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Golder Associates

January 28, 1999

9837551-0100

Bureau of Air Management
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, FL 32399-2400

RECEIVED
JAN 29 1999
BUREAU OF
AIR REGULATION

Attention: Mr. Cleveland Holladay

RE: CARGILL NO. 3 FERTILIZER PLANT PSD APPLICATION – REVISED AIR ANALYSIS

Dear Cleve:

Please find enclosed the revised air quality analysis for the above referenced project. This package includes a 3.5-inch disk containing modeling input and output files. If you have any questions, please email or call me at (352) 336-5600. Thank you.

Sincerely,

GOLDER ASSOCIATES INC.

Steven R. Marks, C.C.M.
Senior Scientist

SRM/tla

Enclosures

cc: D. Buff

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6.0 AIR QUALITY IMPACT ANALYSIS

6.1 SIGNIFICANT IMPACT ANALYSIS

The general modeling approach followed EPA and FDEP modeling guidelines for determining compliance with ambient air quality standards (AAQS) and PSD increments. For all criteria pollutants that will be emitted in excess of the PSD significant emission rate due to a proposed project, a significant impact analysis is performed to determine whether the emission and/or stack configuration changes due to the project alone will result in predicted impacts that are in excess of the EPA significant impact levels at any location beyond the plant property boundaries. For the proposed Cargill project, PM/PM_{10} are the only criteria pollutants emitted in excess of the PSD significant emission rates. Fluoride emissions were also modeled to support the air quality related values analysis, since fluorides are subject to PSD review.

Generally, if the facility undergoing the modification also is within 200 kilometers of a PSD Class I area, then a significant impact analysis is also performed for the PSD Class I area. Currently, the National Park Service (NPS) has recommended significant impact levels for PSD Class I areas. The recommended levels have not been promulgated as rules.

Current FDEP policies stipulate that the highest annual average and highest short-term (i.e., 24 hours or less) concentrations are to be compared to the applicable significant impact levels. Based on the screening modeling analysis results, additional modeling refinements with a denser receptor grid are performed, as necessary, to obtain the maximum concentration. Modeling refinements are performed with a receptor grid spacing of 100 meters (m) or less.

If the project's impacts are above the significant impact levels, then a more detailed air modeling analysis that includes background sources is performed. This consists of evaluating compliance with AAQS and PSD increments.

6.2 AAQS/PSD MODELING ANALYSIS

For each pollutant for which a significant impact is predicted, a refined impact analysis to demonstrate compliance with AAQS and PSD increments is required. This analysis must consider other nearby sources and background concentrations and predict concentrations for comparison to ambient standards. For the proposed project, a refined impact analysis is required for PM_{10}.

In general, when 5 years of meteorological data are used in the analysis, the highest annual and the highest, second-highest (HSH) short-term concentrations are compared to the applicable AAQS and allowable PSD increments. The HSH concentration is calculated for a receptor field by:

1. Eliminating the highest concentration predicted at each receptor,
2. Identifying the second-highest concentration at each receptor, and
3. Selecting the highest concentration among these second-highest concentrations.

This approach is consistent with AAQS and allowable PSD increments, which permit a short-term average concentration to be exceeded once per year at each receptor.

To develop the maximum short-term concentrations for the proposed project, the modeling approach was divided into screening and refined phases to reduce the computation time required to perform the modeling analysis. For this study, the only difference between the two modeling phases is the density of the receptor grid spacing employed when predicting concentrations. Concentrations are predicted for the screening phase using a coarse receptor grid and a 5-year meteorological data record.

If the original screening analysis indicates that the highest concentrations are occurring in a selected area(s) of the grid and, if the area's total coverage is too vast to directly apply a refined receptor grid, then an additional screening grid(s) will be used over that area. The additional screening grid(s) will employ a greater receptor density than the original screening grid, so refinements can be performed if necessary.

Refinements of the maximum predicted concentrations are typically performed for the receptors of the screening receptor grid at which the highest and/or HSH concentrations occurred over the 5-year period. Generally, if the maximum concentration from other years in the screening analysis are within 10 percent of the overall maximum concentration, then those other concentrations are refined as well. Typically, if the highest and HSH concentrations are in different locations, concentrations in both areas are refined.

