APPENDIX K

FEDERAL CONFORMITY ANALYSIS AND OTHER EMISSIONS CALCULATIONS

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General Conformity Analysis
Masonville Dredged Material Containment Facility
Baltimore, Maryland

Prepared for

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EXECUTIVE SUMMARY

This report presents a comprehensive analysis of the air quality impacts and a mitigation plan for emissions associated with the construction of the proposed Masonville Dredged Material Containment Facility (DMCF). The proposed project would construct a disposal site for Baltimore Harbor dredged material in the Middle Branch of the Patapsco River, at Masonville, Baltimore City, Maryland. The proposed Masonville DMCF would provide a disposal site to accommodate Baltimore Harbor dredged material generated by various dredging projects that would potentially occur over the next 20 years in the Baltimore Harbor area. Two construction scenarios for this facility are assessed within this report. Under the first scenario, 25 percent of the containment dike construction material would come from the Seagirt dredging area and most of the remaining construction material would come from an onsite borrow source within the proposed Masonville DMCF footprint. This is an area that is going to be deepened and widened as part of a new work dredging project within the Seagirt Marine Terminal access channels. Under the second scenario 20 percent of the dike construction material would come from the Seagirt dredging area and most of the remaining construction material would come from within the proposed Masonville DMCF footprint. The 5 percent difference in construction material from the Seagirt dredging area stems from the depth to which dredging would be permitted. If dredging to a depth of -52 ft plus an additional 2 feet of overdredging is permitted, then 25 percent of the construction material would come from the Seagirt dredging area. If dredging to a depth of -51 ft plus an additional 2 feet of overdredging is permitted, then 20 percent of the construction material would come from the Seagirt dredging area.

The goal of this report was to develop air emission estimates for the different types of equipment that would be utilized in the construction phase of the proposed Masonville DMCF project for each construction scenario. Criteria air pollutant emissions were calculated from both direct and indirect sources relative to the project in order to address the requirements of the Clean Air Act's General Conformity Regulations. Based on the results of the air emissions analysis, it was determined that an emission reduction strategy and mitigation plan would be necessary for either scenario to allow the project to comply with the General Conformity Regulations. Calculations indicated that the project would exceed General Conformity emission thresholds for nitrous oxides (NOx) in the years 2007 and 2008 under both scenarios. The total emissions of the project are the same for both scenarios.

As part of the mitigation plan emission reduction credits would be attained for the years 2007 and 2008. Credits would be obtained in a 1 to 1 ratio with the project emissions of NO_x. Coordination for the leasing of NO_x credits from the Baltimore non-attainment region is ongoing. A source for these credits has been identified, Sempra Generation, and the terms of the lease agreement are being determined. It is anticipated that these credits would be leased prior to construction of the proposed project in 2007. These credits would be returned to the leasing entity on January 1, 2009 for their use.

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LIST OF ACRONYMS AND ABBREVIATIONS

CAA	Clean Air Act
CFR	Code of Federal Regulations
CO	Carbon Monoxide
CO_2	Carbon Dioxide
CSV	Comma delimited file
DMCF	Dredged Material Containment Facility
EPA	Environmental Protection Agency
ERC	Emission Reduction Credit
GC	General Conformity
GBA	Gahagan & Bryant Associates, Inc.
HC	Hydrocarbons
HDDV	Heavy-Duty Diesel Vehicles
HDGV	Heavy-Duty Gasoline Vehicles
HP	Horsepower
I/M	Inspection and Maintenance
LDDT	Light-Duty Diesel Trucks
LDDV	Light-Duty Diesel Vehicles
LDGV	Light-Duty Gasoline Vehicles
MDOT	Maryland Department of Transportation
MPA	Maryland Port Authority
NAAQS	National Ambient Air Quality Standards
NMHC	Non-Methane Hydrocarbons
NMIM	National Mobile Inventory Model
NMOG	Non-Methane Organic Gases
NO_2	Nitrogen Dioxide
NOx	Nitrogen Oxides
NSR	New Source Review
OTC	Ozone Transport Commission
OTR	Ozone Transport Region
PM	Particulate Matter
SIP	State Implementation Plan
SO_2	Sulfur Dioxide
SOx	Sulfur Oxides

LIST OF ACRONYMS AND ABBREVIATIONS (continued)

RVP	Reid Vapor Pressure
THC	Total Hydrocarbons
TOG	Total Organic Gases
TPY	Ton(s) Per Year
VMT	Vehicle Miles Traveled
VOC	Volatile Organic Compound

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1. INTRODUCTION

This report presents a comprehensive analysis of the air quality impacts from the construction of the proposed Masonville Dredged Material Containment Facility (DMCF). The proposed Masonville DMCF would provide a confined disposal facility for the placement of Baltimore-Harbor dredged material, which is statutorily required to be placed in a confined disposal facility. The facility would be located in the Middle Branch of the Patapsco River within the Baltimore City limits adjacent to the existing Masonville Marine Terminal Phase II (Figure 1-1). This disposal site would provide a placement facility with a site life of approximately 20 years.

The total project footprint is approximately 141 acres. This includes 130 acres of tidal open water, 1 acre of vegetated wetlands, and 10 acres of upland habitat. The proposed Masonville DMCF footprint consists of two areas, the main containment area and the Wet Basin. The main disposal site would include a four part containment structure that is composed of a cofferdam, armored sand dike, a fringe marsh dike, and an onshore dike (Figure 1-2).

The goal of this report was to develop air emission estimates for the different types of equipment that would be utilized in the construction phase of the Masonville DMCF project. Criteria air pollutant emissions that would result from both direct and indirect sources relative to the project will be calculated to address the requirements of the Clean Air Act General Conformity Regulations. Under the General Conformity regulations, an emissions analysis is required to determine the total direct and indirect emissions for each criteria pollutant within the project limits. Based on the results of the air emissions analysis, a determination was made as to whether an emissions reduction strategy and/or mitigation would be necessary to allow the project to comply with the General Conformity requirements of the Clean Air Act. Mitigation is described in Section 5.

Emissions were calculated for two construction scenarios. The source of the materials to construct this dike is the same under both scenarios, but each scenario uses a different amount of material from those sources. The two primary construction material (borrow) sources are the onsite borrow source from within the proposed Masonville DMCF footprint and an offsite borrow source within the Seagirt dredging area.

The onsite borrow source would utilize sand and clay located within the project footprint. There is a layer of unsuitable construction material (overburden) overlying this borrow source that would be removed (predredged) and placed at the HMI DMCF. This borrow material consists of sands and stiff clays that would be hydraulically dredged from within the proposed DMCF footprint and then hydraulically placed during dike construction (Figure 1-3).

The Seagirt borrow source is connected to the Seagirt Marine Terminal Access channel deepening and widening project. Two of the access channels to the Seagirt Marine Terminal, the Seagirt-Dundalk Connecting Channel and the Dundalk West Channel, are being deepened and widened (Figure 1-4). The project is currently permitted to a depth of -50 ft plus an additional 2 ft of overdredging. A permit application has been submitted to increase the dredging depth to -52 ft plus an additional 2 ft of overdredging.

There are two construction scenarios involving the use of the onsite and Seagirt borrow sources. If dredging is approved to a depth of -52 ft plus an additional 2 ft of overdredging, then 25 percent of the initial construction material would come from the Seagirt dredging area and most of the remaining construction material needed would come from an onsite borrow source. Some construction material would need to come from an upland source, such as the material required for the construction of the cofferdam.

If dredging is only permitted to a depth of -51 ft plus an additional 2 ft of overdredging, then 20 percent of the initial construction material would come from the Seagirt dredging area. Most of the remaining material would come from the onsite borrow source. Some construction material would need to come from an upland source, such as the material required for the construction of the cofferdam.

The emissions for the scenario with 25 percent Seagirt dredged material and the scenario with 20 percent Seagirt dredged material are both included in this report.

The scope of work for this analysis involved the following tasks:

1. Determination of the emission quantities for each year of construction of the proposed Masonville DMCF project.

2. Presentation of estimated emissions for each pollutant by the applicable non-attainment status.

This report contains tables and figures that will delineate summary information for all tasks of work.

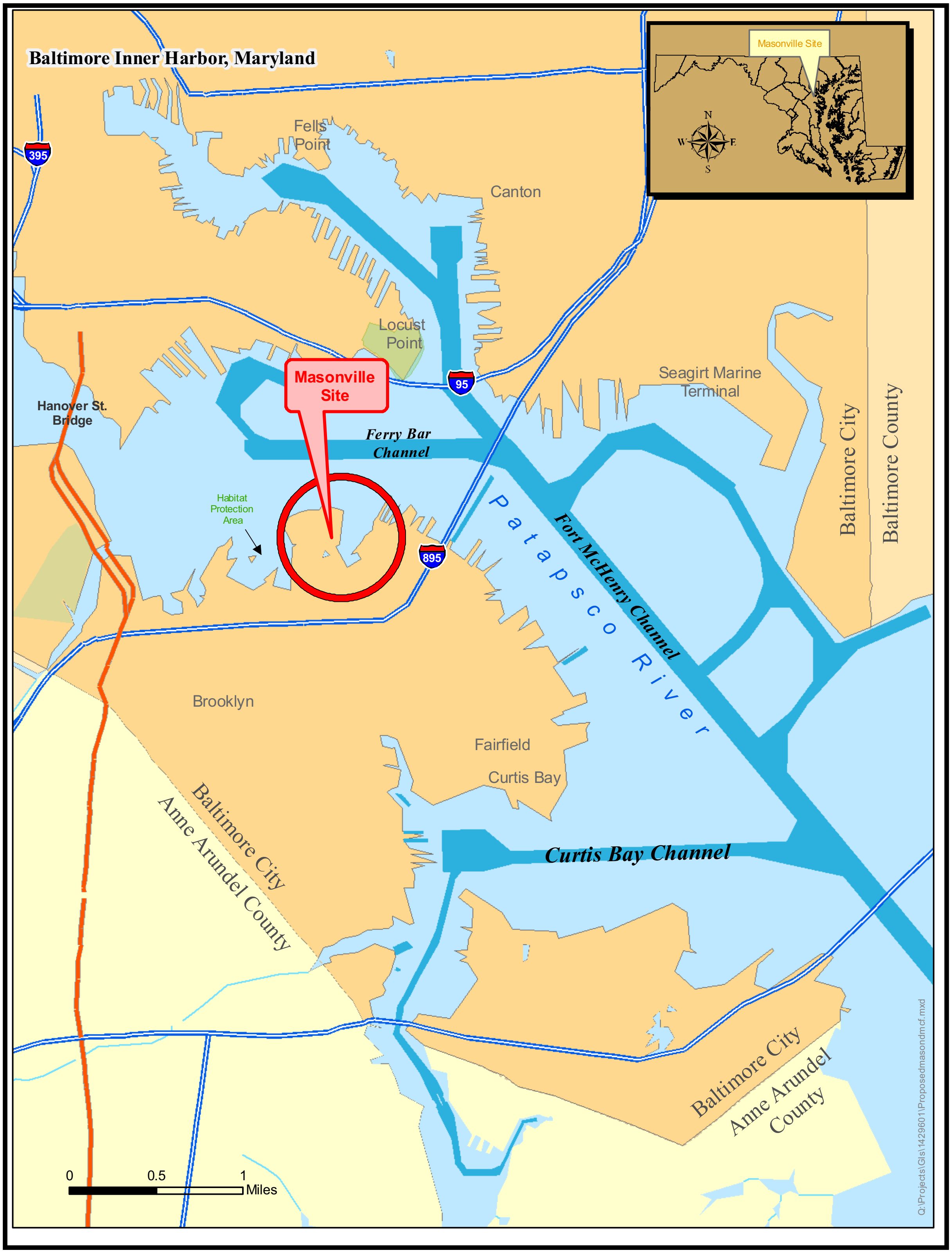

Figure 1-1. Location of the Proposed Masonville DMCF

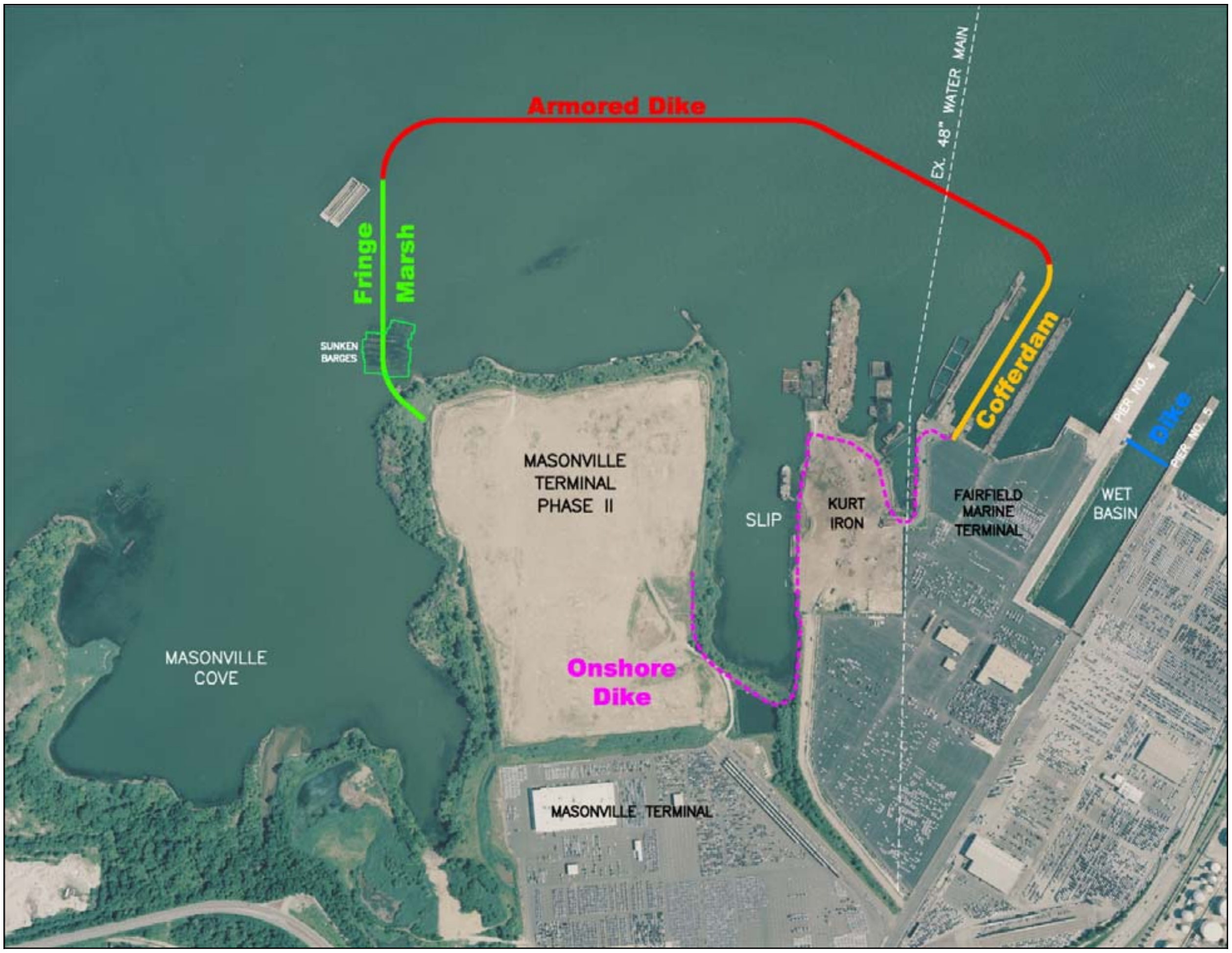

Figure 1-2. Proposed Masonville DMCF Containment Structure

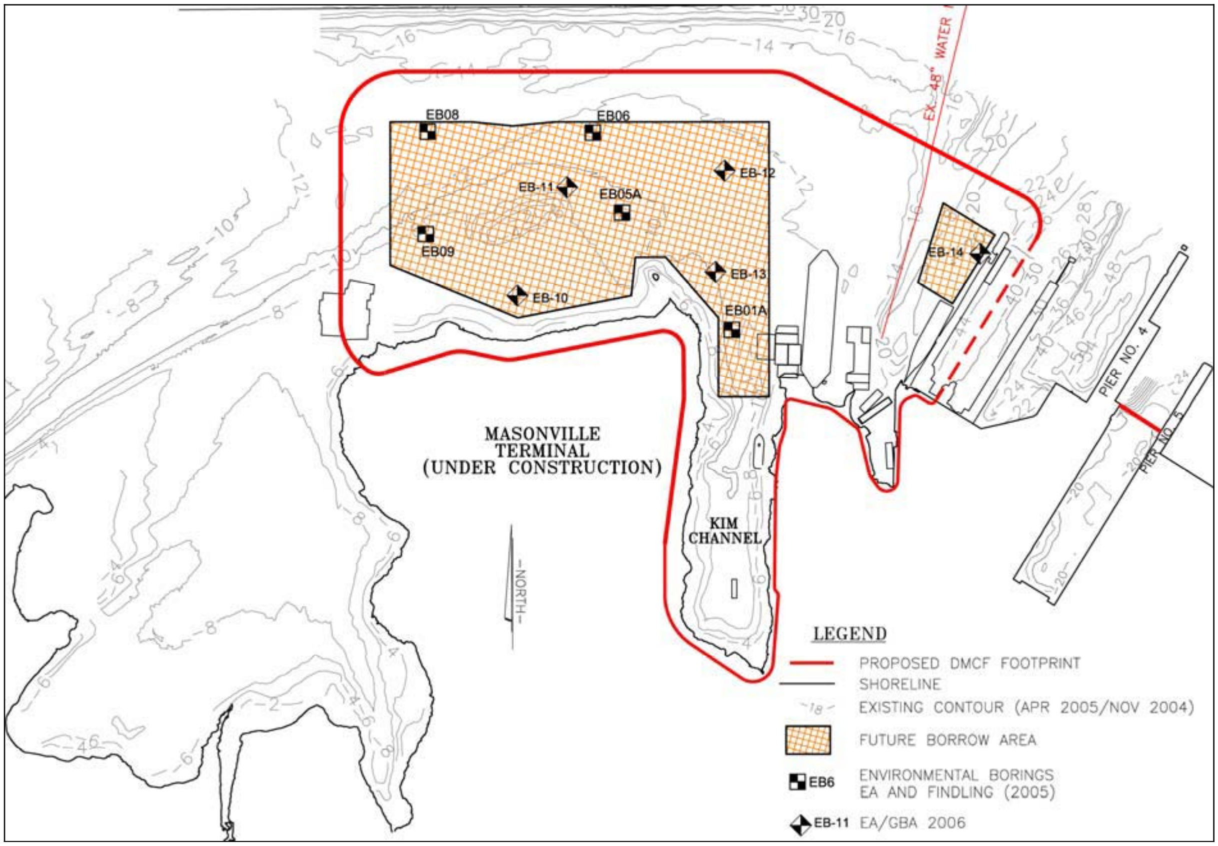

Figure 1-3. Masonville Borrow Source

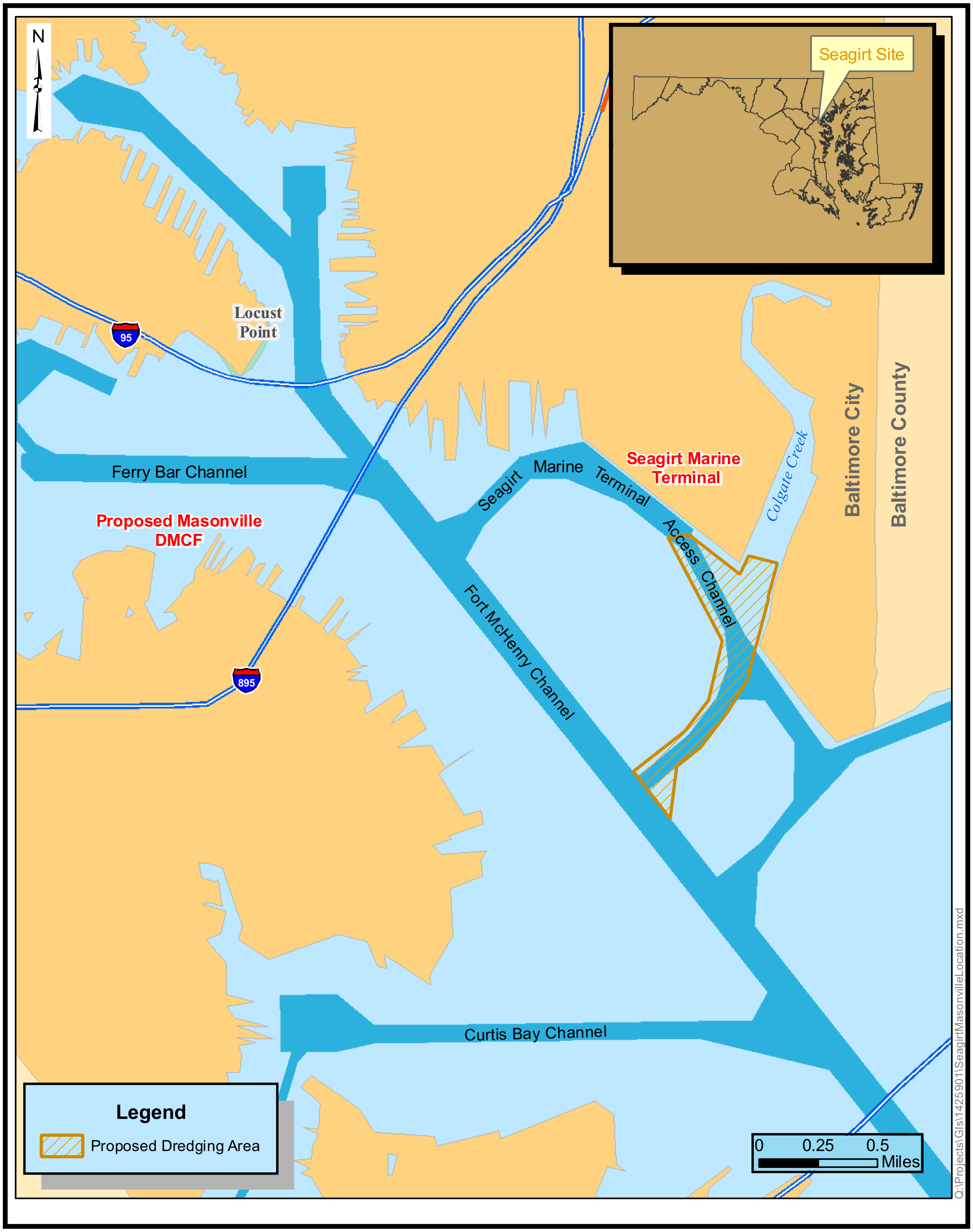

Figure 1-4. Location of the Seagirt Borrow Area

2. GENERAL CONFORMITY – REGULATORY BACKGROUND

The U.S. Environmental Protection Agency (EPA) promulgated the General Conformity Rule on November 30, 1993 to implement the conformity provision of Title I, Section 176(c)(1) of the Federal Clean Air Act (CAA). Section 176(c)(1) requires that the Federal Government does not engage, support, or provide financial assistance for licensing or permitting, or approving any activity that does not conform to an approved CAA implementation plan.

2.1 GENERAL CONFORMITY REQUIREMENTS

Title I, Section 176(c)(1), of the CAA defines conformity as the upholding of "an implementation plan's purpose of eliminating or reducing the severity and number of violations of the NAAQS and achieving attainment of such standards." Conforming activities or actions should not, through additional air pollutant emissions:

- cause or contribute to new violations of any National Ambient Air Quality Standards (NAAQS) in any area;
- increase the frequency or severity of any existing violation of any NAAQS; or
- delay timely attainment of any NAAQS or interim emission reductions.

The General Conformity Rule establishes conformity in coordination with, and as part of, the National Environmental Policy Act (NEPA) process. The rule takes into account air pollutant emissions associated with actions that are federally funded, licensed, permitted, or approved, and ensures emissions do not contribute to air quality degradation, thus preventing the achievement of state and federal air quality goals. Succinctly, General Conformity refers to the process of evaluating plans, programs, and projects to determine and demonstrate that they meet the requirements of the CAA and applicable State Implementation Plan (SIP).

Conformity determination is a two-step process: (1) applicability analysis, and (2) conformity analysis. Applicability analysis is achieved by comparing the project's annual emissions to "*de minimis*" pollutant thresholds outlined in the conformity rule. The more severe the "non-attainment" status of a region, the smaller the corresponding *de minimis* threshold is set. Federal actions are assumed to conform to the most recent federally approved SIP if total direct and indirect emissions caused by the federal action are less than the *de minimis* thresholds. The definitions of total direct and indirect emissions for conformity determination distinguish emissions by timing and location rather than the type of emission source.

Direct emissions occur at the same time and place as the federal action. Indirect emissions include those that may occur later in time or at a distance from the federal action. In addition, the conformity rule limits the scope of indirect emissions to those that can be quantified and are reasonably foreseeable by the federal agency and those that the federal agency can practicably control through its continuing program responsibility. If emissions from a proposed federal action exceed a *de minimis* threshold, a formal conformity analysis is required as the next step in the conformity determination process.

2.2 GENERAL CONFORMITY APPLICABILITY

Pursuant to the General Conformity Rule, a federal agency must make a General Conformity Determination for all federal actions in non-attainment or maintenance areas where the total of direct and indirect emissions of a non-attainment pollutant or its precursors exceeds levels established by the regulations.

Both the Masonville DMCF site and Masonville Cove are located in the Baltimore region for air quality monitoring purposes. The Baltimore region was in severe non-attainment for 1-hour ozone but has been reclassified on June 2005 as moderate non-attainment for 8-hour ozone standard. The region is in non-attainment status for particulate matter 2.5 (PM2.5) per EPA final rule of January 5, 2005; and in attainment for carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), and lead. On July 17 2006, EPA published a direct final rule (71 FR 40420) establishing a 100 tons per year (TPY) *de minimis* levels for both PM2.5 and SO2 emissions.

The entire State of Maryland is part of the Northeast Ozone Transport Region (OTR), which was established in the 1990 Clean Air Act Amendments in recognition of the long-standing ozone non-attainment problems in the northeast. The OTR is the area consisting of the Northeast and Mid-Atlantic States that historically has had a ground-level ozone problem, a large amount of which is accounted for by emissions generated outside the region. The Ozone Transport Commission (OTC), which is a multi-state organization, provides oversight of the region and is responsible for advising U.S. EPA on transport issues. The Northeast OTC is also responsible for developing and implementing regional solutions to the ground-level ozone problem.

The Masonville site is currently owned by the Maryland Department of Transportation (MDOT) and managed by the Maryland Port Administration (MPA). The site is currently undeveloped with a small parking lot (for about 10 vehicles). Presently, automobile exhaust is the main source of emissions.

The DMCF construction project would trigger a conformity analysis if its emissions exceeded the respective *de minimis* limits in the Baltimore region, or 10 percent of the non-attainment area's total emissions for any one pollutant.

This General Conformity Determination has been prepared pursuant to the CAA, Section 176(c)(1), to assess whether the emissions that would result from the Masonville DMCF Project would be in conformity with the SIP.

The established *de minimis* Thresholds are as follows:

- ***Volatile Organic Compounds (VOCs):*** Severe – 25 tons/year, Marginal – 50 tons/year, and Moderate – 50 tons/year
- ***Nitrogen Oxides (NOx):*** Severe – 25 tons/year, Marginal – 100 tons/year, and Moderate – 100 tons/year
- ***Carbon Monoxide (CO):*** Maintenance – 100 tons/year

3. METHODOLOGY FOR DETERMINING GENERAL CONFORMITY

3.1 PROPOSED MASONVILLE DMCF CONSTRUCTION

The Masonville DMCF project is divided into eight construction crews identified as Crews A, B1, B3, C, C1, D, E, and F. Each Crew has a specific job responsibility to be completed within an assigned time frame. Crew A would be responsible for demolition of Pier 3 and Pier 1 decks; Crew B1 would perform the pre-dredging of the Masonville DMCF site; Crew B3 would dredge the Seagirt borrow material; Crews C and C1 would be responsible for the construction of the DMCF Dike and Spillway; and Crews D, E, and F would construct the cofferdam, relocate the stormdrain, and construct mitigation and community enhancement projects within Masonville Cove.

