	18.21	7.32
TECO Gannon	360.0	3087.5	0.03	53.95	298.6	15.52	0.61
TECO Gannon	360.0	3087.5	0.03	53.34	298.6	21.49	0.52
TECO Gannon	360.0	3087.5	0.03	21.95	449.7	10.96	0.21
TECO Gannon	360.0	3087.5	0.03	53.34	298.6	21.49	0.52
TECO Gannon	360.0	3087.5	0.03	53.04	298.6	24.26	0.37
TECO Gannon	360.0	3087.5	0.03	53.34	298.6	21.49	0.52
TECO Gannon	360.0	3087.5	0.03	53.34	298.6	21.49	0.52
TECO Gannon	360.0	3087.5	0.14	32.61	449.7	30.37	0.30
TECO Gannon	360.0	3087.5	0.37	31.70	449.7	18.27	0.61
TECO Gannon	360.0	3087.5	15.40	10.67	816.3	136.61	1.52
TECO Gannon	360.0	3087.5	15.89	93.27	420.8	30.85	3.05
TECO Gannon	360.0	3087.5	15.89	93.27	415.8	28.90	3.05
TECO Gannon	360.0	3087.5	20.18	93.27	419.7	38.64	3.23
TECO Gannon	360.0	3087.5	23.69	93.27	426.9	22.97	3.05
TECO Gannon	360.0	3087.5	28.76	93.27	423.6	23.18	4.45
TECO Gannon	360.0	3087.5	47.91	93.27	433.0	24.74	5.36
US Agri-Chemicals Hwy 60	413.2	3086.3	2.85	22.56	299.7	48.51	0.61
US Agri-Chemicals Hwy 60	413.2	3086.3	4.87	39.93	327.4	11.09	2.13
US Agri-Chemicals Hwy 60	413.2	3086.3	5.04	19.20	308.6	9.31	1.52
US Agri-Chemicals Hwy 630	416.0	3069.0	0.23	28.35	326.9	10.66	1.52
US Agri-Chemicals Hwy 630	416.0	3069.0	0.49	1.83	405.2	104.86	0.09
US Agri-Chemicals Hwy 630	416.0	3069.0	2.48	21.03	315.2	22.16	0.52
US Agri-Chemicals Hwy 630	416.0	3069.0	3.78	42.60	315.2	23.20	0.82
US Agri-Chemicals Hwy 630	416.0	3069.0	5.07	15.85	334.7	10.96	1.83
TECO Polk KBA	402.5	3067.4	2.02	6.1	533	13.1	0.9
TECO Polk KBB	402.5	3067.4	7.43	45.7	400	16.79	5.8
TECO Polk KBC	402.5	3067.4	3.15	60.7	1033	9.14	1.07
FPC Bayboro C4	338.8	3071.3	8.14	12.2	755.4	6.54	6.98
FPC-Bartow TC2	342.4	3082.6	31.96	91.4	424.8	31.09	2.74
FPC-Bartow TD4	342.4	3082.6	12.8	13.7	772	22.25	5.27
FPC-Bartow TO3	342.4	3082.6	27.9	91.4	408.2	34.44	3.35
FPC-Bartow TO4	342.4	3082.6	0.04	9.1	541.5	5.18	0.91
FPC-Bartow TO9	342.4	3082.6	0.01	7.6	298.1	0.04	0.27

**TABLE 6**  
**PM-10 CLASS II AREA**  
**PSD INCREMENT INVENTORY**

Facility	UTM		PM* (g/s)	Height+ (m)	Temper- ature (K)	Velocity** (m/s)	Diameter (m)
	East	North					
Agrico Chemical Pierce	403.7	3,079.0	5.04	24.38	320.8	21.25	2.44
Agrico Chemical Pierce	403.7	3,079.0	3.92	28.96	683.0	14.75	1.77
Agrico South Pierce	407.5	3,071.3	49.10	45.70	350.0	39.06	1.60
CF Industries Bonnie Mine Road	408.4	3,082.4	15.27	42.70	298.0	21.60	0.80
CF Industries Bonnie Mine Road	408.4	3,082.4	2.45	36.58	333.0	17.17	2.29
CF Industries Bonnie Mine Road	408.4	3,082.4	4.95	41.45	333.0	18.05	2.83
Conserv Inc.	398.7	3,084.2	28.91	45.72	349.7	10.31	2.29
Conserv Inc.	398.7	3,084.2	4.92	12.80	310.8	10.60	1.22
FPC Bayboro C4	338.8	3071.3	8.14	12.2	755.4	6.54	6.98
FPC-Bartow TC2	342.4	3082.6	31.96	91.4	424.8	31.09	2.74
FPC-Bartow TD4	342.4	3082.6	12.8	13.7	772	22.25	5.27
FPC-Bartow TO3	342.4	3082.6	27.9	91.4	408.2	34.44	3.35
FPC-Bartow TO4	342.4	3082.6	0.04	9.1	541.5	5.18	0.91
FPC-Bartow TO9	342.4	3082.6	0.01	7.6	298.1	0.04	0.27
Farmland Industries Green Bay Plant	409.5	3,080.1	28.09	30.50	308.0	18.30	1.40
Florida Power & Light	367.2	3054.1	218	152.1	425.8	23.61	7.99
Hardee Power Station	404.8	3,057.4	1.89	22.90	389.0	23.90	4.88
IMC Ft. Lonesome	389.6	3,067.9	3.17	38.10	339.1	15.16	2.44
IMC Ft. Lonesome	389.6	3,067.9	3.14	38.10	339.1	16.80	2.44
IMC Ft. Lonesome	359.6	3,067.9	6.45	45.72	316.3	8.43	0.82
IMC Fertilizer Noralyn Mine	414.7	3,080.3	28.00	11.58	333.0	7.17	0.58
IMC/Uranium Recovery CF Industries	408.4	3,082.8	23.90	25.90	297.0	11.60	0.20
Lakeland City Power CT (Larsen)	409.2	3,102.8	1.89	30.48	783.0	28.22	5.79
Lakeland McIntosh	409.5	3,105.8	40.82	76.20	350.0	32.60	4.90
Lakeland McIntosh	409.5	3,105.8	14.00	45.70	419.0	23.77	2.74
Mobil-Electrophos Division	405.6	3,079.4	15.95	30.48	319.1	12.34	1.31
TECO Big Bend	361.9	3,079.4	167.30	149.40	342.0	20.00	7.32
TECO Big Bend	361.9	3,057.0	54.61	149.35	341.9	18.21	7.32
TECO Polk KBA	402.5	3067.4	2.02	6.1	533	13.1	0.9
TECO Polk KBB	402.5	3067.4	7.43	45.7	400	16.79	5.8
TECO Polk KBC	402.5	3067.4	3.15	60.7	1033	9.14	1.07
WR Grace/Seminole	409.8	3,087.0	13.61	15.24	333.0	17.10	2.00
WR Grace/Seminole	409.8	3,087.0	4.68	60.96	347.0	25.10	1.52