Modeling refinements are performed for short-term averaging times by using a denser receptor grid, centered on the screening receptor to be refined. The angular spacing between radials is 1 degree and the radial distance interval between receptors is 100 m. Annual modeling refinements employ an angular spacing between radials of 1 degree and a distance interval from 100 to 300 m, depending on the concentration gradient in the vicinity of the screening receptor to be refined. If the maximum screening concentration is located on the plant property boundary, additional plant boundary receptors are input, spaced at a 1 degree angular intervals and centered on the screening receptor. The domain of the refinement grid will extend to all adjacent screening receptors. The air dispersion model is then executed with the refined grid for the entire year of meteorology during which the screening concentration occurred. This approach is used to ensure that a valid HSH concentration is obtained. A more detailed description of the model, along with the emission inventory, meteorological data, and screening receptor grids, is presented in the following sections.

6.2.1 MODEL SELECTION

The Industrial Source Complex Short-term (ISCST3, Version 97363) dispersion model (EPA, 1995) was used to evaluate the pollutant impacts due to the proposed modification to Cargill's No. 3 Fertilizer Plant. This model is maintained on the EPA's Technical Transfer Network (TTN) internet web site. A listing of ISCST3 model features in presented in Table 6-1. The ISCST3 model is applicable to sources located in either flat or rolling terrain where terrain heights do not exceed stack heights. The ISCST3 model is designed to calculate hourly concentrations based on hourly meteorological parameters (i.e., wind direction, wind speed, atmospheric stability, ambient temperature, and mixing heights).

In this analysis, the EPA regulatory default options were used in all model executions. Based on the land-use within a 3.5-km radius of the Cargill facility, the rural dispersion coefficients were used in the modeling analysis. The ISCST3 model was used to provide maximum concentrations for the annual and 24-hour averaging times.

6.2.2 METEOROLOGICAL DATA

Meteorological data used in the ISCST3 model to determine air quality impacts consisted of a concurrent 5-year period of hourly surface weather observations and twice-daily upper air soundings from the National Weather Service (NWS) stations at Tampa International Airport and Ruskin, respectively. The 5-year period of meteorological data was from 1987 through 1991. The NWS station at Tampa International Airport, located approximately 69 km to the northwest of the Cargill plant site, was selected for use in the study because it is the closest primary weather station to the study area that is representative of the plant site.

6.2.3 EMISSION INVENTORY

Significant Impact Analysis

The PM_{10} emission rate increases and the physical and operational stack parameters for the No. 3 Fertilizer Plant are summarized in Table 6-2. These data are based on emission and stack parameter data presented in Tables 2-1, 2-2, and 3-2. For the PM_{10} analysis, the modeled sources included the pre-modification No. 3 Fertilizer Plant stack, the post-modification No. 3 Fertilizer Plant stack, the Phosphoric Acid Plant stacks and the No. 3 Shipping Plant stack. These sources were modeled at locations relative to the No. 4 Fertilizer Plant stack, which is the modeling origin that has been used in previous PSD applications for the Cargill Bartow facility.

AAQS Analysis

The non-Cargill PM facilities that were considered in the air modeling analysis are provided in Attachment C, Table C-1. The competing source data were obtained from a modeling analysis performed for a PSD application for IMC-Agrico, a source in Polk County, provided to Golder by FDEP.

PSD Class II Analysis

Cargill's PM_{10} PSD increment consuming sources are provided in Table 6-2. Non-Cargill PSD sources were obtained from the IMC-Agrico PSD analysis, provided to Golder by FDEP. The PSD source emission inventory is presented in Attachment C, Table C-2.

PSD Class I Analysis

Because the proposed No. 3 Fertilizer Plant expansion's maximum air impacts do not exceed the recommended NSPS significant impact levels for PM_{10} at the Chassahowitzka NWA PSD Class I area, a PSD Class I increment consumption modeling assessment is not required. However, the proposed project's emissions of SO_2, PM_{10}, and NO_x were evaluated at the Class I area in support of the regional haze analysis. Fluoride emissions were evaluated in support of the air quality related values (AQRV) analysis. Emissions of SO_2 and NO_x from the proposed project, based on Table 2-3, are presented in Table 6-3. The AQRV analysis is presented in Section 7.0.

