

TECHNICAL REVIEW

AND DETERMINATION OF CONTINUED COMPLIANCE

FOR:

VALLEY JOIST, INC.

Lyon County, Nevada

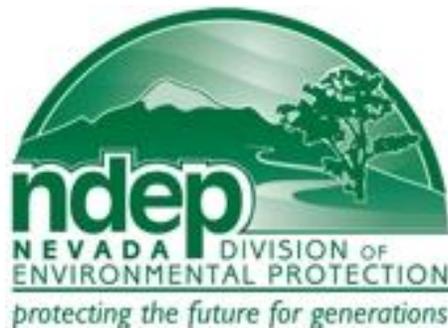
HA – 76

Class I Air Quality Operating Permit Renewal

AP3441-2437.01

FIN A0012, Valley Joist, Inc.

Air Case #13AP7360



BY

STATE OF NEVADA
DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL PROTECTION
BUREAU OF AIR POLLUTION CONTROL

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AUGUST 2013



1.0 INTRODUCTION

Valley Joist, Inc., (Valley Joist) manufactures open-web steel joists under Class I Air Quality Operating Permit AP3441-2437, issued November 26, 2008. Valley Joist applied for and received a minor revision to permit AP3441-2437 in May 2011. Valley Joist submitted a Class I renewal application for their existing permit on February 14, 2013. The Nevada Division of Environmental Protection - Bureau of Air Pollution Control (BAPC) declared Valley Joist's permit renewal application administratively complete on March 29, 2013. The facility's current permit expires on November 26, 2013.

The Standard Industrial Classification (SIC) code for this facility is 3441 "Establishments primarily engaged in fabricating iron and steel or other metal for structural purposes".

Total facility-wide PM (particulate matter) and PM₁₀ (particulate matter less than 10 microns in diameter), PM_{2.5} (particulate matter less than 2.5 microns in diameter), NO_x, SO₂ and CO emissions are below the 100 tons per year major source applicability threshold. The facility is currently operating under a Hazardous Air Pollutant (HAP) emissions cap of 9.9 tons per year of any single HAP and 24.5 tons per year of any combination of HAPs, which is below the major source threshold of 10.0 tons per year of an individual HAP and 25.0 tons per year of any combination of HAPs. The only permitted HAP emissions are from welding operations as part of joist production, and an emergency generator. The facility is also operating under a Volatile Organic Compound (VOC) emissions cap of 249.0 tons per year (tpy). VOC emissions occur primarily from paints and solvents which are used during the cleaning and coating of the steel joist materials. Valley Joist is requesting to renew both the VOC and HAPs emission caps. The Valley Joist operation in Lyon County is a Class I (or Title V) source based on the requested cap of VOC emissions of 249 tpy, which exceeds 100 tpy. Please refer to the Emissions Inventory (Appendix 1) for the facility-wide emissions calculations.

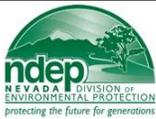
2.0 DESCRIPTION OF FACILITY AND PROCESS

2.1 FACILITY DESCRIPTION

The facility includes one building that is located on a 10.8 acre parcel (A) with an additional 7.5 acres adjacent in two parcels (B&C). The manufacturing portion of the facility is 84,300 square feet in area. The maintenance and break room is 2,346 square feet and the office area is 2,496 square feet. The building is approximately 30 feet high, 656 feet long, 371 feet wide on the east end and 152.5 feet wide on the west end. The UTM coordinates on the southwest corner of the building are North 4387.19 km, East 306.09 km.

2.2 FACILITY LOCATION

Valley Joist is located at 255 Logan Road, Fernley, Nevada (Lyon County). Fernley is located adjacent to Interstate 80, approximately 35 miles east of Reno NV. Fernley is at an elevation of approximately 4,150 feet above mean sea level. The population density of Fernley is low (528 per square mile), with a total population of approximately 20,000. The Valley Joist facility is situated within Section 11, T20N, R24E, and is located in Hydrographic Area (HA) 76. HA 76 is currently unclassified for PM₁₀, CO, NO_x, O₃, and lead criteria pollutants, which have an ambient air quality standard. HA 76 is currently designated as PSD triggered for SO₂. The triggered basin is a result of Nevada Cement, which triggered the basin for SO₂ on October 26, 1982.



