Nonmetallic Mining Permit Application

Vista Sand, Ltd. – Glenwood City Properties

Town of Glenwood, Saint Croix County, Wisconsin

SEH No. VISTA 118109

June 2012 (Revised January 2013)
Certification Page

Nonmetallic Mining Permit Application

Vista Sand, Ltd. – Glenwood City Properties
Town of Glenwood, Saint Croix County, Wisconsin

Prepared by:
Short Elliott Hendrickson Inc.
421 Frenette Drive
Chippewa Falls, WI 54729-3374
715.720.6200

I hereby certify that this reclamation plan was prepared by me, or under my direct supervision, in accordance with Wisconsin Statute Chapter 295, ch. NR 135 Wisconsin Administrative Code, and St. Croix County Ordinance Chapter 14.

Phil Newman
Phil Newman, PE, Manager
PE Number 26594
Date 11/7/2013

Jana Nyhagen
Jana Nyhagen, PE, Project Engineer
PE Number 39045-6
Date 11/7/13

Certification of Reclamation Plan

I, as the Representative of the property described herein, do hereby certify that I have reviewed the reclamation plan, concur with its provisions, and agree to permit its implementation, and certify that reclamation will be carried out in accordance with this reclamation plan.

RJ Sikes, Vista Sand, Ltd.
Date 1/5/2013

Scott Teigen, Trustee
Date 1/5/13

Robert Crosby, Jr., Landowner
Date 1/5/13

Sherry Crosby, Landowner
Date 1/5/13

Velma Crosby, Landowner
Date 1/5/13
Appendix H
Special Exception Application
Vista Sands, Ltd.

Property Owner: Valma Crosby
Contractor/Agent: Vista Sands, Ltd.

Mailing Address: 3549 Monroe Hwy
Branbury, TX 76049

Daytime Phone: (715) 265-4682
Daytime Phone: (254) 777-510

Cell: ( )
Cell: ( )

E-mail: velcro@centurytel.net
E-mail: rj@gcpdq.com

SITE INFORMATION

Site Address: see description attached

Property Location: 1/4, 1/4, Sec. ___ T. 30 N., R. 15 W., Town of Glenwood

Computer #: see attached
Parcel #: see attached

LAND USE INFORMATION

Zoning District: (Check one): ( ) AG. ( ) AG. II ( ) AG. RES. ( ) RESIDENTIAL ( ) COMMERCIAL ( ) INDUSTRIAL
Overlay District: (Check all that apply): ( ) SHORELAND ( ) RIVERWAY ( ) FLOODPLAIN ( ) ADULT ENTERTAINMENT

State the nature of your request: Nonmetallic mining operation in ag. residential zoned area

☐ More than one request with this application? (See the supplemental fee amount below and attach the appropriate addendum.)

Zoning Ordinance Reference 17.16(6)(g)

FEES

Application Fee: $4,000
Supplemental Fees: $175 x ___ (# of additional requests) $2,065
Total Fees: $4,065

I attest that the information contained in this application is true and correct to the best of my knowledge.

Property Owner Signature: [Signature] Date: 3-3-2013

Contractor/Agent Signature: [Signature] Date: 6-4-2013

Office Use Only

Pre-application Meeting: / / With:
Complete Application Accepted: / / By:
Fee Received: / / $ Receipt #: Scheduled Hearing Date: / / 

715-265-4686 St. Croix County Government Center 7161 Carmichael Road, Hudson, WI 54016
WWW.CO.SAINT-CROIX.WI.US 715-265-4686 (Fax)
APPLICATION INFORMATION

Property Owner: Robert Crosby, Jr. Contractor/Agent: Vista Sand, Ltd.
Mailing Address: 1175 Rustle Road R3 Mailing Address: 3549 Monroe Hwy
Glenwood City, WI 54013 Cranbury, TX 76039
Daytime Phone: (715) 265.7012 Daytime Phone: (254) 717.3110
Cell: (___) ___________ Cell: (___)
E-mail: sherryrobcroby@hotmail.com E-mail: ig@gcpgq.com

SITE INFORMATION

Site Address: see description attached
Property Location: ___ 1/4, ___ 1/4, Sec. ___ T. 80 N., R. 15 W., Town of Glenwood
Computer #: see attached Parcel #: see attached

LAND USE INFORMATION

Zoning District: (Check one): ( ) AG. ( ) AG. II ( ) AG. RES. ( ) RESIDENTIAL ( ) COMMERCIAL ( ) INDUSTRIAL
Overlay District: (Check all that apply): ( ) SHORELAND ( ) RIVERWAY ( ) FLOODPLAIN ( ) ADULT ENTERTAINMENT
State the nature of your request: Nonmetallic mining operation in a residential zoned area

☐ More than one request with this application? (See the supplemental fee amount below and attach the appropriate addendums.)

Zoning Ordinance Reference 17.16(6)(a)

FEES

Application Fee: $175 x (number of additional requests) $175
Supplemental Fees: $175 x (number of additional requests) $175
Total Fees: $2,015

I attest that the information contained in this application is true and correct to the best of my knowledge.

Property Owner Signature: Robert Crosby, Jr.
Contractor/Agent Signature: __________________________

Date: June 3, 2012

Pre-application Meeting: / / / With:
Complete Application Accepted: / / / By:
Fee Received: $ / / / $ Receipt #: ___________ Scheduled Hearing Date: / / /
SPECIAL EXCEPTION APPLICATION

APPLICANT INFORMATION

Property Owner: Scott Yelken
Contractor/Agent: Vista Sand, Ltd.
Mailing Address: 1274 Ruesic Road R4
Glenwood City, WI 54013
Mailing Address: 3549 Monroe Hwy
Branbury, TX 74049
Daytime Phone: (715) 868-4444
Daytime Phone: (254) 777-5110
Cell: ___________________ Cell: ___________________
E-mail: scootyelken@hotmail.com E-mail: rj@gcpeq.com

SITE INFORMATION

Site Address: see description attached
Property Location: 1/4, 1/4, Sec., T. 36 N., R. 16 W., Town of Glenwood
Computer #: see attached Parcel #: see attached

LAND USE INFORMATION

Zoning District: (Check one): ( ) AG. ( ) AG. II ( ) AG. RES. ( ) RESIDENTIAL ( ) COMMERCIAL ( ) INDUSTRIAL Overlay District: (Check all that apply): ( ) SHORELAND ( ) RIVERWAY ( ) FLOODPLAIN ( ) ADULT ENTERTAINMENT

State the nature of your request: Nonmetallic mining operation in ag. residential zoned area

More than one request with this application? (See the supplemental fee amount below and attach the appropriate addendum.)