The duration of activity for each of these crews is dependent upon the borrow scenario used. Summaries of the project schedules activity distributions that were used to calculate the emissions for each of the borrow scenarios are shown in Tables 3-1 through 3-4. Appendix A contains a detailed schedule for the entire project. Appendix A also contains a breakdown of the equipment used for each crew and the duration of time that each piece of equipment would be operated.

Table 3-1 – Project Schedule for the 25 Percent Seagirt Borrow Scenario

Crew	Activity	Start Date	Completion Date
A	Pier 1 & 3 Demolition	8/12/06	12/15/06
B1	Predredging (Masonville)	6/2/07	8/1/07
B3	Seagirt Deepening (materials to Masonville)	8/1/07	10/9/07
C	Dike construction	7/1/08	9/12/08
C1	Spillway Construction	8/10/08	1/24/09
D	Cofferdam Retention	1/5/07	2/12/08
E	Phase 2 Storm Drain Relocation	10/14/06	2/10/07
F	Mitigation (Education Center and Trail Construction)	1/26/07	4/25/09

Table 3-2 - Activities Distribution for the 25 Percent Seagirt Borrow Scenario

Crew	2006	2007	2008	2009
A	100%	0%	0%	0%
B1	0%	100%	0%	0%
B3	0%	100%	0%	0%
C	0%	0%	100%	0%
C1	0%	0%	85%	15%
D	0%	90%	10%	0%
E	66%	34%	0%	0%
F	0%	41%	45%	14%

Table 3-3 – Project Schedule for the 20 Percent Seagirt Borrow Scenario

Crew	Activity	Start Date	Completion Date
A	Pier 1 & 3 Demolition	8/12/06	12/15/06
B1	Predredging (Masonville)	6/2/07	8/1/07
B3	Seagirt Deepening (materials to Masonville)	8/1/07	9/29/07
C	Dike construction	7/1/08	9/17/08
C1	Spillway Construction	8/10/08	1/24/09
D	Cofferdam Retention	1/5/07	2/12/08
E	Phase 2 Storm Drain Relocation	10/14/06	2/10/07
F	Mitigation (Education Center and Trail Construction)	1/26/07	4/25/09

Table 3-4 - Activities Distribution for the 20 Percent Seagirt Borrow Scenario

Crew	2006	2007	2008	2009
A	100%	0%	0%	0%
B1	0%	100%	0%	0%
B3	0%	100%	0%	0%
C	0%	0%	100%	0%
C1	0%	0%	85%	15%
D	0%	90%	10%	0%
E	66%	34%	0%	0%
F	0%	41%	45%	14%

3.2 EMISSION TYPES AND SOURCES

As stated earlier, a conformity determination is required where a federal action causes the total of direct and indirect emissions to equal or exceed the prescribed air quality standards. The direct and indirect exhaust emissions from onshore and offshore sources that will be used in the construction activity must be determined. The following sections discuss all the emissions sources (direct and indirect) involved in the proposed Masonville DMCF project. Table 3-5 presents list of various direct equipment (onshore and offshore) and their corresponding horsepower capacities that will be utilized by the Crews during the DMCF construction.

Table 3-5 - Equipment List for Direct Emission Sources

Source Type	Equipment Type	Population	Capacity (HP)
Marine	Cranes	3	1,800
	Hopper Dredges	5	7,500
	Hydraulic Dredge	1	10,000
	Tugboats	12	12,900
Marine Total		**21**	**32,200**
Nonroad	Cranes	3	2100
	Dozers	4	1,800
	Excavators	4	1,200
	Pumps	2	200
	Pumps and Pile hammers	12	1,200
	Trucks	19	5,700
	Unloaders	2	4,000
Nonroad Total		**46**	**16,200**
Grand Total		**67**	**48,400**

3.2.1 Pollutant Types

The Code of Federal Regulations Title 40, Part 50 (40 CFR 50) establishes the overall regulations that specify the allowable concentrations of certain key constituents in the atmosphere. These standards are known as the National Ambient Air Quality Standards (NAAQS).

Each state is required to achieve compliance with the air quality standards through a State Implementation Plan (SIP). The SIP provides specific goals and requirements for the state and different regions within the state for meeting the air quality standards. The degree to which the regions meet the air quality standards is referred to as "attainment." Regions that do not meet the air quality standards are referred to as "nonattainment" or "maintenance" areas. The Code of Federal Regulations Title 40, Part 93, Section 153, (40 CFR 93.153) establishes threshold limits ("*de minimis*" levels in tons/year) for the regulated pollutants in these "nonattainment" or "maintenance" areas.

A federally funded, licensed, permitted, or approved project, such as the proposed Masonville DMCF Project, requires a conformity determination to establish whether the intended project will cause the criteria pollutants to exceed the air quality standards. An emissions analysis is required to determine the total direct and indirect emissions for each pollutant in the applicable nonattainment area. As stated earlier, Baltimore City is classified as moderate nonattainment for ozone based on the 2005 8-hour ozone standard and nonattainment status for particulate matter 2.5 (PM2.5). In addition, the following federally regulated pollutants; particulate matter 10(PM10) and sulfur oxides (SOx) will be included in the emission estimates. PM emissions were calculated for PM10 (particulates with an aerodynamic diameter of less than 10 microns, also called coarse particles) and PM2.5 (particulates with an aerodynamic diameter of less than 2.5 microns, also called fine particles). Emission estimates were performed for the pollutants and their respective results compared to the applicable *de minimis* levels, where applicable.

3.2.2 Emission Sources

The direct and indirect emission sources for the proposed Masonville DMCF project will consist of marine and land-based sources.

The marine sources include two types of dredges (hydraulic and hopper) that would be utilized to dredge material from the onsite borrow source and the Seagirt dredging area and dredge supporting equipment (tugboats and cranes). The land-based emission sources include both off-road and on-road equipment. The off-road equipment comprises heavy equipment that will be used in the construction and maintenance of the disposal sites (dozers, unloaders, cranes, excavators, off-road trucks, welders, pile hammers, and pumps). Refer to Table 3-5 above for a list of direct emissions sources. The on-road emission sources, identified as indirect emission sources, will be comprised of employee vehicles and delivery trucks.

The marine emission sources and off-road equipment all consist primarily of diesel-powered engines. The on-road sources are combinations of gasoline and diesel-powered vehicles.

3.3 AIR EMISSION MODELS

In order to determine the air emission quantities from the sources, background information (engine horsepower, hours of operation, and fuel source) of the different equipment types was obtained. Using this information, different engine load factors and emission factors were determined. Depending on an emission source (marine, land-based off-road equipment, or on-road vehicle), EPA has published guidelines that determine the appropriate engine load factors and emission factors. The EPA guidelines and models are discussed below for various direct and indirect emissions sources that will be used in the project.

3.3.1 Control of Emissions from Marine Diesel Engines

The marine emission sources are comprised of two types of dredges along with the associated support equipment. The EPA currently has an extensive compilation of air emission factors for various types of equipment (Compilation of Air Emission Factors, AP-42). The latest EPA technical report for developing load factors and emission factors for large compression-ignition marine diesel engines is given in the *Analysis of Commercial Marine Vessels Emissions and Fuel Consumption Data*; EPA 420-R-00-002, published February 2000. The technical report is a compilation of engine and fuel usage test data from various types of marine vessels, including bulk carriers, container ships, dredges, tankers, and tugboats. This report was employed in the determination of the load factors and emission factors for the various pieces of marine equipment that would be operational during construction of the proposed Masonville DMCF project. The load factors for the marine equipment shown in Table 5-2 of the EPA technical report *Analysis of Commercial Marine Vessels Emissions and Fuel Consumption Data* are based on the suggested operating mode of the vessel. These load factors are given for the corresponding operating mode (cruise, slow cruise, maneuvering, and hoteling) for the different types of vessels. Detailed emission factors were determined through a regression analysis of the representative test data published by the EPA. Emission factor algorithms were determined for the different pollutants and also for fuel consumption, which is used to determine the SO_2 emission factor. The sulfur content for the fuel consumption regression for SO_2 was set to 0.3 percent, which is the national sulfur content average for nonroad diesel. The marine engine emission factor and fuel consumption algorithms are presented in Table 5-1 of the EPA technical report *Analysis of Commercial Marine Vessels Emissions and Fuel Consumption Data*. The emission factor and fuel consumption rate algorithms are applicable to all engine sizes since the emissions data showed no statistically significant difference across engine sizes. All the equipment required for dredging, transport, and placement of the dredged material is accounted for in this emissions modeling analysis.

3.3.2 Control of Emissions from Off-road and On-road Sources

Nonroad Emissions Model

The off-road land-based emissions were calculated for each scenario using the EPA's new computer-based model known as the National Mobile Inventory Model (NMIM). This computer application was developed by the EPA to help estimate current and future emission inventories for on-road motor vehicles and nonroad equipment. The NMIM uses current versions of MOBILE6 and NONROAD models to calculate emission inventories based on multiple input scenarios entered into the system. The NMIM comprises a Java framework, graphical and command line user interfaces, the MOBILE6 and NONROAD models, a national county database, and post-processing and aggregation capabilities. The NMIM estimates emissions for six different exhaust pollutants: hydrocarbons (HC), NOx, CO, carbon dioxide (CO_2), SOx, and PM. HC are reported as either total hydrocarbons (THC), total organic gases (TOG), non-methane organic gases (NMOG), non-methane hydrocarbons (NMHC), or volatile organic compounds (VOCs). The NONROAD option of the NMIM model contains several different sets of data files that are used to specify the options for a model "run." These data files provide the necessary information to calculate and allocate the emissions estimates. The NMIM database contains information on load factors, emission factors, activity, geographic location (region, state, and counties), equipment source classification codes, and temporal allocation. The data files can be modified to reflect the project conditions by selecting the Fleet option and importing a comma delimited (csv) text files containing user–specified and/or project-specific information like the equipment source classification code (SCC), equipment capacity (HPmax), model year, technology type, equipment population, annual hours of use, and monthly activity distribution.

The NMIM Graphical User Interface was utilized for this project. The input options modified for the purpose of the Masonville DMCF project emissions estimate are discussed in the analysis section of this report. Information on the latest draft of the NMIM model is available on the EPA's website (http://www.epa.gov/otaq/nonrdmdl.htm).

Mobile Source Emissions Model

The indirect emissions sources for the project will be as a result of employee vehicles and other over-the-road vehicles utilized during the construction process. EPA has developed a mobile source emissions model, MOBILE6.2, to calculate emissions from different vehicle types. MOBILE6.2 is a model that calculates emissions, in grams per mile, for different vehicle types under various operating conditions. The user specifies various input options on vehicle types, quantity, and operating conditions. The model will calculate the emission quantities for HC, CO, NOx, CO_2, PM, and toxics for each type of vehicle. The emission quantities are then multiplied by the number of miles traveled to determine the final quantities. The input options utilized to run the model are discussed in the analysis section of this report.

3.4 PROPOSED MASONVILLE DMCF PROJECT EMISSIONS

3.4.1 Marine Emissions

The procedure described here to calculate marine emissions was completed for each of the borrow scenarios described in Section 1. The equipment is the same under both scenarios but the amount of time each crew is operating differs.

The first step in determining the marine emission quantities was to develop a list of all the marine equipment (dredges and support) that would be utilized during construction of the proposed Masonville DMCF project and the engine operating characteristics (horsepower and fuel type). This information in shown in Table 3-5. The marine operations comprised the following equipment: one hydraulic dredge, three hopper dredges, twelve tugboats, and three cranes. Each of these equipment types was analyzed based on its capacity. A detailed breakdown of the different equipment types, engine type and size are presented in the equipment inventory table in Appendix A.

Emission rates, reported in tons of pollutant emitted per hour of operation (tons/hr) for each engine were calculated for each of the six criteria air pollutants: CO, NOx, PM2.5, PM10, SOx, and VOCs. The emission rates were derived from the formula:

$$\textit{Emission Rate (tons/hr)} = \textit{Engine Horsepower} \times \textit{Engine Load Factor} \times \textit{Emission Factor}$$

As stated previously, the EPA technical report: *Analysis of Commercial Marine Vessels Emissions and Fuel Consumption Data* was used to determine the appropriate load factors and emission factors used for the marine equipment emissions calculations. Estimated emission rates from the marine equipment are presented in Appendix B.

Load factors and emission factors for different marine equipment were determined and the project schedule (for each scenario) was used to estimate the annual hours of operation for the each piece of equipment. The proposed Masonville DMCF project would be completed by a total of eight different construction crews as presented in Tables 3-1 and Table 3-3 above. These schedules are based on the detailed construction estimates and other supporting data presented in Appendix A.

After applying the project schedule for each scenario, the annual hours of operation were developed for each piece of marine equipment over the construction period. Quantities of each of the six pollutants emitted were calculated based on the following formula:

$$\textit{Emission Amount (tons/year)} = \textit{Emission Rate (tons/hour)} \times \textit{Working Hours (hours/year)}$$

All the assumptions and equations for the marine emissions calculations and the corresponding emissions for each scenario are presented Appendix B.

3.4.2 Off-Road Emissions

The procedure described here to calculate off-road emissions was completed for each of the borrow scenarios described in Section 1. The equipment is the same under both scenarios but the amount of time each crew is operating differs.

The criteria air pollutant emissions from the off-road land-based equipment were determined using the EPA's new NMIM (March 2006). The equipment types, engine parameters and hours of operation were derived from the project estimates. The off-road equipment was categorized by crews, which are based on contracts, along with the corresponding engine capacities (horsepower), number of pieces of equipment operating, and contract schedules (hours). Based on individual crew project schedules and various crew activities for each project year, the hours of operation for each crew were then distributed to the corresponding years to determine annual operating amounts (Tables 3-2 and 3-4).

In order to quantify emissions, the NMIM requires certain input parameters such as fuel type; temporal information; geographic region (state and county); equipment source classification codes (SCC), equipment technology type, equipment population, and monthly activity distribution ratio. The model contains a database of emission factors, which are a function of equipment SCC, equipment technology type, fuel type and metrological data of the geographical region. Table 3-6 presents list of nonroad equipment and associated SCCs. In any event where user-defined information is not provided for any project-specific parameter, the model will use the default value available within the software's database for that parameter.

Table 3-6. List of Nonroad Equipment SCCs

SCC	Fuel Type	Segment Desc.	SCC Desc.	SCCID
2270002036	Dies	Construction	Diesel Excavators	507
2270002039	Dies	Construction	Diesel Concrete/Industrial Saws	508
2270002042	Dies	Construction	Diesel Cement & Mortar Mixers	509
2270002045	Dies	Construction	Diesel Cranes	510
2270002048	Dies	Construction	Diesel Graders	511
2270002051	Dies	Construction	Diesel Off-highway Trucks	512
2270002054	Dies	Construction	Diesel Crushing/Proc. Equipment	513
2270002057	Dies	Construction	Diesel Rough Terrain Forklifts	514
2270002060	Dies	Construction	Diesel Rubber Tire Loaders	515
2270002063	Dies	Construction	Diesel Rubber Tire Dozers	516
2270002066	Dies	Construction	Diesel Tractors/Loaders/Backhoes	517
2270002069	Dies	Construction	Diesel Crawler Tractors	518
2270002072	Dies	Construction	Diesel Skid Steer Loaders	519
2270002075	Dies	Construction	Diesel Off-Highway Tractors	520
2270002078	Dies	Construction	Diesel Dumpers/Tenders	521
2270002081	Dies	Construction	Diesel Other Construction Equipment	522

To properly characterize nonroad emissions that would result from the project, some of the Model's input parameters were modified to accurately reflect the estimated project schedule. For each crew, the NMIM was executed with a properly formatted input data file. The stepwise NMIM model input parameters and all the project specific modifications are briefly described below.

Time

Appropriate year(s) and associated months (Tables 3-1 and 3-3) were entered for each crew.

Geography

The state and the county of the project were selected from list of states and counties. In this case, the state of Maryland was selected. The NMIM NONROAD database does not contain information for the City of Baltimore and Anne Arundel County for some of the classes of off-road equipment. In these cases, Baltimore County fleet information was selected.

Vehicle/Equipment

In the Vehicle/Equipment option of the NMIM, the nonroad option was selected followed by Diesel, and then Construction.

Fleet

For the Fleet option of the model, the nonroad portion was selected, followed by the "Perform Nonroad Fleet Modeling." The browse option of the "Nonroad Fleet Information

File" was selected to import the user-created project specific CSV file. The information contained in the CSV data are: each equipment source classification codes, equipment capacity (HPmax), equipment model year, equipment technology type, equipment population, annual hours of operation, and monthly distributed activities ratio. The CSV fleet input data for each scenario is presented in Appendix C.

Pollutants

For the pollutant option of the model, the six criteria air pollutants were selected (CO, NOx, PM2.5, PM10, SO_2, and VOC).

Once the appropriate data files were modified, the model was executed for the different crews on an annual basis. The NMIM emissions output results are given in tons of pollutant emitted per year. Appendix C presents the NMIM NONROAD output data for all the contracts. Emissions were determined for the different types of equipment used by each Crew and distributed to each project year based on the degree of activity for that particular year. The NMIM emission results for each borrow scenario are presented in Appendix C.

3.4.3 On-Road Emissions (Mobile Sources)

The procedure to calculate on-road emissions described here was completed for each of the borrow scenarios described in Section 1. The equipment is the same under both scenarios but the amount of time each crew is operating differs.

The indirect emissions for the proposed Masonville DMCF project result from mobile sources (employee vehicles and other on-road vehicles) utilized during the construction of the project. The construction phase on-road vehicle emissions were estimated using the EPA Mobile6.2 emission factor model and activity data representing the employee and delivery vehicle miles traveled (VMT) for all four years of construction and all eight construction crews. CO, NOx, VOC, SO_2, PM10, and PM2.5 emissions were calculated for employees' vehicles and the delivery trucks. Mobile6.2 calculates emission factors in grams per mile for different vehicle types and operating conditions. These emission factors were multiplied by the VMT to calculate the total emissions.

The emission factors were estimated from the execution of Mobile6.2 for the summer and winter seasons of calendar years 2006, 2007, 2008, and 2009. Required local input data such as minimum and maximum temperature, fuel Reid's vapor pressure (RVP), fuel sulfur content, and state inspection and maintenance (I/M) control program data were obtained through a literature search. Data concerning VMT mix fractions and registration distribution used Mobile6.2 default values that represent national average data.

The Mobile6.2 emission factors were further reduced to calculate composite emission factors. In doing so, it was assumed that employee vehicles were composed of light-duty gasoline vehicles (LDGV) and light-duty gasoline trucks. The delivery vehicles were assumed to be composed of heavy-duty gasoline vehicles (HDGV), light-duty diesel vehicles (LDDV), light-duty diesel trucks (LDDT) and heavy-duty diesel vehicles (HDDV).

To account for the monthly fleet turnover, the emission factors for each month were estimated by using EPA recommended mathematical interpolation between the two MOBILE6.2 results by weighting the January and July results relative to 6 months.

The activity data represented the VMT by vehicle class. The total mileage in a given crew was obtained by multiplying the number of employees by the mileage driven per employee per day and by the duration of the crew in days. In doing so, it was assumed that each employee would drive its own vehicle, take two trips on the construction site, and drive 1 mile per trip.

For the delivery vehicles, four deliveries per construction day was assumed. It was also assumed that each delivery vehicle would take two trips on the construction site and drive 1 mile per trip.

4. GENERAL CONFORMITY DETERMINATION

4.1 EMISSIONS RESULTS

The criteria air pollutants emissions presented in the tables below represent the estimated total of direct and indirect emissions that would occur during the proposed Masonville DMCF construction for each borrow scenario. The analysis of the emissions for each scenario has been completed to fulfill the requirements of the General Conformity Provision of the Clean Air Act. The emissions for the marine and land-based equipment were determined according to the methodology described in Section 3.4 for each of the borrow scenarios. The calculated emissions were then totaled on an annual basis for all equipment used for each of the crews. Emissions from each project year were compared to the *de minimis* threshold levels for the project area as discussed in Section 2.2.

Tables 4-1 through Table 4-4 present total emissions summaries from the proposed Masonville DMCF construction project for each scenario. The emissions resulting from each scenario are presented for each crew (Table 4-1 and Table 4-3),and for each calendar year (Tables 4-2 and 4-4). For each year there were emissions, the total amount of emissions for that year were compared to the General Conformity threshold requirements. From Tables 4-2 and 4-4, it is observed that NOx emissions will exceed the Federal Conformity limits (bold print) in the second and third years of the project (2007 and 2008) for both borrow scenarios. All other pollutants (PM2.5 and VOC) are below the Federal Conformity limits in all years for both scenarios and, therefore, no further analysis is required for those pollutants. The tables below present the summaries of emissions for the Masonville DMCF construction project:

Table 4-1. Emissions (tons) Summary for the proposed Masonville DMCF Project for the 25 percent Seagirt Borrow Scenario

	CO	NOx	PM2.5	PM10	SO2	VOC
CREW A	2.164	10.955	0.323	0.332	1.803	0.327
CREW B1	26.585	113.007	3.773	3.897	16.820	3.477
CREW B3	8.371	53.574	1.348	1.348	9.085	0.940
CREW C	18.242	114.344	2.916	2.923	19.239	2.094
CREW C1	2.841	6.057	0.312	0.340	0.132	0.529
CREW D	12.582	37.202	1.854	1.929	7.654	2.025
CREW E	0.843	1.595	0.083	0.092	0.251	0.154
CREW F	7.200	16.593	0.846	0.920	0.973	1.600
TOTAL	**78.83**	**353.33**	**11.46**	**11.78**	**55.96**	**11.15**

Table 4-2 Total Annual Emissions (tons) Compared to the General Conformity (GC) Threshold for the 25 percent Seagirt Borrow Scenario

Pollutant	GC Threshold	2006	2007	2008	2009	TOTAL
CO	**NA**	2.72	49.55	25.12	1.44	78.83
NOx	**100**	12.00	**207.47**	**130.60**	3.26	353.33
PM2.5	**100**	0.38	7.17	3.74	0.17	11.46
PM10	**NA**	0.39	7.39	3.81	0.18	11.78
SOx	**NA**	1.97	33.28	20.55	0.16	55.96
VOC	**50**	0.43	6.95	3.46	0.31	11.15

Table 4-3. Emissions (tons) Summary for the proposed Masonville DMCF Project for the 20 percent Seagirt Borrow Scenario

	CO	NOx	PM2.5	PM10	SO2	VOC
CREW A	2.164	10.955	0.323	0.332	1.803	0.327
CREW B1	26.585	113.007	3.773	3.897	16.820	3.477
CREW B3	7.184	45.922	1.155	1.155	7.787	0.806
CREW C	19.444	122.020	3.111	3.117	20.537	2.230
CREW C1	2.841	6.057	0.312	0.340	0.132	0.529
CREW D	12.582	37.202	1.854	1.929	7.654	2.025
CREW E	0.843	1.595	0.083	0.092	0.251	0.154
CREW F	7.200	16.593	0.846	0.920	0.973	1.600
TOTAL	**78.84**	**353.35**	**11.46**	**11.78**	**55.96**	**11.15**

Table 4-4 Total Annual Emissions (tons) Compared to the General Conformity (GC) Threshold for the 20 percent Seagirt Borrow Scenario

Pollutant	GC Threshold	2006	2007	2008	2009	TOTAL
CO	**NA**	2.72	48.36	26.32	1.44	78.84
NOx	**100**	12.00	**199.82**	**138.27**	3.26	353.35
PM2.5	**100**	0.38	6.97	3.94	0.17	11.46
PM10	**NA**	0.39	7.20	4.01	0.18	11.78
SOx	**NA**	1.97	31.99	21.85	0.16	55.96
VOC	**50**	0.43	6.82	3.59	0.31	11.15

4.2 EMISSIONS SUMMARY

Based on result as shown in Tables 4-2 and 4-4 above**,** NOx emissions are observed to be above the Federal Conformity limits for the second and third years of the proposed Masonville DMCF construction project for both borrow scenarios. Due to this exceedance, according to the General Conformity ruling (40 CFR 93.158 (a)(2) and (a)(4)), it will be required to mitigate or offset the NOx emissions that will result from construction activities to zero for those years (2007 and 2008).

4.3 COMPARISON TO *DE MINIMIS* LEVELS

The general conformity regulation requires that federal agencies sponsoring non transportation-related activities show that the emissions associated with those activities conform to State Implementation Plans and that their emissions meet specific criteria. First, the emissions must not occur in areas designated as nonattainment areas for one or more of the federal ambient air quality standards. Second, those emissions must not exceed certain *de minimis* threshold levels.

Activities associated with the proposed Masonville DMCF project would occur within Baltimore City in the state Maryland. The Baltimore region was in severe non-attainment for 1-hour ozone; however, it is now classified as in moderate non-attainment based on the new 8-hour ozone standard. The region is in non-attainment status for particulate matter 2.5 (PM2.5) per the EPA final rule of 5 January 2005, and in attainment for carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), and lead. On July 17 2006, the EPA published a direct final rule (71 FR 40420) establishing a 100 tons per year (TPY) *de minimis* levels for both direct PM2.5 and SO_2 emissions.

The project areas (Baltimore City) are both designated as a moderate nonattainment for NOx. As such, the *de minimis* threshold for these regions is 100 tons of NO_x per year. Therefore, general conformity mitigation would be required for NO_x for the second and third year of the project (2007 and 2008) under either scenario.

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5. MASONVILLE AIR POLLUTANT MITIGATION PLAN

5.1 BACKGROUND

As demonstrated in the previous sections, the proposed Masonville DMCF project would require the mitigation of air emissions for the construction years of 2007 and 2008 for either of the borrow scenarios that could be selected. NOx emissions (rounded up to the nearest ton) have been projected to be 208 tpy for 2007 and 131 tpy for 2008 for the 25 percent Seagirt material borrow scenario. NOx emissions (rounded up to the nearest ton) have been projected to be 200 tpy for 2007 and 139 tpy for 2008 for the 20 percent Seagirt material borrow scenario. Note that the total for each of the two scenarios remains the same.

The initial approach for developing an emissions mitigation program was to identify emission reduction opportunities for NOx at the Maryland Port Administration facilities. Several possibilities were examined, such as the electrification of gantry cranes at the Dundalk Marine Terminal, however none were deemed cost effective or practical in terms of the Masonville schedule (pursuant to USEPA guidance emission reduction “projects” should occur at the same time new emissions are generated).

The next option examined was to consider the use of securing permanent emission reduction credits (ERC). Several options in this regard are presently being pursued. The first would be to obtain NOx credits for the necessary 2 year period from Sempra Generation, a utility that has secured NOx credits, but does not need them until the 2009/2010 timeframe. Coordination with Sempra Generation is ongoing and a leasing arrangement is being discussed. In the event this option does not work, discussions were held with the Maryland Department of the Environment (MDE) to determine if other options would be available for securing emission credits. The MDE conveyed that a precedent does exist for offsetting NOx emissions with VOC emission reductions under the nonattainment provisions of the State’s New Source Review (NSR) Program. The program has been approved by the USEPA and is included in the State Implementation Plan (SIP). The NSR program regulates major new or modified stationary sources of air pollutants that require emission offsets. Since NOx and VOC are both precursors of ground level ozone, the state has allowed the interchanging of emission credits. The MDE would allow this arrangement for the Masonville project, as indicated in a letter dated October 16, 2006 (Appendix E). Further coordination with MDE indicated that a ratio of 1 to 1 would be used to calculate the mitigation credits required.