2.3 PROPOSED PERMIT ACTION

Valley Joist is proposing to renew their existing Class I Air Quality Operating Permit AP3441-2437, issued November 26, 2008. The following corrections and additions are proposed in the renewal:

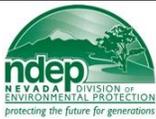
- Storage tanks S2.001 and S2.002 were separated into separate Systems.
- Construction requirements for PF1.006 were deleted because they have been satisfied.
- One existing emergency natural gas generator (S2.003) is added to the permit, because the generator became subject to NESHAP for Stationary Reciprocating Internal Combustion Engines (RICE).
- Emission limits in Section VI for unit PF1.005 were revised to account for an enclosure and to correct the reference to NAC 445B.22033.
- Changed operating parameters and monitoring language in Section VI for unit PF1.005 to clarify and specify that the permit limit of 0.2 tons per hour and associated monitoring requirements are pertaining to welding wire and welding rod consumption and do not apply to tons of joist produced (i.e., weldments).
- Emissions for the two paint/solvent storage tanks (S2.001, S2.002) were clarified that they will be calculated using the EPA TANKS 4.0.9d method, and their monitoring, recordkeeping and reporting requirements described in Section VII of the existing permit were revised accordingly.
- Two diesel and one propane fuel powered forklifts (mobile sources) used to handle finished products are currently considered trivial activities pursuant to the BAPC List of Trivial Activities. Items on the Trivial Activities List are not required for description in the application or included in the inventory. The forklifts have been removed from the application Insignificant Activity Information Form.

2.4 DESCRIPTION OF PROCESS

Valley Joist manufactures open-web steel joists. The facility receives steel raw stock by truck or rail car. Flat sections, angles and smooth rounds are used to build different size joists by being cut, re-shaped, crimped and welded together. The welding used is gas metal arc welding (GMAW). This type of welding uses argon and carbon dioxide to create a slag-free weld. The welding process is the primary emission source for PM, PM₁₀, PM_{2.5} and HAPs for the Valley Joist facility. Valley Joist has requested renewal of the facility-wide Federally Enforceable Cap for HAPs emissions limited to not more than 9.9 tons per year of any single HAP, and not to exceed 24.5 tons per year of any combination of HAPs, calculated on a 12-month rolling average. After a joist is completely welded, it is checked by quality assurance personnel for manufacturing defects and faulty welds. Once approved by quality control, the joists are lifted by an overhead crane and lowered into one of the dip tanks to coat them with paint. The coated joist is then allowed to air dry. Valley Joist has requested that facility-wide VOC emissions from the three dip tanks (long span dip tank, short span dip tank, and bridging tank) and parts washing from paint and solvent usage be limited with a Federally Enforceable Cap of a combined total maximum of 249.0 tpy to avoid PSD permitting. A fourth dipping tank using orange paint was added to the permit in May 2011, and is included in the total VOC emissions calculations and the total maximum VOC cap. Individual emission units are described below.

Systems 01-03: Paint Dip Tank Operations – Gray (PF1.001 – PF1.003)

Three gray primer surface coating dipping tanks are combined to calculate VOC emissions for the gray primer material. Joist material is dipped for coating in the gray primer tanks for various steps of the overall operations described above. The VOC constituent of the gray primer is 3.20 lbs/gallon as supplied by the vendor MSDS. Maximum gray primer throughput is based on an application rate of 2.18 gallons per ton of joist produced. Valley Joist will maintain records of the VOC content of each paint/coating material and solvent or any other VOC containing



material contained in dip tanks or utilized in the truss manufacturing or coating/cleaning processes. The facility will record the gallons used and VOC content of each paint/coating material and solvent utilized in the truss manufacturing or coating/cleaning processes on a monthly frequency. The total VOC emissions will be compared against the facility-wide VOC cap on a monthly and annual 12-month rolling basis. This provides verification that the VOC emissions remain within the permitted emission limitations. Total throughput of material is monitored monthly by means of calculating total usage from paint and solvent material purchase orders and invoices. There are no emission controls used for these systems. The systems are allowed to operate 8,760 hrs/yr. For the purpose of calculations, it is assumed that 100% of all VOC content will eventually evaporate and become emissions. The permit does not allow these systems to use any paint/coating and/or solvent material which contains a HAP component. The gray paint dip tank operations are included within the combined facility-wide VOC emission cap not to exceed 249 tons per year.