FEES

Application Fee: $175 x _______ (# of additional requests) $175
Supplemental Fees: $175 x _______ (# of additional requests) $175
Total Fees: $________________________

I attest that the information contained in this application is true and correct to the best of my knowledge.

Property Owner Signature: ___________________________ Date: 6/1/2012
Contractor/Agent Signature: ___________________________ Date: 6-4-2012

Pre-application Meeting: ______/____/____ With: __________________________
Complete Application Accepted: ______/____/____ By: __________________________
Fee Received: ______/____/____ $ ______ Receipt #: __________________ Scheduled Hearing Date: ______/____/____

715-396-2280 St. Croix County Government Center
PO. Box 201, Hudson, WI 54016
715-396-6864 (FAX) www.co.stc.rn.wi.us
SPECIAL EXCEPTION CRITERIA

Pursuant to the St. Croix County Zoning Ordinance Section 17.70(7), please answer the following questions to justify the approval of your request (attach additional paper if necessary):

1) Describe the details of your request.

A special exception is requested for the described parcels for nonmetallic mining operations.

2) Describe the impact of your request on the enjoyment and value of surrounding properties. If there is no impact, explain why.

The mining is proposed to take place over a span of 24 years, and at any one time, no more than 20 acres will be open for mining. Prior to mining, the land use will remain in the current land use. Following post-mining reclamation, the land will be reclaimed to agricultural or forested, which is the current use. Mining activities will be screened from neighboring homes.

3) Describe the compatibility of your request with the uses and character of the surrounding area.

There are other approved, nonmetallic mining operations in the area, so this operation will not change the character of the surrounding area. The majority of the site will be similar to the current land use, with the exception of the 20 or less acres being mined including the area for processing.

4) Describe how your request is consistent with the spirit and intent of the zoning district in which your property is located. (Please refer to the purpose statement for your zoning district in the St. Croix County Zoning Ordinance.)

The purpose of agricultural-residential zoning district is to establish areas within which agricultural uses, commercial uses serving agriculture, and limited commercial, institutional residential uses may be located. The Agricultural Residential District is intended to include areas in which exclusive agricultural use on an area-wide basis is not warranted due to such factors as the existence of mixed uses prior to the date the district was established and located, demonstrated or expected ability of farm and selected nonfarm uses to exist in close proximity without undue conflict or a determination that the area is in a state of transition to urban residential character. Nonmetallic mining has long been performed in rural areas zoned agricultural residential due to the large area of land required and the location of the desired resources.
5) Describe how your request will impact public health, safety, and general welfare. What measures will you take to minimize any negative impacts?

The mine operator will practice best methods with respect to public health, safety, and general welfare. The mines are regulated by strict safety standards, and the operations take steps to minimize impact to the general welfare of the surrounding area by screening operations, using noise minimization techniques, and other engineered designs. Public access to the mine site will be restricted.

Examples of specific measures that may be taken to minimize negative impacts include constructing berms to screen the mining operations from view and to minimize the noise impacts, using flashing lights in lieu of audible back up warning devices, using water to prevent mitigation of dust from the site, and leaving a wooded buffer around the mine where possible.

6) How will you ensure that your request will not constitute a nuisance by reason of dust, smoke, odor, or other similar factor? What measures will you take to prevent a nuisance?

The mine owner will ensure that the site will not constitute a nuisance for any reason. The trucking route will be established with an emphasis on a safe route. The route in St. Croix County is completely on County and State Highways, with just a short section on CTH G. Water will be applied to minimize dust at the site and along the temporary roads. The mined areas will all meet the required 100-foot setback distance, and in most areas, are significantly further from homes and roads.

7) Additional comments:

The proposed mine is expected to bring jobs to the area for a long duration. There is a similar mine located in the area, so that the character of the area is not expected to change because of this mine. The Owner will take all measures necessary to minimize impacts to the surrounding area and to return the area to a similar state when mining operations have ceased. The Owner has provided the Financial Assurance required by the County for the nonmetallic mining project.

THE FOLLOWING USES REQUIRE A SUPPLEMENTAL INFORMATION SHEET:

( ) Major Home Occupation  ( ) Contractor Storage Yard  ( ) Airstrip
( ) >1 Animal Unit/Acre  ( ) Filling & Grading  ( ) Wireless Communication Tower
( ) Nonmetallic Mining  ( ) Adult Entertainment  ( ) Commercial/Industrial District Use
( ) Lower St. Croix Riverway  ( ) Shoreland  ( ) Floodplain
( ) Junk/Salvage Yard, Kennel, Slaughterhouse, or Limited Commercial Recreational Use

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GENERAL SPECIAL EXCEPTION APPLICATION PROCEDURE

APPLICATION:
The deadline for application submittals is the first Monday of the month before the regularly scheduled St. Croix County Board of Adjustment meeting. The Board of Adjustment generally meets on the 4th Thursday of the month.

Applications will not be accepted until the applicant has:
- met with the Zoning Administrator to review the application;
- original plus 12 copies of the completed application submitted to the Zoning Administrator;
- resolved any land use violations and paid any outstanding fees owed to the Planning and Zoning Department;
- signed the application form (the signatures of the property owners and agents acting on their behalf are required); and
- submitted the appropriate application fee (nonrefundable) payable to St. Croix County.

REVIEW:
The Zoning Administrator will review the application for completeness and assign a file number to the application. The Zoning Administrator may require additional information and will notify the applicant of this within 10 days. Upon receiving a complete application and supporting documents, the Zoning Administrator will:
- schedule a public hearing with the St. Croix County Board of Adjustment and notify the applicant by mail of the date and time of the public hearing;
- notify adjoining property owners of the applicant’s request;
- publish a public hearing notice in the local paper;
- send copies of the applications to the appropriate town and reviewing agencies for comment. Applicants are encouraged to contact their town and attend their town meeting to discuss their application;
- schedule a site visit to the applicant’s property, at which time the applicant shall flag all applicable property/project corners and label the flags accordingly; and
- prepare a staff report on the application. The staff report will be mailed to the applicant and will be available for public review during the week prior to the public hearing.