TABLE 7  
 SUMMARY OF AMBIENT AIR QUALITY STANDARD ANALYSIS FOR PM10  
 U. S. AGRI-CHEMICALS  
 POLK COUNTY, FLORIDA

METEOROLOGICAL DATA	PARTICULATE MATTER IMPACT ( $\mu\text{g}/\text{m}^3$ ) (1)	
	24-HOUR	ANNUAL
1987	74.85	12.35
1988	71.86	13.59
1989	88.21	17.45
1990	79.94	12.17
1991	68.03	12.96
Maximum Impact	88.21	17.45
Maximum Impact Plus Background (2)	118	47
Ambient Air Standard (Rule 62-272, FAC)	150	50

NOTE:

- (1) The predicted impacts represent the highest-high impact for the annual period and the highest second-high for the 24-hour period.
- (2) The maximum predicted impacts for the 24-hour and annual periods, including a conservative background PM10 concentration level (for Gibsonton) of  $30 \mu\text{g}/\text{m}^3$ , would still be below the ambient air quality standards.



TABLE 8  
SUMMARY OF CLASS II AREA PM10 INCREMENT ANALYSIS

U. S. AGRI-CHEMICALS  
POLK COUNTY, FLORIDA

METEOROLOGICAL DATA	PARTICULATE MATTER IMPACT ( $\mu\text{g}/\text{m}^3$ )	
	24-HOUR	ANNUAL
1987	20.49	3.53
1988	20.64	3.60
1989	28.43	4.43
1990	21.76	3.51
1991	19.48	3.41
Class II Increment (Rule 62-272, FAC)	30	17

NOTE:

- (1) The predicted impacts represent the highest-high impact for the annual period, and the highest second-high for the 24-hour period.



**ATTACHMENT 1**  
**DOCUMENTATION OF PM10 EMISSION INVENTORY UPDATES**



U.S. Agri-Chemicals Corporation  
3225 State Road 630 West  
Fort Meade, FL 33841-9799  
813 285 8121

**US**

**Agri-Chemicals**

A Sinochem Company

March 20, 1995

Pradeep Raval  
Koogler & Associates  
4014 NW 13th St  
Gainesville, FL 32609

Dear Pradeep:

RE: PSD-FL-222 (AC53-260190) Prill MAP

A review of the emission inventories showed that the following revisions are necessary:

NAAQS INVENTORY

1. U.S. Agri-Chemicals, Highway 60: There is not a source that emits 5.04 g/s.
2. U.S. Agri-Chemicals, Highway 630: We have permits for Rock Dryer, Sulfur Pit, Boiler, Sulfur Tank, and Rock Screening. The remaining sources should be removed.
3. FPC-Bartow TO3: This source is allowed 221.1 lbs/hr. The corresponding rate in terms of g/s is 27.9
4. Florida Power & Light: There are 2 identical sources, each emits 108.93 g/s. There is not a source that emits 15.95 g/s.
5. Lakeland City Power McIntosh: The rate of 408.56 g/s is incorrect. The correct value is 40.86 g/s.
6. Royster: There is not a source that emits 29.48 g/s.

CLASS II INVENTORY

1. Hardee Power Station: There are 3 identical sources each emits 5 lbs/hr. The corresponding rate in terms of g/s is 0.63
2. Lakeland McIntosh: The rate of 408.56 g/s is incorrect. The correct value is 40.86 g/s.

March 20, 1995

3. FPC-Bartow TO3: This source is allowed 221.1 lbs/hr. The corresponding rate in terms of g/s is 27.9

4. U.S. Agri-Chemicals Highway 630: There is not a source that emits 12.61 g/s.

Attached please find revisions to the emissions inventories as well as some APIS printouts to support the revisions. Due to the available time, we only checked sources with significant emission rates. Please contact me at (813)285-7123, ext. 115, if you have any questions.

Sincerely,

*Viet Ta*

Viet Ta  
Environmental Supervisor

cc: R. Brunk

THIS DISK CONTAINS PM-10 PSD ANALYSIS FILES IN ASCII FORMAT.  
THE FOLLOWING ARE ISCST2 OUTPUT FILES FOR US AGRI-CHEMICALS  
FT. MEADE FACILITY.

FOR PSD AND NAAQS PM-10 MODELING, THE SELF EXTRACTING  
ARCHIVE FILE;  
US-INVRV EXE 325,461 03-20-95

TO UNARCHIVE THIS FILE COPY IT TO A HARD DISK DRIVE AND TYPE THE FILE NAME.  
TO UNARCHIVE THE ISCST2 OUTPUT FILES, TYPE "US-INVRV" AND  
PRESS ENTER. THE FILES WILL AUTOMATICALLY UNARCHIVE TO THE HARD DISK DRIVE.  
THESE ARCHIVED FILES CONTAIN THE MODELING DATA DESCRIBED AS FOLLOWS;

CLASS 2 INVENTORY

USAC2R87 OUT	202,957	03-17-95	CLASS 2 IMPACT FOR 1987
USAC2R88 OUT	202,957	03-17-95	CLASS 2 IMPACT FOR 1988
USAC2R89 OUT	202,957	03-17-95	CLASS 2 IMPACT FOR 1989
USAC2R90 OUT	202,957	03-18-95	CLASS 2 IMPACT FOR 1990
USAC2R91 OUT	202,957	03-18-95	CLASS 2 IMPACT FOR 1991

FAAQS INVENTORY

USCFAQR7 OUT	284,483	03-20-95	FAAQS IMPACT FOR 1987
USCFAQR8 OUT	284,483	03-17-95	FAAQS IMPACT FOR 1988
USCFAQR9 OUT	284,483	03-18-95	FAAQS IMPACT FOR 1989
USCFAQR0 OUT	284,483	03-18-95	FAAQS IMPACT FOR 1990
USCFAQR1 OUT	284,483	03-18-95	FAAQS IMPACT FOR 1991

IF THERE ARE ANY QUESTIONS OR IF ADDITIONAL FILES  
ARE REQUIRED PLEASE CALL ME.