System 04: Parts Washing (PF1.004)

The parts washing operation utilizes a 5 gallon container filled with mineral spirits for the purpose of washing parts as needed. Total throughput of material is monitored monthly by means of calculating total usage from material purchase orders and invoices. There are no emission controls used for this system. The system is allowed to operate 8,760 hrs/yr. For the purpose of calculations, it is assumed that 100% of all VOC content will eventually evaporate and become emissions. The permit does not allow this system to use any paint/coating and/or solvent material which contains a HAP component. The parts washing operation is included within the combined facility-wide VOC emission cap not to exceed 249 tons per year.

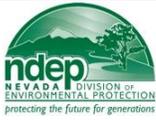
System 05: Fabrication Operations (PF1.005)

The facility receives steel raw stock by truck or rail car. Flat sections, angles and smooth rounds are used to build different size joists by being cut, re-shaped, crimped and welded together. The welding used is gas metal arc welding (GMAW). This type of welding uses argon and carbon dioxide to create a slag-free weld. The permit limits the welding operation to a maximum production of 0.2 tons/hour, which refers to the total amount of welding wire and welding rod consumed during the welding process. Emissions from fabrication operations are partially controlled within the confines of the building. The system is allowed to operate 8,760 hrs/yr. The permit limits PM/PM₁₀ emissions to 1.04 lb/hr and not more than 4.55 tons/year. The BAPC has used emission factors from AP42 Table 12.19-2 to calculate HAPs emissions from this system. Fabrication Operations have the greatest PTE for HAPs for the facility resulting from welding wire throughput. The primary HAP produced from the welding process is manganese, with smaller amounts of chromium, cobalt, and nickel also produced. The calculated PTE for HAP emissions for the fabrication operations is 5.62 tons/year. The permit limits facility-wide HAP emissions to not more than 9.9 tons per year of any single HAP, and not to exceed 24.5 tons per year of any combination of HAPs, calculated on a 12-month rolling average.

A portable electric circular saw is used to cut wood which is a component of certain joists. This activity is conducted on an “as needed” basis to trim lumber to the length of the joist. The wood cutting activity is considered insignificant for permitting purposes and PTE calculation for wood cutting is included in the Insignificant Activities category.

Systems 06 and 07: Storage Tanks (S2.001, S2.002)

The 6,000-gallon capacity gray paint storage tank and 2,000-gallon capacity solvent storage tank each have capacities below the 40,000-gallon capacity specified in NAC 445B.288.2.d; and therefore, would not typically be permitted. Valley Joist is requesting to renew a facility-wide Federally Enforceable Cap for VOCs of 249 tpy, which is very close to the PSD trigger of 250 tpy. It is essential that potential emissions from the storage tanks be quantified in reference to the cap. The storage tanks are permitted because monitoring and recordkeeping requirements are needed to quantify



their contributions to the cap. In contrast to the paint dip operations tanks (Systems 01-03, 08) the storage tanks are roofed, and as such the EPA TANKS 4.0.9d program is used to calculate emissions limits for VOCs. The TANKS calculations account for working and breathing losses only, and do not use the total VOC component calculations such as the dip tank operations do under the current permit requirements.

System 08: Paint Dip Operations – Orange (PF1.006)

The orange paint surface coating dipping tank is used to dip-coat selected joist material for various steps of the overall operations described above. The VOC constituent of the orange paint is 3.11 lbs/gallon as supplied by the vendor MSDS. Maximum orange paint throughput is based on an application rate of 2.50 gallons per ton of joist produced. Valley Joist will maintain records of the VOC content of each paint/coating material and solvent or any other VOC containing material contained in dip tanks or utilized in the truss manufacturing or coating/cleaning processes. The facility will record the gallons used and VOC content of each paint/coating material and solvent utilized in the truss manufacturing or coating/cleaning processes on a monthly frequency. The total VOC emissions will be compared against the facility-wide VOC cap on a monthly and annual 12-month rolling basis. This provides verification that the VOC emissions remain within the permitted emission limitations. Total throughput of material is monitored monthly by means of calculating total usage from material purchase orders and invoices. There are no emission controls used for this system. The system is allowed to operate 8,760 hrs/yr. For the purpose of calculations, it is assumed that 100% of all VOC content will eventually evaporate and become emissions. The permit does not allow this system to use any paint/coating and/or solvent material which contains a HAP component. The orange paint dip tank operations are included within the combined facility-wide VOC emission cap not to exceed 249 tons per year.