ACTION:
Special exception use permits are granted at the discretion of the St. Croix County Board of Adjustment. They are made available to validate uses that, while not approved within the zoning district in question, are deemed to be compatible with approved uses and/or not found to be hazardous, harmful, offensive or otherwise adverse to other uses. Special exceptions are subject to conditions, compatibility with surrounding land uses, and compliance with the St. Croix Zoning Ordinance.

At the public hearing, the applicant may appear in person or through an agent or an attorney of his/her choice. The applicant/agent/attorney may present testimony, evidence and arguments in support of his/her application. The fact that an application for a permit has been filed does not automatically mean that a permit is granted.

Upon the Board making a decision on the application, the Zoning Administrator shall notify the applicant of the decision in writing. All site plans, pictures, etc. become the property of the Zoning Department and will remain in the file.

CHECKLIST FOR COMPLETE APPLICATION

☐ Completed and signed application form with fee.
☐ Original plus 12 copies needed.
☐ Addendum for additional requests and/or supplemental information sheet (if required).
☐ Recorded Warranty Deed (may be obtained at the Register of Deed’s office).
☐ A complete site plan prepared by a registered surveyor showing:
  - project location in the town;
  - lot/parcel dimensions with property lines and all applicable setbacks;
  - minimum of 10-foot contours as determined appropriate by the Zoning Administrator;
  - location of all existing and proposed structures and their square footage and distance from setbacks;
  - location of existing and proposed POWTS, wells, driveways, parking areas, access, signs, and other features; and
  - location of navigable waterways with accurate OHWM, delineated wetlands, floodplains, bluff lines, slopes in excess of 12%, wooded areas, and any other unique limiting conditions of the property.
☐ Other information:

NOTE: All maps, plans, and engineering data shall be no larger than 11” x 17”. No covers, binders, or envelopes. Staple or paperclip your application in the upper left-hand corner.
Appendix I - Operation Plan

References to the St. Croix County Code of Ordinances Land Use and Development Chapter 14 Nonmetallic Mining are noted in italics.

I.1. Operator and Location Information - 14.5 A.2.a.1)
VISTA Sand, Ltd.                 Portions of Sections 35 and 36 of T30N, R15W
Contact: RJ Sikes                  Town of Glenwood
3549 Monroe Hwy                       St. Croix County
Granbury, TX 76049                     Wisconsin
254.717.5110                               
rj@gepdq.com

I.2. Mining Dates - 14.5 A.2.a.2)
Mining Start Date: April 15, 2013
Mining End Date (projected): November 1, 2039
The actual beginning and ending of the mining season will vary each year, with mining will generally taking place April through November depending on temperature and weather patterns.

At the end of each mining season, the operator will have measures in place so that the mine can remain unsupervised during the winter months. Erosion control measures will be in place to ensure no environmental pollution or erosion will occur. Access to the mine site will be restricted through use of locked gates at the mine entrance.

I.3. Mining Methods - 14.5 A.2.a.3)
Sandstone will be extracted using earthmoving equipment, including backhoes, dozers, front end loaders, conveyors, and trucks. Blasting will also be completed as needed to extract sandstone from the site. The site will contain both primary and secondary wet process plants.

Solid wastes other than nonmetallic mining refuse will be disposed of in accordance with the applicable rules of Wisconsin Statutes Chapters 289 and 291, at a facility approved to receive solid waste.

Prior to disturbing the mine site, all necessary measures for diverting and draining runoff from the site will be in place to prevent pollution and erosion. Neighboring properties will not be adversely impacted by runoff from mining operations.

I.4. Machinery and Equipment - 14.5 A.2.a.4)
Sandstone will be extracted using earthmoving equipment, including backhoes, dozers, front end loaders, conveyors, and trucks. Blasting will also be completed as needed to extract sandstone from the site. The site will contain both primary and secondary wet process plants.

All petroleum products stored onsite will be stored in state approved fuel storage containers in accordance with federal standards for fueling and storage areas.
I.5. **Estimated Volumes - 14.5 A.2.a.5)**

It is estimated that 1 million tons will be removed each year over the 27 year life of the mine. Several variable factors will dictate the actual amount of material removed. Initial projections are listed in the following table:

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<th>Length of Phase (YR)</th>
<th>Phase</th>
<th>Estimated Volume (CY)</th>
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The mining boundary will be marked as directed by the Zoning Administrator with stakes made with durable material. Because portions of the mine site will be used for agricultural purposes prior to being actively mined, these locations will be temporarily marked where possible for the Zoning Administrator’s initial review, and marked as described above just prior to commencement of mining in that area. GPS coordinates of the temporary markings will be recorded for subsequent location of the boundary.

I.6. **Estimated Total Volume - 14.5 A.2.a.6)**

The total estimated volume to be removed throughout the life of the mine is 24,821,000 cubic yards. This number will be updated on an annual basis with the volume removed and the project volume yet to be removed.

I.7. **Proposed Travel Routes - 14.5 A.2.a.7)**

The full trucks will exit the mine onto CTH G and travel west to HWY 128, then south along HWY 128, and then east along HWY 12 to the rail spur. Empty trucks will travel the reverse route: west along HWY 12, north along HWY 128, and east along CTH G to the mine site.

I.8. **Days and Hours of Operation - 14.5 A.2.a.8)**

The processing plant will be operated up to 24 hours per day, 6 days per week, from late April through November of each year, depending on temperature. Mining will occur fourteen hours per day Monday through Friday, and twelve hours per day on Saturday per the township’s request. Trucking from the site will occur during the hours allowed by the County.
I.9. **Impact Minimization Techniques - 14.5 A.2.a.9)**

The site will be screened from adjacent land by use of temporary berms. The temporary berms will be constructed with topsoil and subsoil from the plant area and initial open mine area and will be seeded. The south end of the site is on top of a hill and generally will not be visible from the adjacent roadways. The exception is a short stretch of the mine site along Rustic Road 4, and the road is at a higher grade than the current ground elevation at the edge of the mine site, so that mining activities will be downhill from the road and minimally visible. The north edge of the mine has approximately ½-mile exposure along CTH G. Berms will be constructed along CTH G where mining operations are not screened by wooded vegetation. Because a creek runs along CTH G on the north side, there are no homes along this area of CTH G except for one home on the south side of the road. The home has wooded areas to the west and south, and will be screened from mining operations. The west edge of the mine bisects property owned by the mine site owners and the nearest roadway is at a higher elevation then the mine site. The majority of the east edge of the mine is in wooded areas and will be screened from sight.

