PERMIT TO CONSTRUCT EVALUATION

ID: 800267

Legal Owner or Operator: TRIUMPH PROCESSING INC.

MAILING ADDRESS: 2588 & 2605 INDUSTRY WAY
LYNWOOD, CA 90262-4088

Equipment Location: 2588 INDUSTRY WAY, LYNWOOD, CA 90262-4088

EQUIPMENT DESCRIPTION:

A/N 494827 "Minor Permit Revision" (1st since renewal)

A/N 494828 PC (MODIFICATION TO A/N 356625, F31370):

MODIFICATION OF AN EXISTING ANODIZING LINE #A3 (changes are indicated in underline and strike-through) CONSISTING OF:

1. DEVICE NO. D13, TANK NO. 60, CLEANING, ALKALINE SOAP SOLUTION, WIDTH: 2 FT 6 IN; HEIGHT: 6 FT; LENGTH: 62 FT, HEATED, AIR SPARGED.
2. DEVICE NO. D14, TANK NO. , 62, ETCHING, SODIUM HYDROXIDE, WIDTH: 2 FT 6 IN; HEIGHT: 6 FT; LENGTH: 62 FT, HEATED, AIR SPARGED.
3. DEVICE NO. D15, TANK NO. 63, CLEANING, CHROMIC ACID, HYDROCHLORIC ACID, WIDTH: 2 FT 6 IN; HEIGHT: 6 FT; LENGTH: 62 FT.
4. DEVICE NO. D16, TANK NO. 65, CONVERSION COATING, ALODINE, WIDTH: 2 FT 6 IN; HEIGHT: 6 FT; LENGTH: 62 FT.
5. DEVICE NO. D17, TANK NO. 67, ANODIZING, CHROMIC ACID, WIDTH: 3 FT; HEIGHT: 6 FT; LENGTH: 62 FT., WITH SIX SUB-MICRON FILTER MEMBRANES ON A WATER-SEALED COVER, HEATED, RECTIFIED.
6. DEVICE NO. D39, TANK NO. 69, HOLDING, WIDTH: 2 FT 6 IN; HEIGHT: 6 FT; LENGTH: 62 FT.
7. DEVICE NO. D18, TANK NO. 70, ANODIZING, SULFURIC ACID, WIDTH: 2 FT 6 IN; HEIGHT: 6 FT; LENGTH: 62 FT, HEATED, RECTIFIED, AIR SPARGED.
8. DEVICE NO. D62, TANK NO. 72, SEALING, CHROMIC ACID, SODIUM CHROMATE, WIDTH: 2 FT 6 IN; HEIGHT: 6 FT; LENGTH: 62 FT., HEATED.
9. DEVICE NO. D19, TANK NO. 74, SEALING, CHROMIC ACID, SODIUM CHROMATE, WIDTH: 2 FT 6 IN; HEIGHT: 6 FT; LENGTH: 62 FT., HEATED.

A/N 494830 PC (MODIFICATION TO A/N 326624, F31371):

MODIFICATION OF AN EXISTING ANODIZING LINE #A1 (changes are indicated in underline and strike-through) CONSISTING OF:

1. DEVICE NO. D81, TANK NO. 1, CLEANING, ALKALINE SOAP SOLUTION, WIDTH: 3 FT; HEIGHT: 9 FT; LENGTH: 26 FT, HEATED, AIR SPARGED. (existing tank added to make the equipment description consistent with the description of the line A3 under A/N 494828)
2. DEVICE NO. D20, TANK NO. 3, ETCHING, SODIUM HYDROXIDE, WIDTH: 3 FT; HEIGHT: 9 FT; LENGTH: 26 FT, HEATED, AIR SPARGED, VENTED TO AIR POLLUTION CONTROL EQUIPMENT (C43).
3. DEVICE NO. D21, TANK NO. 5, CLEANING, CHROMIC ACID & HYDROFLUORIC ACID, WIDTH: 3 FT; HEIGHT: 9 FT; LENGTH: 26 FT.
4. DEVICE NO. D22, TANK NO. 7, CONVERSION COATING, ALODINE, WIDTH: 3 FT; HEIGHT: 9 FT; LENGTH: 26 FT.
5. DEVICE NO. D23, TANK NO. 9, ANODIZING, CHROMIC ACID, WIDTH: 5 FT; HEIGHT: 10 FT; LENGTH: 27 FT., WITH THREE SUB-MICRON FILTER MEMBRANES ON A WATER-SEALED COVER, HEATED, RECTIFIED.
6. DEVICE NO. D24, TANK NO. 11, ANODIZING, SULFURIC ACID, WIDTH: 6 FT; HEIGHT: 10 FT; LENGTH: 26 FT, RECTIFIED, AIR SPARGED.
7. DEVICE NO. D25, TANK NO. 13, CONVERSION COATING, TRISODIUM PHOSPHATE, POTASSIUM FLUORIDE, WIDTH: 3 FT; HEIGHT: 7 FT; LENGTH: 26 FT, AIR SPARGED.
8. DEVICE NO. D26, TANK NO. 14, CLEANING, NITRIC ACID, WIDTH: 3 FT; HEIGHT: 7 FT; LENGTH: 26 FT, AIR SPARGED.
9. DEVICE NO. D27, TANK NO. 16, ETCHING, NITRIC ACID, AMMONIUM BIFLUORIDE, WIDTH: 3 FT; HEIGHT: 7 FT; LENGTH: 26 FT, AIR SPARGED, VENTED TO AIR POLLUTION CONTROL EQUIPMENT (C44)
10. DEVICE NO. D28, TANK NO. 19, SEALING, CHROMIC ACID, SODIUM CHROMATE, WIDTH: 3 FT; HEIGHT: 9 FT; LENGTH: 26 FT., HEATED
11. DEVICE NO. D29, TANK NO. 21, CONVERSION COATING, ALODINE, WIDTH: 3 FT; HEIGHT: 9 FT; LENGTH: 26 FT, HEATED.

HISTORY

This company is under a government contract to coat large aircraft parts. The anodizing lines are critical to its ability to prepare surfaces of military aircraft parts prior to coating operations. The applicant is proposing to control PM_{10} & Cr^{+6} emissions from Line A1, Tank #9, device D23 & Line A3, Tank #67, device D17 to comply with Rule 1469. To control the emissions, the applicant is proposing to install a water sealed cover with microfilter membranes on Tanks #9 & #67.

The company submitted A/N 409792 in 2003 and was granted a research permit to construct to modify a similar anodizing Line A2, Tank #4, device D48 at this facility to install a water-sealed cover with micro-filter membranes to control PM_{10} & Cr^{+6} emissions. The installation was completed, required testing was conducted on 2-10-2004, and a control efficiency of approximately 100% was verified by the District for PM_{10} & Cr^{+6} emissions. The average of three runs was 0.0000045 mg/amp-hr, well below the Rule 1469 limit of 0.0015 mg/amp-hr. The research permit was converted to a permit to operate under A/N 427998, P/O F71673.

Now, the applicant is proposing to install the same type of cover for their other two existing chrome anodizing tanks belonging to two anodizing lines A1 & A3 under A/N 356624, P/O F31371 & A/N 356625, P/O F31370. The proposed modification of the anodizing lines will reduce emissions of PM_{10} & Cr^{+6}. The emissions will be verified by testing the equipment after the completion of this modification (also required by Rule 1469). There are no other criteria or toxic emissions associated with these anodizing lines.

The modifications under each permit application are summarized as follows:

A/N 494828

MODIFICATION TO ANODIZING LINE A3:

1. To add a tank cover with a water seal, and six particulate control filter membranes on the top of the cover for Tank No. 67, Device D17.
2. To add Tank No. 72 - the company converted an existing rinse tank No. 72 to a sealing tank with dilute chromium solution. (This tank was originally used as a dilute chromium solution tank and was listed in the original command and control permit. When the initial Title V facility permit was issued, it was identified as device D40, but later removed when it was converted to a rinse tank. Now they have converted it back to a dilute chromium solution tank.). There will not be any emissions from this tank since the vapor pressure for the chromium solution is zero and the tank is not air sparged or rectified.