According to the General Conformity rule, any emissions credits obtained must be obtained from the same attainment or non-attainment area. Any credits used to offset the emissions from the proposed Masonville DMCF construction would need to be offset with credits from the Baltimore non-attainment region. The credits that Sempra Generation has obtained were originally from Bethlehem Steel, which is located in the Baltimore non-attainment region. These credits would satisfy the need to obtain all mitigation credits from within the same non-attainment region as the project.

5.2 PROPOSED MITIGATION APPROACH

Based on the above alternatives, the proposed approach for mitigation would be to purchase approved NOx credits from Sempra Generation. There are 250 tpy of NOx credits from the Baltimore non-attainment region available from Sempra Generation. These credits would be sufficient to offset the emissions generated from the construction of the proposed Masonville DMCF under either borrow scenario, as described in previous chapters. These credits would also fulfill the requirement that mitigation credits be obtained from the same non-attainment region as the project requiring mitigation. Negotiations between the State of Maryland and Sempra Generation to lease the credits are ongoing. Both parties are working to create a lease agreement that meets Sempra Generation's need to use the credits beginning in 2009 and the State of Maryland's need to offset emissions during 2007 and 2008. The number of credits required has been calculated for each of the two calendar years 2007 and 2008. Since the ratio used to calculate required NOx mitigation credits is 1 to 1, only the estimated amount of emissions for each year would be leased by the State of Maryland. It is proposed that all emission reduction credits will be secured before construction begins.

APPENDIX A

Project Schedule and Equipment List

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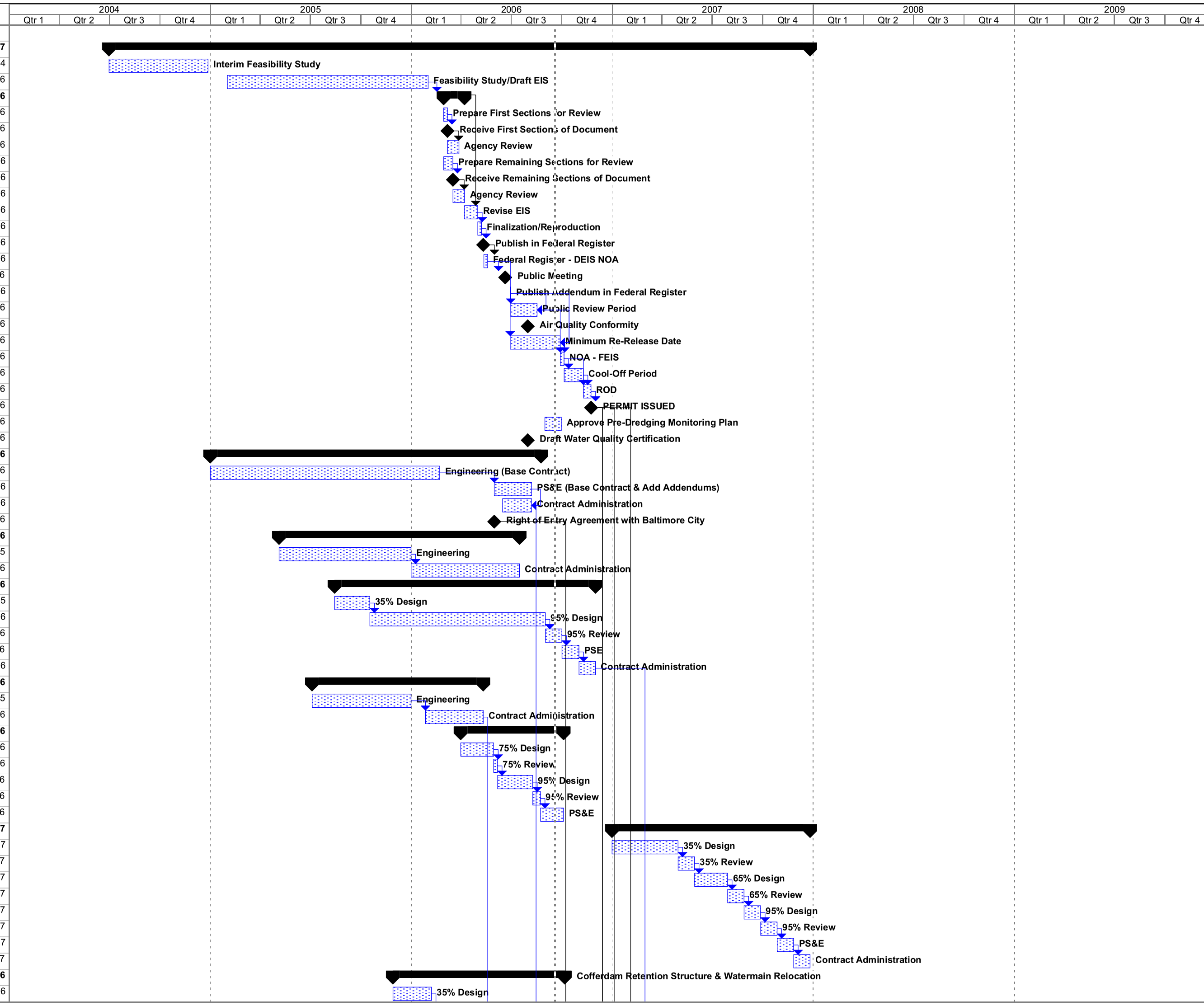
MASONVILLE DEVELOPMENT SCHEDULE
DRAFT - SEPTEMBER 2006

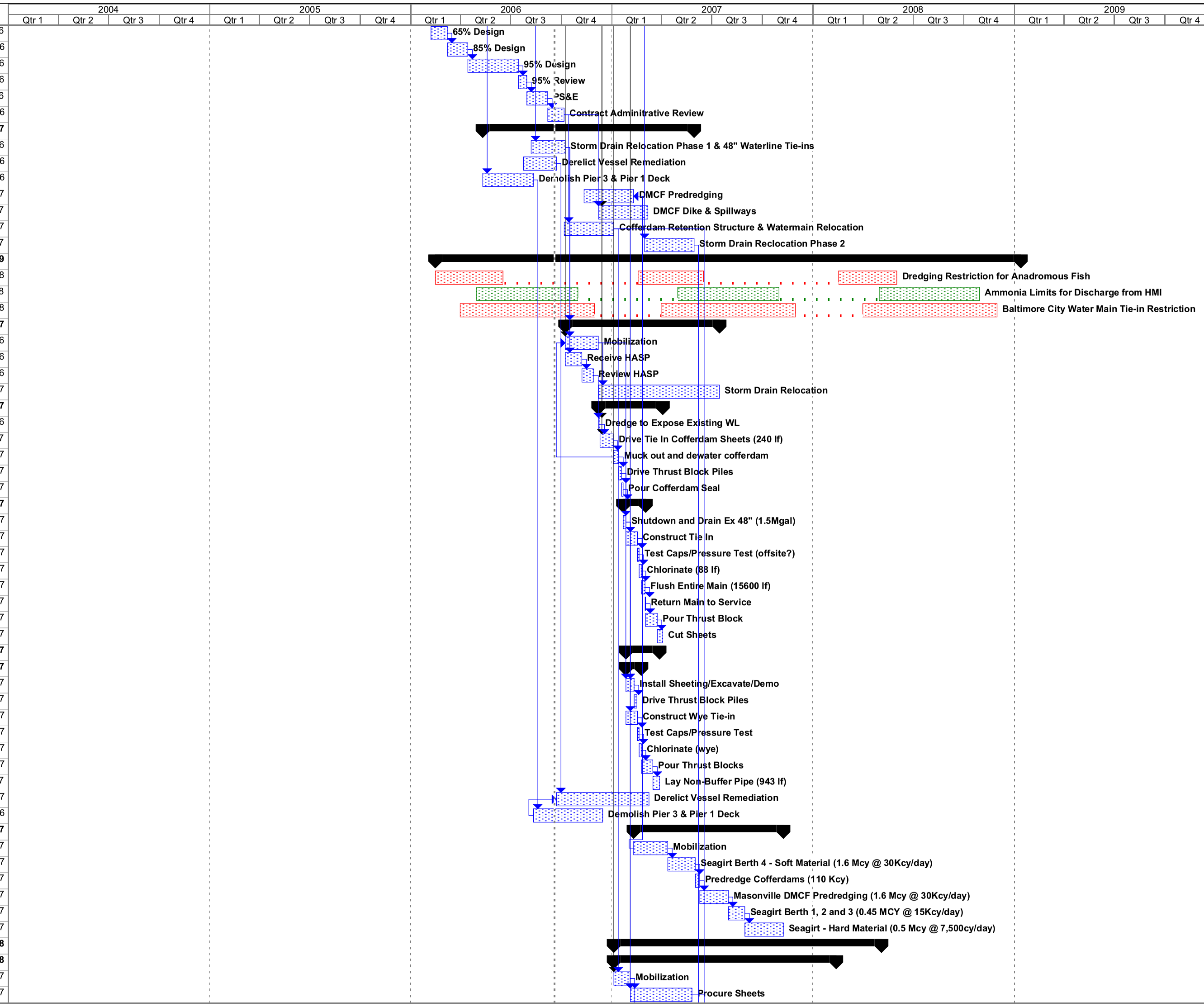
ID	Task Name	Duration	Start	Finish
1				
2	**ENGINEERING**	**1274 days?**	**Thu 7/1/04**	**Wed 12/26/07**
3	Interim Feasibility Study	180 days	Thu 7/1/04	Mon 12/27/04
4	Feasibility Study/Draft EIS	365 days	Tue 2/1/05	Tue 1/31/06
5	**Cooperating Agencies**	**38 days**	**Wed 3/1/06**	**Fri 4/7/06**
6	Prepare First Sections for Review	7 days	Wed 3/1/06	Tue 3/7/06
7	Receive First Sections of Document	0 days	Tue 3/7/06	Tue 3/7/06
8	Agency Review	21 days	Wed 3/8/06	Tue 3/28/06
9	Prepare Remaining Sections for Review	17 days	Wed 3/1/06	Fri 3/17/06
10	Receive Remaining Sections of Document	0 days	Fri 3/17/06	Fri 3/17/06
11	Agency Review	21 days	Sat 3/18/06	Fri 4/7/06
12	Revise EIS	24 days	Sat 4/8/06	Mon 5/1/06
13	Finalization/Reproduction	7 days	Tue 5/2/06	Mon 5/8/06
14	Publish in Federal Register	1 day	Fri 5/12/06	Fri 5/12/06
15	Federal Register - DEIS NOA	7 days	Sat 5/13/06	Fri 5/19/06
16	Public Meeting	0 days	Wed 6/21/06	Wed 6/21/06
17	Publish Addendum in Federal Register	1 day?	Fri 6/30/06	Fri 6/30/06
18	Public Review Period	48 days	Sat 7/1/06	Thu 8/17/06
19	Air Quality Conformity	1 day?	Tue 8/1/06	Tue 8/1/06
20	Minimum Re-Release Date	91 days	Fri 6/30/06	Thu 9/28/06
21	NOA - FEIS	7 days	Fri 9/29/06	Thu 10/5/06
22	Cool-Off Period	35 days	Fri 10/6/06	Thu 11/9/06
23	ROD	14 days	Fri 11/10/06	Thu 11/23/06
24	PERMIT ISSUED	14 days	Fri 11/24/06	Thu 12/7/06
25	Approve Pre-Dredging Monitoring Plan	30 days	Fri 9/1/06	Sat 9/30/06
26	Draft Water Quality Certification	1 day?	Tue 8/1/06	Tue 8/1/06
27	**Storm Drain Relocation Phase 1 & 48" Watermain Tie-ins**	**601 days?**	**Sat 1/1/05**	**Thu 8/24/06**
28	Engineering (Base Contract)	417 days?	Sat 1/1/05	Tue 2/21/06
29	PS&E (Base Contract & Add Addendums)	68 days	Thu 6/1/06	Mon 8/7/06
30	Contract Administration	53 days	Fri 6/16/06	Mon 8/7/06
31	Right of Entry Agreement with Baltimore City	85 days	Thu 6/1/06	Thu 8/24/06
32	**Derelict Vessel Remediation**	**437 days**	**Fri 5/6/05**	**Sun 7/16/06**
33	Engineering	240 days	Fri 5/6/05	Sat 12/31/05
34	Contract Administration	197 days	Sun 1/1/06	Sun 7/16/06
35	**Storm Drain Reclocation Phase 2**	**474 days?**	**Mon 8/15/05**	**Fri 12/1/06**
36	35% Design	64 days?	Mon 8/15/05	Mon 10/17/05
37	95% Design	319 days?	Tue 10/18/05	Fri 9/1/06
38	95% Review	30 days	Sat 9/2/06	Sun 10/1/06
39	PSE	31 days	Mon 10/2/06	Wed 11/1/06
40	Contract Administration	30 days	Thu 11/2/06	Fri 12/1/06
41	**Demolish Pier 3 & Pier 1 Deck**	**311 days?**	**Tue 7/5/05**	**Thu 5/11/06**
42	Engineering	180 days?	Tue 7/5/05	Sat 12/31/05
43	Contract Administration	105 days	Fri 1/27/06	Thu 5/11/06
44	**Predredging**	**187 days**	**Sat 4/1/06**	**Wed 10/4/06**
45	75% Design	60 days	Sat 4/1/06	Tue 5/30/06
46	75% Review	7 days	Wed 5/31/06	Tue 6/6/06
47	95% Design	64 days	Wed 6/7/06	Wed 8/9/06
48	95% Review	14 days	Thu 8/10/06	Wed 8/23/06
49	PS&E	42 days	Thu 8/24/06	Wed 10/4/06
50	**DMCF Dike & Spillways**	**360 days**	**Mon 1/1/07**	**Wed 12/26/07**
51	35% Design	120 days	Mon 1/1/07	Mon 4/30/07
52	35% Review	30 days	Tue 5/1/07	Wed 5/30/07
53	65% Design	60 days	Thu 5/31/07	Sun 7/29/07
54	65% Review	30 days	Mon 7/30/07	Tue 8/28/07
55	95% Design	30 days	Wed 8/29/07	Thu 9/27/07
56	95% Review	30 days	Fri 9/28/07	Sat 10/27/07
57	PS&E	30 days	Sun 10/28/07	Mon 11/26/07
58	Contract Administration	30 days	Tue 11/27/07	Wed 12/26/07
59	**Cofferdam Retention Structure & Watermain Relocation**	**312 days**	**Tue 11/29/05**	**Fri 10/6/06**
60	35% Design	70 days	Tue 11/29/05	Mon 2/6/06



mville 09-08-06 - masonville draft.mpp Date: Mon 9/18/06	Task		Progress		Summary		External Tasks		Deadline	
	Split		Milestone		Project Summary		External Milestone			

MASONVILLE DEVELOPMENT SCHEDULE
DRAFT - SEPTEMBER 2006

ID	Task Name	Duration	Start	Finish
61	65% Design	30 days	Tue 2/7/06	Wed 3/8/06
62	85% Design	37 days	Thu 3/9/06	Fri 4/14/06
63	95% Design	92 days	Sat 4/15/06	Sat 7/15/06
64	95% Review	15 days	Sun 7/16/06	Sun 7/30/06
65	PS&E	38 days	Mon 7/31/06	Wed 9/6/06
66	Contract Adminitrative Review	30 days	Thu 9/7/06	Fri 10/6/06
67	**PROCUREMENT**	**384 days**	**Fri 5/12/06**	**Wed 5/30/07**
68	Storm Drain Relocation Phase 1 & 48" Waterline Tie-ins	62 days	Tue 8/8/06	Sun 10/8/06
69	Derelict Vessel Remediation	60 days	Tue 7/25/06	Fri 9/22/06
70	Demolish Pier 3 & Pier 1 Deck	92 days	Fri 5/12/06	Fri 8/11/06
71	DMCF Predredging	90 days	Sun 11/12/06	Sat 2/10/07
72	DMCF Dike & Spillways	90 days	Fri 12/8/06	Wed 3/7/07
73	Cofferdam Retention Structure & Watermain Relocation	90 days	Sat 10/7/06	Thu 1/4/07
74	Storm Drain Reclocation Phase 2	90 days	Fri 3/2/07	Wed 5/30/07
75	**CONSTRUCTION**	**1063 days**	**Wed 2/15/06**	**Mon 1/12/09**
76	Dredging Restriction for Anadromous Fish	348 days	Wed 2/15/06	Sun 6/1/08
77	Ammonia Limits for Discharge from HMI	550 days	Mon 5/1/06	Wed 10/29/08
78	Baltimore City Water Main Tie-in Restriction	732 days	Sat 4/1/06	Sun 11/30/08
79	**Storm Drain Relocation Phase 1 & 48" Waterline Tie-ins**	**280 days**	**Mon 10/9/06**	**Sun 7/15/07**
80	Mobilization	60 days	Mon 10/9/06	Thu 12/7/06
81	Receive HASP	30 days	Mon 10/9/06	Tue 11/7/06
82	Review HASP	21 days	Wed 11/8/06	Tue 11/28/06
83	Storm Drain Relocation	220 days	Fri 12/8/06	Sun 7/15/07
84	**Waterside Tie-in**	**117 days**	**Fri 12/8/06**	**Tue 4/3/07**
85	Dredge to Expose Existing WL	3 days	Fri 12/8/06	Sun 12/10/06
86	Drive Tie In Cofferdam Sheets (240 lf)	24 days	Mon 12/11/06	Wed 1/3/07
87	Muck out and dewater cofferdam	10 days	Thu 1/4/07	Sat 1/13/07
88	Drive Thrust Block Piles	5 days	Sun 1/14/07	Thu 1/18/07
89	Pour Cofferdam Seal	3 days	Fri 1/19/07	Sun 1/21/07
90	**Shutdown Work**	**41 days**	**Mon 1/22/07**	**Sat 3/3/07**
91	Shutdown and Drain Ex 48" (1.5Mgal)	5 days	Mon 1/22/07	Fri 1/26/07
92	Construct Tie In	21 days	Sat 1/27/07	Fri 2/16/07
93	Test Caps/Pressure Test (offsite?)	3 days	Sat 2/17/07	Mon 2/19/07
94	Chlorinate (88 lf)	4 days	Tue 2/20/07	Fri 2/23/07
95	Flush Entire Main (15600 lf)	7 days	Sat 2/24/07	Fri 3/2/07
96	Return Main to Service	1 day	Sat 3/3/07	Sat 3/3/07
97	Pour Thrust Block	21 days	Sun 3/4/07	Sat 3/24/07
98	Cut Sheets	10 days	Sun 3/25/07	Tue 4/3/07
99	**Landside Tie-in**	**61 days**	**Sat 1/27/07**	**Wed 3/28/07**
100	**Shutdown Work (concurrent w/ waterside shutdown)**	**28 days**	**Sat 1/27/07**	**Fri 2/23/07**
101	Install Sheeting/Excavate/Demo	15 days	Sat 1/27/07	Sat 2/10/07
102	Drive Thrust Block Piles	5 days	Sun 2/11/07	Thu 2/15/07
103	Construct Wye Tie-in	21 days	Sat 1/27/07	Fri 2/16/07
104	Test Caps/Pressure Test	3 days	Sat 2/17/07	Mon 2/19/07
105	Chlorinate (wye)	4 days	Tue 2/20/07	Fri 2/23/07
106	Pour Thrust Blocks	21 days	Sat 2/24/07	Fri 3/16/07
107	Lay Non-Buffer Pipe (943 lf)	12 days	Sat 3/17/07	Wed 3/28/07
108	Derelict Vessel Remediation	168 days	Sat 9/23/06	Fri 3/9/07
109	Demolish Pier 3 & Pier 1 Deck	126 days	Sat 8/12/06	Fri 12/15/06
110	**DMCF Predredging & Seagirt Dredging**	**272 days**	**Sat 2/10/07**	**Thu 11/8/07**
111	Mobilization	62 days	Sat 2/10/07	Thu 4/12/07
112	Seagirt Berth 4 - Soft Material (1.6 Mcy @ 30Kcy/day)	50 days	Fri 4/13/07	Fri 6/1/07
113	Predredge Cofferdams (110 Kcy)	8 days	Sat 6/2/07	Sat 6/9/07
114	Masonville DMCF Predredging (1.6 Mcy @ 30Kcy/day)	52 days	Sun 6/10/07	Tue 7/31/07
115	Seagirt Berth 1, 2 and 3 (0.45 MCY @ 15Kcy/day)	30 days	Wed 8/1/07	Thu 8/30/07
116	Seagirt - Hard Material (0.5 Mcy @ 7,500cy/day)	70 days	Fri 8/31/07	Thu 11/8/07
117	**Cofferdam Retention Structure & Water Main Relocation**	**486 days**	**Fri 1/5/07**	**Sun 5/4/08**
118	**Cofferdam Retention Structure**	**404 days**	**Fri 1/5/07**	**Tue 2/12/08**
119	Mobilization	30 days	Fri 1/5/07	Sat 2/3/07
120	Procure Sheets	112 days	Sun 2/4/07	Sat 5/26/07



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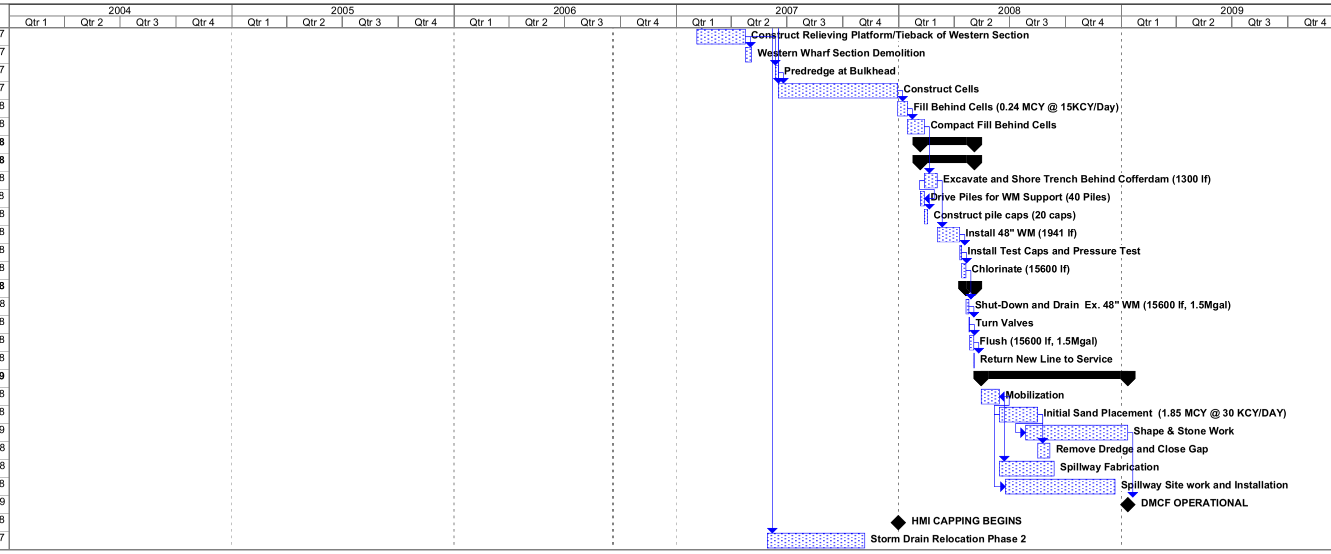
Date: Mon 9/18/06

Task		Progress		Summary		External Tasks		Deadline	
Split		Milestone		Project Summary		External Milestone			

MASONVILLE DEVELOPMENT SCHEDULE
DRAFT - SEPTEMBER 2006

ID	Task Name	Duration	Start	Finish
121	Construct Relieving Platform/Tieback of Western Section	80 days	Sun 2/4/07	Tue 4/24/07
122	Western Wharf Section Demolition	10 days	Wed 4/25/07	Fri 5/4/07
123	Predredge at Bulkhead	5 days	Wed 6/13/07	Sun 6/17/07
124	Construct Cells	196 days	Mon 6/18/07	Sun 12/30/07
125	Fill Behind Cells (0.24 MCY @ 15KCY/Day)	16 days	Mon 12/31/07	Tue 1/15/08
126	Compact Fill Behind Cells	28 days	Wed 1/16/08	Tue 2/12/08
127	**48" WATERLINE**	**89 days**	**Wed 2/6/08**	**Sun 5/4/08**
128	**Waterside Construction - 48" Watermain**	**89 days**	**Wed 2/6/08**	**Sun 5/4/08**
129	Excavate and Shore Trench Behind Cofferdam (1300 lf)	21 days	Wed 2/13/08	Tue 3/4/08
130	Drive Piles for WM Support (40 Piles)	7 days	Wed 2/6/08	Wed 2/13/08
131	Construct pile caps (20 caps)	5 days	Wed 2/13/08	Sun 2/17/08
132	Install 48" WM (1941 lf)	37 days	Wed 3/5/08	Thu 4/10/08
133	Install Test Caps and Pressure Test	3 days	Fri 4/11/08	Sun 4/13/08
134	Chlorinate (15600 lf)	7 days	Mon 4/14/08	Sun 4/20/08
135	**Shutdown Work**	**14 days**	**Mon 4/21/08**	**Sun 5/4/08**
136	Shut-Down and Drain Ex. 48" WM (15600 lf, 1.5Mgal	5 days	Mon 4/21/08	Fri 4/25/08
137	Turn Valves	1 day	Sat 4/26/08	Sat 4/26/08
138	Flush (15600 lf, 1.5Mgal)	7 days	Sun 4/27/08	Sat 5/3/08
139	Return New Line to Service	1 day	Sun 5/4/08	Sun 5/4/08
140	**DMCF Dike and Spillways**	**241 days**	**Fri 5/16/08**	**Sun 1/11/09**
141	Mobilization	30 days	Fri 5/16/08	Sun 6/15/08
142	Initial Sand Placement (1.85 MCY @ 30 KCY/DAY)	63 days	Sun 6/15/08	Sat 8/16/08
143	Shape & Stone Work	168 days	Mon 7/28/08	Sun 1/11/09
144	Remove Dredge and Close Gap	20 days	Sun 8/17/08	Fri 9/5/08
145	Spillway Fabrication	90 days	Sun 6/15/08	Fri 9/12/08
146	Spillway Site work and Installation	180 days	Wed 6/25/08	Sun 12/21/08
147	DMCF OPERATIONAL	1 day	Mon 1/12/09	Mon 1/12/09
148	HMI CAPPING BEGINS	1 day	Tue 1/1/08	Tue 1/1/08
149	Storm Drain Relocation Phase 2	160 days	Thu 5/31/07	Tue 11/6/07



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Date: Mon 9/18/06

Task | Split | Progress | Milestone | Summary | Project Summary | External Tasks | External Milestone | Deadline

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APPENDIX A2 - Project Schedule and Equipment List - 25 % Seagirt Borrow

Crew	Source Type	Capacity (HP)	Equipment Type	Quantity	Total Capacity (HP)	Days	Weeks	Total Hrs	Hrs/wk
Crew A	Marine	600	Crane	1	600	126	18	585	33
	Marine	600	Tugboat	2	1200				
	Nonroad	300	Trucks	2	600				
	Nonroad	600	Crane	1	600				
Crew B 1(masonville)	Marine	2500	Dredges	2	5000	61	9	952	109
	Marine	600	Tugboat	2	1200				
	Marine	2500	Tugboat	2	5000				
	Nonroad	600	Dozer	1	600				
	Nonroad	100	Pumps and Pile hammer	2	200				
	Nonroad	4000	Unloader	1	4000				
Crew B3	Marine	2500	Dredges	1	2500	70	10	1092	109
	Marine	600	Tugboat	1	600				
	Marine	2500	Tugboat	1	2500				
Crew C	Marine	10000	Hydraulic Dredge	1	10000	74	11	1154	109
	Marine	600	Tugboat	2	1200				
	Nonroad	300	Trucks	1	300				
	Nonroad	100	Pumps	1	100				
CREW C1	Nonroad	300	Trucks	5	1500	168	24	600	25
	Nonroad	750	Crane	1	750				
	Nonroad	750	Crane	1	750				
	Nonroad	600	Dozer	1	600				
	Nonroad	100	Pumps and Pile hammer	4	400				
CREW D	Marine	600	Crane	1	600	404	58	1876	33
	Marine	600	Crane	1	600				
	Marine	600	Tugboat	2	1200				
	Nonroad	300	trucks	5	1500				
	Nonroad	600	Dozer	1	600				
	Nonroad	300	Excavator	1	300				
	Nonroad	100	Pumps	1	100				
CREW E	Nonroad	300	Trucks	3	900	110	16	409	26
	Nonroad	300	Excavator	2	600				
	Nonroad	100	Pumps and Pile hammer	3	300				
CREW F	Nonroad	300	trucks	3	900	410	59	2343	40
	Nonroad	300	Excavator	1	300				
	Nonroad	300	Pumps and Pile hammer	1	300				
TOTAL						**1497**			

