Id. No. 039-00662 Reg. PD15-062

Company DeNovo Constructors, Inc

Facility Spring Hill Region 4

Initials TJM

WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF AIR QUALITY
601 57th Street, SE
Charleston, WV 25304
Phone: (304) 926-0475
www.dep.wv.gov/daq

PERMIT DETERMINATION FORM (PDF)

FOR AGENCY USE ONLY: PLANT ID #: _____

PDF # _____ PERMIT WRITER: _____

RECEIVED
AUG – 7 2015
WV DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF AIR QUALITY

1. NAME OF APPLICANT (AS REGISTERED WITH THE WV SECRETARY OF STATE'S OFFICE):
DeNovo Constructors, Inc.

2. NAME OF FACILITY (IF DIFFERENT FROM ABOVE):
Former FMC Spring Hill Peroxide Plant

3. NORTH AMERICAN INDUSTRY CLASSIFICATION SYSTEM (NAICS) CODE:
238910

4A. MAILING ADDRESS:
100 S. Wacker Drive, Suite LL 1-50
Chicago, IL 60606

4B. PHYSICAL ADDRESS:
3200 MacCorkle Avenue SW
South Charleston, WV 25303

5A. DIRECTIONS TO FACILITY (PLEASE PROVIDE **MAP** AS **ATTACHMENT A**):
The site can be accessed by driving south on an unnamed paved road off of MacCorkle Avenue/Route 60 in South Charleston, WV. The crive is located 0.25 miles east of Riheldaffer Avenue, and 0.30 miles west of "F" Street.

5B. NEAREST ROAD:	5C. NEAREST CITY OR TOWN:	5D. COUNTY:
MacCorkle /Route 60	South Charleston	Kanawha
5E. UTM NORTHING (KM):	**5F. UTM EASTING (KM):**	**5G. UTM ZONE:**
4246271.00	438422.79	17S

6A. INDIVIDUAL TO CONTACT IF MORE INFORMATION IS REQUIRED:	6B. TITLE:
Elaine Petkovsek, P.E.	Senior Project Manager

6C. TELEPHONE:	6D. FAX:	6E. E-MAIL:
312.646.6722	312.733.9320	epetkovsek@denovogrp.com

7A. DAQ PLANT I.D. NO. (FOR AN EXISTING FACILITY ONLY):
___ ___ ___ – ___ ___ ___ ___ ___
NA

7B. PLEASE LIST ALL CURRENT 45CSR13, 45CSR14, 45CSR19 AND/OR TITLE V (45CSR30) PERMIT NUMBERS ASSOCIATED WITH **THIS** PROCESS (FOR AN EXISTING FACILITY ONLY):
NA

7C. IS THIS PDF BEING SUBMITTED AS THE RESULT OF AN ENFORCEMENT ACTION? IF YES, PLEASE LIST:
No

8A. TYPE OF EMISSION SOURCE (CHECK ONE):
☒ **NEW SOURCE** ☐ **ADMINISTRATIVE UPDATE**
☐ **MODIFICATION** ☐ **OTHER** (PLEASE EXPLAIN IN 11B)

8B. IF ADMINISTRATIVE UPDATE, DOES DAQ HAVE THE APPLICANT'S CONSENT TO UPDATE THE EXISTING PERMIT WITH THE INFORMATION CONTAINED HEREIN?
☐ **YES** ☐ **NO**

9. IS *DEMOLITION* OR PHYSICAL *RENOVATION* AT AN EXISTING FACILITY INVOLVED? ☒ **YES** ☐ **NO**

10A. DATE OF ANTICIPATED INSTALLATION OR CHANGE:	10B. DATE OF ANTICIPATED START-UP:
08/ 31 /2015 .	08 / 31 /2015 .

11A. PLEASE PROVIDE A **DETAILED PROCESS FLOW DIAGRAM** SHOWING EACH PROPOSED OR MODIFIED PROCESS EMISSION POINT AS **ATTACHMENT B**.

11B. PLEASE PROVIDE A **DETAILED PROCESS DESCRIPTION** AS **ATTACHMENT C**.

12. PLEASE PROVIDE **MATERIAL SAFETY DATA SHEETS (MSDS)** FOR ALL MATERIALS PROCESSED, USED OR PRODUCED AS **ATTACHMENT D**. FOR CHEMICAL PROCESSE, PLEASE PROVIDE A MSDS FOR EACH COMPOUND EMITTED TO AIR.

Entire Document
NON-CONFIDENTIAL

13A. **REGULATED AIR POLLUTANT EMISSIONS:**

⇒ **FOR A NEW FACILITY,** PLEASE PROVIDE PLANT WIDE EMISSIONS BASED ON THE POTENTIAL TO EMIT (PTE) FOR THE FOLLOWING AIR POLLUTANTS INCLUDING ALL PROCESSES.

⇒ **FOR AN EXISTING FACILITY,** PLEASE PROVIDE THE PROPOSED CHANGE IN EMISSIONS BASED ON THE PTE OF ALL PROCESS CHANGES FOR THE FOLLOWING AIR POLLUTANTS.

