Ms. Beth Pratt
Ohio Department of Natural Resources
Division of Oil and Gas Resources Management
2045 Morse Road
Building F-2
Columbus, OH 43229-6693

Re: Permit Application to Operate an O&G Processing Facility at Martins Ferry, Ohio

Dear Ms. Pratt

Austin Master Services, LLC (AMS) is submitting this permit application for operation of a storage and processing facility to be located at 801 North 1st Street, Martins Ferry OH. One of the buildings (#256) that previously comprised the former RG Steel Industrial Plant will be the specific location of AMS's operation.

Attached are the permit and supporting documentation as follows:

Attachment 1 – Completed Permit Application Form

Attachment 2 – Facility Location Map and Building Drawings

Attachment 3 - Description of Proposed Facility Use

Attachment 4 – Radiological and Environmental Protection Program Plan

Attachment 5 – Flood Plan Support Responses

Attachment 6 – MSDSs/SDSs

Attachment 7 – ODH Comments and AMS Responses

Within the ODNR response to our initial application there were several comments related to flooding and protective actions. The text of Attachment 3 has been revised to address those concerns and a summary of those text changes is provided as follows:

1. There is a mailing provided by the Martin's Ferry City Civil Engineer indicating historical information as to why the 100 year flood will not impact facility operation. In addition there is a letter from the property owner indicating that any space on the property is available for our storage use in the event of flood impacting our operations within the facility. As noted on the drawings provided our planned storage location and a number of other locations are well outside the 100 flood plain boundary. These letters are contained in Attachment 5 tot his submittal.

2. While it is true that the facility elevation is within the flood plain it needs to be recognized that the working surfaces within the building are a minimum of four feet off the base floor elevation. Consequently any flooding of the facility will first be detected by FEMA notifications, water rise from the Ohio River which is several hundred feet from the building and leakage through the entrance doors. These aspects will allow for early warning of a potential flood problem that may impact materials at the site.

3. The materials are contained in closed roll-offs and vacuum boxes providing additional protection against any water intrusions. The container design provides an engineered barrier to water intrusion and that aspect plus movement outside the floodplain precludes the need to build any specialty flood protection barriers.

Note that we are not using our specific State of Ohio Radioactive Materials License at this time given the Ohio Department of Health indicated there is no requirement for a license for this specific operation. However, our proposed program in Attachment 4 will use the same implementing procedures for monitoring and measurement specific tasks.

Additionally AMS intends to perform a modified Phase 2 Environmental Assessment of the property but that task is a separate activity from this permit application. It is our understanding that a Phase 2 assessment is not a permit requirement.

Please direct any questions or comments to me at the phone or address listed below.

Respectfully,

Jack Bement
Chief Operating Officer
Austin Master Services LLC
355 Circle of Progress
Pottstown PA, 19464
jbement@austinmasterservices.com
Ph:(585) 704-2744
Fax: 484 624-5506

Attachment 1
Completed Permit Application Form

APPLICATION TO OPERATE A FACILITY

OHIO DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL AND GAS RESOURCES MANAGEMENT
2045 MORSE ROAD, BUILDING F-2
COLUMBUS, OHIO 43229-6693
(614) 265-6922

1. Name of Applicant: Austin Master Services, LLC Phone #: 484- 624-5504
   Address: 355 Circle of Progress Drive, Pottstown, PA 19464
   Date: 9/10/2014 eMail Address: jbement@austinmasterservices.com
   For an Order or a Permit to Operate: ☐ Existing Facility ☒ New Facility

2. **PURPOSE OF FACILITY:** (Check all that Apply) ☒ Storage ☐ Recycling ☒ Treatment ☒ Processing ☒ Disposal

3. **TYPE OF MATERIAL:**
   ☐ Brine ☒ Drill Cuttings
   ☒ Drilling Mud ☒ Other Waste Substance (explain) **All E&P generated TENORM**

4. **If a Business Entity, list the statutory agent and include a certified copy of their appointment:**
   Name: Business Filings Inc.
   Address: 4400 Easton Commons Way, Suite 125, Columbus, OH 43219

5. **Engineer of Record:**
   Name: N/A
   Address: N/A
   Ohio Professional Engineering License Number: N/A

6. **Address of Facility:**
   Address: 801 North First Street, Martins Ferry, OH 43935
   County: Belmont
   Township: Martins Ferry
   Municipal Corporation: Martins Ferry
   Latitude: 40° 06' 10.03" N
   Longitude: 80° 42' 39.01" W

7. **Write a brief description of the facility and operations:** The facility is a ~100,00 ft2 concrete floor and metal wall structure housed in the former RG Industrial Steel Plant. The facility will be used for the characterization of waste materials generated during oil and gas extraction processes, mixing and stabilization of waste materials to reduce radiological concentrations, packaging of wastes for transport to disposal facilities, and waste container transfer from trucks to rail for eventual disposal outside the State of Ohio. Attachments to this permit application contain additional details of facility operation.

8. **Include all information as set forth in the "*Guidelines for Application for Chief's Order*". Attach Additional Documents**

I, the undersigned, being first duly sworn, depose and state under penalties of law, that I am authorized to make this application, that this application was prepared by me or under my supervision and direction, and that the facts stated herein are true, correct, and complete, to the best of my knowledge.

I certify that the facility will comply with or is currently in compliance with all provisions of Chapter 1509 ORC, Chapter 1501 OAC, and all terms and conditions of orders and permits issued by the Chief, Division of Oil and Gas Resources Management.

Signature of Authorized Agent J. S. Bement

Name (Type or Print) John S. Bement Title CEO

Sworn to and subscribed before me this the 24th day of October, 2014.

Patricia A Caruso (Notary Public)