MARK KOLETZKE  
KOOGLER AND ASSOCIATES  
(904) 377-5822



KOOGLER & ASSOCIATES  
ENVIRONMENTAL SERVICES  
4014 NW THIRTEENTH STREET  
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RECEIVED

MAR 3 1995

Bureau of  
Air Regulation

KA 173-94-04

March 2, 1995

Mr. A. A. Linero  
Florida Department of  
Environmental Protection  
Twin Towers Office Building  
2600 Blair Stone Road  
Tallahassee, Florida 32399-2400

Subject: Submittal of Additional Information  
U.S. Agri-Chemicals Corporation  
PSD-FL-222 (AC53-260190) Prilled MAP Plant  
PSD-FL-223 (AC53-260192) Granular MAP/DAP Plant

Dear Mr. Linero:

This is in response to your letter dated November 23, 1994, and the U.S. Department of Interior letter dated December 15, 1994, for additional information on the above referenced projects.

The information provided in this response pertains to the application for the Prilled MAP plant. The information requested by FDEP on the proposed granular plant will be provided under separate cover.

In recognition of the ultimate capacity of an MAP plant "rated" at 40 tons per hour production capacity, it is requested that the proposed project be permitted for a maximum production rate of 60 tons per hour of prilled MAP, and for continuous operation. The information provided below is consistent with this request. Updated information for the proposed project is included in this response. It should be noted that this request does not significantly affect FDEP's project review.

The responses below are provided in the same order as the questions.

1. Since the MAP product is about 51% P2O5, the proposed Best Available Control Technology (BACT) fluoride emission limit of 0.046 pound of fluorides (F) per ton of Prilled MAP product is less stringent than the most recent (July 1992) Pipe Reactor/Granular MAP BACT limit of 0.060 pound F per ton of P2O5 input (Farmland's AC53-210886). Farmland's MAP BACT limit is equivalent to the DAP federal NSPS and pre-1994 DAP BACT limit. However, the typical BACT limit for DAP plants has been reduced from 0.060 to 0.0417 pound F per ton of P2O5 input with the issuance of IMC-Agrico's AC53-232681 in April of this year.

Therefore, assuming equivalency of fluoride emissions from the MAP and DAP processes, and from the Prilled vs. Granular processes, the fluoride emissions from the new Prilled MAP plant would be limited to 0.85 pound F per hour instead of the 1.84 figure proposed. Likewise, the fluoride emissions from the new Granular MAP/DAP plant would be limited to 2.88 pounds per hour instead of the 4.14 figure proposed. The Cargill (AC53-194504 & -08) limit of 0.046 pound F per ton of P2O5 that the Prilled MAP proposal is based on was not derived from a BACT determination for a new facility. It was a production increase with no increase in allowable emissions based on Cargill's fluoride allocation of 1.0 pound F per hour under the "0.4 existing plant emissions" rule (Rule 62-296.403(2), Florida Administrative Code (F.A.C.)). Please address these issues and revise the application accordingly.

RESPONSE:

USAC proposes to meet the FDEP's fluoride BACT determination of 0.0417 lb per ton of P2O5 input. The fluoride emission calculations are presented below.

The production rate based on P2O5 is:

$$\begin{aligned} \text{Product rate} &= 60 \text{ tph MAP} \times 0.51 \text{ ton P2O5/ton MAP} \\ &= 30.6 \text{ tph P2O5} \end{aligned}$$

The P2O5 input based on a 96% process efficiency (typical efficiency used by other fertilizer plants in Florida) is:

$$\begin{aligned} \text{P}_2\text{O}_5 \text{ Input} &= 30.6 \text{ tph P2O5}/0.96 \\ &= 31.9 \text{ tph P2O5} \end{aligned}$$

Therefore, the emission rate of fluorides is:

$$\begin{aligned} \text{Fluorides} &= 31.9 \text{ tph P2O5 input} \times 0.0417 \text{ lb F/ton P2O5 input} \\ &= 1.33 \text{ lbs/hr} \\ &\quad \times 8760 \text{ hrs/yr} \times \text{ton}/2000 \text{ lbs} \\ &= 5.8 \text{ tpy} \end{aligned}$$

2. The Prilled MAP application should describe the type of pond water makeup to be employed (i.e., fresh water or gypsum pond water).

RESPONSE:

The scrubbing system makeup water will be either fresh water or pond water. A side stream will recycle some scrubber water to the reactor feed tank. A scrubber pond is not planned. The scrubber system will be designed to meet the fluoride emission limit.



3. The use of allowable particulate matter emissions instead of the representative two-year average actual emissions cannot be used for netting out of PSD review (see 40 CFR 52.21 and Rule 62-212.400(2)(e)3, FAC). The only exception would be a situation in which no actual emission data exist and the limits for the emission units shut down were federally enforceable. The net emission increase will have to be recalculated using the most recent or representative two-year average actual emissions from the rock drying operation and the results are to be compared to the proposed potential/allowables. If the increase is significant, then the requirements (i.e., modeling analysis, BACT determination, etc.) of Rule 62-212.400(5), FAC, must be satisfied and provided to the Department.

RESPONSE:

Given the approach used by FDEP for emission netting purposes, USAC hereby withdraws the rock drying operation from this project. Therefore, the rock dryer operation will retain its current permit. As the particulate matter emissions from the proposed project, presented below, exceed the significant net emissions increase threshold of 25 tons, both a BACT determination and an ambient air quality analysis are required for particulate matter.

In reviewing the information in FDEP files, and based on our meeting with Mr. John Reynolds, the particulate matter BACT determination for IMC-Agrico's prilled MAP plant seems to be the most representative for the proposed prilled MAP project. The IMC-Agrico MAP BACT is representative for this project given the common prilled product. Other BACT determinations pertain to granular MAP production and are not representative of the prilled product manufacture and handling. The BACT determination for IMC-Agrico's plant indicates a particulate matter emission limit from the prill tower scrubber stack of 0.3 pound per ton MAP; 0.02 gr/dscf from the cooler baghouse stack; and, 3.6 lbs/hr from the MAP loadout system (based on voluntary restriction associated with ambient air quality modeling). In order to compare the emission limitations, the IMC-Agrico emission limits can be converted to limitations with a common denominator as follows:

Prill Tower PM = 0.3 lb/ton MAP

Cooler PM = 0.02 gr/dscf x 30,000 dscfm x 1b/7000 gr x 60 min/hr  
= 5.14 lb/hr  
x hr/50 tph MAP produced  
= 0.1 lb/ton MAP