Total Equipment	**HP**
Nonroad	16200
Marine	32200
Overall	**48400**

Activities Distribution				
	2006	**2007**	**2008**	**2009**
CREW A	100%	0%	0%	0%
CREW B1	0%	100%	0%	0%
CREW B 3	0%	100%	0%	0%
CREW C	0%	0%	100%	0%
CREW C1	0%	0%	85%	15%
CREW D	0%	90%	10%	0%
CREW E	66%	34%	0%	0%
CREW F	0%	41%	45%	14%

ATTACHMENT A2 - Project Schedule and Equipment List - 20% Seagirt Borrow

Crew	Source Type	Capacity (HP)	Equipment Type	Quantity	Total Capacity (HP)	Days	Weeks	Total Hrs	Hrs/wk
Crew A	Marine	600	Crane	1	600	126	18	585	33
	Marine	600	Tugboat	2	1200				
	Nonroad	300	Trucks	2	600				
	Nonroad	600	Crane	1	600				
Crew B 1(masonville)	Marine	2500	Dredges	2	5000	61	9	952	109
	Marine	600	Tugboat	2	1200				
	Marine	2500	Tugboat	2	5000				
	Nonroad	600	Dozer	1	600				
	Nonroad	100	Pumps and Pile hammer	2	200				
	Nonroad	4000	Unloader	1	4000				
Crew B3	Marine	2500	Dredges	1	2500	60	9	936	109
	Marine	600	Tugboat	1	600				
	Marine	2500	Tugboat	1	2500				
Crew C	Marine	10000	Hydraulic Dredge	1	10000	79	11	1232	109
	Marine	600	Tugboat	2	1200				
	Nonroad	300	Trucks	1	300				
	Nonroad	100	Pumps	1	100				
CREW C1	Nonroad	300	Trucks	5	1500	168	24	600	25
	Nonroad	750	Crane	1	750				
	Nonroad	750	Crane	1	750				
	Nonroad	600	Dozer	1	600				
	Nonroad	100	Pumps and Pile hammer	4	400				
CREW D	Marine	600	Crane	1	600	404	58	1876	33
	Marine	600	Crane	1	600				
	Marine	600	Tugboat	2	1200				
	Nonroad	300	trucks	5	1500				
	Nonroad	600	Dozer	1	600				
	Nonroad	300	Excavator	1	300				
	Nonroad	100	Pumps	1	100				
CREW E	Nonroad	300	Trucks	3	900	110	16	409	26
	Nonroad	300	Excavator	2	600				
	Nonroad	100	Pumps and Pile hammer	3	300				
CREW F	Nonroad	300	trucks	3	900	410	59	2343	40
	Nonroad	300	Excavator	1	300				
	Nonroad	300	Pumps and Pile hammer	1	300				
TOTAL						1492			

Total Equipment	HP
Nonroad	16200
Marine	32200
Overall	**48400**

Activities Distribution				
	2006	2007	2008	2009
CREW A	100%	0%	0%	0%
CREW B1	0%	100%	0%	0%
CREW B 3	0%	100%	0%	0%
CREW C	0%	0%	100%	0%
CREW C1	0%	0%	85%	15%
CREW D	0%	90%	10%	0%
CREW E	66%	34%	0%	0%
CREW F	0%	41%	45%	14%

APPENDIX B

Marine Vessel Emissions

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Marine Engine Emission Factor
and Fuel Consumption Algorithms
(in g/kW-hr for all marine engines

Pollutant	Exponent(x)	Intercept (b)	Coefficient (a)
PM	1.5	0.2551	0.0059
NOx	1.5	10.4496	0.1255
NO2	1.5	15.5247	0.18865
SO2	0	0	2.3735
CO	1	0	0.8378
HC	1.5	0	0.0667
CO2	1	648.6	44.1

1 All regression but SO2 are in the form of:
Emissions Rate (g/kW-hr) = a (fractional load)$^{-x}$ + b

2 Fractional load is equal to actual engine output divided by rated engine output

3 The SO2 regression is the form of:
Emissions rate (g/kW-hr) = a(fuel sulfur flow in g/kW-hr) + b

4 **Fuel Consumption (g/kW-hr) = 14.12/(fractional load) + 205.717**

5 n/a means not applicable, n/s means not statistically significant

Fuel Sulfur Concentration	3300	ppm
Fuel consumption	233.957	g/kW-hr
Assuming Load Factor of	50%	

Marine Engine Emission Rate based on Table 5.1:

Pollutant	Emission Rate (g/kW-hr)	lb/hp-hr
PM	0.272	0.0004
NOx	10.805	0.0175
NO2	16.058	0.0260
SO2	1.832	0.0030
CO	1.676	0.0027
VOC	0.189	0.0003

Marine Equipment Total Annual Emissions - 25 % Seagirt Borrow

CREW A - Derelict Remediation		Capacity	Annual	Pollutants (tons/yr)					
Equipment		(hp)	(hrs)	CO	NO_X	$PM_{2.5}$	PM_{10}	SOx	VOC
Crane		600	585	0.48	3.07	0.08	0.08	0.52	0.05
Tugboat		1200	585	0.95	6.15	0.15	0.15	1.04	0.11
Total				**1.43**	**9.22**	**0.23**	**0.23**	**1.56**	**0.16**
CREW B 1- Predredging (Masonville)				CO	NO_X	$PM_{2.5}$	PM_{10}	SOx	VOC
Dredges		5000	952	6.46	41.68	1.05	1.05	7.07	0.73
Tugboat		1200	952	1.55	10.00	0.25	0.25	1.70	0.17
Tugboat		5000	952	6.46	41.68	1.05	1.05	7.07	0.73
Total				**14.48**	**93.36**	**2.35**	**2.35**	**15.83**	**1.63**
CREW B3- Predredging (Seagirt)				CO	NO_X	$PM_{2.5}$	PM_{10}	SOx	VOC
Crane		2500	1092	3.71	23.91	0.60	0.60	4.06	0.42
Crane		600	1092	0.89	5.74	0.14	0.14	0.97	0.10
Tugboat		2500	1092	3.71	23.91	0.60	0.60	4.06	0.42
Total				**8.31**	**53.57**	**1.35**	**1.35**	**9.09**	**0.94**
CREW C - Dike Construction				CO	NO_X	$PM_{2.5}$	PM_{10}	SOx	VOC
Hydraulic Dredge		10000	1154	15.68	101.12	2.54	2.54	17.15	1.77
Tugboat		1200	1154	1.88	12.13	0.31	0.31	2.06	0.21
Total				**17.56**	**113.26**	**2.85**	**2.85**	**19.21**	**1.98**
CREW C1 -Dike Construction - Armor Stone				CO	NO_X	$PM_{2.5}$	PM_{10}	SOx	VOC
NA				0.00	0.00	0.00	0.00	0.00	0.00
Total				**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
CREW D -Cofferdam and pipeline relocation				CO	NO_X	$PM_{2.5}$	PM_{10}	SOx	VOC
Crane		600	1876	1.53	9.86	0.25	0.25	1.67	0.17
Crane		600	1876	1.53	9.86	0.25	0.25	1.67	0.17
Tugboat		1200	1876	3.06	3.34	0.50	0.50	3.34	0.34
Total				**6.12**	**23.06**	**0.99**	**0.99**	**6.69**	**0.69**
CREW E - Phase 2 Storm drain relocation				CO	NO_X	$PM_{2.5}$	PM_{10}	SOx	VOC
NA				0.00	0.00	0.00	0.00	0.00	0.00
Total				**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
CREW F- Mitigation and Trail Construction				CO	NO_X	$PM_{2.5}$	PM_{10}	SOx	VOC
NA				0.00	0.00	0.00	0.00	0.00	0.00
Total				0.00	0.00	0.00	0.00	0.00	0.00
Total Emissions				**47.90**	**292.47**	**7.77**	**7.77**	**52.38**	**5.39**

Marine Engine Emission Factor		
Pollutant	(g/kW-hr)	lb/hp-hr
PM	0.272	0.0004
NOx	10.805	0.0175
SO2	1.832	0.0030
CO	1.676	0.0027
VOC	0.189	0.0003

Activities Distribution				
	2006	**2007**	**2008**	**2009**
CREW A	100%	0%	0%	0%
CREW B1	0%	100%	0%	0%
CREW B3	0%	100%	0%	0%
CREW C	0%	0%	100%	0%
CREW C1	0%	0%	85%	15%
CREW D	0%	90%	10%	0%
CREW E	66%	34%	0%	0%
CREW F	0%	41%	45%	14%

Marine Equipment Emissions Distribution					
Pollutant	**2006**	**2007**	**2008**	**2009**	**TOTAL**
CO	1.430	28.290	18.176	0.000	**47.90**
NOx	9.224	167.683	115.563	0.000	**292.47**
PM2.5	0.232	4.589	2.948	0.000	**7.77**
PM10	0.232	4.589	2.948	0.000	**7.77**
SOx	1.564	30.939	19.877	0.000	**52.38**
VOC	0.161	3.185	2.046	0.000	**5.39**

Marine Equipment Total Annual Emissions - 20% Seagirt Borrow

Equipment	Capacity (hp)	Annual (hrs)	CO	NO_X	$PM_{2.5}$	PM_{10}	SOx	VOC
CREW A - Derelict Remediation			**Pollutants (tons/yr)**					
Crane	600	585	0.48	3.07	0.08	0.08	0.52	0.05
Tugboat	1200	585	0.95	6.15	0.15	0.15	1.04	0.11
Total			**1.43**	**9.22**	**0.23**	**0.23**	**1.56**	**0.16**
CREW B 1- Predredging (Masonville)			**CO**	**NO_X**	**$PM_{2.5}$**	**PM_{10}**	**SOx**	**VOC**
Dredges	5000	952	6.46	41.68	1.05	1.05	7.07	0.73
Tugboat	1200	952	1.55	10.00	0.25	0.25	1.70	0.17
Tugboat	5000	952	6.46	41.68	1.05	1.05	7.07	0.73
Total			**14.48**	**93.36**	**2.35**	**2.35**	**15.83**	**1.63**
CREW B3- Predredging (Seagirt)			**CO**	**NO_X**	**$PM_{2.5}$**	**PM_{10}**	**SOx**	**VOC**
Crane	2500	936	3.18	20.50	0.52	0.52	3.48	0.36
Crane	600	936	0.76	4.92	0.12	0.12	0.83	0.09
Tugboat	2500	936	3.18	20.50	0.52	0.52	3.48	0.36
Total			**7.12**	**45.91**	**1.15**	**1.15**	**7.79**	**0.80**
CREW C - Dike Construction			**CO**	**NO_X**	**$PM_{2.5}$**	**PM_{10}**	**SOx**	**VOC**
Hydraulic Dredge	10000	1232	16.74	107.95	2.72	2.72	18.31	1.88
Tugboat	1200	1232	2.01	12.95	0.33	0.33	2.20	0.23
Total			**18.75**	**120.91**	**3.04**	**3.04**	**20.51**	**2.11**
CREW C1 -Dike Construction - Armor Stone			**CO**	**NO_X**	**$PM_{2.5}$**	**PM_{10}**	**SOx**	**VOC**
NA			0.00	0.00	0.00	0.00	0.00	0.00
Total			**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
CREW D -Cofferdam and pipeline relocation			**CO**	**NO_X**	**$PM_{2.5}$**	**PM_{10}**	**SOx**	**VOC**
Crane	600	1876	1.53	9.86	0.25	0.25	1.67	0.17
Crane	600	1876	1.53	9.86	0.25	0.25	1.67	0.17
Tugboat	1200	1876	3.06	3.34	0.50	0.50	3.34	0.34
Total			**6.12**	**23.06**	**0.99**	**0.99**	**6.69**	**0.69**
CREW E - Phase 2 Storm drain relocation			**CO**	**NO_X**	**$PM_{2.5}$**	**PM_{10}**	**SOx**	**VOC**
NA			0.00	0.00	0.00	0.00	0.00	0.00
Total			**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
CREW F- Mitigation and Trail Construction			**CO**	**NO_X**	**$PM_{2.5}$**	**PM_{10}**	**SOx**	**VOC**
NA			0.00	0.00	0.00	0.00	0.00	0.00
Total			0.00	0.00	0.00	0.00	0.00	0.00
Total Emissions			**47.90**	**292.47**	**7.77**	**7.77**	**52.38**	**5.39**

Marine Engine Emission Factor		
Pollutant	(g/kW-hr)	lb/hp-hr
PM	0.272	0.0004
NOx	10.805	0.0175
SO2	1.832	0.0030
CO	1.676	0.0027
VOC	0.189	0.0003

Activities Distribution				
	2006	**2007**	**2008**	**2009**
CREW A	100%	0%	0%	0%
CREW B1	0%	100%	0%	0%
CREW B3	0%	100%	0%	0%
CREW C	0%	0%	100%	0%
CREW C1	0%	0%	85%	15%
CREW D	0%	90%	10%	0%
CREW E	66%	34%	0%	0%
CREW F	0%	41%	45%	14%

Marine Equipment Emissions Distribution					
Pollutant	**2006**	**2007**	**2008**	**2009**	**TOTAL**
CO	1.430	27.103	19.362	0.000	**47.90**
NOx	9.224	160.030	123.215	0.000	**292.47**
PM2.5	0.232	4.396	3.141	0.000	**7.77**
PM10	0.232	4.396	3.141	0.000	**7.77**
SOx	1.564	29.641	21.175	0.000	**52.38**
VOC	0.161	3.052	2.180	0.000	**5.39**

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APPENDIX C

Onshore Sources and Emissions Data

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APPENDIX C1 - Onshore Emissions Data - 25% Seagirt Borrow

NONROAD Equipment Emissions

	CO	NOx	PM2.5	PM10	SO2	VOC
CREW A	0.571	1.710	0.091	0.099	0.238	0.151
CREW B1	11.979	19.633	1.424	1.548	0.986	1.838
CREW B3	0.000	0.000	0.000	0.000	0.000	0.000
CREW C	0.462	1.065	0.067	0.073	0.030	0.102
CREW C1	2.590	6.032	0.312	0.339	0.132	0.513
CREW D	6.221	14.104	0.861	0.936	0.966	1.318
CREW E	0.628	1.574	0.083	0.091	0.251	0.141
CREW F	7.003	16.527	0.844	0.918	0.973	1.585
TOTAL	**29.45**	**60.65**	**3.68**	**4.00**	**3.58**	**5.65**

Pollutant	2006	2007	2008	2009	TOTAL
CO	0.983	20.689	6.403	1.379	**29.45**
NOx	2.742	39.701	14.960	3.243	**60.65**
PM2.5	0.145	2.576	0.794	0.166	**3.68**
PM10	0.159	2.801	0.863	0.181	**4.00**
SOx	0.403	2.344	0.672	0.157	**3.58**
VOC	0.243	3.728	1.375	0.301	**5.65**

Indirect (Vehicles) Emissions

Tons of Emissions per Crew

	CO	NOx	PM2.5	PM10	SO2	VOC
CREW A	0.1623	0.0210	0.0004	0.0006	0.0002	0.0149
CREW B1	0.1271	0.0137	0.0003	0.0004	0.0001	0.0085
CREW B3	0.0635	0.0068	0.0001	0.0002	0.0000	0.0042
CREW C	0.2154	0.0223	0.0004	0.0007	0.0002	0.0146
CREW C1	0.2513	0.0246	0.0005	0.0008	0.0002	0.0157
CREW D	0.2455	0.0374	0.0008	0.0011	0.0002	0.0186
CREW E	0.2147	0.0207	0.0004	0.0006	0.0002	0.0131
CREW F	0.1966	0.0663	0.0015	0.0020	0.0002	0.0151
TOTAL	**1.476**	**0.213**	**0.004**	**0.006**	**0.001**	**0.105**

Tons of Emissions Per Contract year

Pollutant	2006	2007	2008	2009	TOTAL
CO	0.303	0.567	0.541	0.066	**1.476**
NOx	0.035	0.089	0.076	0.013	**0.213**
PM2.5	0.001	0.002	0.002	0.000	**0.004**
PM10	0.001	0.003	0.002	0.000	**0.006**
SOx	0.000	0.000	0.000	0.000	**0.001**
VOC	0.023	0.040	0.037	0.005	**0.105**

Activities Distribution

	2006	2007	2008	2009
CREW A	100%	0%	0%	0%
CREW B1	0%	100%	0%	0%
CREW B3	0%	100%	0%	0%
CREW C	0%	0%	100%	0%
CREW C1	0%	0%	85%	15%
CREW D	0%	90%	10%	0%
CREW E	66%	34%	0%	0%
CREW F	0%	41%	45%	14%

ATTACHEMENT C1 - Onshore Emissions Data - 20% Seagirt Borrow

NONROAD Equipment Emissions

	CO	NOx	PM2.5	PM10	SO2	VOC
CREW A	0.571	1.710	0.091	0.099	0.238	0.151
CREW B1	11.979	19.633	1.424	1.548	0.986	1.838
CREW B3	0.000	0.000	0.000	0.000	0.000	0.000
CREW C	0.478	1.088	0.069	0.075	0.030	0.104
CREW C1	2.590	6.032	0.312	0.339	0.132	0.513
CREW D	6.221	14.104	0.861	0.936	0.966	1.318
CREW E	0.628	1.574	0.083	0.091	0.251	0.141
CREW F	7.003	16.527	0.844	0.918	0.973	1.585
TOTAL	**29.47**	**60.67**	**3.68**	**4.01**	**3.58**	**5.65**

Pollutant	2006	2007	2008	2009	TOTAL
CO	0.983	20.689	6.419	1.379	**29.47**
NOx	2.742	39.701	14.982	3.243	**60.67**
PM2.5	0.145	2.576	0.796	0.166	**3.68**
PM10	0.159	2.801	0.865	0.181	**4.01**
SOx	0.403	2.344	0.672	0.157	**3.58**
VOC	0.243	3.728	1.378	0.301	**5.65**

Indirect (Vehicles) Emissions

Tons of Emissions per Crew

	CO	NOx	PM2.5	PM10	SO2	VOC
CREW A	0.1623	0.0210	0.0004	0.0006	0.0002	0.0149
CREW B1	0.1271	0.0137	0.0003	0.0004	0.0001	0.0085
CREW B3	0.0635	0.0068	0.0001	0.0002	0.0000	0.0042
CREW C	0.2154	0.0223	0.0004	0.0007	0.0002	0.0146
CREW C1	0.2513	0.0246	0.0005	0.0008	0.0002	0.0157
CREW D	0.2455	0.0374	0.0008	0.0011	0.0002	0.0186
CREW E	0.2147	0.0207	0.0004	0.0006	0.0002	0.0131
CREW F	0.1966	0.0663	0.0015	0.0020	0.0002	0.0151
TOTAL	**1.476**	**0.213**	**0.004**	**0.006**	**0.001**	**0.105**

Tons of Emissions Per Contract year

Pollutant	2006	2007	2008	2009	TOTAL
CO	0.303	0.567	0.541	0.066	**1.476**
NOx	0.035	0.089	0.076	0.013	**0.213**
PM2.5	0.001	0.002	0.002	0.000	**0.004**
PM10	0.001	0.003	0.002	0.000	**0.006**
SOx	0.000	0.000	0.000	0.000	**0.001**
VOC	0.023	0.040	0.037	0.005	**0.105**

Activities Distribution

	2006	2007	2008	2009
CREW A	100%	0%	0%	0%
CREW B1	0%	100%	0%	0%
CREW B3	0%	100%	0%	0%
CREW C	0%	0%	100%	0%
CREW C1	0%	0%	85%	15%
CREW D	0%	90%	10%	0%
CREW E	66%	34%	0%	0%
CREW F	0%	41%	45%	14%

RAW MODEL INPUTS

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APPENDIX C2 - CREW A INPUT - BOTH SCENARIOS

SCC, HPmax, ModelYear, TechType, Population, Hours/Year

Jan,	Feb,	Mar,	Apr,	May,	Jun,	Jul,	Aug,	Sep,	Oct,	Nov,	Dec
2270002051,		300,	2005,	ALL,	2,	585					
0.0,	0.0,	0.0,	0.0,	0.0,	0.0,	0.0,	0.2,	0.2,	0.2,	0.2,	0.2
2270002045,		600,	1995,	ALL,	1,	585					
0.0,	0.0,	0.0,	0.0,	0.0,	0.0,	0.0,	0.2,	0.2,	0.2,	0.2,	0.2

APPENDIX C2 - CREW B1 INPUT - BOTH SCENARIOS

```
SCC,    HPmax,       ModelYear,   TechType,    Population,   Hours/Year

Jan,    Feb,    Mar,    Apr,    May,    Jun,    Jul,    Aug,    Sep,    Oct,    Nov,    Dec
2270002081,     100,    2005,   T1,     2,      952
0.0,    0.0,    0.0,    0.0,    0.0,    0.333,  0.333,  0.333,  0.0,    0.0,    0.0,    0.0
2270002048,     600,    1995,   ALL,    1,      952
0.0,    0.0,    0.0,    0.0,    0.0,    0.333,  0.333,  0.333,  0.0,    0.0,    0.0,    0.0
2270002060,     1000,   1995,   ALL,    4,      952
0.0,    0.0,    0.0,    0.0,    0.0,    0.333,  0.333,  0.333,  0.0,    0.0,    0.0,    0.0
```

APPENDIX C2 - CREW C INPUT - 25 % SEAGIRT BORROW

SCC, HPmax, ModelYear, TechType, Population, Hours/Year

Jan, Feb, Mar, Apr, May, Jun, Jul, Aug, Sep, Oct, Nov, Dec
2270002081, 100, 2005, T1, 1, 1154
0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.333, 0.333, 0.333, 0.0, 0.0, 0.0
2270002051, 300, 2005, ALL, 1, 1154
0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.333, 0.333, 0.333, 0.0, 0.0, 0.0

APPENDIX C2 - CREW C INPUT - 20% SEAGIRT BORROW

SCC, HPmax, ModelYear, TechType, Population, Hours/Year

Jan,	Feb,	Mar,	Apr,	May,	Jun,	Jul,	Aug,	Sep,	Oct,	Nov,	Dec
2270002081,		100,	2005,	T1,	1,	1232					
0.0,	0.0,	0.0,	0.0,	0.0,	0.0,	0.333,	0.333,	0.333,	0.0,	0.0,	0.0
2270002051,		300,	2005,	ALL,	1,	1232					
0.0,	0.0,	0.0,	0.0,	0.0,	0.0,	0.333,	0.333,	0.333,	0.0,	0.0,	0.0

APPENDIX C2 - CREW C1 INPUT - BOTH SCENARIOS

```
SCC,   HPmax,   ModelYear,   TechType,   Population,   Hours/Year

Jan,   Feb,   Mar,   Apr,   May,   Jun,   Jul,   Aug,   Sep,   Oct,   Nov,   Dec
2270002048,   600,   1995,   T0,   1,   600
0.166,   0.0,   0.0,   0.0,   0.0,   0.0,   0.0,   0.166,   0.166,   0.166,   0.166,   0.170
2270002045,   750,   1995,   ALL,   1,   600
0.166,   0.0,   0.0,   0.0,   0.0,   0.0,   0.0,   0.166,   0.166,   0.166,   0.166,   0.170
2270002045,   750,   2005,   ALL,   1,   600
0.166,   0.0,   0.0,   0.0,   0.0,   0.0,   0.0,   0.166,   0.166,   0.166,   0.166,   0.170
2270002081,   100,   2005,   ALL,   4,   600
0.166,   0.0,   0.0,   0.0,   0.0,   0.0,   0.0,   0.166,   0.166,   0.166,   0.166,   0.170
2270002051,   300,   2005,   ALL,   5,   600
0.166,   0.0,   0.0,   0.0,   0.0,   0.0,   0.0,   0.166,   0.166,   0.166,   0.166,   0.170
```

```
SCC,  HPmax,      ModelYear,  TechType,   Population, Hours/Year
Jan,  Feb,  Mar,  Apr,  May,  Jun,  Jul,  Aug,  Sep,  Oct,  Nov,  Dec
2270002036, 300,  1995, ALL,  1,    1876
0.0833,     0.0833,     0.0833,     0.0833,     0.0833,     0.0833,     0.0833,
0.0833,     0.0833,     0.0833,     0.0833,     0.0833
2270002048, 600,  1995, ALL,  1,    1876
0.0833,     0.0833,     0.0833,     0.0833,     0.0833,     0.0833,     0.0833,
0.0833,     0.0833,     0.0833,     0.0833,     0.0833
2270002081, 100,  2005, ALL,  1,    1876
0.0833,     0.0833,     0.0833,     0.0833,     0.0833,     0.0833,     0.0833,
0.0833,     0.0833,     0.0833,     0.0833,     0.0833
2270002051, 300,  2005, ALL,  5,    1876
0.0833,     0.0833,     0.0833,     0.0833,     0.0833,     0.0833,     0.0833,
0.0833,     0.0833,     0.0833,     0.0833,     0.0833
```

APPENDIX C2 - CREW E INPUT - BOTH SCENARIOS

```
SCC,  HPmax,      ModelYear,  TechType,   Population, Hours/Year
Jan,  Feb,  Mar,  Apr,  May,  Jun,  Jul,  Aug,  Sep,  Oct,  Nov,  Dec
2270002036, 300,  2005, ALL,  2,    409
0.2,  0.2,  0,    0,    0,    0,    0,    0,    0,    0.2,  0.2,  0.2
2270002081, 100,  2005, ALL,  3,    409
0.2,  0.2,  0,    0,    0,    0,    0,    0,    0,    0.2,  0.2,  0.2
2270002051, 300,  2005, ALL,  3,    409
0.2,  0.2,  0,    0,    0,    0,    0,    0,    0,    0.2,  0.2,  0.2
```

APPENDIX C2 - CREW F INPUT - BOTH SCENARIOS

```
SCC,  HPmax,      ModelYear,  TechType,   Population, Hours/Year
Jan,  Feb,  Mar,  Apr,  May,  Jun,  Jul,  Aug,  Sep,  Oct,  Nov,  Dec
2270002036, 300,  2005, ALL,  1,    2343
0.0833,     0.0833,     0.0833,     0.0833,     0.0833,     0.0833,     0.0833,
0.0833,     0.0833,     0.0833,     0.0833,     0.0833
2270002081, 100,  2005, ALL,  3,    2343
0.0833,     0.0833,     0.0833,     0.0833,     0.0833,     0.0833,     0.0833,
0.0833,     0.0833,     0.0833,     0.0833,     0.0833
2270002051, 300,  2005, ALL,  3,    2343
0.0833,     0.0833,     0.0833,     0.0833,     0.0833,     0.0833,     0.0833,
0.0833,     0.0833,     0.0833,     0.0833,     0.0833
```

MODEL INPUTS FORMATTED FOR EACH YEAR FOR CREWS OPERATING DURING MORE THAN ONE YEAR
(note: these inputs are shown for clarification purposes and should not be inserted into the NMIM in this format)

