| EQ IDA - Production | Page 1 of 2 |
|--|-----------------------------------|
| LTR-587186 | Return to Sharenet |
| TRY - 587187 | |
| 07/11/2017NSR IMS - PROJECT RECORD | |
| PROJECT#: 269550PERMIT#: 146912STATUS: PENDINGDISP CODE:RECEIVED: 05/22/2017PROJTYPE: INITIALAUTHTYPE: PBRISSUED DT:RENEWAL:ISSUED DT:ISSUED DT:ISSUED DT: | $\frac{1}{7-12-17}$ |
| PROJECT ADMIN NAME: AUTHORIZE 7 STORAGE TANKS & BUTANE STORAGE & GAS BLENDING COMBUSTER THERMAL OXIDIZER PROJECT TECH NAME: CMG BROWNSVILLE II | EQUIPMENT & |
| Assigned Team: RR SECTION | |
| STAFF ASSIGNED TO PROJECT:GRUNNET, BROOKE- REVIEWR1_2 -AP INITIAL REVIEWMA, JOHN- PEERREVIEW -RR TEAM 2REYES, GUILLERMO- REVIEW ENG -RR TEAM 2 | |
| ISSUED TO: CMG BROWNSVILLE II, LLC COMPANY NAME: CMG BROWNSVILLE II, LLC CUSTOMER REFERENCE NUMBER: CN605370378 REGULATED ENTITY/SITE INFORMATION REGULATED ENTITY NUMBER: RN107928129 ACCOUNT: | |
| PERMIT NAME: CMG BROWNSVILLE II REGULATED ENTITY LOCATION: 1000 FOUST ROAD REGION 15 - HARLINGEN NEAR CITY: BROWNSVILLE COUNTY: CAMERON | |
| CONTACT DATA | |
| CONTACT NAME: MR PETER SCHMARCONTACT ROLE: RESPONSIBLE OFFICIALJOB TITLE: EXECUTIVE VP OF OPERATIONSORGANIZATION: CMG BROWNSVILLE II LLCMAILING ADDRESS: PO BOX 797544, DALLAS, TX, 75379-7544PHONE: (918) 801-8911 Ext: 0EMAIL:PSCHMAR@CENTURIONTERMINALS.COM | |
| - CONTACT NAME: MR RALPH CHAIET CONTACT ROLE: TECHNICAL CONTACT JOB TITLE: SENIOR AIR COMPLIANCE SPECIALIST ORGANIZATION: WITT OBRIENS MAILING ADDRESS: 5818 CHEENA DR, HOUSTON, TX, 77096-5928 PHONE: (713) 283-7921 Ext: 0 FAX: (713) 721-8376 Ext: 0 EMAIL:RCHAIET@WITTOBRIENS.COM | RECEIVE |
| PROJECT NOTES: | JUL 2 5 2017 CENTRAL FILE ROOM |

http://ida.tceq.texas.gov/ida/index.cfm?fuseaction=nsrproject_project_report&proj_id=269... 7/11/2017

TCEQ IDA - Production

05/23/2017 DFC 05/23/2017 NO APWL

PERMIT NOTES:

FEE: Reference **Fee Receipt Number** Amount Fee Receipt Date Fee Payment Type 289 100.00 CHECK TRACKING ELEMENTS: **TE Name** Start Date **Complete Date** APIRT RECEIVED PROJECT (DATE) 05/22/2017 APIRT TRANSFERRED PROJECT TO TECHNICAL STAFF (DATE) 05/23/2017 PROJECT RECEIVED BY ENGINEER (DATE) 05/26/2017 ENGINEER INITIAL REVIEW COMPLETED (DATE) 06/28/2017 PEER / MANAGER REVIEW PERIOD 06/28/2017 07/12/2017 CENTRAL REGISTRY UPDATED ENHANCED ADMINISTRATIVE OR APPLICATIONS REVIEW (EAR) **PROJECT RULES: Unit Desc** Rule Request On Approve Desc Туре Application FACILITIES (EMISSION LIMITATIONS) 106.261 -ADD Υ APPROVE FACILITIES (EMISSION AND DISTANCE 106.262 -Y ADD APPROVE LIMITATIONS) ROUTINE MAINTENANCE STARTUP AND 106.263 -ADD APPROVE Y SHUTDOWN OF FACIL ORGANIC AND INORGANIC LIQUID LOADING AND 106.472 -ADD Y APPROVE UNLOADING

106.476 -

106.478 -

| Unit Desc | Rule Desc | Start Date |
|-----------------|-----------|------------|
| PROJECT ATTRIBU | ſES: | |
| Attributes | | |
| CERT_PI_7 | | |

PRESSURIZED TANKS OR TANKS VENTED TO

STORAGE TANK AND CHANGE OF SERVICE

CONTROL

PERMIT RULES: Unit Desc

PROJECT POINT

Value

ADD

ADD

Y

Y

End Date

APPROVE

APPROVE

| | | | \bigcirc | |
|--|---|--|--------------------------|--------------------|
| | | | | Return to Sharenet |
| 05/23/2017 | -NSR IMS - PROJECT RE | CORD | | |
| PROJECT#: 269550 RECEIVED: 05/22/2017 RENEWAI | PERMIT#: 146912 PROJTYPE: INITIAL | STATUS: PENDING AUTHTYPE: PBR | DISP CODE: ISSUED DT: | |
| PROJECT ADMIN NAME: THERMAL OXIDIZER PROJECT TECH NAME: | AUTHORIZE 7 STORAGE TAN | KS & BUTANE STORAGE & G/ | AS BLENDING EQUIPMENT | & COMBUSTER |
| Assigned Team: RR SEC | TION | | | |
| STAFF ASSIGNED TO PI GRUNNET , BROOKE TEAM LEADER , RR | ROJECT: - REVIEWR1_2 - - REVIEW ENG - | AP INITIAL REVIEW RR SECTION | | |
| CUSTOMER INFORMATI ISSUED TO: CMG BROW COMPANY NAME: CMG I CUSTOMER REFERENC | ON (OWNER/OPERATOR DATA /NSVILLE II, LLC BROWNSVILLE II, LLC E NUMBER: CN605370378 | () | | _ |
| REGULATED ENTITY/SI REGULATED ENTITY NU PERMIT NAME: CMG BR REGULATED ENTITY LO REGION 15 - HARLINGE | TE INFORMATION MBER: RN107928129 OWNSVILLE II CATION: 1000 FOUST ROAD N NEAR CITY: BROW | ACCOUNT: NSVILLE COUNTY: CA | MERON | _ |
| CONTACT NAME: MR PE JOB TITLE: EXECUTIVE MAILING ADDRESS: PO PHONE: (918) 801-8911 E EMAIL:PSCHMAR@CEN | TER SCHMAR CON VP OF OPERATIONS ORG, BOX 797544, DALLAS, TX, 753 Ext: 0 TURIONTERMINALS.COM | TACT ROLE: RESPONSIBLE O ANIZATION: CMG BROWNSVII 379-7544 | OFFICIAL LLE II LLC | |
| CONTACT NAME: MR RA JOB TITLE: SENIOR AIR MAILING ADDRESS: 581 PHONE: (713) 283-7921 F FAX: (713) 721-8376 Ext: EMAIL:RCHAIET@WITTG | ALPH CHAIET COMPLIANCE SPECIALIST 8 CHEENA DR, HOUSTON, TX Ext: 0 0 DBRIENS.COM | CONTACT ROLE: TECHNICA ORGANIZATION: WITT OBRI 3, 77096-5928 | L CONTACT ENS | |
| PROJECT NOTES: 05/23/2017 DFC 05/ PERMIT NOTES: | 23/2017 NO APWL | | | _ |
| FEE: Reference Fee R | eceipt Number Amoun | t Fee Receipt Date | Fee Payment Type | - |

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| 289 | 9 100.00 | | | | CHECK | | | | |
|----------------------|---------------------------|-------------|-----------|------------|---------------|---------------|--|--|--|
| TRACKING ELEMENTS: | | | | | | | | | |
| TE Name | | | Start | Date C | omplete Date | | | | |
| APIRT RECEIVED PRC | JECT (DATE) | | 05/22 | 2/2017 | | | | | |
| APIRT TRANSFERRED | PROJECT TO TECHNICAL ST | AFF (DATE) | 05/23 | 3/2017 | | | | | |
| CENTRAL REGISTRY | JPDATED | | | | | | | | |
| DEFICIENCY CYCLE | | | | | | | | | |
| ENGINEER INITIAL RE | VIEW COMPLETED (DATE) | | | | | | | | |
| ENHANCED ADMINIST | RATIVE OR APPLICATIONS R | EVIEW (EAR) | | | | | | | |
| ENHANCED ADMINIST | RATIVE OR APPLICATIONS R | EVIEW (EAR) | | | | | | | |
| PEER / MANAGER REV | /IEW PERIOD | | | | | | | | |
| PROJECT RECEIVED | BY ENGINEER (DATE) | | | | | | | | |
| PROJECT RULES: | | | | | | • | | | |
| Unit Desc | | | Rule Desc | Request Ty | pe On Applica | ation Approve | | | |
| FACILITIES (EMISSION | I LIMITATIONS) | | 106.261 - | ADD | Y | APPROVE | | | |
| FACILITIES (EMISSION | AND DISTANCE LIMITATION | 6) | 106.262 - | ADD | Y | APPROVE | | | |
| ROUTINE MAINTENAN | CE STARTUP AND SHUTDOW | /N OF FACIL | 106.263 - | ADD | Y | APPROVE | | | |
| ORGANIC AND INORG | ANIC LIQUID LOADING AND U | JNLOADING | 106.472 - | ADD | Y | APPROVE | | | |
| PRESSURIZED TANKS | OR TANKS VENTED TO CON | TROL | 106.476 - | ADD | Y | APPROVE | | | |
| STORAGE TANK AND | CHANGE OF SERVICE | | 106.478 - | ADD | Y | APPROVE | | | |
| ENGINES AND TURBIN | IES | | 106.511 - | ADD | Y | APPROVE | | | |
| WATER AND WASTEW | ATER TREATMENT | | 106.532 - | ADD | Y | APPROVE | | | |
| PERMIT RULES: | | | | | | | | | |
| Unit Desc | Rule Desc | Start Date | | End Dat | e | | | | |

PROJECT ATTRIBUTES:

Attributes PROJECT POINT Value

Guillermo Reyes

From: Sent: To: Subject: Attachments: Ralph Chaiet <RChaiet@wittobriens.com> Friday, June 23, 2017 7:05 AM Guillermo Reyes Centurion Brownsville-Reflecting the Changes 20170623 Centurion Brownsville Terminal PBR TABLE 1(a).doc; 20170623 MTBE Loading 262 Centurion BROWNSVILLE Marine PBR Hourly and Annual NOx CO PM Emissions.xlsx

This morning

I have updated the NOx, CO and PM short term and annual emissions on the Table 1(a) (6/23/2017) based on the changes that we have made including the lowering the flow rate to the vapor combustor (VC-1).

I have updated the emissions calculations for the NOx, CO and PM along with the 106.262 Emax review including Gasoline.

Ralph

Ralph G. Chaiet P.E. | Senior Air Compliance Specialist

Witt O'Brien's 5718 Cheena Dr. Houston, TX 77096

Direct +1 713-283-7921 Cell +1 832-483-7299

| Thermal | Oxidize | r | 106.261 8 | k 106.262 | | 7 | |
|--------------|-----------|--------------|--------------|----------------|--------------|-----------------|-------------|
| Hourly Emis | sions | 2785 | bph | 2525+260 = 2 | 2785 bph | | |
| | | Flow to Comb | ustor | % | | Heat Generate | d |
| | | LB/hr | BTU/lb | Combustion | | BTU/hr | |
| | VOC | 318 | 19000 | 99.9 | | 6,035,958 | |
| SCF | Supp Fuel | 0.0 | 1000 | 100 | | 0 | |
| Process Flow | / | 15637.7 | SCFH | | | | |
| Natural Gas | Flow | 0.0 | SCFH | | Total | 6,035,958 | BTU/hr |
| | | | | | | | Loading VOC |
| | | | | | | | 294 |
| NOx Factor | | 0.07 | lb/10^ 6 BTU |] | | | 27 |
| CO Factor | | 0.004 | Ib/10^ 6 BTU | 1 | | | 321 |
| PM Factor | | 0.0076 | lb/10^ 6 BTU | 1 | | | 317.79 |
| HOURLY | | lb/hr | | ſ | PBR Limit | | |
| NOx Genera | ted | 0.423 | | 261 | 6 | lb/hr |] |
| CO Generat | ed | 0.024 | | 261 | 6 | lb/hr | |
| PM2.5 Gen | erated | 0.046 | | 262 | L/K | Emax=0.214 |] |
| VOC Gasolin | e | 5.97* | | 262 | L/K | Emax=6.0 |] |
| | PM2.5 | | | | Gasoline | | |
| L for PM 2.5 | = | 3.000 | mg/m3 | L for Gasoline | 6 = | 800.000 | mg/m3 |
| Distance to | receptor | 2000 | ft | Distance to r | eceptor | 2000 | ft |
| Distance | K value | 14 | | Distance | K value | 14 | |
| Emax = L/K | | 0.214 | lb/hr | Emax = L/K | | 6.000 | lb/hr |
| | | | | * Includes TO |), Uncollect | ed and Piping F | ugitives |
| | MTBE | | | | | | |
| L C AATOF | | 45.000 | (1) | 7 | | | |

NOx, CO and PM Emissions Generated During Marine Loading

| | MIBE | | | | |
|-------------|----------|--------|-----------|--|--|
| L for MTBE | z | 45.000 | (L) mg/m3 | | |
| Distance to | receptor | 2000 | ft | | |
| Distance | K value | 14 | | | |
| Emax = L/K | | 3.214 | lb/hr | | |

| Annual Emis | sions | 10,000,000 | bbls/yr | | | | |
|---------------|------------|----------------|--------------|------------|-------|-----------|-------------|
| | | Flow to Comb | ustor | % | | ed | |
| | | LB/yr | BTU/lb | Combustion | | BTU/yr | |
| | VOC | 849274 | 19000 | 99.9 | | 2.E+10 | |
| SCF | Supp Fuel | 56,149,733 | 1000 | 100 | | 6.E+10 | |
| Process Flow | , | 56149732.6 | SCFY | | | | |
| Natural Gas | Flow | 11229946.5 | SCFY | | Total | 7.23.E+10 | BTU/yr |
| Natural Gas | flow = 20% | of Process Gas | flow | _ | | | Loading VOC |
| NOx Factor | | 0.07 | lb/10^ 6 BTU | | | | 776779 |
| CO Factor | | 0.004 | lb/10^ 6 BTU |] | | | 81073 |
| PM Factor | | 0.0076 | lb/10^ 6 BTU |] | | | 857852 |
| ANNUAL | | lb/yr | tons/yr | | | | 849273.48 |
| NOx Generated | | 5058.886 | 2.529 | | | | |
| CO Generated | | 289.079 | 0.145 |] | | | |
| PM2.5 Gen | erated | 549.250 | 0.275 | | | | |
| VOC Gasolin | e | 9580* | 4.79 | Emax = 262 | | 5.00 | tons/yr |

* Includes TO, Uncollected and Piping Fugitives



Table 1(a) Emission Point Summary

| Date: June 23, 2017 | Permit No.: | Regulated Entity No.: Not yet assigned |
|----------------------------------|-------------|--|
| Area Name: Centurion Brownsville | | Customer Reference No.: Not yet assigned |

Review of applications and issuance of permits will be expedited by supplying all necessary information requested on this Table.

| 1. Emission Point | | | 2. Component or Air Contaminant Name | 3. Air Contaminant Emission Rate | | | |
|-------------------|---------|------------|--------------------------------------|----------------------------------|---------|--|--|
| (A) EPN | (B) FIN | (C) Name | | (A) Pound Per Hour | (B) TPY | | |
| Т-150-1 | T-150-1 | Tank 150-1 | VOC | 0.548 | 1.83 | | |
| Т-150-5 | T-150-5 | Tank 150-5 | VOC | 0.548 | 1.83 | | |
| Г-150-9 | T-150-9 | Tank 150-9 | VOC | 0.548 | 1.83 | | |
| Г-250-1 | T-250-1 | Tank 250-1 | VOC | 2.15 | 3.95 | | |
| Г-250-2 | T-250-2 | Tank 250-2 | VOC | 2.15 | 3.95 | | |
| Г-250-3 | T-250-3 | Tank 250-3 | VOC | 1.38 | 0.33 | | |
| Г-250-4 | T-250-4 | Tank 250-4 | VOC | 1.38 | 0.16 | | |
| Г-250-5 | T-250-5 | Tank 250-5 | VOC | 1.38 | 0.16 | | |
| Г-250-6 | T-250-6 | Tank 250-6 | VOC | 1.38 | 0.16 | | |

EPN = Emission Point Number

FIN = Facility Identification Number

TCEQ - 10153 (Revised 04/08) Table 1(a) This form is for use by sources subject to air quality permit requirements and may be revised periodically. (APDG 5178 v5)

Table 1(a) Emission Point Summary

| Date: | Permit No.: | Regulated Entity No.: |
|---------------------------------|-------------|-------------------------|
| Area Name: Centurion Brownville | | Customer Reference No.: |

Review of applications and issuance of permits will be expedited by supplying all necessary information requested on this Table.

| AIR CO | NTAMIN | ANT DATA | | | | EMISSION POINT DISCHARGE PARAMETERS | | | | | | | | |
|---------|---------------------------------------|----------|------|------------------|-------------------|-------------------------------------|-----------------|--------------------------|-----------------------|-----------------------|-------------------------|---------------------|--------------------|---------------------|
| 1. Emis | ssion Poin | it | 4. U | TM Coordin | ates of | Source | | | | | | | | |
| | | | E | mission Point | t | 5. | Building 6 | 6. Height | 7. Stack Exi | t Data | | 8. Fugiti | ves | |
| (A) EPN | (B) FIN | (C) NAME | Zone | East (Meters) | North (Meters) | | Height (Ft.) | Above Ground (Ft.) | (A) Diameter (Ft.) | (B) Velocity (FPS) | (C) Temperature (°F) | (A) Length (Ft.) | (B) Width (Ft.) | (C) Axis Degrees |
| | | | | | | | | | | | | | | |
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EPN = Emission Point Number FIN = Facility Identification Number TCEQ - 10153 (Revised 04/08) Table 1(a) This form is for use by sources subject to air quality permit requirements and may be revised periodically. (APDG 5178 v5)

TCEQ



Table 1(a) Emission Point Summary

| Date: June 23, 2017 | Permit No.: | Regulated Entity No.: Not yet assigned |
|----------------------------------|--|--|
| Area Name: Centurion Brownsville | Customer Reference No.: Not yet assigned | |

Review of applications and issuance of permits will be expedited by supplying all necessary information requested on this Table.

| AIR CONTAMINANT DATA | | | | | | |
|----------------------|----------------|---------------------------|--------------------------------------|----------------------------------|---------|--|
| 4. Emission Point | | | 5. Component or Air Contaminant Name | 6. Air Contaminant Emission Rate | | |
| (A) EPN | (B) FIN | (C) Name | - | (A) Pound Per Hour | (B) TPY | |
| Fug | Fug | Piping Comp Fug | VOC | 0.43 | 1.86 | |
| Marine Load | Marine Load | Uncontrolled Load | VOC | 5.88 | 1.68 | |
| VC-1 | Marine Load | Marine Vapor Combustor | VOC | 3.2 | 0.42 | |
| VC-1 | Marine Load | Marine Vapor Combustor | NOx | 0.423 | 2.529 | |
| VC-1 | Marine Load | Marine Vapor Combustor | СО | 0.024 | 0.145 | |
| VC-1 | Marine Load | Marine Vapor Combustor | PM/PM10/PM2.5 | 0.046 | 0.275 | |
| Uncollected VOC | Marine Load | Uncollected VOC | VOC | 3.2 | 4.29 | |
| MSS Control | Tank Degassing | Portable Control | VOC | 0.67 | 0.08 | |
| MSS Control | Tank Degassing | Portable Control | NOx | 0.68 | 0.016 | |
| MSS Control | Tank Degassing | Portable Control | СО | 0.52 | 0.013 | |

EPN = Emission Point Number

FIN = Facility Identification Number

TCEQ - 10153 (Revised 04/08) Table 1(a) This form is for use by sources subject to air quality permit requirements and

may be revised periodically. (APDG 5178 v5)

TCEQ

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Table 1(a) Emission Point Summary

| Date: | Permit No.: | Regulated Entity No.: |
|------------|-------------|-------------------------|
| Area Name: | | Customer Reference No.: |

Review of applications and issuance of permits will be expedited by supplying all necessary information requested on this Table.

| AIR CO | NTAMIN | ANT DATA | | | | EMISSION POINT DISCHARGE PARAMETERS | | | | | | | | | |
|---------|------------|----------|------|------------------|---------------------------------------|-------------------------------------|-----------------|-----|--------------------------|-----------------------|---------------------------------------|------------------------|-----------------------|--------------------|---------------------|
| 2. Emi | ssion Poin | nt | 5. U | TM Coordin | ates of | | Source | | | | | | | | |
| | | | E | mission Point | t | 9. | Building | 10. | Height | 11. Stack Exi | t Data | | 12. Fugiti | ves | |
| (A) EPN | (B) FIN | (C) NAME | Zone | East (Meters) | North (Meters) | | Height (Ft.) | | Above Ground (Ft.) | (A) Diameter (Ft.) | (B) Velocity (FPS) | (C) Temperatur (°F) | e (A) Length (Ft.) | (B) Width (Ft.) | (C) Axis Degrees |
| | | | | | | | | | | | | | | | |
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EPN = Emission Point Number

FIN = Facility Identification Number

TCEQ - 10153 (Revised 04/08) Table 1(a)

This form is for use by sources subject to air quality permit requirements and

may be revised periodically. (APDG 5178 v5)



Table 1(a) Emission Point Summary

| Date: June 23, 2017 | Permit No.: | Regulated Entity No.: Not yet assigned |
|----------------------------------|-------------|--|
| Area Name: Centurion Brownsville | | Customer Reference No.: Not yet assigned |

Review of applications and issuance of permits will be expedited by supplying all necessary information requested on this Table.

| AIR CONTAMINANT DATA | | | | | | |
|----------------------|---------|-----------------------|--------------------------------------|----------------------|---------|--|
| 7. Emission Point | | | 8. Component or Air Contaminant Name | 9. Air Contaminant E | | |
| (A) EPN | (B) FIN | (C) Name | | (A) Pound Per Hour | (B) TPY | |
| WTTK-1 | WTTK-1 | Water Collection Tank | VOC | 0.116 | 0.507 | |
| | | | | | | |
| | | | | | | |
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EPN = Emission Point Number

FIN = Facility Identification Number

TCEQ - 10153 (Revised 04/08) Table 1(a) This form is for use by sources subject to air quality permit requirements and may be revised periodically. (APDG 5178 v5)



Table 1(a) Emission Point Summary

| Date: May 2, 2 | 2017 | Permit N | D.: | Regulated Entity No.: Not yet assigned | | | |
|----------------|-----------------------|-------------------------|---|--|---------|--|--|
| Area Name: C | Centurion Brownsvi | lle | Customer Reference No.: N | ot yet assigned | | | |
| Review of appl | ications and issuance | e of permits will be ex | pedited by supplying all necessary information reques | ted on this Table. | ···· | | |
| | | | AIR CONTAMINANT DATA | | | | |
| 10. Emission | Point | | 11. Component or Air Contaminant Name | 12. Air Contaminant Emission Rate | | | |
| (A) EPN | (B) FIN | (C) Name | | (A) Pound Per Hour | (В) ТРҮ | | |
| | | | · · · · · · · · · · · · · · · · · · · | | | | |
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EPN = Emission Point Number

FIN = Facility Identification Number

Guillermo Reyes

| From: | Ralph Chaiet <rchaiet@wittobriens.com></rchaiet@wittobriens.com> | | | | | |
|--------------|--|--|--|--|--|--|
| Sent: | Thursday, June 22, 2017 6:57 PM | | | | | |
| То: | Guillermo Reyes | | | | | |
| Subject: | Fugitive emissions speciation and Gasoline Maximum | | | | | |
| Attachments: | 20170622 FUG + 99% 95F PLUS 10% MTBE CENTURION Annual and Hourly Rate | | | | | |
| | Gasoline to Seagoing Barge Loading w TO Control.xlsx; 20170622 BUTANE SPECIATION CENTURION BROWNSVILLE PIPING FUGITIVES EMISSIONS.xlsx; 20170622 GASOLINE SPECIATION CENTURION BROWNSVILLE PIPING FUGITIVES EMISSIONS.xlsx | | | | | |

Guillermo,

I have prepared a calculation sheet for piping component fugitive emissions for Butane and for Gasoline

The gasoline amounted to 0.12 lb/hr

I have therefore reduced the gasoline fill rate just a bit so that the sum of the hourly Collection loss, the TO emissions and the Piping Components does not exceed 6 b/hr (5.85+0.12 = 5.97).