PTE FOR A GIVEN POLLUTANT IS TYPICALLY BEFORE AIR POLLUTION CONTROL DEVICES AND IS COLLECTED BASED ON THE MAXIMUM DESIGN CAPACITY OF PROCESS EQUIPMENT.

POLLUTANT	HOURLY PTE (LB/HR)	YEARLY PTE (TON/YR) ~~(HOURLY PTE MULTIPLIED BY 8760 HR/YR) DIVIDED BY 2000 LB/TON~~ (see calculations)
PM	2.7	0.095
PM_{10}	0.97	0.071
VOCs	0.37	0.01
CO	0.98	0.04
NO_x	4.55	0.18
SO_2	0.30	0.01
Pb	NA	NA
HAPs (AGGREGATE AMOUNT)	NA	NA
TAPs (INDIVIDUALLY)*	NA	NA
OTHER (INDIVIDUALLY)*	NA	NA

* ATTACH ADDITIONAL PAGES AS NEEDED

13B. PLEASE PROVIDE ALL **SUPPORTING CALCULATIONS** AS **ATTACHMENT E.**

CALCULATE AN HOURLY AND YEARLY PTE OF EACH PROCESS EMISSION POINT (SHOWN IN YOUR DETAILED PROCESS FLOW DIAGRAM) FOR ALL AIR POLLUTANTS LISTED ABOVE INCLUDING INDIVIDUAL HAP'S (LISTED IN SECTION 112[b] OF THE 1990 CAAA), TAP'S (LISTED IN 45CSR27), AND OTHER AIR POLLUTANTS (E.G. POLLUTANTS LISTED IN TABLE 45-13A OF 45CSR13, MINERAL ACIDS PER 45CSR7, ETC.).

14. **CERTIFICATION OF DATA**

I, DAN SCHMITTDIEL (*TYPE NAME*) ATTEST THAT ALL THE REPRESENTATIONS CONTAINED IN THIS APPLICATION, OR APPENDED HERETO, ARE TRUE, ACCURATE, AND COMPLETE TO THE BEST OF MY KNOWLEDGE BASED ON INFORMATION AND BELIEF AFTER REASONABLE INQUIRY, AND THAT I AM A ***RESPONSIBLE OFFICIAL**** (*PRESIDENT, VICE PRESIDENT, SECRETARY OR TREASURER, GENERAL PARTNER OR SOLE PROPRIETOR*) OF THE APPLICANT.

SIGNATURE OF RESPONSIBLE OFFICIAL: _____

TITLE: PRESIDENT DATE: 8 / 5 / 2015

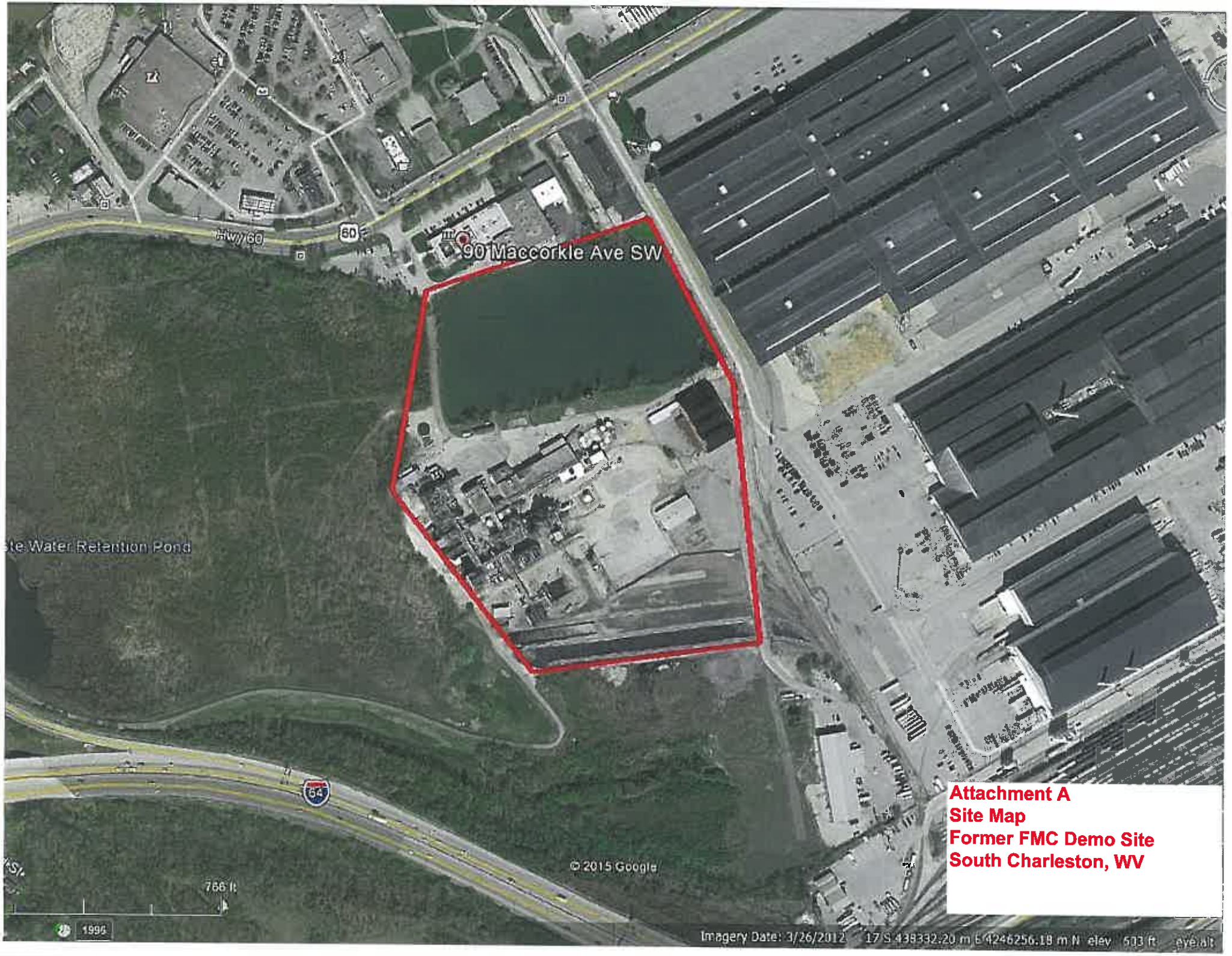
** THE DEFINITION OF THE PHRASE '***RESPONSIBLE OFFICIAL***' CAN BE FOUND AT 45CSR13, SECTION 2.23.