6.2.4 RECEPTOR LOCATIONS

Site Vicinity

To determine the PM_{10} significant impact area for the proposed project, concentrations were predicted for 324 regular and 146 discrete polar grid receptors located in a radial grid centered on the No. 4 Fertilizer Plant stack. Receptors were located in "rings" with 36 receptors per ring, spaced at 10E intervals and at distances along the fence line 2.5, 3.0, 3.5, 4.0, 4.5, 5.0, 6.0, 7.0, and 8.0 km from the No. 4 Fertilizer Plant stack location. Discrete receptors were placed at 10E intervals along the plant property boundary and off-property receptors at distances of 1.5, 2.0, 2.5, 3.0, 3.5 and 4.0 km from the No. 4 Fertilizer Plant stack. The 18 property boundary receptors used for the screening analysis are presented in Table 6-4. Based on the results of the significant impact analysis, a maximum receptor distance of 3.3 km was used for the screening grid for the AAQS and PSD Class II analysis.

Class I Area

Maximum PM_{10} impacts for the Chassahowitzka NWA were predicted at 13 discrete receptors located along the border of the PSD Class I area. Impacts for the proposed modification only were also compared to the Class I significance levels recommended by the National Park Service (NPS). A listing of Class I receptors is provided in Table 6-5.

6.2.5 BACKGROUND CONCENTRATIONS

To estimate total air quality concentrations in the site vicinity, a background concentration must be added to the modeling results. The background concentration is considered to be the air quality concentration contributed by sources not included in the modeling evaluation.

The derivation of the background concentration for the modeling analysis was presented in Section 4.0. Based on this analysis, the PM_{10} background concentration was determined to be 18 $\mu g/m^3$ for the 24-hour and annual averaging periods. These background levels were added to model-predicted concentrations to estimate total air quality levels for comparison to AAQS.

6.2.6 BUILDING DOWNWASH EFFECTS

All significant building structures within Cargill's existing plant area were determined by a site plot plan. The plot plan of the Bartow facility was presented in Figure 2-2. All building structures were processed in the EPA Building Input

Profile (BPIP, Version 95086) program to determine direction-specific building heights and projected widths for each 10-degree azimuth direction for each source that was included in the modeling analysis.

6.3 MODEL RESULTS

6.3.1 SIGNIFICANT IMPACT MODELING ANALYSIS

A summary of the predicted maximum PM_{10} concentrations for the proposed modification only for the screening analysis is presented in Table 6-6. The modeling demonstrates that the maximum 24-hour concentration of 11.1 µg/m³ is above the significance level of 5 µg/m³, 24-hour average. The maximum annual PM_{10} impact of 1.03 µg/m³ is above the significance level of 1.0 µg/m³, annual average. As the proposed project's maximum impacts are above the significant impact levels, further PSD Class II increment and AAQS analysis are required for PM_{10}. The distance to which PM_{10} is significant was determined to be 3.3 km, based on 24-hour impacts.

6.3.2 AAQS ANALYSIS

A summary of the maximum PM_{10} concentrations predicted for all sources for the screening analysis is presented in Table 6-7. Based on the screening analysis results, modeling refinements were performed. The results of the refined modeling analysis are presented in Table 6-8. The maximum predicted annual and 24-hour PM_{10} concentrations are 31.1 µg/m³ and 119.8 µg/m³ (high, second high), respectively, which includes an ambient non-modeled background concentration of 18 µg/m³. The maximum high, second high PM_{10} concentrations are less than the AAQS of 50 and 150 µg/m³, respectively.

6.3.3 PM_{10} PSD CLASS II ANALYSIS

The results of the screening analysis for PSD Class II increment consumption are presented in Table 6-9. Based on the screening analysis results, modeling refinements were performed. The results of the refined modeling analysis are presented in Table 6-10. The refined modeling results indicate that the maximum predicted PSD Class II 24-hour increment of 29.4 μg/m³ is predicted to meet the allowable PM_{10} PSD Class II increment of 30 μg/m³.

6.3.4 PSD CLASS I MODELING ANALYSIS

Maximum PM_{10} concentrations predicted for the proposed project alone at the Chassahowitzka NWA PSD Class I area are compared with the NPS recommended PSD Class I significance levels in Table 6-11. As the proposed project's maximum impacts are below the Class I significant impact levels, a full PSD Class I increment analysis is not required. However, PM10 impacts are required for the AQRV analysis for the Class I area, presented in Section 7.0.