The annual quantity of gasoline including the Collection loss, the TO emissions and the Piping Components does not exceed 5 tons/yr (4.27 +0.52=4.79)

Thank you for your patience.

Ralph

Ralph G. Chaiet P.E. | Senior Air Compliance Specialist

Witt O'Brien's 5718 Cheena Dr. Houston, TX 77096

Direct +1 713-283-7921 Cell +1 832-483-7299



7. If an applicant decides to monitor their flanges using an organic vapor analyzer (OVA) at the same leak definition of valves, then valve credit may be used instead of the 30%. If this option is chosen, in addition to the OVA monitoring the company shall conti the weekly physical inspections.

| ſ | | FUCITI | /E EMISSIC | ON CALCULA | TIONS | DATE: | 6/28/2017 |
|----|------------------------------|-------------------|------------------|-----------------------|------------------|--------------------|------------------------|
| | | rounn | | Sit Checceli | 110115 | Diffe | 0.2012017 |
| ł | BISS Cold Economy States 500 | | | | | JOB NO: | 78261 |
| ļ | Houston, Texas 77017 | | | | | | |
| | REFERENCE: | TCEQ FACTO | RS 1/10/1996 | | - | | |
| | CONTROL PLAN: | SOCMI W/O C | 2. 28VHP | | | | |
| Al | DDITIONAL FACTORS: | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | CLIENT: | CENTURION | BROWNSVILL | E TERMINALS | | | |
| | LOCATION: | Brownsville TX | C C | | | | |
| | UNIT: | Gasoline Storag | ge and Loading | Components | | | |
| | | PROCESS | VOC | | | NO. OF | TOTAL |
| | EMISSION | STREAM | SOURCE | CONTROL | | EMISSION | EMISSION |
| | SOURCE | TYPE | LBS/HR | EFFICIENCY | NOTES | SOURCES | LBS/HR |
| | | R | 0.0089 | 97% | | 36 | 0.00961 |
| | VAL VEO | C | 0.0035 | 97% | | 41 | 0.00431 |
| | | D | 0.0007 | 0% | | 0 | 0.00000 |
| | | c | 0.0297 | 050/ | | А | 0.02216 |
| | PUMPS SEALS | C D | 0.0386 | 85% | | 4 | 0.00000 |
| | | D | 0.0101 | 070 | | - | |
| | COMPRESSOR SEALS | В | 0.5027 | 85% | | 1 | 0.07541 |
| | RELIEF VALVES | В | 0.2293 | 97% | | 0 | 0.00000 |
| | FLANGES | в | 0.0029 | 97% | 7 | 74 | 0.00644 |
| | | С | 0.0005 | 97% | 7 | 51 | 0.00077 |
| | | D | 0.00007 | 97% | 7 | 0 | 0.00000 |
| | OPEN ENDED LINES | Α | 0.0040 | 97% | | | 0.00000 |
| | SAMPLE CONNECTION | 5 A | 0.0330 | 97% | | 0 | 0.00000 |
| | PROCESS STREAM LEG | END | | 1001 | | EMISSION TOT | ALS |
| | A All Streems | | | | | I BS/HR | 0 11969 |
| | B Gas/Vapor Streams | | | | | LBS/DAY | 2.87244 |
| | C Light Liquid & Gas/Li | quid Streams | | | | LBS/YR | 1048.44060 |
| | D Heavy Liquid Streams | | • | | | TONS/YR | 0.52422 |
| | Light Liquid > 0.044 PSIA | A VP @ 68°F | | | - | TONS / 1 YEAR | 0.52422 |
| | <u></u> | MOLFR | COMPONEN | TT T | Lbs/Hr | Lbs/Day | Ton/Yr |
| | | 1 | | | 0.119685 | 2.87244 | 0.5242203 |
| | | 0 | | | 0 | 0 | 0 |
| ĺ | | ů 0 | | | 0 | 0 | 0 |
| | | | | | 0 11069F | 2 87244 | 0 5242203 |
| | | 1 | | | 0.119083 | 2.0/244 | 0.3242203 |
| Γ | Fugitive Emission Factor N | lotes: | EDA 452/D 02 | 026 June 1002 D- | | nt SOCMI w/o C2 | and w/ C2 which ar |
| | 1. racions are taken if om I | BEA DOCUMENT, | LI A-433/K-93- | -020, June 1993, Pa | 150 2-10, CXCC | pr 5001411 W/0 C2 | und with CA without al |
| - | Control Efficiency Notes | | | · · · · · | | | |
| | 7. If an applicant decides | o monitor their f | langes using an | organic vapor anal | yzer (OVA) at | the same leak defi | inition of valves, the |
| | valve credit may be use | d instead of the | 30%. If this opt | tion is chosen, in ad | ldition to the C | VA monitoring the | e company shall con |
| | the weekly physical ins | pections. | | | | | |

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Guillermo Reyes

| From: |
|--------------|
| Sent: |
| То: |
| Cc: |
| Subject: |
| Attachments: |

Ralph Chaiet <RChaiet@wittobriens.com> Tuesday, June 20, 2017 8:38 AM Guillermo Reyes Peter Schmar CMG Brownsville PBR 20170620 Centurion Reply to TCEQ.pdf

Mr. Guillermo Reyes P.E. Permit Engineer, TCEQ Project CMG Brownsville LLC (Centurion) PBR

Corrections and Additional Information supporting the submittal of the PBR for Construction and Operations of the Gasoline Storage Facility in Brownsville. Response to your e-mail to Mr. Peter Schmar dated 6/16/2017

- 1. We have updated the calculations to reflect the use of 99% Vapor Collection Efficiency for marine loading operations. The Table 1(a) has been updated to reflect the emissions changes.
- 2. Centurion will include on-line monitors for Oxygen or Carbon Monoxide. Centurion will also perform the stack testing as required.

In addition, Centurion has made a minor change to the Description of this project. Reformate formerly stored in tank T-150-1 will now be stored in tank T-250-3. MTBE (a gasoline blendstock) will now be stored in tank T-150-1. Diesel will be stored in two 250 M bbl tanks instead of three.

Fugitive emissions have been recalculated to reflect the operations of the blending of Butane.

Attached to this reply please find supporting documents reflecting this change as of 6/20/2017.

Ralph G. Chaiet P.E. | Senior Air Compliance Specialist

Witt O'Brien's 5718 Cheena Dr. Houston, TX 77096

Direct +1 713-283-7921 Cell +1 832-483-7299 Mr. Guillermo Reyes P.E.

Permit Engineer, TCEQ

Project CMG Brownsville LLC (Centurion) PBR

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Fugitive emissions have been recalculated to reflect the operations of the blending of Butane.

Attached to this reply please find supporting documents reflecting this change as of 6/20/2017.

Oph Chaut 713-283-7921

PROCESS DESCRIPTION

Gasoline blending stock including MTBE and Natural Gas Condensate will arrive primarily by marine vessels in to three (3) 150 M bbl IFR storage tanks. Reformate will be stored in one (1) 250 M bbl IFR storage tank.

According to a prescribed receipt, the blending stocks will be transferred into two (2) 250 M bbl IFR storage tanks. Additional MTBE and Butane will be injected into the blended gasoline from the on-site MTBE tank and the Butane high pressure storage tanks.

The finished gasoline will be pumped to awaiting marine vessels. A Vapor Combustor will destroy the VOC emissions generated during the gasoline marine loading operations.

Additionally, Diesel Fuel will arrive by marine vessels and stored in three (3) 250 M bbl IFR tanks. The Diesel Fuel will be pumped out to marine vessels. There is no control of the marine loading emissions.

Description of Storage tanks to Be Constructed and Operated

Tanks T-250-1 and T-250-2 (identical) will be IFR tanks with a Diameter of 224 ft and a Height of 48 ft. The nominal capacity is 250,000 bbls. Gasoline will be stored in these tanks under 106.478.

Emissions have been calculated using Tanks 4.09.

Tanks T-250-4, T-250-5 and T-250-6 (identical) will be IFR tanks with a Diameter of 224 ft and a Height of 48 ft. The nominal capacity is 250,000 bbls. Diesel Fuel will be stored in these tanks under 106.472.

Tank T-250-3 will be IFR tanks with a Diameter of 225 ft and a Height of 48 ft. The nominal capacity is 250,000 bbls. Reformate (Gasoline Blendstock) will be stored in this tanks under 106.478.

Emissions have been calculated using Tanks 4.09.

Tanks T-150-1, T-150-5 and T-150-9 (identical) will be IFR tanks with a Diameter of 168 ft and a Height of 48 ft. The nominal capacity is 150,000 bbls. Gasoline Blendstocks will be stored in these tanks under 106.478. Specifically T-150-1 will store MTBE.

Since these tanks may store a variety of Gasoline Blendstocks from the refinery processes, emissions using Tanks 4.09 was determined. Centurion chooses to assign the emissions based on the highest vapor pressure blendstock that they anticipate storing.



Table 1(a) Emission Point Summary

| Date: June 19, 2017 | Permit No.: | Regulated Entity No.: Not yet assigned |
|----------------------------------|-------------|--|
| Area Name: Centurion Brownsville | | Customer Reference No.: Not yet assigned |

Review of applications and issuance of permits will be expedited by supplying all necessary information requested on this Table.

| AIR CONTAMINANT DATA | | | | | | |
|----------------------|---|--|---|---|--|--|
| Point | , in a | 2. Component or Air Contaminant Name | 3. Air Contaminant Emission Rate | | | |
| (B) FIN (C) Name | | - | (A) Pound Per Hour | (B) TPY | | |
| T-150-1 | Tank 150-1 | VOC | 0.548 | 1.83 | | |
| | Tank 150-5 | VOC | 0.548 | 1.83 | | |
| | Tank 150-9 | VOC | 0.548 | 1.83 | | |
| | Tank 250-1 | VOC | 2.15 | 3.95 | | |
| | Tank 250-2 | VOC | 2.15 | 3.95 | | |
| | Tank 250-3 | VOC | 1.38 | 0.33 | | |
| T-250-4 | Tank 250-4 | VOC | 1.38 | 0.16 | | |
| | Tank 250-5 | VOC | 1.38 | 0.16 | | |
| | Tank 250-6 | VOC | 1.38 | 0.16 | | |
| | | | | | | |
| | Point (B) FIN T-150-1 T-150-5 T-150-9 T-250-1 T-250-2 T-250-3 T-250-4 T-250-5 T-250-6 | (B) FIN (C) Name T-150-1 Tank 150-1 T-150-5 Tank 150-5 T-150-9 Tank 150-9 T-150-9 Tank 150-9 T-250-1 Tank 250-1 T-250-2 Tank 250-2 T-250-3 Tank 250-3 T-250-4 Tank 250-4 T-250-5 Tank 250-5 T-250-6 Tank 250-6 | AIR CONTAMINANT DATA Point 2. Component or Air Contaminant Name (B) FIN (C) Name T-150-1 Tark 150-1 T-150-5 Tark 150-5 T-150-9 Tark 150-9 T-250-1 Tark 250-1 T-250-2 Tark 250-1 T-250-3 Tark 250-2 T-250-4 Tark 250-3 T-250-5 Tark 250-3 T-250-6 Tark 250-6 | AIR CONTAMINANT DATA Point 2. Component or Air Contaminant Name 3. Air Contaminant Er (B) FIN (C) Name (A) Pound Per Hour T-150-1 Tank 150-1 VOC 0.548 T-150-5 Tank 150-5 VOC 0.548 T-150-9 Tank 150-9 VOC 0.548 T-150-9 Tank 150-9 VOC 0.548 T-250-1 Tank 250-1 VOC 2.15 T-250-2 Tank 250-2 VOC 2.15 T-250-3 Tank 250-3 VOC 1.38 T-250-4 Tank 250-4 VOC 1.38 T-250-5 Tank 250-5 VOC 1.38 T-250-6 Tank 250-6 VOC 1.38 | | |

EPN = Emission Point Number

FIN = Facility Identification Number



Table 1(a) Emission Point Summary

| Date: June 19, 2017 | Permit No.: | Regulated Entity No.: Not yet assigned |
|----------------------------------|-------------|--|
| Area Name: Centurion Brownsville | | Customer Reference No.: Not yet assigned |

Review of applications and issuance of permits will be expedited by supplying all necessary information requested on this Table.

| AIR CONTAMINANT DATA | | | | | | |
|----------------------|----------------|-------------------|--------------------------------------|----------------------------------|---------|--|
| 4. Emission Point | | | 5. Component or Air Contaminant Name | 6. Air Contaminant Emission Rate | | |
| (A) EPN | (B) FIN | (C) Name | | (A) Pound Per Hour | (B) TPY | |
| Fug | Fug | Piping Comp Fug | VOC | 0.43 | 1.86 | |
| Marine Load | Marine Load | Uncontrolled Load | VOC | 5.88 | 1.68 | |
| VC-1 | Marine Load | Marine Vapor | VOC | 0.50 | 0.50 | |
| VC-1 | Marine Load | Marine Vapor | NOx | 0.78 | 2.647 | |
| VC-1 | Marine Load | Marine Vapor | СО | 0.044 | 0.151 | |
| VC-1 | Marine Load | Marine Vapor | PM/PM10/PM2.5 | 0.085 | 0.287 | |
| Uncollected VOC | Marine Load | Uncollected VOC | VOC | 5.9 | 5.04 | |
| MSS Control | Tank Degassing | Portable Control | VOC | 0.67 | 0.08 | |
| MSS Control | Tank Degassing | Portable Control | NOx | 0.68 | 0.016 | |
| MSS Control | Tank Degassing | Portable Control | СО | 0.52 | 0.013 | |

EPN = Emission Point Number

FIN = Facility Identification Number

TCEQ - 10153 (Revised 04/08) Table 1(a) This form is for use by sources subject to air quality permit requirements and may be revised periodically. (APDG 5178 v5)



Table 1(a) Emission Point Summary

| Date: June 19, | 2017 | Permit No.: | | Regulated Entity No.: Not yet assigned | | | |
|----------------------------------|---|--------------------------|--------------------------------------|--|--------------|--|--|
| Area Name: Centurion Brownsville | | | | Customer Reference No.: Not yet assigned | | | |
| | the second interview of normita will be expedited by supplying all necessary information requested on this Table. | | | | | | |
| keview of appir | | of permits will be exped | AIR CONTAMINANT DATA | | | | |
| 7. Emission | Point | | 8. Component or Air Contaminant Name | 9. Air Contaminant Er | nission Rate | | |
| (A) EPN | (B) FIN | (C) Name | | (A) Pound Per Hour | (B) TPY | | |
| WTTK-I | WTTK-I | Water Collection Tank | VOC | 0.116 | 0.507 | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

EPN = Emission Point Number

FIN = Facility Identification Number



INTERNAL FLOATING ROOF STORAGE TANK SUMMARY Tank T-250-4, T-250-5 and T-250-6 will be built exactly the same as T-250-3

| The I I I will differ a separate form for each to | ink). |
|--|--|
| 1. Tank Taenification (Use a separate form for each te | |
| 1. Applicant's Name: CWO Drownsvine in EEC | inates): 663739 E 2871955 N |
| 2. Location (indicate on piot piun and provide coord | on Point No. T-250-3 |
| 3. Tank No. <u>T-250-3</u> <u>4</u> . Emissi | |
| 5. FIN <u>1 ank 1-250-3</u> | Relocation [] Change of Service [] |
| 6. Status: New tank [X] Altered tank [] | |
| Previous permit or exemption number(s) | |
| U. Truck Dissignal Changestanistics | |
| 1. Tank Physical Characteristics | |
| 1. Dimensions 48 ft | |
| a. Shell Height : 48 11. | |
| b. Diameter: <u>224</u> II. | BIS gallons |
| c. Nominal Capacity of Talk Volume. 250 M D | <u>DDD</u> Guitenal |
| d. Turnovers per year: 24 | 0 BBI S/YR gallons/year. |
| e. Net Inroughpul: <u>ESTIMATED 0,000,00</u> | gallons/hour (Use the higher of the maximum fill |
| f. Maximum Pumping Rate: 28,000 <u>BBE/IIR</u> | guilons noun (coo intengenera) |
| rate or maximum withdrawai rate.) | |
| g. Self-Supporting Root ? Tes [] NO [X] | |
| h. Number of Columns: 31 | |
| i. Column Diameter: 0.7 II. | |
| 2. Shell/Roof and Paint Characteristics | an Rust [] Gunite Lining [] |
| a. Shell Condition : Light Rust [X] Den | A luminum/Sneeular [] Aluminum/Diffuse [] |
| b. Shell Color/Shade : White/White [X] | Aluminum/Specular [] Aluminum Britade [] |
| Gray/Light [] Gray/Medium [] Red/I | |
| c. Shell Condition : Good [X] Pool | [] |
| d. Roof Color/Shade : White/White [X] | Aluminum/Specular [] Aluminum/Diffuse [] |
| Gray/Light [] Gray/Medium [] Red/ | |
| e. Roof Condition : Good [X] Poor | τ [] |
| 3. Rim-Seal System | the state [] Machanical Shoe [Y] |
| a. Primary Seal: Vapor-mounted [] Liq | uid-mounted [] Mechanical Shoe [X] |
| b. Secondary Seal : Yes [X] No [] | |
| 4. Deck Characteristics | |
| a. Deck Type: Bolted [] Welded [X] | |
| b. Deck Construction (Bolted Tanks Only): | |
| Continuous Sheet Construction 5 | ft. wide |
| Continuous Sheet Construction 6 | ft. wide |
| Continuous Sheet Construction 7 | ft. wide |
| Rectangular Panel Construction 5 | X 7.5 ft. wide [] |
| Rectangular Panel Construction 5 | X 12 ft. wide [] |
| c. Deck Seam Length (Bolted Tanks Only): | ft. |
| 5. Roof Fitting Loss Factor:545 lb-mo | le/year |
| Based upon Typical [] Controlled [] or | Actual [X] fittings |
| Complete Section IV, Fittings Information, to r | ecord fittings count used to calculate the roof fitting loss |
| factor. | |

| Table 7(d) | INTERNAL FLOATING ROOF TANK SUMMARY |
|------------|-------------------------------------|
| Page 2 | |

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| Permi | it No Tank No. T-250-3 | |
|----------|--|---------|
| III. Lic | uid Properties of Stored Material See Tanks 4.09 for Details | |
| 1. | Chemical Category: Organic Liquids [] Petroleum Distillates [X] Crude Oils [|] |
| 2. | Single or Multi-Component Liquid | |
| | Single []Complete Section III.3 | |
| | Multiple [] Complete Section III.4 | |
| 3. | Single Component Information | |
| | a. Chemical Name: Reformate | |
| | b. CAS Number: | |
| | d. True Vapor Pressure at Average Liquid Surface Temperature: | psia. |
| | e. Liquid Molecular Weight: | |
| 4. | Multiple Component Information | |
| | a. Mixture Name: Heavy Condensate | ······ |
| | b. Average Liquid Surface Temperature:°F. | |
| | c. Minimum Liquid Surface Temperature: °F. | |
| | d. Maximum Liquid Surface Temperature: °F. | |
| | e. True Vapor Pressure at Average Liquid Surface Temperature: | _ psia. |
| | f. True Vapor Pressure at Minimum Liquid Surface Temperature: | _ psia. |
| | g. True Vapor Pressure at Maximum Liquid Surface Temperature: | _ psia. |
| | h. Liquid Molecular Weight: | |

. Chemical Components Information

| Chemical Name | CAS Number | Percent of Total Liquid Weight (typical) | Percent of Total Vapor Weight(typical | Molecular Weight |
|---------------|------------|---|--|---------------------|
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

Permit No.Tank No.T-250-3IV.Fittings InformationSEE TANKS 4.09 PRINTOUT FOR DETAILS

| | | | | Quantity |
|------------------------------------|---------------------------------------|----------|-----|----------|
| Fitting Type | Fitting Status | Quantity | KF | |
| Access Hatch (24-in. Diam.) | Bolted Cover, Gasketed | | 1.6 | |
| Access Hatch (24-in. Diam.) | Unbolted Cover, Gasketed | | 11 | |
| Access Hatch (24-in. Diam.) | Unbolted Cover, Ungasketed | | 25 | |
| Automatic Gauge Float Well | Bolted Cover, Gasketed | | 2.8 | |
| Automatic Gauge Float Well | Unbolted Cover, Gasketed | | 15 | |
| Automatic Gauge Float Well | Unbolted Cover, Ungasketed | | 28 | |
| Column Well (24-in.Diam.) | Built-Up Col. –Sliding Cover, Gask. | | 33 | |
| .Column Well (24-in.Diam.) | Built-Up Col. –Sliding Cover, Ungask. | | 47 | |
| Column Well (24-in.Diam.) | Pipe ColFlex. Fabric Sleeve Seal | | 10 | |
| Column Well (24-in.Diam.) | Pipe Col. –Sliding Cover, Gask. | | 25 | |
| Column Well (24-in.Diam.) | Pipe Col. –Sliding Cover, Ungask. | | 32 | |
| Ladder Well (36-in. Diam.) | Sliding Cover, Ungasketed | | 76 | |
| Ladder Well (36-in. Diam.) | Sliding Cover, Gasketed | | 56 | |
| Roof Leg or Hanger Well | Adjustable | | 7.9 | |
| Roof Leg or Hanger Well | Fixed | | 0 | |
| Sample Pipe or Well (24-in. Diam.) | Slit Fabric Seal 10% Open | | 12 | |
| Sample Pipe or Well (24-in. Diam.) | Slotted Pipe-Sliding Cover, Gask. | | 44 | |
| Sample Pipe or Well (24-in. Diam.) | Slotted Pipe-Sliding Cover, Ungask. | | 57 | |
| Stub Drain (1-in, Diam.) | | | 1.2 | |
| Vacuum Breaker (10-in. Diam.) | Weighted Mech. Actuation, Gask. | | 6.2 | |
| Vacuum Breaker (10-in. Diam.) | Weighted Mech. Actuation, Ungask. | | 0.9 | |