Loadout PM = 3.6 lb/hr x hr/50 tph MAP produced  
= 0.072 lb/ton MAP





As the proposed project will have a common scrubber and stack for the tower and cooler, and a separate stack for the product loadout, the particulate matter emissions from the proposed MAP system are as follows:

$$\begin{aligned} \text{Tower/Cooler PM} &= (0.3 + 0.1) \text{ lb/ton MAP} \times 60 \text{ tph MAP} \\ &= 24 \text{ lb/hr} \\ &\quad \times 8760 \text{ hrs/yr} \times \text{ton}/2000 \text{ lbs} \\ &= 105.1 \text{ tpy} \\ \\ \text{Loadout PM} &= 0.072 \text{ lb/ton MAP} \times 60 \text{ tph MAP produced} \\ &= 4.32 \text{ lb/hr} \\ &\quad \times 8760 \text{ hrs/yr} \times \text{ton}/2000 \text{ lbs} \\ &= 18.9 \text{ tpy} \end{aligned}$$

In order to assure product moisture consistency prior to storage, the designer has added a 12 MMBtu/hr (0.012 MMCFH) natural gas fired air heater package to the cooler, to be utilized as and when needed. Assuming continuous operation at maximum heat input rate, the maximum potential annual emissions (tpy) from the heater, based on AP-42 factors, are as follows:

$$\begin{aligned} \text{PM} &= (6.2 + 7.5) \text{ lb/MMCF} \times 0.012 \text{ MMCF/hr} \\ &= 0.16 \text{ lb/hr} \\ &\quad \times 8760 \text{ hrs/yr} \times \text{ton}/2000 \text{ lbs} \\ &= 0.7 \text{ tpy} \\ \\ \text{SO}_2 &= 0.6 \text{ lb/MMCF} \times 0.012 \text{ MMCF/hr} \\ &= 0.007 \text{ lb/hr} \\ &\quad \times 8760 \text{ hrs/yr} \times \text{ton}/2000 \text{ lbs} \\ &= 0.03 \text{ tpy} \\ \\ \text{NO}_x &= 140 \text{ lb/MMCF} \times 0.012 \text{ MMCF/hr} \\ &= 1.68 \text{ lb/hr} \\ &\quad \times 8760 \text{ hrs/yr} \times \text{ton}/2000 \text{ lbs} \\ &= 7.4 \text{ tpy} \\ \\ \text{CO} &= 35 \text{ lb/MMCF} \times 0.012 \text{ MMCF/hr} \\ &= 0.42 \text{ lb/hr} \\ &\quad \times 8760 \text{ hrs/yr} \times \text{ton}/2000 \text{ lbs} \\ &= 1.8 \text{ tpy} \\ \\ \text{TOC} &= 5.8 \text{ lb/MMCF} \times 0.012 \text{ MMCF/hr} \\ &= 0.07 \text{ lb/hr} \\ &\quad \times 8760 \text{ hrs/yr} \times \text{ton}/2000 \text{ lbs} \\ &= 0.3 \text{ tpy} \end{aligned}$$

It should be noted that the above uncontrolled products of natural gas combustion do not alter the pollutants subject to PSD review. The net



contemporaneous emission changes for the proposed project are the emissions associated with the proposed project. The particulate matter emissions from the natural gas fired unit would be subject to BACT and ambient air quality analysis. Natural gas is proposed as BACT for particulate matter from the heating unit. The ambient air quality analysis addresses the particulate matter emissions from the tower/cooler, including the heating unit.

The following design information is provided for the proposed project:

Tower/Cooler Stack:	Height - 72 ft. Diameter - 9 ft. Temperature - 138°F Flow - 180,000 acfm
Loadout Baghouse Vent:	Height - 50 ft. Diameter - 16.75 inches Temperature - 80°F Flow - 4300 acfm
Venturi Scrubber:	Efficiency - 99% Pressure Drop - 8" to 40" Water Maximum Total Liquid Flow - 1760 gpm
Baghouse:	Efficiency - 99.98% Filter Area - 358 sq. ft. Static Pressure - 2" to 8"

4. The National Park Service may have additional questions about the impacts of fluoride emissions on the Chassahowitzka PSD Class I area. They may need more time to review the proposal since the applications were delayed getting to the Bureau because they were filed with the district office.

RESPONSE:

The NPS questions, dated December 15, 1994, are addressed below.

PSD Applicability

The application provides net emission increase calculations to determine which pollutants are subject to PSD review. The calculations use allowable permitted emissions to offset the proposed emission increases. As you know, net emission increase calculations must be based on actual, not allowable emissions. It is not clear if, in this case, allowable emissions are equal to actual. If actual emissions are less, the applicant should



reevaluate PSD applicability based on actual emissions and perform or revise impact and control analyses accordingly.

RESPONSE:

Please refer to RESPONSE No. 3 above.

Best Available Control Technology (BACT)

The applicant proposes to meet a fluoride emission rate of 0.06 pounds per ton of P2O5 input at their DAP plant. A recent BACT determination for an IMC Agrico Diammonium Phosphate plant requires a BACT limit of 0.0417 pounds per ton of P2O5 input. BACT should be set at the lower level unless the applicant provides information demonstrating that 0.0417 is not an appropriate level for this particular plant.

RESPONSE:

Please refer to RESPONSE No. 1 above.

Air Quality Modeling Analysis

The applicant incorrectly concludes that because the proposed facilities are more than 100 km from a Class I area, analyses of impacts at the Class I area are not necessary. The determination of whether a Class I area impact analysis is required is made on a case-by-case basis. The Environmental Protection Agency has stated that "large sources located at distances greater than 100 kilometers need to be considered when such impacts reasonably could affect the outcome of the Class I analysis." The need for a Class I impact analysis cannot be decided until the amounts of the proposed emissions increases are clarified.

No increment analysis or viability impact analysis was performed for the Class I area. If the proposed project is PSD significant for particulate matter, these analyses must be done. In addition, fluoride concentrations at the Class I area should be modeled.

RESPONSE:

The Class I area analyses are presented in Attachment 1. The inputs and the results of the ambient air impact analysis are summarized in Attachment 2. The modeling output is provided on disk.



Air Quality Related Values (AQRV) Analysis

As noted above, USAC did not analyze impacts, including AQRV impacts, on the Class I area. We are particularly concerned with cumulative fluoride impacts to vegetation and wildlife at Chassahowitzka WA. We would like the applicant to discuss these impacts in an AQRV analysis.

RESPONSE:

The AQRV analysis is presented in Attachment 1.

In accordance with the discussions with FDEP staff, the Class II area ambient air quality analysis, based on an extensive inventory currently being updated, will be submitted under separate cover.