6.3.5 FLUORIDE IMPACTS

PSD Class II Modeling Analysis

Maximum fluoride concentrations due to the proposed project at the site vicinity, PSD Class II area, are presented in Table 6-12 for the 8-hour, 24-hour, and annual averaging times. There are no AAQS or PSD increments for fluorides. However, fluoride impacts are required for the additional impact analysis and AQRV analysis for the Class II area, presented in Section 7.0.

PSD Class I Modeling Analysis

Maximum fluoride concentrations due to the proposed project at the Chassahowitzka Class I area are presented in Table 6-13 for the 8-hour, 24-hour, and annual averaging times. There are no AAQS or PSD increments for fluorides. However, fluoride impacts are required for the additional impact analysis and AQRV analysis for the Class I area, presented in Section 7.0.

Table 6-9. Maximum Predicted PM10 Increment Consumption - PSD Class II Screening Analysis

Averaging Time	Concentration ($\mu g/m^3$)	Receptor Location[a] Direction (degrees)	Receptor Location[a] Distance (m)	Period Ending (YYMMDDHH)
Annual	3.85	110.	2500.	87123124
	3.36	110.	3000.	88123124
	3.82	200.	1212.	89123124
	3.81	110.	2500.	90123124
	3.88	110.	2500.	91123124
HIGH 24-Hour	24.11	180.	3300.	87032824
	25.21	180.	3300.	88090624
	28.25	160.	3000.	89031424
	30.42	180.	3300.	90010624
	21.81	100.	2500.	91052124
HSH 24-Hour	22.66	170.	2500.	87032824
	18.37	190.	3300.	88090624
	23.71	170.	3300.	89071424
	25.58	170.	3000.	90022024
	18.04	100.	2629.	91020324

Note: YY=Year, MM=Month, DD=Day, HH=Hour.

[a] Relative to H_2SO_4 Plant No. 9 stack location.

Table 6-10. Maximum Predicted PM10 PSD Increment Consumption Compared with PSD Class II Increments -- Refined Analysis

	Receptor Location[a]				
Averaging Time	Concentration ($\mu g/m^3$)	Direction (degrees)	Distance (m)	Period Ending (YYMMDDHH)	Allowable PSD Increment ($\mu g/m^3$)
Annual	3.90	108	2600	91123124	17
HSH 24-Hour	29.39	174	3300	90022024	30

Note: YY=Year, MM=Month, DD=Day, HH=Hour.

[a] Relative to No. 4 DAP stack location.

Table 6-11. Maximum Predicted PM10 Concentrations for the Proposed Modification Only at the Chassahowitzka Wilderness Area

Averaging	Concentration	Receptor Location[a]		Period Ending (YYMMDDHH)	EPA Significance Levels ($\mu g/m^3$)
		UTM-E	UTM-N		
Annual	0.003	340300.	3165700.	87123124	0.1
	0.003	340300.	3165700.	88123124	
	0.004	343700.	3178300.	89123124	
	0.002	342000.	3174000.	90123124	
	0.002	340300.	3165700.	91123124	
HIGH 24-Hour	0.058	341100.	3183400.	87080524	0.33
	0.061	340300.	3167700.	88073124	
	0.071	340300.	3169800.	89100624	
	0.075	342000.	3174000.	90071424	
	0.056	340300.	3169800.	91072724	
HIGH 8-Hour	0.173	341100.	3183400.	87080508	NA
	0.176	340300.	3165700.	88101208	
	0.244	343700.	3178300.	89072024	
	0.202	342000.	3174000.	90071416	
	0.142	340300.	3165700.	91083024	

Note: YY=Year, MM=Month, DD=Day, HH=Hour, HSH = Highest, Second-Highest, NA = Not Applicable.

[a] All receptor coordinates are reported in Universal Transverse Mercator (UTM) Coordinates.

Table 6-12. Maximum Predicted Fluoride Impacts Due to the Future No. 3 Fertilizer Plant —Site Vicinity

Averaging Time	Concentration ($\mu g/m^3$)	Receptor Location[a] Direction (degrees)	Receptor Location[a] Distance (m)	Period Ending (YYMMDDHH)
Site Vicinity				
Annual	0.096	250	2092	87123124
	0.128	210	1313	88123124
	0.139	190	1158	89123124
	0.105	260	1996	90123124
	0.106	250	2092	91123124
HIGH 24-Hour	1.064	210	1313	87101124
	1.187	200	1212	88070524
	1.443	150	1137	89030724
	0.870	170	1160	90111924
	1.012	210	1313	91012624
HIGH 8-Hour	1.479	200	1313	87110524
	2.039	190	1158	88120224
	2.074	160	1131	89103008
	1.633	180	1142	90013116
	1.724	180	1142	91110324

Note: Impacts reported are highest predicted.
YY=Year, MM=Month, DD=Day, HH=Hour, HSH=Highest, Second-Highest.