A/N 494830

MODIFICATION TO ANODIZING LINE A1:

1. To add a tank cover with a water seal, with three particulate control filter membranes on the top of the cover for Tank No. 9, Device D23.
2. To add Tank No. 1, Device D81, an existing soap solution tank. No emission increase.

From a field evaluation conducted on 03-11-2009, no visible plume was observed from the previously modified Line A2, Tank # 4, D48 during the chromic acid anodizing process or when the mechanical cover was removed at the end of the process. No discoloration inside the cover and membrane filers were observed.

Triumph Processing Inc. is a Title V Group A facility, but not a RECLAIM facility. The proposed changes are the 1st Title V permit revision for this facility since the Title V renewal was issued on March, 26, 2006. A review of the District compliance records shows that no nuisance complaints have been filed against this facility. The company did not receive any NOVs or NCs during the past two years.

PROCESS DESCRIPTION:

Unfinished aluminum aerospace parts are anodized with a dilute solution of chromic acid for 20 to 45 minutes, emitting hexavalent chromium (Cr^{+6}) emissions and PM_{10}. To control Cr^{+6} emissions from the anodizing tank, the tank will be equipped with a mechanical metal cover and a 2" W. x 2" D. gutter will be built around the edge of the entire tank. Prior to the anodizing process, the operator turns a switch on to close the tank. The cover will sit in the gutter with approximately one inch of water which seals the tank and prevents PM_{10} & Cr^{+6} from escaping. In addition, specialty designed micro filter membranes will be built on top of the cover, evenly distributed over the entire length of the cover (6 membranes for Tank #9, and 3 membranes for Tank #67). The membranes allow free passage of hydrogen and oxygen gasses as the anodizing process takes place, while at the same time block the escape of water vapor and chromium mist.

Since Cr^{+6} particles are too large to pass through the membranes that are contained in the vapor zone (headspace) above the liquid anodizing bath, they are eventually returned to the bath by gravity and condensed water vapor. Negligible Cr^{+6} particles are expected in the headspace before the cover is lifted for unloading part at the end of each anodizing cycle.

EMISSION CALCULATIONS:

The baseline emission data for these anodizing lines have not been updated since the original applications for permits to operate were evaluated approximately 20 years ago. The anodizing lines were exempt from the permit requirements per Rule 219 prior to the rule change in 1988. The original applications were evaluated for permits to operate based on the available emission factors at the time. The emission factors have been updated several times since the original evaluation was completed, therefore, we will calculate the emissions for each line for pre and post modification to determine the net emission change.

For reference, air sparging in some tanks were omitted from the permit descriptions when permits were converted to Title V format, we will add them to the permit description since there may be emissions associated with them. Pre & post modification emissions were calculated on the attached excel spreadsheets. The pre & post modification emissions are the same for all the tanks except for Tanks #9 & # 67. The delta emissions will be zero for all of the tanks except for Tanks #9 & # 67 which will be reduced due to the new water sealed membrane filter covers.

On 2-10-2004, source tests were conducted on Tank #4, D48 to measure the emissions for Cr and Cr^{+6} which showed 0.000028 and 0.0000045 mg/amp-hr, respectively. We assumed the emissions of Tanks 9 and 67 are directly related to the control factor established by the source testing of a similar tank with the membrane filter with cover at this facility. Tank 9 & 62 will be source tested to verify compliance with Rule 1469. These tanks are expected to operate in compliance with Rule 1469.

From the attached excel spreadsheets:

A/N 494830

PM_{10}

Pre modification R1 = R2 = 0.21 lb/hr, @ 24 hr/day = 5.04 lb/day

Post modification R1 = R2 = 0.17 lb/hr, @ 24 hr/day = 4.08 lb/day

A/N 494828

PM_{10}

Pre modification R1 = R2 = 0.27 lb/hr, @ 24 hr/day = 6.48 lb/day

Post modification R1 = R2 = 0.24 lb/hr, @ 24 hr/day = 5.76 lb/day

The addition of Tank #72 to the anodizing line will not result in any emission increase since the vapor pressure of the chromium solution is zero, there is no electrical current going through the tank and there is no air sparging.