NOTE: PLEASE CHECK ENCLOSED ATTACHMENTS

☒ **ATTACHMENT A** ☒ **ATTACHMENT B** ☒ **ATTACHMENT C** ☒ **ATTACHMENT D** ☒ **ATTACHMENT E**

RECORDS ON ALL CHANGES ARE REQUIRED TO BE KEPT AND MAINTAINED ON-SITE FOR TWO (2) YEARS.

THE PERMIT DETERMINATION FORM WITH THE INSTRUCTIONS CAN BE FOUND ON DAQ'S PERMITTING SECTION WEB SITE ***www.dep.wv.gov/daq***



Attachment A
Site Map
Former FMC Demo Site
South Charleston, WV

SCREEN SERVICES

TESAB 1012TS Impact Crusher

Photographs for representation purposes only

ATTACHMENT B
Process Diagram and Specifications
Mobile Crusher

SCREEN SERVICES

Elaine Petkovsek, P.E.
Senior Project Manager
Denovo
100 South Wacker, Suite LL 1-50
Chicago, IL 60606

Tuesday August 4th, 2015

RE: Crusher Specs for Denovo Spring Hill, West Virginia Project

Dear Ms. Petkovsek,

As a follow-up to our conversation earlier today, I wish to confirm that Screen Services LLC will provide a Tesab 1012TS with a CAT C13 engine to Denovo Constructors jobsite at 3200 MacCorkle Avenue, South Charleston, WV to process concrete at 2 inch minus per Denovo specifications. The unit will process approximately 100 TPH of 2 inch minus material. After the concrete is crushed, it will remain on site. Due to the type of material being fed into the machine, and the screen sizes to be used, the maximum throughput of this system will be 100 tons/hour.

I look forward to working with yourself and Denovo on this project. Please do not hesitate to contact me if your have any questions or require additional information.

Regards,

Kieran McCracken
Sales Manager

Screen Services LLC
443-742-1680 Cell
888-717-2211 Office

ATTACHMENT C
DETAILED PROCESS DESCRIPTION

DeNovo Constructors, Inc. (DeNovo) has been hired to conduct the demolition of the remaining concrete pads and foundations at the Former FMC Spring Hill Peroxide Plant in South Charleston, West Virginia. Buildings and equipment have been formerly removed from the site, by others. A portion of the demolition work involves crushing the concrete on-site for reuse as fill. This attachment provides pertinent details regarding this work.

Potentially contaminated concrete has been identified on site by the engineer of record (ERM). Potentially contaminated concrete will be removed and directly loaded onto trucks or roll-off containers and will not be mixed with other concrete. DeNovo will decontaminate equipment used for this concrete removal prior to using on other parts of the site.

The remainder of the concrete on site, consisting of slabs, foundations, and other abandoned at-grade or underground structures on the site will be removed to the bottom of the foundation or to a depth of six feet. The concrete will be stockpiled for crushing. It is estimated that there is 3,700 cubic yards of concrete slabs and foundations on site. Using a conversion factor of 1.7 tons/cubic yard and a 10% contingency factor, it is estimated that there is 7,000 tons of concrete to be crushed.

DeNovo will utilize a TESAB 1012TS tracked impact crusher to crush the concrete to less than 2 inches in diameter. The crusher utilizes a Caterpillar C13 350 BHP diesel-powered engine. A front end loader will be used to feed the concrete into the crusher. After the concrete is processed, it will be loaded into trucks for distribution across the site, or stockpiled. The crushed concrete will be reused on site to backfill excavations and provide a 4 inch cover. Steel reinforcing bars will be removed from the concrete prior to crushing and recycled.

During the demolition, crushing, backfilling and grading operations, DeNovo will implement dust control and maintain the project site to minimize the creation and dispersion of dust. Dust control measures will consist of water applications. Water will be applied a minimum of once per day and more frequently during dry weather periods. Additional spraying will be conducted when visible dust is observed to be migrating from work areas or roads and when dust action levels specified in the Contractor's Health and Safety Plan (HASP) are exceeded.