Site erosion control will include silt fence, temporary and permanent vegetation, erosion mat, and ditch checks as detailed in the reclamation plan and storm water management plan.

Noise from mining operations will be minimized by wooded buffers and distance from homes. Berms will be constructed as necessary. Construction equipment will be new or well maintained so that the equipment does not produce excessive noise. Equipment will receive periodic inspection and maintenance to ensure that the noise reduction features are working properly.

Dust from mining operations will be minimized by application of water. Tracking pads will be constructed at the mine entrance to keep dirt and dust contained within the site.

The mine operator will enforce a strict policy with regards to the standards of trucking the material from the mine to the rail loading facility. Every load must be covered before leaving the site. Standard procedure for a truck leaving the site will include verification that the load is covered.

I.10. **Topsoil Stripping and Storage Methods - 14.5 A.2.a.10)**

Topsoil will be stripped from the site using earthmoving equipment, including backhoes, dozers, front end loaders, conveyors, and trucks. A-horizon and B-horizon soils will be stored separately at the site according to the reclamation plan. The soils from Phase 2 will be spread on Phase 1, and will follow this sequence until the entire mine is complete, with the soils from Phase 1 applied to the final phase. While stored, the soils will be stabilized with temporary vegetation.

I.11. **Water Needs - 14.5 A.2.a.11)**

The quantity of water needed for mining will be obtained from a new 500 to 1,000 gallon per minute high capacity well. The process water will be recycled on site and well water will be used for make-up water as needed. Monitoring wells have been installed to verify water table elevations and ensure the well does not impact surrounding property owners.

Initially, a large volume of water will be needed to fill the process ponds. Once full, it is anticipated that, through evaporation, the removal of wet sand from the site, and other
processes, the level in the ponds will slowly decrease so that the operator will need to pump a relatively small amount of make-up water periodically to fill the ponds. Following the first year of operation, a fairly accurate estimate of the annual water needs can be provided.

The other use of water is for dust mitigation during dry periods. The sand product is removed from the ground moist, washed and sorted in a wet process, and hauled from the site while still wet. If stockpile surfaces begin to dry, they will be moistened to keep dust from blowing from the stockpiles. Haul roads will also be moistened to mitigate mobilization of fine materials.

I.12. **Mining in Groundwater - 14.5 A.2.a.12)**
Not applicable

Stump burial location coordinates will be provided with the annual report.

Prior to placement, the process reject material will be stockpiled and tested to determine levels of coagulant in the material.

The Fuel Spill Response Plan is included as Appendix R to the Nonmetallic Mining Permit Application.
Appendix J - Reclamation Plan

References to the St. Croix County Code of Ordinances Land Use and Development Chapter 14 Nonmetallic Mining are noted in italics.

J.1. Operator and Location Information - 14.6 A.2.a.1)
VISTA Sand, Ltd. Portions of Sections 35 and 36 of T30N, R15W
Contact: RJ Sikes Town of Glenwood
3549 Monroe Hwy St. Croix County
Granbury, TX 76049 Wisconsin
254.717.5110
rj@gcpdq.com

J.2. Reclamation Plan Overview - 14.6 A.2.a.2)
The property owner of the mine site currently utilizes the non-wooded areas of the property for tilled agricultural farming and the wooded areas for recreation, such as hunting. The duration of mine operation is expected to be 27 years. The property owner will continue to farm portions of the property that are currently farmed and not yet opened for mining. After mining, a portion of the area will be reclaimed for agricultural. The property owner and/or mine operator will purchase a tree spade and transplant trees during clearing of land to prepare for mining to reclaimed areas to help establish wooded areas.

A stable and safe condition will be restored for all areas impacted by mining operations. Final reclaimed slopes covered by topsoil material will not be steeper than a 3:1 horizontal to vertical incline.

J.3. Roads, Buildings and Other Structures - 14.6 A.2.a.3)
See Figures 3A and 3B.

All structures constructed for processing sand will be removed following cessation of the processing plant operation. Haul roads internal to the site will remain if desired by the land owners. Storm water ponds will be removed during the continuous reclamation. Process water ponds will be removed following cessation of mining. The high capacity well will be abandoned. Material storage areas will be reclaimed to agricultural areas. Berms will be removed and the material used for reclamation with the required amendments to support the end land use.

J.4. Topography Post-Reclamation - 14.6 A.2.a.4)
See Figure 5.

The topography following reclamation will be gently rolling terrain with steeper terrain (not to exceed 3:1 slopes) near the south and east boundaries of the mine site. The majority of the steeper slopes and highest elevations will be established as wooded areas for wildlife habitat. The flatter elevations will be reclaimed for agriculture.
J.5. **Topsoil for Reclamation - 14.6 A.2.a.5)**
See Tables 1A and 1B.

Topsoil will be stripped from the site using earthmoving equipment including backhoes, dozers, front end loaders, conveyors, and trucks. A-horizon and B-horizon soils will be stored separately at the site. The soils from Phase 2 will be spread on Phase 1, and will follow this sequence until the entire mine is complete, with the soils from Phase 1 applied to the final phase. By reapplying the topsoil soon after it is removed, the active soil biology is maintained.

The volume of topsoil to be stockpiled is adequate for reclamation. Topsoil that is not immediately applied to the previous phase for reclamation will be stabilized by temporary seeding, and will have silt fence surrounding it to prevent the topsoil from leaving the stockpile in storm water runoff.

Process reject material will be stockpiled in berms. After mining commences in the subsequent mining phase area, process reject material returned to the mine site will be used during interim and final reclamation of the previous mine phase area. Process reject material will be used first for reclaiming side slopes and remaining process reject material, if any, will be used for floor reclamation. The topsoil will be reapplied using earthmoving equipment as soon as the extraction phase is complete and reject material has been placed.