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CREW C1 INPUTS FOR 2008

```
SCC,  HPmax,      ModelYear,  TechType,   Population, Hours/Year
Jan,  Feb,  Mar,  Apr,  May,  Jun,  Jul,  Aug,  Sep,  Oct,  Nov,  Dec
2270002048, 600,  1995, T0,   1,    510
0.0,  0.0,  0.0,  0.0,  0.0,  0.0,  0.0,  0.2,  0.2,  0.2,  0.2,  0.2
2270002045, 750,  1995, ALL,  1,    510
0.0,  0.0,  0.0,  0.0,  0.0,  0.0,  0.0,  0.2,  0.2,  0.2,  0.2,  0.2
2270002045, 750,  2005, ALL,  1,    510
0.0,  0.0,  0.0,  0.0,  0.0,  0.0,  0.0,  0.2,  0.2,  0.2,  0.2,  0.2
2270002081, 100,  2005, ALL,  4,    510
0.0,  0.0,  0.0,  0.0,  0.0,  0.0,  0.0,  0.2,  0.2,  0.2,  0.2,  0.2
2270002051, 300,  2005, ALL,  5,    510
0.0,  0.0,  0.0,  0.0,  0.0,  0.0,  0.0,  0.2,  0.2,  0.2,  0.2,  0.2
```

CREW C1 INPUTS FOR 2009

```
SCC,  HPmax,      ModelYear,  TechType,   Population, Hours/Year
Jan,  Feb,  Mar,  Apr,  May,  Jun,  Jul,  Aug,  Sep,  Oct,  Nov,  Dec
2270002048, 600,  1995, T0,   1,    90
1.0,  0.0,  0.0,  0.0,  0.0,  0.0,  0.0,  0.0,  0.0,  0.0,  0.0,  0.0
2270002045, 750,  1995, ALL,  1,    90
1.0,  0.0,  0.0,  0.0,  0.0,  0.0,  0.0,  0.0,  0.0,  0.0,  0.0,  0.0
2270002045, 750,  2005, ALL,  1,    90
1.0,  0.0,  0.0,  0.0,  0.0,  0.0,  0.0,  0.0,  0.0,  0.0,  0.0,  0.0
2270002081, 100,  2005, ALL,  4,    90
1.0,  0.0,  0.0,  0.0,  0.0,  0.0,  0.0,  0.0,  0.0,  0.0,  0.0,  0.0
2270002051, 300,  2005, ALL,  5,    90
1.0,  0.0,  0.0,  0.0,  0.0,  0.0,  0.0,  0.0,  0.0,  0.0,  0.0,  0.0
```

CREW D INPUTS FOR 2007

```
SCC,  HPmax,      ModelYear,  TechType,   Population, Hours/Year
Jan,  Feb,  Mar,  Apr,  May,  Jun,  Jul,  Aug,  Sep,  Oct,  Nov,  Dec
2270002036, 300,  1995, ALL,  1,    1688
0.0833,     0.0833,     0.0833,     0.0833,     0.0833,     0.0833,     0.0833,
      0.0833,     0.0833,     0.0833,     0.0833,     0.0833
2270002048, 600,  1995, ALL,  1,    1688
0.0833,     0.0833,     0.0833,     0.0833,     0.0833,     0.0833,     0.0833,
      0.0833,     0.0833,     0.0833,     0.0833,     0.0833
2270002081, 100,  2005, ALL,  1,    1688
0.0833,     0.0833,     0.0833,     0.0833,     0.0833,     0.0833,     0.0833,
      0.0833,     0.0833,     0.0833,     0.0833,     0.0833
2270002051, 300,  2005, ALL,  5,    1688
0.0833,     0.0833,     0.0833,     0.0833,     0.0833,     0.0833,     0.0833,
      0.0833,     0.0833,     0.0833,     0.0833,     0.0833
```

CREW D INPUTS 2008

```
SCC,  HPmax,      ModelYear,  TechType,   Population, Hours/Year
Jan,  Feb,  Mar,  Apr,  May,  Jun,  Jul,  Aug,  Sep,  Oct,  Nov,  Dec
2270002036, 300,  1995, ALL,  1,    188
0.5,  0.5,  0.0,  0.0,  0.0,  0.0,  0.0,  0.0,  0.0,  0.0,  0.0,  0.0
2270002048, 600,  1995, ALL,  1,    188
0.5,  0.5,  0.0,  0.0,  0.0,  0.0,  0.0,  0.0,  0.0,  0.0,  0.0,  0.0
2270002081, 100,  2005, ALL,  1,    188
0.5,  0.5,  0.0,  0.0,  0.0,  0.0,  0.0,  0.0,  0.0,  0.0,  0.0,  0.0
2270002051, 300,  2005, ALL,  5,    188
0.5,  0.5,  0.0,  0.0,  0.0,  0.0,  0.0,  0.0,  0.0,  0.0,  0.0,  0.0
```

CREW E INPUTS 2006

```
SCC,  HPmax,      ModelYear,  TechType,   Population, Hours/Year
Jan,  Feb,  Mar,  Apr,  May,  Jun,  Jul,  Aug,  Sep,  Oct,  Nov,  Dec
2270002036, 300,  2005, ALL,  2,    270
0.0,  0.0,  0.0,  0.0,  0.0,  0.0,  0.0,  0.0,  0.0,  0.333,      0.333,
      0.333
2270002081, 100,  2005, ALL,  3,    270
0.0,  0.0,  0.0,  0.0,  0.0,  0.0,  0.0,  0.0,  0.0,  0.333,      0.333,
      0.333
2270002051, 300,  2005, ALL,  3,    270
0.0,  0.0,  0.0,  0.0,  0.0,  0.0,  0.0,  0.0,  0.0,  0.333,      0.333,
      0.333
```

CREW E INPUTS 2007

```
SCC,  HPmax,      ModelYear,  TechType,   Population, Hours/Year
Jan,  Feb,  Mar,  Apr,  May,  Jun,  Jul,  Aug,  Sep,  Oct,  Nov,  Dec
2270002036, 300,  2005, ALL,  2,    139
0.5,  0.5,  0.0,  0.0,  0.0,  0.0,  0.0,  0.0,  0.0,  0.0,  0.0,  0.0
2270002081, 100,  2005, ALL,  3,    139
0.5,  0.5,  0.0,  0.0,  0.0,  0.0,  0.0,  0.0,  0.0,  0.0,  0.0,  0.0
2270002051, 300,  2005, ALL,  3,    139
0.5,  0.5,  0.0,  0.0,  0.0,  0.0,  0.0,  0.0,  0.0,  0.0,  0.0,  0.0
```

CREW F INPUTS 2007

```
SCC,  HPmax,      ModelYear,  TechType,   Population, Hours/Year
Jan,  Feb,  Mar,  Apr,  May,  Jun,  Jul,  Aug,  Sep,  Oct,  Nov,  Dec
2270002036, 300,  2005, ALL,  1,    961
0.0833,     0.0833,     0.0833,     0.0833,     0.0833,     0.0833,     0.0833,
      0.0833,     0.0833,     0.0833,     0.0833,     0.0833
2270002081, 100,  2005, ALL,  3,    961
0.0833,     0.0833,     0.0833,     0.0833,     0.0833,     0.0833,     0.0833,
      0.0833,     0.0833,     0.0833,     0.0833,     0.0833
2270002051, 300,  2005, ALL,  3,    961
0.0833,     0.0833,     0.0833,     0.0833,     0.0833,     0.0833,     0.0833,
      0.0833,     0.0833,     0.0833,     0.0833,     0.0833
```

CREW F INPUTS 2008

```
SCC,  HPmax,      ModelYear,  TechType,   Population, Hours/Year
Jan,  Feb,  Mar,  Apr,  May,  Jun,  Jul,  Aug,  Sep,  Oct,  Nov,  Dec
2270002036, 300,  2005, ALL,  1,    1054
0.0833,     0.0833,     0.0833,     0.0833,     0.0833,     0.0833,     0.0833,
      0.0833,     0.0833,     0.0833,     0.0833,     0.0833
2270002081, 100,  2005, ALL,  3,    1054
0.0833,     0.0833,     0.0833,     0.0833,     0.0833,     0.0833,     0.0833,
      0.0833,     0.0833,     0.0833,     0.0833,     0.0833
2270002051, 300,  2005, ALL,  3,    1054
0.0833,     0.0833,     0.0833,     0.0833,     0.0833,     0.0833,     0.0833,
      0.0833,     0.0833,     0.0833,     0.0833,     0.0833
```

CREW F INPUTS 2009

```
SCC,  HPmax,      ModelYear,  TechType,   Population, Hours/Year
Jan,  Feb,  Mar,  Apr,  May,  Jun,  Jul,  Aug,  Sep,  Oct,  Nov,  Dec
2270002036, 300,  2005, ALL,  1,    328
0.25, 0.25, 0.25, 0.25, 0.0,  0.0,  0.0,  0.0,  0.0,  0.0,  0.0,  0.0
2270002081, 100,  2005, ALL,  3,    328
0.25, 0.25, 0.25, 0.25, 0.0,  0.0,  0.0,  0.0,  0.0,  0.0,  0.0,  0.0
2270002051, 300,  2005, ALL,  3,    328
0.25, 0.25, 0.25, 0.25, 0.0,  0.0,  0.0,  0.0,  0.0,  0.0,  0.0,  0.0
```

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MODEL OUTPUT

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APPENDIX C3 **CREW A - BOTH SCENARIOS**

RunId	FIPSCount	FIPSStateI	Year	Month	SCCID	PowerClass	EmissionTypeID	PollutantCodeID	Pollutant
1	5	24	2006	8	512	300	1	54	0.04416
1	5	24	2006	8	510	600	1	54	0.0700194
1	5	24	2006	8	512	300	1	60	0.147116
1	5	24	2006	8	510	600	1	60	0.194823
1	5	24	2006	8	512	300	1	61	0.00807348
1	5	24	2006	8	510	600	1	61	0.0117706
1	5	24	2006	8	512	300	1	62	0.0074276
1	5	24	2006	8	510	600	1	62	0.010829
1	5	24	2006	8	510	600	1	63	0.017955
1	5	24	2006	8	512	300	1	63	0.0296044
1	5	24	2006	8	512	300	1	66	0.0129596
1	5	24	2006	8	510	600	1	66	0.0172599
1	5	24	2006	9	512	300	1	54	0.04416
1	5	24	2006	9	510	600	1	54	0.0700194
1	5	24	2006	9	512	300	1	60	0.147116
1	5	24	2006	9	510	600	1	60	0.194823
1	5	24	2006	9	512	300	1	61	0.00807348
1	5	24	2006	9	510	600	1	61	0.0117706
1	5	24	2006	9	512	300	1	62	0.0074276
1	5	24	2006	9	510	600	1	62	0.010829
1	5	24	2006	9	510	600	1	63	0.017955
1	5	24	2006	9	512	300	1	63	0.0296044
1	5	24	2006	9	512	300	1	66	0.0129596
1	5	24	2006	9	510	600	1	66	0.0172599
1	5	24	2006	10	512	300	1	54	0.04416
1	5	24	2006	10	510	600	1	54	0.0700194
1	5	24	2006	10	512	300	1	60	0.147116
1	5	24	2006	10	510	600	1	60	0.194823
1	5	24	2006	10	512	300	1	61	0.00807348
1	5	24	2006	10	510	600	1	61	0.0117706
1	5	24	2006	10	512	300	1	62	0.0074276
1	5	24	2006	10	510	600	1	62	0.010829
1	5	24	2006	10	510	600	1	63	0.017955
1	5	24	2006	10	512	300	1	63	0.0296044
1	5	24	2006	10	512	300	1	66	0.0129596
1	5	24	2006	10	510	600	1	66	0.0172599
1	5	24	2006	11	512	300	1	54	0.04416
1	5	24	2006	11	510	600	1	54	0.0700194
1	5	24	2006	11	512	300	1	60	0.147116
1	5	24	2006	11	510	600	1	60	0.194823
1	5	24	2006	11	512	300	1	61	0.00807348
1	5	24	2006	11	510	600	1	61	0.0117706
1	5	24	2006	11	512	300	1	62	0.0074276
1	5	24	2006	11	510	600	1	62	0.010829
1	5	24	2006	11	510	600	1	63	0.017955
1	5	24	2006	11	512	300	1	63	0.0296044
1	5	24	2006	11	512	300	1	66	0.0129596
1	5	24	2006	11	510	600	1	66	0.0172599
1	5	24	2006	12	512	300	1	54	0.04416
1	5	24	2006	12	510	600	1	54	0.0700194
1	5	24	2006	12	512	300	1	60	0.147116
1	5	24	2006	12	510	600	1	60	0.194823
1	5	24	2006	12	512	300	1	61	0.00807347
1	5	24	2006	12	510	600	1	61	0.0117706
1	5	24	2006	12	512	300	1	62	0.0074276
1	5	24	2006	12	510	600	1	62	0.010829
1	5	24	2006	12	510	600	1	63	0.017955
1	5	24	2006	12	512	300	1	63	0.0296044
1	5	24	2006	12	512	300	1	66	0.0129596
1	5	24	2006	12	510	600	1	66	0.0172599

APPENDIXC3 **CREW B1 - BOTH SCENARIOS**

RunId	FIPSCountyId	FIPSStatel	Year	Month	SCCID	PowerClas	EmissionT	PollutantC	Pollutant
1	5	24	2007	6	522	100	1	54	0.128726
1	5	24	2007	6	511	600	1	54	0.344888
1	5	24	2007	6	515	1000	1	54	3.4058
1	5	24	2007	6	522	100	1	60	0.185207
1	5	24	2007	6	511	600	1	60	0.572967
1	5	24	2007	6	515	1000	1	60	5.78617
1	5	24	2007	6	522	100	1	61	0.0202211
1	5	24	2007	6	511	600	1	61	0.0469801
1	5	24	2007	6	515	1000	1	61	0.448775
1	5	24	2007	6	522	100	1	62	0.0186034
1	5	24	2007	6	511	600	1	62	0.0432217
1	5	24	2007	6	515	1000	1	62	0.412873
1	5	24	2007	6	522	100	1	63	0.0154196
1	5	24	2007	6	511	600	1	63	0.0281123
1	5	24	2007	6	515	1000	1	63	0.285015
1	5	24	2007	6	522	100	1	66	0.0203232
1	5	24	2007	6	511	600	1	66	0.0562656
1	5	24	2007	6	515	1000	1	66	0.566171
1	5	24	2007	7	522	100	1	54	0.128726
1	5	24	2007	7	511	600	1	54	0.344888
1	5	24	2007	7	515	1000	1	54	3.4058
1	5	24	2007	7	522	100	1	60	0.185207
1	5	24	2007	7	511	600	1	60	0.572967
1	5	24	2007	7	515	1000	1	60	5.78617
1	5	24	2007	7	522	100	1	61	0.0202211
1	5	24	2007	7	511	600	1	61	0.0469801
1	5	24	2007	7	515	1000	1	61	0.448775
1	5	24	2007	7	522	100	1	62	0.0186034
1	5	24	2007	7	511	600	1	62	0.0432217
1	5	24	2007	7	515	1000	1	62	0.412873
1	5	24	2007	7	522	100	1	63	0.0154196
1	5	24	2007	7	511	600	1	63	0.0281123
1	5	24	2007	7	515	1000	1	63	0.285015
1	5	24	2007	7	522	100	1	66	0.0203232
1	5	24	2007	7	511	600	1	66	0.0562656
1	5	24	2007	7	515	1000	1	66	0.566171
1	5	24	2007	8	522	100	1	54	0.128726
1	5	24	2007	8	511	600	1	54	0.344888
1	5	24	2007	8	515	1000	1	54	3.4058
1	5	24	2007	8	522	100	1	60	0.185207
1	5	24	2007	8	511	600	1	60	0.572967
1	5	24	2007	8	515	1000	1	60	5.78617
1	5	24	2007	8	522	100	1	61	0.0202211
1	5	24	2007	8	511	600	1	61	0.0469801
1	5	24	2007	8	515	1000	1	61	0.448775
1	5	24	2007	8	522	100	1	62	0.0186034
1	5	24	2007	8	511	600	1	62	0.0432217
1	5	24	2007	8	515	1000	1	62	0.412873
1	5	24	2007	8	522	100	1	63	0.0154196
1	5	24	2007	8	511	600	1	63	0.0281123
1	5	24	2007	8	515	1000	1	63	0.285015
1	5	24	2007	8	522	100	1	66	0.0203232
1	5	24	2007	8	511	600	1	66	0.0562656
1	5	24	2007	8	515	1000	1	66	0.566171

APPENDIX C3 **CREW C - 20% SEAGIRT BORROW**

RunId	FIPSCount	FIPSStateI	Year	Month	SCCID	PowerClas	EmissionT	PollutantC	Pollutant
2	5	24	2008	7	512	300	1	54	0.0754377
2	5	24	2008	8	512	300	1	54	0.0754377
2	5	24	2008	9	512	300	1	54	0.0754377
2	5	24	2008	7	522	100	1	54	0.0786099
2	5	24	2008	8	522	100	1	54	0.0786099
2	5	24	2008	9	522	100	1	54	0.0786099
2	5	24	2008	7	522	100	1	60	0.112458
2	5	24	2008	8	522	100	1	60	0.112458
2	5	24	2008	9	522	100	1	60	0.112458
2	5	24	2008	7	512	300	1	60	0.242698
2	5	24	2008	8	512	300	1	60	0.242698
2	5	24	2008	9	512	300	1	60	0.242698
2	5	24	2008	7	512	300	1	61	0.01201
2	5	24	2008	8	512	300	1	61	0.01201
2	5	24	2008	9	512	300	1	61	0.01201
2	5	24	2008	7	522	100	1	61	0.0121642
2	5	24	2008	8	522	100	1	61	0.0121642
2	5	24	2008	9	522	100	1	61	0.0121642
2	5	24	2008	7	512	300	1	62	0.0110492
2	5	24	2008	8	512	300	1	62	0.0110492
2	5	24	2008	9	512	300	1	62	0.0110492
2	5	24	2008	7	522	100	1	62	0.0111911
2	5	24	2008	8	522	100	1	62	0.0111911
2	5	24	2008	9	522	100	1	62	0.0111911
2	5	24	2008	7	522	100	1	63	0.00272389
2	5	24	2008	8	522	100	1	63	0.00272389
2	5	24	2008	9	522	100	1	63	0.00272389
2	5	24	2008	7	512	300	1	63	0.00711697
2	5	24	2008	8	512	300	1	63	0.00711697
2	5	24	2008	9	512	300	1	63	0.00711697
2	5	24	2008	7	522	100	1	66	0.0123514
2	5	24	2008	8	522	100	1	66	0.0123514
2	5	24	2008	9	522	100	1	66	0.0123514
2	5	24	2008	7	512	300	1	66	0.0215805
2	5	24	2008	8	512	300	1	66	0.0215805
2	5	24	2008	9	512	300	1	66	0.0215805

ATTACHMENT C3

CREW C 25 % SEAGIRT BORROW SCENARIO

RunId	FIPSCoun	FIPSStateI	Year	Month	SCCID	PowerClas	EmissionTypeID	PollutantC	Pollutant
1	5	24	2008	7	512	300	1	54	0.075438
1	5	24	2008	7	522	100	1	54	0.07861
1	5	24	2008	7	522	100	1	60	0.112458
1	5	24	2008	7	512	300	1	60	0.242698
1	5	24	2008	7	512	300	1	61	0.01201
1	5	24	2008	7	522	100	1	61	0.012164
1	5	24	2008	7	512	300	1	62	0.011049
1	5	24	2008	7	522	100	1	62	0.011191
1	5	24	2008	7	522	100	1	63	0.002724
1	5	24	2008	7	512	300	1	63	0.007117
1	5	24	2008	7	522	100	1	66	0.012351
1	5	24	2008	7	512	300	1	66	0.021581
1	5	24	2008	8	512	300	1	54	0.075438
1	5	24	2008	8	522	100	1	54	0.07861
1	5	24	2008	8	522	100	1	60	0.112458
1	5	24	2008	8	512	300	1	60	0.242698
1	5	24	2008	8	512	300	1	61	0.01201
1	5	24	2008	8	522	100	1	61	0.012164
1	5	24	2008	8	512	300	1	62	0.011049
1	5	24	2008	8	522	100	1	62	0.011191
1	5	24	2008	8	522	100	1	63	0.002724
1	5	24	2008	8	512	300	1	63	0.007117
1	5	24	2008	8	522	100	1	66	0.012351
1	5	24	2008	8	512	300	1	66	0.021581
1	5	24	2008	9	512	300	1	54	0.075438
1	5	24	2008	9	522	100	1	54	0.07861
1	5	24	2008	9	522	100	1	60	0.112458
1	5	24	2008	9	512	300	1	60	0.242698
1	5	24	2008	9	512	300	1	61	0.01201
1	5	24	2008	9	522	100	1	61	0.012164
1	5	24	2008	9	512	300	1	62	0.011049
1	5	24	2008	9	522	100	1	62	0.011191
1	5	24	2008	9	522	100	1	63	0.002724
1	5	24	2008	9	512	300	1	63	0.007117
1	5	24	2008	9	522	100	1	66	0.012351
1	5	24	2008	9	512	300	1	66	0.021581

APPENDIX C3 **CREW C1**

RunId	FIPSCount	FIPSStateI	Year	Month	SCCID	PowerClas	EmissionT	PollutantC	Pollutant
1	5	24	2008	8	522	100	1	54	0.081498
1	5	24	2008	8	512	300	1	54	0.097762
1	5	24	2008	8	511	600	1	54	0.108357
1	5	24	2008	8	510	750	1	54	0.141744
1	5	24	2008	8	522	100	1	60	0.101273
1	5	24	2008	8	511	600	1	60	0.180015
1	5	24	2008	8	512	300	1	60	0.314518
1	5	24	2008	8	510	750	1	60	0.405363
1	5	24	2008	8	522	100	1	61	0.007478
1	5	24	2008	8	511	600	1	61	0.014254
1	5	24	2008	8	512	300	1	61	0.015564
1	5	24	2008	8	510	750	1	61	0.018713
1	5	24	2008	8	522	100	1	62	0.00688
1	5	24	2008	8	511	600	1	62	0.013114
1	5	24	2008	8	512	300	1	62	0.014319
1	5	24	2008	8	510	750	1	62	0.017216
1	5	24	2008	8	511	600	1	63	0.002574
1	5	24	2008	8	522	100	1	63	0.002826
1	5	24	2008	8	510	750	1	63	0.007279
1	5	24	2008	8	512	300	1	63	0.009223
1	5	24	2008	8	522	100	1	66	0.009766
1	5	24	2008	8	511	600	1	66	0.017678
1	5	24	2008	8	512	300	1	66	0.027967
1	5	24	2008	8	510	750	1	66	0.029737
1	5	24	2008	9	522	100	1	54	0.081498
1	5	24	2008	9	512	300	1	54	0.097761
1	5	24	2008	9	511	600	1	54	0.108357
1	5	24	2008	9	510	750	1	54	0.141744
1	5	24	2008	9	522	100	1	60	0.101273
1	5	24	2008	9	511	600	1	60	0.180015
1	5	24	2008	9	512	300	1	60	0.314518
1	5	24	2008	9	510	750	1	60	0.405363
1	5	24	2008	9	522	100	1	61	0.007478
1	5	24	2008	9	511	600	1	61	0.014254
1	5	24	2008	9	512	300	1	61	0.015564
1	5	24	2008	9	510	750	1	61	0.018713
1	5	24	2008	9	522	100	1	62	0.00688
1	5	24	2008	9	511	600	1	62	0.013114
1	5	24	2008	9	512	300	1	62	0.014319
1	5	24	2008	9	510	750	1	62	0.017216
1	5	24	2008	9	511	600	1	63	0.002574
1	5	24	2008	9	522	100	1	63	0.002826
1	5	24	2008	9	510	750	1	63	0.007279
1	5	24	2008	9	512	300	1	63	0.009223
1	5	24	2008	9	522	100	1	66	0.009766
1	5	24	2008	9	511	600	1	66	0.017678
1	5	24	2008	9	512	300	1	66	0.027967
1	5	24	2008	9	510	750	1	66	0.029737
1	5	24	2008	10	522	100	1	54	0.081498
1	5	24	2008	10	512	300	1	54	0.097761
1	5	24	2008	10	511	600	1	54	0.108357
1	5	24	2008	10	510	750	1	54	0.141744
1	5	24	2008	10	522	100	1	60	0.101273
1	5	24	2008	10	511	600	1	60	0.180015
1	5	24	2008	10	512	300	1	60	0.314518
1	5	24	2008	10	510	750	1	60	0.405363
1	5	24	2008	10	522	100	1	61	0.007478
1	5	24	2008	10	511	600	1	61	0.014254
1	5	24	2008	10	512	300	1	61	0.015564
1	5	24	2008	10	510	750	1	61	0.018713
1	5	24	2008	10	522	100	1	62	0.00688
1	5	24	2008	10	511	600	1	62	0.013114
1	5	24	2008	10	512	300	1	62	0.014319
1	5	24	2008	10	510	750	1	62	0.017216
1	5	24	2008	10	511	600	1	63	0.002574
1	5	24	2008	10	522	100	1	63	0.002826
1	5	24	2008	10	510	750	1	63	0.007279

APPENDIX C3 **CREW C1**

1	5	24	2008	10	512	300	1	63	0.009223
1	5	24	2008	10	522	100	1	66	0.009766
1	5	24	2008	10	511	600	1	66	0.017678
1	5	24	2008	10	512	300	1	66	0.027967
1	5	24	2008	10	510	750	1	66	0.029737
1	5	24	2008	11	522	100	1	54	0.081498
1	5	24	2008	11	512	300	1	54	0.097761
1	5	24	2008	11	511	600	1	54	0.108357
1	5	24	2008	11	510	750	1	54	0.141744
1	5	24	2008	11	522	100	1	60	0.101273
1	5	24	2008	11	511	600	1	60	0.180015
1	5	24	2008	11	512	300	1	60	0.314518
1	5	24	2008	11	510	750	1	60	0.405363
1	5	24	2008	11	522	100	1	61	0.007478
1	5	24	2008	11	511	600	1	61	0.014254
1	5	24	2008	11	512	300	1	61	0.015564
1	5	24	2008	11	510	750	1	61	0.018713
1	5	24	2008	11	522	100	1	62	0.00688
1	5	24	2008	11	511	600	1	62	0.013114
1	5	24	2008	11	512	300	1	62	0.014319
1	5	24	2008	11	510	750	1	62	0.017216
1	5	24	2008	11	511	600	1	63	0.002574
1	5	24	2008	11	522	100	1	63	0.002826
1	5	24	2008	11	510	750	1	63	0.007279
1	5	24	2008	11	512	300	1	63	0.009223
1	5	24	2008	11	522	100	1	66	0.009766
1	5	24	2008	11	511	600	1	66	0.017678
1	5	24	2008	11	512	300	1	66	0.027967
1	5	24	2008	11	510	750	1	66	0.029737
1	5	24	2008	12	522	100	1	54	0.083462
1	5	24	2008	12	512	300	1	54	0.100117
1	5	24	2008	12	511	600	1	54	0.110968
1	5	24	2008	12	510	750	1	54	0.14516
1	5	24	2008	12	522	100	1	60	0.103714
1	5	24	2008	12	511	600	1	60	0.184352
1	5	24	2008	12	512	300	1	60	0.322096
1	5	24	2008	12	510	750	1	60	0.415131
1	5	24	2008	12	522	100	1	61	0.007658
1	5	24	2008	12	511	600	1	61	0.014598
1	5	24	2008	12	512	300	1	61	0.015939
1	5	24	2008	12	510	750	1	61	0.019164
1	5	24	2008	12	522	100	1	62	0.007046
1	5	24	2008	12	511	600	1	62	0.01343
1	5	24	2008	12	512	300	1	62	0.014664
1	5	24	2008	12	510	750	1	62	0.017631
1	5	24	2008	12	511	600	1	63	0.002636
1	5	24	2008	12	522	100	1	63	0.002894
1	5	24	2008	12	510	750	1	63	0.007454
1	5	24	2008	12	512	300	1	63	0.009445
1	5	24	2008	12	522	100	1	66	0.010001
1	5	24	2008	12	511	600	1	66	0.018104
1	5	24	2008	12	512	300	1	66	0.028641
1	5	24	2008	12	510	750	1	66	0.030453
1	5	24	2009	1	522	100	1	54	0.08211
1	5	24	2009	1	512	300	1	54	0.099312
1	5	24	2009	1	511	600	1	54	0.108357
1	5	24	2009	1	510	750	1	54	0.142962
1	5	24	2009	1	522	100	1	60	0.101369
1	5	24	2009	1	511	600	1	60	0.180015
1	5	24	2009	1	512	300	1	60	0.315102
1	5	24	2009	1	510	750	1	60	0.40584
1	5	24	2009	1	522	100	1	61	0.007753
1	5	24	2009	1	511	600	1	61	0.014254
1	5	24	2009	1	512	300	1	61	0.016679
1	5	24	2009	1	510	750	1	61	0.019203
1	5	24	2009	1	522	100	1	62	0.007133
1	5	24	2009	1	511	600	1	62	0.013114
1	5	24	2009	1	512	300	1	62	0.015344