The TESAB 1012TS comes equipped with a dust suppression system. Water is supplied to the manifold on the crusher via a hose that will be attached to the water truck. Thee water is distributed to 3 points on the crusher as a mist, to suppress the dust.

A location map of the site is provided as Attachment A
Photographs of the TESAB 1012TS are provided as Attachment B
A material safety data sheet for hardened concrete is provided as Attachment D
Emission calculations and assumptions are provided as Attachment E
A map showing the areas of the site where crushing will occur is provided as Attachment F

ATTACHMENT D
MSDS - HARDENED CONCRETE

MATERIAL SAFETY DATA SHEET
FOR
CONCRETE/CONCRETE PRODUCTS

Section I - Product and Company Identification

Material Identity (Trade Names):	Ready Mix Concrete, Concrete, Portland Cement Concrete, Concrete Blocks (Wet Unhardened Concrete and Dry Hardened Concrete Products)
Manufacturer's Name:	Ozinga Ready Mix Concrete, Inc.
Address:	19001 Old LaGrange Rd. Mokena, IL 60448
Phone Number:	708-326-4200
Fax Number:	708-326-4201

Section II - Hazardous Ingredients/Identity Information

Hazardous Components Chemical Identity/ Common Names	CAS Number	OSHA PEL	ACGIH TLV	MSHA PEL	%
Portland Cement	65997-15-1	15mg/m^3 (Total) 5mg/m^3 (Respirable)	10 mg/m^3	10 mg/m^3 (Total)	10 - 30%
Limestone (Calcium Carbonate-C_aCO_3	1317-65-3	15mg/m^3 (Total) 5mg/m^3 (Respirable)	10 mg/m^3	10 mg/m^3 (Total)	25 - 65%
Crystalline Silica (Quartz)*	14808-60-7	30/(%SiO_2+2)mg/m^3 (Total) 10/(%SiO_2+2) mg/m^3 (Respirable)	0.5 mg/m^3 (Respirable Quartz)	30/(%SiO_2+3)mg/m^3 (Total) 10/(%SiO_2+2) mg/m^3 (Respirable)	0.5 - 80%
Fly Ash* which contains:	68131-74-8	N/A	N/A	N/A	0 - 15%
Aluminum Oxide(Al_2O_3)	1344-28-1	15mg/m^3 (Total) 5mg/m^3 (Respirable)	10 mg/m^3	10 mg/m^3	0.1 - 2%
Amorphous Silica	61790-53-2	80 mg/m^3/(%SiO_2)	10 mg/m^3 (Inhalable) 3 mg/m^3(Respirable)	20 mppcf	0.01 - 3%
Calcium Oxide (CaO)	1305-78-8	5mg/m^3	2 mg/m^3	5mg/m^3	0 - 1%
Iron Oxide (Fe_2O_3)	1309-37-1	10 mg/m^3 (as Fe_2O_3)	5 mg/m^3 (as FE)	10 mg/m^3 (as Fe_2O_3)	0.01 - 2%
Slag*-Which Contains:	N/A	N/A	N/A	N/A	3 - 21%
Aluminum Oxide(Al_2O_3)	1344-28-1	15mg/m^3 (Total) 5mg/m^3 (Respirable)	10 mg/m^3	10 mg/m^3	0 - 4%
Calcium Oxide (CaO)	1305-78-8	5mg/m^3	2 mg/m^3	5mg/m^3	1 - 11%
Amorphous Silica Hydrated	61790-53-2	80 mg/m^3/(%SiO_2)	10 mg/m^3 (Inhalable) 3 mg/m^3(Respirable)	20 mppcf	1 - 11%
Crystalline Silica (Quartz)*	14808-60-7	30/(%SiO_2+2)mg/m^3 (Total) 10/(%SiO_2+2) mg/m^3 (Respirable)	0.5 mg/m^3 (Respirable Quartz)	30/(%SiO_2+3)mg/m^3 (Total) 10/(%SiO_2+2) mg/m^3 (Respirable)	0 - 3%
Magnesium Oxide	1309-48-4	15mg/m^3	10 mg/m^3	10 mg/m^3	0 - 4%

Section II - Hazardous Ingredients/Identity Information (Continued)

Iron Oxide (Fe_2O_3)	1309-37-1	10 mg/m^3 (as Fe_2O_3)	5 mg/m^3 (as FE)	10 mg/m^3 (as Fe_2O_3)	0 - 2%
Particulates Not Otherwise Classified	N/A	15mg/m^3 (Total) 5mg/m^3 (Respirable)	10 mg/m^3 (Inhalable) 3 mg/m^3(Respirable)	10 mg/m^3 (Total)	0 - 1%
Magnesium Oxide	7439-96-5	(C)15mg/m^3 (as Mn)	0.2 mg/m^3 (asMn)	5 mg/m^3 (as Mn)	0 - 0.5%
Sulfer	7704-34-9	N/A	N/A	N/A	<1%

* Each of these ingredients may have quartz (silica) as a component. The percent of silica varies greatly from product to product and also within the same product. Silica exposure may occur when respirable dust is present. Dust is not present in freshly mixed unhardened concrete.