Topsoil redistribution methods will minimize compaction and prevent erosion. Redistillation will be uniform across the site unless environmentally undesirable. Topsoil shall not be placed during or after a precipitation event until it can be redistributed effectively.

J.6. **Earthwork Methods/Machinery/Equipment - 14.6 A.2.a.6)**

Sandstone will be extracted using earthmoving equipment, including backhoes, dozers, front end loaders, conveyors, and trucks. Blasting will also be completed as needed to extract sandstone from the site. The site will contain both primary and secondary wet process plants.

Final reclaimed slopes covered by topsoil will not be steeper than a 3:1 horizontal to vertical incline. Topsoil redistribution will not take place during or immediately after a precipitation event, until the soils have sufficiently dried.

J.7. **Reclamation Cost - 14.6 A.2.a.7)**
The estimated total land reclamation cost is $9,911,170. The reclamation cost for the structures is estimated to be an additional $197,500. The estimated total cost of reclamation is $10,108,670. Initial projections by phase are listed in the table below. The reclamation cost for the structures would be realized following Phase 32.

<table>
<thead>
<tr>
<th>Phase</th>
<th>Estimated Cost</th>
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<td>$128,009</td>
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</table>
### J.8. Erosion Control Measures - 14.6 A.2.a.8)
Erosion control BMPs will be utilized in those areas, if any, where severe erosion occurs during reclamation. In areas where erosion problems occur (i.e. long slopes, steep slopes, concentrated flow channels, failed revegetation, etc.) increasingly engineered BMPs will be applied to address erosion and ensure establishment of the end land use and associated vegetation. Erosion control measures in place at the reclaimed mine site will be maintained until reclamation is complete. Construction and materials specifications for erosion and sediment control structures are included in the WisDOT Standard Specifications for Highway and Structure Construction.

### J.9. Disposition of Man-Made Features and Related Facilities - 14.6 A.2.a.9)
Man-made features to be constructed on the site include storm ponds, a process water pond, process plant, thickener/clarifier, screening towers, associated processing equipment, wells, berms, and access roads. The process plant and equipment will be salvaged for reuse or scrapped after closure of the mine. Berms will be removed as part of the final reclamation. Storm ponds that are not part of the final reclamation plan will be removed.

### J.10. Reclamation Cost - 14.6 A.2.a.10)
The estimated total land reclamation cost is $9,911,170. The reclamation cost for the structures is estimated to be an additional $197,500. The estimated total cost of reclamation is $10,108,670. Initial projections by phase are listed in the table below. The reclamation cost for the structures would be realized following Phase 32.

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<tr>
<td>Total</td>
<td>$9,911,170</td>
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</tbody>
</table>

**J.11. Revegetation - 14.6 A.2.a.11)**

All disturbed surfaces will be restored, reclaimed, and/or restabilized following mining except for permanent roads or other surfaces identified by the mine operator and agreed to by the landowners. Restoration of the mined area phase shall be completed as soon as practicable after mining activity is completed for an area of the site.

The post-mining land use will be for agriculture and wildlife habitat. Revegetation is intended to provide stabilization of all reclaimed areas including side slopes, bottomlands and hilltops. Revegetation will occur during the growing season when soil conditions are suitable. Based on the post-mining land use, the following activities are proposed to achieve successful revegetation.

The seedbed will be prepared using discs, harrows or other equipment to obtain an even and loose seedbed. Prepared areas will be seeded as soon as practicable. Seeding will be performed using the best available methods. Revegetation will be completed using an appropriate seed mixture to establish vegetation for the proposed post-mining land use. Disturbed areas will be seeded as soon as practicable. A nurse crop may be used to assist the establishment of the final reclamation seed mix. Annual Oats or other agricultural crop as selected by the landowner may be used when spring planting is possible and Annual Ryegrass or Winter Wheat may be used when fall or winter planting is necessary. The Reclamation Plan describes the revegetative plan and standards in more detail.

A Nutrient Management Plan is currently being developed to assess the characteristics of the existing farmland. Reclamation procedures will include testing the characteristics of the material placed for agricultural farming and adding soil amendments as needed to establish post-mining soil quality at or above the pre-mining soil quality.


See Section J.8. (14.6 A.2.a.8))


Reclamation will occur as mining of each area ceases and mining of the next area commences considering the 20-acre maximum mining area per 14.3 A.6.b.

**J.14. Description of Temporarily Reclaimed Areas - 14.6 A.2.a.14)**

It is not anticipated that any areas will require temporary reclamation. If the need for temporary reclamation arises, the County will be notified and pertinent information will be provided to the County regarding proposed temporary reclamation areas.

**J.15. Revegetation Standards - 14.6 A.2.a.15)**

Around the majority of the mine site, there will remain a wooded buffer between the mined areas and neighboring property owners and roads. The nearest mined area
distance from CTH G is approximately 400 feet. Rustic Road 4 runs parallel to and 600 to 800 feet west of the mine. The west edge of the mine boundary is a high point, so mining activities will be naturally out of view from the road. The only area where mining will be visible from the Rustic Road is along the north edge of the northwest quarter of the northeast quarter of section 2 in the Town of Springfield (T 29 N, R 15 W), where the mine property is up to the right-of-way, but includes a 100-foot setback. Portions of the reclaimed mine site will be visible from CTH G. The post-mining land use will be agricultural and wildlife habitat, similar to the current land use.

J.16. **Existing Plant Community Baseline Data - 14.6 A.2.a.16)**
The post-mining reclamation will generally return the site to its pre-mining condition. With the flatter slopes post-mining, additional land will be reclaimed to tilled agricultural uses as desired by the landowner.

The landowners also wish to reclaim portions of the site to forested land to provide wildlife habitat. In many areas, a wooded buffer will be preserved near the mined area boundaries. Restoration on the slopes near the boundaries will likely include forest plantings or transplanted trees. The landowner and/or mine operator will transplant trees from future mine phases to phases previously or concurrently being reclaimed. Portions of cut trees (tree-tops or trees undesirable for logging) may be transferred to previously reclaimed areas to enhance wildlife habitat.

J.17. **Long-Term Safety of the Reclaimed Mine Site - 14.6 A.2.a.17)**
The reclaimed mine site will be safe for the proposed uses of agriculture and wildlife habitat. The steepest slope of the reclaimed site will be 3:1 as indicated on Figure 5. All restored surfaces will be vegetated.