APPENDIX C3 **CREW C1**

1	5	24	2009	1	510	750	1	62	0.017666
1	5	24	2009	1	511	600	1	63	0.002574
1	5	24	2009	1	522	100	1	63	0.002826
1	5	24	2009	1	510	750	1	63	0.007278
1	5	24	2009	1	512	300	1	63	0.009223
1	5	24	2009	1	522	100	1	66	0.009791
1	5	24	2009	1	511	600	1	66	0.017678
1	5	24	2009	1	512	300	1	66	0.028125
1	5	24	2009	1	510	750	1	66	0.029814

APPENDIX C3 **CREW D**

RunId	FIPSCount	FIPSStateI	Year	Month	SCCID	PowerClass	EmissionT	PollutantC	Pollutant
1	5	24	2007	1	522	100	1	54	0.031727
1	5	24	2007	1	507	300	1	54	0.116043
1	5	24	2007	1	512	300	1	54	0.150421
1	5	24	2007	1	511	600	1	54	0.17001
1	5	24	2007	1	522	100	1	60	0.039686
1	5	24	2007	1	507	300	1	60	0.192783
1	5	24	2007	1	511	600	1	60	0.28244
1	5	24	2007	1	512	300	1	60	0.492356
1	5	24	2007	1	522	100	1	61	0.003043
1	5	24	2007	1	507	300	1	61	0.015807
1	5	24	2007	1	511	600	1	61	0.023159
1	5	24	2007	1	512	300	1	61	0.025124
1	5	24	2007	1	522	100	1	62	0.002799
1	5	24	2007	1	507	300	1	62	0.014543
1	5	24	2007	1	511	600	1	62	0.021306
1	5	24	2007	1	512	300	1	62	0.023114
1	5	24	2007	1	522	100	1	63	0.003803
1	5	24	2007	1	507	300	1	63	0.009459
1	5	24	2007	1	511	600	1	63	0.013858
1	5	24	2007	1	512	300	1	63	0.04965
1	5	24	2007	1	522	100	1	66	0.00382
1	5	24	2007	1	507	300	1	66	0.018931
1	5	24	2007	1	511	600	1	66	0.027736
1	5	24	2007	1	512	300	1	66	0.043577
1	5	24	2007	2	522	100	1	54	0.031727
1	5	24	2007	2	507	300	1	54	0.116043
1	5	24	2007	2	512	300	1	54	0.150421
1	5	24	2007	2	511	600	1	54	0.17001
1	5	24	2007	2	522	100	1	60	0.039686
1	5	24	2007	2	507	300	1	60	0.192783
1	5	24	2007	2	511	600	1	60	0.28244
1	5	24	2007	2	512	300	1	60	0.492356
1	5	24	2007	2	522	100	1	61	0.003043
1	5	24	2007	2	507	300	1	61	0.015807
1	5	24	2007	2	511	600	1	61	0.023159
1	5	24	2007	2	512	300	1	61	0.025124
1	5	24	2007	2	522	100	1	62	0.002799
1	5	24	2007	2	507	300	1	62	0.014543
1	5	24	2007	2	511	600	1	62	0.021306
1	5	24	2007	2	512	300	1	62	0.023114
1	5	24	2007	2	522	100	1	63	0.003803
1	5	24	2007	2	507	300	1	63	0.009459
1	5	24	2007	2	511	600	1	63	0.013858
1	5	24	2007	2	512	300	1	63	0.04965
1	5	24	2007	2	522	100	1	66	0.00382
1	5	24	2007	2	507	300	1	66	0.018931
1	5	24	2007	2	511	600	1	66	0.027736
1	5	24	2007	2	512	300	1	66	0.043577
1	5	24	2007	3	522	100	1	54	0.031727
1	5	24	2007	3	507	300	1	54	0.116043
1	5	24	2007	3	512	300	1	54	0.150421
1	5	24	2007	3	511	600	1	54	0.17001
1	5	24	2007	3	522	100	1	60	0.039686
1	5	24	2007	3	507	300	1	60	0.192783
1	5	24	2007	3	511	600	1	60	0.28244
1	5	24	2007	3	512	300	1	60	0.492356
1	5	24	2007	3	522	100	1	61	0.003043
1	5	24	2007	3	507	300	1	61	0.015807
1	5	24	2007	3	511	600	1	61	0.023159
1	5	24	2007	3	512	300	1	61	0.025124
1	5	24	2007	3	522	100	1	62	0.002799
1	5	24	2007	3	507	300	1	62	0.014543
1	5	24	2007	3	511	600	1	62	0.021306
1	5	24	2007	3	512	300	1	62	0.023114
1	5	24	2007	3	522	100	1	63	0.003803
1	5	24	2007	3	507	300	1	63	0.009459
1	5	24	2007	3	511	600	1	63	0.013858

APPENDIX C3 **CREW D**

1	5	24	2007	3	512	300	1	63	0.04965
1	5	24	2007	3	522	100	1	66	0.00382
1	5	24	2007	3	507	300	1	66	0.018931
1	5	24	2007	3	511	600	1	66	0.027736
1	5	24	2007	3	512	300	1	66	0.043577
1	5	24	2007	4	522	100	1	54	0.031727
1	5	24	2007	4	507	300	1	54	0.116043
1	5	24	2007	4	512	300	1	54	0.150421
1	5	24	2007	4	511	600	1	54	0.17001
1	5	24	2007	4	522	100	1	60	0.039686
1	5	24	2007	4	507	300	1	60	0.192783
1	5	24	2007	4	511	600	1	60	0.28244
1	5	24	2007	4	512	300	1	60	0.492356
1	5	24	2007	4	522	100	1	61	0.003043
1	5	24	2007	4	507	300	1	61	0.015807
1	5	24	2007	4	511	600	1	61	0.023159
1	5	24	2007	4	512	300	1	61	0.025124
1	5	24	2007	4	522	100	1	62	0.002799
1	5	24	2007	4	507	300	1	62	0.014543
1	5	24	2007	4	511	600	1	62	0.021306
1	5	24	2007	4	512	300	1	62	0.023114
1	5	24	2007	4	522	100	1	63	0.003803
1	5	24	2007	4	507	300	1	63	0.009459
1	5	24	2007	4	511	600	1	63	0.013858
1	5	24	2007	4	512	300	1	63	0.04965
1	5	24	2007	4	522	100	1	66	0.00382
1	5	24	2007	4	507	300	1	66	0.018931
1	5	24	2007	4	511	600	1	66	0.027736
1	5	24	2007	4	512	300	1	66	0.043577
1	5	24	2007	5	522	100	1	54	0.031727
1	5	24	2007	5	507	300	1	54	0.116043
1	5	24	2007	5	512	300	1	54	0.150421
1	5	24	2007	5	511	600	1	54	0.17001
1	5	24	2007	5	522	100	1	60	0.039686
1	5	24	2007	5	507	300	1	60	0.192783
1	5	24	2007	5	511	600	1	60	0.28244
1	5	24	2007	5	512	300	1	60	0.492356
1	5	24	2007	5	522	100	1	61	0.003043
1	5	24	2007	5	507	300	1	61	0.015807
1	5	24	2007	5	511	600	1	61	0.023159
1	5	24	2007	5	512	300	1	61	0.025124
1	5	24	2007	5	522	100	1	62	0.002799
1	5	24	2007	5	507	300	1	62	0.014543
1	5	24	2007	5	511	600	1	62	0.021306
1	5	24	2007	5	512	300	1	62	0.023114
1	5	24	2007	5	522	100	1	63	0.003803
1	5	24	2007	5	507	300	1	63	0.009459
1	5	24	2007	5	511	600	1	63	0.013858
1	5	24	2007	5	512	300	1	63	0.04965
1	5	24	2007	5	522	100	1	66	0.00382
1	5	24	2007	5	507	300	1	66	0.018931
1	5	24	2007	5	511	600	1	66	0.027736
1	5	24	2007	5	512	300	1	66	0.043577
1	5	24	2007	6	522	100	1	54	0.031727
1	5	24	2007	6	507	300	1	54	0.116043
1	5	24	2007	6	512	300	1	54	0.150421
1	5	24	2007	6	511	600	1	54	0.17001
1	5	24	2007	6	522	100	1	60	0.039686
1	5	24	2007	6	507	300	1	60	0.192783
1	5	24	2007	6	511	600	1	60	0.28244
1	5	24	2007	6	512	300	1	60	0.492356
1	5	24	2007	6	522	100	1	61	0.003043
1	5	24	2007	6	507	300	1	61	0.015807
1	5	24	2007	6	511	600	1	61	0.023159
1	5	24	2007	6	512	300	1	61	0.025124
1	5	24	2007	6	522	100	1	62	0.002799
1	5	24	2007	6	507	300	1	62	0.014543
1	5	24	2007	6	511	600	1	62	0.021306

APPENDIX C3 **CREW D**

1	5	24	2007	6	512	300	1	62	0.023114
1	5	24	2007	6	522	100	1	63	0.003803
1	5	24	2007	6	507	300	1	63	0.009459
1	5	24	2007	6	511	600	1	63	0.013858
1	5	24	2007	6	512	300	1	63	0.04965
1	5	24	2007	6	522	100	1	66	0.00382
1	5	24	2007	6	507	300	1	66	0.018931
1	5	24	2007	6	511	600	1	66	0.027736
1	5	24	2007	6	512	300	1	66	0.043577
1	5	24	2007	7	522	100	1	54	0.031727
1	5	24	2007	7	507	300	1	54	0.116043
1	5	24	2007	7	512	300	1	54	0.150421
1	5	24	2007	7	511	600	1	54	0.17001
1	5	24	2007	7	522	100	1	60	0.039686
1	5	24	2007	7	507	300	1	60	0.192783
1	5	24	2007	7	511	600	1	60	0.28244
1	5	24	2007	7	512	300	1	60	0.492356
1	5	24	2007	7	522	100	1	61	0.003043
1	5	24	2007	7	507	300	1	61	0.015807
1	5	24	2007	7	511	600	1	61	0.023159
1	5	24	2007	7	512	300	1	61	0.025124
1	5	24	2007	7	522	100	1	62	0.002799
1	5	24	2007	7	507	300	1	62	0.014543
1	5	24	2007	7	511	600	1	62	0.021306
1	5	24	2007	7	512	300	1	62	0.023114
1	5	24	2007	7	522	100	1	63	0.003803
1	5	24	2007	7	507	300	1	63	0.009459
1	5	24	2007	7	511	600	1	63	0.013858
1	5	24	2007	7	512	300	1	63	0.04965
1	5	24	2007	7	522	100	1	66	0.00382
1	5	24	2007	7	507	300	1	66	0.018931
1	5	24	2007	7	511	600	1	66	0.027736
1	5	24	2007	7	512	300	1	66	0.043577
1	5	24	2007	8	522	100	1	54	0.031727
1	5	24	2007	8	507	300	1	54	0.116043
1	5	24	2007	8	512	300	1	54	0.150421
1	5	24	2007	8	511	600	1	54	0.17001
1	5	24	2007	8	522	100	1	60	0.039686
1	5	24	2007	8	507	300	1	60	0.192783
1	5	24	2007	8	511	600	1	60	0.28244
1	5	24	2007	8	512	300	1	60	0.492356
1	5	24	2007	8	522	100	1	61	0.003043
1	5	24	2007	8	507	300	1	61	0.015807
1	5	24	2007	8	511	600	1	61	0.023159
1	5	24	2007	8	512	300	1	61	0.025124
1	5	24	2007	8	522	100	1	62	0.002799
1	5	24	2007	8	507	300	1	62	0.014543
1	5	24	2007	8	511	600	1	62	0.021306
1	5	24	2007	8	512	300	1	62	0.023114
1	5	24	2007	8	522	100	1	63	0.003803
1	5	24	2007	8	507	300	1	63	0.009459
1	5	24	2007	8	511	600	1	63	0.013858
1	5	24	2007	8	512	300	1	63	0.04965
1	5	24	2007	8	522	100	1	66	0.00382
1	5	24	2007	8	507	300	1	66	0.018931
1	5	24	2007	8	511	600	1	66	0.027736
1	5	24	2007	8	512	300	1	66	0.043577
1	5	24	2007	9	522	100	1	54	0.031727
1	5	24	2007	9	507	300	1	54	0.116043
1	5	24	2007	9	512	300	1	54	0.150421
1	5	24	2007	9	511	600	1	54	0.17001
1	5	24	2007	9	522	100	1	60	0.039686
1	5	24	2007	9	507	300	1	60	0.192783
1	5	24	2007	9	511	600	1	60	0.28244
1	5	24	2007	9	512	300	1	60	0.492356
1	5	24	2007	9	522	100	1	61	0.003043
1	5	24	2007	9	507	300	1	61	0.015807
1	5	24	2007	9	511	600	1	61	0.023159

APPENDIX C3 **CREW D**

1	5	24	2007	9	512	300	1	61	0.025124
1	5	24	2007	9	522	100	1	62	0.002799
1	5	24	2007	9	507	300	1	62	0.014543
1	5	24	2007	9	511	600	1	62	0.021306
1	5	24	2007	9	512	300	1	62	0.023114
1	5	24	2007	9	522	100	1	63	0.003803
1	5	24	2007	9	507	300	1	63	0.009459
1	5	24	2007	9	511	600	1	63	0.013858
1	5	24	2007	9	512	300	1	63	0.04965
1	5	24	2007	9	522	100	1	66	0.00382
1	5	24	2007	9	507	300	1	66	0.018931
1	5	24	2007	9	511	600	1	66	0.027736
1	5	24	2007	9	512	300	1	66	0.043577
1	5	24	2007	10	522	100	1	54	0.031727
1	5	24	2007	10	507	300	1	54	0.116043
1	5	24	2007	10	512	300	1	54	0.150421
1	5	24	2007	10	511	600	1	54	0.17001
1	5	24	2007	10	522	100	1	60	0.039686
1	5	24	2007	10	507	300	1	60	0.192783
1	5	24	2007	10	511	600	1	60	0.28244
1	5	24	2007	10	512	300	1	60	0.492356
1	5	24	2007	10	522	100	1	61	0.003043
1	5	24	2007	10	507	300	1	61	0.015807
1	5	24	2007	10	511	600	1	61	0.023159
1	5	24	2007	10	512	300	1	61	0.025124
1	5	24	2007	10	522	100	1	62	0.002799
1	5	24	2007	10	507	300	1	62	0.014543
1	5	24	2007	10	511	600	1	62	0.021306
1	5	24	2007	10	512	300	1	62	0.023114
1	5	24	2007	10	522	100	1	63	0.003803
1	5	24	2007	10	507	300	1	63	0.009459
1	5	24	2007	10	511	600	1	63	0.013858
1	5	24	2007	10	512	300	1	63	0.04965
1	5	24	2007	10	522	100	1	66	0.00382
1	5	24	2007	10	507	300	1	66	0.018931
1	5	24	2007	10	511	600	1	66	0.027736
1	5	24	2007	10	512	300	1	66	0.043577
1	5	24	2007	11	522	100	1	54	0.031727
1	5	24	2007	11	507	300	1	54	0.116043
1	5	24	2007	11	512	300	1	54	0.150421
1	5	24	2007	11	511	600	1	54	0.17001
1	5	24	2007	11	522	100	1	60	0.039686
1	5	24	2007	11	507	300	1	60	0.192783
1	5	24	2007	11	511	600	1	60	0.28244
1	5	24	2007	11	512	300	1	60	0.492356
1	5	24	2007	11	522	100	1	61	0.003043
1	5	24	2007	11	507	300	1	61	0.015807
1	5	24	2007	11	511	600	1	61	0.023159
1	5	24	2007	11	512	300	1	61	0.025124
1	5	24	2007	11	522	100	1	62	0.002799
1	5	24	2007	11	507	300	1	62	0.014543
1	5	24	2007	11	511	600	1	62	0.021306
1	5	24	2007	11	512	300	1	62	0.023114
1	5	24	2007	11	522	100	1	63	0.003803
1	5	24	2007	11	507	300	1	63	0.009459
1	5	24	2007	11	511	600	1	63	0.013858
1	5	24	2007	11	512	300	1	63	0.04965
1	5	24	2007	11	522	100	1	66	0.00382
1	5	24	2007	11	507	300	1	66	0.018931
1	5	24	2007	11	511	600	1	66	0.027736
1	5	24	2007	11	512	300	1	66	0.043577
1	5	24	2007	12	522	100	1	54	0.031727
1	5	24	2007	12	507	300	1	54	0.116043
1	5	24	2007	12	512	300	1	54	0.150421
1	5	24	2007	12	511	600	1	54	0.17001
1	5	24	2007	12	522	100	1	60	0.039686
1	5	24	2007	12	507	300	1	60	0.192783
1	5	24	2007	12	511	600	1	60	0.28244

APPENDIX C3 **CREW D**

1	5	24	2007	12	512	300	1	60	0.492356
1	5	24	2007	12	522	100	1	61	0.003043
1	5	24	2007	12	507	300	1	61	0.015807
1	5	24	2007	12	511	600	1	61	0.023159
1	5	24	2007	12	512	300	1	61	0.025124
1	5	24	2007	12	522	100	1	62	0.002799
1	5	24	2007	12	507	300	1	62	0.014543
1	5	24	2007	12	511	600	1	62	0.021306
1	5	24	2007	12	512	300	1	62	0.023114
1	5	24	2007	12	522	100	1	63	0.003803
1	5	24	2007	12	507	300	1	63	0.009459
1	5	24	2007	12	511	600	1	63	0.013858
1	5	24	2007	12	512	300	1	63	0.04965
1	5	24	2007	12	522	100	1	66	0.00382
1	5	24	2007	12	507	300	1	66	0.018931
1	5	24	2007	12	511	600	1	66	0.027736
1	5	24	2007	12	512	300	1	66	0.043577
1	5	24	2008	1	522	100	1	54	0.031967
1	5	24	2008	1	507	300	1	54	0.116043
1	5	24	2008	1	512	300	1	54	0.153386
1	5	24	2008	1	511	600	1	54	0.17001
1	5	24	2008	1	522	100	1	60	0.039724
1	5	24	2008	1	507	300	1	60	0.192783
1	5	24	2008	1	511	600	1	60	0.28244
1	5	24	2008	1	512	300	1	60	0.493473
1	5	24	2008	1	522	100	1	61	0.002933
1	5	24	2008	1	507	300	1	61	0.015266
1	5	24	2008	1	511	600	1	61	0.022365
1	5	24	2008	1	512	300	1	61	0.02442
1	5	24	2008	1	522	100	1	62	0.002699
1	5	24	2008	1	507	300	1	62	0.014044
1	5	24	2008	1	511	600	1	62	0.020576
1	5	24	2008	1	512	300	1	62	0.022466
1	5	24	2008	1	522	100	1	63	0.001108
1	5	24	2008	1	507	300	1	63	0.002757
1	5	24	2008	1	511	600	1	63	0.004039
1	5	24	2008	1	512	300	1	63	0.014471
1	5	24	2008	1	522	100	1	66	0.00383
1	5	24	2008	1	507	300	1	66	0.018931
1	5	24	2008	1	511	600	1	66	0.027736
1	5	24	2008	1	512	300	1	66	0.043879
1	5	24	2008	2	522	100	1	54	0.031967
1	5	24	2008	2	507	300	1	54	0.116043
1	5	24	2008	2	512	300	1	54	0.153386
1	5	24	2008	2	511	600	1	54	0.17001
1	5	24	2008	2	522	100	1	60	0.039724
1	5	24	2008	2	507	300	1	60	0.192783
1	5	24	2008	2	511	600	1	60	0.28244
1	5	24	2008	2	512	300	1	60	0.493473
1	5	24	2008	2	522	100	1	61	0.002933
1	5	24	2008	2	507	300	1	61	0.015266
1	5	24	2008	2	511	600	1	61	0.022365
1	5	24	2008	2	512	300	1	61	0.02442
1	5	24	2008	2	522	100	1	62	0.002699
1	5	24	2008	2	507	300	1	62	0.014044
1	5	24	2008	2	511	600	1	62	0.020576
1	5	24	2008	2	512	300	1	62	0.022466
1	5	24	2008	2	522	100	1	63	0.001108
1	5	24	2008	2	507	300	1	63	0.002757
1	5	24	2008	2	511	600	1	63	0.004039
1	5	24	2008	2	512	300	1	63	0.014471
1	5	24	2008	2	522	100	1	66	0.00383
1	5	24	2008	2	507	300	1	66	0.018931
1	5	24	2008	2	511	600	1	66	0.027736
1	5	24	2008	2	512	300	1	66	0.043879

APPENDIX C3 **CREW E**

RunId	FIPSCount	FIPSStateI	Year	Month	SCCID	PowerClas	EmissionT	PollutantCodeID	Pollutant
1	5	24	2006	10	507	300	1	54	0.029087
1	5	24	2006	10	512	300	1	54	0.046311
1	5	24	2006	10	522	100	1	54	0.049446
1	5	24	2006	10	522	100	1	60	0.062262
1	5	24	2006	10	507	300	1	60	0.098075
1	5	24	2006	10	512	300	1	60	0.154284
1	5	24	2006	10	522	100	1	61	0.005085
1	5	24	2006	10	507	300	1	61	0.005105
1	5	24	2006	10	512	300	1	61	0.008467
1	5	24	2006	10	522	100	1	62	0.004679
1	5	24	2006	10	507	300	1	62	0.004697
1	5	24	2006	10	512	300	1	62	0.007789
1	5	24	2006	10	522	100	1	63	0.011891
1	5	24	2006	10	507	300	1	63	0.019766
1	5	24	2006	10	512	300	1	63	0.031047
1	5	24	2006	10	522	100	1	66	0.005984
1	5	24	2006	10	507	300	1	66	0.008612
1	5	24	2006	10	512	300	1	66	0.013591
1	5	24	2006	11	507	300	1	54	0.029087
1	5	24	2006	11	512	300	1	54	0.046311
1	5	24	2006	11	522	100	1	54	0.049446
1	5	24	2006	11	522	100	1	60	0.062262
1	5	24	2006	11	507	300	1	60	0.098075
1	5	24	2006	11	512	300	1	60	0.154284
1	5	24	2006	11	522	100	1	61	0.005085
1	5	24	2006	11	507	300	1	61	0.005105
1	5	24	2006	11	512	300	1	61	0.008467
1	5	24	2006	11	522	100	1	62	0.004679
1	5	24	2006	11	507	300	1	62	0.004697
1	5	24	2006	11	512	300	1	62	0.007789
1	5	24	2006	11	522	100	1	63	0.011891
1	5	24	2006	11	507	300	1	63	0.019766
1	5	24	2006	11	512	300	1	63	0.031047
1	5	24	2006	11	522	100	1	66	0.005984
1	5	24	2006	11	507	300	1	66	0.008612
1	5	24	2006	11	512	300	1	66	0.013591
1	5	24	2006	12	507	300	1	54	0.029087
1	5	24	2006	12	512	300	1	54	0.046311
1	5	24	2006	12	522	100	1	54	0.049446
1	5	24	2006	12	522	100	1	60	0.062262
1	5	24	2006	12	507	300	1	60	0.098075
1	5	24	2006	12	512	300	1	60	0.154284
1	5	24	2006	12	522	100	1	61	0.005085
1	5	24	2006	12	507	300	1	61	0.005105
1	5	24	2006	12	512	300	1	61	0.008467
1	5	24	2006	12	522	100	1	62	0.004679
1	5	24	2006	12	507	300	1	62	0.004697
1	5	24	2006	12	512	300	1	62	0.007789
1	5	24	2006	12	522	100	1	63	0.011891
1	5	24	2006	12	507	300	1	63	0.019766
1	5	24	2006	12	512	300	1	63	0.031047
1	5	24	2006	12	522	100	1	66	0.005984
1	5	24	2006	12	507	300	1	66	0.008612
1	5	24	2006	12	512	300	1	66	0.013591
1	5	24	2007	1	507	300	1	54	0.029482
1	5	24	2007	1	512	300	1	54	0.047243
1	5	24	2007	1	522	100	1	54	0.049823
1	5	24	2007	1	522	100	1	60	0.062321
1	5	24	2007	1	507	300	1	60	0.098224
1	5	24	2007	1	512	300	1	60	0.154634
1	5	24	2007	1	507	300	1	61	0.004596
1	5	24	2007	1	522	100	1	61	0.004778
1	5	24	2007	1	512	300	1	61	0.007891
1	5	24	2007	1	507	300	1	62	0.004228
1	5	24	2007	1	522	100	1	62	0.004396
1	5	24	2007	1	512	300	1	62	0.007259
1	5	24	2007	1	522	100	1	63	0.005972

APPENDIX C3 **CREW E**

1	5	24	2007	1	507	300	1	63	0.009928
1	5	24	2007	1	512	300	1	63	0.015594
1	5	24	2007	1	522	100	1	66	0.005999
1	5	24	2007	1	507	300	1	66	0.008652
1	5	24	2007	1	512	300	1	66	0.013686
1	5	24	2007	2	507	300	1	54	0.029482
1	5	24	2007	2	512	300	1	54	0.047243
1	5	24	2007	2	522	100	1	54	0.049823
1	5	24	2007	2	522	100	1	60	0.062321
1	5	24	2007	2	507	300	1	60	0.098224
1	5	24	2007	2	512	300	1	60	0.154634
1	5	24	2007	2	507	300	1	61	0.004596
1	5	24	2007	2	522	100	1	61	0.004778
1	5	24	2007	2	512	300	1	61	0.007891
1	5	24	2007	2	507	300	1	62	0.004228
1	5	24	2007	2	522	100	1	62	0.004396
1	5	24	2007	2	512	300	1	62	0.007259
1	5	24	2007	2	522	100	1	63	0.005972
1	5	24	2007	2	507	300	1	63	0.009928
1	5	24	2007	2	512	300	1	63	0.015594
1	5	24	2007	2	522	100	1	66	0.005999
1	5	24	2007	2	507	300	1	66	0.008652
1	5	24	2007	2	512	300	1	66	0.013686