System 09: Emergency Generator (S2.003)

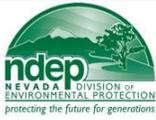
One natural gas emergency generator is added to the permit, because the generator became subject to NESHAP for Stationary Reciprocating Internal Combustion Engines (RICE). The generator is intended to operate only during a loss of power to ensure the paint exhaust ventilations system continues to operate. The emergency generator has an hour meter installed on it. The total number of hours operated since installation in 1997 is 251.3 hours. Valley Joist is requesting 100 hours/year to be authorized for this generator. Valley Joist has provided stack parameter information for the unit, and BAPC has calculated the generator PTE for PM, PM₁₀, PM_{2.5}, NO_x, SO₂, CO, VOC, and HAPs, using emission factors from AP42 Section 3.2, table 3.2-4 (4-stroke rich-burn engines).

Insignificant Activities

The non-permit equipment units (insignificant activities) at the Valley Joist facility include a 250 gallon horizontal diesel storage tank, a portable electric saw, and 28 natural gas heaters distributed throughout the fabrication facility. All non-permit equipment with a quantifiable PTE was included in the air dispersion model and the facility wide emissions calculations. Please see Appendix 1 for facility-wide emission calculations.

VOC emissions from the diesel tank are negligible in relation to the potential from the solvent/coating tanks, and have been taken into account in developing the VOC cap. The paint/coating, solvent and diesel storage tanks are not subject to the New Source Performance Standards 40 CFR Part 60 Subpart Kb because they do not meet the requirements of 40 CFR 60.110b (less than 20,000 gallons each in capacity).

Emissions from two diesel and one propane fuel powered forklifts (mobile sources) used to handle finished products are currently considered trivial activities pursuant to the BAPC List of Trivial Activities. Items on the Trivial Activities List are not required for description in the application or included in the inventory. The forklifts have been removed from the application Insignificant Activity Information Form.



3.0 APPLICABLE REGULATIONS

3.1 NEVADA REVISED STATUTES

The Nevada Revised Statutes (NRS) are the current codified laws of the State of Nevada. The NRS is the statutory authority for the adoption and implementation of administrative regulations. The statutes relating to the control of air pollution are contained in Title 40, Public Health and Safety, Chapter 445B, Air Pollution, NRS 445B.100 through NRS 445B.640. The NRS specifies that the State Environmental Commission is the governing body given the power to adopt administrative regulations. Because the NRS is the enabling statutory authority, very few specific requirements are contained in the statutes. Rather, the NRS provides, generally, broad authority for the adoption and implementation of air pollution control regulations. Valley Joist will be subject to the NRS and will need to comply with all applicable regulations under the NRS. The NRS may be viewed at the following website:

<http://www.leg.state.nv.us/NRS/Index.cfm>

3.2 NEVADA ADMINISTRATIVE CODE

The Nevada Administrative Code (NAC) contains the regulations that have been adopted by the State Environmental Commission (SEC), pursuant to the authority granted by the Nevada Revised Statutes (NRS), relating to the control of air pollution. The NAC requires that, where State regulations are more stringent in comparison to Federal regulations, the State regulations are applicable. The NAC sets forth, by rule, maximum emission standards for visible emissions (opacity), PM₁₀ (particulate matter less than 10 microns in diameter) and sulfur emitting processes. Other requirements are established for incinerators, storage tanks, odors and maximum concentrations of criteria air pollutants in the ambient air. Other NAC regulations specify the requirements for applying for and method of processing applications for operating permits. All the equipment considered in this application must meet, at a minimum, the applicable standards and requirements set forth in the NAC, specifically, the emission standards contained in NAC 445B.22027 through 445B.22033 for particulate matter, 445B.22017 for opacity, NAC 445B.22013 for Hazardous Air Pollutants, NAC 445B.22093 for organic solvents and other volatile compounds, and the Nevada Ambient Air Quality Standards as set forth in NAC 445B.310 through 445B.311. The NAC may be viewed at the following website:

<http://www.leg.state.nv.us/NAC/CHAPTERS.HTML>

3.3 NEVADA APPLICABLE STATE IMPLEMENTATION PLAN

The Applicable State Implementation Plan (ASIP) is a document that is prepared by a state or local air regulatory agency and required to be submitted to the U.S. EPA for approval. Title I of the Clean Air Act is the statutory authority for the U.S. EPA regulations that require a State to submit an ASIP. The contents of the ASIP are intended to show how a state, through the implementation and enforcement of the regulations contained in the ASIP, will either show how attainment of the national ambient air quality standards (NAAQS) will be achieved or how a state will continue to maintain compliance with the NAAQS.