[a] Relative to No. 4 DAP stack location. Impacts reported are highest predicted.

Table 6-13. Maximum Predicted Fluoride Concentrations for the Future No. 3 Fertilizer Plant — Chassahowitzka Wilderness Area

		Receptor Location[a]		
Averaging	Concentration	UTM-E	UTM-N	Period Ending (YYMMDDHH)
Annual	0.00060	340300.	3165700.	87123124
	0.00077	340300.	3165700.	88123124
	0.00086	340300.	3165700.	89123124
	0.00044	340300.	3165700.	90123124
	0.00055	340300.	3165700.	91123124
HIGH 24-Hour	0.01304	342400.	3180600.	87080524
	0.01371	340300.	3167700.	88073124
	0.01559	340300.	3169800.	89100624
	0.01267	340700.	3171900.	90070324
	0.01237	340300.	3169800.	91072724
HIGH 8-Hour	0.03911	342400.	3180600.	87080508
	0.03550	340300.	3165700.	88101208
	0.05342	343700.	3178300.	89072024
	0.03371	340700.	3171900.	90070324
	0.03104	340300.	3165700.	91083024

Note: YY=Year, MM=Month, DD=Day, HH=Hour, HSH = Highest, Second-Highest, NA = Not Applicable.

[a] All receptor coordinates are reported in Universal Transverse Mercator (UTM) Coordinates.

Table C-2. PSD-PM Inventory for Proposed Cargill Project

ISCST ID	Relative Coordinates (m		QS	HS	TS	VS	DS
	X	Y	(g/s)	(m)	(K)	(m/s)	(m)
IMCKLN	-13100	-7300	2.52	52.4	314	21.4	1.37
IMCCOLR	-13100	-7300	0.79	26.21	394.3	32.3	0.91
IMCMILL	-13100	-7300	0.23	27.44	327.4	34.45	0.46
AGSP2	-2420	-15235	4.002	3	344.1	20.69	0.55
AGSP3	-2420	-15235	0.23	19.8	300.2	88.45	0.49
AGSP4	-2420	-15235	4.318	18.3	323	9.7	0.3
AGSP5	-2420	-15235	5.067	24.4	295.2	7.23	3.35
AGSP6	-2420	-15235	5.067	24.4	296.9	7.8	3.35
AGSP7	-2420	-15235	0.259	19.8	310.2	5.48	0.49
AGSP10	-2420	-15235	3.023	38.1	327.4	14.55	3.05
AGSP11	-2420	-15235	0.432	38.1	319.1	15.84	1.07
CFPLT2	-21920	29265	2.007	33.5	316.5	19.68	1.52
CFPLT4	-21920	29265	1.197	60.7	352.6	16.4	2.44
CFPLT5	-21920	29265	1.197	60.7	337.6	9.7	2.44
CFPLT6	-21920	29265	3.91	36.3	314.3	13.64	1.22
CFPLT7	-21920	29265	4.115	28.6	326.5	7.93	3.05
CFPLT10	-21920	29265	4.725	35.1	299.9	11.01	2.8
CFPLT11	-21920	29265	0.63	27.4	298.2	19.02	0.52
CFPLT14	-21920	29265	0.63	10.1	298.8	5.94	1.01
CFPLT18	-21920	29265	0.126	30.5	294.3	7.64	0.76
CFPLT19	-21920	29265	2.667	25.9	298.2	11.64	0.15
CRGL1	-47020	-4535	1.036	20.7	314.7	11.09	1.07
CRGL2	-47020	-4535	0.662	19.8	303	11.74	1.22
CRGL3	-47020	-4535	1.267	20.1	333	16.17	0.61
CRGL4	-47020	-4535	2.246	22.6	305.2	7.84	1.22
CRGL5	-47020	-4535	1.036	20.7	319.1	1.16	1.07
CRGL6	-47020	-4535	0.662	19.8	301.9	14.43	1.22
CRGL7	-47020	-4535	3.858	16.8	323.6	19.93	1.31
CRGL8	-47020	-4535	0.979	9.8	308.6	8.04	0.4
CRGL9	-47020	-4535	1.209	6.1	488.6	15.89	1.22
CRGL12	-47020	-4535	0.173	6.1	298.6	16.31	0.37
CRGL13	-47020	-4535	0.547	9.1	298.6	13.2	1.07
CRGL14	-47020	-4535	0.173	18.3	588.6	6.94	2.53
CRGL15	-47020	-4535	0.605	12.2	298	11.21	0.46
CRGL16	-47020	-4535	0.403	15.2	303.6	12.42	0.76
CRGL17	-47020	-4535	0.029	12.2	321.9	9.94	0.52
CRGL18	-47020	-4535	0.633	27.4	333.6	17.32	1.07
CRGL19	-47020	-4535	0.144	26.5	331.9	8.18	0.37
CRGL20	-47020	-4535	2.879	16.5	320.2	19.69	1.31
CRGL21	-47020	-4535	0.72	27.4	334.1	21.96	1.01
CRGL22	-47020	-4535	0.72	27.4	334.1	19.58	1.01
CRGL23	-47020	-4535	0.086	13.7	298.6	16.31	0.37
CRGL24	-47020	-4535	0.086	9.1	298.6	16.31	0.37
CRGL25	-47020	-4535	0.144	22.9	298.6	12.42	0.58
CRGL27	-47020	-4535	0.118	11.6	298.6	17.75	0.82