APPENDIX C3 **CREW F**

RunId	FIPSCount	FIPSStateI	Year	Month	SCCID	PowerClas	EmissionT	PollutantC	Pollutant
1	5	24	2007	1	507	300	1	54	0.035171
1	5	24	2007	1	512	300	1	54	0.112719
1	5	24	2007	1	522	100	1	54	0.118876
1	5	24	2007	1	507	300	1	60	0.117179
1	5	24	2007	1	522	100	1	60	0.148697
1	5	24	2007	1	512	300	1	60	0.368952
1	5	24	2007	1	507	300	1	61	0.005483
1	5	24	2007	1	522	100	1	61	0.0114
1	5	24	2007	1	512	300	1	61	0.018827
1	5	24	2007	1	507	300	1	62	0.005044
1	5	24	2007	1	522	100	1	62	0.010488
1	5	24	2007	1	512	300	1	62	0.017321
1	5	24	2007	1	507	300	1	63	0.011844
1	5	24	2007	1	522	100	1	63	0.01425
1	5	24	2007	1	512	300	1	63	0.037206
1	5	24	2007	1	507	300	1	66	0.010322
1	5	24	2007	1	522	100	1	66	0.014315
1	5	24	2007	1	512	300	1	66	0.032655
1	5	24	2007	2	507	300	1	54	0.035171
1	5	24	2007	2	512	300	1	54	0.112719
1	5	24	2007	2	522	100	1	54	0.118876
1	5	24	2007	2	507	300	1	60	0.117179
1	5	24	2007	2	522	100	1	60	0.148697
1	5	24	2007	2	512	300	1	60	0.368952
1	5	24	2007	2	507	300	1	61	0.005483
1	5	24	2007	2	522	100	1	61	0.0114
1	5	24	2007	2	512	300	1	61	0.018827
1	5	24	2007	2	507	300	1	62	0.005044
1	5	24	2007	2	522	100	1	62	0.010488
1	5	24	2007	2	512	300	1	62	0.017321
1	5	24	2007	2	507	300	1	63	0.011844
1	5	24	2007	2	522	100	1	63	0.01425
1	5	24	2007	2	512	300	1	63	0.037206
1	5	24	2007	2	507	300	1	66	0.010322
1	5	24	2007	2	522	100	1	66	0.014315
1	5	24	2007	2	512	300	1	66	0.032655
1	5	24	2007	3	507	300	1	54	0.035171
1	5	24	2007	3	512	300	1	54	0.112719
1	5	24	2007	3	522	100	1	54	0.118876
1	5	24	2007	3	507	300	1	60	0.117179
1	5	24	2007	3	522	100	1	60	0.148697
1	5	24	2007	3	512	300	1	60	0.368952
1	5	24	2007	3	507	300	1	61	0.005483
1	5	24	2007	3	522	100	1	61	0.0114
1	5	24	2007	3	512	300	1	61	0.018827
1	5	24	2007	3	507	300	1	62	0.005044
1	5	24	2007	3	522	100	1	62	0.010488
1	5	24	2007	3	512	300	1	62	0.017321
1	5	24	2007	3	507	300	1	63	0.011844
1	5	24	2007	3	522	100	1	63	0.01425
1	5	24	2007	3	512	300	1	63	0.037206
1	5	24	2007	3	507	300	1	66	0.010322
1	5	24	2007	3	522	100	1	66	0.014315
1	5	24	2007	3	512	300	1	66	0.032655
1	5	24	2007	4	507	300	1	54	0.035171
1	5	24	2007	4	512	300	1	54	0.112719
1	5	24	2007	4	522	100	1	54	0.118876
1	5	24	2007	4	507	300	1	60	0.117179
1	5	24	2007	4	522	100	1	60	0.148697
1	5	24	2007	4	512	300	1	60	0.368952
1	5	24	2007	4	507	300	1	61	0.005483
1	5	24	2007	4	522	100	1	61	0.0114
1	5	24	2007	4	512	300	1	61	0.018827
1	5	24	2007	4	507	300	1	62	0.005044
1	5	24	2007	4	522	100	1	62	0.010488
1	5	24	2007	4	512	300	1	62	0.017321
1	5	24	2007	4	507	300	1	63	0.011844

APPENDIX C3 **CREW F**

1	5	24	2007	4	522	100	1	63	0.01425
1	5	24	2007	4	512	300	1	63	0.037206
1	5	24	2007	4	507	300	1	66	0.010322
1	5	24	2007	4	522	100	1	66	0.014315
1	5	24	2007	4	512	300	1	66	0.032655
1	5	24	2007	5	507	300	1	54	0.035171
1	5	24	2007	5	512	300	1	54	0.112719
1	5	24	2007	5	522	100	1	54	0.118876
1	5	24	2007	5	507	300	1	60	0.117179
1	5	24	2007	5	522	100	1	60	0.148697
1	5	24	2007	5	512	300	1	60	0.368952
1	5	24	2007	5	507	300	1	61	0.005483
1	5	24	2007	5	522	100	1	61	0.0114
1	5	24	2007	5	512	300	1	61	0.018827
1	5	24	2007	5	507	300	1	62	0.005044
1	5	24	2007	5	522	100	1	62	0.010488
1	5	24	2007	5	512	300	1	62	0.017321
1	5	24	2007	5	507	300	1	63	0.011844
1	5	24	2007	5	522	100	1	63	0.01425
1	5	24	2007	5	512	300	1	63	0.037206
1	5	24	2007	5	507	300	1	66	0.010322
1	5	24	2007	5	522	100	1	66	0.014315
1	5	24	2007	5	512	300	1	66	0.032655
1	5	24	2007	6	507	300	1	54	0.035171
1	5	24	2007	6	512	300	1	54	0.112719
1	5	24	2007	6	522	100	1	54	0.118876
1	5	24	2007	6	507	300	1	60	0.117179
1	5	24	2007	6	522	100	1	60	0.148697
1	5	24	2007	6	512	300	1	60	0.368952
1	5	24	2007	6	507	300	1	61	0.005483
1	5	24	2007	6	522	100	1	61	0.0114
1	5	24	2007	6	512	300	1	61	0.018827
1	5	24	2007	6	507	300	1	62	0.005044
1	5	24	2007	6	522	100	1	62	0.010488
1	5	24	2007	6	512	300	1	62	0.017321
1	5	24	2007	6	507	300	1	63	0.011844
1	5	24	2007	6	522	100	1	63	0.01425
1	5	24	2007	6	512	300	1	63	0.037206
1	5	24	2007	6	507	300	1	66	0.010322
1	5	24	2007	6	522	100	1	66	0.014315
1	5	24	2007	6	512	300	1	66	0.032655
1	5	24	2007	7	507	300	1	54	0.035171
1	5	24	2007	7	512	300	1	54	0.112719
1	5	24	2007	7	522	100	1	54	0.118876
1	5	24	2007	7	507	300	1	60	0.117179
1	5	24	2007	7	522	100	1	60	0.148697
1	5	24	2007	7	512	300	1	60	0.368952
1	5	24	2007	7	507	300	1	61	0.005483
1	5	24	2007	7	522	100	1	61	0.0114
1	5	24	2007	7	512	300	1	61	0.018827
1	5	24	2007	7	507	300	1	62	0.005044
1	5	24	2007	7	522	100	1	62	0.010488
1	5	24	2007	7	512	300	1	62	0.017321
1	5	24	2007	7	507	300	1	63	0.011844
1	5	24	2007	7	522	100	1	63	0.01425
1	5	24	2007	7	512	300	1	63	0.037206
1	5	24	2007	7	507	300	1	66	0.010322
1	5	24	2007	7	522	100	1	66	0.014315
1	5	24	2007	7	512	300	1	66	0.032655
1	5	24	2007	8	507	300	1	54	0.035171
1	5	24	2007	8	512	300	1	54	0.112719
1	5	24	2007	8	522	100	1	54	0.118876
1	5	24	2007	8	507	300	1	60	0.117179
1	5	24	2007	8	522	100	1	60	0.148697
1	5	24	2007	8	512	300	1	60	0.368952
1	5	24	2007	8	507	300	1	61	0.005483
1	5	24	2007	8	522	100	1	61	0.0114
1	5	24	2007	8	512	300	1	61	0.018827

APPENDIX C3 **CREW F**

1	5	24	2007	8	507	300	1	62	0.005044
1	5	24	2007	8	522	100	1	62	0.010488
1	5	24	2007	8	512	300	1	62	0.017321
1	5	24	2007	8	507	300	1	63	0.011844
1	5	24	2007	8	522	100	1	63	0.01425
1	5	24	2007	8	512	300	1	63	0.037206
1	5	24	2007	8	507	300	1	66	0.010322
1	5	24	2007	8	522	100	1	66	0.014315
1	5	24	2007	8	512	300	1	66	0.032655
1	5	24	2007	10	507	300	1	54	0.035171
1	5	24	2007	10	512	300	1	54	0.112719
1	5	24	2007	10	522	100	1	54	0.118876
1	5	24	2007	10	507	300	1	60	0.117179
1	5	24	2007	10	522	100	1	60	0.148697
1	5	24	2007	10	512	300	1	60	0.368952
1	5	24	2007	10	507	300	1	61	0.005483
1	5	24	2007	10	522	100	1	61	0.0114
1	5	24	2007	10	512	300	1	61	0.018827
1	5	24	2007	10	507	300	1	62	0.005044
1	5	24	2007	10	522	100	1	62	0.010488
1	5	24	2007	10	512	300	1	62	0.017321
1	5	24	2007	10	507	300	1	63	0.011844
1	5	24	2007	10	522	100	1	63	0.01425
1	5	24	2007	10	512	300	1	63	0.037206
1	5	24	2007	10	507	300	1	66	0.010322
1	5	24	2007	10	522	100	1	66	0.014315
1	5	24	2007	10	512	300	1	66	0.032655
1	5	24	2007	11	507	300	1	54	0.035171
1	5	24	2007	11	512	300	1	54	0.112719
1	5	24	2007	11	522	100	1	54	0.118876
1	5	24	2007	11	507	300	1	60	0.117179
1	5	24	2007	11	522	100	1	60	0.148697
1	5	24	2007	11	512	300	1	60	0.368952
1	5	24	2007	11	507	300	1	61	0.005483
1	5	24	2007	11	522	100	1	61	0.0114
1	5	24	2007	11	512	300	1	61	0.018827
1	5	24	2007	11	507	300	1	62	0.005044
1	5	24	2007	11	522	100	1	62	0.010488
1	5	24	2007	11	512	300	1	62	0.017321
1	5	24	2007	11	507	300	1	63	0.011844
1	5	24	2007	11	522	100	1	63	0.01425
1	5	24	2007	11	512	300	1	63	0.037206
1	5	24	2007	11	507	300	1	66	0.010322
1	5	24	2007	11	522	100	1	66	0.014315
1	5	24	2007	11	512	300	1	66	0.032655
1	5	24	2007	12	507	300	1	54	0.035171
1	5	24	2007	12	512	300	1	54	0.112719
1	5	24	2007	12	522	100	1	54	0.118876
1	5	24	2007	12	507	300	1	60	0.117179
1	5	24	2007	12	522	100	1	60	0.148697
1	5	24	2007	12	512	300	1	60	0.368952
1	5	24	2007	12	507	300	1	61	0.005483
1	5	24	2007	12	522	100	1	61	0.0114
1	5	24	2007	12	512	300	1	61	0.018827
1	5	24	2007	12	507	300	1	62	0.005044
1	5	24	2007	12	522	100	1	62	0.010488
1	5	24	2007	12	512	300	1	62	0.017321
1	5	24	2007	12	507	300	1	63	0.011844
1	5	24	2007	12	522	100	1	63	0.01425
1	5	24	2007	12	512	300	1	63	0.037206
1	5	24	2007	12	507	300	1	66	0.010322
1	5	24	2007	12	522	100	1	66	0.014315
1	5	24	2007	12	512	300	1	66	0.032655
1	5	24	2008	1	507	300	1	54	0.035642
1	5	24	2008	1	512	300	1	54	0.114941
1	5	24	2008	1	522	100	1	54	0.119775
1	5	24	2008	1	507	300	1	60	0.117356
1	5	24	2008	1	522	100	1	60	0.148838

APPENDIX C3 **CREW F**

1	5	24	2008	1	512	300	1	60	0.369789
1	5	24	2008	1	507	300	1	61	0.005145
1	5	24	2008	1	522	100	1	61	0.01099
1	5	24	2008	1	512	300	1	61	0.018299
1	5	24	2008	1	507	300	1	62	0.004733
1	5	24	2008	1	522	100	1	62	0.010111
1	5	24	2008	1	512	300	1	62	0.016835
1	5	24	2008	1	507	300	1	63	0.003452
1	5	24	2008	1	522	100	1	63	0.004153
1	5	24	2008	1	512	300	1	63	0.010844
1	5	24	2008	1	507	300	1	66	0.01037
1	5	24	2008	1	522	100	1	66	0.014352
1	5	24	2008	1	512	300	1	66	0.032881
1	5	24	2008	2	507	300	1	54	0.035642
1	5	24	2008	2	512	300	1	54	0.114941
1	5	24	2008	2	522	100	1	54	0.119775
1	5	24	2008	2	507	300	1	60	0.117356
1	5	24	2008	2	522	100	1	60	0.148838
1	5	24	2008	2	512	300	1	60	0.369789
1	5	24	2008	2	507	300	1	61	0.005145
1	5	24	2008	2	522	100	1	61	0.01099
1	5	24	2008	2	512	300	1	61	0.018299
1	5	24	2008	2	507	300	1	62	0.004733
1	5	24	2008	2	522	100	1	62	0.010111
1	5	24	2008	2	512	300	1	62	0.016835
1	5	24	2008	2	507	300	1	63	0.003452
1	5	24	2008	2	522	100	1	63	0.004153
1	5	24	2008	2	512	300	1	63	0.010844
1	5	24	2008	2	507	300	1	66	0.01037
1	5	24	2008	2	522	100	1	66	0.014352
1	5	24	2008	2	512	300	1	66	0.032881
1	5	24	2008	3	507	300	1	54	0.035642
1	5	24	2008	3	512	300	1	54	0.114941
1	5	24	2008	3	522	100	1	54	0.119775
1	5	24	2008	3	507	300	1	60	0.117356
1	5	24	2008	3	522	100	1	60	0.148838
1	5	24	2008	3	512	300	1	60	0.369789
1	5	24	2008	3	507	300	1	61	0.005145
1	5	24	2008	3	522	100	1	61	0.01099
1	5	24	2008	3	512	300	1	61	0.018299
1	5	24	2008	3	507	300	1	62	0.004733
1	5	24	2008	3	522	100	1	62	0.010111
1	5	24	2008	3	512	300	1	62	0.016835
1	5	24	2008	3	507	300	1	63	0.003452
1	5	24	2008	3	522	100	1	63	0.004153
1	5	24	2008	3	512	300	1	63	0.010844
1	5	24	2008	3	507	300	1	66	0.01037
1	5	24	2008	3	522	100	1	66	0.014352
1	5	24	2008	3	512	300	1	66	0.032881
1	5	24	2008	4	507	300	1	54	0.035642
1	5	24	2008	4	512	300	1	54	0.114941
1	5	24	2008	4	522	100	1	54	0.119775
1	5	24	2008	4	507	300	1	60	0.117356
1	5	24	2008	4	522	100	1	60	0.148838
1	5	24	2008	4	512	300	1	60	0.369789
1	5	24	2008	4	507	300	1	61	0.005145
1	5	24	2008	4	522	100	1	61	0.01099
1	5	24	2008	4	512	300	1	61	0.018299
1	5	24	2008	4	507	300	1	62	0.004733
1	5	24	2008	4	522	100	1	62	0.010111
1	5	24	2008	4	512	300	1	62	0.016835
1	5	24	2008	4	507	300	1	63	0.003452
1	5	24	2008	4	522	100	1	63	0.004153
1	5	24	2008	4	512	300	1	63	0.010844
1	5	24	2008	4	507	300	1	66	0.01037
1	5	24	2008	4	522	100	1	66	0.014352
1	5	24	2008	4	512	300	1	66	0.032881
1	5	24	2008	5	507	300	1	54	0.035642

APPENDIX C3 **CREW F**

1	5	24	2008	5	512	300	1	54	0.114941
1	5	24	2008	5	522	100	1	54	0.119775
1	5	24	2008	5	507	300	1	60	0.117356
1	5	24	2008	5	522	100	1	60	0.148838
1	5	24	2008	5	512	300	1	60	0.369789
1	5	24	2008	5	507	300	1	61	0.005145
1	5	24	2008	5	522	100	1	61	0.01099
1	5	24	2008	5	512	300	1	61	0.018299
1	5	24	2008	5	507	300	1	62	0.004733
1	5	24	2008	5	522	100	1	62	0.010111
1	5	24	2008	5	512	300	1	62	0.016835
1	5	24	2008	5	507	300	1	63	0.003452
1	5	24	2008	5	522	100	1	63	0.004153
1	5	24	2008	5	512	300	1	63	0.010844
1	5	24	2008	5	507	300	1	66	0.01037
1	5	24	2008	5	522	100	1	66	0.014352
1	5	24	2008	5	512	300	1	66	0.032881
1	5	24	2008	6	507	300	1	54	0.035642
1	5	24	2008	6	512	300	1	54	0.114941
1	5	24	2008	6	522	100	1	54	0.119775
1	5	24	2008	6	507	300	1	60	0.117356
1	5	24	2008	6	522	100	1	60	0.148838
1	5	24	2008	6	512	300	1	60	0.369789
1	5	24	2008	6	507	300	1	61	0.005145
1	5	24	2008	6	522	100	1	61	0.01099
1	5	24	2008	6	512	300	1	61	0.018299
1	5	24	2008	6	507	300	1	62	0.004733
1	5	24	2008	6	522	100	1	62	0.010111
1	5	24	2008	6	512	300	1	62	0.016835
1	5	24	2008	6	507	300	1	63	0.003452
1	5	24	2008	6	522	100	1	63	0.004153
1	5	24	2008	6	512	300	1	63	0.010844
1	5	24	2008	6	507	300	1	66	0.01037
1	5	24	2008	6	522	100	1	66	0.014352
1	5	24	2008	6	512	300	1	66	0.032881
1	5	24	2008	7	507	300	1	54	0.035642
1	5	24	2008	7	512	300	1	54	0.114941
1	5	24	2008	7	522	100	1	54	0.119775
1	5	24	2008	7	507	300	1	60	0.117356
1	5	24	2008	7	522	100	1	60	0.148838
1	5	24	2008	7	512	300	1	60	0.369789
1	5	24	2008	7	507	300	1	61	0.005145
1	5	24	2008	7	522	100	1	61	0.01099
1	5	24	2008	7	512	300	1	61	0.018299
1	5	24	2008	7	507	300	1	62	0.004733
1	5	24	2008	7	522	100	1	62	0.010111
1	5	24	2008	7	512	300	1	62	0.016835
1	5	24	2008	7	507	300	1	63	0.003452
1	5	24	2008	7	522	100	1	63	0.004153
1	5	24	2008	7	512	300	1	63	0.010844
1	5	24	2008	7	507	300	1	66	0.01037
1	5	24	2008	7	522	100	1	66	0.014352
1	5	24	2008	7	512	300	1	66	0.032881
1	5	24	2008	8	507	300	1	54	0.035642
1	5	24	2008	8	512	300	1	54	0.114941
1	5	24	2008	8	522	100	1	54	0.119775
1	5	24	2008	8	507	300	1	60	0.117356
1	5	24	2008	8	522	100	1	60	0.148838
1	5	24	2008	8	512	300	1	60	0.369789
1	5	24	2008	8	507	300	1	61	0.005145
1	5	24	2008	8	522	100	1	61	0.01099
1	5	24	2008	8	512	300	1	61	0.018299
1	5	24	2008	8	507	300	1	62	0.004733
1	5	24	2008	8	522	100	1	62	0.010111
1	5	24	2008	8	512	300	1	62	0.016835
1	5	24	2008	8	507	300	1	63	0.003452
1	5	24	2008	8	522	100	1	63	0.004153
1	5	24	2008	8	512	300	1	63	0.010844

APPENDIX C3 **CREW F**

1	5	24	2008	8	507	300	1	66	0.01037
1	5	24	2008	8	522	100	1	66	0.014352
1	5	24	2008	8	512	300	1	66	0.032881
1	5	24	2008	10	507	300	1	54	0.035642
1	5	24	2008	10	512	300	1	54	0.114941
1	5	24	2008	10	522	100	1	54	0.119775
1	5	24	2008	10	507	300	1	60	0.117356
1	5	24	2008	10	522	100	1	60	0.148838
1	5	24	2008	10	512	300	1	60	0.369789
1	5	24	2008	10	507	300	1	61	0.005145
1	5	24	2008	10	522	100	1	61	0.01099
1	5	24	2008	10	512	300	1	61	0.018299
1	5	24	2008	10	507	300	1	62	0.004733
1	5	24	2008	10	522	100	1	62	0.010111
1	5	24	2008	10	512	300	1	62	0.016835
1	5	24	2008	10	507	300	1	63	0.003452
1	5	24	2008	10	522	100	1	63	0.004153
1	5	24	2008	10	512	300	1	63	0.010844
1	5	24	2008	10	507	300	1	66	0.01037
1	5	24	2008	10	522	100	1	66	0.014352
1	5	24	2008	10	512	300	1	66	0.032881
1	5	24	2008	11	507	300	1	54	0.035642
1	5	24	2008	11	512	300	1	54	0.114941
1	5	24	2008	11	522	100	1	54	0.119775
1	5	24	2008	11	507	300	1	60	0.117356
1	5	24	2008	11	522	100	1	60	0.148838
1	5	24	2008	11	512	300	1	60	0.369789
1	5	24	2008	11	507	300	1	61	0.005145
1	5	24	2008	11	522	100	1	61	0.01099
1	5	24	2008	11	512	300	1	61	0.018299
1	5	24	2008	11	507	300	1	62	0.004733
1	5	24	2008	11	522	100	1	62	0.010111
1	5	24	2008	11	512	300	1	62	0.016835
1	5	24	2008	11	507	300	1	63	0.003452
1	5	24	2008	11	522	100	1	63	0.004153
1	5	24	2008	11	512	300	1	63	0.010844
1	5	24	2008	11	507	300	1	66	0.01037
1	5	24	2008	11	522	100	1	66	0.014352
1	5	24	2008	11	512	300	1	66	0.032881
1	5	24	2008	12	507	300	1	54	0.035642
1	5	24	2008	12	512	300	1	54	0.114941
1	5	24	2008	12	522	100	1	54	0.119775
1	5	24	2008	12	507	300	1	60	0.117356
1	5	24	2008	12	522	100	1	60	0.148838
1	5	24	2008	12	512	300	1	60	0.369789
1	5	24	2008	12	507	300	1	61	0.005145
1	5	24	2008	12	522	100	1	61	0.01099
1	5	24	2008	12	512	300	1	61	0.018299
1	5	24	2008	12	507	300	1	62	0.004733
1	5	24	2008	12	522	100	1	62	0.010111
1	5	24	2008	12	512	300	1	62	0.016835
1	5	24	2008	12	507	300	1	63	0.003452
1	5	24	2008	12	522	100	1	63	0.004153
1	5	24	2008	12	512	300	1	63	0.010844
1	5	24	2008	12	507	300	1	66	0.01037
1	5	24	2008	12	522	100	1	66	0.014352
1	5	24	2008	12	512	300	1	66	0.032881
1	5	24	2009	1	507	300	1	54	0.036113
1	5	24	2009	1	512	300	1	54	0.116764
1	5	24	2009	1	522	100	1	54	0.120674
1	5	24	2009	1	507	300	1	60	0.117534
1	5	24	2009	1	522	100	1	60	0.148979
1	5	24	2009	1	512	300	1	60	0.370476
1	5	24	2009	1	507	300	1	61	0.005483
1	5	24	2009	1	522	100	1	61	0.011395
1	5	24	2009	1	512	300	1	61	0.01961
1	5	24	2009	1	507	300	1	62	0.005044
1	5	24	2009	1	522	100	1	62	0.010483

APPENDIX C3 **CREW F**

1	5	24	2009	1	512	300	1	62	0.018041
1	5	24	2009	1	507	300	1	63	0.003452
1	5	24	2009	1	522	100	1	63	0.004153
1	5	24	2009	1	512	300	1	63	0.010844
1	5	24	2009	1	507	300	1	66	0.010418
1	5	24	2009	1	522	100	1	66	0.01439
1	5	24	2009	1	512	300	1	66	0.033068
1	5	24	2009	2	507	300	1	54	0.036113
1	5	24	2009	2	512	300	1	54	0.116764
1	5	24	2009	2	522	100	1	54	0.120674
1	5	24	2009	2	507	300	1	60	0.117534
1	5	24	2009	2	522	100	1	60	0.148979
1	5	24	2009	2	512	300	1	60	0.370476
1	5	24	2009	2	507	300	1	61	0.005483
1	5	24	2009	2	522	100	1	61	0.011395
1	5	24	2009	2	512	300	1	61	0.01961
1	5	24	2009	2	507	300	1	62	0.005044
1	5	24	2009	2	522	100	1	62	0.010483
1	5	24	2009	2	512	300	1	62	0.018041
1	5	24	2009	2	507	300	1	63	0.003452
1	5	24	2009	2	522	100	1	63	0.004153
1	5	24	2009	2	512	300	1	63	0.010844
1	5	24	2009	2	507	300	1	66	0.010418
1	5	24	2009	2	522	100	1	66	0.01439
1	5	24	2009	2	512	300	1	66	0.033068
1	5	24	2009	3	507	300	1	54	0.036113
1	5	24	2009	3	512	300	1	54	0.116764
1	5	24	2009	3	522	100	1	54	0.120674
1	5	24	2009	3	507	300	1	60	0.117534
1	5	24	2009	3	522	100	1	60	0.148979
1	5	24	2009	3	512	300	1	60	0.370476
1	5	24	2009	3	507	300	1	61	0.005483
1	5	24	2009	3	522	100	1	61	0.011395
1	5	24	2009	3	512	300	1	61	0.01961
1	5	24	2009	3	507	300	1	62	0.005044
1	5	24	2009	3	522	100	1	62	0.010483
1	5	24	2009	3	512	300	1	62	0.018041
1	5	24	2009	3	507	300	1	63	0.003452
1	5	24	2009	3	522	100	1	63	0.004153
1	5	24	2009	3	512	300	1	63	0.010844
1	5	24	2009	3	507	300	1	66	0.010418
1	5	24	2009	3	522	100	1	66	0.01439
1	5	24	2009	3	512	300	1	66	0.033068
1	5	24	2009	4	507	300	1	54	0.036113
1	5	24	2009	4	512	300	1	54	0.116764
1	5	24	2009	4	522	100	1	54	0.120674
1	5	24	2009	4	507	300	1	60	0.117534
1	5	24	2009	4	522	100	1	60	0.148979
1	5	24	2009	4	512	300	1	60	0.370476
1	5	24	2009	4	507	300	1	61	0.005483
1	5	24	2009	4	522	100	1	61	0.011395
1	5	24	2009	4	512	300	1	61	0.01961
1	5	24	2009	4	507	300	1	62	0.005044
1	5	24	2009	4	522	100	1	62	0.010483
1	5	24	2009	4	512	300	1	62	0.018041
1	5	24	2009	4	507	300	1	63	0.003452
1	5	24	2009	4	522	100	1	63	0.004153
1	5	24	2009	4	512	300	1	63	0.010844
1	5	24	2009	4	507	300	1	66	0.010418
1	5	24	2009	4	522	100	1	66	0.01439
1	5	24	2009	4	512	300	1	66	0.033068

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NONROAD EMISSIONS SUMMARY

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NONROAD **EMISSIONS SUMMARY**

Pollutant Code	Pollutant Name	CREW A	CREW B	CREW C	CREW C1	CREW D	CREW E	CREW F	TOTAL (tons)
54	**CO**	0.571	11.979	0.462	2.590	6.221	0.628	7.003	**29.454**
60	**NOx**	1.710	19.633	1.065	6.032	14.104	1.574	16.527	**60.646**
61	**PM10**	0.099	1.548	0.073	0.339	0.936	0.091	0.918	**4.003**
62	**PM2.5**	0.091	1.424	0.067	0.312	0.861	0.083	0.844	**3.682**
63	**SO2**	0.238	0.986	0.030	0.132	0.966	0.251	0.973	**3.575**
66	**VOC**	0.151	1.838	0.102	0.513	1.318	0.141	1.585	**5.648**

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APPENDIX D

Project Emissions Summary

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APPENDIX D- Emissions Summary for the Entire Masonville DMCF Project (tons) - 25% Seagirt Borrow