As you are aware, USAC is under considerable pressure to maintain the project schedule. Consequently, we are available to you at all times should any questions arise. We appreciate your guidance and continued support of our application and the project's timely conclusion.

If you have any questions, please call Pradeep Raval or me.

Very truly yours,

KOOGLER & ASSOCIATES

John B. Koogler, Ph.D., P.E.

JBK:PAR:wa  
Enc.

c: Steve Susick, USAC

*D. Reynolds*  
*R. Zemaney*  
*D. Krasil, SW District*  
*S. Muehl, Polk Co.*  
*O. Naples, EPA*  
*G. Bernhardt, NPS*



## ATTACHMENT 1

### 1.0 IMPACTS ON SOILS, VEGETATION AND VISIBILITY

#### 1.1 IMPACT ON SOILS AND VEGETATION

The U. S. Environmental Protection Agency was directed by Congress to develop primary and secondary ambient air quality standards. The primary standards were to protect human health and the secondary standards were to "... protect the public welfare from any known or anticipated adverse effects of a pollutant." The public welfare was to include soils, vegetation and visibility.

As a basis for promulgating the air quality standards, EPA undertook studies related to the effects of all major air pollutants and published criteria documents summarizing the results of the studies. The studies included in the criteria documents were related to both acute and chronic effects of air pollutants. Based on the results of these studies, the criteria documents recommended air pollutant concentration limits for various periods of time that would protect against both chronic and acute effects of air pollutants with a reasonable margin of safety.

The air quality modeling that has been conducted as a requirement for the PSD application demonstrates that the levels of particulate matter expected in the vicinity of the proposed project are well below the ambient air quality standards. As a result, it is reasonable to conclude that there will be no adverse effect to the soils, vegetation or visibility of the area.

The air quality modeling demonstrates that the levels of fluoride expected from the proposed project will be in line with levels from similar fertilizer plants evaluated by FDEP in the recent past. The fluoride monitoring conducted by several fertilizer companies in the area in accordance with past FDEP requirements had shown little or no effect on vegetation from airborne fluorides at even higher concentrations than those evaluated for this project.

The USAC plant property and the surrounding areas are comprised of mining lands (phosphate), flatwoods, marshes, and sloughs. The soils of the area are primarily sandy and are typically low in both clay and silt content. These characteristics and the semi-tropic climatic factors of high temperature and rainfall are the natural factors which determine the terrestrial communities of the region.

The land in the vicinity of the USAC plant supports various plant communities. Much of the natural vegetation on the site and the surrounding areas has been altered due to mining and industrial use; primarily the phosphate fertilizer industry. As a result of mining and industrial activity, there is very little undisturbed land in existence in the vicinity of the plant. As a result, no adverse impacts from the



proposed project are expected on the soils and vegetation in the vicinity of the facility.

## 1.2 GROWTH RELATED IMPACTS

The proposed project will require a minimal increase in personnel to operate the plant. Also, the increase in fertilizer production may cause a slight increase in vehicular traffic but will have a negligible impact on traffic in the area as compared with traffic levels that presently exist. Therefore, no additional growth impacts are expected as a result of the proposed project.

## 1.3 VISIBILITY IMPACTS

The proposed project will result in emissions of particulate matter and therefore has the potential for adverse impacts on visibility.

A screening approach suggested by EPA (Workbook for Plume Visual Impact Screening and Analysis, 1988) was conducted using the VISCREEN model. The emissions of particulate matter were input to the model. The VISCREEN - Level 1 modeling results (attached) indicate that there will be no adverse visibility impacts from the proposed project.

## 1.4 IMPACTS ON AIR QUALITY RELATED VALUES FOR CLASS I AREA

In the previous section, the impact of the air emission increases on air quality related values in the vicinity of the proposed project was addressed. The analysis addressed in this section extends the review of the impact of increased emissions on air quality related values to the Chassahowitzka Class I PSD area; an area in excess of 120 kilometers northwest of the USAC plant.

### 1.4.1 Impact on Vegetation

The response of vegetation to air pollutants is influenced by the concentration of the pollutant, the duration of the exposure and the frequency of the exposure. The pattern of exposure expected from a single facility is that of a few episodes of relatively high concentrations interdispersed with long periods of no exposure or extremely low concentrations. This is the pattern of exposure that would be expected from fluorides and particulate matter emissions from the proposed project at Chassahowitzka.

The vegetation in the Chassahowitzka area is characterized by flatwoods, brackish-water, marine and halothyctic terrestrial species. Predominant tree species are slash pine, laurel oak, sweet gum and palm. Other plants in the area include needlegrass rush, seashore saltgrass, marsh hay and red mangrove.



Vegetation responds to a dose of an air pollutant with a dose being defined as the product of the concentration of the pollutant and the duration of the exposure. The maximum expected concentrations of fluorides and particulate matter in the Chassahowitzka area resulting from the increased emissions from USAC will be less than significant. In perspective, it should be noted that particulate matter concentration in the form of salt deposition in coastal areas are in the range of 25-300 pounds per acre per year and may be as high as 4000 pounds per acre per year on exposed shorelines.

#### 1.4.2 Impact on Soils

The major soil classification in the Chassahowitzka area is Weeki Wachee-Durbin muck. This is an euic, hyderthermic typic sulfhemist that is characterized by high levels of sulfur and organic matter. This soil is flooded daily with the advent of high tide and the pH ranges between 6.1 and 7.8. The upper level of this soil may contain as much as four percent sulfur (USDA, 1991).

Based upon the insignificant fluoride and particulate matter concentrations in the Chassahowitzka area resulting from the increased emissions from the USAC plant, it is not expected that there will be any adverse impact on the native soils.

#### 1.4.3 Impacts on Wildlife

As the predicted fluoride and particulate matter levels are insignificant, the proposed project is not expected to have any impact on the wildlife in the Chassahowitzka area.

#### 1.4.4 Visibility Impairment Analysis

Visibility impairment analysis was performed to determine potential visibility effects of the proposed project in the Chassahowitzka area. The VISCREEN - Level 1 modeling results (attached) indicate that no adverse visibility impacts are expected within the Class I area as a result of the proposed project.



