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ENGINEERING EVALUATION / FACT SHEET

BACKGROUND INFORMATION

Application No.:	R13-2874
Plant ID No.:	079-00167
Applicant:	Clark International Logistics, LLC
Facility Name:	Military Vehicle Refurbishing and Assembly Facility
Location:	Black Betsy (Between Poca and Bancroft)
NAICS Code:	336212 & 336992
Application Type:	Construction
Received Date:	February 28, 2011
Engineer Assigned:	Edward S. Andrews, P.E.
Fee Amount:	$2000.00
Date Received:	February 28, 2011
Completeness Date:	March 23, 2011
Due Date:	June 21, 2011
Newspaper:	The Hurricane Breeze & The Daily Mail
Applicant Ad Date:	March 11, 2011
UTMs:	Easting: 427.1.1km Northing: 4,261.8 km Zone: 17
Description:	After the fact permit for the construction of a military vehicle refurbishing and assembly facility.

DESCRIPTION OF PROCESS

Clark International Logistics, LLC (Clark) refurbishes used military vehicles or assembles new vehicles for resale or return to the U.S. Armed Forces. The process that the vehicles undergo includes diagnostic testing, mechanical and electrical overhauling, paint and body work, and upgrades and custom accessories as requested by the customer.

The process which each individual vehicle goes through is dependent on the as received condition of the vehicle and the requirement for the sale. The typical work which occurs does not include what is considered a zero-hour rebuild which is returning the vehicle to the original condition or as close as possible to the new condition of the vehicle.

Overall the facility is set up to take the vehicles from a rough-rusted used condition , strip the vehicle down, conduct such work as necessary to assure that the vehicle is electronically and mechanically sound, and repaint the vehicles. This includes engine testing, also transmission, and other mechanical work typical of any vehicle maintenance shop.

The work includes replacement, or reconditioning, of the seats and other parts of the vehicle that may be taken out/off the vehicle, cleaned, painted, re-upholstered, etc. and then re-installing the equipment. This includes bed racks which are mode of wood. The small painting operations (small pieces of metal or wood) are typically painted in the open face paint booth. The vehicles themselves are painted in the larger paint booth (Paint Booth A). Paint Booth A is the main paint booth and includes a heating system. The two (2) paint booths combined cannot exceed 10 gallon per hour of paint usage. The vehicle or parts of the vehicle are painted in a camouflage pattern or other military style paint finishes with CARC-military paints. Some customers do request domestic paint finishing but this a minor portion of the vehicles that are repaired.

Vehicle assembly is the assembly of a vehicle from purchased parts and will include retrofitting a purchased chassis into a military style vehicle. This operation would be similar to refurbishing activities but would be incorporating new part to make a new vehicle.

SITE INSPECTION

This writer conducted an announced site visit of the proposed facility on March 15, 2011. Mr. Bob Elswick, Maintenance Manager, was present during this visit.

Clark International Logistics, LLC located in the Black Betsy location in 1992. At this location, Clark operated a paint booth to accommodate their coating needs. Last year Clark became aware the facility should have obtained an air permit for their refurbishing activities at the Black Betsy facility.

The facility has two main buildings and several motor pools at the Black Betsy Road location. One building is used mainly for offices and storage area. The second building

encloses most of the refurbishing activities that includes the metal surface cleaning and applying coatings.

The Kanawha River confides the boundary of the actual site on one side and Norfolk Southern's rail line on the opposite end. Residential dwells on remaining sides of the facility. Some of these dwells are less than 50 feet to the main refurbishing building. Supplies and finished products are shipped in and out of the facility only by truck. Access roads and motor pools (long tern parking lots) at the facility is either paved surface (i.e. concrete pads or thick layer of clean crusher run gravel. Thus, any fugitive dust from the access roads and motor pools would be minimal without any addition control measures.

ESTIMATE OF EMISSIONS BY REVIEWING ENGINEER

Emissions generated at this facility are mainly from the abrasive blasting, applying surface coatings and associated cleanup activities. The pollutants emitted are particulate matter and VOCs, which include hazardous air pollutants (HAPs).