J.18. **Financial Assurance - 14.6 A.2.a.18)**
Financial assurance will be provided in form of a bond from the mine operator, payable to St. Croix County. The amount required for financial assurance shall be reviewed annually.

J.19. **Signed Certification of Reclamation Plan - 14.6 A.2.a.19)**
The signed certification of the reclamation plan is included at the beginning of the Permit Application.
Appendix K - Well Replacement Program

The County has requested a Well Replacement Program within 1-mile of the nonmetallic mining site. Figure 3C includes a 1-mile buffer around the mine site. Considering the Village of Downing has private wells, there is a large quantity of wells within the 1-mile buffer, and this may also include a Glenwood City Municipal Well.

Prior to commencement of mining operations, all wells within 1-mile of the mine site boundary will be identified through public posting of a boundary map and submittal of private well information from the private well owner to the mine operator or the mine operator’s representative. Private well information shall include the following:

1. Well Construction Report
2. Date of most recent well pump installation
3. Any additional information available

The Mine Operator of Mine Operator Representative will not monitor water levels in private wells due to the potential for 1) level measurement equipment becoming trapped in the well and 2) contamination of the private well.

Well and/or Pumping Equipment Replacement will be considered if one of the following conditions occurs:

1. The water level in the well drops to a sustained low level due to pumping of the high capacity well at the mine site.
   It is recognized that seasonal variations in water levels occur due to precipitation patterns and aquifer replenishment rates. The data from the one temporary and five permanent monitoring wells will be periodically analyzed to determine the facility’s impact on the water levels in the aquifer. The mine owner will also request water level information from transient, non-community wells in Downing and municipal wells in Glenwood City. If a water level is required from a private well, a private well contractor will be hired by the well owner, with costs reimbursed by the Mine Operator if it is determined that a) the water level has dropped due to operation of the mine’s high capacity well and b) the lower water level caused the failure of the pumping equipment.
   If it is determined that the water level has dropped, the well will be analyzed to determine if lowering of the well pump is feasible to remedy the problem or if the well must be deepened to achieve adequate supply.

2. The water quality in the well deteriorates to an unacceptable level.
   All well owners entering into the Well Replacement Program consent to random sampling of their private well water so that the quality can be observed to monitor for changes in quality. The well replacement program may include temporary supplies of bottled water for drinking and cooking purposes while the well water quality is observed. Water quality sampling shall be performed by
the private well owner, and witnessed by a representative of the mine operator. Costs of water quality testing will be reimbursed by the Mine Operator if it is determined that the water quality has been impacted as a result of operation of the mine. If it is determined that the water quality has deteriorated to an unusable state, the mine operator shall consider treatment equipment installation or well replacement. If treatment equipment is installed, the cost for operating and maintaining the treatment equipment shall be the responsibility of the private well owner.

In order to finance the Well Replacement Program, the mine operator shall maintain funds in an account.
Appendix N - Flocculant Management Plan

In order to maximize the ability to reuse and recycle water at the mine site, flocculant will be used to enhance settling of solids in the process water. Flocculants are frequently used in the mining industry, as well as in municipal water treatment plants and wastewater treatment plants.

The flocculant management plan includes information about chemical storage, chemical use, and chemical fate.

Flocculant comes in a dry or emulsion form. Most plants use the dry form because it is both less expensive and more effective. The dry flocculant is delivered in 55 pound bags and is stored in a covered or enclosed area out of the elements. Chemical use is determined by how many bags of flocculant are used over a given period of time. Dry polymer (flocculant) is mixed with water to a concentration that has been determined (usually 0.05 to 0.5 percent) to provide the required solids settling rate and desired water clarity. Once mixed, the flocculant is stored in an aging tank until it is fed to the thickener.

Prior to start up, samples of the material will be jar tested to determine the optimal flocculant type and dosage to minimize flocculant use and maximize water reuse. Chemical dosage will be optimized by the mine operator during operation.

Typically, flocculant is fed to the thickener via a variable speed progressive cavity pump. Flocculant pump speed (dosing rate) is determined based on the operators visual evaluation of the flocculant’s effectiveness or it can be controlled by an electronic sensor that measures the clarity of water in the thickener.

A process water pond will contain approximately 900,000 gallons of water to be used in the processing of the sand. A high capacity well on the mine site will be used to supply water to the process water pond. The site will be graded so that drain water from wet stockpiles drains to the process water pond. Periodically, accumulated solids, composed of a combination of both flocculant and fine material, will be removed from the process water pond and used in reclamation.

The lagoons will be cleaned annually, with decant water removed prior to freezing weather, and the thawed decant water removed following spring thaw. The significantly reduced volume of solids will be incorporated into reclamation.
Appendix N - Mixing and Dosing System Description

- Flocculant (polymer) is added to a hopper where a variable speed screw feeder mixes it with incoming fresh water. Speed of the screw feeder is dependent on desired solution strength of flocculant. Typical solution strengths range from 0.05% - 0.5%. If an emulsion type flocculant is used, the dry floc hopper and feeder would be replaced by an emulsion tank and variable speed positive displacement pump.

- Solution enters the mix tank where it is gently mixed for a certain amount of time to allow the flocculant to “activate.” The mix tanks are typically automated with high and low level sensors that are used mix the flocculant automatically.

- Once mixed, solution is transferred to the aging/dosing tank by automatic valve or pump where it is stored and then pumped to the thickener by a variable speed positive displacement pump. This pump speed can be controlled manually or it can be controlled automatically by an electronic sensor in the thickener that measures water clarity.