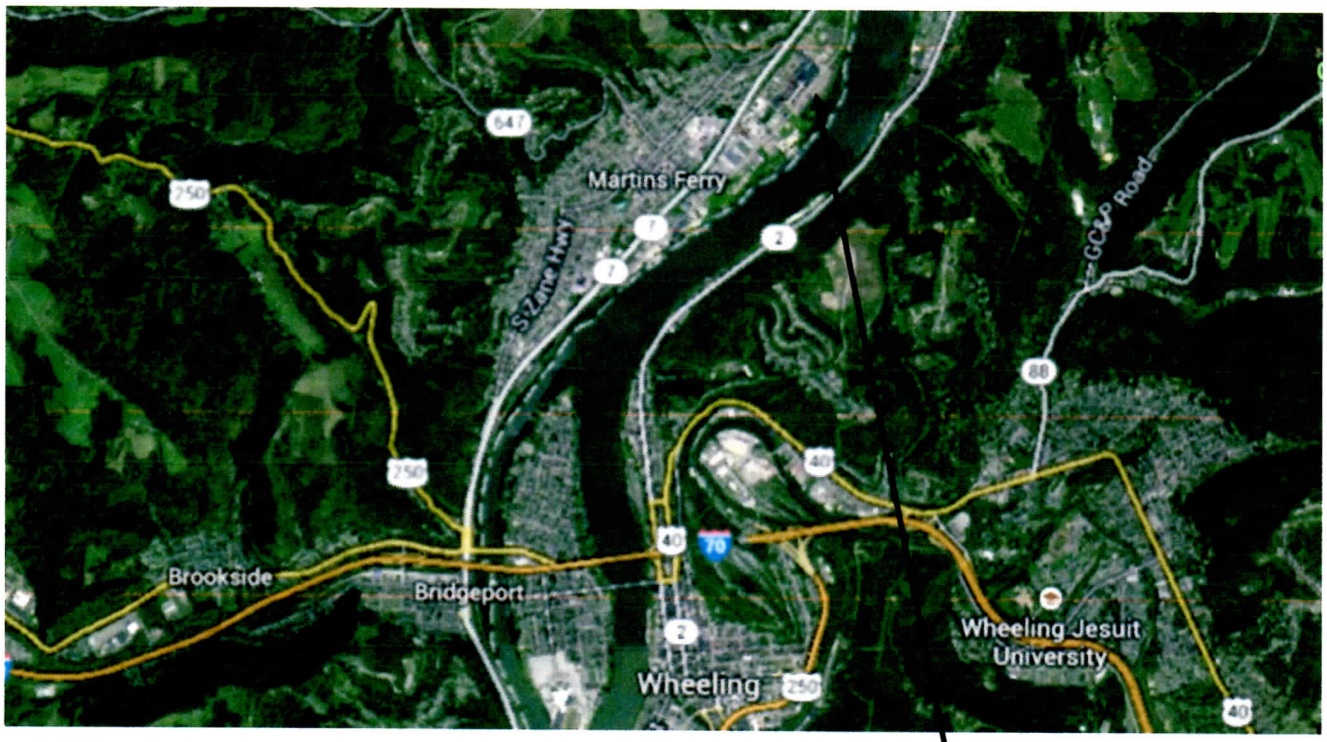
Patricia A Caruso

COMMONWEALTH OF PENNSYLVANIA
NOTARIAL SEAL
PATRICIA A CARUSO, NOTARY PUBLIC
NORTH COVENTRY TWP, CHESTER COUNTY
MY COMMISSION EXPIRES FEB. 25, 2018

DNR 1509.22 (12/2013)

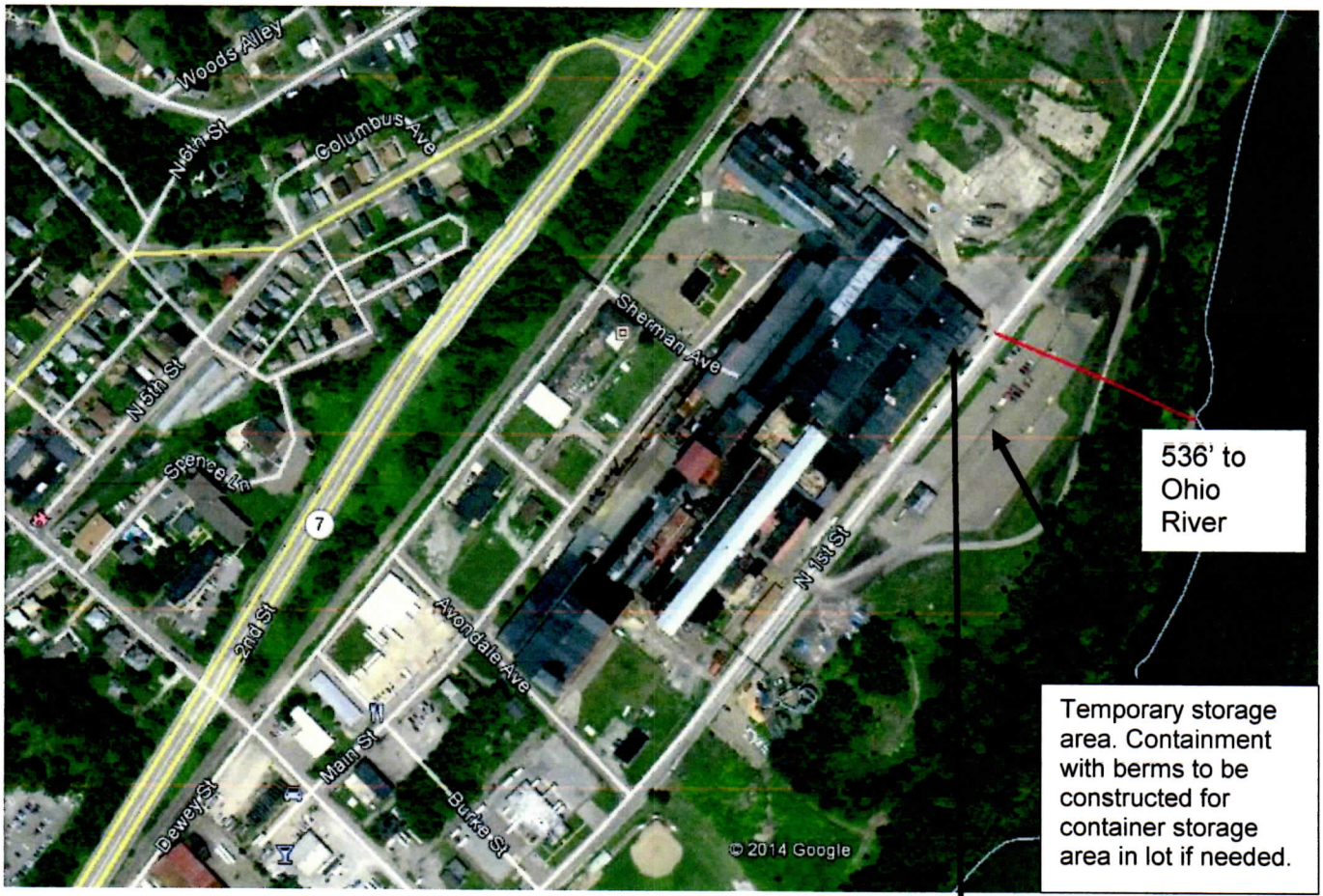
Attachment 2
Site Overview/Drawing

Figure 1- General Map Overview of Martins Ferry Facility Location



Facility located at
801 North First Street, Martins Ferry, OH 43935
Building 256, 255

Figure 2 Local Area Map Surrounding Buildings 256 255 Processing Facility



Building 256, 255 – Proposed AMS Processing Facility
40° 06' 10.03" N
80° 42' 39.01" W
El. 656'