## REFERENCES

- Curtis, C.R., L.R. Krusbert, T.L. Lauver, and B.A. Francis. 1975. Chalk Point Cooling Tower Project: Field Research on Native Vegetation. Maryland Water Resources Research Center. Maryland Department of Natural Resources - Power Plant Siting Program. p.107.
- McLaughlin, S.B. and N.T. Lee. 1974 Botanical Studies in the Vicinity of the Widows Creek Steam Plant. Review of Air Pollution Effects Studies, 1952-1972, and Results of 1973 Surveys. Internal Report I-EB-74-1. TVA.
- United States Environmental Protection Agency, 1988. Workbook for Plume Visual Impact Screen and Analysis. EPA-450/4-88-015, September 1988.
- United States Department of Agriculture, 1991. Surveys of Hernando and Citrus Counties, Florida. USDA Soil Conservation Service in cooperation with University of Florida, Institute of Food and Agricultural Sciences, Agricultural Experiment Stations and Soil Science Department.
- Woltz, S.S. and T.K. Howe, 1981. Effects of Coal Burning Emissions on Florida Agriculture. In: The Impact of Increased Coal Use in Florida. Interdisciplinary Center for Aeronomy and (other) Atmospheric Sciences. University of Florida, Gainesville.





## VISCREEN ANALYSIS

Visual Effects Screening Analysis for  
Source: USAC MAP  
Class I Area: CHASS

\*\*\* Level-1 Screening \*\*\*  
Input Emissions for

Particulates	3.56	G	/S
NOx (as NO2)	.21	G	/S
Primary NO2	.00	G	/S
Soot	.00	G	/S
Primary SO4	.00	G	/S

\*\*\*\* Default Particle Characteristics Assumed

Transport Scenario Specifications:

Background Ozone:	.04 ppm
Background Visual Range:	25.00 km
Source-Observer Distance:	123.00 km
Min. Source-Class I Distance:	123.00 km
Max. Source-Class I Distance:	130.00 km
Plume-Source-Observer Angle:	11.25 degrees
Stability:	6
Wind Speed:	1.00 m/s

## R E S U L T S

Maximum Visual Impacts INSIDE Class I Area  
Screening Criteria ARE NOT Exceeded

Backgrnd	Theta	Azi	Distance	Alpha	Delta E		Contrast	
					Crit	Plume	Crit	Plume
SKY	10.	84.	123.0	84.	2.00	.010	.05	.000
SKY	140.	84.	123.0	84.	2.00	.001	.05	.000
TERRAIN	10.	84.	123.0	84.	2.00	.000	.05	.000
TERRAIN	140.	84.	123.0	84.	2.00	.000	.05	.000

Maximum Visual Impacts OUTSIDE Class I Area  
Screening Criteria ARE NOT Exceeded

Backgrnd	Theta	Azi	Distance	Alpha	Delta E		Contrast	
					Crit	Plume	Crit	Plume
SKY	10.	75.	119.1	94.	2.00	.011	.05	.000
SKY	140.	75.	119.1	94.	2.00	.001	.05	.000
TERRAIN	10.	65.	114.8	104.	2.00	.001	.05	.000
TERRAIN	140.	65.	114.8	104.	2.00	.000	.05	.000



## ATTACHMENT 2

### 2.0 AMBIENT AIR QUALITY ANALYSIS

An air quality review is required for the pollutants subject to PSD review. Air quality modeling is required to provide assurance that the increases in air pollutant emissions associated with the project, combined with all other applicable air pollutant emission rate increases and decreases associated with new sources affecting the project area, will not cause or contribute to an exceedance of the applicable ambient air quality standards.

The air quality review for the proposed project included emission increases of particulate matter and fluorides associated with the prilled MAP plant.

### 2.1 AIR QUALITY MODELING FOR PARTICULATE MATTER

#### 2.1.1 Area of Significant Impact

The impact analysis of the particulate emissions was conducted using the Industrial Source Complex-Short Term 2 (ISC-ST2) air quality model, Version 93109, in accordance with guidelines established by EPA and published in the document, Guideline for Air Quality Modeling. The meteorological data used with the model were for Tampa, Florida and represented the period 1987-1991.

The emission rates of particulate matter used for air quality modeling purposes to determine the area of significant impact (ASI) represent the emission rates associated with the MAP prill tower/cooler and the MAP loadout. Table 2-1 contains modeling input parameters used in the ambient air quality impacts analysis.

The ASI modeling included discrete receptors at the facility property boundary and additional receptors established by the polar grid system extending to 10 kilometers from the plant (see Figure 2-1 and 2-2). The discrete receptors were placed along the property boundary. The polar grid receptor rings were placed up to a distance of 10,000 meters from the plant with receptors placed at 10 degree intervals from 10° to 360° on each receptor ring beyond the plant boundary. The downwind receptor distances were selected in order to provide a higher concentration of receptors closer to the source where the maximum impacts were expected.

Building wake effects were also addressed in the modeling. The EPA recommended BPIP program was used to determine the downwash criteria for the modeling. The buildings used in the BPIP analysis are presented in Figure 2-3.



A second set of modeling runs were conducted with the same modeling inputs with receptors placed at the Class I area (Chassahowitzka National Wildlife Refuge) boundary. The receptor locations used for the Class I area impact analysis are identical to those used in modeling analyses for recent sources evaluated in this area.

The results of the ASI modeling, summarized in Table 2-2 (Class II area) and Table 2-3 (Class I area), demonstrate that the predicted ambient air quality impact of particulate matter emissions from the proposed project are greater than significant for the 24-hour and annual periods in the Class II area; and, less than significant in the Class I area.

Thus the results of the modeling analyses indicate that the proposed project is not expected to cause or significantly contribute to any violation of the allowable Class I area PSD increment.

As the predicted particulate matter impacts from the proposed project are significant within the Class II area, additional modeling is required to determine compliance with the ambient air quality standards and allowable Class II area PSD increments. However, an extensive particulate matter emission inventory for the sources in the vicinity of the proposed project will be required. With FDEP's assistance, an updated source inventory should be available soon. Results of that analysis will be submitted for agency review under separate cover, so as not to delay the other aspects of review regarding the proposed project.

## 2.2 AIR QUALITY REVIEW FOR FLUORIDES AND AMMONIA

No ambient air quality standards, PSD increments or significant impact levels have been established for fluorides or ammonia. FDEP's current permitting guideline for air toxics requires temporary facilities to evaluate short-term impacts for comparison with Air Reference Concentrations (ARC) listed in Version 3 of the Air Toxics List. However, permanent facilities have to evaluate annual impacts to compare with the ARCs.

To address the concerns of the U.S. Department of Interior, the fluoride emissions from not only the proposed project but also from other significant emission sources at the USAC facility were included in the air modeling. Both the A and B phosphoric acid plants were included in the modeling (see Table 2-1). The receptor grid discussed in the previous section was used for the modeling of fluoride emissions.