INTERNAL FLOATING ROOF STORAGE TANK SUMMARY Tank T-250-5 and T-250-6 will be built exactly the same as T-250-4

| I. | Tank Identification (Use a separate form for each tank). |
|-----|---|
| | 1. Applicant's Name: CMG Brownsville II LLC |
| | 2. Location (indicate on plot plan and provide coordinates): 663841 E 28/1960 N |
| | 3. Tank No. 1-250-4 4. Emission Point No. 1-250-4 5. FIN Tank T 250.4 |
| | 6 Status: New tank [Y] Altered tank [] Pelocation [] Change of Service [] |
| | Previous permit or exemption number(s) |
| | |
| II. | Tank Physical Characteristics |
| | 1. Dimensions |
| | a. Shell Height : <u>48</u> ft. |
| | b. Diameter: <u>224</u> ft. |
| | c. Nominal Capacity or Tank Volume: <u>250 M BBLS</u> gallons. |
| | d. Turnovers per year:24 |
| | e. Net Throughput : <u>ESTIMATED 6,000,000 BBLS/YR</u> gallons/year. |
| | f. Maximum Pumping Rate: 28,000 <u>BBL/HR</u> gallons/hour. (Use the higher of the maximum fill |
| | rate or maximum withdrawal rate.) |
| | g. Self-Supporting Roof ? Yes [] No [X] |
| | n. Number of Columns: 31 |
| | 1. Column Diameter: <u>0.7</u> Π. |
| | 2. Shell Condition: Light Dust [V] Dance Dust [] Gunite Lining [] |
| | a. Sheh Color/Shade : White/White [X] Aluminum/Snecular [] Aluminum/Diffuse [] |
| | Grav/Light [] Grav/Medium [] Red/Primer [] Other [] (Describe) |
| | c. Shell Condition : Good [X] Poor [] |
| | d. Roof Color/Shade : White/White [X] Aluminum/Specular [] Aluminum/Diffuse [] |
| | Gray/Light [] Gray/Medium [] Red/Primer [] Other [] (Describe) |
| | e. Roof Condition : Good [X] Poor [] |
| | 3. Rim-Seal System |
| | a. Primary Seal: Vapor-mounted [] Liquid-mounted [] Mechanical Shoe [X] |
| | b. Secondary Seal : Yes [X] No [] |
| | 4. Deck Characteristics |
| | a. Deck Type: Bolted [] Welded [X] |
| | b. Deck Construction (Bolted Tanks Only): |
| | Continuous Sheet Construction 5 ft. wide |
| | Continuous Sheet Construction 6 ft. wide [] |
| | Continuous Sheet Construction / It. wide [] |
| | Rectangular Panel Construction 5 X 1.2 ft wide [] |
| | C Deck Seam Length (<i>Rolted Tanks Only</i>): |
| | 5. Roof Fitting Loss Factor: 545 lb-mole/year |
| | Based upon Typical [] Controlled [] or Actual [X] fittings |
| | Complete Section IV, Fittings Information. to record fittings count used to calculate the roof fitting loss |
| | factor. |

| Table 7(d) | INTERNAL FLOATING ROOF TANK SUMMARY |
|------------|-------------------------------------|
| Page 2 | |

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| Perr | mit No Tank No. T-250-4 | |
|---------------|--|----------|
| III. L | iquid Properties of Stored Material See Tanks 4.09 for Details | |
| 1 | 1. Chemical Category: Organic Liquids [] Petroleum Distillates [X] Crude (| Dils [] |
| 2 | 2. Single or Multi-Component Liquid | |
| | Single []Complete Section III.3 | |
| | Multiple [] Complete Section III.4 | |
| | 3. Single Component Information | |
| | a. Chemical Name: Diesel Fuel | |
| | b. CAS Number: | |
| | d. True Vapor Pressure at Average Liquid Surface Temperature: | psia. |
| | e. Liquid Molecular Weight: | |
| | 4. Multiple Component Information | |
| | a. Mixture Name: Heavy Condensate | |
| | b. Average Liquid Surface Temperature:°F. | |
| | c. Minimum Liquid Surface Temperature: °F. | |
| | d. Maximum Liquid Surface Temperature: °F. | |
| | e. True Vapor Pressure at Average Liquid Surface Temperature: | psia. |
| | f. True Vapor Pressure at Minimum Liquid Surface Temperature: | psia. |
| | g. True Vapor Pressure at Maximum Liquid Surface Temperature: | psia. |
| | h. Liquid Molecular Weight: | |
| | | |

. Chemical Components Information

| Chemical Name | CAS Number | Percent of Total Liquid Weight (typical) | Percent of Total Vapor Weight(typical | Molecular Weight |
|---------------|------------|---|--|---------------------|
| | | | | |
| | | | | |
| | | | | |
| | | | | |

Permit No.Tank No.T-250-4IV.Fittings InformationSEE TANKS 4.09 PRINTOUT FOR DETAILS

| | | | | Quantity |
|------------------------------------|---------------------------------------|----------|-----|------------------|
| Fitting Type | Fitting Status | Quantity | Kf | X K _F |
| Access Hatch (24-in. Diam.) | Bolted Cover, Gasketed | | 1.6 | |
| Access Hatch (24-in. Diam.) | Unbolted Cover, Gasketed | | 11 | |
| Access Hatch (24-in. Diam.) | Unbolted Cover, Ungasketed | | 25 | |
| Automatic Gauge Float Well | Bolted Cover, Gasketed | | 2.8 | |
| Automatic Gauge Float Well | Unbolted Cover, Gasketed | | 15 | |
| Automatic Gauge Float Well | Unbolted Cover, Ungasketed | | 28 | |
| Column Well (24-in.Diam.) | Built-Up Col. –Sliding Cover, Gask. | | 33 | |
| .Column Well (24-in.Diam.) | Built-Up Col. –Sliding Cover, Ungask. | | 47 | |
| Column Well (24-in.Diam.) | Pipe ColFlex. Fabric Sleeve Seal | | 10 | |
| Column Well (24-in.Diam.) | Pipe Col. –Sliding Cover, Gask. | | 25 | |
| Column Well (24-in.Diam.) | Pipe Col. –Sliding Cover, Ungask. | | 32 | |
| Ladder Well (36-in. Diam.) | Sliding Cover, Ungasketed | | 76 | |
| Ladder Well (36-in. Diam.) | Sliding Cover, Gasketed | | 56 | |
| Roof Leg or Hanger Well | Adjustable | | 7.9 | |
| Roof Leg or Hanger Well | Fixed | | 0 | |
| Sample Pipe or Well (24-in. Diam.) | Slit Fabric Seal 10% Open | | 12 | |
| Sample Pipe or Well (24-in. Diam.) | Slotted Pipe-Sliding Cover, Gask. | | 44 | |
| Sample Pipe or Well (24-in. Diam.) | Slotted Pipe-Sliding Cover, Ungask. | | 57 | |
| Stub Drain (1-in. Diam.) | | | 1.2 | |
| Vacuum Breaker (10-in. Diam.) | Weighted Mech. Actuation, Gask. | | 6.2 | |
| Vacuum Breaker (10-in. Diam.) | Weighted Mech. Actuation, Ungask. | | 0.9 | |

Centurion Brownsville Seagoing Barge/Ship Loading Calculation

Blended Gasoline high 11.5 RVP Thermal Oxidizer designed for 99.9% DRE

| Loading Seagoing | Equation Annual g Barge/Ship | Emissions Inerted Only |
|---------------------------------|---|---|
| LI = | 12.46 x ((Q x 42)/1000) x M | 1W x VP x S/(T+460) |
| Q = MW = VP S = T = | 9,000,000 bbls/yr 65 lb/lb-mole 8.1 psia 0.2 76 F | loading rate 76 F Annual Average Sat Factor for Seagoing Barge/Ship loading Annual Average product storage temperature |
| LI = | 925281 lb/yr 462.64 tons/yr | |

Collection Efficiency 99.0% per TCEQ

| Collection Loss | 9252 81 lb/vr |
|-----------------|---------------|
| Collection Loss | 4.63 tons/yr |
| T.O. DRE 99.9% | 916 lb/yr |
| | 0.46 tons/yr |
| Total VOC | 5.08 tons/yr |

Blended Gasoline high 11.5 RVP Thermal Oxidizer designed for 99.9% DRE

Loading Equation Hourly Emissions

Seagoing Barge/Ship Inerted

LI =

12.46 x ((Q x 42)/1000) x MW x VP x S/(T+460)

| Q = | 4,900 bbls/hr 65 lb/lb-mole | loading rate |
|-----------|--------------------------------|--|
| VP S - | 8.9 psia 0.2 | at 87 F Maximum Daily Sat Factor for Seagoing Barge loading |
| Τ= | 87 F | Maximum product storage temperature |

Ll = 542 lb/hr

| Collection Efficiency 99 | .0% per TCEQ |
|--------------------------|--------------|
| | 5.4 lb/hr |
| | · |
| T.O. DRE 99.9% | 0.5 lb/hr |

| T.O. DRE 99.9% | 0.5 10/11 |
|----------------|-----------|
| Total VOC | 6.0 lb/hr |
| | |

Centurion Brownsville Seagoing Barge/Ship Loading Calculation

10% MTBE Speciation Blended Gasoline high 11.5 RVP Thermal Oxidizer designed for 99.9% DRE

Annual Emissions Loading Equation Inerted Only Seagoing Barge/Ship

Ll =

12.46 x ((Q x 42)/1000) x MW x VP x S/(T+460)

| Q = MW = VP S = T = | 1,000,000 bbls/yr 88.15 lb/lb-mole 4.71 psia 0.2 76 F | loading rate 76 F Annual Average Sat Factor for Seagoing Barge/Ship loading Annual Average product storage temperature |
|---------------------------------|---|---|
| LI = | 81073 lb/yr | |

| 01010 | 1007 71 |
|-------|---------|
| 40.54 | tons/yr |

Collection Efficiency 99.0% per TCEQ

| Collection Loss | 810.73 lb/yr |
|-----------------|--------------|
| | 0.41 tons/yr |
| T.O. DRE 99.9% | 80 lb/yr |
| | 0.04 tons/yr |
| Total VOC | 0.45 tons/yr |
| | |

Blended Gasoline high 11.5 RVP

Thermal Oxidizer designed for 99.9% DRE

| Loading Equation | Hourly Emissions | | | |
|---------------------|------------------|--|--|--|
| Seagoing Barge/Ship | Inerted | | | |

12.46 x ((Q x 42)/1000) x MW x VP x S/(T+460) LI =

| Q = MW = VP | 490 bbls/hr 88.15 lb/lb-mole 6.04 psia 0.2 87 F | loading rate at 87 F Maximum Daily | | | |
|-------------------|---|--|--|--|--|
| S = T = | | Sat Factor for Seagoing Barge loading Maximum product storage temperature | | | |

Ll =

50 lb/hr

Collection Efficiency 99.0% per TCEQ 0.5 lb/hr

| T.O. DRE 99.9% | 0.0 lb/hr |
|----------------|-----------|
| Total VOC | 0.5 lb/hr |
| | |

Nox, CO and PM Emissions Generated During Marine Loading

-

| Thermal Oxidizer | | 106.261 | & 106.262 | | | | |
|------------------|-----------|---------------|---------------------------------------|------------|-------|---------------|--------|
| Hourly Emis | sions | 5390 | bph | | | | |
| - | | Flow to Combu | istor | % | | Heat Generate | ed |
| | | LB/hr | BTU/ib | Combustion | | BTU/hr | |
| | voc | 586 | 19000 | 99.9 | | 11,122,866 | |
| SCF | Supp Fuel | 0.0 | 1000 | 100 | | 0 | |
| Process Flow | | 30264.7 | SCFH | | | | |
| Natural Gas Flow | | 0.0 | SCFH | | Total | 11,122,866 | BTU/hr |
| | | | | | | | |
| | | | · · · · · · · · · · · · · · · · · · · | _ | | | |
| NOx Factor | | 0.07 | 1b/10^ 6 BTL | <u>,</u> | | | |

| CO [| 0.004 | 16/10^ 6BTU | | | | |
|----------------------|--------|-------------|----------------|-----------|------------|--------|
| CU Factor | 0.004 | IL GOA COTU | 1 | | | |
| PM Factor | 0.0076 | 10/10-6810 | | | | 1 |
| HOURLY | ib/hr | | | PBR Limit | | 4 |
| NOx Generated | 0.779 | | 261 | 6 | lb/hr | |
| CO Generated | 0.044 | | 261 | 6 | lb/hr | |
| PM2.5 Generated | 0.085 | | 262 | L/K | Emax=0.214 | |
| voc | 3.000 | | 262 | L/K | Emax=6.0 | 1 |
| PM2.5 | | | | Gasoline | | |
| L for PM 2.5 = | 3.000 | mg/m3 | L for Gasoline | = | 800.000 | mg/m3 |
| Distance to recentor | 2000 | ft | Distance to re | eceptor | 2000 | ft |
| Distance K value | 14 | | Distance | K value | 14 | |
| Fmax = 1/K | 0.214 | lb/hr | Emax = L/K | | 6.000 | lb/hr_ |

| | MTBE | | | | |
|-------------|----------|--------|-----------|--|--|
| L for MTBE | - | 45.000 | (L) mg/m3 | | |
| Distance to | receptor | 2000 | ft | | |
| Distance | K value | 14 | | | |
| Emax = L/K | | 3.214 | lb/hr | | |

lb/yr 5294.970

302.570

574.882

NOx Generated

CO Generated

PM2.5 Generated

| Annual Emis | sions | 10,000,000 | bbis/yr | | | | |
|------------------|------------|----------------|-------------|------------|-------|---------------|--------|
| | | Flow to Combu | istor | % | | Heat Generate | ed |
| | | LB/yr | BTU/lb | Combustion | | BTU/yr | |
| VOC | | 1026958 | 19000 | 99.9 | | 2.E+10 | 1 |
| SCF | Supp Fuel | 56,149,733 | 1000 | 100 | | 6.E+10 | |
| Process Flow | | 56149732.6 | SCFY | | | | |
| Natural Gas Flow | | 11229946.5 | SCFY | | Total | 7.56.E+10 | BTU/yr |
| Natural Gas | flow = 20% | of Process Gas | flow | - | | | |
| NOx Factor | Τ | 0.07 | lb/10^6 BTU | 1 | | | |
| CO Factor | | 0.004 | lb/10^6 BTU | | | | |
| PM Factor | | 0.0076 | Ib/10^6 BTU | 1 | | | |
| ANNUAL | 1 | lb/yr | tons/yr | 1 | | | |

2.647

0.151

0.287

201 70619 MTBE Loading 262 Centurion BROWNSVILLE Marine PBR Houriy and Annual NOx CO PM Emission risk

| DHOENX NGINEERING INC. 8086 Galf Frankle, Salis 600 Higgsbo, Torok 27817 | FUGITIV | E EMISSIO | TIONS | DATE: JOB NO: | 6/19/2017 78261 | |
|---|----------------------------------|--------------------------|-------------------|------------------|--------------------|--------------|
| REFERENCE: CONTROL PLAN: | TCEQ FACTO SOCMI W/O (| RS 1/10/1996 C2、28VHP | | | | |
| IIIONAL IACTORS. | | | | | | |
| CLIENT: | CENTURION | BROWNSVILI | E TERMINALS | | | <u> </u> |
| LOCATION: UNIT: | Brownsville T2 Gasoline Stora | K ge and Diesel St | torage Terminal | | | |
| | PROCESS | VOC | | | NO. OF | TOTAL |
| EMISSION | STREAM | SOURCE | CONTROL | NOTES | SOURCES | LBS/HR |
| JOURCE | | | | | | |
| VALVES | В | 0.0089 | 97% | | 60 | 0.01602 |
| | C | 0.0035 | 97% | | 432 | 0.045.56 |
| | U | 0.0007 | •/• | | | 0.00000 |
| PUMPS SEALS | С | 0.0386 | 85% | | 8 | 0.04632 |
| | D | 0.0161 | 0% | | 4 | 0.06440 |
| COMPRESSOR SEALS | В | 0.5027 | 85% | | I | 0.07541 |
| RELIEF VALVES | В | 0.2293 | 97% | | Û | 0.00000 |
| EL ANICES | ъ | 0.0029 | 97% | 7 | 945 | 0.08222 |
| FLANGES | c | 0.0005 | 97% | ż | 532 | 0.00798 |
| | Ď | 0.00007 | 97% | 7 | 323 | 0,00068 |
| OPEN ENDED LINES | А | 0.0040 | 97% | | | 0.00000 |
| SAMPLE CONNECTION | A | 0.0330 | 97% | | ۵ | 0.00000 |
| PROCESS STREAM LEC | END | | | | EMISSION TO | TALS |
| A All Streams | | | | I | .BS/HR | 0 42518 |
| B Gas/Vapor Streams | | | | ĩ | BS/DAY | 10.20428 |
| C Light Liquid & Gas/Li | iquid Streams | | | I | _BS/YR | 3724.56191 |
| D Heavy Liquid Streams | 5 | | | 1 | FONS/YR | 1.86228 |
| Light Liquid > 0.044 PSI | A VP @ 68⁼F | | | тс | DNS/1 YEAR | 1.86228 |
| | MOLFR | COMPONEN | Т | Lbs/Hr | Lbs/Day | Ton/Yr |
| | I | | | 0.4251783 | 10.2042792 | 1.862280954 |
| | 0 | | | ő | 0 | ő |
| | Ō | | | 0 | 0 | 0 |
| | 1 | | | 0.4251783 | 10.2042792 | 1.862280954 |
| Fugitive Emission Factor 1 | Notes: | | | | | |
| 1. Factors are taken from | EPA Documen | t, EPA-453/R-93 | 3-026, June 1993, | , Page 2-10, ex | cept SOCMI w/c | C2 and w/ C2 |
| | | | | | | |
| Control Efficiency Notes: | | | | | | |

 \bigcirc



Permits by Rule 30 TAC Chapter 106, Section 106.4 "Quick-Check" Applicability Checklist Instructions and Guidance for Using the "Quick-Check" Checklist

| | | the formation of the second | | | | | | | | | |
|------------------|--|---|--|---|---------------------------------------|---------------|------|--|--|--|--|
| List tl | he maximum a | nnual emission rates, in | TONS PER YEAR (| TPY), for this project: | | | | | | | |
| со | 0.16 | 0.16 NO _x 2.67 VOC 23.87 | | | | | | | | | |
| PM | 0.29 | | SO ₂ | | Other | | | | | | |
| The f | ollowing que | tions require a "Yes," | or "No," answer to b | e indicated for this pe | rmit by rule claim: | | | | | | |
| А. | Title 30 TAC | C § 106.4(a)(5): Currer | nt Permit by Rule Re | quirements | | | | | | | |
| Have | you checked t | o determine if this exem | pt project is being cla | imed under the current | version of 30 TAC 106? | X YES | □no | | | | |
| | If "Yes," con | ntinue to next question | | | | | | | | | |
| | If "No," plea | ase contact the Air Perm | its Division for a copy | of the current permit b | y rule to be claimed. | | | | | | |
| B . | Title 30 TA | C § 106.4(a)(7): Permit | t by rule prohibition | check | • | | | | | | |
| Are the permi | here any <u>air pe</u> its by rule? | rmits under the same acc | count containing perm | it conditions which pro | hibit or restrict the use of | YES | X NO | | | | |
| | If "No," con | tinue to next question | | | | | | | | | |
| | lf "Yes, " per | mits by rule may not be | used or their use must | t meet the restrictions of | f the permit. | | | | | | |
| | A new permi | t or permit amendment n | nay be required. | | | | | | | | |
| List p | ermits number | r(s): | | | | | | | | | |
| C. | Title 30 TA | C § 106.4(b): Circumv | ention check | | · · · · · · · · · · · · · · · · · · · | | | | | | |
| Title . (cove | 30 TAC § 106. ring permitting | 4(b) states "No person s g)." Circumvention by a | shall circumvent by ar rtificial limitations ma | tificial limitations the reason of the re The reason of the reason of th | equirements of § 116.110 ited to: | of this title | 2 | | | | |
| | (1.) <i>A</i> . | dividing a complete pro | oject into separate seg | ments to circumvent §1 | 06.4(a)(1) limits; | | | | | | |
| | (2.) claiming feed or production rates below the physical capacity of the project's equipment in order to begin constructing facilities before a permit or permit amendment is approved for full scale operations, particularly when the unit will not be economically viable at less than permitted capacity; | | | | | | | | | | |
| | (3.) claiming a limited chemical list in order to begin constructing facilities before a permit or permit amendment is approved for additional chemicals, particularly when the unit will not be economically viable until the additional chemicals are authorized. | | | | | | | | | | |
| Does | your project n | neet any of the criteria li | sted above? | | | YES | X NO | | | | |
| | If "No, " con | tinue to next rule question | on. | | | | | | | | |
| | If "Yes," a permit by rule may not be claimed. | | | | | | | | | | |
| D. | D. Title 30 TAC § 106.4(c) and (d): Compliance with all Rules | | | | | | | | | | |
| Will perm | the facility cor itting or regist | nply with all rules and re ration requirements? | egulations of the, the i | ntent of the Texas Clea | n Air Act, and any local | X YES | □ NO | | | | |
| | If "Yes," cor | ntinue to next rule questi | ion | | | | | | | | |
| | If "No," a p | ermit by rule may not be | claimed | | | | | | | | |
| | | | | | | | | | | | |

Guillermo Reyes

To:

From: Ralph Chaiet <RChaiet@wittobriens.com> Sent: Tuesday, June 20, 2017 2:02 PM **Guillermo Reyes** Subject: Additional Document Centurion Brownsville Tank emissions Attachments: 20170619 Centurion Tank 250-3 Reformate emissions.pdf

I believe that I failed to scan and send you the Tanks 4.09 Emissions calculation for the Reformate storage in Tank 250-3. Please see attached.

Sorry, my error.

We are not asking for negotiations to eliminate the analyzer on the Vapor Combustor. I will be installed.

Ralph

Ralph G. Chaiet P.E. | Senior Air Compliance Specialist

Witt O'Brien's 5718 Cheena Dr. Houston, TX 77096

Direct +1 713-283-7921 Cell +1 832-483-7299

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TANKS 4.0.9d Emissions Report - Detail Format Tank Indentification and Physical Characteristics

| Identification User Identification: City: | CENTURION BROWNSVILLE 250 M IN REFORMATE $(7-250-3)$ | |
|---|---|-------------------------------|
| State: Company: Type of Tank: Description: | Internal Floating Roof Tank | |
| Tank Dimensions Diameter (ft): Volume (gallons): Turnovers: Self Supp. Roof? (y/n): No. of Columns: Eff. Col. Diam. (ft): | 224.00 10,500,000.00 4.00 N 31.00 0.70 | |
| Paint Characteristics Internal Shell Condition: Shell Color/Shade: Shell Condition Roof Color/Shade: Roof Condition: | Light Rust White/White Good White/White Good | |
| Rim-Seal System Primary Seal: Secondary Seal | Mechanical Shoe Rim-mounted | |
| Deck Characteristics Deck Fitting Category: Deck Type: | Detail Welded | |
| Deck Fitting/Status | | Quantity |
| Access Hatch (24-in. Diam.)/Bolted Automatic Gauge Float Well/Bolted Column Well (24-in. Diam.)/Pipe C Roof Leg (3-in. Diameter)/Fixed Slotted Guide-Pole/Sample Well/G Ladder Well (36-in. Diam.)/Sliding | d Cover, Gasketed d Cover, Gasketed colFlex. Fabric Sleeve Seal Sask. Sliding Cover, w. Pole Sleeve,Wiper Cover, Gasketed | 2 2 31 112 2 2 |

Meterological Data used in Emissions Calculations: Brownsville, Texas (Avg Atmospheric Pressure = 14.72 psia)

file:///C:/Program%20Files%20(x86)/Tanks409d/summarydisplay.htm

TANKS 4.0.9d Emissions Report - Detail Format Liquid Contents of Storage Tank

CENTURION BROWNSVILLE 250 M IN REFORMATE - Internal Floating Roof Tank

| | , <u> </u> | De Tem | ally Liquid S perature (d | urf. eg F) | Liquid Bulk Temp | Vapo | r Pressure | (psia) | Vapor Mol. | Liquid Mass | Vepor Mass | Mal. | Basis for Vapor Pressure |
|-------------------|------------|-----------|------------------------------|---------------|------------------------|--------|------------|--------|---------------|----------------|---------------|--------|---|
| Mixture/Component | Month | Avg. | Min. | Max. | (deg F) | Avg. | Min. | Max. | Weight. | Fract. | Fract. | Weight | Calculations |
| | lon | 69.71 | 64.20 | 73.21 | 73.84 | 0.4347 | N/A | | 114,0000 | | | 114.00 | Option 2: A=6.851, B=1307.882, C=217.44 |
| Retormate | Jeil | 20.24 | 65 41 | 75 27 | 73.84 | 0.4562 | N/A | N/A | 114.0000 | | | 114.00 | Option 2: A=6.851, B=1307.882, C=217.44 |
| Reformate | rep | 10.34 | 60.41 | 70.70 | 72.04 | 0.5010 | N/A | N/A | 114 0000 | | | 114.00 | Option 2: A=6.851, B=1307.882, C=217.44 |
| Reformate | Mar | 73.56 | 68.35 | 10.70 | 73.04 | 0.5010 | NIA | N//A | 114 0000 | | | 114.00 | Option 2: A=6.851, B=1307.882, C=217.44 |
| Reformate | Apr | 76.73 | /1.5/ | 81.89 | 73.04 | 0.5487 | NVA | 10/1 | 414.0000 | | | 114.00 | Option 2: A=6 851, B=1307,882, C=217,44 |
| Reformate | May | 78.98 | 73.94 | 84.01 | 73.84 | 0.5848 | N/A | NVA | 114.0000 | | | 114.00 | Option 2: A=6 851 B=1307 882 C=217 44 |
| Reformate | Jun | 80.56 | 75.26 | 85.87 | 73.84 | 0.6115 | N/A | N/A | 114.0000 | | | 114.00 | Option 2: A=0.001, B=1007,002, C=217.44 |
| Reformate | Jui | 81.31 | 75.68 | 86.94 | 73.84 | 0.6244 | N/A | N/A | 114.0000 | | | 114.00 | Uption 2: A=6.851, B=1307.862, C=217.44 |
| Reformate | Aug | 81.09 | 75.54 | 86.64 | 73.84 | 0.6207 | N/A | N/A | 114.0000 | | | 114.00 | Option 2: A=6 851, B=1307.882, C=217.44 |
| Referencia | Sen | 79 55 | 74.50 | 84.61 | 73.84 | 0.5944 | N/A | N/A | 114.0000 | | | 114.00 | Option 2: A=6.851, B=1307.882, C=217.44 |
| Reiomate | 000 | 76.57 | 71 42 | 81 72 | 73 84 | 0 5463 | N/A | N/A | 114.0000 | | | 114.00 | Option 2: A=6.851, B=1307.882, C=217.44 |
| Reiormate | Ua | 70.07 | 00.05 | 77.00 | 73.84 | 0 4933 | N/A | N/A | 114 0000 | | | 114.00 | Option 2: A=6.851, B=1307.882, C=217.44 |
| Reformate | Nov | 73.02 | 68.25 | 77.80 | 13.64 | 0.4933 | 14/A | NUA | 114.0000 | | | 114 00 | Option 2: A=6.851, B=1307,882, C=217.44 |
| Reformate | Dec | 69.82 | 65.31 | 74.33 | /3.84 | 0.4493 | N/A | N/A | 114.0000 | | | | ************************************** |
TANKS 4.0.9d Emissions Report - Detail Format Detail Calculations (AP-42)