3.4 CODE OF FEDERAL REGULATIONS

The Code of Federal Regulations (CFR) are regulations adopted by the U.S. EPA and published in the Federal Register pursuant to the authority granted by Congress in the Clean Air Act. The CFR addresses multiple aspects, including but not limited to, permitting requirements, performance standards, testing methods, and monitoring requirements. The CFRs may be viewed online at the following website: <http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr&tpl=%2Findex.tpl>



3.4.1 NEW SOURCE PERFORMANCE STANDARDS

Section 111 of the Clean Air Act, “Standards of Performance of New Stationary Sources,” (NSPS) requires EPA to establish federal emission standards for source categories which cause or contribute significantly to air pollution. Each NSPS defines the facilities subject to these requirements and prescribes emission limits for specified pollutants, compliance requirements, monitoring requirements, and test methods and procedures. These standards are intended to promote use of the best air pollution control technologies, taking into account the cost of such technology and any other non-air quality, health, and environmental impact and energy requirements. These standards apply to sources which have been constructed or modified since the proposal of the standard. Since December 23, 1971, the Administrator has promulgated 88 such standards and associated test methods. These standards can be found in the CFR at Title 40 (Protection of Environment), Part 60 (Standards of Performance for New Stationary Sources).

Generally, state and local air pollution control agencies are responsible for implementation, compliance assistance, and enforcement of the NSPS. EPA retains concurrent enforcement authority and is also available to provide technical assistance when a state or local agency seeks help. EPA also retains a few of the NSPS responsibilities such as the ability to approve alternative monitoring methods to maintain a minimum level of national consistency.

There are no units subject to NSPS requirements for this facility (40 CFR Part 60).

3.4.2 FEDERAL NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS

NESHAP for hazardous air pollutants (HAPs) are established in the CFR pursuant to Section 112 of the Clean Air Act Amendments of 1990. These standards regulate air pollutants that are believed to be detrimental to human health. The NESHAP program applies to all sources, both existing and new. These standards are codified in Title 40 CFR Parts 61 and 63.

Part 61, which predates the Clean Air Act Amendments of 1990, includes specific standards, reporting and recordkeeping requirements, and test methods for the initial eight hazardous air pollutants: asbestos, benzene, beryllium, coke oven emissions, inorganic arsenic, mercury, radionuclides, and vinyl chloride. The regulations covering these eight hazardous air pollutants focused on health-based considerations. NESHAPs were established for certain operations that commonly emit the eight hazardous air pollutants.

Other substances were included for consideration due to the serious health effects, including cancer, which may occur from ambient air exposure to those substances. However, no specific restrictions were placed on facilities that used or released these compounds.

Under the Clean Air Act Amendments of 1990, Congress greatly expanded the Air Toxics program, creating a list of 189 substances to be regulated as hazardous air pollutants. Rather than regulating individual pollutants by establishing health-based standards, the new Air Toxics program granted EPA the authority to regulate specific industrial major source categories with NESHAPs based on maximum achievable control technology (MACT) for each source category. Thus, a number of NESHAPs have been established to regulate specific categories of stationary sources that emit (or have the potential to emit) one or more hazardous air pollutants.

The standards in 40 CFR Part 63 are independent of the NESHAPs contained in 40 CFR Part 61 which remain in effect until they are amended, if appropriate, and added to this part. More information on NESHAPs can be found at the EPA Unified Air Toxics Website (<http://www.epa.gov/ttn/atw/>).



NESHAPs may cover both major sources and area sources in a given source category. Major sources are defined as those facilities emitting, or having the potential to emit, 10 tons per year or more of one Hazardous Air Pollutant (HAP) or 25 tons per year or more of multiple HAPs. Major sources are required to comply with MACT standards. Area Sources are defined as those facilities that are not major sources.

The Valley Joist facility is requesting to renew the permit HAPs emission cap of 9.9 tons per year of any single HAP, and 24.5 tons per year of any combination of HAPs. Therefore, Valley Joist is not a major source for HAPs emissions.

Welding operations are the primary source for HAPs emissions at the facility (5.62 tons per year). Additionally, one natural gas emergency generator is being added to the permit, because the generator became subject to NESHAP for Stationary Reciprocating Internal Combustion Engines (RICE). The generator is subject to 40 CFR Part 63, subpart ZZZZ.