Figure 3 – Former RG Steel Industrial Facility

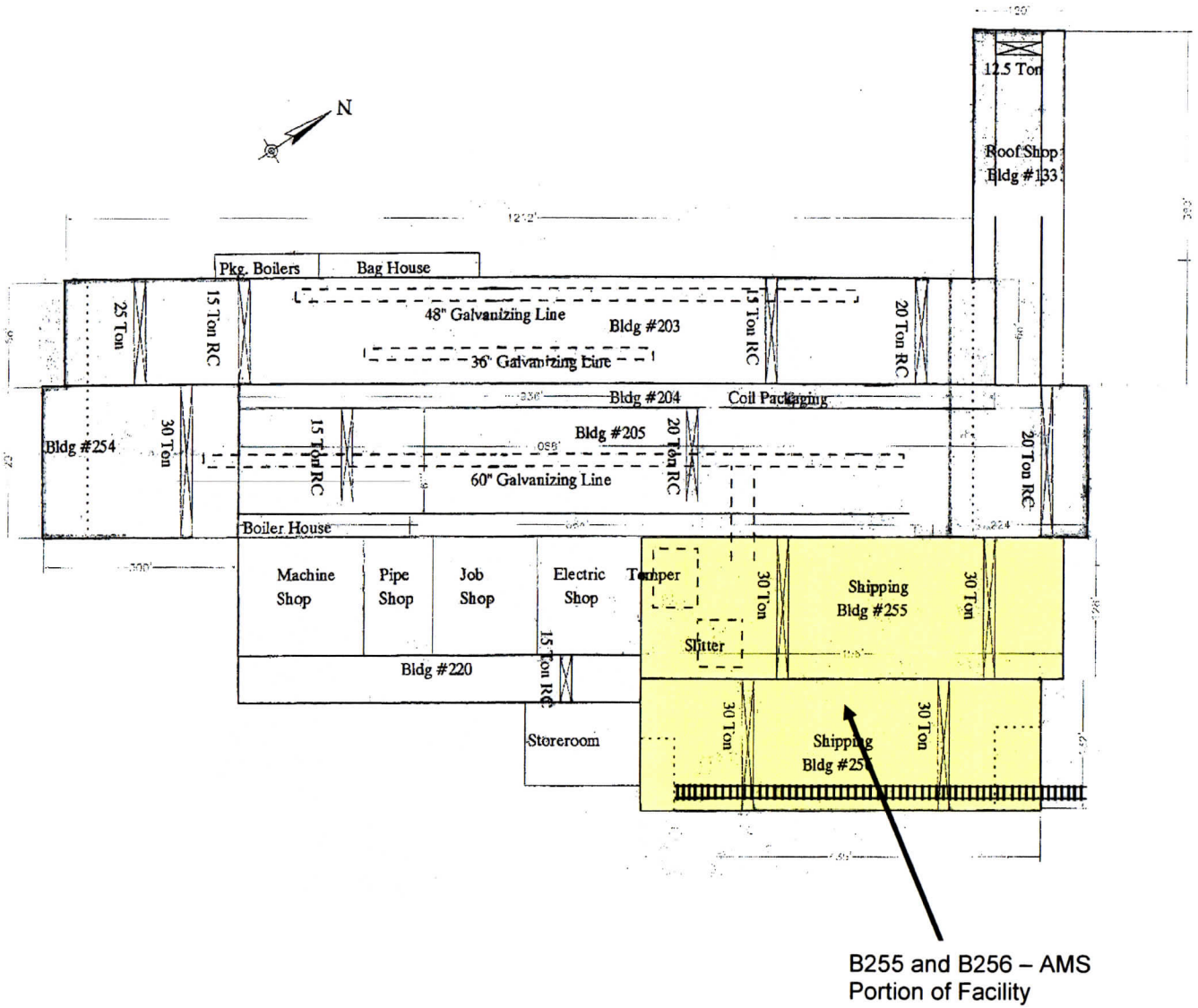


Figure 4 Proposed Interior Use Layout

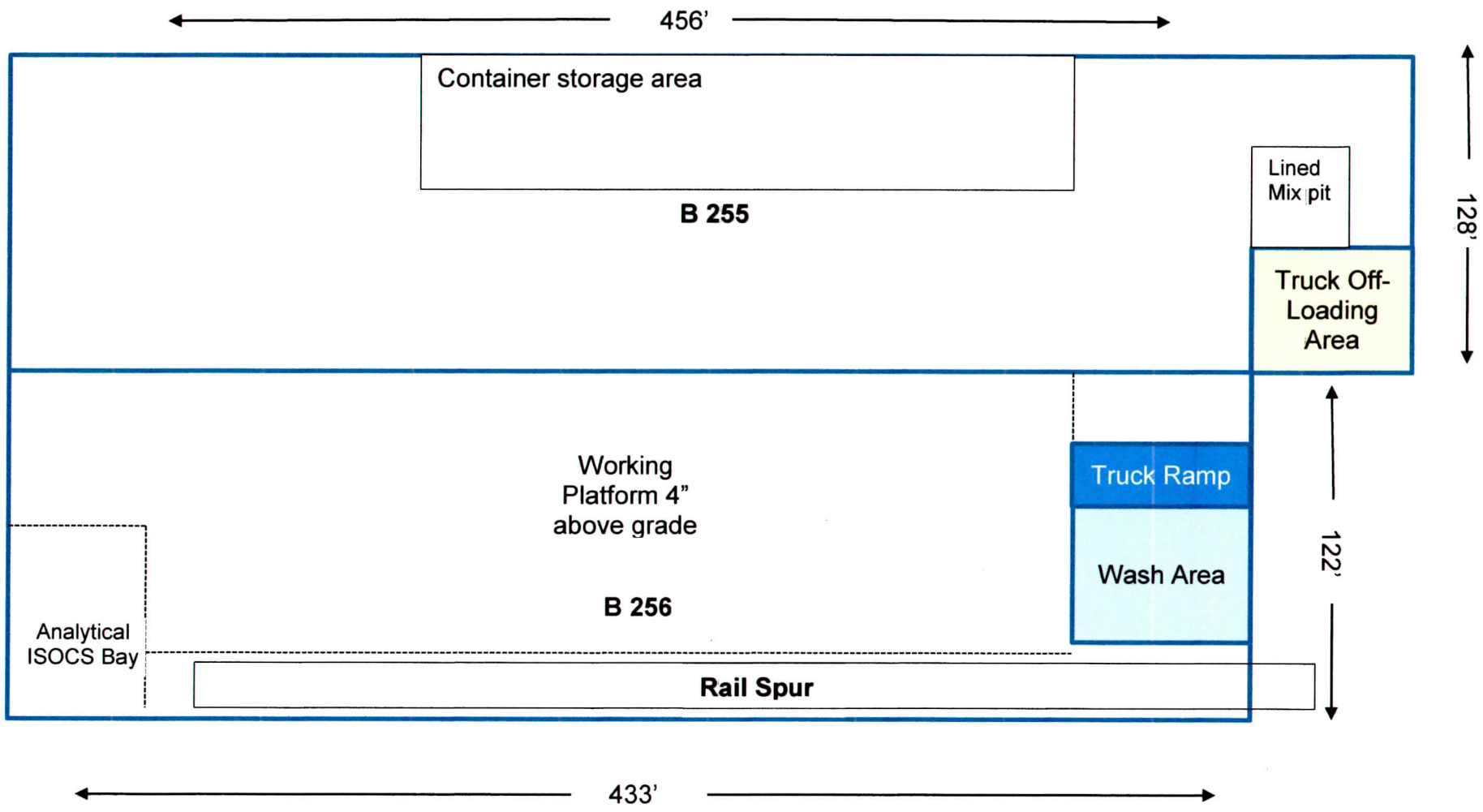
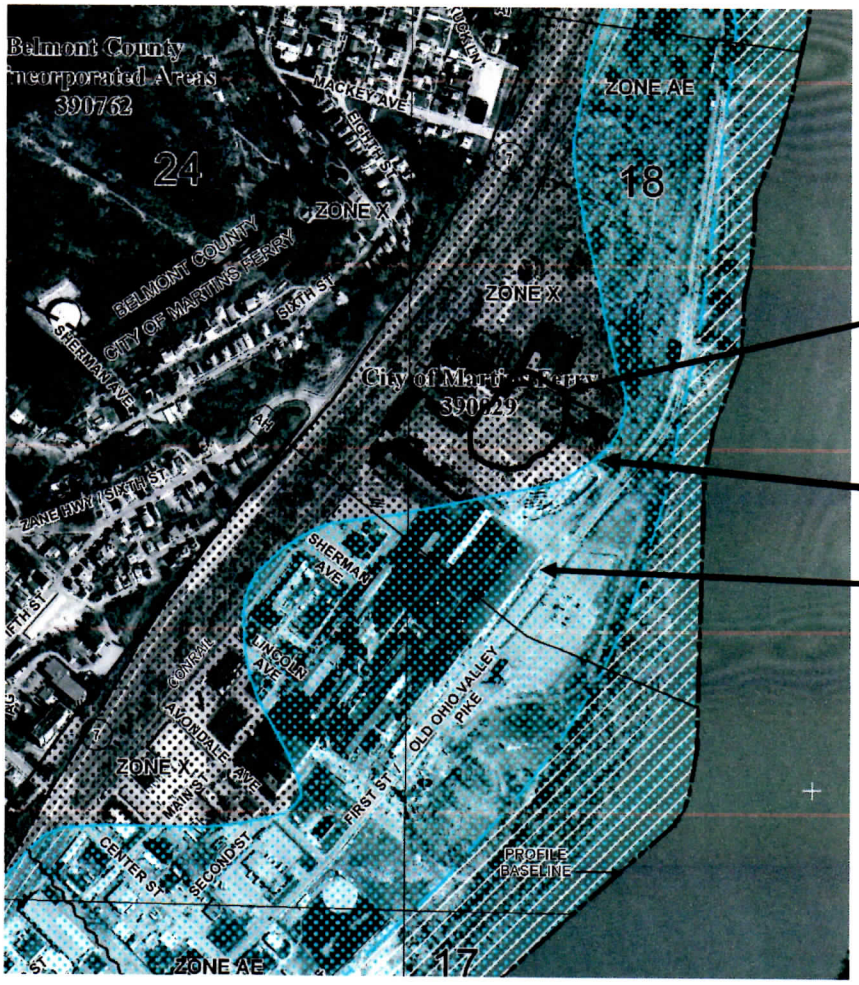