- Flocculant dosage is typically determined by the total flow in gallons per minute to the thickener/clarifier along with the tons per hour of solids within the given flow.
Appendix N - Thickener Process Description

1. Feed enters the velocity break box where excess energy is removed from the slurry prior to entering the Thickener feed pipe.
2. Flocculant is added into the feed pipe and mixes with the solids, forming larger agglomerations that will rapidly settle to the bottom of the Thickener.
3. The feed well is oversized allowing entrapped air, contained within the feed slurry, to rise and dissipate so it does not enter the main settling zone within the Thickener.
4. Flocculated solids settle to the bottom of the Thickener, compacting in what is known as the compression zone, creating a dense slurry.
5. The dense Thickener solids are raked to the thickener’s underflow cone and are removed via a slurry pump through the underflow pipe. Underflow slurry densities can vary based on the type of material being processed, size distribution of solids being settled, or other process factors but as a general rule, range from 35-50% solids by weight. Thickener underflow is pumped to a slurry containment (settling) pond where the water and solids are allowed more time to further separate. The clean water generated in the slurry pond can then be pumped back into the clean water storage tank and reused in the wash plant.
6. Clean water rises to the top of the Thickener and overflows a peripheral weir into a collection launder.
7. Once collected in the overflow launder, clean water exits through a single flanged outlet and can flow via gravity to a water storage tank or clean water pond where it is available for immediate reuse in the wash plant.
MATERIAL SAFETY DATA SHEET
REVISION DATE: 9/1/2011

1. IDENTIFICATION OF THE PRODUCT AND THE COMPANY
Product: CW16PWG
Supplier: Clearwater Industries, Inc.
9446 N. 107th Street
Milwaukee, WI 53224
Tel: 414-365-1200
Fax: 414-365-0200

2. COMPOSITION/INFORMATION ON INGREDIENTS
Identification of the preparation: Anionic water-soluble polymer

3. HAZARDS IDENTIFICATION
Aqueous solutions or powders that become wet render surfaces extremely slippery

4. FIRST AID MEASURES
Inhalation: No hazards which require special first aid measures.
Skin contact: Wash with water and soap as a precaution. In case of persistent skin irritation, consult a physician.
Eye contact: Rinse thoroughly with plenty of water, also under the eyelids. In case of persistent eye irritation, consult a physician.
Ingestion: No hazards which require special first aid measures.

5. FIRE-FIGHTING MEASURES
Suitable extinguishing media: Water, water spray, foam, carbon dioxide (CO2), dry powder
Special fire-fighting precautions: Aqueous solutions or powders that become wet render surfaces extremely slippery.
Protective equipment for firefighters: No special equipment required.
Flash point: Not applicable
Autoignition temperature: Not applicable

6. ACCIDENTAL RELEASE MEASURES
Personal precautions: No special precautions required.
Environmental precautions: As with all chemical products, do not flush into surface water.
Methods for cleaning up: Do not flush with water. Clean up promptly by sweeping or vacuum. Keep in suitable and closed containers for disposal. After cleaning, flush away traces with water.

7. HANDLING AND STORAGE
Safe Handling Advice: Avoid contact with skin, eyes and clothes. Avoid dust formation.
Do not breathe vapours/dust. Wash hands before breaks and at the end of workday.
Storage: Keep in a dry, cool place (0-35°C).

In case of emergency call Clearwater Industries at 1-800-949-1880 or 1-414-365-1200.
8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering controls: Use local exhaust if dusting occurs.
Natural ventilation is adequate in absence of dusts.

PERSONAL PROTECTION EQUIPMENT

- Respiratory protection: Dust safety masks are recommended where concentration of total dust is more than 10 mg/m3.
- Hand protection: Rubber gloves.
- Eye protection: Safety glasses with side-shields. Do not wear contact lenses.
- Skin protection: Chemical resistant apron or protective suit if splashing or contact with solution is likely.

Hygiene measures: Wash hands before breaks and at the end of workday. Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form: granular solid
Color: white
Odor: none
pH: 4-9 @ 5 g/l
Melting point (°C): Not applicable
Flash point (°C): Not applicable
Autoignition temperature (°C): Not applicable
Vapour pressure (mm Hg): Not applicable
Bulk density: 0.80
Water solubility: Completely miscible
LogPow: ~ 0

10. STABILITY AND REACTIVITY

Stability: Product is stable. Hazardous polymerisation does not occur.
Conditions to avoid: Oxidizing agents may cause exothermic reactions.
Hazardous decomposition products: Thermal decomposition may produce. Nitrogen oxides (NOx), carbon oxides (COx).

11. TOXICOLOGICAL INFORMATION

Acute toxicity

- Oral: LD50/oral/rat > 5000 mg/kg
- Dermal: The results of testing on rabbits showed this material to be non-toxic even at high dose levels.
- Inhalation: The product is not expected to be toxic by inhalation.

Irritation

- Skin: The results of testing on rabbits showed this material to be non-irritating to the skin.
- Eyes: Testing conducted according to the Draize technique showed the material produces no corneal or iridial effects and only slight transitory conjunctival effects similar to those which all granular materials have on conjunctivae.

Sensitization: The results of testing on guinea pigs showed this material to be non-sensitizing.
Chronic toxicity: A two-year feeding study on rats did not reveal adverse health effects. A two-year feeding study on dogs did not reveal adverse health effects.
12. ECOLOGICAL INFORMATION
- Fish LC50/Danio rerio/96 hr > 100 mg/L (OECD 203) (Based on results obtained from tests of analogous products.)
- Algae: IC50/Scenedesmus subspicatus/72hr > 100 mg/L (OECD 201) (Based on results obtained from tests of analogous products.)
- Daphnia: EC50 /Daphnia magna/48 hr > 100 mg/L (OECD 202) (Based on results obtained from tests of analogous products.)

Bioaccumulation: Does not bioaccumulate.
Hydrolysis: Does not hydrolyse.
Persistence / degradability: Not readily biodegradable.

13. DISPOSAL CONSIDERATIONS
Disposal: Dispose of in accordance with local, state and federal regulations.
Container: Rinse empty containers with water and use the rinse water to prepare the working solution. Can be landfilled or incinerated, when in compliance with local regulations.

14. TRANSPORT INFORMATION
DOT
Remarks: Not classified as dangerous in the meaning of DOT regulations.
IMDG/IMO
Remarks: Not classified as dangerous in the meaning of IMO/IMDG regulations.
ICAO/IATA
Remarks: Not classified as dangerous in the meaning of ICAO/IATA regulations.

15. REGULATORY INFORMATION
US SARA Reporting Requirements
SARA Title III Sections
Sara(311,312) hazard class: Not Concerned

State Regulations
The following statement is made in order to comply with the California Safe Drinking Water and Toxic Enforcement Act of 1986. This product contains substance(s) known to the State of California to cause cancer: Acrylamide.