Table C-2. PSD-PM Inventory for Proposed Cargill Project

ISCST ID	Relative Coordinates (m		QS	HS	TS	VS	DS
	X	Y	(g/s)	(m)	(K)	(m/s)	(m)
CNRV7	-11220	-2535	0.633	54.6	338.6	14.37	0.18
CNRV8	-11220	-2535	0.202	55.5	310.8	2.97	0.43
CNRV12	-11220	-2535	0.633	63.1	330.2	21.12	0.43
CNSDM2	-16120	9565	0.202	13.7	349.7	14.17	0.55
CNSDM3	-16120	9565	0.202	16.5	298	19.96	0.55
CNSDM4	-16120	9565	4.405	24.4	308	79.21	1.37
CNSDM5	-16120	9565	0.115	16.5	298	19.14	0.43
CNSDM7	-16120	9565	0.662	9.8	295.8	10.76	0.46
CNSDM9	-16120	9565	1.756	24.4	319.1	6.2	1.68
CNSDM10	-16120	9565	1.9	45.7	313	18.34	1.77
CNSDM11	-16120	9565	0.173	32.6	298	33.69	0.37
CNSDM12	-16120	9565	0.259	24.7	315.2	9.05	0.82
CNSDM13	-16120	9565	1.67	30.5	338	11.98	1.37
CNSDM14	-16120	9565	0.029	15.2	294.1	20.7	0.15
CNSDM15	-16120	9565	0.058	3	338.6	18.19	0.24
CNSDM18	-16120	9565	0.029	21.3	298	12.58	0.18
CNSDM19	-16120	9565	0.144	20.4	298	11.5	0.46
CNSDM20	-16120	9565	0.259	18.9	298	24.95	0.55
CNSDM21	-16120	9565	0.086	21.3	298	31.89	0.37
CNSDM22	-16120	9565	0.202	17.4	298	28.75	0.46
CNSDM23	-16120	9565	0.892	10.4	327.4	19.16	0.82
CNSDM24	-16120	9565	0.086	14	298	17.97	0.18
CNSDM25	-16120	9565	0.864	30.5	319.1	0.01	0.91
CNSDM26	-16120	9565	0.058	29.6	298	13.58	0.3
CNSDM27	-16120	9565	0.115	15.8	298	19.14	0.43
FRMGB2	-420	-6635	2.937	56.4	338	5.17	1.52
FRMGB3	-420	-6635	3.8	39.3	319.1	10.66	2.13
FRMGB6	-420	-6635	0.144	12.2	366.3	0.03	0.61
FRMGB7	-420	-6635	6.622	35.1	349.7	22.72	0.67
FRMGB9	-420	-6635	3.224	39.6	311.9	5.66	1.22
FRMGB12	-420	-6635	0.086	12.2	366.3	0.03	0.61
FRMGB13	-420	-6635	0.086	12.2	366.3	2.67	0.61
FRMGB14	-420	-6635	3.311	50.3	298	8.86	0.7
FRMGB15	-420	-6635	3.426	26.8	349.7	19.09	0.73
IMCFL1	-20320	-18835	6.766	22.9	314.7	17.33	0.85
IMCFL4	-20320	-18835	6.45	45.7	316.3	8.43	0.82
IMCNW9	-13220	-7335	0.432	19.8	352.4	14.37	0.46
IMCNW10	-13220	-7335	0.432	32.6	313.6	20.96	0.55
IMCNW11	-13220	-7335	0.115	30.5	299.7	54.62	0.46
IMCNW14	-13220	-7335	0.432	31.7	313.6	21.48	0.49
IMCNW20	-13220	-7335	0.432	17.4	352.4	22.96	0.4
IMCNW21	-13220	-7335	0.432	5.2	380.2	38.27	0.4
IMCNW23	-13220	-7335	0.777	51.8	316.3	1.97	1.52
IMCNW25	-13220	-7335	0.662	7.6	333	10.49	1.31
IMCNW29	-13220	-7335	0.806	12.2	299.7	9.39	0.27