The air modeling conducted for ammonia represented the expected emissions from the proposed project and followed the same format as the fluoride modeling described above (see Table 2-1), except that only one year of meteorological data, representing the most recent Tampa data, was used. This approach is consistent with the FDEP policy for pollutants with no established ambient air standards.



The modeling results indicated fluoride and ammonia impacts far below the annual ARCs in the vicinity of the plant, and at insignificant levels at the Class I area (see Table 2-4). Consequently, neither the fluoride nor the ammonia emissions from the proposed project are not expected to be of concern.

TABLE 2-1  
AIR QUALITY MODELING PARAMETERS

U. S. AGRI-CHEMICALS  
POLK COUNTY, FLORIDA

Source	Emission (g/s)	Height (m)	Temp. (°K)	Velocity (m/s)	Diameter (m)
<b>Particulate Matter</b>					
Tower/Cooler Loadout	3.02	21.95	332	14.37	2.74
	0.54	15.24	300	14.40	0.43
<b>Fluorides</b>					
Tower/Cooler Loadout	0.168	21.95	332	14.37	2.74
	NA				
Phos Acid A	0.111	25.90	316	12.22	0.76
Phos Acid B	0.111	25.90	316	12.22	0.76
<b>Ammonia</b>					
Tower/Cooler Loadout	4.8	21.95	332	14.37	2.74
	NA				

NOTE: No emissions of fluorides or ammonia are associated with MAP loadout.



TABLE 2-2  
 SUMMARY OF PARTICULATE MATTER SIGNIFICANT IMPACT ANALYSIS  
 CLASS II AREA

U. S. AGRI-CHEMICALS  
 POLK COUNTY, FLORIDA

METEOROLOGICAL DATA	PARTICULATE MATTER IMPACT ( $\mu\text{g}/\text{m}^3$ )	
	24-HOUR	ANNUAL
1987	16.08	1.25
1988	15.95	1.56
1989	20.43	2.02
1990	16.42	1.30
1991	16.38	1.53
Significant Impact (Rule 62-272, FAC)	5	1
Class II Increment (Rule 62-272, FAC)	30	17
Ambient Air Standard (Rule 62-272, FAC)	150	50

NOTE:

- (1) The predicted impacts represent the highest-high impact.



TABLE 2-3  
 SUMMARY OF PARTICULATE MATTER SIGNIFICANT IMPACT ANALYSIS  
 CLASS I AREA

U. S. AGRI-CHEMICALS  
 POLK COUNTY, FLORIDA

METEOROLOGICAL DATA	PARTICULATE MATTER IMPACT ( $\mu\text{g}/\text{m}^3$ )	
	24-HOUR	ANNUAL
1987	0.065	0.0022
1988	0.051	0.0033
1989	0.068	0.0043
1990	0.075	0.0022
1991	0.039	0.0019
Significant Impact (NPS guidelines)	0.27	0.08

NOTE:

- (1) The predicted impacts represent the highest-high impact.



TABLE 2-4  
 SUMMARY OF FLUORIDES AND AMMONIA IMPACTS ANALYSIS  
 U. S. AGRI-CHEMICALS  
 POLK COUNTY, FLORIDA

METEOROLOGICAL DATA	FLUORIDES ( $\mu\text{g}/\text{m}^3$ ) ANNUAL	AMMONIA ( $\mu\text{g}/\text{m}^3$ ) ANNUAL
CLASS I AREA		
1991	0.0002	0.0026
CLASS II AREA		
1991	0.1367	1.1299
(FDEP ARC guideline)	50	100

NOTE:

(1) The impact represents the highest-high impact.