16. OTHER INFORMATION
NFPA and HMIS Ratings:
NFPA:
Health: 1
Flammability: 1
Instability: 0

HMIS:
Health: 1
Flammability: 1
Physical /Hazard: 0

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release, and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process unless specified in the text.
The Nutrient Management Plan is currently being developed and will be submitted to the County for approval prior to commencement of mining activities.
Appendix Q - Ambient Air Monitoring Program

An ambient air monitoring program for particulate matter less than 10 microns in diameter (PM_{10}) will be implemented for the Vista Sand, Ltd. (Vista) Glenwood City wet plant and mine located in the Town of Glenwood, T30N, R15W, Sections 35 and 36, St. Croix County, Wisconsin.

The ambient air monitoring program is required under NR 415.075(4) which requires ambient air monitoring to be conducted at industrial sand mines unless a waiver from this requirement has been granted by the Wisconsin Department of Natural Resources (WDNR). Vista will be requesting a waiver from this requirement. However, Vista is developing their own ambient air monitoring program consistent with the state and federal protocol.

Monitoring Site Location

The proposed monitoring site will be located at the southern edge of the Glenwood City High School and Middle School property line. The address for the Glenwood City High School and Middle School is 850 Maple Street, Glenwood City, Wisconsin. The southern edge of the Glenwood School District property line is approximately 1800 feet northwest, of the nearest open area of the mine and approximately 3,000 feet northwest of the proposed wet plant and stockpile area. Local topography is generally flat. The monitor will be sited at least 300 feet from 320th Street south of a railroad grade currently owned by the Glenwood City. Airflow to the monitor will be unobstructed from all directions and no buildings or trees will be located within 100 feet of the monitor. The monitor will be placed on a platform to achieve an air intake height of six to eight feet above grade.

This location will meet the following criteria:
1. Accessible all year; on pavement or year round vegetated surface
2. Away from heavily traveled roads, railroad line and buildings
3. Non-wooded area
4. Secure (the area will be secured with a fence)
5. Access to power
6. Located between the active mine area and the High School/Middle School

The prevailing wind directions are from the west-southwest.

The area surrounding the monitoring site is mostly lowland and flood plain.

Sampling Frequency

Even though a variance from ambient air monitoring will be requested from the WDNR, sample collection will follow the sample collection schedule established in NR 415.075(4)(a)(3). Twenty-four hour PM_{10} samples will be collected every six days for the first six months of facility operation. The monitoring schedule with comply with the US EPA monitoring schedule. It is anticipated that the ambient air monitoring will start
approximately one month prior to the commencement of mining. If ambient air emissions of PM$_{10}$ are minimal, monitoring frequency will be decreased to once per month.

**Sampling Program and Monitoring**

A Mass Flow Controlled PM$_{10}$ Ambient Air Monitor is proposed for the ambient air monitoring program. The monitor will consist of a High Vol. Plus lower section and PM$_{10}$ head. The High Vol. Plus maintains a constant mass flow through an 8" x 10" glass fiber filter in the PM$_{10}$ head. The total ambient air volume passed through the filters is recorded and stored by the microprocessor used to control the High Vol. Plus.

**Data Reporting**

Exposed filters will be sent to an analytical laboratory on a weekly basis for analysis:

Exposed filters will be submitted for PM$_{10}$ analyses.

Sampling will be conducted in accordance with the monitoring equipment procedures and procedures found in 40 CFR Part 50, Appendix J. The analytical lab will provide tared filters, analyze the sampled filters, and calculate the weight of PM$_{10}$ sampled in the air.

If the facility is granted a variance from ambient air monitoring by the WDNR, Vista is not required to submit ambient air data collected. In the event that a measured value exceeds the 24-hour National Ambient Air Quality Standards (NAAQS) for PM$_{10}$ (150 micrograms per cubic meter), the WDNR, the City of Glenwood City, the Village of Downing, the Town of Glenwood, the County, and Glenwood School District will be notified.

**Quality Assurance Program**

Vista will implement a Quality Assurance (QA) program to control and improve the quality of the monitoring data. The QA program will consist of quality control policies, procedures, and corrective actions and will generally include the following:

- **Filter Selection and Preparation**
  
  PM$_{10}$ filters are prepared and processed according to the U.S. Environmental Protection Agency (US EPA) Compendium Method IO-3.1 (US EPA, 1999) as applicable for gravimetric determination. Filter handling procedures found in 40 CFR Part 50, Appendix J will also be followed.

- **Sample Collection and Custody**
  
  The air sampler will draw ambient air at a constant flow rate into a specially shaped inlet where the suspended particulate matter is inertially separated into one or more size fractions within the PM$_{10}$ size range. Each PM$_{10}$ sample filter will be handled according to the procedures outlined in 40 CFR Part 50, Appendix J. A chain of custody form will be provided by the laboratory to accompany each set of filters transported to the field and back to the laboratory, as described in Section 8.2 of the US EPA Quality Assurance Handbook.

- **Internal Quality Control Checks**
  
  For each sample collected, the following information will be recorded:

  - Reported flow rate – verify flow rate is within 1.02 to 1.24 m$^3$/min actual flow
  - Sampling period - must be between 23 and 25 hours
- Stop and start time – must be within one hour of midnight
- Filter condition – note any visible damage
- Filter number – must match the number on the chain of custody

- **Calibration Procedures and Frequency**

Prior to and during the implementation of a sampling and analysis program, a variety of sampling and analysis equipment must be calibrated. The High Vol. Plus will be calibrated annually, or anytime the unit is moved or flow probe adjusted. Since the High Vol. Plus is set to maintain a constant mass flow, the motor automatically adjusts to changes in ambient temperature and atmospheric pressure.

In addition to annual calibration by the manufacturer, the following will be verified on a quarterly basis:

- Temperature sensor is within two degrees Celsius of actual temperature
- Pressure sensor is within 10 mm mercury of actual
- Flow rate (checked manually) is with four percent of sampler readout flow

- **Routine Maintenance Procedures and Schedule**

Routine maintenance is an important part of operating an ambient air monitoring station. Manufacturer recommendations for equipment maintenance procedures and schedules will be followed. Vista will also follow maintenance guidelines contained in Section 11 of the US EPA Quality Assurance Handbook.