*Since blast furnace slag cement is manufactured from materials mined from the earth, trace but detectable amounts of naturally occuring metals, and possibly harmful elements may be found during chemical analysis. Ingredients are expressed as oxides for quantitative purposes. Actual oxides do not generally occur in "free form" but rather as complex silica based glasses or crystals.

Chemical admixtures are present in quantities comprising less than 1%. These chemical admixtures can be both dry and/or liquid. MSDS's for admixtures are available upon request.

Section III - Physical/Chemical Characteristics

Boiling Point	N/A	**Specific Gravity (H_2O = 1)**	Wet Concrete 1.9 to 2.4
Vapor Pressure (mm Hg)	N/A	**Melting Point**	N/A
Vapor Density (Air=1)	N/A	**Evaporation Rate (Butyl Acetate=1)**	N/A
Solubility in Water:	Not Soluble		
Appearance and Odor:	Unhardened wet concrete is an odorless gray, plastic, flowable, granular mud of varying color and texture. Hardened Concrete products are odorless solid materials.		

Section IV - Fire and Explosion Hazard Data

Flash Point:	Not Combustible	**Flammable Limits:**	Not Flammable	**LEL:** N/A	**UEL:** N/A
Extinguishing Media:	This material is noncombustible. Use extinguishing media appropriate to surrounding fire.				
Special Fire Fighting Procedures:	Do not expose skin or eyes to wet unhardened concrete. Be aware of runoff from fire control methods. Do not release wet unhardened concrete into sewers or waterways, as it will harden and obstruct sewers and waterways.				
	Wet concrete is caustic. Avoid breathing dust.				
Unusual Fire and Explosion Hazards:	Concrete poses no fire related hazard				

Section V - Reactivity Data

Stability: Stable under normal temperatures and pressures
Wet unhardened concrete sets and hardens in 2 to 8 hours and is no longer hazardous. Hardened concrete is stable.

Conditions to Avoid: Do not let wet unhardened concrete to set on skin, tools, or surfaces. Product hardens in 2 to 8 hrs.

Incompatibility (Materials to Avoid): Stable under expected conditions of use. Under unanticipated conditions of use, crystalline silica may react with hydrofluoric acid to produce a corrosive gas (silicon tetrafluoride). Aluminum powder and other alkali and alkaline earth metals will react in wet mortar or concrete, liberating hydrogen gas.

Hazardous Decomposition or Byproducts: Thermal oxidative decomposition of limestone can produce lime. The lime does not addd to the hazards associated with the use of the product.
Silica-containing respirable dust particles may be generated. When heated, quartz is slowly transformed into tridymite (above 860°C/1580°F) and cristobalite (above 1470°C/2678°F).

Hazardous Polymerization: Not known to occur

Section VI - Health Hazard Data

Route(s) of Entry: **Inhalation?** Yes **Skin?** No **Ingestion?** Unlikely

Health Hazards:

Emergency Overview:

Wet unhardened concrete can cause chemical burns to eyes and skin. Avoid direct contact and use protective clothing. Skin contact with wet concrete can dry the skin and cause alkali burns. Within 12 to 48 hours after skin contact, first, second, or third degree burns may occur. Eye contact with wet unhardened concrete may cause burning and possible corneal edema.

Avoid breathing excessive dust from hardened/dried material. Dust may irritate the eyes, skin, and respiratory tract. Breathing silica-containing dust for long periods in the workplace can cause lung damage and lung disease called silicosis. Silicosis or lung cancer can result in permanent injury or death. Cutting, grinding, crushing or drilling hardened concrete or concrete products may generate dust containing crystalline silica. Note: This product is normally mixed, transported and used only when wet.This reduces the potential for dust exposure. After product has dried and hardened, further handling or processing may generate dust.

Eye Contact: Contact may result in chemical (caustic) burns and eye injury which may be progressive and could cause blindness. Symtoms may include tearing, redness, pain, swelling with blurred vision. Direct contact with dust may

cause irritation by mechanical abrasion.

Skin Contact: May cause skin irritation with redness, an itching or burning feeling, and swelling of the skin. May cause contact dermatitis, with symtomss that may include reddening, irritation, and rash. More severe effects, including chemical (alkali) burns and skin ulcers may occur. Direct contact to dust may cause irritation by mechanical abrasion.

Skin Absorption: Not expected to be a significant route of exposure.

Ingestion: Direct contact with exposed tissues may reslt in severe irritation with pain, nausea, vomiting and possibly chemical (alkali) burns. Ingestion of large amounts may cause gastrointestinal irritation and blockage.

Inhalation:

Acute Effects: Breathing dust may cause nose, throat, lung, and mucous membrane irritation, including choking, depending on the degree of exposure. Inhalation of high levels of dust can cause chemical burns to the nose, throat and lungs. Coughing, sneezing, and shortness of breath may occur following exposures in excess of recommended exposure limits.