Clark surface cleans larger assemblies (truck frames and cargo beds) in the dry abrasive blasting booth, which is converted garage bay. Smaller assemblies or parts are cleaned either in the Paragon blaster or in the smaller abrasive chamber. The PM rate for the blasting booth was estimated using AP-42 emission factors and maximum amount of abrasive to be consumed on an annual basis. The PM rate from the abrasive blaster booth was predicted to be 0.02 tons per year with controls. Clark uses an abrasive media manufactured by SPONGE-JET®. This media is sponge with the abrasive embedded into it. Thus, the dust generated from the blasted is significantly reduced. Thus, the actual particulate matter emission rate would be less that the predicted amount.

The small abrasive chamber is self-contained and does not vents direct to the outside air. Thus, the emissions from it were considered insignificant. The Paragon surface cleaner is vented to a three-compartment bag house and could clean assemblies in size of up to nearly 1 cubic yard in volume. Clark estimated the maximum annual consumption of abrasive media for the Pangborn machine is about 2,000 pounds per year. This usage rate would have the potential to emit of 1.4 pounds per year after controls.

VOC estimates were determined by using a mass balance approach and assuming that all of the VOCs in the coating were emitted. The applicant proposed to use over twenty different coating at the facility. In addition, the facility's usage of the each coating varies between the type of vehicle being refurbished and parts being recondition/re-manufactured. The facility is

located within a Rule 21 County and all coating applied are subject to a VOC emission limitation. These limitations are discussed in further detail under the REGULATORY APPLICABILITY Section of this evaluation. Clark estimated the maximum amount of coatings to be applied at 10,008 gallons per year. Using the VOC content limitation of 3.5 lb of VOC per gallon of coating, the facility's VOC emissions generated from coatings is 17.5 tons per year.

PM and PM_{10} emissions from coating were estimated by applying a transfer efficiency of 65% for the use high volume low pressure paint gun systems and a control efficiency of 98% for the efficiency for the paint arrestors. Clark uses airless system to apply the undercoating, which typically has a transfer efficiency of 45%. In addition, Clark does not apply the undercoating in the paint booth. This coating is applied in a dedicated single stall garage bay. Thus, the efficiency for the paint arrestor filter is not appropriate for this particular coating. The following table is the PM potential from the HVLP systems and the airless system.

Table #1 PM Emissions from Coatings

Application System	Coating	Hourly Coating Usage	Transfer ɳ (%)	Solids Content lb/gal	PM & $PM_{2.5}$ Emission Rate lb/hr
HVLP	Kem Kronik Metal Primer off White	10	65	6	0.42
Airless	Z Guard CTPM Green (Undercoating)	10	45	5	5.5

Assuming each paint booths and the undercoating operation is consuming 10 gallons of the respective highest solid content coatings; the facility would have a hourly PM rate of 6.34 pounds per hour. Clark has proposed annual limit of 10,008 gallons of coatings at the facility. This usage limit would restrict the facility's worst-case potential of PM & $PM_{2.5}$ to just 2.75 tons per year.

Other potential sources of emissions are the application of the rust preventative (protective film) and solvent cleaning. Certain customers require a rust preventative to be applied to the finish product to ensure oxidation does not occur during shipment. Clark applies Carwell Rust Inhibitor T-32 to the finish vehicle using air atomization sprayer. Based on the MSDS sheet for this Carwell product, there are no hazardous or volatile ingredients. Thus, there is no potential of VOC emission from the application of this protective film.

Clark typically uses solvents to the clean small parts. Brake components are clean with one of two different systems. One is a non-VOC brake cleaner that has tetrachloroehylene as the

active ingredient. The other system is SmartWasher® manufactured by ChemFree Corporation. This system uses a VOC free cleaning solution to clean metal parts.

The SmartWasher systems employ a natural process called bioremediation to eliminate liquid hazardous waste streams, reduce the release of harmful pollutants and increase employee safety while washing parts. The patented systems combine three essential components: the SmartWasher, the parts washer, with a powerful water based degreasing solution called OzzyJuice®, along with a microbe impregnated particulate trap called an OzzyMat™.