CENTURION BROWNSVILLE 250 M IN REFORMATE - Internal Floating Roof Tank

| Month | January | February | March | April | May | June | July | August | September | October | November | December |
|--|--------------------------|--------------|----------------|----------------|----------------|-------------------------|-------------------|----------------|----------------|----------------|----------------|----------------|
| Dia Caali aaaa (b) | 9 5706 | 10 0504 | 11 0542 | 12,1278 | 12.9426 | 13.5463 | 13.8382 | 13.7525 | 13.1594 | 12.0725 | 10.8819 | 9.8954 |
| Rim Seal Losses (ID). | 0.6000 | 0 6000 | 0.6000 | 0,6000 | 0.6000 | 0.6000 | 0.6000 | 0.6000 | 0.6000 | 0.6000 | 0.6000 | 0.6000 |
| Seal Factor A (D-molefit v/ (mob)^o) | 0.4000 | 0.4000 | 0.4000 | 0.4000 | 0.4000 | 0.4000 | 0.4000 | 0,4000 | 0.4000 | 0.4000 | 0.4000 | 0.4000 |
| Seal Factor B (ID-mole/it-yr (mpn) 1). | 0.0075 | 0.0079 | 0 0087 | 0.0095 | 0.0101 | 0.0106 | 0.0108 | 0.0108 | 0.0103 | 0.0095 | 0,0085 | 0.0078 |
| Value of vapor Pressure Function. | 0.0010 | 0.0070 | | | | | | | | | | o 4400 |
| Vapor Pressure at Daily Average Equit | 0 4347 | 0.4562 | 0.5010 | 0.5487 | 0.5848 | 0.6115 | 0.6244 | 0.6207 | 0.5944 | 0.5463 | 0.4933 | 0.4493 |
| Surace Temperature (psia). | 224 0000 | 224 0000 | 224,0000 | 224,0000 | 224,0000 | 224.0000 | 224.0000 | 224,0000 | 224.0000 | 224.0000 | 224.0000 | 224.0000 |
| Lank Diameter (T): | 114 0000 | 114 0000 | 114,0000 | 114,0000 | 114.0000 | 114.0000 | 114.0000 | 114.0000 | 114.0000 | 114.0000 | 114.0000 | 114,0000 |
| Vapor Molecular Weight (IDND-micha). | 1 0000 | 1 0000 | 1 0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Product Pactor: | 1.0000 | | | | | | | | | | | |
| the fate days will be made a fib to | 4 1270 | 4 1270 | 4 1270 | 4,1270 | 4.1270 | 4.1270 | 4,1270 | 4.1270 | 4.1270 | 4.1270 | 4.1270 | 4,12/0 |
| Windrawai Losses (iii). | 31 0000 | 31 0000 | 31,0000 | 31,0000 | 31,0000 | 31.0000 | 31.0000 | 31,0000 | 31.0000 | 31.0000 | 31.0000 | 31,0000 |
| Number of Columns: | 0 7000 | 0 7000 | 0 7000 | 0,7000 | 0,7000 | 0.7000 | 0.7000 | 0,7000 | 0.7000 | 0.7000 | 0.7000 | 0.7000 |
| Effective Column Diameter (iii). | 3 500 000 0000 3 | 500 000 0000 | 3 500 000 0000 | 3.500.000.0000 | 3,500,000,0000 | 3,500,000.0000 | 3,500,000.0000 | 3,500,000.0000 | 3,500,000.0000 | 3,500,000.0000 | 3,500,000.0000 | 3,500,000.0000 |
| Net Throughput (gal/mo.): | 0,0015 | 0.0015 | 0 0015 | 0.0015 | 0.0015 | 0.0015 | 0.0015 | 0.0015 | 0.0015 | 0.0015 | 0.0015 | 0.0015 |
| Shell Clingage Factor (corridou sqn). | 7 1500 | 7 1500 | 7 1500 | 7 1500 | 7,1500 | 7.1500 | 7.1500 | 7,1500 | 7.1500 | 7,1500 | 7.1500 | 7,1500 |
| Average Organic Liquid Densky (ib/gai) | 224 0000 | 224 0000 | 224 0000 | 224,0000 | 224.0000 | 224.0000 | 224.0000 | 224.0000 | 224.0000 | 224.0000 | 224,0000 | 224.0000 |
| Tank Diameter (fi): | 224.0000 | 224.0000 | | | | | | | | | | |
| and an and the second | 31 8593 | 33 4563 | 36 7979 | 40.3718 | 43,0843 | 45,0940 | 46.0656 | 45.7803 | 43.8061 | 40.1877 | 36.2245 | 32.9404 |
| Deck Fitting Losses (ID). | 0.0075 | 0 0079 | 0.0087 | 0.0095 | 0.0101 | 0.0106 | 6 0.0108 | 0.0108 | 0.0103 | 0.0095 | 0.0085 | 0.0078 |
| Value of vapor Pressure Function | 114 0000 | 114 0000 | 114 0000 | 114 0000 | 114,0000 | 114,0000 | 114.0000 | 114.0000 | 114.0000 | 114.0000 | 114.0000 | 114.0000 |
| Vapor Molecular Weight (Ib/Ib-mole). | 1 0000 | 1 0000 | 1 0000 | 1 0000 | 1 0000 | 1 0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Product Factor | 447,4000 | 447 4000 | 447 4000 | 447 4000 | 447 4000 | 447 4000 | 447.4000 | 447,4000 | 447.4000 | 447.4000 | 447,4000 | 447.4000 |
| Tot. Roof Fitting Loss Fact. (ID-moleryr): | 447.4000 | | | | | | | | | | | |
| | 0,000 | 0.0000 | 0.0000 | 0 0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0,0000 |
| Deck Seam Losses (ID): | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0,0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Deck Seam Length (n) | 0.0000 | 0.0000 | 0,0000 | | | | | | | | | |
| Deck Seam Loss per Unit Length | 0,0000 | 0.0000 | 0 0000 | 0 0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |) 0.0000 | 0.0000 | 0.0000 |
| Factor (Ib-mole/It-yr): | 0.0000 | 6,0000 | 0.0000 | 0.0000 | 0,0000 | 0.0000 | 0.0000 (| 0.0000 | 0.0000 |) 0.0000 | 0.0000 | 0.0000 |
| Deck Seam Length Factor(fl/sqn): | 224,0000 | 224 0000 | 224 0000 | 224 0000 | 224,0000 | 224,0000 | 224.0000 | 224.0000 | 224.0000 |) 224.0000 | 224.0000 | 224,0000 |
| Tank Diameter (It). | 114 0000 | 114 0000 | 114 0000 | 114 0000 | 114 0000 | 114,0000 | 0 114.0000 | 114,0000 | 114.0000 |) 114,0000 | 114.0000 | 114.0000 |
| Vapor Molecular Weight (Ibrid-mole) | 1 0000 | 1 0000 | 1 0000 | 1 0000 | 1 0000 | 1.0000 | 1.0000 | 1,0000 | 1.0000 |) 1.0000 | 1.0000 | 1.0000 |
| Product Factor: | 1.0000 | 1.0000 | 1.0000 | | | | | | | | | |
| | | | | | | | | C2 C508 | e 1.000 | 56 3871 | 61 2334 | 46 9628 |
| Total Losses (lb): | 45.5570 | 47.6337 | 51.9791 | 56.6266 | 60.1540 | 62.7673 | 3 64.0309 | 63.6598 | 61.0925 | 3 30.367 | 51.2004 | 40.0020 |
| | | | | - | | (1) - (1) - (1 - k) = 1 | Koor Fitting Loss | PECIDIS | | m | Losses(ib) | |
| Roof Fitting/Status | | | | Qua | nuty | KFa(ip-mole/yr) | KED(IDHIIOBA() | 1 mpn m) | | 0.00 | 2 4040 | |
| Access Hatch (24-in, Diam.)/Bolted Cover, Gaskete | ed | | | | 2 | 1.60 | | 0.00 | | 0.00 | 5 0505 | |
| Automatic Gauge Float Well/Bolted Cover, Gaskete | eci | | | | 2 | 2.80 | | 0.00 | | 0.00 | 0.0000 | |
| Column Well (24-in, Diam, VPipe ColFlex, Fabric S | Sleeve Seal | | | | 31 | 10.00 | | 0.00 | | 0.00 | 323.0312 | |
| Roof Lee (3-in Diameter)/Fixed | | | | | 112 | 0.00 | | 0.00 | | 0.00 | 0.0000 | |
| Sinted Guide-Pole/Sample Well/Gask Sliding Cov | er, w. Pole Sieeve Wider | r | | | 2 | 8.30 | | 4.40 | | 1.60 | 17.6630 | |
| Ladder Well (36-in. Diam.)/Sliding Cover, Gasketer | 3 | | | | 2 | 56.00 | | 0.00 | | 0.00 | 119.1721 | |

TANKS 4.0.9d Emissions Report - Detail Format Individual Tank Emission Totals

Emissions Report for: January, February, March, April, May, June, July, August, September, October, November, December

CENTURION BROWNSVILLE 250 M IN REFORMATE - Internal Floating Roof Tank

| | | | Losses(lbs) | | |
|------------|---------------|----------------|-------------------|----------------|-----------------|
| Components | Rim Seal Loss | Withdrawl Loss | Deck Fitting Loss | Deck Seam Loss | Total Emissions |
| Reformate | 142.89 | 49.52 | 475.67 | 0.00 | 668.08 |

AIR PERMITS DIVISION

MAY 2 2 2017

RECEIVED

| I. Registrant Information | | | | | | | | | |
|---|---------------------------------|---------------------------|--|-------------|--|--|--|--|--|
| A. Company or Other Legal Customer Name: CMG Brownsville II, LLC | | | | | | | | | |
| B. Company Official Contact Information (X Mr.] Mrs.] Ms. Other | | | | | | | | | |
| Name: Peter Schmar | | | | | | | | | |
| Title: Executive VP of Operations MAY 2.2.4 | | | | | | | | | |
| Mailing Address: PO Box 797544 APIKI | | | | | | | | | |
| City: Dallas | State: Texas | | ZIP Code: 75379-7 | 7544 | | | | | |
| Phone: 1-918-801-8911 | | Fax: | . <u></u> | | | | | | |
| E-mail Address: pschmar@centuriont | erminals.com | | | | | | | | |
| All PBR registration responses will be sent via e-mail unless a hard copy is specifically requested. The company official must initial here if hard copy is requested | | | | | | | | | |
| C. Technical Contact Information | (🗙 Mr. 🗌 Mrs | s. 🗌 Ms. 🗌 Other | |) | | | | | |
| Name: Ralph Chaiet | | | | | | | | | |
| Title: Senior Air Compliance Specialist | | | | | | | | | |
| Company Name: Witt O'Brien's | | | | | | | | | |
| Mailing Address: 5818 Cheena Dr. | | | | | | | | | |
| City: Houston | State: Texa | S | ZIP Code: 770 | 096 | | | | | |
| Phone: 713-283-7921 | | Fax: 713-721-8376 | | | | | | | |
| E-mail: rchaiet@wittobriens.com | | | and the second | | | | | | |
| II. Facility and Site Informat | tion | | | | | | | | |
| A. Name and Type of Facility | | · · · · | | | | | | | |
| Facility Name: Centurion Brownsville | Terminal | | | | | | | | |
| Type of Facility: | 🛛 Permanent | | Temporary | | | | | | |
| For portable units, please provide the | e serial number | of the equipment bei | ng authorized belo | w. | | | | | |
| Serial No: | | Serial No: | | | | | | | |
| B. Facility Location Information | | | | | | | | | |
| Street Address: no address assigned | | | | | | | | | |
| If there is no street address, provide written driving directions to the site and provide the closest city or town, county, and ZIP code for the site (attach description if additional space is needed). | | | | | | | | | |
| Heading east On R.L. Ostos Rd, drive | approximately 1/2 | 2 mile east past Liquid 0 | Cargo Road. Port of | Brownsville | | | | | |
| City: Brownsville | County: Cameron ZIP Code: 78521 | | | | | | | | |

TCEQ-20182 (APDG 5379v17, Revised 07/15) PI-7-CERT This form is for use by facilities subject to air quality permit requirements and may be revised periodically.

Page _____ of _____

| II. Facility and Site Information (continued) | | | | | | | | | |
|---|---|---------------------|--|--|--|--|--|--|--|
| C. TCEQ Core Data Form | | | | | | | | | |
| Is the Core Data Form (TCEQ Form Number 10400) atta | the Core Data Form (TCEQ Form Number 10400) attached? | | | | | | | | |
| If "NO," provide customer reference number (CN) and re | egulated entity number (RN) below. | | | | | | | | |
| Customer Reference Number (CN): 604726745- كركاميا | 570378 BG | | | | | | | | |
| Regulated Entity Number (RN): 10798129 | | | | | | | | | |
| D. TCEQ Account Identification Number (if known): | | | | | | | | | |
| E. PBR number(s) claimed under 30 TAC Chapter 10 | 6 | | | | | | | | |
| (List all the individual rule number(s) that are being clai | med.) | | | | | | | | |
| 106. 261 | 106. 476 | | | | | | | | |
| 106. 262 and 263 | 106. 472 | | | | | | | | |
| 106. 478 | 106. 511 and 532 | | | | | | | | |
| F. Historical Standard Exemption or PBR | | | | | | | | | |
| Are you claiming a historical standard exemption or PBR? | | | | | | | | | |
| If "YES," enter rule number(s) and associated effective d | ate in the spaces provided below. | | | | | | | | |
| Rule Number(s) | Effective Date | | | | | | | | |
| | | | | | | | | | |
| G. Previous Standard Exemption or PBR Registration | Number | | | | | | | | |
| Is this authorization for a change to an existing facility p standard exemption or PBR? | reviously authorized under a | 🛛 YES 🗌 NO | | | | | | | |
| If "YES," enter previous standard exemption number(s) effective dates in the spaces provided below. | and PBR registration number(s), a | nd associated | | | | | | | |
| Standard Exemption and PBR Registration Number(s) | Effective Date | | | | | | | | |
| 129047 | 2/18/2015 (to be Voided) | | | | | | | | |
| H. Other Facilities at this Site Authorized by Standard | d Exemption, PBR, or Standard Per | mit | | | | | | | |
| Are there any other facilities at this site that are authoriz PBR, or Standard Permit? | zed by an Air Standard Exemption, | 🗌 YES 🔀 NO | | | | | | | |
| If "YES," enter standard exemption number(s), PBR reg number(s), and associated effective date in the spaces p | istration number(s), and Standard rovided below. | Permit registration | | | | | | | |
| Standard Exemption, PBR Registration, and Standard Permit Registration Number(s) | Effective Date | | | | | | | | |
| | | | | | | | | | |

TCEQ-20182 (APDG 5379v17, Revised 07/15) PI-7-CERT This form is for use by facilities subject to air quality permit requirements and may be revised periodically.

| II. Facility and Site Information (continued) | | | | | | |
|---|--------------------------|--|--|--|--|--|
| I. Other Air Preconstruction Permits | n na szina () diakorrad | | | | | |
| Are there any other air preconstruction permits at this site? | TYES X NO | | | | | |
| If "YES," enter permit number(s) in the spaces provided below. | | | | | | |
| | | | | | | |
| | | | | | | |
| J. Affected Air Preconstruction Permits | | | | | | |
| Does the PBR being claimed directly affect any permitted facility? | 🗌 YES 🔀 NO | | | | | |
| If "YES," enter the permit number(s) in the spaces provided below. | | | | | | |
| | | | | | | |
| | | | | | | |
| K. Federal Operating Permit (FOP) Requirements (30 TAC Chapter 122 Applicability) | | | | | | |
| 1. Is this facility located at a site that is required to obtain an FOP UYES INO DY pursuant to 30 TAC Chapter 122? | Го Be Determined | | | | | |
| If the site currently has an existing FOP, enter the permit number: | | | | | | |
| Check the requirements of 30 TAC Chapter 122 that will be triggered if this certification is a (check all that apply) | accepted. | | | | | |
| 🗌 Initial Application for an FOP 🛛 Significant Revision for an SOP 🔹 🗌 Minor Revis | ion for an SOP | | | | | |
| □ Operational Flexibility/Off Permit Notification for an SOP □ Revision for | a GOP | | | | | |
| ☐ To be Determined | | | | | | |
| 2. Identify the type(s) of FOP issued and/or FOP application(s) submitted/pending for t (check all that apply) | he site. | | | | | |
| □ SOP □ GOP □ GOP application/revision (submitted or under APD r | review) | | | | | |
| ☑ N/A ☐ SOP application/revision (submitted or under APD review) | | | | | | |
| III. Fee Information (See Section VII. for address to send fee or go to www.tceq.texa online.) | us.gov/epay to pay | | | | | |
| A. Fee Requirements | | | | | | |
| Is a fee required per Title 30 TAC § 106.50? | X YES 🗌 NO | | | | | |
| If "NO," specify the exception (check all that apply) | | | | | | |
| 1. Registration is solely to establish a federally enforceable emission limit. | 🗌 YES 🔀 NO | | | | | |
| 2. Registration is within six months of an initial PBR review, and it is addressing deficiencies, administrative changes, or other allowed changes. | 🗌 YES 🗙 NO | | | | | |
| 3. Registration is for a remediation project (30 TAC § 106.533). | 🗌 YES 🔀 NO | | | | | |

TCEQ-20182 (APDG 5379v17, Revised 07/15) PI-7-CERT This form is for use by facilities subject to air quality permit requirements and may be revised periodically.

| III. Fee Information (See Section VII. for address to send fee or go to www.tceq online.) (continued) | .texas.gov/epay to pay |
|---|--|
| B. Fee Amount | |
| 1. A \$100 fee is required if <i>any</i> of the answers in III.B.1 are "YES." | |
| This business has less than 100 employees. | 🛛 YES 🗌 NO |
| This business has less than 6 million dollars in annual gross receipts. | 🗌 YES 🗵 NO |
| This registration is submitted by a governmental entity with a population of less than 10,000. | 🗌 YES 🗵 NO |
| This registration is submitted by a non-profit organization. | 🗌 YES 🗵 NO |
| 2. A \$450 fee is required for all other registrations. | |
| C. Payment Information | |
| Check/money order/transaction or voucher number: | |
| Individual or company name on check: Peter Schmar | |
| Fee Amount: \$ 100.00 | |
| Was fee paid online? | 🗌 YES 🔀 NO |
| Place a check next to the appropriate box to indicate what is included in yo NOTE: Any technical or essential information needed to confirm that facilities are <i>n</i> requirements of the PBR must be provided. Not providing key information could resu deficiency and voiding of the project. | ur submittal. weeting the ult in an automatic |
| A. PBR requirements (Checklists are optional; however, your review will go faster if checklists.) | you provide applicable |
| Did you demonstrate that the general requirements in 30 TAC § 106.4 are met? | X YES 🗌 NO |
| Did you demonstrate that the individual requirements of the specific PBR are met? | X YES 🗌 NO |
| B. Confidential Information (All pages properly marked "CONFIDENTIAL") | 🗌 YES 🗵 NO |
| C. Process Flow Diagram | 🔀 YES 🗌 NO |
| D. Process Description | 🔀 YES 🗌 NO |
| E. Maximum Emissions Data and Calculations | 🛛 YES 🗌 NO |
| Note: If the facilities listed in this registration are subject to the Mass Emissions Capunder 30 TAC Chapter 101, Subchapter H, Division 3, the owner/operator of to possess NO _x allowances equivalent to the actual NO _x , emissions from these facilities. | > & Trade program hese facilities must |

| IV. Technical Information Including State And Federal Regulatory Require (continued) | ements |
|--|--|
| Place a check next to the appropriate box to indicate what is included in yo | ur submittal. |
| Note: Any technical or essential information needed to confirm that facilities are mee of the PBR must be provided. Not providing key information could result in an automa voiding of the project. | ting the requirements tic deficiency and |
| F. Is this certification being submitted to certify the emissions for the entire site? | X YES 🗌 NO |
| If "NO," include a summary of the specific facilities and emissions being certified. | |
| G. Table 1(a) (Form 10153) Emission Point Summary | X YES NO |
| H. Distances from Property Line and Nearest Off-Property Structure | |
| Distance from this facility's emission release point to the nearest property line:_all Por | t property feet |
| Distance from this facility's emission release point to the nearest off-property structure | e: 2000 ft feet |
| I. Project Status | |
| Has the company implemented the project or waiting on a response from TCEQ? | nplemented 🔀 Waiting |
| J. Projected Start of Construction and Projected Start of Operation Dates | |
| Projected Start of Construction (provide date): 08/01/2017 | |
| Projected Start of Operation (provide date): <u>12/01/2017</u> | |
| V. Delinquent Fees | |
| This form will not be processed until all delinquent fees and/or penalties owed to t of the Attorney General on behalf of the TCEQ is paid in accordance with the Delinque Protocol. For more information regarding Delinquent Fees and Penalties, go to the TC www.tceq.texas.gov/agency/delin/index.html. | he TCEQ or the Office nt Fee and Penalty EQ Web site at: |
| VI. Signature For Registration And Certification | |
| The signature below confirms that I have knowledge of the facts included in this applic facts are true and correct to the best of my knowledge and belief. I further state that to knowledge and belief, the project for which this application is made will not in any way of the Texas Water Code (TWC), Chapter 7; the Texas Health and Safety Code, Chapter Air Act (TCAA); the air quality rules of the Texas Commission on Environmental Qual governmental ordinance or resolution enacted pursuant to the TCAA. I further state the signature indicates that this application meets all applicable nonattainment, prevention deterioration, or major source of hazardous air pollutant permitting requirements. The signifies awareness that intentionally or knowingly making or causing to be made false representations in the application is a criminal offense subject to criminal penalties. | cation and that these the best of my y violate any provision r 382, the Texas Clean ity; or any local nat I understand my on of significant e signature further e material statements or |
| Name (printed): Peter Schmar | |
| Signature (original signature required): | |
| Date: 5.3.17 | |

TCEQ-20182 (APDG 5379v17, Revised 07/15) PI-7-CERT This form is for use by facilities subject to air quality permit requirements and may be revised periodically.