Chronic Effects: ***The following information pertains to creating dust from hardened dry material:***
Prolonged overexposure to respirable dusts in excess of allowable exposure limits can cause inflammation of the lungs leading to possible fibrotic changes, a medical condition known as pneumoconiosis.
Prolonged and repeated inhalation of respirable crystalline silica-containing dust in excess of allowable exposure limits may cause a chronic form of silicosis, an incurable lung disease that may result in permanent lung damage or death. Chronic silicosis generally occurs after 10 years or more of over exposure: a more accelerated type of silicosis may occur between 5 and 10 years of higher levels of exposure. Silicosis can be progressive and symtoms can appear at any time, even years after exposure has ceased. Symptoms of silicosis may include, but are not limited to, the following: shortness of breath; difficulty breathing with or without exertion; coughing; diminished work capacity; diminished chest expansion; reduction of lung volume; right heart enlargement and/or failure. Persons with silicosis have an increased risk of pulmonary tuberculosis infection. Use of concrete products for construction purposes is not believed to cause acute toxic effects. Repeated over exposures to very high levels of respirable crystalline silica for periods as short as six months may cause acute silicosis. Acute silicosis is a rapidly progressive, incurable lung disease that is typically fatal. Symptoms include (but are not limited to): shortness of breath, cough, fever, weight loss, and chest pain.

Carcinogenicity: Concrete products are not listed on the NTP, IARC, or OSHA list of carcinogens. However, in October 1996, IARC classified respirable crystalline from occupational sources as carcinogenic (Group 1). The NTP indicates that crystalline silica (respirable size) is a known human carcinogen (Group 1). These classifications are based on sufficient evidence of carcinogenicity in certain experimental animals and on selected epidemiological studies of workers exposed to crystalline silica. Iron oxide is listed by IARC as exhibiting evidence of carcinogenicity in experimental animals.

Medical Conditions Generally Aggravated by Exposure: Individuals with chronic respiratory disorders should minimize inhalation of dust generated from cutting, grinding, or drilling hardened concrete. Individuals with skin diseases should minimize skin contact with the dust.

Section VII - Emergency and First Aid Procedures

Wet Unhardened Concrete on Skin:
Quickly remove contaminated clothing. Wash affected areas thoroughly with soap and water. Consult a physician if irritation persists.

Wet Unhardened Concrete or Hardened Concrete Dust In Eyes:
Gently lift the eyelids and flush immediately and continuously with flooding amounts of water for a minimum of 15 minutes. Consult a physician immediately if irritation persists or develops later.

Ingestion of Wet Unhardened Concrete or Concrete Dust:
Never give anything by mouth to an unconscious or convulsing person. Consult a physician immediately.

Inhalation of hardened Concrete Dust:
Remove exposed person to fresh air and support breathing as needed. Encourage victim to cough, spit out, and blow nose to remove dust. Consult a physician immediately if irritation persists or later develops.

Physicians Note:
Ingestion of large amounts of wet unhardened concrete is unlikely. However, if wet concrete is swallowed, to prevent re-exposing the esophagus and stomach, do not induce emesis or perform gastric lavage. Immediate dilution may prevent esophageal burns. For severe burns, consider esophagoscopy, within the first 24 hours. Neutralization with acidic agents is not advised because of increased risk of exothermic burns. Water-mineral oil soaks or washing with soap and water may aid in removing hardened concrete form the skin.

Section VIII - Precautions For Safe Handling and Use

Material Is Released or Spilled:
Personnel involved with the handling of wet unhardened concrete should take steps to avoid contact with the eyes and skin, through the use of gloves and suitable clothing. Wet unhardened concrete should be recycled or allowed to harden and disposed of.

Waste Disposal Method:
Allow wet unhardened concrete to harden and recycle or dispose of in a landfill as common solid waste. Follow applicable Federal, State, and local regulations for disposal. The material is not listed as a hazardous waste under designations by the EPA or DOT.

Precautions to be Taken in Handling and Storing:
Silica-containing respirable dust particles may be generated by crushing, cutting, grinding, or drilling hardened concrete or concrete products. Follow protective controls defined in Section IX when handling these products.

Section IX - Control Measures

Respiratory Protection:
When exposed to dust from cutting, grinding, crushing, or drilling hardened concrete or concrete products above recommended limits, wear a suitable NIOSH-approved respirator with a protection factor appropriate for the level of exposure. Seek guidance from a qualified industrial hygienist, safety professional, or other suitably knowledgeable individual prior to respirator selection and use. For emergency or non-routine operations (e.g., confined spaces), additional precautions or equipment may be required. Respirator use must comply with applicable MSHA or OSHA standards, which include provisions for a user training program, respirator repair and cleaning, respirator fit testing, and other requirements.

Ventilation:
Local Exhaust: When cutting, grinding, crushing, or drilling hardened concrete, provide general or local ventilation systems, as needed, to maintain airborne dust concentrations below the OSHA PEL's, MSHA PEL's, and ACGIH TLV. Local exhaust ventilation is preferred since it prevents release of contaminants into the work area by controlling it at the source.

Mechanical (General): See above recommendations.

Section IX - Control Measures (Continued)

Other: Respirable dust and quartz levels from hardened concrete cutting, grinding, crushing, or drilling operations should be monitored regularly. Dust and quartz levels in excess of applicable OSHA PEL's, MSHA PEL's, and ACGIH TLV's should be reduced by all feasible engineering controls including but not limited to, wet suppression, ventilation, process enclosure, and enclosed employee work stations.