Thus, it appears that these SmartWasher does not generated any air emissions other than carbon dioxide. Controlled VOC emissions from the typical solvent degreaser were predicted to be 0.29 tons of VOC per degreaser per year. Clark has operated up to five degreasers at single time. Thus, the total VOC emissions from the degreasers was predicted to be 1.4 tons of VOCs per year.

Another source of emissions is from the activities involved with vehicle body repair. Clark uses two types of processes at the facility. One involves the use of body filter, hardeners, and cure agents to fill in or repair dents or other minor surface deflects in the vehicle body. The other process involves cutting out the dent or rusted body part and replace with a new sheet metal or steel plate.

Both process generates air pollutants. Body filters and hardeners contain VOCs (mainly styrene) which are released to the atmosphere once mixed and applied. Replacing the deflective body parts or panels mostly requires some form of cutting, grinding, and welding. Most of the cutting involves mechanical forms, which usually does not generated air emission or at the least significant amounts. Grinding is conducted to prepare the surface before welding and sometimes afterwards to smooth out the weld (remove the slag formed during the welding process).

Clark estimated that the body shop consumes 300 gallons of body filters per year. The 3M DMS Dent Filling Compound has a VOC content of 1.76 pounds of VOC per gallon. Usage of this 3M product at 300 gallon per year would result in VOC potential of 0.3 tons per year.

In the application, only emissions from welding was manganese emission, which is hazardous air pollutant. PM is also generated from welding. AP-42 has a list of emission factors for welding based on the type of welding using specific type of electrode. The application did not identify the type being preformed or electrode used. Just to get a picture of the maximum of PM generated from welding, the highest PM emission factor was multiply by the maximum amount of electrodes consumed in a year was used to predict a annual PM rate of 163 pounds per

year of PM_{10}. This predicted rate was based on shielded metal arc welding with a 14Mn-4Cr electrode. In the application, the manganese emissions were predicted to be 40 pounds per year.

Grinding emissions in the application were predicted to be estimated at 43.8 tons per year. This estimate was not based on the amount of grinding or number of grinders in contentious operation. Instead, this rate was allowable PM from Rule 7 for refurbishing a 10,000-pound vehicle in hour for every hour in a year.

The proposed PM and PM_{10} emission rates from grinder is not respective of the actual emission generated from such activities. Further, the grinding of metal using hand-held equipment is listed consider a "de minims source" in 45CSR13 (See Table 45-13B). Therefore, no estimated emissions from grinding is deem necessary for this permitting action.

Emissions from the natural gas fired devices such as the paint booth heater and the Hotsy Wash System (hot water pressure washer) are deem insignificant sources of emissions. Both sources have a combined maximum heat input of less than five MMBtu/hr. Clark operates a 0.34 MMBtu/hr used oil space heater. This heater is consider to be a insignificant source of emissions. Thus, the potential to emit from these sources were not reviewed as part of this permitting action.

The application listed emissions from the dynameters engine test stand. This dynameter is a chaise dynameter, which requires the engine to be installed in a vehicle before it can be tested. Thus, the operating engine cannot be classified as a stationary source. Therefore, the potential to emit from the dynameter was not evaluated in this permitting action since it is not a stationary source.

The following table is summary of the emissions from the Black Betsy Facility;

Table #2 - Summary of Emissions from the Facility		
Process	Pollutant	Annual Emission Rate (TPY)
Surface Cleaning –Abrasive	PM & $PM_{2.5}$	0.02
Surface Coatings	PM & $PM_{2.5}$	2.75
Surface Coatings	VOCs	17.5
Metal Cleaning – Solvent	VOCs	1.4
Body Work w/filters	VOCs	0.3
Welding	PM & $PM_{2.5}$	0.08

Most of the coatings and solvents used at the facility contain components or compounds that are classified as HAPs under the Clean Air Act. The applicant estimated the facility's

potential to emits of total to be 1.54 tons per year. Based on this writer's review of the coatings listed in the application, this emission rate appears to be low.