| | | | | | | | | \bigcirc | | | |
|--------------------------|--|------------------------------------|--|---------------------------|-----------------------------|--------------------|---------------|-----------------------------|---------------------|------------------|-------------------|
| | AIR PERMITS D | MISIUN | | | | | | | 7 | | |
| TCEQ | MAY 22 2 RECEIV | 017. ED. rding completion of | CEQ | | re C _{e read} |)ata the Core | For Data | M Form Instructions | or c <u>all 512</u> | -239-5175. | |
| SECTION I: | General Information | ו <u>י</u> | | | | | | | | AV 2 7 20 | 17 |
| 1. Reason for | Submission (If other is o | hecked please des | scribe in sp Form shou | ace p | orovide | d.) tted with | the n | rogram application | | ADIRT | |
| | (Core Data Form should | be submitted with | the renew | al form | n) | | her | | | AI | |
| 2. Customer F | Reference Number (if issue | ed) | | | <u>'''</u> | 3. Re | gulate | ed Entity Reference | e Number (| if issued) | 10-1-1-00-1900-19 |
| CN | | f | ollow this I or CN or RN Central F | ink to 1 num Recijs | searcr bers in strv** | RN | 10 | 7928129 | | | |
| SECTION II | : Customer Informat | ion | oonaan | <u></u> | | | | | | | |
| 4. General Cu | ustomer Information | 5. Effective Date | e for Custo | mer Ir | nforma | tion Upda | ates (r | mm/dd/yyyy) | 01/01/ | 2017 | and a second |
| New Cust | omer Legal Name (Verifiable w | Upd | ate to Cust etary of Sta | omer ate or | Inform Texas | ation Comptro | ller of | Change in Public Accounts) | Regulated I | Entity Ownershi | p the |
| The Custor Texas Seci | mer Name submitted retary of State (SOS) | or Texas Com | ptroller | auto of Pi | ublic . | ally ba Accoui | sed nts ((| on what is cui CPA). | Tent and | active with | ine |
| 6. Customer I | Legal Name (If an individual | , print last name first | : e.g.: Doe, | John) | | <u>lf ne</u> | w Cu | stomer, enter previ | ous Custom | er below: | |
| CMG Brown | sville II, LLC | | đ (116 | | 2.8 | | | | | | - A |
| 7. TX SOS/C 080242898 | PA Filing Number 3 | 8. TX State Tax 32060074765 | ID (11 digits) | | | 9. F 812 | edera 2880 | Il Tax ID (9 digits) 716 | [10. DUN | S Number (if app | licable) |
| 11. Type of C | Customer: 🔀 Corpora | tion | | ndivid | lual | | Par | rtnership: 🛄 Gener | al 🔟 Limited | | |
| Government: | City County Federal | State Other | | Sole F | Proprie | orship | | Other: | | | |
| 12. Number o 0-20 🔀 | of Employees (21-100 101-250 | 251-500 | 501 and | l high | er | 13. X | Indep Yes | endently Owned a | and Operate | ed? | |
| 14. Customer | r Role (Proposed or Actual) | - as it relates to the I | Regulated E | intity li | sted on | this form. | Pleas | e check one of the f | ollowing: | | |
| Owner | onal Licensee Resp | rator onsible Party | | wner & oluntar | & Oper ry Clea | ator nup App | licant | Other: | | | |
| 15 Mailing | 15851 Dallas Parkwa | y / PO Box 797 | 544 | | | | 1 | | | | |
| Address: | Suite 650 | | | 0170 | | | | | | | |
| | City Dallas | | State | ΤX | | ZIP | 7537 | /9 | ZIP + 4 | 7544 | |
| 16. Country M | Mailing Information (if outsid | e USA) | | | 17 <u>. I</u> | E-Mail Ac | ldress | (if applicable) | | | |
| | | | | 0 | psch | mar@c | entu | rionterminals.c | om (if applicat | | |
| 18. Telephon | | 18 | J. Extensio | n or C | | | | | (III applicat | jej | |
| (918) | 801 - 8911 | | | | | 111 og | | | | | |
| SECTION I | II: Regulated Entity | Information | | | | | | | | | |
| 21. General F | Regulated Entity Information | on (If 'New Regulat | ted Entity" | is sele | ected b | elow this | form | should be accom | panied by a | permit applicat | ion) |
| New Reg | ulated Entity Upda | te to Regulated En | tity Name | tod i | Upda | te to Reg | | Entity Informatio | n Data Sta | ndards (rem | oval |
| of organi | uiateo Entity Name s izational endinos su | ch as Inc. LP. c | or LLC). | leu II | nuu | | 571 1 | CLA Ageney | | | |
| 22. Regulate | d Entity Name (Enter name | of the site where the | regulated a | iction i | is takinę | place.) | | | | | |

CMG Brownsville II

| 23 Street Address of the | not li | sted Jress yet | | | | | | |
|--------------------------|--------|----------------|-------|----|-----|-------|-----------|--|
| Regulated Entity: | Port | of Brownsville | | | | | ATT THE A | |
| (No PO Boxes) | City | Brownsville | State | TX | ZIP | 78521 | ZIP + 4 | |
| 24. County | Cam | eron | | | | | | |

Enter Physical Location Description if no street address is provided.

| 25. Description to Physical Location: | Drivin | g east on R.L. Ost | os Rd contini | ue approxi | mately 1/2 | mile past Li | quid Cargo R |) pad | |
|--|--|--|------------------|------------------|---|----------------------|----------------------------|------------------------------------|------------------------------|
| 26. Nearest City | 1. | Contraction of the second seco | | | | | State | | Nearest ZIP Code |
| | % (| | | | | | | | |
| 27. Latitude (N) In Decim | al; | | | | 28. Lon | gitude (W) | In Decimal | | |
| Degrees | Minutes | | Seconds | | Degrees | | Minutes | | Seconds |
| 25 | 57.23 | | | | 97 | | 21,50 | | |
| 29. Primary SIC Code (4 dig | 29. Primary SIC Code (4 digits) 30. Secondary SIC Code (4 digits) 31. Primary NAICS Code (5 or 6 digits) (5 or 6 digits) (5 or 6 digits) | | | | | | | | |
| 4226 | Nur of the second | | | | | | | | |
| 33. What is the Primary Bu | siness c | of this entity? (Do | not repeat the S | SIC or NAICS | description.) | | | | |
| Storage and Blending | of Gas | oline | | | | 903 B | | 5 - 1981 - 1995 5 - 1985 - 1995 | |
| | 440 L | ouisiana St | r ang a | and and | | | 1999 - 1997 1997 - 1997 | TYPE . | |
| 34. Mailing | Suite | 723 | | in di Antonio | 1 - | - (184) - (1971 - | | | u tangan <u>man</u> angan sa |
| | City | Houston | ····· | State | TX | ZIP | 77002 | arcelar. | ZIP+4 |
| 35. E-Mail Address: | | peterschmar@gn | nail.com | | | | | A STATE | |
| 36. Telepho | 36. Telephone Number 37. Extens | | | | ion or Code 38. Fax Number (if applicable) | | | | if applicable) |
| (918) 891 - 8911 | | | | | (| | | | |

39. TCEQ Programs and ID Numbers Check all Programs and write in the permits/registration numbers that will be affected by the updates submitted on this form. See the Core Data Form instructions for additional guidance.

| Dam Safety | Districts | Edwards Aquifer | Emissions Inventory Air | Industrial Hazardous Waste |
|-----------------------|-----------------------|------------------------|-------------------------|----------------------------|
| | | | | |
| Municipal Solid Waste | New Source Review Air | | Petroleum Storage Tank | D PWS |
| | | | | |
| Sludge | Storm Water | Title V Air | Tires | Used Oil |
| | | | | |
| Voluntary Cleanup | Waste Water | Wastewater Agriculture | U Water Rights | Other: |
| | | | | |

SECTION IV: Preparer Information

| 40. Name: Ralph Chaiet | | | 41. Title: Senior Air Compliance Specialist |
|------------------------|---------------|----------------|---|
| 42. Telephone Number | 43. Ext./Code | 44. Fax Number | 45. E-Mail Address |
| (713) 283 - 7921 | | () - | rchaiet@wittobriens.com |

SECTION V: Authorized Signature

46. By my signature below, I certify, to the best of my knowledge, that the information provided in this form is true and complete, and that I have signature authority to submit this form on behalf of the entity specified in Section II, Field 6 and/or as required for the updates to the ID numbers identified in field 39.

| Company: | CMG Brownsville II, LLC | Job Title: | Executive Vice President of Operations |
|-----------------|-------------------------|------------|--|
| Name(In Print): | PelerSchmar | Phone: | (918)801-8911 |
| Signature: 7 | My | Date: | 5.3.17 |



MAY 2 2 2017 <u>APIRT</u>

May 18, 2017

AIR PERMITS DIVISION

MAY 22 2017

RECEIVED

Texas Commission on Environmental Quality Air Permits Division Air Permits Initial Review Team (APIRT) MC-161 12100 Park 35 Circle, Building C, Third Floor, Room 300W Austin, TX 78753

CMG Brownsville II, LLC, Brownsville, Cameron County Notification of Use of PBR for Construction of Storage Tanks (7), Butane Storage and Gasoline Blending System and a Marine Loading Vapor Control Combustor/Thermal Oxidizer.

CMG Brownsville II, LLC, in Brownsville, Cameron County, is submitting this Registration of Use of PBR 106.262, 106.472, 106.476, 106.478, 106.532, 106.511, 106.263 and 106.261.

This submittal request will supercede Permit 129047 which was issued in February 2015 to Stampede Energy LLC.

This Registration has been sealed by a Professional Engineer as the construction cost of these facility will exceed \$2,000.000.

A copy of the fee check for \$100 is enclosed in this document. The actual Fee check has been sent to the Revenue Section separately with a cover letter.

For any technical questions, please call Ralph Chaiet at Witt O'Brien's at 713-283-7921, and we will assist you in any way possible.

Sincerely, Chart

Ralph Chaiet P.E. Senior Air Compliance Specialist

Attachments

cc: Mr. Peter Schmar, CMG Brownsville II, LLC, Houston, TX Air Section Manager, Region 15, TCEQ, Harlingen, Texas

. .

Antim



May 18, 2017

Revenue Section, TCEQ Mail Code 214 12100 Park 35 Circle Building A, Third Floor Austin, Texas 78753

AIR PERMITS DIVISION MAY 2 2 2017 RECEIVED

P.O. Box 13088

or

Re: Permit by Rule Fee Submittal

Austin Texas 78711-3088

Attached, please find a check for \$100.00, the filing fee for a Permit by Rule Registration for CMG Brownsville II, LLC, Brownsville, Cameron County, Texas.

CN604726745 RN107928129

Project Name:

Notification of Use of PBR for Construction of Storage Tanks (7), Butane Storage and Gasoline Blending Equipment and a Marine Loading Vapor Control Combustor/Thermal Oxidizer.

Sinderely.

Ralph Chaiet P.E. Senior Air Compliance Specialist Witt O'Brien's

REGISTRATION OF PERMIT BY RULE 106.261, 106.262, 106.472, 106.476, 106.478, 106.511 and 106.532 FOR THE CONSTRUCTION AND OPERATION OF A GASOLINE STORAGE FACILITY WITH MARINE LOADING VAPOR CONTROLS

MAY 2 2 2017 APIRT

Original

CN RN

AIR PERMITS DIVISION

MAY 2 2 2017

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AT

CMG BROWNSVILLE II, LLC CENTURION BROWNSVILLE

BROWNSVILLE, TEXAS

PREPARED BY WITT O'BRIEN'S CHAIE" Marel P.E. Isfzorg

REVISION: 1 MAY 15, 2017 ISSUED FOR: SUBMISSION TO TCEQ

Table of Contents

- 1. Introduction
- 2. PI-7 Cert, CORE Data Form, 106.4 Checklist, 106.261 Checklist, 106.262 Checklist, 106.478 Checklist, 106.472 Checklist, Table 1(a), Copy of Fee Check.
- 3. Area Map and Equipment Plot Plan.
- Process Description and Process Flow Diagrams, Tanks 4.09 Annual Tank emissions calculations, Maximum Hourly Tank emissions calculations, Table 7s for Storage Tanks.
- 5. Calculations for Marine Loading VOC Emissions of Diesel Fuel without controls, Calculations for Marine Loading VOC Emissions Gasoline Loading with Vapor Controls including Vapor Collection Loss.
- 6. Combustion Emissions from Marine Loading Gasoline with Vapor Combustion Controls, NOx and CO and PM Combustion Factors for VCs from vendor. Compliance with 106.261 and 106.262. Table 4 for Marine Loading Vapor Combustion unit.
- 7. Fugitive Emissions from Piping Components.
- 8. MSS Emissions estimates from Tank Degassing with Internal Combustion Engines
- 9. Storm water Collection and Emergency Electric Generator
- 10. Storage of Butane
- 11. APD Marine Loading Collection Efficiency Guidance 09/21/2016.

INTRODUCTION

Stampede Energy LLC is currently authorized under PBR Registration Number 129047 to operate a Bulk Liquid Storage Terminal in Brownsville, Cameron County.

The RN is currently listed as RN107928129 The CN is currently listed as CN604726745

This facility was authorized on February 18, 2015. None of the facilities authorized under this PBR were constructed.

The business plan and the company structure for this facility has changed.

The Company is now "CMG Brownsville II, LLC." (a.k.a. Centurion Brownsville)

Centurion would like to cancel the existing PBR 129047 when this new PBR has been reviewed and issued by the agency.

Under the new marketing plan, the facility will receive Gasoline blendstocks (offloaded from marine vessels) into newly constructed IFR storage tanks, and "blend" finished Gasoline in newly constructed IFR storage tanks for shipment at the marine dock. Also, the facility will receive Diesel Fuel (offloaded from marine vessels) into newly constructed IFR storage tanks for re-shipment at the marine dock.

The three (3) 150 M bbl IFR storage tanks for Gasoline blendstock will be authorized under 106.478. The two (2) 250 bbl IFR storage tanks for finished Gasoline will be authorized under 106.478. The four (4) 250 bbl IFR storage tanks for Diesel Fuel will be authorized under 106.472.

Marine loading of Diesel Fuel will be uncontrolled. The emissions from marine loading will gualify under 106.261.

Marine loading of finished Gasoline will be collected and controlled by a Vapor Combustor with a 99.9% DRE. The Seagoing barges and ship will be inert loaded under slight pressure. Under new TCEQ Marine guidelines, Centurion has selected the case where the collection efficiency will be 99.49%. Testing of ships will be performed per these new guidelines. The VOC emissions will quality under 106.262 for Gasoline. The combustion emissions, NOx and CO will quality under 106.261. The PM emissions will quality under 106.262.

Very high pressure horizontal tanks (bullets) will be installed for Butane storage. The butane will be injected into the finished gasoline for vapor pressure blending. There will be six (6) tanks installed, each with a capacity of 90,000 gallons. These tanks meet the criteria of 106.476 with a container pressure sufficient to prevent vapor or gas loss to the atmosphere.

Piping component fugitive emissions will occur and be monitored by a LDAR program.

An emergency generator powered by a natural gas fired engine will be authorized under 106.511. This will be a very small HP installations.

Storm water collecting and handline will be authorized under 106.532. There is no process water generated with this operation.

MSS emissions from IFR roof landings have been addressed in this document.

This project will have a Capital Cost of greater than \$2,000,000, therefore the project is signed and sealed by a Professional Engineer.

Description of Storage tanks to Be Constructed and Operated

Tanks T-250-1 and T-250-2 (identical) will be IFR tanks with a Diameter of 224 ft and a Height of 48 ft. The nominal capacity is 250,000 bbls. Gasoline will be stored in these tanks under 106.478.

Emissions have been calculated using Tanks 4.09.

Tanks T-250-3, T-250-4, T-250-5 and T-250-6 (identical) will be IFR tanks with a Diameter of 224 ft and a Height of 48 ft. The nominal capacity is 250,000 bbls. Diesel Fuel will be stored in these tanks under 106.472

Emissions have been calculated using Tanks 4.09.

Tanks T-150-1, T-150-5 and T-150-9 (identical) will be IFR tanks with a Diameter of 168 ft and a Height of 48 ft. The nominal capacity is 150,000 bbls. Gasoline Blendstocks will be stored in these tanks under 106.478.

Since these tanks may store a variety of Gasoline Blendstocks from the refinery processes, emissions using Tanks 4.09 was determined. Centurion chooses to assign the emissions based on the highest vapor blendstock that they anticipate storing.



TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Table 1(a) Emission Point Summary

| Date: May 2, 2017 | Permit No.: | Regulated Entity No.: Not yet assigned |
|----------------------------------|-------------|--|
| Area Name: Centurion Brownsville | | Customer Reference No.: Not yet assigned |

Review of applications and issuance of permits will be expedited by supplying all necessary information requested on this Table.

| | | | | AIR CONTAMINANT DATA | | |
|-------------------|---|---------|------------|--------------------------------------|-----------------------|-------------|
| 1. Emission Point | | | | 2. Component or Air Contaminant Name | 3. Air Contaminant Em | ission Rate |
| (A) EPN | | (B) FIN | (C) Name | | (A) Pound Per Hour | (В) ТРУ |
| T-150-1 | | T-150-1 | Tank 150-1 | VOC | 0.548 | 1.83 |
| T-150-5 | | T-150-5 | Tank 150-5 | VOC | 0.548 | 1.83 |
| T-150-9 | | T-150-9 | Tank 150-9 | VOC | 0.548 | 1.83 |
| T-250-1 | | T-250-1 | Tank 250-1 | VOC | 2.15 | 3.95 |
| T-250-2 | | T-250-2 | Tank 250-2 | VOC | 2.15 | 3.95 |
| T-250-3 | | T-250-3 | Tank 250-3 | VOC | 1.38 | 0.16 |
| T-250-4 | | T-250-4 | Tank 250-4 | VOC | 1.38 | 0.16 |
| T-250-5 | | T-250-5 | Tank 250-5 | VOC | 1.38 | 0.16 |
| T-250-6 | | T-250-6 | Tank 250-6 | VOC | 1.38 | 0.16 |
| <u>.</u> | · | | | | | |
| | | I | 4 | 1 | 1 | |

*These two numbers are not additive. ** These two numbers are not additive

EPN = Emission Point Number

•

FIN = Facility Identification Number

TCEQ - 10153 (Revised 04/08) Table 1(a) This form is for use by sources subject to air quality permit requirements and may be revised periodically. (APDG 5178 v5)



TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Table 1(a) Emission Point Summary

| Date: May 2, 2017 | Permit No.: | Regulated Entity No.: Not yet assigned |
|----------------------------------|-------------|--|
| Area Name: Centurion Brownsville | | Customer Reference No.: Not yet assigned |

Review of applications and issuance of permits will be expedited by supplying all necessary information requested on this Table.

| en e | | 5. Component or Air Contaminant Name | 6. Air Contaminant Emi | 6. Air Contaminant Emission Rate | | | | |
|--|---|--|---|---|--|--|--|--|
| (B) FIN | (C) Name | | (A) Pound Per Hour | (В) ТРҮ | | | | |
| Fug | Piping Comp Fug | VOC | 1.41 | 6.16 | | | | |
| Marine Load | Uncontrolled Load | VOC | 5.88 | 1.68 | | | | |
| Marine Load | Marine Vapor Combustor | VOC | 1.8 | 0.51 | | | | |
| Marine Load | Marine Vapor Combustor | NOx | 1.91 | 2.647 | | | | |
| Marine Load | Marine Vapor Combustor | СО | 0.109 | 0.151 | | | | |
| Marine Load | Marine Vapor Combustor | PM/PM10/PM2.5 | 0.208 | 0.287 | | | | |
| Marine Load | Uncollected VOC | VOC | 2.0 | 0.57 | | | | |
| Tank Degassing | Portable Control | VOC | 0.67 | 0.08 | | | | |
| Tank Degassing | Portable Control | NOx | 0.68 | 0.016 | | | | |
| Tank Degassing | Portable Control | СО | 0.52 | 0.013 | | | | |
| | (B) FIN Fug Marine Load Tank Degassing Tank Degassing Tank Degassing | (B) FIN(C) NameFugPiping Comp FugMarine LoadUncontrolled LoadMarine LoadMarine Vapor CombustorMarine LoadPortable ControlTank DegassingPortable ControlTank DegassingPortable ControlTank DegassingPortable Control | S. Component or Air Contaminant Name(B) FIN(C) NameFugPiping Comp FugVOCMarine LoadUncontrolled LoadVOCMarine LoadMarine Vapor CombustorVOCMarine LoadMarine Vapor CombustorNOxMarine LoadMarine Vapor CombustorCOMarine LoadMarine Vapor CombustorCOMarine LoadMarine Vapor CombustorCOMarine LoadMarine Vapor CombustorCOMarine LoadMarine Vapor CombustorVOCMarine LoadMarine Vapor CombustorVOCTank DegassingPortable ControlVOCTank DegassingPortable ControlNOxTank DegassingPortable ControlCO | S. Component or Air Contaminant Name6. Air Contaminant Emi(B) FIN(C) Name(A) Pound Per HourFugPiping Comp FugVOC1.41Marine LoadUncontrolled LoadVOC5.88Marine LoadMarine Vapor CombustorVOC1.8Marine LoadMarine Vapor CombustorNOx1.91Marine LoadMarine Vapor CombustorCO0.109Marine LoadMarine Vapor CombustorCO0.208Marine LoadMarine Vapor CombustorPM/PM10/PM2.50.208Marine LoadUncollected VOCVOC2.0Tank DegassingPortable ControlNOx0.68Tank DegassingPortable ControlCO0.52 | | | | |

EPN = Emission Point Number

FIN = Facility Identification Number

TCEQ - 10153 (Revised 04/08) Table 1(a) This form is for use by sources subject to air quality permit requirements and may be revised periodically. (APDG 5178 v5)



TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Table 1(a) Emission Point Summary

| Date: May 2, 2017 | Permit No.: | Regulated Entity No.: Not yet assigned |
|----------------------------------|-------------|--|
| Area Name: Centurion Brownsville | | Customer Reference No.: Not yet assigned |

Review of applications and issuance of permits will be expedited by supplying all necessary information requested on this Table.

| | | | AIR CONTAMINANT DATA | | | | | | | |
|-------------------|---------|-----------------------|---------------------------------------|-----------------------|----------------------------------|--|--|--|--|--|
| 7. Emission Point | | | 8. Component or Air Contaminant Name | 9. Air Contaminant Ei | 9. Air Contaminant Emission Rate | | | | | |
| (A) EPN | (B) FIN | (C) Name | | (A) Pound Per Hour | (B) TPY | | | | | |
| WTTK-1 | WTTK-1 | Water Collection Tank | VOC | 0.116 | 0.507 | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
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*These two numbers are not additive. ** These two numbers are not additive

EPN = Emission Point Number

FIN = Facility Identification Number

TCEQ - 10153 (Revised 04/08) Table 1(a)

This form is for use by sources subject to air quality permit requirements and may be revised periodically. (APDG 5178 v5)



ALL property shown is the Post of Brownsville Centurion will not own the property

PROCESS DESCRIPTION

Gasoline blending stock including Reformate and Natural Gas Condensate will arrive primarily by marine vessels in to three (3) 150 M bbl IFR storage tanks.

According to a prescribed receipt, the blending stocks will be transferred into two (2) 250 M bbl IFR storage tanks. Additional Butane will be injected into the blended gasoline from the on-site Butane high pressure storage tanks.

The finished gasoline will be pumped to awaiting marine vessels. A Vapor Combustor will destroy the VOC emissions generated during the gasoline marine loading operations.

Additionally, Diesel Fuel will arrive by marine vessels and stored in four (4) 250 M bbls IFR tanks. The Diesel Fuel will be pumped out to marine vessels. There is no control of the marine loading emissions.