Figure 5 - Flood Plain Map for Martins Ferry Facility



Proposed Emergency Outside Container Storage Area

100 hundred year year flood plain boundary

Building 256

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water surface elevation of the 1% annual chance flood.

OTHER FLOOD AREAS

ZONE X

Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood

Attachment 3
Detailed Facility Description

Facility Description Contents

Basic Operations Summary 2
Material Types and Volumes 2
Transport Flow 3
Facility Layout 3
Characterization Process 4
Container Transfer 4
Material Stabilization 4
Material Mixing 5
Material Packaging for Transport 5
Tank Washing/Cleaning/Decontamination 5
Waste Storage 6
Emergency Plans 6

Basic Operations Summary

Austin Master Services will be performing the following seven tasks at the Martin's Ferry facility:

1. Radiological characterization of waste containers. It is expected that 100% of the containers will contain waste products from the Oil and Gas industry.
2. Transfer of containers, delivered to the facility by truck, to rail cars for eventual transport to disposal; facilities outside of Ohio.
3. Stabilization of materials using cement kiln dust and/or approved stabilization agents to reduce the amount of free liquid in the container.
4. Mixing of materials to reduce the over-all radiological concentrations in the resulting mixture.
5. Packaging of mixed materials and loading of packages for disposal transport at Ohio landfills provided material meets Ohio EPA acceptance criteria for landfill disposal.
6. Pressure washing, tank cleaning and decontamination
7. Containerized waste storage

Attachment 4 to this permit describes the exposure control and monitoring program that will be employed for all the processes to be conducted within the facility.

Material Types and Volumes

It is expected that the maximum volume of material to be received will be as follows:

Daily - 1000 tons principally drilling muds and production/flow back water sludge
Weekly – 5,000 tons
Annually – 100,000 tons

Storage on site will principally be interim in nature until the material can be processed, re-containerized, characterized and packaged/loaded for shipments. Most of this activity will occur on the day of material acceptance. However, there is the potential to have up to 20,000 tons of material stored on site for as long as a 30 days. Storage, if it occurs, will be done in sealed roll-offs or equivalent containers and will be located at center North in Building 255.

Transport Flow

A maximum of 60 trucks per day may enter the facility for off-loading and loading. It is expected all the trucks will access the facility by traveling on north or south on Route 7, southeast on Center Street and then North on 1st Street. The parking area immediately outside of Building 256 is a flat gravel area of approximately 20,000 ft^2. The configuration and size of the parking lot allows for easy ingress and egress with limited vehicle congestion.

It is expected that rail traffic will be one day per week with 4-5 rail cars per shipment. As shown in the Figures in Attachment 3 to this permit application, the rail-line enters and exits Building 256 from the north adjacent to 1st Street. Rail cars will be loaded in the building and it is expected to take between 2 and 4 hours for rail car loading.

Facility Layout

The processing will occur in a 100,000 ft^2 concrete floor and galvanized steel walled facility (see Attachment 2, Figure 4 for facility layout). There is a raised interior entrance floor in both Buildings 255 and 256. This floor is approximately four feet above the entrance grade to the Truck Bays

The "northeast" entrance bays are within the Building 255 and 256 facilities and under cover such that no opening will be subject to impact from external weather conditions. There are three bays located at the "east" side of Building 256; two will be used for washing out tanks and trucks and the third will have a ramp installed to allow for truck access onto the processing floor located four feet above the building entrance elevation. A "southeast" side entrance bay will be used for radiological characterization of containers.

There will be an off-loading area at the entrance bay to Building 255.

On the northeast end of Building 255, two "half round" tanks will be used for mixing and stabilization processes. These tanks are 45' long, 4 feet in depth and made of 3/8" steel. A conveyor and pug mill will be installed in the "west' side of the building. The pug mill will be used processing of drilling muds with eventual beneficial re-use application where the Ohio EPA provides approval.

Two 30 ton cranes in Building 256 and one 30 ton crane in building 255 are available to lift the containers from the incoming transport vehicles and placed onto the processing floor which consist of solid concrete. It is expected that containers will be of the following configurations:

- Tarped 20 yd^3 roll-offs
- 20 yd^3 sludge boxes
- 45 yd^3 "End Dumps" (note: capacity limited by material weight to about 10-25% of volume)

- 1-10 yd^3 Super Sacks
- 25 yd^3 Intermodal containers

Drains in the building will be sealed to prevent any effluents from reaching the sanitary sewer system.