The applicant based this estimate on narrow business model of only needing to use certain coatings and over look cobalt and chromium compounds as HAPs. The cobalt and chromium compounds would increase the facility potential by 2.15 tpy. These particular HAPs are not volatile and could be collected in a high efficient paint arresting filters.

Only one of the coatings listed in the application has HAP content greater than 3.5 lb of HAP per gallon of coating, which is the high temperature engine paint near 6 lb of HAPs per gallon. Because this coating is specifically design for high temperatures, it would not be practicable to assume the usage of it as the facility's maximum.

Because most of the HAPs in these coatings are volatile and is included in the VOC content of the coating, set a maximum volatile HAP content at 3.5 lb of HAP per gallon should be appropriate for estimate the maximum potential of HAPs. Using the production model that 6,000 gallon of the annual coating usage would be decided to military specified coatings, this would have the potential of 2.16 tons of HAPs per year. Then, assume that the remaining 4,000 gallons could have a maximum content of 3.5 lb of HAPs per gallon, which yielded a maximum potential of 7 tons of HAPs per year. No one individual HAP is clearly the main HAP in the proposed. It is a combination of ethyl benzene, toluene, and xylene. There are traces of other HAPs such cobalt, chromium, naphthalene and hexamethylene diisoyanate.

The bono and fillers used in the body shop contains styrene, which is a HAP compound. However, the maximum potential of styrene from these body fillers would be 0.03 tpy. Overall, the facility maximum potential of combined total amount of HAPs is 9.2 tons per year.

REGULATORY APPLICABILITY

45CSR7 To Prevent and Control Particulate Matter Air Pollution From Manufacturing Processes and Associated Operations

The purpose of this rule is to prevent and control particulate matter air pollution from manufacturing process and associated operations. The facility performers surface cleaning (abrasive blasting), grinding/welding, and surface coating.

The activities of interest with regards to body repair and surface cleaning are the abrasive blasting, which includes the blasting bay and Pangborn machine. Both of the emission unit are

equipped with control devices that significantly reduces its potential to emit particulate matter. Using the maximum projected vehicle weight of 52,000 pounds in the bay, the abrasive blasting bay would have an allowable of 31 pounds per hour. With the two bag houses, the bay has a potential PM rate of 0.01 pounds per hour. If the Pangborn machine would clean 1,250 pounds parts, it would have a allowable of 1.5 pounds per hour. This hourly allowable is more than the estimate annual rate of 1.4 pounds per hour.

The process activities involved with the coating process is classified as type "a" source operation. Using the maximum hourly application listed in Attachment N1, this writer determined the paint booth maximum controlled PM to be 0.83 pounds per hour. The allowable PM rate under this rule for processing 52,000 pounds is 31 pounds per hour, which is significantly greater than the controlled rate of 0.83 pounds per hour. Thus, this operation should have no problem achieving compliance with the process weight limits of this rule.

45CSR21 Regulation To Prevent And Control Air Pollution From The Emission Of Volatile Organic Compounds

This rule is West Virginia's application of RACT for stationary sources located in Cabell, Kanawha, Putnam, Wayne, and Wood Counties. Clark's Black Betsy facility is subject to two sections of this rule, which are Sections 19 and 30.

Section 19 pertains to the coating (painting) of miscellaneous metal parts. Clark is engaged in coating miscellaneous metal parts and vehicles. However, these vehicles are not classified as automobile or light-duty trucks. Clark mainly refurbishes military vehicles with a nominal capacity rate of 2-1/2 tons or greater. Thus, none of the exemptions in §§45-19-1.b. or c. applies to this coating operating. Therefore, the VOC emission limitations of this section apply to all surface coatings applied at this facility. At the facility, most of the parts or vehicles are painted with a type of coating that is referring to as CARC. CARC is Chemical Agent Resistant Coating. CARC resist corrosion and the penetration of chemical agent. It does not soak up chemical agents the way alkyd paint does. It also resists removal by decontaminating solutions. The CARC should be considered as an extreme performance coating.