TANKS 4.0.9d Emissions Report - Detail Format Tank Indentification and Physical Characteristics

| | TANKS 4.0.9d Emissions Report - Detail Format Tank Indentification and Physical Characteristics | 2 TANKS | i N |
|---|---|---|-----------------|
| Identification User Identification: City: State: Company: Type of Tank: Description: | Centurion Brownsville 150 M in Natural Gasoline Co Internal Floating Roof Tank Natural Gasoline Condensate | 3655 LB/42 1.826 tome | Honk Yr Hond |
| Tank Dimensions Diameter (ft): Volume (gallons): Turnovers: Self Supp. Roof? (y/n): No. of Columns: Eff. Col. Diam. (ft): | 168.00 6,300,000.00 25.00 N 16.00 0.70 | 2310 | |
| Paint Characteristics Internal Shell Condition: Shell Color/Shade: Shell Condition Roof Color/Shade: Roof Condition: | Light Rust White/White Good Good | | |
| Rim-Seal System Primary Seal: Secondary Seal | Mechanical Shoe Rim-mounted | | |
| Deck Characteristics Deck Fitting Category: Deck Type: | Detail Welded | | \bigcirc |
| Deck Fitting/Status Access Hatch (24-in. Diam.)/Bolted Co Automatic Gauge Float Well/Bolted Co Column Well (24-in. Diam.)/Pipe ColI Ladder Well (36-in. Diam.)/Sliding Cov Roof Leg (3-in. Diameter)/Fixed Slotted Guide-Pole/Sample Well/Gask Vacuum Breaker (10-in. Diam.)/Weigh | over, Gasketed over, Gasketed Flex. Fabric Sleeve Seal <i>r</i> er, Gasketed t. Sliding Cover, w. Pole Sleeve,Wiper ted Mech. Actuation, Gask. | Quantity 1 16 16 69 1 1 | |

Meterological Data used in Emissions Calculations: Brownsville, Texas (Avg Atmospheric Pressure = 14.72 psia)

TANKS 4.0.9d Emissions Report - Detail Format Liquid Contents of Storage Tank

Centurion Brownsville 150 M in Natural Gasoline Co - Internal Floating Roof Tank

| | | Da Tem | ily Liquid So perature (de | unf. eg F) | Liquid Bulk Temp | Vapo | r Pressure | (psia) | Vapor Mol. | Liquid Mass | Vapor Mass | Mol. | Basis for Vapor Pressure |
|----------------------------|-------|-----------|-------------------------------|---------------|------------------------|--------|------------|--------|---------------|----------------|---------------|--------|---------------------------------------|
| Mixture/Component | Month | Avg. | Min. | Max. | (deg F) | Avg. | Min. | Max. | Weight. | Fract. | Fract. | Weight | Calculations |
| Natural Gasline Condensate | Jan | 68.71 | 64.20 | 73.21 | 73.84 | 5,9792 | N/A | N/A | 66.0000 | | | 66.00 | Option 2: A=6.81, B=1268.03, C=273.15 |
| Natural Gasline Condensate | Feb | 70.34 | 65.41 | 75.27 | 73.84 | 6.1655 | N/A | N/A | 66.0000 | | | 66.00 | Option 2: A=6.81, B=1268.03, C=273.15 |
| Natural Gasline Condensate | Mar | 73.56 | 68.35 | 78.76 | 73.84 | 6.5452 | N/A | N/A | 66.0000 | | | 66.00 | Option 2: A=6.81, B=1268.03, C=273.15 |
| Natural Gasline Condensate | Apr | 76.73 | 71.57 | 81.89 | 73.84 | 6.9378 | N/A | N/A | 66.0000 | | | 66.00 | Option 2: A=6.81, B=1268.03, C=273.15 |
| Natural Gasline Condensate | May | 78.98 | 73.94 | 84.01 | 73.84 | 7.2275 | N/A | N/A | 66.0000 | | | 66.00 | Option 2: A=6.81, B=1268.03, C=273.15 |
| Natural Gasline Condensate | Jun | 80.56 | 75.26 | 85.87 | 73.84 | 7.4379 | N/A | N/A | 66.0000 | | | 66.00 | Option 2: A=6.81, B=1268.03, C=273.15 |
| Natural Gasline Condensate | Jul | 81.31 | 75.68 | 86.94 | 73.84 | 7.5384 | N/A | N/A | 66.0000 | | | 66.00 | Option 2: A=6.81, B=1268.03, C=273.15 |
| Natural Gasline Condensate | Aug | 81.09 | 75.54 | 86.64 | 73.84 | 7.5090 | N/A | N/A | 66.0000 | | | 66.00 | Option 2: A=6.81, B=1268.03, C=273.15 |
| Natural Gasline Condensate | Sep | 79.55 | 74.50 | 84.61 | 73.84 | 7.3035 | N/A | N/A | 66.0000 | | | 66.00 | Option 2: A=6.81, B=1268.03, C=273.15 |
| Natural Gasline Condensate | Oct | 76.57 | 71.42 | 81.72 | 73.84 | 6.9179 | N/A | N/A | 66.0000 | | | 66.00 | Option 2: A=6.81, B=1268.03, C=273.15 |
| Natural Gasline Condensate | Nov | 73.02 | 68.25 | 77.80 | 73.84 | 6.4810 | N/A | N/A | 66.0000 | | | 66.00 | Option 2: A=6.81, B=1268.03, C=273.15 |
| Natural Gasline Condensate | Dec | 69.82 | 65.31 | 74.33 | 73.84 | 6.1057 | N/A | N/A | 66.0000 | | | 66.00 | Option 2: A=6.81, B=1268.03, C=273.15 |

TANKS 4.0.9d Emissions Report - Detail Format Detail Calculations (AP-42)

Centurion Brownsville 150 M in Natural Gasoline Co - Internal Floating Roof Tank

| Menth: | January | February | March | April | May | June | July | August | September | October | November | December |
|---|------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|------------------|-----------------|-----------------|-----------------|-----------------|----------------|
| Rim Seal Losses (lb): | 71,8490 | 74,7830 | 80.9537 | 87.6203 | 92.7405 | 96.5742 | 98.4414 | 97.8922 | 94.1132 | 87.2747 | 79.8912 | 73.8343 |
| Seal Factor A (lb-mole/ft-vr): | 0.6000 | 0.6000 | 0.6000 | 0,6000 | 0.6000 | 0.6000 | 0.6000 | 0.6000 | 0.6000 | 0.6000 | 0.6000 | 0.6000 |
| Seal Factor B (lb-mole/ft-vr (mph)^n): | 0.4000 | 0.4000 | 0.4000 | 0.4000 | 0.4000 | 0.4000 | 0.4000 | 0.4000 | 0.4000 | 0.4000 | 0.4000 | 0.4000 |
| Value of Vapor Pressure Function: | 0.1296 | 0.1349 | 0.1460 | 0.1580 | 0.1673 | 0.1742 | 0.1776 | 0.1766 | 0.1698 | 0.1574 | 0.1441 | 0.1332 |
| Vapor Pressure at Daily Average Liquid | | | | | | | | | | | | |
| Surface Temperature (psia): | 5.9792 | 6.1655 | 6.5452 | 6.9378 | 7.2275 | 7.4379 | 7.5384 | 7.5090 | 7.3035 | 6.9179 | 6.4810 | 6.1057 |
| Tank Diameter (ft): | 168.0000 | 168.0000 | 168.0000 | 168.0000 | 168.0000 | 168.0000 | 168.0000 | 168.0000 | 168.0000 | 168.0000 | 168.0000 | 168.0000 |
| Vapor Molecular Weight (lb/lb-mole): | 66.0000 | 66.0000 | 66.0000 | 66.0000 | 66.0000 | 66.0000 | 66.0000 | 66.0000 | 66.0000 | 66.0000 | 66.0000 | 66.0000 |
| Product Factor: | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Withdrawal Losses (lb): | 17.1199 | 17.1199 | 17,1199 | 17.1199 | 17.1199 | 17.1199 | 17.1199 | 17.1199 | 17.1199 | 17.1199 | 17.1199 | 17.1199 |
| Number of Columns: | 16,0000 | 16.0000 | 16.0000 | 16.0000 | 16.0000 | 16.0000 | 16.0000 | 16.0000 | 16.0000 | 16.0000 | 16.0000 | 16.0000 |
| Effective Column Diameter (ft) | 0.7000 | 0.7000 | 0,7000 | 0.7000 | 0.7000 | 0.7000 | 0.7000 | 0.7000 | 0.7000 | 0.7000 | 0.7000 | 0.7000 |
| Net Throughout (gal/mg.) | 13 125 000 000013 | 3.125.000.00001 | 3,125,000,00001 | 3,125,000.00001 | 3,125,000.00001 | 3,125,000.00001 | 3,125,000.00001 | 3,125,000.00001 | 3,125,000.00001 | 3,125,000.00001 | 3,125,000.00001 | 3,125,000.0000 |
| Shell Clinoage Factor (bbl/1000 soft): | 0.0015 | 0.0015 | 0.0015 | 0.0015 | 0.0015 | 0.0015 | 0.0015 | 0.0015 | 0.0015 | 0.0015 | 0.0015 | 0.0015 |
| Average Organic Liquid Density (Ib/gal): | 6,1000 | 6.1000 | 6.1000 | 6.1000 | 6.1000 | 6.1000 | 6.1000 | 6.1000 | 6.1000 | 6.1000 | 6.1000 | 6.1000 |
| Tank Diameter (ft): | 168.0000 | 168.0000 | 168.0000 | 168.0000 | 168.0000 | 168.0000 | 168.0000 | 168.0000 | 168.0000 | 168.0000 | 168.0000 | 168.0000 |
| Deck Fitting Losses (lb): | 167,4338 | 174.2712 | 188.6511 | 204.1867 | 216.1186 | 225.0525 | 229.4036 | 228.1237 | 219.3174 | 203.3813 | 186.1750 | 172.0604 |
| Value of Vapor Pressure Function: | 0.1296 | 0.1349 | 0.1460 | 0.1580 | 0.1673 | 0.1742 | 0.1776 | 0.1766 | 0.1698 | 0.1574 | 0.1441 | 0.1332 |
| Vapor Molecular Weight (lb/lb-mole): | 66.0000 | 66.0000 | 66.0000 | 66.0000 | 66.0000 | 66.0000 | 66.0000 | 66.0000 | 66.0000 | 66.0000 | 66.0000 | 66.0000 |
| Product Factor: | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Tot. Roof Fitting Loss Fact. (lb-mole/yr): | 234.9000 | 234.9000 | 234.9000 | 234.9000 | 234.9000 | 234.9000 | 234.9000 | 234,9000 | 234.9000 | 234,9000 | 234.9000 | 234.9000 |
| Deck Seam Losses (lb): | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Deck Seam Length (ft): | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Deck Seam Loss per Unit Length | | | | | | | | | | | | |
| Factor (lb-mole/ft-yr): | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0,0000 | 0.0000 | 0.0000 | 0.0000 |
| Deck Seam Length Factor(ft/sqft): | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Tank Diameter (ft): | 168.0000 | 168.0000 | 168.0000 | 168.0000 | 168.0000 | 168.0000 | 168.0000 | 168.0000 | 168.0000 | 168.0000 | 168.0000 | 168,0000 |
| Vapor Molecular Weight (lb/lb-mole): | 66.0000 | 66.0000 | 66.0000 | 66.0000 | 66.0000 | 66.0000 | 66.0000 | 66.0000 | 66.0000 | 66.0000 | 66.0000 | 66.0000 |
| Product Factor: | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| | 256 4027 | 266 1742 | 286 7247 | 308 9269 | 325 9791 | 338 7466 | 344 9650 | 343,1358 | 330.5505 | 307.7760 | 283,1861 | 263.0146 |
| Total Losses (ib). | 200.402.1 | 200.1142 | 200.7211 | 000.0100 | 020.0101 | | Poof Eitting Los | e Eactore | | | | |
| Roof Fitting/Status | | | | Q | uantity | KFa(lb-mole/yr |) KFb(lb-mole/ | (yr mph^n)) | | m | Losses(lb) | |
| Access Hatch (24-in Diam)/Bolted Cover, Ga | sketed | | | | 1 | 1.60 |) | Ö.00 | | 0.00 | 16.4553 | |
| Automatic Gauge Float Well/Bolted Cover, Ga | sketed | | | | 1 | 2.80 |) | 0.00 | | 0.00 | 28.7968 | |
| Column Well (24-in, Diam, VPipe ColFlex, Fa | bric Sleeve Seal | | | | 16 | 10.00 | כ | 0.00 | | 0.00 | 1,645.5293 | |
| Ladder Well (36-in, Diam, VSliding Cover, Gas | keted | | | | 1 | 56.00 |) | 0.00 | | 0.00 | 575.9353 | |
| Roof Leg (3-in, Diameter)/Fixed | | | | | 69 | 0.00 |) | 0.00 | | 0.00 | 0.0000 | |
| Slotted Guide-Pole/Sample Well/Gask, Sliding | Cover, w. Pole Sleeve. | Wiper | | | 1 | 8.30 | 2 | 4.40 | | 1.60 | 85.3618 | |
| Vacuum Breaker (10-in. Diam.)/Weighted Med | h. Actuation, Gask. | | | | 1 | 6.20 | ס | 1.20 | | 0.94 | 63.7643 | |

TANKS 4.0.9d Emissions Report - Detail Format Individual Tank Emission Totals

Emissions Report for: January, February, March, April, May, June, July, August, September, October, November, December

Centurion Brownsville 150 M in Natural Gasoline Co - Internal Floating Roof Tank

| | Losses(lbs) | | | | | | | | |
|----------------------------|---------------|----------------|-------------------|----------------|-----------------|--|--|--|--|
| Components | Rim Seal Loss | Withdrawl Loss | Deck Fitting Loss | Deck Seam Loss | Total Emissions | | | | |
| Natural Gasline Condensate | 1,035.97 | 205.44 | 2,414.18 | 0.00 | 3,655.58 | | | | |

TANKS 4.0.9d Emissions Report - Detail Format Tank Indentification and Physical Characteristics

| Identification User Identification: City: State | Centurion Brownsville 150 M in Reformate |
|--|--|
| Company: Type of Tank: Description: | Internal Floating Roof Tank |
| Tank Dimensions | |
| Diameter (ft): | 168.00 |
| Volume (gallons): | 6,300,000.00 |
| Turnovers: | 25.00 |
| Self Supp. Roof? (y/n): | N |
| No. of Columns: | 16.00 |
| Eff. Col. Diam. (ft): | 0.70 |
| Paint Characteristics | |
| Internal Shell Condition: | Light Rust |
| Shell Color/Shade: | White/White |
| Shell Condition | Good |
| Roof Color/Shade: | White/White |
| Roof Condition: | Good |
| Rim-Seal System | |
| Primary Seal: | Mechanical Shoe |
| Secondary Seal | Rim-mounted |
| Deck Characteristics | |
| Deck Fitting Category: | Detail |
| Deck Type: | Welded |
| Deck Fitting/Status | |
| Access Hatch (24-in, Diam.)/Bolted | 1 Cover. Gasketed |
| Automatic Gauge Float Well/Bolted | d Cover, Gasketed |
| Column Well (24-in, Diam.)/Pipe C | olFlex. Fabric Sleeve Seal |

I TANK 598 UB/topa/tonk 0.30tons/42 2570

1 16

1

69

1

1

| Deck Fitting/Status | Quantity |
|---|----------|
| Access Hatch (24-in. Diam.)/Bolted Cover, Gasketed | 1 |
| Automatic Gauge Float Well/Bolted Cover, Gasketed | 1 |
| Column Well (24-in. Diam.)/Pipe ColFlex. Fabric Sleeve Seal | 16 |
| Ladder Well (36-in. Diam.)/Sliding Cover, Gasketed | 1 |
| Roof Leg (3-in. Diameter)/Fixed | 69 |
| Slotted Guide-Pole/Sample Well/Gask. Sliding Cover, w. Pole Sleeve, Wiper | 1 |
| Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask. | 1 |

Meterological Data used in Emissions Calculations: Brownsville, Texas (Avg Atmospheric Pressure = 14.72 psia)

TANKS 4.0.9d Emissions Report - Detail Format Liquid Contents of Storage Tank

Centurion Brownsville 150 M in Reformate - Internal Floating Roof Tank

| | | Daily Liquid Surf. Temperature (deg F) | | | Liquid Bulk Temp | Vapor | Vapor Pressure (psia) | | Vapor Mol. | Liquid Mass | Vapor Mass | Mol. | Basis for Vapor Pressure |
|-------------------|-------|---|-------|-------|------------------------|--------|-----------------------|------|---------------|----------------|---------------|--------|---|
| Mixture/Component | Month | Avg. | Min. | Max. | (deg F) | Avg. | Min. | Max. | Weight. | Fract. | Fract. | Weight | Calculations |
| Reformate | Jan | 68.71 | 64.20 | 73.21 | 73.84 | 0.4347 | N/A | N/A | 114.0000 | | | 114.00 | Option 2: A=6.851, B=1307.882, C=217.44 |
| Reformate | Feb | 70.34 | 65.41 | 75.27 | 73.84 | 0.4562 | N/A | N/A | 114.0000 | | | 114.00 | Option 2: A=6.851, B=1307.882, C=217.44 |
| Reformate | Mar | 73.56 | 68.35 | 78.76 | 73.84 | 0.5010 | N/A | N/A | 114.0000 | | | 114.00 | Option 2: A=6.851, B=1307.882, C=217.44 |
| Reformate | Apr | 76.73 | 71.57 | 81.89 | 73.84 | 0.5487 | N/A | N/A | 114.0000 | | | 114.00 | Option 2: A=6.851, B=1307.882, C=217.44 |
| Reformate | May | 78.98 | 73.94 | 84.01 | 73.84 | 0.5848 | N/A | N/A | 114.0000 | | | 114.00 | Option 2: A=6.851, B=1307.882, C=217.44 |
| Reformate | Jun | 80.56 | 75.26 | 85.87 | 73.84 | 0.6115 | N/A | N/A | 114.0000 | | | 114.00 | Option 2: A=6.851, B=1307.882, C=217.44 |
| Reformate | Jul | 81.31 | 75.68 | 86.94 | 73.84 | 0.6244 | N/A | N/A | 114.0000 | | | 114.00 | Option 2: A=6.851, B=1307.882, C=217.44 |
| Reformate | Aug | 81.09 | 75.54 | 86.64 | 73.84 | 0.6207 | N/A | N/A | 114.0000 | | | 114.00 | Option 2: A=6.851, B=1307.882, C=217.44 |
| Reformate | Sep | 79.55 | 74.50 | 84.61 | 73.84 | 0.5944 | N/A | N/A | 114.0000 | | | 114.00 | Option 2: A=6.851, B=1307.882, C=217.44 |
| Reformate | Oct | 76.57 | 71.42 | 81.72 | 73.84 | 0.5463 | N/A | N/A | 114.0000 | | | 114.00 | Option 2: A=6.851, B=1307.882, C=217.44 |
| Reformate | Nov | 73.02 | 68.25 | 77.80 | 73.84 | 0.4933 | N/A | N/A | 114.0000 | | | 114.00 | Option 2: A=6.851, B=1307.882, C=217.44 |
| Reformate | Dec | 69.82 | 65.31 | 74.33 | 73.84 | 0.4493 | N/A | N/A | 114.0000 | | | 114.00 | Option 2: A=6.851, B=1307.882, C=217.44 |

TANKS 4.0.9d Emissions Report - Detail Format Detail Calculations (AP-42)

Centurion Brownsville 150 M in Reformate - Internal Floating Roof Tank

| Month | January | February | March | April | May | June | July | August | September | October | November | December |
|---|-----------------------|-----------------|-----------------|-----------------|-----------------|------------------|------------------|-------------------|-----------------|----------------|------------------|----------------|
| Rim Seal Losses (Ib): | 7,1780 | 7,5378 | 8,2906 | 9.0958 | 9,7070 | 10.1597 | 10.3787 | 10.3144 | 9.8696 | 9.0543 | 8.1614 | 7.4215 |
| Seal Easter A (Ib-mole/ff-vr) | 0,6000 | 0 6000 | 0.6000 | 0.6000 | 0.6000 | 0.6000 | 0.6000 | 0.6000 | 0.6000 | 0.6000 | 0.6000 | 0.6000 |
| Seal Factor B (Ib-mole/ff-vr (mph)^n) | 0.4000 | 0.4000 | 0.4000 | 0.4000 | 0,4000 | 0.4000 | 0.4000 | 0.4000 | 0.4000 | 0.4000 | 0.4000 | 0.4000 |
| Value of Vapor Pressure Function | 0.0075 | 0.0079 | 0.0087 | 0.0095 | 0.0101 | 0.0106 | 0.0108 | 0.0108 | 0.0103 | 0.0095 | 0.0085 | 0.0078 |
| Value of Paper Pressure at Daily Average Liquid | | | | | | | | | | | | |
| Surface Temperature (nsia) | 0.4347 | 0.4562 | 0.5010 | 0.5487 | 0.5848 | 0.6115 | 0.6244 | 0.6207 | 0.5944 | 0.5463 | 0.4933 | 0.4493 |
| Tank Diameter (ft) | 168,0000 | 168.0000 | 168.0000 | 168.0000 | 168.0000 | 168.0000 | 168.0000 | 168.0000 | 168.0000 | 168.0000 | 168.0000 | 168.0000 |
| Vanor Molecular Weight (lb/lb-mole): | 114,0000 | 114.0000 | 114,0000 | 114,0000 | 114.0000 | 114.0000 | 114.0000 | 114.0000 | 114.0000 | 114.0000 | 114.0000 | 114.0000 |
| Product Factor: | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| | | | | | | | | 00.0000 | 00.0000 | 20.0669 | 20.0669 | 20.0668 |
| Withdrawal Losses (lb): | 20.0668 | 20.0668 | 20.0668 | 20.0668 | 20.0008 | 20.0000 | 20.0000 | 20.0000 | 20.0000 | 16.0000 | 16 0000 | 16,0000 |
| Number of Columns: | 16.0000 | 16.0000 | 16.0000 | 16.0000 | 16.0000 | 16.0000 | 16.0000 | 10.000 | 0 7000 | 0 7000 | 0.0000 | 0.0000 |
| Effective Column Diameter (ft): | 0.7000 | 0.7000 | 0.7000 | 0.7000 | 0.7000 | 0.7000 | 2 425 000 00004 | 0.7000 | 2 125 000 00001 | 2 125 000 0000 | 13 125 000 00001 | 3 125 000 0000 |
| Net Throughput (gal/mo.): | 13,125,000.00001 | 3,125,000.00001 | 3,125,000.00001 | 3,125,000.00001 | 3,125,000.00001 | 13,125,000.00001 | 3,123,000.00001 | 3, 123,000.0000 I | 0.0016 | 0.0015 | 0.0015 | 0.0015 |
| Shell Clingage Factor (bbl/1000 sqft): | 0.0015 | 0.0015 | 0.0015 | 0.0015 | 0.0015 | 0.0015 | 7 1500 | 7 1500 | 7 1500 | 7 1500 | 7 1500 | 7 1500 |
| Average Organic Liquid Density (lb/gal): | 7.1500 | 7.1500 | 7.1500 | 7.1500 | 7.1500 | 7.1500 | 1.1000 | 169,0000 | 169,0000 | 169,0000 | 169,0000 | 168,0000 |
| Tank Diameter (ft): | 168.0000 | 168.0000 | 168.0000 | 168.0000 | 168.0000 | 100.0000 | 100.0000 | 100.0000 | 100.0000 | 100.0000 | 100.0000 | 100.0000 |
| Deck Fitting Losses (lb): | 16,7272 | 17.5657 | 19.3201 | 21.1966 | 22.6207 | 23.6758 | 24.1860 | 24.0362 | 22.9997 | 21.0999 | 19.0191 | 17.2948 |
| Value of Vapor Pressure Function: | 0.0075 | 0.0079 | 0.0087 | 0.0095 | 0.0101 | 0.0106 | 0.0108 | 0.0108 | 0.0103 | 0.0095 | 0.0085 | 0.0078 |
| Vapor Molecular Weight (lb/lb-mole): | 114,0000 | 114.0000 | 114.0000 | 114.0000 | 114.0000 | 114.0000 | 114.0000 | 114.0000 | 114.0000 | 114.0000 | 114.0000 | 114.0000 |
| Product Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Tot. Roof Fitting Loss Fact. (lb-mole/yr): | 234.9000 | 234,9000 | 234.9000 | 234.9000 | 234.9000 | 234,9000 | 234.9000 | 234.9000 | 234.9000 | 234.9000 | 234.9000 | 234.9000 |
| Deels Seem Leases (Ib): | 0.0000 | 0 0000 | 0 0000 | 0.0000 | 0 0000 | 0000 0 | 0.0000 | 0,0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Deck Seam Longth (ft): | 0,0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Deck Seam Loss por Unit Longth | 0,0000 | 0.0000 | 0.0000 | 0.0000 | | •••••• | | | | | | |
| Easter (Ib molofft vr): | 0 0000 | 0.0000 | 0 0000 | 0 0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0,0000 |
| Pactor (ID-Hildich(-yr)). | 0.0000 | 0.0000 | 0,0000 | 0.0000 | 0,0000 | 0,0000 | 0 0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Terek Diemeter (#): | 168.0000 | 168,0000 | 168,0000 | 168,0000 | 168,0000 | 168 0000 | 168 0000 | 168 0000 | 168,0000 | 168,0000 | 168.0000 | 168.0000 |
| Tank Diameter (It). | 114,0000 | 114 0000 | 114 0000 | 114 0000 | 114 0000 | 114 0000 | 114 0000 | 114 0000 | 114.0000 | 114.0000 | 114.0000 | 114.0000 |
| Product Factor: | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| | | | | | | | | | | | | |
| Total Losses (lb): | 43.9720 | 45.1703 | 47.6776 | 50.3592 | 52.3945 | 53.9024 | 54.6315 | 54.4174 | 52.9361 | 50.2210 | 47.2473 | 44.7832 |
| | | | | | | | Roof Fitting Los | ss Factors | | - | Leases/lb) | |
| Roof Fitting/Status | | | | Q | uantity | KFa(ID-mole/yr | | (yr mpn~n)) | | | LOSSES(ID) | |
| Access Hatch (24-in. Diam.)/Bolted Cover, Gas | sketed | | | | 1 | 1.60 | 0 | 0.00 | | 0.00 | 1.7025 | |
| Automatic Gauge Float Well/Bolted Cover, Gas | sketed | | | | 1 | 2.8 | 0 | 0.00 | | 0.00 | 2.9793 | |
| Column Well (24-in. Diam.)/Pipe ColFlex. Fat | bric Sleeve Seal | | | | 16 | 10.0 | D | 0.00 | | 0.00 | 170.2458 | |
| Ladder Well (36-in. Diam.)/Sliding Cover, Gasl | keted | | | | <u>,</u> 1 | 56.0 | 0 | 0.00 | | 0.00 | 59.5860 | |
| Roof Leg (3-in. Diameter)/Fixed | | | | | 69 | 0.0 | 0 | 0.00 | | 0.00 | 0.0000 | |
| Slotted Guide-Pole/Sample Well/Gask. Sliding | Cover, w. Pole Sleeve | Wiper | | | 1 | 8.3 | D | 4.40 | | 1.60 | 8.8315 | |
| Vacuum Breaker (10-in. Diam.)/Weighted Med | h. Actuation, Gask. | | | | 1 | 6.2 | 0 | 1.20 | | 0.94 | 6.5970 | |