The permit does not allow for the use of coating/solvent materials containing HAPs.

The BAPC has calculated the facility-wide annual PTE for HAPs at 5.62 tons per year.

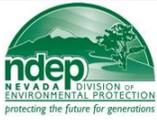
3.4.3 PREVENTION OF SIGNIFICANT DETERIORATION DETERMINATION

The Prevention of Significant Deterioration (PSD) permitting program is a Clean Air Act permitting program for new and modified major stationary sources of air pollution. Implementation of the federal PSD regulations is delegated to the State of Nevada by U.S. EPA and these regulations are contained at 40 CFR Part 52.21. Therefore, BAPC implements the federal PSD regulations directly. These regulations specify federally required permitting procedures for each "major stationary source." The PSD regulations define a "stationary source" as *"any building, structure, facility, or installation which emits or may emit any air pollutant subject to regulation under the Act."* A "building structure facility or installation" is defined as *"all of the pollutant-emitting activities which belong to the same industrial grouping, are located on one or more contiguous or adjacent properties, and are under the control of the same person (or persons under common control) except the activities of any vessel. Pollutant-emitting activities shall be considered as part of the same industrial grouping if they belong to the same 'Major Group' (i.e., which have the same first two digit code) as described in the Standard Industrial Classification Manual, 1972, as amended by the 1977 Supplement."*

"Major" is defined as the potential to emit of a stationary source, which equals or exceeds a specified threshold (in tons per year) of any air pollutant regulated under the Clean Air Act (40 CFR 52.21(b)(1)). The first threshold is for a stationary source that emits or has the potential to emit 100 tons per year or more of any regulated NSR pollutant and is defined as one of 28 specific categories of sources (see 40 CFR 52.21(b)(1)(i)(a)). The other applicability threshold is for any other stationary source that emits or has the potential to emit 250 tons per year of any regulated NSR pollutant (see 40 CFR 52.21(b)(1)(i)(b)). The SIC code for this facility is 3441. Therefore, the major SIC grouping is 34, which is identified as Fabricated Metal Products in the SIC manual. However, none of the 28 specific categories is representative of this facility. Therefore, major source status is classified at the 250 tons per year emission threshold for any pollutant regulated under the Act. Valley Joist will have an emission cap to emit less than the 250 tons per year threshold for VOCs and, as such, is classified as a minor source for PSD purposes.

3.4.4 COMPLIANCE ASSURANCE MONITORING (CAM) – 40 CFR Part 64

Compliance Assurance Monitoring (CAM) plans are required for major sources required to obtain Title V (Part 70



or 71) permits. The CAM rule was signed on October 3, 1997 and came into effect on November 21, 1997. The U.S. EPA developed the CAM rule to focus on monitoring of certain operating parameters to ensure compliance with emission limitations in-between scheduled source tests. CAM requirements apply to stationary sources that: (1) are equipped with post-process pollutant control devices; (2) have pre-control device emissions equal to or greater than 100% of the major source threshold for a pollutant; and (3) are subject to the Title V permit program.

Valley Joist is not subject to the requirements under CAM since the facility is not equipped with post-process pollutant control devices and does not have pre-control device emissions equal to or greater than 100% of the major source threshold for a pollutant.

3.4.5 DUST CONTROL PLAN

The BAPC requires that permit holders who disturb or cover 20 acres or more to file a dust control plan as one of the necessary measures to prevent particulate matter from becoming airborne (NAC 445B.22037). The dust control plan is a written plan signed by a facility's responsible official who outlines the measures a facility will use to minimize fugitive dust as required by the NAC and ASIP, e.g., water trucks, surfactant, reclamation, etc.

The Valley Joist facility does not disturb or cover 20 acres or more, as total facility size is less than 20 acres. Therefore Valley Joist is not required to develop or submit a dust control plan. An onsite water truck is used to control fugitive dust on an as-needed basis.

4.0 EMISSIONS INVENTORY

4.1 PROPOSED EMISSIONS

Table 4.1 summarizes the potential emissions, including insignificant sources, for the Valley Joist facility.