The miscellaneous parts coated at the facility are normal air-dried. Therefore, the coatings applied at the facility will be subject to VOC content limitation of 3.5 pounds of VOC per gallon of coating as applied as extreme performance coating or as air-dried coating under this section. The following table is a list of coating with corresponding VOC contents applied at the facility.

Table #3 – List of Coatings					
Product Code	**Coating Name**	**VOC Content (lb/gal)**		**Solids (lb/gal)**	**HAP Free (lb/gal)**
F93XXH9114	CTPM Tan Fed ST 30277 (Component A)	1.04 (0.9 as mixed)		4.6 (as mixed)	No (0.09)
F93XXG9089	CTPM Green FED ST34079 (Component A)	0.98 (0.9 as mixed)		4.776 (as mixed)	No (2.07)
F93XXB9196	CTPM Black FED ST 37038 (Component A)	1.13 (0.9 as mixed)		4.257 (as mixed)	Yes
V66XXV9317	CTPM 2K WB POLY CATALYST (Component B)	2.22 (0.9 as mixed)		N/A	No (0.01)
E90XXH9318	CTPM EPOXY PRIMER TAN	2.85			No (0.58)
V66XXV9319	CTPM EPOXY PRIMER CATALYST				No (0.01)
E90G4	DOD-P-15328 Metal Wash Primer Component A	5.78	6.1 (As mixed)	0.741	Yes
V93VC2	DOD-P-15328 Metal Wash Primer Component B	5.96		0.543	Yes
B66A310	PRO-CRTL Universal Acrylic Primer Gray	0.76		0.86	Yes
F75B401	KEM 400 Enamel, Gloss Black	4.99		2.79	No (3.20)
F77A3	Quick Dry Enamel Machine Tool Gray	4.98		2.42	No (3.47)
F77B1	Quick Dry Enamel, Gloss Black	4.88		2.33	No (2.93)
F77Y17	Quick Dry Enamel, Equipment Yellow	4.75		2.54	No (3.26)
F77Y15	Quick Dry Enamel, LF Safety Yellow	4.55		2.37	No (1.01)
F63W13	Polane B Poly Enamel (Part A) Strobe White	4.68		2.967	No (0.87)

V66VC232	Polane Catalyst	2.56		Yes
F79R34	Acrylic Enamel Red	4.45		No (3.37)
B50WZ1	Kem Kronik Metal Primer off White	3.29	6	No (2.02)
850-01 Black	High Temp Engine - Black	4.2	4.21	No (5.92)
80-883	Ultra Pro-Max Oxide Primer	4.85	ND	No (0.80)
451812	Lt. Gray (Floor Coating)	3.05		No (0.01
0346CTPM	Z Guard CTPM Green (Undercoating)	0.0	5.73	Unknown
DUR-A_PLEX-Ultra 9400	Seafoam Green	2.8	5.92	Yes
	Herculiner™ Protective Coating*	2.51	N/A	No (2.51)

Herculiner™ Protective Coating – only applied with roller.

Nearly half of the proposed coatings are non-compliance coatings. Thus, the applicant will be required to calculate the facility's daily weighted average every day coating operations are engaged, which is allowed under §45-21-19.4. The permit will allow the applicant to switch compliance means as allowed under §§21-4.3.c.2. & 4.4.c.2.

The facility uses solvents to degrease or clean a certain small metal parts (mainly brakes and engine parts), which bring in Section 30 *Solvent Metal Cleaning.* The degreasers used at the facility are "cold cleaning" type that has open area of 7.3 square feet. Clark uses a solvent that has a vapor pressure of 400 mm Hg at 104^0F. Therefore, the cold cleaning degreasers at the facility must meet the following requirements:

Equip the cleaner with a cover that is easily operated with one hand;

Equip the cleaner with a internal drainage vessel so that parts are enclosed the cover while draining; and

The cleaner must have a freeboard ratio of 0.7 or greater.