Toxic Evaluation

The attached spreadsheets show the pre and post modification emissions and it is determined that for PM_{10} & Cr^{+6} the emissions have been reduced. The modification, the addition of a control system with no increase in emissions or risk, is exempt from Rule 1401 and is also expected to comply with the 0.0015 mg/amp-hr threshold limit of Rule 1469 with an expected calculated Cr^{+6} emission of 0.0000002 mg/amp-hr. This will be verified by a required source test.

RULES/REGULATION

Rule 212 – Public Notification:

This modification will result in a reduction in emissions of PM_{10} & Cr^{+6}, therefore, public notice will not be required for this project.

Rule 401: Compliance is expected. Visible emissions are not expected with the proper operation of the equipment.

Rule 402: Compliance is expected. Nuisance is not expected with the proper operation of the equipment; no complaints on file.

Rule 1303(a): The modification will reduce PM_{10} from the anodizing lines, therefore, the modification of this equipment is not subject to BACT requirement. There are no other criteria pollutant emissions from this equipment.

Rule 1303(b)(1): The modification will reduce PM_{10} from the anodizing lines, therefore, the modification of this equipment is not subject to the modeling requirements. There are no other criteria pollutant emissions from this equipment.

Rule 1303(b)(2): The modification will reduce PM_{10} from the anodizing lines, therefore, the modification of this equipment is not subject to offset requirements. There are no other criteria pollutant emissions from this equipment.

Rule 1401: This project is a modification with no increase in risk, which is exempt by 1401(g). See Toxic evaluation.

Rule 1469: The anodizing tanks (anodizing lines A1 & A3) at this facility are expected to comply with this rule with the installation of these membrane covers. The covers will completely seal the tank during the anodizing cycle. The emission estimation for each Tank #9 & #67 is 0.0000045 mg/amp-hr. The equipment is expected to comply with the threshold limit of 0.0015 mg/amp- hr according to the source test results for a similar operation at this facility, and will be verified by a source test once the covers are installed. Fume suppressant will not be used in the anodizing tanks.

REGULATION XXX:

This facility is not in the RECLAIM program. The proposed project is considered as a "minor permit revision" to the Title V permit for this facility.

Rule 3000(b)(12)(vi) defines a "minor permit revision" as any Title V permit revision that does not result in an increase in emissions of a pollutant subject to Regulation XIII – New Source Review (non-RECLAIM pollutants) or a hazardous air pollutant (HAP).

The proposed project is not expected to result in an increase in emissions of a pollutant subject to Regulation XIII – New Source Review (non-RECLAIM pollutants) or a hazardous air pollutant (HAP), and therefore is considered as a "minor permit revision" pursuant to Rule 3000(b)(12)(A)(vi).

This proposed project is the 1st permit revision to the Title V renewal permit issued to this facility on March 26, 2006. The following table summarizes the permit revisions since the Title V renewal permit was issued:

Revision	HAP	VOC	NOx	PM_{10}	SOx	CO
1st Permit Revision: modification of anodizing lines A1 and A3 by adding a membrane cover to the Cr anodizing tanks #9 (Line A1) and #67 (Line A3), adding cleaning tank #1 (D81) to Line A1, and adding sealing tank #72 (D62) to Line A3	0	0	0	0	0	0
Cumulative Total	0	0	0	0	0	0
Maximum Daily	30	30	40	30	60	220

RECOMMENDATION

The proposed project is expected to comply with all applicable District Rules and Regulations. Since the proposed project is considered as a "minor permit revision", it is exempt from the public participation requirements under Rule 3006(b). A proposed permit incorporating this permit revision will be submitted to EPA for a 45-day review pursuant to Rule 3003(j). If EPA does not have any objections within the review period, a revised Title V permit will be issued to this facility.