TANKS 4.0 Report



TANKS 4.0.9d Emissions Report - Detail Format Individual Tank Emission Totals

Emissions Report for: January, February, March, April, May, June, July, August, September, October, November, December

Centurion Brownsville 150 M in Reformate - Internal Floating Roof Tank

| | Losses(lbs) | | | | | | | | | | | |
|------------|---------------|----------------|-------------------|----------------|-----------------|--|--|--|--|--|--|--|
| Components | Rim Seal Loss | Withdrawl Loss | Deck Fitting Loss | Deck Seam Loss | Total Emissions | | | | | | | |
| Reformate | 107.17 | 240.80 | 249.74 | 0.00 | 597.71 | | | | | | | |

TANKS 4.0.9d Emissions Report - Detail Format Tank Indentification and Physical Characteristics

| | Emissions Report - Detail Format | 2 TANKS | |
|--|---|---|---------------|
| Identification User Identification: City: State: Company: Type of Tank: Description: Tank Dimensions Diameter (ft): Volume (gallons): Turnovers: Self Supp. Roof? (y/n): | Tank Indentification and Physical Characteristics Centurion Brownsville 250 M in Gasoline Internal Floating Roof Tank Total of 2 tank this size, each one's emissions estimated at 20 TO/tank Assume 11.5 rvp Gasoline 224.00 10,500,000.00 20.00 N | 7904 LB/yr/ 3.95 tons/yr 20TO 11.5 RVP | tank Atonk |
| No. of Columns: Eff. Col. Diam. (ft): Paint Characteristics Internal Shell Condition: Shell Color/Shade: Shell Condition Roof Color/Shade: Roof Condition: | 31.00 0.70 Light Rust White/White Good White/White Good | | |
| Rim-Seal System Primary Seal: Secondary Seal Deck Characteristics Deck Fitting Category: Deck Type: | Mechanical Shoe Rim-mounted Detail Welded | | \bigcirc |
| Deck Fitting/Status Access Hatch (24-in. Diam.)/Boltec Automatic Gauge Float Well/Boltec Column Well (24-in. Diam.)/Pipe C Roof Leg (3-in. Diameter)/Fixed Slotted Guide-Pole/Sample Well/G | l Cover, Gasketed l Cover, Gasketed olFlex. Fabric Sleeve Seal ask. Sliding Cover, w. Pole Sleeve,Wiper | Quantity 2 2 31 112 2 | |

Meterological Data used in Emissions Calculations: Brownsville, Texas (Avg Atmospheric Pressure = 14.72 psia)

Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask. Ladder Well (36-in. Diam.)/Sliding Cover, Gasketed

2

2 2

TANKS 4.0.9d Emissions Report - Detail Format Liquid Contents of Storage Tank

Centurion Brownsville 250 M in Gasoline - Internal Floating Roof Tank

| | | Da Tem | aily Liquid S perature (d | unf. ∋g F) | Liquid Bulk Temp | Vapo | r Pressure | (psia) | Vapor Mol. | Liquid Mass | Vapor Mass | Mol. | Basis for Vapor Pressure |
|---------------------|-------|-----------|------------------------------|---------------|------------------------|--------|------------|--------|---------------|----------------|---------------|--------|----------------------------------|
| Mixture/Component | Month | Avg. | Min. | Max. | (deg F) | Avg. | Min. | Max. | Weight. | Fract. | Fract. | Weight | Calculations |
| Gasoline (RVP 11.5) | Jan | 68.71 | 64.20 | 73.21 | 73.84 | 7.1313 | N/A | N/A | 65.0000 | | | 92.00 | Option 4: RVP=11.5, ASTM Slope=3 |
| Gasoline (RVP 11.5) | Feb | 70.34 | 65.41 | 75.27 | 73.84 | 7.3482 | N/A | N/A | 65.0000 | | | 92.00 | Option 4: RVP=11.5, ASTM Slope=3 |
| Gasoline (RVP 11.5) | Mar | 73,56 | 68.35 | 78.76 | 73.84 | 7.7901 | N/A | N/A | 65.0000 | | | 92.00 | Option 4: RVP=11.5, ASTM Slope=3 |
| Gasoline (RVP 11.5) | Apr | 76.73 | 71.57 | 81.89 | 73.84 | 8.2463 | N/A | N/A | 65.0000 | | | 92.00 | Option 4: RVP=11.5, ASTM Slope=3 |
| Gasoline (RVP 11.5) | May | 78.98 | 73.94 | 84.01 | 73.84 | 8.5825 | N/A | N/A | 65.0000 | | | 92.00 | Option 4: RVP=11.5, ASTM Slope=3 |
| Gasoline (RVP 11.5) | Jun | 80.56 | 75.26 | 85.87 | 73.84 | 8.8264 | N/A | N/A | 65.0000 | | | 92.00 | Option 4: RVP=11.5, ASTM Slope=3 |
| Gasoline (RVP 11.5) | Juí | 81.31 | 75.68 | 86.94 | 73.84 | 8.9429 | N/A | N/A | 65.0000 | | | 92.00 | Option 4: RVP=11.5, ASTM Slope=3 |
| Gasoline (RVP 11.5) | Aua | 81.09 | 75.54 | 86.64 | 73.84 | 8.9088 | N/A | N/A | 65.0000 | | | 92.00 | Option 4: RVP=11.5, ASTM Slope=3 |
| Gasoline (RVP 11.5) | Sep | 79.55 | 74.50 | 84.61 | 73.84 | 8.6706 | N/A | N/A | 65.0000 | | | 92.00 | Option 4: RVP=11.5, ASTM Slope=3 |
| Gasoline (RVP 11.5) | Oct | 76.57 | 71.42 | 81.72 | 73.84 | 8.2231 | N/A | N/A | 65.0000 | | | 92.00 | Option 4: RVP=11.5, ASTM Slope=3 |
| Gasoline (RVP 11.5) | Nov | 73.02 | 68.25 | 77.80 | 73.84 | 7.7153 | N/A | N/A | 65.0000 | | | 92.00 | Option 4: RVP=11.5, ASTM Slope=3 |
| Gasoline (RVP 11.5) | Dec | 69.82 | 65.31 | 74.33 | 73.84 | 7.2786 | N/A | N/A | 65.0000 | | | 92.00 | Option 4: RVP=11.5, ASTM Slope=3 |

TANKS 4.0.9d Emissions Report - Detail Format Detail Calculations (AP-42)

Centurion Brownsville 250 M in Gasoline - Internal Floating Roof Tank

| Month | January | February | March | April | May | June | July | August | September | October | November | December |
|--|---------------------|-----------------|-----------------|-----------------|----------------|------------------|-------------------|-----------------|-----------------|----------------|------------------|----------------|
| Dim Soal Losses (lb): | 119,5211 | 124,6531 | 135.5456 | 147.4755 | 156.7612 | 163.7885 | 167.2354 | 166.2198 | 159.2698 | 146.8527 | 133.6601 | 122.9904 |
| Seal Eactor A (Ib-mole/ff-vr) | 0.6000 | 0.6000 | 0,6000 | 0.6000 | 0.6000 | 0.6000 | 0.6000 | 0.6000 | 0.6000 | 0.6000 | 0.6000 | 0.6000 |
| Seal Factor B (Ib-mole/ff-vr (moh)^n) | 0,4000 | 0.4000 | 0.4000 | 0.4000 | 0.4000 | 0.4000 | 0.4000 | 0.4000 | 0.4000 | 0.4000 | 0.4000 | 0.4000 |
| Value of Venor Pressure Function: | 0.1642 | 0.1712 | 0.1862 | 0.2026 | 0.2153 | 0.2250 | 0.2297 | 0.2283 | 0.2188 | 0.2017 | 0.1836 | 0.1689 |
| Vanor Pressure at Daily Average Liquid | | | | | | | | | | | 7 7460 | 7 0700 |
| Surface Temperature (psia): | 7.1313 | 7.3482 | 7.7901 | 8.2463 | 8.5825 | 8.8264 | 8.9429 | 8.9088 | 8.6706 | 8.2231 | 7.7153 | 7.2700 |
| Tank Diameter (ft): | 224,0000 | 224.0000 | 224.0000 | 224.0000 | 224.0000 | 224.0000 | 224.0000 | 224.0000 | 224.0000 | 224.0000 | 224.0000 | 224.0000 |
| Vapor Molecular Weight (lb/lb-mole): | 65.0000 | 65.0000 | 65.0000 | 65.0000 | 65.0000 | 65,0000 | 65.0000 | 65.0000 | 65.0000 | 65.0000 | 65.0000 | 65.0000 |
| Product Factor: | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| | | | | | | | | | | 40.4040 | 40 4049 | 46 4649 |
| Withdrawal Losses (lb): | 16.1618 | 16.1618 | 16.1618 | 16.1618 | 16.1618 | 16.1618 | 16.1618 | 16.1618 | 16,1618 | 10.1010 | 10,1010 | 24 0000 |
| Number of Columns: | 31.0000 | 31.0000 | 31.0000 | 31.0000 | 31.0000 | 31.0000 | 31.0000 | 31.0000 | 31.0000 | 31.0000 | 31.0000 | 0 7000 |
| Effective Column Diameter (ft): | 0.7000 | 0.7000 | 0.7000 | 0.7000 | 0.7000 | 0.7000 | 0.7000 | 0.7000 | 0.7000 | 0.7000 | 7 500 000 00001 | 7 500 000 0000 |
| Net Throughput (gal/mo.): | 17,500,000.000017 | ,500,000.000017 | ,500,000.000017 | ,500,000.000017 | ,500,000.00001 | 7,500,000.000017 | ,500,000.000017, | ,500,000.000017 | ,500,000.000017 | ,500,000.00001 | 7,500,000.00001. | 0.0015 |
| Sheli Clingage Factor (bbi/1000 sqft): | 0.0015 | 0.0015 | 0.0015 | 0.0015 | 0.0015 | 0.0015 | 0.0015 | 0.0015 | 5,6000 | 5,6000 | 5 6000 | 5 6000 |
| Average Organic Liquid Density (lb/gal): | 5.6000 | 5.6000 | 5,6000 | 5.6000 | 5.6000 | 5.6000 | 5.6000 | 5.6000 | 0000.0 | 224 0000 | 224 0000 | 224 0000 |
| Tank Diameter (ft): | 224.0000 | 224.0000 | 224.0000 | 224.0000 | 224.0000 | 224.0000 | 224.0000 | 224.0000 | 224.0000 | 224.0000 | 224.0000 | 224.0000 |
| | | | | | 500 0000 | 500 0 400 | 670 10/0 | 569 6509 | 544 8827 | 502 4023 | 457 2686 | 420 7664 |
| Deck Fitting Losses (lb): | 408.8974 | 426.4544 | 463.7194 | 504.5330 | 535.3006 | 0.0050 | 0 2007 | 0 2292 | 0.2188 | 0 2017 | 0 1836 | 0 1689 |
| Value of Vapor Pressure Function: | 0.1642 | 0.1712 | 0.1862 | 0.2026 | 0.2153 | 0.2200 | 0.2297 | 65 0000 | 65,0000 | 65,0000 | 65 0000 | 65 0000 |
| Vapor Molecular Weight (lb/lb-mole): | 65.0000 | 65.0000 | 65.0000 | 65.0000 | 65.0000 | 4 0000 | 1 0000 | 1 0000 | 1 0000 | 1 0000 | 1 0000 | 1.0000 |
| Product Factor: | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1,0000 | 460,9000 | 459,8000 | 459 8000 | 459 8000 | 459 8000 | 459,8000 |
| Tot. Roof Fitting Loss Fact.(lb-mole/yr): | 459.8000 | 459.8000 | 459.8000 | 459.8000 | 459.6000 | 459.0000 | 455.0000 | 433.0000 | 400.0000 | 400.0000 | 100.0000 | |
| | 0.0000 | 0.0000 | 0 0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Deck Seam Losses (ID): | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Deck Seam Lengur (it). | 0.0000 | 0.0000 | 0.0000 | | | | | | | | | |
| Easter (Ib molo/ft.vr): | 0 0000 | 0.0000 | 0.0000 | 0,0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Pactor (ID-molent-yr). | 0.0000 | 0.0000 | 0.0000 | 0,0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Tenk Diemeter (#): | 224 0000 | 224 0000 | 224,0000 | 224,0000 | 224.0000 | 224.0000 | 224.0000 | 224.0000 | 224.0000 | 224.0000 | 224.0000 | 224.0000 |
| Vener Melecular Melecht (Ib/Ib-mole): | 65,0000 | 65.0000 | 65.0000 | 65,0000 | 65,0000 | 65.0000 | 65.0000 | 65.0000 | 65.0000 | 65.0000 | 65.0000 | 65.0000 |
| Product Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| | | | | | | | | | | | | |
| | E 4 4 E 900 | 667 2603 | 615 4268 | 668 1703 | 709 2236 | 740 2923 | 755.5315 | 751.0414 | 720.3143 | 665.4168 | 607.0905 | 559.9186 |
| Total Losses (ID): | <u></u> | 307.2033 | 010.4200 | 000.1100 | | | Roof Fitting Loss | s Factors | | | | |
| Roof Fitting/Status | | | | Q | uantity | KFa(lb-mole/yr) | KFb(lb-mole/() | yr mph^n)) | | m | Losses(lb) | |
| Assess Heteb (24 in Diem)/Bolted Cover Gas | keted | | | | 2 | 1.60 | | 0.00 | | 0.00 | 41.5538 | |
| Access Haldin (24-III. Dialit. //Bolted Cover, Gas | kotod | | | | 2 | 2.80 | | 0.00 | | 0.00 | 72.7192 | |
| Automatic Gauge Float Well/Bolled Cover, Gas | ric Sloove Seel | | | | 31 | 10.00 | | 0.00 | | 0.00 | 4,025.5274 | |
| Column well (24-in, Diam. /ripe ColFlex, rabi | 10 0100VC 0001 | | | | 112 | 0.00 | | 0.00 | | 0.00 | 0.0000 | |
| Rooi Ley (3-11). Diameter / Fixed Statted Cuide Bolo/Sample Well/Gask Stidios (| Cover w Pole Sleeve | Wiper | | | 2 | 8.30 | | 4.40 | | 1.60 | 215.5605 | |
| Vorum Brecker (10-in Diam)Meinhed Mech | Actuation Gask | | | | 2 | 6.20 | | 1.20 | | 0.94 | 161.0211 | |
| Ladder Wall (26 in Diam)/Sliding Cover Gask | ated | | | | 2 | 56.00 | | 0.00 | | 0.00 | 1,454.3841 | |

TANKS 4.0 Report

TANKS 4.0.9d Emissions Report - Detail Format Individual Tank Emission Totals

Emissions Report for: January, February, March, April, May, June, July, August, September, October, November, December

Centurion Brownsville 250 M in Gasoline - Internal Floating Roof Tank

| | Losses(lbs) | | | | | | | | | | | |
|---------------------|---------------|----------------|-------------------|----------------|-----------------|--|--|--|--|--|--|--|
| Components | Rim Seal Loss | Withdrawi Loss | Deck Fitting Loss | Deck Seam Loss | Total Emissions | | | | | | | |
| Gasoline (RVP 11.5) | 1,743.97 | 193.94 | 5,966.36 | 0.00 | 7,904.28 | | | | | | | |
4 TANKS

Quantity

TANKS 4.0.9d Emissions Report - Detail Format Tank Indentification and Physical Characteristics

Identification

CENTURION BROWNSVILLE 250 M IN ULSD User Identification: City: State: Company: Internal Floating Roof Tank Type of Tank: Total of 4 tank, each one emissions estimated at 24 TO/tank Description:

Tank Dimensions

| Diameter (ft): | | 224.00 |
|-------------------------|---|---------------|
| Volume (gallons): | | 10,500,000.00 |
| Turnovers: | | 24.00 |
| Self Supp. Roof? (y/n): | N | |
| No. of Columns: | | 31.00 |
| Eff. Col. Diam. (ft): | | 0.70 |

Light Rust

Good

Good

White/White

White/White

310 16/42/tonk 0.16tons/42/tonk 24TO

| Paint Characteristics | |
|--------------------------|---|
| Internal Shell Condition | Ľ |

| Internal Shell Condition: | |
|---------------------------|--|
| Shell Color/Shade: | |
| Shell Condition | |
| Roof Color/Shade: | |
| Roof Condition: | |
| | |

Rim-Seal System

-

| Primary Seal: | Mechanical Shoe |
|----------------|-----------------|
| Secondary Seal | Rim-mounted |

Deck Characteristics

| Deck Fitting Category: | Detail |
|------------------------|--------|
| Deck Type: | Welded |

| Access Hatch (24-in, Diam,)/Bolted Cover, Gasketed | 2 |
|---|-----|
| Automatic Gauge Float Well/Bolted Cover, Gasketed | 2 |
| Column Well (24-in, Diam.)/Pipe ColFlex, Fabric Sleeve Seal | 31 |
| Roof Len (3-in Diameter)/Fixed | 112 |
| Slotted Guide-Pole/Sample Well/Gask. Sliding Cover, w. Pole Sleeve, Wiper | 2 |
| Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask. | 2 |
| Ladder Well (36-in. Diam.)/Sliding Cover, Gasketed | 2 |

Meterological Data used in Emissions Calculations: Brownsville, Texas (Avg Atmospheric Pressure = 14.72 psia)

TANKS 4.0.9d Emissions Report - Detail Format Liquid Contents of Storage Tank

CENTURION BROWNSVILLE 250 M IN ULSD - Internal Floating Roof Tank

| | | Da Tem | aily Liquid So perature (de | urf. eg F) | Liquid Bulk Temp | Vapo | r Pressure | (psia) | Vapor Mol. | Liquid Mass | Vapor Mass | Mol. | Basis for Vapor Pressure |
|---------------------------|-------|-----------|--------------------------------|---------------|------------------------|--------|------------|--------|---------------|----------------|---------------|--------|------------------------------------|
| Mixture/Component | Month | Avg. | Min. | Max. | (deg F) | Avg. | Min. | Max. | Weight. | Fract. | Fract. | Weight | Calculations |
| Distillate fuel oil no. 2 | Jan | 68.71 | 64.20 | 73.21 | 73.84 | 0.0087 | N/A | N/A | 130.0000 | | | 188.00 | Option 1: VP60 = .0065 VP70 = .009 |
| Distillate fuel oil no. 2 | Feb | 70.34 | 65.41 | 75.27 | 73.84 | 0.0091 | N/A | N/A | 130.0000 | | | 188.00 | Option 1: VP70 = .009 VP80 = .012 |
| Distillate fuel oil no 2 | Mar | 73.56 | 68.35 | 78.76 | 73.84 | 0.0101 | N/A | N/A | 130.0000 | | | 188.00 | Option 1: VP70 = .009 VP80 = .012 |
| Distillate fuel oil no 2 | Apr | 76.73 | 71.57 | 81.89 | 73.84 | 0.0110 | N/A | N/A | 130.0000 | | | 188.00 | Option 1: VP70 = .009 VP80 = .012 |
| Distillate fuel oil no. 2 | Mav | 78.98 | 73.94 | 84.01 | 73.84 | 0.0117 | N/A | N/A | 130.0000 | | | 188.00 | Option 1: VP70 = .009 VP80 = .012 |
| Distillate fuel oil no. 2 | Jun | 80.56 | 75.26 | 85.87 | 73.84 | 0.0122 | N/A | N/A | 130.0000 | | | 188.00 | Option 1: VP70 = .009 VP80 = .012 |
| Distillate fuel oil no. 2 | Jul | 81.31 | 75.68 | 86.94 | 73.84 | 0.0125 | N/A | N/A | 130.0000 | | | 188.00 | Option 1: VP70 = .009 VP80 = .012 |
| Distillate fuel oil no. 2 | Aug | 81.09 | 75.54 | 86.64 | 73.84 | 0.0124 | N/A | N/A | 130.0000 | | | 188.00 | Option 1: VP70 = .009 VP80 = .012 |
| Distillate fuel oil no. 2 | Sep | 79.55 | 74.50 | 84.61 | 73.84 | 0.0119 | N/A | N/A | 130.0000 | | | 188.00 | Option 1: VP70 = .009 VP80 = .012 |
| Distillate fuel oil no. 2 | Oct | 76.57 | 71.42 | 81.72 | 73.84 | 0.0110 | N/A | N/A | 130.0000 | | | 188.00 | Option 1: VP70 = .009 VP80 = .012 |
| Distillate fuel oil no. 2 | Nov | 73.02 | 68.25 | 77.80 | 73.84 | 0.0099 | N/A | N/A | 130.0000 | | | 188.00 | Option 1: VP70 = .009 VP80 = .012 |
| Distillate fuel oil no. 2 | Dec | 69.82 | 65.31 | 74.33 | 73.84 | 0.0090 | N/A | N/A | 130.0000 | | | 188.00 | Option 1: VP60 = .0065 VP70 = .009 |

TANKS 4.0.9d Emissions Report - Detail Format Detail Calculations (AP-42)