Characterization Process

AMS's in-situ counting system (ISOCS) will then be utilized to perform a radiological characterization of the box contents. The characterization process/measurement will produce an analytical report detailing the observed concentration of Ra-226/228. The results of the characterization will determine the final disposition of the material. For example under State of Ohio regulations material characterized as greater than 6.99 pCi/g of combined Ra-228 and 226 content would not be eligible for disposal in an Ohio permitted landfill. Because each state has different disposal requirements the resulting concentration values will define the eventual disposal destination for each characterized container.

The AMS Quality Assurance program for this in-situ characterization consists of collecting composited samples from selected containers and analyzing those samples using EPA Method 901.1M. The QA Program is reviewed by the AMS Radiation Safety Officer (RSO) and where data consistently demonstrates correlation between in-situ and lab results the frequency of QA sampling may be reduced.

Container Transfer

Approximately 10-20% of the material received annually at the facility will be destined for disposal at facilities served by rail transport. To support this effort materials will be delivered by truck in containers such as super sacks which will be off-loaded and processed in the Delivery Bay and moved to a rail gondola car.

Material Stabilization

Waste treatment/stabilization process involves pumping or dumping the waste material into half-round containers. Waste will be mixed with an EPA approved non-hazardous media and agitated (Portland cement, ect.) using a track-hoe excavator or pug-mill mixing unit until the physical consistency reduces the water content to a level expected to meet the EPA paint filter test criteria. The waste will then be transferred into tarped containers for shipment to an approved facility.

Attachment 6 contains the MSDSs/SDSs for the proposed material to be used for stabilization.

Material Mixing

The process is expected to be similar to that of the stabilization process described above except that larger volumes of material and longer process times will be used. Once the characterization of the materials to be mixed have been determined, AMS will calculate the amounts of material that will be added to the half round mixing container to achieve the desired final concentration. In some cases the pug mill will be used to blend larger volumes where the stabilization material will automatically be added as part of the mixing process.

Once mixed another characterization will be performed of the container to ensure the activity meets the desired acceptance criteria for the destination disposal facility. The mixed materials will then be transferred to a roll-off or suitable transport package for eventual facility disposal.

Material Packaging for Transport

Small excavators, front loaders and overhead crane will be used to load materials into containers that are suitable for transport. All containers will be of the strong tight or DOT IP-1 variety and if any material exceeds DOT criteria for transport as a hazardous material only containers meeting DOT requirements will be selected and used for material packaging.

Packages will be loaded, using the overhead cranes or equipment, into trucks or rail cars, manifested and shipped to the destination disposal facility. Surveys of outgoing packaging and shipments will meet the requirements described in Attachment 4 to this permit application.

Tank Washing/Cleaning/Decontamination

Multiple options for cleaning vacuum tanks, truck tankers and almost any kind of tank used in the oil/gas industry will be employed. Tanks are pressure washed in the Wash Bay and the waste is vacuumed into a separate container via a closed loop system.

Surveys as described in Attachment 4 to this permit application will be performed of all tanks prior for release for re-use. Water collected will be treated at a local approved Division of Oil and Gas Treatment Facility or deep well injection.

Waste Storage

It is expected, as described in the section above on waste volumes, that some temporary onsite storage of containerized waste will be necessary. Containerized waste will be stored inside the building in the west end of the process floor. In the event there is insufficient room for the stored containers, a lot is located northeast of the entrance lot that may be used. The location is noted on Figure 5 of Attachment 2 to this application.

Waste containers will be inspected prior to receipt, after moving and periodically to ensure container integrity remains intact. If stored outside, a berm consisting of a rubber liner with bermed side walls will be used and sized such that the volume of the maximum stored container can be contained in the event of container failure. The berm will be inspected at intervals no less than a once a week.

As noted in Figure 5 of Attachment 2, the location of the exterior storage area is outside the 100 year flood zone. Because of this location and the fact the materials will be in sealed containers, no extraordinary flood protection interventions are expected to be needed. In addition, as noted in the letters in Attachment 5 of this submittal, 1) historically this area has not been impacted by significant flooding events and 2) other locations will be available to us to store material in the rare event the proposed storage location is impacted by a flood.

Emergency Plans

AMS procedure EH&S 200-001, *Martins Ferry Facility Emergency Action Plan*, will be developed to address the following incidents:

- Worker Injury
- Fire
- Inclement Weather
- Hostile Intruder
- Flooding

While the facility is located within the 100 year flood plain, the fact AMS intends to perform most of its work at a level four feet above the facility elevation will significantly mitigate any potential flood impacts. AMS will use berm materials described in the waste storage section to limit entrance of waters into the building. Sufficient materials to seal the entrance doors will be maintained on site and available for deployment whenever a FEMA flood alert indicates inundation of the facility is likely. In addition steps will be provided in the emergency plan to direct personnel to limit incoming shipments of material and to expedite off-site transport of materials in the event of a FEMA flood alert.

Initial actions prior to movement of containers will be to secure container tops and liners to prevent water intrusion. The gondola cars are lined with water tight zipper closure polypropylene bags. Hard tops will then be installed on top of Gondola car to seal each car. All other containers, such as vacuum boxes, have lids that will be bolted down to create a seal and prevent water intrusion.

Attachment 4
Radiological Safety and Environmental Monitoring Program for Martin's Ferry Facility

Martins Ferry Radiological Safety and Environmental Monitoring and Control Program

Initial Baseline Surveys

Initial surveys of the facility prior to material acceptance will be performed.

- Exterior 2x2 NaI Survey with GPS data logging will be performed and investigations of any location exceeding 3X background will be performed.
- Dose rate measurements using a Bicron MicoRem or equivalent low level dose rate meter will be sued to establish perimeter and interior building dose rates.
- Interior radon measurements will be performed using a real time radon monitor

Process Surveys

Incoming vehicle/containers

Each incoming vehicle will be surveyed using either a 2x2 NaI detector a low level dose rate meter. These values will be used to establish action levels based upon the resulting characterization measurements performed for the containers. Once a correlation between the field measurement and the in-situ measurement have been established then action levels will be established as follows:

- Values that indicate the material content is less than 10 pCi/g will allow for no special handling controls

- Values that indicate the material is greater than 10 pCi/g but less than 1000 pCi/g will require initial worker protection controls and surveys until it can be established that the worker controls without measurement are sufficient to protect workers and the environment.

- Values greater than 1000 pCi/g will always require the controls and measurements described in this program.

Work Areas

For each work area where processes are conducted dose rate and gross gamma count rate measurements will be made for a minimum of one month per process. The AMS Radiation Safety Officer will evaluate the accumulated data to determine if the values remains within a deterministic range and can be predicted by the incoming shipment exposure rate or gross gamma count rate measurements. The RSO will then provide a written report of his/her assessment and determine if further measurements are needed and if they are what the frequency should be.

For each work area where processes are conducted that involve exposure to uncontained materials, surface contamination and airborne survey measurements will be made. These surveys will be collected for at least three months of each process. The AMS Radiation Safety Officer will evaluate the accumulated data to determine if the values remains within a deterministic range and can be predicted by the incoming shipment exposure rate or gross gamma count rate measurements. The RSO will then provide a written report of his/her assessment and determine if further measurements are needed and if they are what the frequency should be.