	CO	NOx	PM2.5	PM10	SO2	VOC
CREW A	2.164	10.955	0.323	0.332	1.803	0.327
CREW B1	26.585	113.007	3.773	3.897	16.820	3.477
CREW B3	8.371	53.574	1.348	1.348	9.085	0.940
CREW C	18.242	114.345	2.916	2.922	19.239	2.094
CREW C1	2.841	6.057	0.312	0.340	0.132	0.529
CREW D	12.582	37.202	1.854	1.929	7.654	2.025
CREW E	0.843	1.595	0.083	0.092	0.251	0.154
CREW F	7.200	16.593	0.846	0.920	0.973	1.600
TOTAL	**78.83**	**353.33**	**11.45**	**11.78**	**55.96**	**11.15**

Emissions Percentage Distribution

	CO	NOx	PM2.5	PM10	SO2	VOC
CREW A	3%	3%	3%	3%	3%	3%
CREW B1	34%	32%	33%	33%	30%	31%
CREW B3	11%	15%	12%	11%	16%	8%
CREW C	23%	32%	25%	25%	34%	19%
CREW C1	4%	2%	3%	3%	0%	5%
CREW D	16%	11%	16%	16%	14%	18%
CREW E	1%	0%	1%	1%	0%	1%
CREW F	9%	5%	7%	8%	2%	14%
TOTAL	**1.00**	**1.00**	**1.00**	**1.00**	**1.00**	**1.00**

Total Annual Emissions Compared to The General Conformity (GC) Threshold (tons)

Pollutant	GC Threshold	2006	2007	2008	2009	TOTAL
CO	**NA**	2.72	49.55	25.12	1.44	78.83
NOx	**100**	12.00	**207.47**	**130.60**	3.26	353.33
PM2.5	**100**	0.38	7.17	3.74	0.17	11.45
PM10	**NA**	0.39	7.39	3.81	0.18	11.78
SOx	**NA**	1.97	33.28	20.55	0.16	55.96
VOC	**50**	0.43	6.95	3.46	0.31	11.15

APPENDIX D- Emissions Summary for the Entire Masonville DMCF Project (tons) - 20% Seagirt Borrow

	CO	NOx	PM2.5	PM10	SO2	VOC
CREW A	2.164	10.955	0.323	0.332	1.803	0.327
CREW B1	26.585	113.007	3.773	3.897	16.820	3.477
CREW B3	7.184	45.922	1.155	1.155	7.787	0.806
CREW C	19.444	122.020	3.111	3.117	20.537	2.230
CREW C1	2.841	6.057	0.312	0.340	0.132	0.529
CREW D	12.582	37.202	1.854	1.929	7.654	2.025
CREW E	0.843	1.595	0.083	0.092	0.251	0.154
CREW F	7.200	16.593	0.846	0.920	0.973	1.600
TOTAL	**78.84**	**353.35**	**11.46**	**11.78**	**55.96**	**11.15**

Emissions Percentage Distribution

	CO	NOx	PM2.5	PM10	SO2	VOC
CREW A	3%	3%	3%	3%	3%	3%
CREW B1	34%	32%	33%	33%	30%	31%
CREW B3	9%	13%	10%	10%	14%	7%
CREW C	25%	35%	27%	26%	37%	20%
CREW C1	4%	2%	3%	3%	0%	5%
CREW D	16%	11%	16%	16%	14%	18%
CREW E	1%	0%	1%	1%	0%	1%
CREW F	9%	5%	7%	8%	2%	14%
TOTAL	**1.00**	**1.00**	**1.00**	**1.00**	**1.00**	**1.00**

Total Annual Emissions Compared to The General Conformity (GC) Threshold (tons)

Pollutant	GC Threshold	2006	2007	2008	2009	TOTAL
CO	**NA**	2.72	48.36	26.32	1.44	78.84
NOx	**100**	12.00	**199.82**	**138.27**	3.26	353.35
PM2.5	**100**	0.38	6.97	3.94	0.17	11.46
PM10	**NA**	0.39	7.20	4.01	0.18	11.78
SOx	**NA**	1.97	31.99	21.85	0.16	55.96
VOC	**50**	0.43	6.82	3.59	0.31	11.15

APPENDIX E

Correspondence Received on the Conformity Analysis

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MARYLAND DEPARTMENT OF THE ENVIRONMENT
1800 Washington Boulevard • Baltimore MD 21230
410-537-3000 • 1-800-633-6101

October 16, 2006

Mary A. Frazier
Maryland Section Northern
Department of the Army
Baltimore District
U.S. Army Corps of Engineers
PO Box 1715
Baltimore, MD 21203-1715

***RE**: General Conformity Analysis of the Masonville Dredged Material Containment Facility Baltimore, Maryland*

Dear Ms. Frazier:

Thank you for providing the Maryland Department of the Environment (MDE) the opportunity to review and comment on your draft Air Quality Conformity Report. The MDE requests the following comments be addressed:

1. The statement on pages 2-2 and 4-2 of the analysis that "There is currently no General Conformity applicability threshold listed for PM2.5 non-attainment areas", is incorrect. On July 17, 2006 the EPA published a direct final rule (71 FR 40420) establishing *de minimis* levels for PM2.5 General Conformity Analyses: http://www.epa.gov/fedrgstr/EPA-AIR/2006/July/Day-17/a11241.htm. The requirements of this federal rule need to be addressed specifically in the general conformity section of the FEIS. Under the July 17th, 2006 final rule the general conformity *de minimus* level of PM2.5 emissions (and precursors) from a federal action is 100 tons per year (tpy) for direct PM2.5, 100 tpy for NOx and 100 tpy for SO2. Based on the above the *de minimus* level for SO2 has been set for the Baltimore Region at 100 TPY and Table 4-1 on page 4-1 should reflect this final rule.

2. In the mitigation section of the report (page 5-1 and 5-2) you state that MDE conveyed that a precedent does exist for offsetting NOx emissions using VOC emission reduction credits under the New Source Review (NSR) program. Precedent for VOC substitution does exist in the NSR program in Maryland however not for General Conformity. MDE would likely allow the use of VOC emission reduction credits to offset NOx emissions from a general conformity project but MDE will require using a 1.3 to 1 ratio as established by NSR.

3. Page 5-1 states "The remaining issue that was discussed with both the MDE and the USEPA (in Research Triangle Park in North Carolina) was whether out-of-State VOC credits could be used rather than securing in-State credits. Since Maryland does not have an approved program, purchasing credits in bordering states (i.e., Pennsylvania) is believed by trading professionals to be a less expensive alternative. Although such an approach has yet to be used under General Conformity, it does have precedence under the EPA New Source Review Program, including in Maryland. The only requirement is that emission credits be obtained from a region within the air basin that has the same or worse attainment classification for ground level ozone".

   The General Conformity rule states, "for ozone or nitrogen dioxide, the total of direct and indirect emissions from the action are fully offset within the same nonattainment or maintenance area through a revision to the SIP or similarly enforceable measure that effects emission reductions so that there are no next increases in emissions of that pollutant". The purchase of emission reduction credits is considered an enforceable measure used to offset emission increases and therefore emission reduction credits need to be purchased from the same nonattainment area as the project. For the Masonville project the nonattainment area would be the Baltimore Nonattainment Area.

4. The NMIM input data presented in Attachment D2 shows a single year. Please identify what analysis year these figures represent. As the proposed project spans three years please provide the NMIM input data files for the all years that the project spans.

5. The input data for the NMIM model runs (Attachment D2) does not correspond with the annual emission estimates. After reviewing the annual emission totals shown in Attachment D1 (page 36) and the summary emission totals presented on the following pages of the report MDE is concerned that the model runs do not reflect all of the months that a piece of equipment is running.

   The following is an example of a discrepancy: Only one piece of equipment operates at 1000 HP according to the data presented. Attachment D2 (NMIM Input Data) identifies SCC 2270002060 (1000 HP Rubber Tire Loader) in operation for three months of the year (July, August and September). Therefore the model run output data should show emissions for 1000 HP for only those months. However, the CREW B1 model run: SCC 515 – 1000 HP operates in all months but July, August and September. MDE requests clarification as to why the emissions from the model runs do not correspond to the equipment activity.

6. MDE was not able to identify the emission factors used to generate the emission estimates in the report. Although the emission factors reside within the NMIM model, the emission factors should be supplied in order to verify emission estimates. MDE is concerned that the emission factors used in estimating the emissions are not reflective of the actual machinery used in the project.

7. MDE has assumed that the pollutant IDs from the model runs correspond to the following pollutant names: 54=CO, 60=NOx, 61=PM10, 62=PM2.5, 63=SO2, 66=VOC. MDE requests that clarification is provided on pollutant ID and pollutant name.

Thank you again for the opportunity to review the draft conformity report. If there are any questions related to the above comments please contact me at 410-537-3245, or Brian Hug, Acting Deputy Program Manager at 410-537-4125.

Sincerely,

Diane L. Franks
Acting Program Manager
Air Quality Planning Program

CC: Brian Hug, MDE

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OTHER EMISSIONS CALCULATIONS

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Table 1 - Masonville DMCF Emissions Summary

Scenario 1 - Masonville without Seagirt material (tons)

	CO	NOx	PM2.5	PM10	SO2	VOC
CREW A	1.855	10.032	0.274	0.278	1.674	0.245
CREW B	28.568	149.716	4.337	4.413	24.060	3.588
CREW C	23.215	144.904	3.690	3.696	24.430	2.634
CREW C1	1.420	2.751	0.141	0.153	0.060	0.248
CREW D	8.784	26.481	1.283	1.324	6.126	1.295
CREW E	0.345	0.349	0.018	0.020	0.058	0.043
CREW F	3.020	6.738	0.340	0.370	0.399	0.619
TOTAL	**67.21**	**340.97**	**10.08**	**10.25**	**56.81**	**8.67**

Emissions Percentage Distribution

	CO	NOx	PM2.5	PM10	SO2	VOC
CREW A	3%	3%	3%	3%	3%	3%
CREW B	43%	44%	43%	43%	42%	41%
CREW C	35%	42%	37%	36%	43%	30%
CREW C1	2%	1%	1%	1%	0%	3%
CREW D	13%	8%	13%	13%	11%	15%
CREW E	1%	0%	0%	0%	0%	0%
CREW F	4%	2%	3%	4%	1%	7%
TOTAL	**1.00**	**1.00**	**1.00**	**1.00**	**1.00**	**1.00**

Total Annual Emissions Compared to The General Conformity (GC) Threshold (tons)

Pollutant	GC Threshold	2006	2007	2008	2009	TOTAL
CO	**NA**	1.86	31.50	33.80	0.05	67.21
NOx	**100**	10.03	**156.19**	**174.69**	0.05	340.97
PM2.5	**100**	0.27	4.66	5.14	0.00	10.08
PM10	**NA**	0.28	4.77	5.20	0.00	10.25
SOx	**NA**	1.67	24.43	30.70	0.01	56.81
VOC	**50**	0.25	4.18	4.24	0.01	8.67

Activity Percentage Distribution

	2006	2007	2008	2009
CREW A	100%	0%	0%	0%
CREW B	0%	100%	0%	0%
CREW C	0%	0%	100%	0%
CREW C1	0%	0%	85%	15%
CREW D	30%	70%	0%	0%
CREW E	66%	34%	0%	0%
CREW F	0%	41%	45%	14%

Scenario 2 - Masonville with Seagirt materials (tons)

	CO	NOx	PM2.5	PM10	SO2	VOC
CREW A	1.855	10.032	0.274	0.278	1.674	0.245
CREW B1	21.684	105.332	3.220	3.296	16.532	2.813
CREW B3	8.371	53.574	1.348	1.348	9.085	0.940
CREW C	18.106	113.879	2.891	2.895	19.226	2.051
CREW C1	1.420	2.751	0.141	0.153	0.060	0.248
CREW D	9.919	30.762	1.467	1.509	7.367	1.423
CREW E	0.345	0.349	0.018	0.020	0.058	0.043
CREW F	3.020	6.738	0.340	0.370	0.399	0.619
TOTAL	**64.722**	**323.416**	**9.700**	**9.869**	**54.402**	**8.380**

Emissions Percentage Distribution

	CO	NOx	PM2.5	PM10	SO2	VOC
CREW A	0.029	0.031	0.028	0.028	0.031	0.029
CREW B1	0.335	0.326	0.332	0.334	0.304	0.336
CREW B3	0.129	0.166	0.139	0.137	0.167	0.112
CREW C	0.280	0.352	0.298	0.293	0.353	0.245
CREW C1	0.022	0.009	0.015	0.016	0.001	0.030
CREW D	0.153	0.095	0.151	0.153	0.135	0.170
CREW E	0.005	0.001	0.002	0.002	0.001	0.005
CREW F	0.047	0.021	0.035	0.038	0.007	0.074
TOTAL	**1.000**	**1.000**	**1.000**	**1.000**	**1.000**	**1.000**

Total Annual Emissions Compared to The General Conformity (GC) Threshold (tons)

Pollutant	GC Threshold	2006	2007	2008	2009	TOTAL
CO	NA	2.082	40.350	21.650	0.640	**64.722**
NOx	100	10.260	**189.498**	**122.293**	1.366	**323.416**
PM2.5	100	0.286	6.035	3.309	0.069	**9.700**
PM10	NA	0.291	6.162	3.341	0.075	**9.869**
SOx	NA	1.712	32.433	20.192	0.065	**54.402**
VOC	50	0.273	5.303	2.679	0.125	**8.380**

NOx Emissions Reduced (tons)

2006	2007	2008	2009	Emission Reduced
-0.23	**-33.30**	**52.40**	**-1.31**	**17.55**

Table 2 Combined Masonville and Seagirt Emissions summary

Scenario 1 - 100% Seagirt Materials to HMI

	CO	NOx	PM2.5	PM10	SO2	VOC
CREW A	1.855	10.032	0.274	0.278	1.674	0.245
CREW B1	28.568	149.716	4.337	4.413	24.060	3.588
CREW B2	49.834	261.171	7.565	7.698	41.971	6.259
CREW C	23.215	144.904	3.690	3.696	24.430	2.634
CREW C1	1.420	2.751	0.141	0.153	0.060	0.248
CREW D	8.784	26.481	1.283	1.324	6.126	1.295
CREW E	0.345	0.349	0.018	0.020	0.058	0.043
CREW F	3.020	6.738	0.340	0.370	0.399	0.619
TOTAL	**117.04**	**602.14**	**17.65**	**17.95**	**98.78**	**14.93**

Emissions Percentage Distribution

	CO	NOx	PM2.5	PM10	SO2	VOC
CREW A	2%	2%	2%	2%	2%	2%
CREW B1	24%	25%	25%	25%	24%	24%
CREW B2	43%	43%	43%	43%	42%	42%
CREW C	20%	24%	21%	21%	25%	18%
CREW C1	1%	0%	1%	1%	0%	2%
CREW D	8%	4%	7%	7%	6%	9%
CREW E	0%	0%	0%	0%	0%	0%
CREW F	3%	1%	2%	2%	0%	4%
TOTAL	**1.00**	**1.00**	**1.00**	**1.00**	**1.00**	**1.00**

al Annual Emissions Compared to The General Conformity (GC) Threshold (t

Pollutant	C Thresho	2006	2007	2008	2009	TOTAL
CO	**NA**	4.74	85.90	25.77	0.64	**117.04**
NOx	**100**	18.26	432.27	150.24	1.37	**602.14**
PM2.5	**100**	2.19	12.94	3.96	0.07	**17.65**
PM10	**NA**	0.69	13.19	3.99	0.08	**17.95**
SOx	**NA**	3.56	70.49	24.66	0.07	**98.78**
VOC	**50**	0.64	10.97	3.08	0.12	**14.81**

Activity Percentage Distribution

	2006	2007	2008	2009
CREW A	100%	0%	0%	0%
CREW B1	0%	100%	0%	0%
CREW B2	0%	100%	0%	0%
CREW C	0%	0%	100%	0%
CREW C1	0%	0%	85%	15%
CREW D	30%	70%	0%	0%
CREW E	66%	34%	0%	0%
CREW F	0%	41%	45%	14%

Scenario 2 - 25% Seagirt Materials to Masonville

	CO	NOx	PM2.5	PM10	SO2	VOC
CREW A	1.855	10.032	0.274	0.278	1.674	0.245
CREW B1	28.568	149.716	4.337	4.413	24.060	3.588
CREW B2	28.568	149.716	4.337	4.413	24.060	3.588
CREW B3	8.015	51.279	1.290	1.290	8.696	0.899
CREW C	13.834	86.330	2.198	2.202	14.554	1.570
CREW C1	1.420	2.751	0.141	0.153	0.060	0.248
CREW D	8.784	26.481	1.283	1.324	6.126	1.295
CREW E	0.345	0.349	0.018	0.020	0.058	0.043
CREW F	3.020	6.738	0.340	0.370	0.399	0.619
TOTAL	**94.41**	**483.39**	**14.22**	**14.46**	**79.69**	**12.09**

Emissions Percentage Distribution

	CO	NOx	PM2.5	PM10	SO2	VOC
CREW A	2%	2%	2%	2%	2%	2%
CREW B1	30%	31%	31%	31%	30%	30%
CREW B2	30%	31%	31%	31%	30%	30%
CREW B3	8%	11%	9%	9%	11%	7%
CREW C	15%	18%	15%	15%	18%	13%
CREW C1	2%	1%	1%	1%	0%	2%
CREW D	9%	5%	9%	9%	8%	11%
CREW E	0%	0%	0%	0%	0%	0%
CREW F	3%	1%	2%	3%	1%	5%
TOTAL	**1.00**	**1.00**	**1.00**	**1.00**	**1.00**	**1.00**

Total Annual Emissions Compared to The General Conformity (GC) Threshold

Pollutant	GC Thresh	2006	2007	2008	2009	TOTAL
CO	**NA**	2.08	74.42	17.26	0.64	94.41
NOx	**100**	10.26	337.45	141.32	1.37	483.39
PM2.5	**100**	0.29	11.26	2.60	0.07	14.22
PM10	**NA**	0.29	11.47	2.63	0.08	14.46
SOx	**NA**	1.71	62.51	15.40	0.07	79.69
VOC	**50**	0.27	9.51	2.18	0.12	12.09

Nox Emissions reduced (tons)

2006	2007	2008	2009	TOTAL
8.00	**94.82**	**8.92**	**0.00**	**111.74**

CORRESPONDENCE REGARDING THE FINAL CONFORMITY ANALYSIS

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DEPARTMENT OF THE ARMY
BALTIMORE DISTRICT, U.S. ARMY CORPS OF ENGINEERS
P.O. BOX 1715
BALTIMORE, MD 21203-1715

REPLY TO
ATTENTION OF

NOV 2 0 2006

Regulatory Branch

Ms. Diane L. Franks
Acting Program Manager
Air Quality Planning Program
Maryland Department of the Environment
1800 Washington Boulevard
Baltimore, MD 21230

RE: Response to Comments on the Masonville Dredged Material Containment Facility (DMCF) General Conformity Study

Dear Ms. Franks:

Thank your for your prompt review of the Masonville DMCF General Conformity Study. The following is our response to your 16 October 2006 letter providing comments from the Maryland Department of the Environment (MDE).

Response to Comment 1: The report has been revised to reflect the 17 July 2006 rulemaking. Emissions of NOx remain the only pollutant that has applicability to General Conformity.

Response to Comment 2: The use of VOC credits to offset NOx credits by a 1.3 to 1 ratio is acknowledged. In subsequent discussions with the MDE, it was confirmed that if NOx credits are used to offset emissions, the ratio would be 1 to 1.

Response to Comment 3: It appears at this time, that the debate as to whether the use of out-of-State emission credits being allowable under the intent of General Conformity is moot. Sufficient in-State NOx credits have been identified that will adequately offset emissions NOx emissions from the Masonville project.

Response to Comment 4: The NMIM model was performed individually for every Crew based on the Crew's activity for each project year. The input data table (Attachment D2) was only a combined data for all the Crews for the 3 (three) project years. This misrepresentation has been clarified in the revised report (please refer to Attachment D).

Response to Comment 5: The NMIM model was executed separately for each Crew per project year as addressed in Comment 4 above. All the months within every project year were fully represented in the model output table (please refer to the revised report – Attachment D).

Response to Comment 6: The NMIM model emission factor is a function of individual equipment source classification codes (SCC), equipment technology type, fuel type, and meteorological data for the project's geographical region. A comprehensive database with all the emission factors is embedded within the model. Please refer to Tables 3.2 and 3.4.2 for the categories of equipment and associated SCCs used in the estimation.

Response to Comment 7: The assumptions of pollutant identification numbers made by MDE is correct (54 = CO, 60 = NOx, 61 = PM10, 62 = PM2.5, 63 = SO2, and 66 = VOC).

Your expeditious review of the Masonville DMCF report was greatly appreciated and comments made were valuable to the findings of the study. The complete revised report is attached. If you have any further questions and/or comments, please do not hesitate to contact me at (410) 962-5679.

Sincerely,

Mary Frazier

Mary Frazier
Biologist

Enclosure

MARYLAND DEPARTMENT OF THE ENVIRONMENT
1800 Washington Boulevard • Baltimore MD 21230
410-537-3000 • 1-800-633-6101

November 29, 2006

Mary A. Frazier
Maryland Section Northern
Department of the Army
Baltimore District
U.S. Army Corps of Engineers
PO Box 1715
Baltimore, MD 21203-1715

RE*: General Conformity Analysis of the Masonville Dredged Material Containment Facility Baltimore, Maryland*

Dear Ms. Frazier:

The Maryland Department of the Environment (MDE) concurs that securing emission reduction credits is an acceptable general conformity mitigation measure for the Masonville dredging project. Thank you for your continued communications with the MDE's Air Quality Planning Program related to the Masonville project and if you have any questions please contact me at 410-537-3245, or Brian Hug, Acting Deputy Program Manager at 410-537-4125.

Sincerely,

Diane L. Franks
Program Manager
Air Quality Planning Program

CC: Brian Hug, MDE

-----Original Message-----
From: Brian Hug [mailto:bhug@mde.state.md.us]
Sent: Monday, March 26, 2007 3:03 PM
To: Frazier, Mary A NAB02
Cc: Nat Brown; Brian Hug; Diane Franks
Subject: RE: General Conformity Analysis of the Masonville DredgedMaterial Containment Facility Baltimore, Maryland

Ms. Frazier,

On October 16, 2006 the MDE submitted a comment letter to the ACOE related to the Masonville project.

On November 20, 2006 the ACOE responded to the MDE in a letter signed by Mary Frazier of the ACOE. This letter explained how each of the MDE comments were handled in the revised conformity analysis.

Per the request of the ACOE, the MDE has again reviewed the November 20, 2006 response letter and the MDE concurs that the MDE comments were adequately addressed.

thank you

Brian J. Hug
Acting Deputy Program Manager
Air Quality Planning Program
Maryland Department of the Environment
1800 Washington Boulevard
Baltimore, Maryland 21237
410-537-4125

From: Steve Storms
Sent: Thursday, April 05, 2007 12:01 PM
To: 'Mark.Mendelsohn@nab02.usace.army.mil'; 'Frazier, Mary A NAB02'
Cc: Nat Brown; Frank Hamons; 'jbrunion@gba-inc.com'; 'Jane Boraczek'; 'Stephanie Lindley'
Subject: Masonville Air Emission Reduction Credits Teleconference, 9 Feb 2007

On 9 February 2007, Maryland Port Administration convened a teleconference with Maryland Department of the Environment and US Environmental Protection Agency personnel to discuss MPA's proposed leasing of air emission reduction credits regarding the construction of the Masonville Dredged Material Containment Facility.

MPA participants in the call included Frank Hamons, Nat Brown, and Steve Storms; MDE participants included Brian Hug; EPA was represented by Makeba Morris and Rose Quinto. Several MPA contractors were in attendance as well.

MPA and its contractors detailed the proposed approach involving leasing NOx credits originating from the shutdown of a local Bethlehem Steel facility from their current owner, Sempra Energy, to offset calculated NOx emissions for the period of construction of the Masonville DMCF.

EPA indicated that they have no objections to the proposed air emission reduction credit leasing plan.

MDE indicated that they are amenable to the proposed air emission reduction credit leasing plan.

MPA indicated it would continue to work to finalize the draft air emission reduction credit lease with Sempra Energy as soon as possible.

DEPARTMENT OF THE ARMY
BALTIMORE DISTRICT, U.S. ARMY CORPS OF ENGINEERS
P.O. BOX 1715
BALTIMORE, MD 21203-1715

REPLY TO
ATTENTION OF

APR 1 3 2007

Operations Division

Mr. Frank L. Hamons
Director Harbor Development
Maryland Port Administration
2310 Broening Highway
Baltimore, MD 21224

Dear Mr. Hamons:

The US Army Corps of Engineers (USACE) has reviewed the General Conformity Analysis for the proposed Masonville Dredged Material Containment Facility (DMCF) prepared by EA Engineering and dated November 17, 2006.

After reviewing the analysis, USACE has the following comments:

1. Section 2.2, Table 4-2, and Table 4-4 should state that the SO_X General Conformity (GC) threshold is 100 tons per year (in place of NA). This threshold value was established by 71 Fed. Reg. 40420 on July 17, 2006. Establishing the SO_X value does not affect the air requirements because the calculated SO_X is projected to be below this threshold.

2. The mitigation back-up plan is to acquire VOC credits in place of NO_X credits. The VOC:NO_X credit ratio stated in the third paragraph of Section 5.1 is stated incorrectly as 1:1. The correct VOC:NO_X credit ratio is 1.3:1 as indicated in a MDE letter dated October 16, 2006.

   A phone conversation on March 23, 2007 with EA Engineering concluded that the mitigation back-up plan was not needed because the first option of obtaining NO_X credits from Sempra Generation is being pursued between the Maryland Port Administration (MPA) and Sempra Generation. However, the correct ratio should be noted in the event that the back-up mitigation plan is needed. Since the acquisition of the credits is an integral part of the mitigation package, agreements between the MPA and Sempra Generation should be forwarded to the Corps when completed. Section 5.2 indicates that it was anticipated these agreements would be completed by 1 January, but it is not known whether this has occurred at this time.

3. Changes in the proposed construction schedule may affect the conformity analysis and mitigation plan. It appears this analysis was prepared using a September 2006 draft construction schedule, which has slipped to some extent. This alteration of the schedule may change the actual emission or at least the timing of the emissions calculated in this report. Changes to the actual emissions will affect the mitigation plan of acquiring emission credits.

If the acquisition of NO_X credits is required after 2008, the MPA will need to identify the source from which to acquire additional NO_X emission credits and provide us any final agreements associated with the acquisition ensuring conformity. As discussed in the General Conformity Analysis, Sempra Generation plans to start using their emission credits in 2009 for their own projects and will not lease their emission credits to MPA after 2008. However, it is our understanding that the MPA and Sempra Generation have recently negotiated that credits would not need to be returned prior to 2010. This provides a comfortable window of availability of credits based on the proposed construction schedule for the Masonville DMCF project. As a result, securing additional credits, if dictated by schedule changes, is not deemed an issue at this time provided that the anticipated lease agreement is executed.

The Maryland Department of the Environment (MDE) commented on the draft Air Quality Conformity Analysis in a letter dated October 16, 2006 (Appendix E). The General Air Quality Analysis was revised November 17, 2006. The Corps responded to MDE's comments by letter dated November 20, 2006. The MDE has informed the Corps that their comments were adequately addressed. After evaluating the report and coordinating with the MDE to resolve outstanding comments, the Corps has preliminarily determined that the General Conformity Analysis prepared for the proposed Masonville Dredged Material Containment Facility (DMCF) dated November 17, 2006, with the compensation proposed, conforms to the General Conformity requirements of the Clean Air Act. The MPA is requested to provide a copy of the executed lease agreements between the MPA and Sempra Generation at the conclusion of negotiations. Our final determination will be made after the circulation of the Final Environmental Impact Statement, and availability of the analysis for public comment.

If you have any questions regarding this matter please do not hesitate to contact me at 410-962-4252.

Sincerely,

V. G. Hobbs

Vance G. Hobbs
Chief, Maryland Section Northern