Table 4.1									
Valley Joist, Inc. (Class 1 Air Quality Operating Permit Renewal)									
BAPC Calculated Facility Wide Potential to Emit (ton/yr)									
System	PM	PM ₁₀	PM _{2.5}	NO _x	SO ₂	CO	VOC	HAPs	CO _{2e}
1-3 - Paint Dip Operations - Gray							230.090		
4 - Parts Washing							2.290		
5 - Fabrication Operations	4.550	4.550	4.550					5.624	
6 - Storage Tanks							1.14E-02		
7 - Paint Dip Operations - Orange							15.550		
8 - Emergency Generator	9.45E-05	9.45E-05	9.45E-05	2.20E-02	5.85E-06	3.70E-02	2.94E-04	3.22E-04	1.210
Non-Permit Units (IA1.001-IA1.029)	2.33E-03	1.37E-03	2.70E-04	9.70E-04	1.00E-05	4.10E-04	6.00E-05	2.00E-07	4.569
TOTAL	4.552	4.551	4.550	0.023	1.58E-05	0.037	247.942	5.624	5.779

The applicant has quantified all VOC emissions based on an operating schedule of 24 hours per day, 8,760 hours per year. The permit does not allow the facility to use paints/solvents containing a HAP component. Valley Joist is proposing to renew a facility-wide VOC cap and uses monitoring and recordkeeping as described in the existing permit to verify that the cap limits are not exceeded. As such, the facility has the flexibility to operate 8,760 hours per year, provided that the facility does not exceed its annual limitation of 249.0 tons VOC emissions.

Monitoring and recordkeeping requirements quantify VOC emissions to compare against the annual facility-wide cap. The requested cap renewal also includes HAPs, not to exceed 9.9 tons per year of any single HAP, or 24.5 tons per year of any combination of HAPs.

5.0 AMBIENT AIR IMPACT ANALYSIS

5.1 INTRODUCTION/PURPOSE

The purpose of this analysis is to determine potential air quality impacts resulting from operation of Valley Joist based on the permit renewal. The air impact analysis was conducted by BAPC.

5.2 CLASSIFICATION OF AIR BASIN

The Valley Joist facility is located in Hydrographic Area (HA) 76. HA 76 is currently unclassified for PM₁₀, CO, NO_x, O₃, and lead criteria pollutants, which have an ambient air quality standard. HA 76 is currently designated as PSD triggered for SO₂. The triggered basin is a result of Nevada Cement, which triggered the basin for SO₂ on October 26, 1982. Therefore, this evaluation will address the dual issues of compliance with the Nevada AAQS and the PSD increments.

5.3 AIR QUALITY MODELING ANALYSIS

5.3.1 AIR DISPERSION MODEL

The BAPC performed the requisite air dispersion modeling analysis and environmental evaluation for the proposed renewal using the currently approved/preferred U.S. EPA model AERMOD to determine likely air quality impacts. The BAPC used Lakes Environmental's *AERMOD-View* graphical-user interface (v. 8.2.0) to input source information, generate receptors, and to run AERMOD (V 12345).

5.3.2 AVERAGING PERIODS

The Nevada Ambient Air Quality Standards (AAQS) for PM₁₀ (24-hour, annual averaging periods), NO₂ (annual averaging period), CO (1-hour and 8-hour averaging periods), SO₂ (3-hour, 24-hour, and annual averaging periods), and O₃ are listed in Table 5.4-1 and include model results generated by the BAPC. PM_{2.5}, 1-hour NO₂, and the 1-hour SO₂ were not modeled, because the BAPC has not yet adopted these standards into its administrative regulations.

5.3.3 SOURCE PARAMETERS

Source input parameters were provided by Valley Joist. Although it is not possible to verify all source release parameters used by an applicant, a review of the model input data submitted by Valley Joist indicated that they were reasonable and not outside the ranges typically encountered in air dispersion models submitted by applicants. All emission sources, receptors, and building locations were modeling in the NAD 83 UTM project datum. Emission rate scalars were not used in the modeling.

5.3.4 RECEPTORS

A total of 22,472 receptors were included in the model. The fabrication/coating facility building was used as the plant boundary, or fenceline, as the site is not adequately fenced to prevent potential public access onto the Valley Joist property. Plant boundary receptors were spaced as follows:

- 10 meter spacing along the facility fenceline;
- 10 meter spacing from the fenceline out to 750 meters;

The ten meter receptor spacing is conservative and minimizes the risk of missing "hot spot" emission levels in the analysis.

5.3.5 METEOROLOGICAL DATA

The BAPC used on-site meteorological data from Nevada Cement for the model analysis, due to the close proximity. The Nevada Cement weather station is located within one kilometer of the Valley Joist facility. The data was pre-processed by BAPC using AERMET before use in the AERMOD model runs. Only one year of meteorological data was available from the Nevada Cement weather station (December 1, 2000 – November 30, 2001).