The cleaners (degreaser) at the facility have covers and internal solvent drainage vessels. The freeboard height was not easily measureable on the one at the facility during the site

inspection. Back calculating using the minimum freeboard ratio and width of the cleaner, the freeboard height needs to be no less than 15.5 inches.

There are few other activities preformed at the facility that are not identified in this rule. First, one is compounds used in the body shops (filters, hardeners, and curing agents). Body repair work with filters , hardeners, and curing agents (i.e. bondo) are not subject to this rule. The other activity is application of a proactive film or lube to the vehicle prior to being ship to the customer. Clark mainly applies this protective film to vehicles that are being export overseas or upon request. This film is not classified as coating.

45CSR13 - Permits for Construction, Modification, Relocation and Operation of Stationary sources of Air Pollutants, Notification Requirements, Administrative Updates, Temporary Permits, General Permits, and Procedures for Evaluation

The purpose of this rule is to set forth the procedures for stationary source reporting, and the criteria for obtaining a permit to construct and operate a new stationary source which is not a major stationary source, to modify a non-major stationary source, to make modifications which are not major modifications to an existing major stationary source and to relocate non-major stationary sources within the State of West Virginia.

Clark International Logistics, LLC has proposed to install a paint booth that has a potential to emit before controls greater than 6 pounds per hour and 10 tons per year of particulate matter and volatile organic compounds. Thus, the Clark International Logistics, LLC must obtain a permit for the paint booth as required in 45CSR§13-5.1. The company has complied with the public review procedures in 45CSR§13-8.3. by publishing a legal ad in *The Hurricane Breeze* and *The Daily Mail* on March 11, 2011. In addition, the applicant submitted a complete application and paid the permit application fees.

The source has potential to emit of less than 100 tons per year of VOCs. In addition, emissions of HAPs are below the major source trigger levels of 10 tons per year of single HAPs and 25 tons per years of total combine HAPs. Thus, the source is not subject to a MACT standard as a major source or required to obtain a Title V operating permit in accordance with 45 CSR 30. Therefore, the source is subject to 45 CSR 22 as a 9E – Miscellaneous Surface Coating.

However, this facility is possibly subject at least one (40 CFR 63, Subpart HHHHHH) and may be more "area source" rules under Part 63 (GACT). The State of West Virginia has elected not to take delegation of several of these rules, which includes Subpart HHHHHH. Therefore, this permitting authority did not review the facility's proposed operations and control

measures with respect to complying to the limitation or requirements in Subpart HHHHHH or any of the other "area source" rules

TOXICITY OF NON-CRITERIA REGULATED POLLUTANTS

Ethyl benzene

Ethyl benzene is mainly used in the manufacture of styrene. Acute (short-term) exposure to ethyl benzene in humans results in respiratory effects, such as throat irritation and chest constriction, irritation of the eyes, and neurological effects such as dizziness. Chronic (long-term) exposure to ethyl benzene by inhalation in humans has shown conflicting results regarding its effects on the blood. Animal studies have reported effects on the blood, liver, and kidneys from chronic inhalation exposure to ethyl benzene. Limited information is available on the carcinogenic effects of ethyl benzene in humans. In a study by the National Toxicology Program (NTP), exposure to ethyl benzene by inhalation resulted in an increased incidence of kidney and testicular tumors in rats, and lung and liver tumors in mice. EPA has classified ethyl benzene as a Group D, not classifiable as to human carcinogenicity.

Toluene

Toluene is a clear, colorless liquid with a distinctive smell. Toluene occurs naturally in crude oil and in the tolu tree. It is also produced in the process of making gasoline and other fuels from crude oil and making coke from coal. Toluene is used in making paints, paint thinners, fingernail polish, lacquers, adhesives, and rubber and in some printing and leather tanning processes.

Toluene may affect the nervous system. Low to moderate levles can cause tiredness, confusion, weakness, drunkentype actions, memory loss, nausea, loss of appetite, and hearing and color vision loss. These symptoms usually disappear when exposure is stopped. Inhaling High levels of toluene in a short time can make you feel light-headed, dizzy, or sleepy. It can also cause unconsciousness, and even death. High levels of toluene may affect your kidneys.