Storage Areas

Storage areas will be surveyed and inspected each week. The surveys will principally consist of gross gamma count rate or dose rate measurements. If there is evidence of container leakage or excess mud/debris on or around the containers surface contamination measurements will be made. Inspections will include an assessment as to the integrity of containers and berms, if used. All inspections will be recorded. The AMS RSO, after three calendar quarters will assess the survey and inspection results to determine if changes are needed to the survey/inspection program and elements.

Exiting Vehicles/Containers

Where characterization surveys indicate the contents of waste materials being shipped from the facility exceed 270 pCi/g of combined Ra-226 and 228 then dose rate and contamination surveys/inspections of the vehicle and/or container will be performed. In those cases where the material contents would require the material to be shipped as a hazardous material, the AMS Radioactive Materials Shipping procedure requirements will be followed. The AMS RSO, after three calendar quarters will assess the survey results to determine if changes are needed to the survey/inspection program and elements.

Worker Surveys

Initially each worker will be assigned a TLD for monitoring their direct radiation exposure. After three consecutive calendar quarters of monitoring, the AMS Radiation Safety Officer (RSO) will review the results to determine if the measurements demonstrate, along with dose rate measurements, that there is no potential for a worker to exceed 100 mrem in a calendar year. The RSO will provide written documentation of his/her assessment and the use of TLDs can be discontinued. The RSO will continue to evaluate survey data as it is collected and based upon this data may elect to reintroduce monitoring to ensure the 100 mrem in a calendar year is not likely to be exceeded.

Breathing zone airborne measurements will be made initially for all work involving non-containerized material that will be disturbed and can be re-suspended. Processes involving highly "wetted" material will be assessed on a case by case basis to determine

if an airborne survey is warranted. Initial airborne surveys will involve both respirable particulate measurements but also radioactive airborne particle measurements.

Radon measurements will be made at least weekly for three area within the building designated by the AMS RSO. At present it is expected that these will be the potential storage area in the west end of the building, the area around the mixing box rounds and areas where tank washing/decontamination may occur.

The AMS RSO, after three months of data collection, will assess the results to determine if survey type and frequency should be modified or even discontinued. A written report of the RSO's assessment will be produced and maintained as part of the facility records.

Environmental Surveys

Initially exterior particulate and airborne radioactivity measurements will be made at the downwind and upwind boundary facility locations. It is expected approximately 30 eight hour shift measurements will be made during a calendar quarter. Days selected will be based on operations that involve the use of open containers and potential re-suspension of materials into the air.

The AMS RSO, after three months of data collection, will assess the results to determine if survey type and frequency should be modified or even discontinued. A written report of the RSO's assessment will be produced and maintained as part of the facility records.

Worker Protection

Training

All workers will receive radiation safety awareness training, in addition to the AMS Project Safety training, prior to their work at the facility. The training will meet the basic requirements of 10CFR19.

PPE

Based upon measurements of incoming materials and the processes, the RSO will determine the required PPE. Initially any work where hand contact with materials greater than 10 pCi/g will require a minimum of gloves and protective coveralls such as disposable Tyvek coveralls. Regular work coveralls may be used but surface contamination surveys of those coveralls must be made at the end of the shift before the worker can leave the site.

Respiratory protection will only be assigned if the concentrations are greater than 1000 pCi/g and the process is generating dust levels that exceed 1000 ug/m^3 of respirable dust.

At the end of each calendar quarter the SAMS RSO will evaluate the results of all surveys to determine if the level of PPE needs modification.

Attachment 5

Flood Response Support Letters

4K Industrial Park, LLC
1001 Main Street
P.O. Box 37
Martins Ferry, OH. 43935

October 24, 2014

To Whom It May Concern:

Please be advised that 4K Industrial Park, LLC has an agreement with Austin Masters Services on the following:

In the event of a flood, with the assistance of 4K industrial Park, LLC, Austin Masters Services can remove any and all materials under the ODNR Oil & Gas flood evacuation plan to areas zoned within the 4K Industrial Park property that are not in the flood plain.

Very truly yours,

4K INDUSTRIAL PARK, LLC.

Terry L Dusz.
VP Real Estate Development

Cc: file

Gmail by Google

John Bement <jbement@austinmasterservices.com>

100 Year Flood Plain

1 message

Paul Riethmiller <mayorriethmiller@comcast.net> Thu, Oct 30, 2014 at 1:48 PM
To: jbement@austinmasterservices.com

Dear Jack,

Jeff Vaughn is on a retainer with the City of Martins Ferry to serve as our city engineer and as part of his responsibilities he handles any questions or issues about the 100 year flood plain located within our city limits due to his vast knowledge and experience in these areas. If you have any additional questions please feel free to call my office.

Mayor Paul Riethmiller
City of Martins Ferry
35 S. 5th Street
Martins Ferry, OH 43935
Office: 740-633-2876
Cell: 740-391-2734
Email: MayorRiethmiller@comcast.net

Vaughn, Coast & Vaughn, Inc.
154 S. Marietta Street St. Clairsville, Ohio 43950 Phone: (740) 695-7256 Fax: (740) 695-2203

VAUGHN
COAST &
VAUGHN *engineers*

October 27, 2014

Mr. Jack Bement
Director of Operations
Austin Master Services LLC
355 Circle of Progress
Pottstown, PA 19464

Re: City of Martins Ferry
Proposed Oil and Gas Business – RG Steel Building on First Street
FEMA Flood Elevation

Dear Mr. Bement:

Your company is proposing to setup a frac water processing facility in the old RG Steel building(s) located at the north end of First Street in the City of Martins Ferry. This type of business is regulated solely by the Ohio Dept. of Natural Resources (ODNR). One of their concerns is how the site/building would be impacted by the flooding of the Ohio River.

It is assumed that the flood event of concern is the 100 year flood event. The Ohio River water elevations are controlled by the Corps of Engineers through the various locks and dams on the river. The Corps publishes the flood elevations of the Ohio River. The 100 year flood elevation on the river is estimated to be slightly above 658.0. The ground elevation of the building to be used is around 650.

The Federal Emergency Management Administration (FEMA) publishes Flood Insurance Rate Maps (FIRM) that indicate the 100 year flood plain delineation along specific streams including the Ohio River. The FIRM map for this site is attached and indicates the 100 year flood plain coverage in this area. The RG Steel building is within the 100 year flood plain.

Your business plan is to temporarily relocate all tank trucks and frac liquids and solid materials to a storage pad area directly to the west of the RG Steel building if a 100 year flood event were to occur. This area is shown to be outside of the 100 year flood plain on the FEMA FIRM map. This operation would prevent frac liquids and solids from entering the river during this flood event.

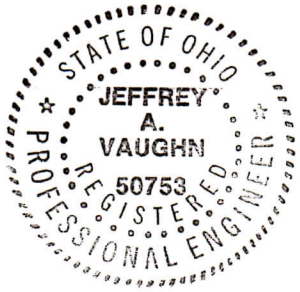
This plan should meet the intent of the City of Martins Ferry's flood regulations. The final acceptance of the siting of the business within the 100 year flood plain will be by the City of Martins Ferry.

If you have any questions, please contact us.

Very truly yours,

VAUGHN, COAST & VAUGHN, INC.