FIGURE 2-1

FENCE LINE AND POLAR RECEPTORS  
US AGRI-CHEMICALS, FT. MEADE, FLORIDA

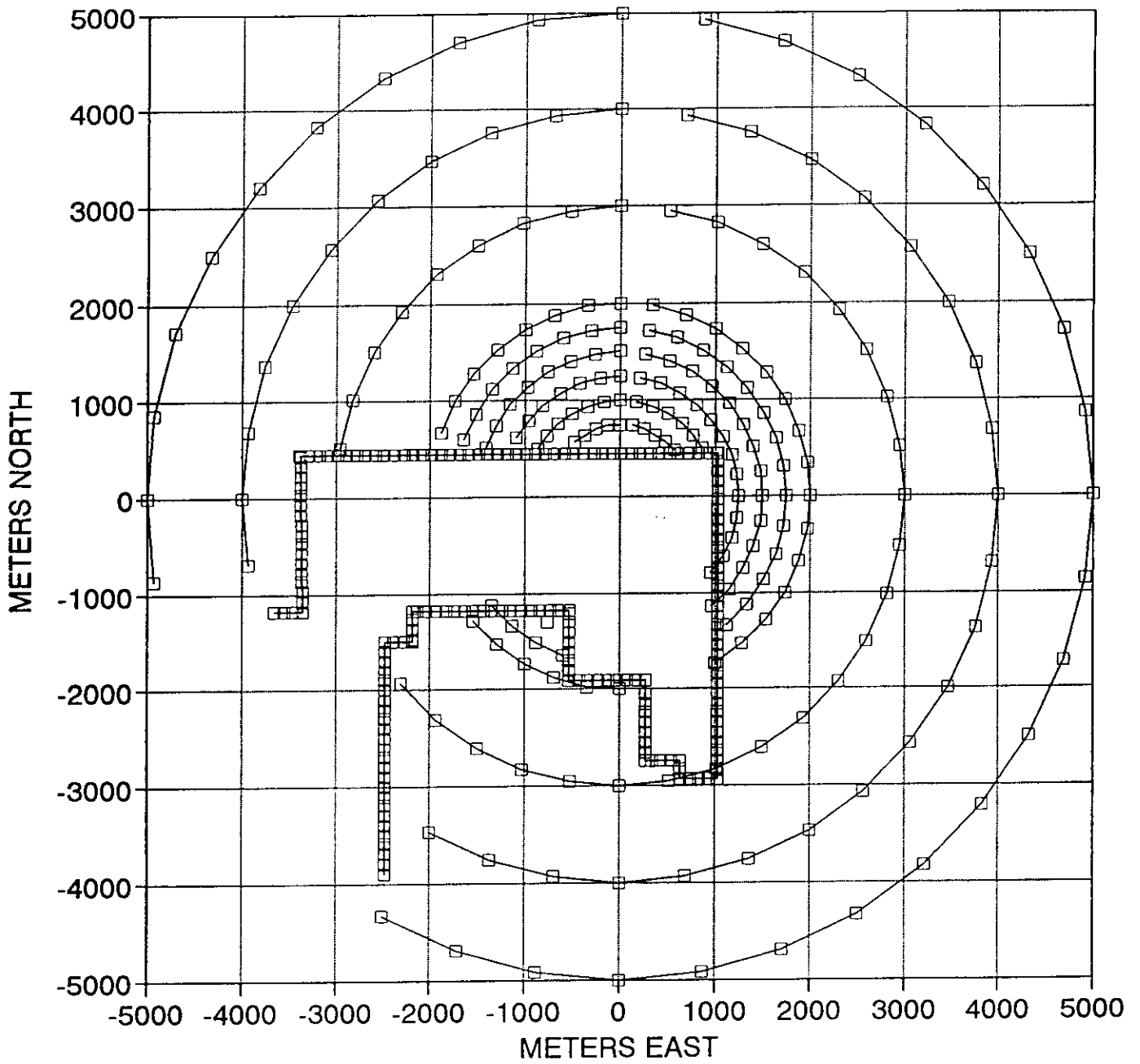
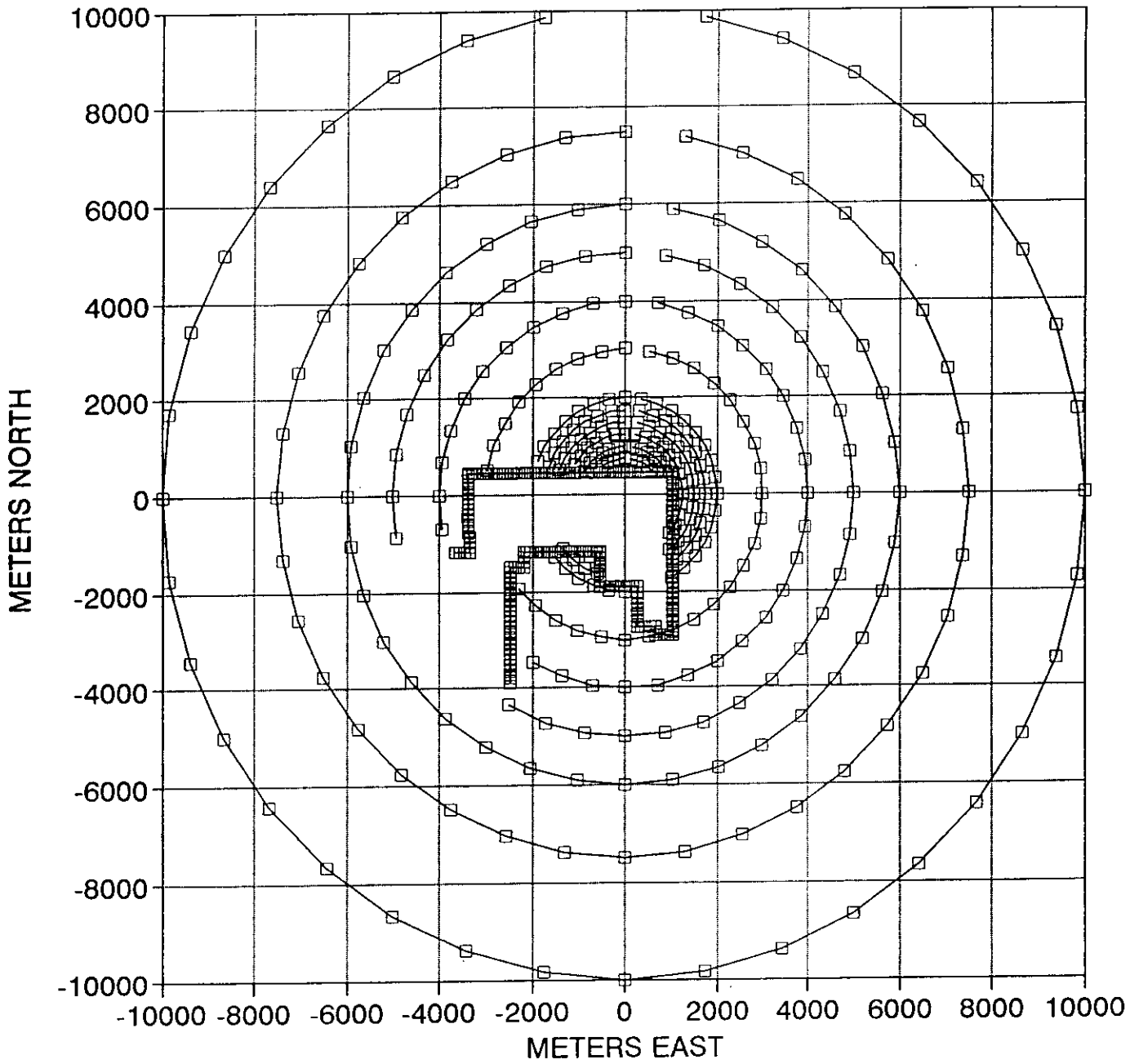
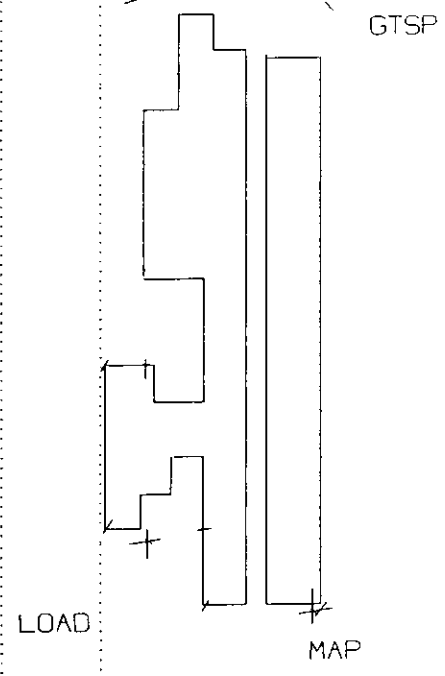
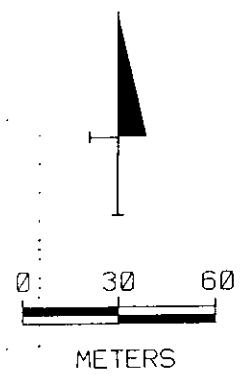


FIGURE 2-2

FENCE LINE AND POLAR RECEPTORS  
US AGRI-CHEMICALS, FT. MEADE, FLORIDA





**FIGURE 2-3**

**BUILDINGS USED IN BPIP ANALYSIS**

**U.S. AGRI-CHEMICALS  
POLK COUNTY, FLORIDA**