Studies in humans and animals generally indicate that toluene does not cause cancer. The EPA has determined that the carcinogenicity of toluene can not be classified.

Xylene

Commercial or mixed xylene usually contains about 40-65% *m*-xylene and up to 20% each of *o*-xylene and *p*-xylene and ethyl benzene. Xylenes are released into the atmosphere as fugitive emissions from industrial sources, from auto exhaust, and through volatilization from their use as solvents. Acute (short-term) inhalation exposure to mixed xylenes in humans results in irritation of the eyes, nose, and throat, gastrointestinal effects, eye irritation, and neurological effects.

Chronic (long-term) inhalation exposure of humans to mixed xylenes results primarily in central nervous system (CNS) effects, such as headache, dizziness, fatigue, tremors, and incoordination; respiratory, cardiovascular, and kidney effects have also been reported. EPA has classified mixed xylenes as a Group D, not classifiable as to human carcinogenicity.

Styrene

Styrene is a colorless liquid that evaporates easily and has a sweet smell. It often contains other chemicals that give it a sharp, unpleasant smell. Styrene is widely used to make plastics and rubber. Products containing styrene include insulation, fiberglass, plastic pipes, automobile parts, shoes, drinking cups and other food containers, and carpet backing. Most of these products contain styrene linked together in a long chain (polystyrene) as well as unlinked styrene. Low levels of styrene also occur naturally in a variety of foods such as fruits, vegetables, nuts, beverages, and meats. In addition, small amounts of styrene can be transferred to food from styrene-based packaging material.

If you breathe high levels of styrene (more than 1000 times higher than levels normally found in the environment), you may experience nervous system effects such as changes in color vision, tiredness, feeling drunk, slowed reaction time, concentration problems, or balance problems. Hearing loss has been observed in animals exposed to very high concentrations of styrene. Changes in the lining of the nose and damage to the liver has also been observed in animals exposed to high concentrations of styrene, but animals may be more sensitive than humans to these effects.

The International Agency for Research on Cancer (IARC) has determined that styrene is a possible human carcinogen.

AIR QUALITY IMPACTS ANALYSIS

This writer deemed that an air dispersion modeling study or analysis was not necessary, because the proposed construction does not meet the definition of a major source as defined in 45CSR14.

MONITORING OF OPERATIONS

For purposes showing compliance with the established emission limits and other applicable requirements, the following parameters will be monitored:

Name and Product number of the coating applied;
Amount of each coating applied on a daily basis;
VOC and HAP content of the coating;

The main proposed paint booth is equipped with manometers that measure the pressure drop across the paint arrestors in inches of water column (in. W.C.). However, the paint booth operator can adjust the airflow from the ventilation system for the paint booth. Thus, the pressure drop will be affected by the change in airflow. Thus, measuring the pressure drop would not be a reliable indicator for changing out the paint arrestors in the paint booth. The rule of thumb for ensuring efficient filter operating is to maintain a filter face velocity within a range of 100 ft^3/min – 300 ft^3/min. The applicant needs to develop a means to determine when to replace the filters in the paint booths. Thus, the permit will require the permittee to develop and implement a maintain schedule for routine replacement of the paint-asserting filters.

The abrasive blasting activities at the facility are equipped with fabric filter controls devices. Second, the blasting bay uses a non-typical media that generates less particulate matter than typical media such as black beauty or steel shot. The Pangborn machine collects and recycles the media, which reduces the particulate matter loading seen by the bag house. Therefore, the focus of the monitoring should be on maintaining the control devices. Monitoring the pressure drop is on each control device will be required in the permit.

RECOMMENDATION TO DIRECTOR

The information provided in the permit application indicates that Clark International Logistics, LLC proposed construction of a vehicle refurbishing manufacturing facility meets all the requirements of the applicable rules when operated according to the permit application. Therefore, this writer recommends granting Clark International Logistics, LLC a Rule 13 construction permit for their military vehicle refurbishing facility near Black Betsy.

Edward S. Andrews, P.E.
Engineer
Date: June 2, 2011