Jeffrey A. Vaughn, P.E.
Enc.



FEMA

Info Scale: 14 % LOMC: 1

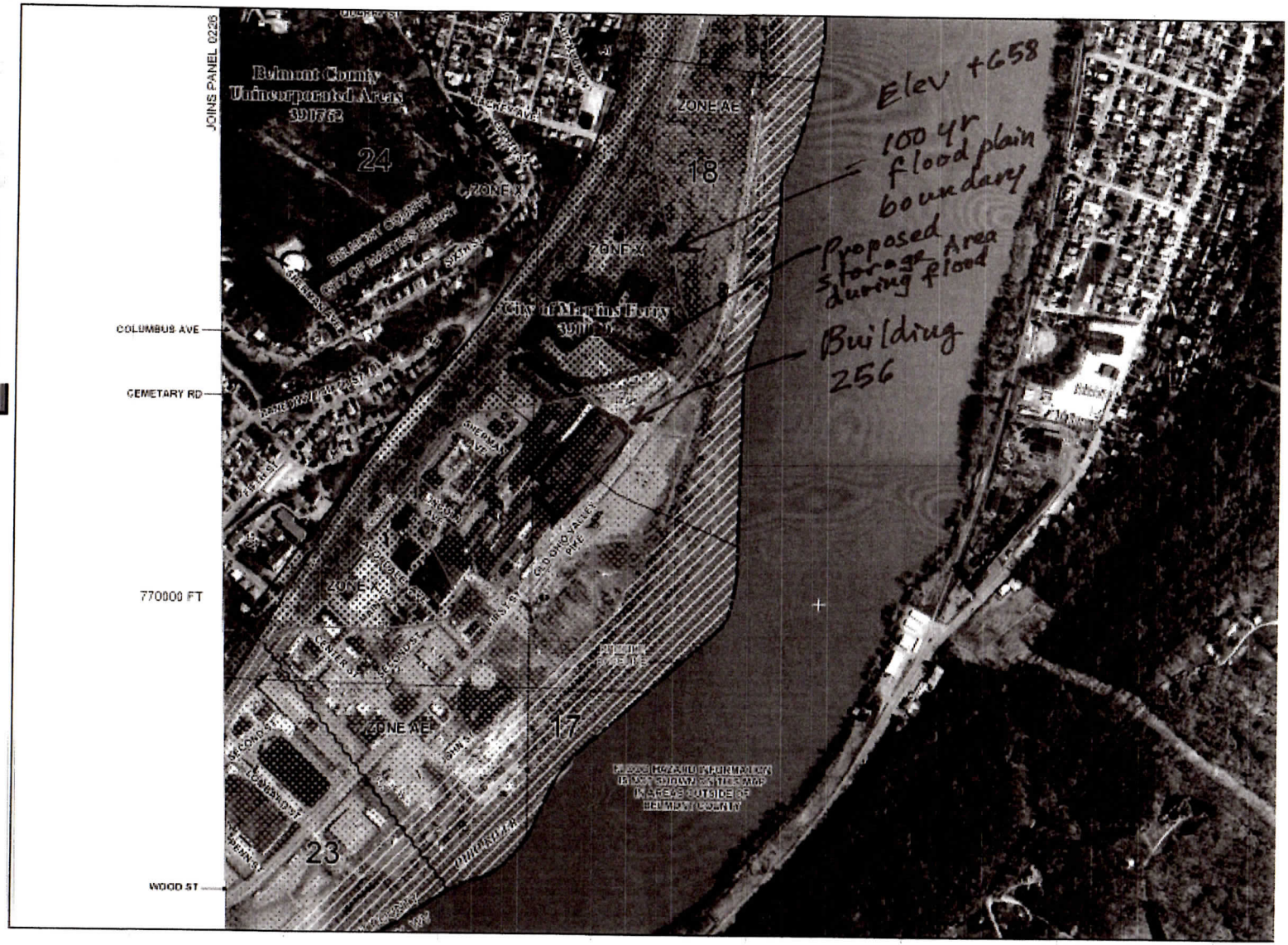
Help

Zoom Win | Pan

Zoom In | Zoom Out

1:1 Zoom In | MAX Zoom Out

Make a FIRMette



Attachment 6
Stabilization MSDSs/SDSs

SAFETY DATA SHEET

according to EEC Directives 91/155/EEC and 93/112/EC

Product name:	Portland cements and Portland limestone cement:	Page:	1/4
Last revised date:	2001-23-08	Print date:	01-23-08
		SDS-ID:	GB/IRL/1.9

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY/UNDERTAKING

Product name: CEM I 42.5 N
CEM I 52.5 N
CEM I 52.5 R
CEM II / A-LL 52.5 N
CEM II / A-LL 52.5 R

Application: Binder for natural and artificially processed aggregates, such as sand and gravel, for production of mortar, plaster and concrete.

Container size: 25 and 50 kg sack
Bulk

Supplier: Aalborg Portland
Rørdalsvej 44
DK-9100 Aalborg
Phone: +45 98 16 77 77

2. COMPOSITION/INFORMATION ON INGREDIENTS

The product contains: cement.

The following substances shall be indicated according to legislation:

Chemical name:	CAS-No..	%:	Hazard classification:	Notes:
Portland cement clinker	65997-15-1	75-100	Xi;R37/38-41	-

3. HAZARDS IDENTIFICATION

Man: Dust may irritate throat and respiratory system and cause coughing. Dust or splashes from the mixture may cause permanent eye damage. Dust has an irritating effect on moist skin. Prolonged contact with wet cement/mixture may cause burns. Frequent inhalation of dust over a long period of time increases the risk of developing lung diseases.

Environment: The product is not expected to be hazardous to the environment. In the presence of water the product hardens to a solid mass which is not biodegradable.

4. FIRST-AID MEASURES

Inhalation: Move injured person into fresh air and keep person calm under observation. If necessary, seek hospital and bring along these instructions.

Skin contact: Remove contaminated clothes and rinse skin thoroughly with water.

Eye contact: Do not rub eye. Immediately flush with plenty of water for at least 15 minutes. Remove any contact lenses and open eyelids widely. If irritation persists. Continue flushing during transport to hospital. Bring along these instructions.

Ingestion: Immediately rinse mouth and drink plenty of water or milk. Keep person under observation. Do not induce vomiting. If vomiting occurs, keep head low. Immediate transport to hospital. Bring along these instructions.

5. FIRE-FIGHTING MEASURES

Extinguishing media: Use fire-extinguishing media appropriate for surrounding materials.

Specific hazards: Water used for fire extinguishing, which has been in contact with the product, may be corrosive.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions: Avoid inhalation of dust. Avoid contact with eyes and prolonged skin contact. Use work methods which minimise dust production. For personal protection, see point 8.

Environmental precautions: The product should not be dumped in nature but collected and delivered according to agreement with the local authorities.

Methods for cleaning up: Remove spillage with vacuum cleaner. If not possible, collect spillage with shovel, broom or the like. For waste disposal see point 13.

7. HANDLING AND STORAGE

Safe handling advice: Observe good industrial hygiene practices. Avoid inhalation of dust. Avoid contact with eyes and prolonged skin contact. Change contaminated clothing. Avoid spread of dust.