5.3.6 BUILDING DOWNWASH

In accordance with current U.S. EPA and BAPC guidelines, building downwash was considered for all model runs. Building downwash effects were evaluated using the BPIP-PRIME algorithm to calculate projected building heights and widths for each point source in the model. This information is used by AERMOD to determine whether plume dispersion from a particular point source will be influenced by building downwash.

5.3.7 TERRAIN

AERMOD requires that elevated terrain be considered in air dispersion modeling analyses. Therefore, elevations were processed in AERMAP using the USGS NED 1 (USA~30) files for the chosen modeling domain. The NED files were imported from webgis.com. All sources, buildings, and receptors were processed in the NAD 83 project datum.

5.3.8 BACKGROUND CONCENTRATIONS

Background values from Lehman Caves (Great Basin NP) were used: PM₁₀ (24-hour), 10.2 µg/m³, and 9.0 µg/m³ for the PM₁₀ Annual. The BAPC does not have ambient monitoring data for HA 76, therefore background values for the gaseous pollutants are assumed to be zero.

5.4 AIR QUALITY IMPACT ASSESSMENT

Results of air dispersion modeling are presented in Table 5.4-1. Results demonstrate that the permit renewal will not result in violations of the Nevada AAQS, because the total impacts are less than the applicable AAQS values.

Table 5.4-1

Valley Joist, Inc. – Class I Air Quality Operating Permit Renewal

BAPC Air Dispersion Model Results

Pollutant	AAQS Averaging Period	BAPC Model Met Year	BAPC Model Conc.	Backgr. Conc.	PABC Total Impact	AAQS	BAPC Percent of Standard
			µg/m3	µg/m3	µg/m3	µg/m3	%
PM ₁₀	24-hr	2001	105.9	10.2	116.1	150	77.4
	Annual	2001	34.3	9	43.3	50	86.6
SO ₂	3-hr	2001	0.158	0	0.158	1300	0.012
	24-hr	2001	0.067	0	0.067	365	0.018
	Annual	2001	0.021	0	0.021	80	0.026
NO ₂	Annual	2001	34.7	0	34.7	100	34.7
CO	1-hr	2001	409.7	0	409.7	40,500	1.01
	8-hr	2001	166.7	0	166.7	10,500	1.59
O ₃	1-hr	2001	13.64	0	13.64	235	5.8

Note: The BAPC used 1-year (Dec 1, 2000 – Nov 30, 2001) of on-site surface met data collected by Nevada Cement (located within 1 kilometer of the Valley Joist facility). Background concentrations for PM₁₀ are those for generally pristine rural areas of Nevada (Lehman Caves, Great Basin NP). The BAPC does not have ambient monitoring data for HA 76, so background values for the gaseous pollutants are assumed to be zero.

5.5 HA 76 PSD INCREMENT ANALYSIS

An increment analysis was performed for HA76 to evaluate the impacts of the Class I Air Quality Operating Permit renewal application from Valley Joist. Increment was analyzed on a paired-in-time basis for the receptors in the HA76 study receptor grid to reflect Valley Joist's renewal. Two receptors fell within the HA76 receptor grid which was modified to exclude those receptors. Increment impacts were evaluated for SO₂, the only triggered pollutant in HA76. Based on the modeling information provided, emissions from Valley Joist's proposed Class I Air Quality Operating Permit renewal will not contribute to or cause a violation of the SO₂ PSD increment standard.



6.0 CONCLUSIONS / RECOMMENDATIONS

Based on the above review and supporting data and analyses, operation of Valley Joist under the draft conditions set forth in the renewal will not result in violations of any applicable ambient air quality standards. Therefore, we recommend that the draft facility wide operating permit be formally issued, with those applicable requirements, conditions, and restrictions contained therein.

Appendix 1 – BAPC Detailed Emissions Inventory

Appendix 2 – Valley Joist – Nevada Fernley Facility – Process Flow Diagram

Appendix 3 – BAPC Draft Class I Title V Air Quality Operating Permit AP3441-2437.01

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Appendix 1

Valley Joist, Inc.

BAPC Detailed Emissions Inventory



Appendix 2

Valley Joist, Inc.

Nevada Fernley Facility

Process Flow Diagram



Appendix 3
Valley Joist, Inc.
BAPC Title V Permit
AP3441-2437.01