Special:	None reported
Protective Gloves:	When handling wet unhardened concrete, wear impervious gloves to prevent skin contact. Wash thoroughly after handling.
Eye Protection:	When cutting, grinding, crushing, or drilling hardened concrete, wear safety glasses with side shields or dust goggles in dusty environments. When there is a splash hazard working with wet unhardened concrete, wear safety glasses with side shields or goggles.
Other protective Clothing or Equipment:	Wear suitable protective clothing as needed to prevent skin contact with wet unhardened concrete. Make available (if necessary), the use of eyewash stations and suitable washing facilities.
Work/Hygienic Practices:	Avoid dust inhalation and direct contact with skin and eyes. Wear gloves, boots, and other protective gear when pouring wet unhardened concrete. If respiratory protection is used, institute a respiratory protection program that includes regular training, inspection, maintenance, and evaluation. To prevent ingestion and skin contact, practce good personal hygiene. Wash contaminated skin before eating, drinking, smoking, lavatory use and before applying cosmetics.

Attachment E - Air Emission Calculations for Temporary Concrete Crushing

Former FMC Spring Hill Peroxide Plant
3200 MacCorkle Avenue, South Charleston, WV

Item	Quantity	Units	Notes
Amount of Concrete to be Crushed	3700	cubic yards	
Concrete Quantity - convert to tons	7000	tons	(cy x 1.7 tons/cy x 10% contingency)
Duration	10	days	
Hours per day	8	hrs/day	
Total hours crushing	80	hours	
Max rate of crushing	100	tons/hour	(limited by screen capacity)
Estimated rate of crushing	90	tons/hour	
Cat C13 Diesel Engine	350	BHP	fuel throughput = 64.2 cf/hour

Particulate Matter Calculations

	lbs/ton throughput		
Emission Factors	PM	PM10	Source
Primary Crushing	0.002	0.001	WVDEP G40 Calculations
Screening	0.025	0.0087	AP-42, Table 11.19.2-2, 5th Edition

Pollutant	PM	PM10
Primary Crushing		
lbs/hour (based on maximum rate)	0.2	0.1
tons/year	0.007	0.03045
Screening		
lbs/hour (based on maximum rate)	2.5	0.87
tons/year	0.0875	0.03045

Total Particulate Emissions[1]	PM	PM10
lbs/hour	2.7	0.97
tons/year	0.0945	0.0609

[1]Based on crushing all of the concrete on site

Attachment E - Air Emission Calculations for Temporary Concrete Crushing

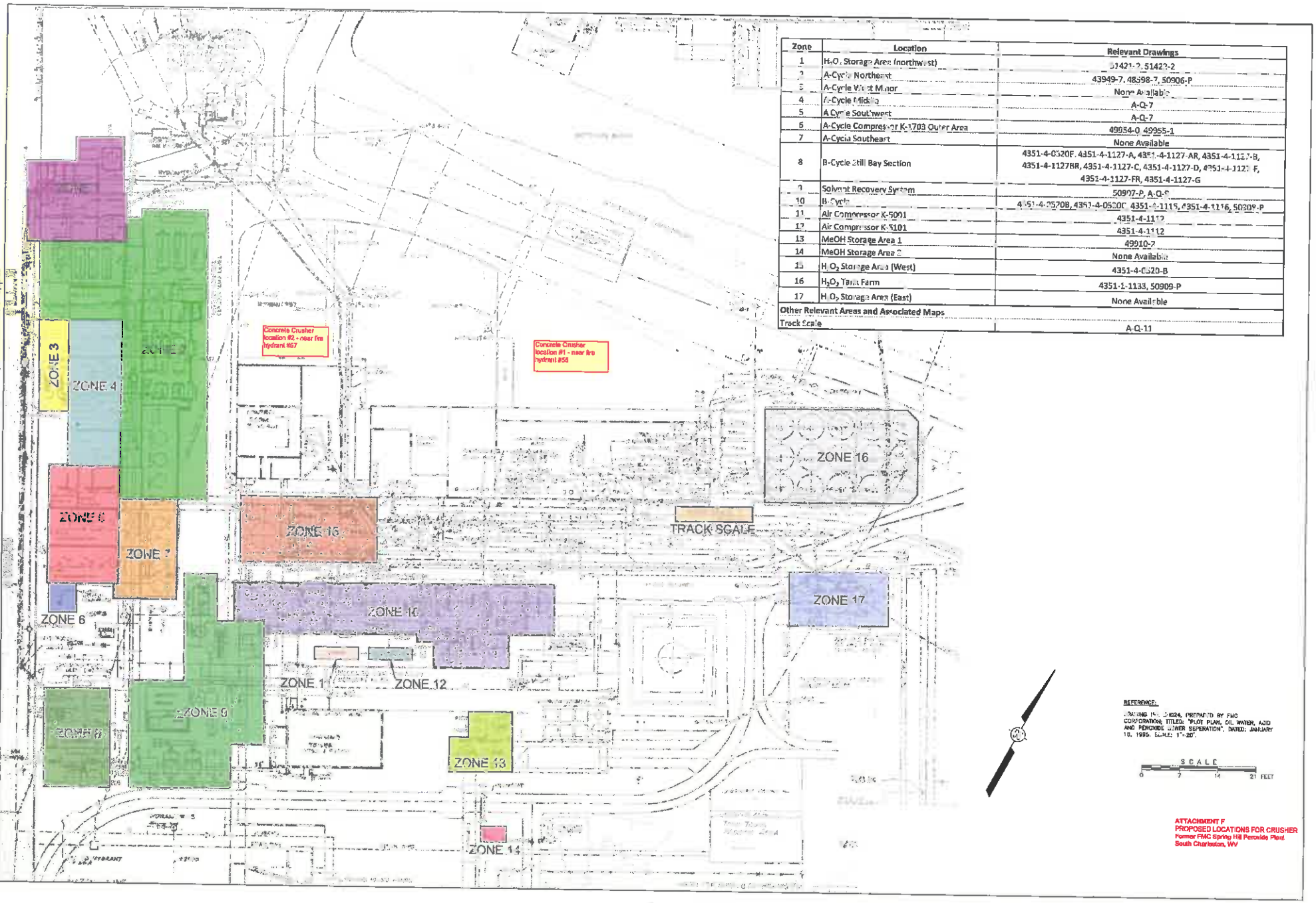
Former FMC Spring Hill Peroxide Plant
3200 MacCorkle Avenue, South Charleston, WV