Table C-2. PSD-PM Inventory for Proposed Cargill Project

ISCST ID	Relative Coordinates (m		QS	HS	TS	VS	DS
	X	Y	(g/s)	(m)	(K)	(m/s)	(m)
IMCNW31	-13220	-7335	0.058	30.5	311.9	12.58	0.55
IMCNW32	-13220	-7335	0.576	28.7	352.4	10.78	1.83
IMCNW33	-13220	-7335	0.173	33.5	316.3	13.86	0.43
IMCNW34	-13220	-7335	0.202	26.2	299.7	16.5	0.21
IMCNW35	-13220	-7335	0.345	32.6	338.6	15.84	1.07
IMCNW37	-13220	-7335	0.432	36	313.6	10.35	0.3
IMCNY1	4780	-6435	0.076	8.2	302.4	16.17	0.61
IMCNY2	4780	-6435	0.025	8.2	296.9	4.85	0.61
IMCNY3	4780	-6435	0.025	7.6	296.9	11.5	0.46
IMCNY4	4780	-6435	0.113	7.3	316.3	8.09	0.61
IMCNY5	4780	-6435	0.013	13.1	303	18.11	0.61
IMCNY6	4780	-6435	0.19	41.1	288.6	16.75	0.85
IMCNY13	4780	-6435	0.025	8.2	302.4	16.17	0.61
IMCNY14	4780	-6435	0.214	45.7	310.8	15.84	1.07
LLMC6	-720	19365	40.82	76.2	349.7	32.85	4.88
MMM2	-11520	-1635	0.144	4.6	312.4	16.5	0.43
MMM3	-11620	-1635	6.996	25.9	296.9	19.4	1.52
MMM6	-11520	-1535	1.555	24.4	326.9	11.68	0.49
MMM7	-11520	-1535	1.123	30.5	338.6	19.02	1.1
MMM8	-11520	-1535	1.411	24.4	326.9	11.68	0.49
MMM9	-11520	-1435	1.382	12.2	344.1	11.83	1.07
MMM10	-11520	-1435	0.058	24.1	349.7	14.64	0.24
MMM11	-11520	-1435	0.72	4	521.9	2.12	0.76
MMM12	-11520	-1435	1.958	25.9	299.7	14.54	1.68
TCOBB1	-48020	-11735	0.029	42.4	333	18.19	0.49
TCOBB2	-48020	-11735	2.102	34.4	394.1	123.77	0.27
TCOBB3	-48020	-11735	0.662	31.1	394.1	16.04	0.76
TCOBB4	-48020	-11735	0.173	54.6	298.6	21.04	0.52
TCOPP1	-7420	-19335	2.02	6.1	533	13.1	0.9
TCOPP2	-7420	-19335	7.43	45.7	400	16.79	5.8
TCOPP3	-7420	-19335	3.15	60.7	1033	9.14	1.07
USAC1	3280	-435	2.85	22.6	299.7	48.51	0.61
USAC3	3280	-435	4.866	39.9	327.4	11.09	2.13

Source: FDEP