Technical measures: Use work methods which minimise dust production.

Technical precautions: Mechanical ventilation may be required. Provide easy access to water supply and eye wash facilities.

Technical measures for safe storage: No special precautions.

Storage conditions: Store in closed original container in a dry place. Seal opened containers and use up as soon as possible. When stored under humid conditions, the chromate neutralization will

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering measures: Provide adequate ventilation. Observe Occupational Exposure Limits and minimize the risk of inhalation of dust.

Chemical name:	Exposure limits:	Type:	Notes:	References:
Portland cement:				EH 40/99
Total inhalable dust	10 mg/m³			
Respirable dust	4mg/m³			

Respiratory equipment: During dust-raising work: Use respiratory equipment with particle filter, type P2.

Hand protection: Wear protective gloves. Suitable gloves can be recommended by the glove supplier.

Eye protection: Risk of splashes: Wear goggles/face shield.

Skin protection: Wear special protective clothing. Hood or helmet shall be used in connection with splashing work.

Hygiene measures: Remove contaminated clothing and wash the skin thoroughly with soap and water after

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	grey and white powder
Odour:	odourless
pH:	Approx. 13 (mixed with water)
Boiling point:	not relevant
Flash point:	not relevant
Explosive properties:	not relevant
Relative density:	not available
Solubility:	Miscible with water.

10. STABILITY AND REACTIVITY

Stability:	Stable. The content of chromate reducing agent is gradually diminished.
Conditions/ materials to avoid:	The product willl harden into a hard mass in contact with water and moisture.
Hazardous decomposition products:	None in particular.

11. TOXICOLOGICAL INFORMATION

Inhalation:	Dust may irritate throat and respiratory system and cause coughing.
Skin contact:	Dust has an irritating effect on moist skin. Prolonged contact with the mixture may cause corrosion
Eye contact:	Dust or splashes from the mixture may cause permanent eye damage. Immediate first aid is necessary.
Ingestion:	Not likely, due to the form of the product. Ingestion may cause severe irritation of the mouth, the oesophagus and the gastrointestinal tract.
Specific effects:	Frequent inhalation of dust over a long period of time increases the risk of developing lung diseases.

12. ECOLOGICAL INFORMATION

Mobility:	The product is not volatile but may be spread by dust-raising handling.
Degradability:	The product is not biodegradable.
Ecotoxicity:	The product is not expected to be hazardous to the environment.

13. DISPOSAL CONSIDERATIONS

Dispose of waste and residues according to agreement with local authorities. Waste is classified as special waste. Disposal to licensed waste disposal site in accordance with the local Waste Disposal Authority. Note that fully cured material is not considered as hazardous waste.

Waste from residues: EWC-code: 10 13 06

Contaminated packaging: EWC-code: 15 01 01 (paper and cardboard)

14. TRANSPORT INFORMATION

The product is not covered by international regulation on the transport of dangerous goods (IMDG, IATA, ADR/RID).

15. REGULATORY INFORMATION

Labelling:

Irritant

R37/38	Irritating to respiratory system and skin.
R41	Risk of serious damage to eyes.
S2	Keep out of reach of children.
S22	Do not breathe dust.
S26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S39	Wear eye/face protection.
	Calcium oxide. When mixed with water it will form calcium hydroxide which has a corrosive effect on skin and eyes.

National regulation: CHIP: The Chemicals (Hazard Information and Packaging for Supply) Regulations 1994 (SI 1994/3247), with Amendment Regulations 1996 (SI 1996/1092), 1997 (SI 1997/1460), 1998 (SI 1998/3106), 1999 (SI 1999/197), 1999 (SI 1999/3165), 2000 (SI 2000/2381) and 2000 (SI 2000/2897).
Occupational Exposure Limits EH 40/2000 from the Health and Safety Executive.
The Special Waste Regulations 1996 (SI 1996/972) with Amendment Regulations 1996 (SI 1996/2019) and 1997 (SI 1997/251).

16. OTHER INFORMATION

The user must be instructed in the proper work procedure and be familiar with the contents of these instructions.

The information on this data sheet represents our current data and is reliable provided that the product is used under the prescribed conditions and in accordance with the application specified on the packaging and/or in the technical guidance literature. Any other use of the product which involves using the product in combination with any other product or any other process is the responsibility of the user.

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Attachment 7
Response to ODH Comments

ODH Comment 1: *Range of TENORM concentrations mentioned and large volumes of wastes processed/stored make possible occupational airborne exposure a concern. Provide additional information for what action levels are established and dosimetric consequences and ventilation plans.*

AMS Response to Comment 1: Typical radium 226 concentrations for the facility will seldom exceed 300 pCi/g and in our experience to date will be no greater than 2000 pCi/g. The material received at the facility will be sufficiently wetted that it is unlikely high concentrations of airborne particulate will be generated. For material at 300 pCi/g, the AMS control value of 1000 ug/m^3 would result in a maximum airborne concentration of 3E-10 uCi/cc which is equivalent to the Ra-226 Derived Airborne Concentration (DAC). If there were fugitive emissions from the facility using a conservative X/Q value of 1E-03, the standard air dispersion default value, exterior levels would not exceed 3E-13 uCi/cc which is less than the public concentration limit of 9E-13 uCi/cc.

Dust suppression measures will be employed to limit any airborne particulate generation if the levels approach the 1000 ug/m^3 action level. It is not AMS's intent to install ventilation systems for the building as our experience indicates they are not warranted. However, as outlined in the controls, measurements and actions in Attachment 4 AMS will take all reasonable precautions while data is collected to validate the AMS assumption that airborne activity will not represent a worker or public hazard.

If the data collected shows that airborne concentrations for Ra-226, Ra-228 and Rn-222 consistently approach or exceed the *OAC 3701:1-38-12,* AMS will cease operations and identify engineering controls and work practices that will reduce those concentrations to values below any public or occupational worker limits.

ODH Comment 2: *Facility ISOCS measurements are to be conducted in the same general area where large volumes of waste may be stored. Has consideration been given to the impact that elevated background from the TENORM storage area may have on the ISOCS measurements conducted*?

AMS Response to Comment 2: As noted in Figure 5 of Attachment 2 to this submittal the ISOCS measurement location is not co-located with the bulk of the radioactive material. If background gamma levels begin to impact ISOCS measurements it will do so in a conservative manner as greater uncertainty will be introduced with the result of higher final measurement values.

AMS will be tracking background values to determine if the presence of radioactive materials anywhere in the facility is raising measurement values to an unstainable operational level.

ODH Comment 3: *Under "process surveys", the vehicle survey values between 10-100pCi/g have no action defines as other ranges do. Please explain.*

That was typographical error and that section should have read as follows: "Values that indicate the material is greater than 10 pCi/g but less than 1000 pCi/g will require initial worker protection controls and surveys until it can be established that the worker controls without measurement are sufficient to protect workers and the environment."

ODH Comment 4: *Under "PPE", respiratory protections is required if concentrations exceed 100pCi/g, but no isotope is mentioned. Is this from OAC 3701:1-38-12 occupational dose limit tables*?

AMS Response to Comment 4: Please see response to comment 1 above.