Item	Quantity	Units	Notes
Amount of Concrete to be Crushed	3700	cubic yards	
Concrete Quantity - convert to tons	7000	tons	(cy x 1.7 tons/cy x 10% contingency)
Duration	10	days	
Hours per day	8	hrs/day	
Total hours crushing	80	hours	
Max rate of crushing	100	tons/hour	(limited by screen capacity)
Estimated rate of crushing	90	tons/hour	
Cat C13 Diesel Engine	350	BHP	
Fuel Throughput	8	gallons/hour	
MMBtu/hour	1.032	MMBtu/hr	Diesel Fuel = 0.129 MMBtu/gallon

Diesel Generator Emissions for Crusher

Pollutant	Emission Factor lb/MMBtu	Emission Rate lbs/hour	Emission Total[1] tons/project	Source
NO_x	4.41	4.55	0.18	AP-42, Table 3.3-1, 5th Edition
CO	0.95	0.98	0.04	AP-42, Table 3.3-1, 5th Edition
SO_2	0.29	0.30	0.01	AP-42, Table 3.3-1, 5th Edition
PM-10	0.31	0.32	0.01	AP-42, Table 3.3-1, 5th Edition
CO_2	164.00	169.25	6.77	AP-42, Table 3.3-1, 5th Edition
Aldehydes	0.07	0.07	0.00	AP-42, Table 3.3-1, 5th Edition
TOC				
Exhaust	0.35	0.36	0.01	AP-42, Table 3.3-1, 5th Edition
Evaporative	0.00	0.00	0.00	AP-42, Table 3.3-1, 5th Edition
Crankcase	0.01	0.01	0.00	AP-42, Table 3.3-1, 5th Edition
Refueling	0.00	0.00	0.00	AP-42, Table 3.3-1, 5th Edition

[1]Total Project Hours used to calculate



Zone	Location	Relevant Drawings
1	H_2O_2 Storage Area (northwest)	51421-2, 51422-2
2	A-Cycle Northeast	43949-7, 48898-7, 50906-P
3	A-Cycle West Manor	None Available
4	A-Cycle Middle	A-Q-7
5	A Cycle Southwest	A-Q-7
6	A-Cycle Compressor K-1703 Outer Area	49954-0, 49955-1
7	A-Cycle Southeast	None Available
8	B-Cycle Still Bay Section	4351-4-0520F, 4351-4-1127-A, 4351-4-1127-AR, 4351-4-1127-B, 4351-4-1127BR, 4351-4-1127-C, 4351-4-1127-D, 4351-4-1127-F, 4351-4-1127-FR, 4351-4-1127-G
9	Solvent Recovery System	50907-P, A-Q-8
10	B-Cycle	4351-4-0520B, 4351-4-0520C, 4351-4-1115, 4351-4-1116, 50909-P
11	Air Compressor K-5001	4351-4-1112
12	Air Compressor K-5101	4351-4-1112
13	MeOH Storage Area 1	49910-7
14	MeOH Storage Area 2	None Available
15	H_2O_2 Storage Area (West)	4351-4-0520-B
16	H_2O_2 Tank Farm	4351-1-1133, 50909-P
17	H_2O_2 Storage Area (East)	None Available
Other Relevant Areas and Associated Maps		
Track Scale		A-Q-11

REFERENCE:
DRAWING NO. 51424, PREPARED BY FMC CORPORATION; TITLED: "PLOT PLAN, OIL WATER, ACID AND PEROXIDE SEWER SEPERATION", DATED: JANUARY 18, 1995. SCALE: 1"=20'.

ATTACHMENT F
PROPOSED LOCATIONS FOR CRUSHER
Former FMC Spring Hill Peroxide Plant
South Charleston, WV

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