CENTURION BROWNSVILLE 250 M IN ULSD - Internal Floating Roof Tank

| Month: | January | February | March | April | May | June | July | August | September | October | November | December |
|--|------------------------|----------------|-----------------|-----------------|-----------------|-----------------|------------------|-----------------|------------------|-----------------|-----------------|----------------|
| Rim Seal Losses (lb): | 0.2147 | 0.2252 | 0.2491 | 0.2726 | 0.2893 | 0.3025 | 0.3099 | 0.3077 | 0.2936 | 0.2714 | 0.2451 | 0.2216 |
| Seal Factor A (lb-mole/ft-yr): | 0.6000 | 0.6000 | 0.6000 | 0.6000 | 0.6000 | 0.6000 | 0.6000 | 0.6000 | 0.6000 | 0.6000 | 0.6000 | 0.6000 |
| Seal Factor B (lb-mole/ft-yr (mph)^n): | 0.4000 | 0.4000 | 0.4000 | 0.4000 | 0.4000 | 0.4000 | 0.4000 | 0.4000 | 0.4000 | 0.4000 | 0.4000 | 0.4000 |
| Value of Vapor Pressure Function: | 0.0001 | 0.0002 | 0.0002 | 0.0002 | 0.0002 | 0.0002 | 0.0002 | 0.0002 | 0.0002 | 0.0002 | 0.0002 | 0.0002 |
| Vapor Pressure at Daily Average Liquid | | | | | | | | | | | | |
| Surface Temperature (psia): | 0.0087 | 0.0091 | 0.0101 | 0.0110 | 0.0117 | 0.0122 | 0.0125 | 0.0124 | 0.0119 | 0.0110 | 0.0099 | 0.0090 |
| Tank Diameter (ft): | 224.0000 | 224.0000 | 224.0000 | 224.0000 | 224,0000 | 224.0000 | 224.0000 | 224.0000 | 224.0000 | 224.0000 | 224.0000 | 224.0000 |
| Vapor Molecular Weight (lb/lb-mole): | 130.0000 | 130.0000 | 130.0000 | 130.0000 | 130.0000 | 130.0000 | 130.0000 | 130.0000 | 130.0000 | 130.0000 | 130.0000 | 130.0000 |
| Product Factor: | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Withdrawal Losses (lb): | 24.5890 | 24.5890 | 24.5890 | 24.5890 | 24.5890 | 24.5890 | 24.5890 | 24.5890 | 24.5890 | 24.5890 | 24.5890 | 24.5890 |
| Number of Columns: | 31,0000 | 31,0000 | 31,0000 | 31.0000 | 31,0000 | 31.0000 | 31.0000 | 31.0000 | 31.0000 | 31.0000 | 31.0000 | 31.0000 |
| Effective Column Diameter (ft): | 0.7000 | 0.7000 | 0,7000 | 0.7000 | 0.7000 | 0.7000 | 0.7000 | 0.7000 | 0.7000 | 0,7000 | 0.7000 | 0.7000 |
| Net Throughout (gal/mo.): | 21,000,000,000021 | .000.000.00002 | 1.000.000.00002 | 1,000,000,00002 | 1,000,000.00002 | 1,000,000.00002 | 1,000,000.00002 | 1,000,000.00002 | 21,000,000.00002 | 1,000,000.00002 | 1,000,000.00002 | 1,000,000.0000 |
| Shell Clingage Factor (bbl/1000 soft): | 0.0015 | 0.0015 | 0.0015 | 0.0015 | 0.0015 | 0.0015 | 0.0015 | 0.0015 | 0.0015 | 0.0015 | 0.0015 | 0.0015 |
| Average Organic Liquid Density (lb/gal): | 7,1000 | 7,1000 | 7.1000 | 7.1000 | 7.1000 | 7.1000 | 7.1000 | 7.1000 | 7.1000 | 7.1000 | 7.1000 | 7.1000 |
| Tank Diameter (ft): | 224.0000 | 224.0000 | 224.0000 | 224,0000 | 224.0000 | 224.0000 | 224.0000 | 224.0000 | 224.0000 | 224.0000 | 224.0000 | 224.0000 |
| Deck Fitting Losses (Ib): | 07344 | 0.7704 | 0.8521 | 0.9326 | 0.9897 | 1.0349 | 1.0602 | 1.0528 | 1.0044 | 0,9286 | 0.8385 | 0.7580 |
| Value of Vapor Pressure Function: | 0.0001 | 0.0002 | 0.0002 | 0.0002 | 0.0002 | 0.0002 | 0.0002 | 0.0002 | 0.0002 | 0.0002 | 0.0002 | 0.0002 |
| Vapor Molecular Weight (Ib/lb-mole): | 130 0000 | 130,0000 | 130,0000 | 130.0000 | 130.0000 | 130.0000 | 130.0000 | 130,0000 | 130.0000 | 130.0000 | 130.0000 | 130.0000 |
| Product Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Tot. Roof Fitting Loss Fact. (lb-mole/yr): | 459.8000 | 459.8000 | 459.8000 | 459.8000 | 459.8000 | 459.8000 | 459.8000 | 459.8000 | 459.8000 | 459.8000 | 459.8000 | 459.8000 |
| Deck Seam Losses (lb): | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Deck Seam Length (ft): | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Deck Seam Loss per Unit Length | | | | | | | | | | | | |
| Factor (lb-mole/ft-vr); | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Deck Seam Length Factor(ft/soft): | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Tank Diameter (ft): | 224.0000 | 224.0000 | 224.0000 | 224.0000 | 224.0000 | 224.0000 | 224.0000 | 224.0000 | 224.0000 | 224.0000 | 224.0000 | 224.0000 |
| Vapor Molecular Weight (ib/ib-mole): | 130,0000 | 130.0000 | 130.0000 | 130,0000 | 130.0000 | 130.0000 | 130.0000 | 130.0000 | 130.0000 | 130.0000 | 130.0000 | 130,0000 |
| Product Factor: | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total Losses (lb): | 25.5380 | 25.5846 | 25.6901 | 25.7942 | 25.8680 | 25.9264 | 25.9590 | 25.9495 | 25.8870 | 25.7890 | 25.6726 | 25.5685 |
| | | | | · | | | Roof Fitting Los | s Factors | | | | |
| Roof Fitting/Status | | | | Q | uantity | KFa(lb-mole/yr |) KFb(lb-mole/ | (yr mph^n)) | | m | Losses(lb) | |
| Access Hatch (24-in, Diam.)/Bolted Cover, Gas | sketed | | | | 2 | 1.6 | D | 0.00 | | 0.00 | 0.0763 | |
| Automatic Gauge Float Well/Bolted Cover, Gas | sketed | | | | 2 | 2.8 | D | 0.00 | | 0.00 | 0.1336 | |
| Column Well (24-in, Diam.)/Pipe ColFlex. Fab | pric Sleeve Seal | | | | 31 | 10.0 | D | 0.00 | | 0.00 | 7.3930 | |
| Roof Leg (3-in. Diameter)/Fixed | | | | | 112 | 0.0 | D | 0.00 | | 0.00 | 0.0000 | |
| Slotted Guide-Pole/Sample Well/Gask. Sliding | Cover, w. Pole Sleeve. | Wiper | | | 2 | 8.3 | 0 | 4.40 | | 1.60 | 0.3959 | |
| Vacuum Breaker (10-in. Diam.)/Weighted Mech | h. Actuation, Gask. | • | | | 2 | 6.2 | D | 1.20 | | 0.94 | 0.2957 | |
| Ladder Well (36-in. Diam.)/Sliding Cover, Gask | eted | | | | 2 | 56.0 | D | 0.00 | | 0.00 | 2.6710 | |

TANKS 4.0 Report

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TANKS 4.0.9d Emissions Report - Detail Format Individual Tank Emission Totals

Emissions Report for: January, February, March, April, May, June, July, August, September, October, November, December

CENTURION BROWNSVILLE 250 M IN ULSD - Internal Floating Roof Tank

| | | | Losses(lbs) | | |
|---------------------------|---------------|----------------|-------------------|----------------|-----------------|
| Components | Rim Seal Loss | Withdrawl Loss | Deck Fitting Loss | Deck Seam Loss | Total Emissions |
| Distillate fuel oil no. 2 | 3.20 | 295.07 | 10.96 | 0.00 | 309.23 |

| TABLE 7(d) | |
|------------|--|
|------------|--|

02-95

INTERNAL FLOATING ROOF STORAGE TANK SUMMARY Tank T-250-2 will be built exactly the same as T-250-1

| I. Tank Identification (Use a separate form for each tank). |
|---|
| 1. Applicant's Name: CMG Brownsville II LLC |
| 2. Location (<i>indicate on plot plan and provide coordinates</i>): 663/34 E 28/2057 N |
| 3. Tank No. <u>T-250-1</u> 4. Emission Point No. 1-250-1 |
| 5. FIN <u>Tank T-250-1</u> CIN |
| 6. Status: New tank [X] Altered tank [] Relocation [] Change of Service [] |
| Previous permit or exemption number(s) |
| II Tank Physical Characteristics |
| 1 Dimensions |
| a Shell Height: 48 ft. |
| h Diameter: 224 ft. |
| c Nominal Canacity or Tank Volume: 250 M BBLS gallons. |
| d. Turnovers per vear: 20 |
| e. Net Throughput : ESTIMATED 5,000,000 BBLS/YR gallons/year. |
| f. Maximum Pumping Rate: 20,000 BBL/HR gallons/hour. (Use the higher of the maximum fill |
| rate or maximum withdrawal rate.) |
| g. Self-Supporting Roof? Yes [] No [X] |
| h. Number of Columns: <u>31</u> |
| i. Column Diameter: <u>0.7</u> ft. |
| 2. Shell/Roof and Paint Characteristics |
| a. Shell Condition : Light Rust [X] Dense Rust [] Gunite Lining [] |
| b. Shell Color/Shade : White/White [X] Aluminum/Specular [] Aluminum/Diffuse [] |
| Gray/Light [] Gray/Medium [] Red/Primer [] Other [] (Describe) |
| c. Shell Condition : Good [X] Poor [] |
| d. Roof Color/Shade : White/White [X] Aluminum/Specular [] Aluminum/Diffuse [] |
| Gray/Light [] Gray/Medium [] Red/Primer [] Other [] (Describe) |
| e. Roof Condition : Good [X] Poor [] |
| 3. Rim-Seal System |
| a. Primary Seal: Vapor-mounted [] Liquid-mounted [] Mechanical Shoe [A] |
| b. Secondary Seal : Yes [X] No [] |
| 4. Deck Characteristics |
| a. Deck Type: Bolted [] Welded [X] |
| b. Deck Construction (Bolted Tanks Only): |
| Continuous Sheet Construction 5 ft. wide [] |
| Continuous Sheet Construction 7 ft, wide |
| Destengular Panel Construction 5 X 7 5 ft wide [] |
| Rectangular Panel Construction 5 X 12 ft wide [] |
| Dool: Soom Length (Bolted Tanks Only): |
| 5. Deef Eitting Loss Eastor: 545 lb-mole/year |
| Based upon Typical [] Controlled [] or Actual [X] fittings |
| Complete Section IV Fittings Information to record fittings count used to calculate the roof fitting loss |
| factor |
| jucior. |

| Permit No Tank No. T-250-1 _ | |
|--|----------|
| III. Liquid Properties of Stored Material See Tanks 4.09 for Details | |
| 1. Chemical Category: Organic Liquids [] Petroleum Distillates [X] Crude (| Dils [] |
| 2. Single or Multi-Component Liquid | |
| Single []Complete Section III.3 | |
| Multiple [] Complete Section III.4 | |
| 3. Single Component Information | |
| a. Chemical Name: Gasoline | |
| b. CAS Number: | |
| d. True Vapor Pressure at Average Liquid Surface Temperature: | psia. |
| e. Liquid Molecular Weight: | |
| 4. Multiple Component Information | |
| a. Mixture Name: Heavy Condensate | |
| b. Average Liquid Surface Temperature: °F. | |
| c. Minimum Liquid Surface Temperature: °F. | |
| d. Maximum Liquid Surface Temperature: °F. | |
| e. True Vapor Pressure at Average Liquid Surface Temperature: | psia. |
| f. True Vapor Pressure at Minimum Liquid Surface Temperature: | psia. |
| g. True Vapor Pressure at Maximum Liquid Surface Temperature: | psia. |
| | |

| Chemical Name | CAS Number | Percent of Total Liquid Weight (typical) | Percent of Total Vapor Weight(typical | Molecular Weight |
|---------------|------------|---|--|---------------------|
| | | | | |
| | | | | |
| | | | | |

Permit No. Tank No. T-250-1 IV. Fittings Information SEE TANKS 4.09 PRINTOUT FOR DETAILS

| | | | | Quantity |
|--|---------------------------------------|----------|-----|----------|
| Fitting Type | Fitting Status | Quantity | KF | X KF |
| Access Hatch (24-in. Diam.) | Bolted Cover, Gasketed | | 1.6 | |
| Access Hatch (24-in. Diam.) | Unbolted Cover, Gasketed | | 11 | |
| Access Hatch (24-in. Diam.) | Unbolted Cover, Ungasketed | | 25 | |
| Automatic Gauge Float Well | Bolted Cover, Gasketed | | 2.8 | |
| Automatic Gauge Float Well | Unbolted Cover, Gasketed | | 15 | |
| Automatic Gauge Float Well | Unbolted Cover, Ungasketed | | 28 | |
| Column Well (24-in.Diam.) | Built-Up Col. –Sliding Cover, Gask. | | 33 | |
| .Column Well (24-in.Diam.) | Built-Up Col. –Sliding Cover, Ungask. | | 47 | |
| Column Well (24-in.Diam.) | Pipe ColFlex. Fabric Sleeve Seal | | 10 | |
| Column Well (24-in.Diam.) | Pipe Col. –Sliding Cover, Gask. | ļ | 25 | |
| Column Well (24-in.Diam.) | Pipe Col. –Sliding Cover, Ungask. | | 32 | |
| Ladder Well (36-in. Diam.) | Sliding Cover, Ungasketed | | 76 | |
| Ladder Well (36-in. Diam.) | Sliding Cover, Gasketed | | 56 | |
| Roof Leg or Hanger Well | Adjustable | | 7.9 | |
| Roof Leg or Hanger Well | Fixed | | 0 | |
| Sample Pipe or Well (24-in. Diam.) | Slit Fabric Seal 10% Open | | 12 | |
| Sample Pipe or Well (24-in. Diam.) | Slotted Pipe-Sliding Cover, Gask. | | 44 | |
| Sample Pipe or Well (24-in. Diam.) | Slotted Pipe-Sliding Cover, Ungask. | | 57 | |
| Stub Drain (1-in. Diam.) | | | 1.2 | |
| Vacuum Breaker (10-in. Diam.) | Weighted Mech. Actuation, Gask. | | 6.2 | |
| Vacuum Breaker (10-in. Diam.) | Weighted Mech. Actuation, Ungask. | | 0.9 | |
| Total deck fitting loss factor, lb-mole/year | | | | |

INTERNAL FLOATING ROOF STORAGE TANK SUMMARY Tank T-250-4, T-250-5 and T-250-6 will be built exactly the same as T-250-3

| Tank Identification (Use a separate form for each tank). |
|--|
| 1 Applicant's Name: CMG Brownsville II LLC |
| 1. Applicant's Name. Civil Blownsvine in <u>BLO</u> 2. Logation (indigate on plot plan and provide coordinates): 663739 E_2871955 N |
| 2. Location (<i>Indicate on piot pian and provide coordinates</i>), objects 2 - 201-201-201-201-201-201-201-201-201-201- |
| 5. FIN Tank T-250-3 CIN |
| 6 Status: New tank [X] Altered tank [] Relocation [] Change of Service [] |
| Previous permit or exemption number(s) |
| |
| II. Tank Physical Characteristics |
| 1. Dimensions |
| a. Shell Height : <u>48</u> ft. |
| b. Diameter: <u>224</u> ft. |
| c. Nominal Capacity or Tank Volume: <u>250 M BBLS</u> gallons. |
| d. Turnovers per year: <u>24</u> |
| e. Net Throughput :ESTIMATED 6,000,000 BBLS/YR gallons/year. |
| f. Maximum Pumping Rate: 28,000 <u>BBL/HR</u> gallons/hour. (Use the higher of the maximum fill |
| rate or maximum withdrawal rate.) |
| g. Self-Supporting Roof? Yes [] No [X] |
| h. Number of Columns: <u>31</u> |
| i. Column Diameter: <u>0.7</u> ft. |
| 2. Shell/Roof and Paint Characteristics |
| a. Shell Condition : Light Rust [X] Dense Rust [] Gunite Lining [] |
| b. Shell Color/Shade : White/White [X] Aluminum/Specular [] Aluminum/Diffuse [] |
| Gray/Light [] Gray/Medium [] Red/Primer [] Other [] (Describe) |
| c. Shell Condition : Good [X] Poor [] |
| d. Roof Color/Shade: White/White [X] Aluminum/Specular [] Aluminum/Diffuse [] |
| Gray/Light [] Gray/Medium [] Red/Primer [] Other [] (Describe) |
| e. Roof Condition : Good [X] Poor [] |
| 3. Rim-Seal System |
| a. Primary Seal: Vapor-mounted [] Liquid-mounted [] Mechanical Shoe [A] |
| b. Secondary Seal : Yes [X] No [] |
| 4. Deck Characteristics |
| a. Deck Type: Bolted [] Welded [X] |
| b. Deck Construction (Bolted Tanks Only): |
| Continuous Sheet Construction 5 II. wide [] |
| Continuous Sheet Construction 6 II. wide [] |
| Continuous Sneet Construction / II. wide [] |
| Rectangular Panel Construction 5 X 1.2 ft. wide [] |
| Rectangular Panel Construction 5 X 12 II. wide [] |
| c. Deck Seam Length (Bolted Tanks Only): II. |
| 5. KOOI FITTING LOSS FACTOR: ID-IIIOIC/year |
| Based upon Typical [] Controlled [] of Actual [A] multips |
| Complete Section IV, Fittings information, to record fittings count used to calculate the roof fitting toss |
| Jactor. |

| Permit | No Tank No. T-250-3 | |
|-----------|---|-------|
| III. Liqu | id Properties of Stored Material See Tanks 4.09 for Details | |
| 1. C | Chemical Category: Organic Liquids [] Petroleum Distillates [X] Crude Oils [] |] |
| 2. S | ingle or Multi-Component Liquid | |
| S | Single []Complete Section III.3 | |
| h | Nultiple [] Complete Section III.4 | |
| 3. 5 | Single Component Information | |
| C | a. Chemical Name: Diesel Fuel | |
| k | o. CAS Number: | |
| C | d. True Vapor Pressure at Average Liquid Surface Temperature: | psia. |
| e | e. Liquid Molecular Weight: | |
| 4. 1 | Multiple Component Information | |
| (| a. Mixture Name: Heavy Condensate | |
| I | b. Average Liquid Surface Temperature: °F. | |
| (| c. Minimum Liquid Surface Temperature: °F. | |
| (| d. Maximum Liquid Surface Temperature: °F. | |
| (| e. True Vapor Pressure at Average Liquid Surface Temperature: | psia. |
| • | f. True Vapor Pressure at Minimum Liquid Surface Temperature: | psia. |
| ! | g. True Vapor Pressure at Maximum Liquid Surface Temperature: | psia. |
| | h. Liauid Molecular Weight: | |

. Chemical Components Information

| Chemical Name | CAS Number | Percent of Total Liquid Weight (typical) | Percent of Total Vapor Weight(typical | Molecular Weight |
|---------------|------------|---|--|---------------------|
| | | | | |
| | | | | |
| | | | | |
| | | | | |

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Permit No.

Tank No. **T-250-3**

IV. Fittings Information SEE TANKS 4.09 PRINTOUT FOR DETAILS

| | | | | Quantity |
|------------------------------------|---------------------------------------|-------------------|--------------|-------------|
| Fitting Type | Fitting Status | Quantity | KF | X KF |
| Access Hatch (24-in. Diam.) | Bolted Cover, Gasketed | | 1.6 | |
| Access Hatch (24-in. Diam.) | Unbolted Cover, Gasketed | | 11 | |
| Access Hatch (24-in. Diam.) | Unbolted Cover, Ungasketed | | 25 | |
| Automatic Gauge Float Well | Bolted Cover, Gasketed | | 2.8 | |
| Automatic Gauge Float Well | Unbolted Cover, Gasketed | | 15 | |
| Automatic Gauge Float Well | Unbolted Cover, Ungasketed | | 28 | |
| Column Well (24-in.Diam.) | Built-Up Col. –Sliding Cover, Gask. | | 33 | |
| .Column Well (24-in.Diam.) | Built-Up Col. –Sliding Cover, Ungask. | | 47 | |
| Column Well (24-in.Diam.) | Pipe ColFlex. Fabric Sleeve Seal | | 10 | |
| Column Well (24-in.Diam.) | Pipe Col. –Sliding Cover, Gask. | | 25 | |
| Column Well (24-in.Diam.) | Pipe Col. –Sliding Cover, Ungask. | | 32 | |
| Ladder Well (36-in. Diam.) | Sliding Cover, Ungasketed | | 76 | |
| Ladder Well (36-in. Diam.) | Sliding Cover, Gasketed | | 56 | |
| Roof Leg or Hanger Well | Adjustable | | 7.9 | |
| Roof Leg or Hanger Well | Fixed | | 0 | |
| Sample Pipe or Well (24-in. Diam.) | Slit Fabric Seal 10% Open | | 12 | |
| Sample Pipe or Well (24-in. Diam.) | Slotted Pipe-Sliding Cover, Gask. | | 44 | |
| Sample Pipe or Well (24-in. Diam.) | Slotted Pipe-Sliding Cover, Ungask. | | 57 | |
| Stub Drain (1-in. Diam.) | | | 1.2 | |
| Vacuum Breaker (10-in. Diam.) | Weighted Mech. Actuation, Gask. | | 6.2 | |
| Vacuum Breaker (10-in. Diam.) | Weighted Mech. Actuation, Ungask. | | 0.9 | |
| | T | otal deck fitting | loss factor, | lb-mole/yea |

| TABLE | 7(d) |
|-------|------|
|-------|------|

02-95

INTERNAL FLOATING ROOF STORAGE TANK SUMMARY Tank T-250-4, T-250-5 and T-250-6 will be built exactly the same as T-250-3

| I. Tank Identification (Use a separate form for each tank). |
|--|
| 1. Applicant's Name: CMG Brownsville II LLC |
| 2 Location (indicate on plot plan and provide coordinates): 663739 E 2871955 N |
| 3 Tank No. T-250-3 4. Emission Point No. T-250-3 |
| 5 FIN Tank T-250-3 CIN |
| 6. Status: New tank [X] Altered tank [] Relocation [] Change of Service [] |
| Previous permit or exemption number(s) |
| |
| II. Tank Physical Characteristics |
| 1. Dimensions |
| a. Shell Height : <u>48</u> ft. |
| b. Diameter: <u>224</u> ft. |
| c. Nominal Capacity or Tank Volume: <u>250 M BBLS</u> gallons. |
| d. Turnovers per year: <u>24</u> |
| e. Net Throughput :ESTIMATED 6,000,000 BBLS/YR gallons/year. |
| f. Maximum Pumping Rate: 28,000 <u>BBL/HR</u> gallons/hour. (Use the higher of the maximum fill |
| rate or maximum withdrawal rate.) |
| g. Self-Supporting Roof? Yes [] No [X] |
| h. Number of Columns: <u>31</u> |
| i. Column Diameter: ft. |
| 2. Shell/Roof and Paint Characteristics |
| a. Shell Condition : Light Rust [X] Dense Rust [] Gunite Lining [] |
| b. Shell Color/Shade : White/White [X] Aluminum/Specular [] Aluminum/Diffuse [] |
| Gray/Light [] Gray/Medium [] Red/Primer [] Other [] (Describe) |
| c. Shell Condition : Good [X] Poor [] |
| d. Roof Color/Shade : White/White [X] Aluminum/Specular [] Aluminum/Diffuse [] |
| Gray/Light [] Gray/Medium [] Red/Primer [] Other [] (Describe) |
| e. Roof Condition : Good [X] Poor [] |
| 3. Rim-Seal System |
| a. Primary Seal: Vapor-mounted [] Liquid-mounted [] Mechanical Shoe [A] |
| b. Secondary Seal : Yes [X] No [] |
| 4. Deck Characteristics |
| a. Deck Type: Bolted [] Welded [X] |
| b. Deck Construction (Bolted Tanks Only): |
| Continuous Sheet Construction 5 II. wide [] |
| Continuous Sheet Construction of It. wide |
| Continuous Sneet Construction 7 II. wide [] |
| Rectangular Panel Construction 5 X 12 ft wide [] |
| Rectangular Panel Construction 5 A 12 It. while [] |
| c. Deck Seam Length (Bolted Tanks Only):1. |
| 5. KOOI FILLING LOSS FACTOR: ID-IIIOIC/year Decodemon Transical [] Controlled [] or Actual [X] fittings |
| Based upon Typical [] Controlled [] of Actual [A] mungs |
| Complete Section IV, Fullings Information, to record julings count used to calculate the roof fulling toss |
| jacior. |

| Permit No | Tank No. T-250-3 | | |
|------------------------|---------------------------------------|--------------------------|----------|
| III. Liquid Properties | of Stored Material See Tanks 4.09 | for Details | |
| 1. Chemical Co | ategory: Organic Liquids [] Petroleu | ım Distillates [X] Crude | Oils [] |
| 2. Single or Mul | li-Component Liquid | | |
| Single []Co | mplete Section III.3 | | |
| Multiple [] | Complete Section III.4 | | |
| 3. Single Comp | onent Information | | |
| a. Chemica | Name: Diesel Fuel | | |
| b. CAS Num | ber: | | |
| d. True Vap | or Pressure at Average Liquid Surfac | e Temperature: | psia. |
| e. Liquid Mo | blecular Weight: | | |
| 4. Multiple Cor | nponent Information | | |
| a. Mixture N | ame: Heavy Condensate | | |
| b. Average | Liquid Surface Temperature: | °F. | |
| c. Minimum | Liquid Surface Temperature: | °F. | |
| d. Maximur | n Liquid Surface Temperature: | °F. | |
| e. True Vap | or Pressure at Average Liquid Surfac | e Temperature: | psia. |
| f. True Vap | or Pressure at Minimum Liquid Surfac | ce Temperature: | psia. |
| a. True Vap | or Pressure at Maximum Liquid Surfc | ice Temperature: | psia. |
| U 1 | | | |

. Chemical Components Information

| Chemical Name | CAS Number | Percent of Total Liquid Weight (typical) | Percent of Total Vapor Weight(typical | Molecular Weight |
|---------------|------------|---|--|---------------------|
| | | | | |
| | | | | |
| | | | | |
| | | | | |

_

Tank No. T-250-3 SEE TANKS 4.09 PRINTOUT FOR DETAILS Permit No. _____ IV. Fittings Information

| | | | | Quantity |
|------------------------------------|---------------------------------------|-------------------|--------------|------------------|
| Fitting Type | Fitting Status | Quantity | KF | X KF |
| Access Hatch (24-in. Diam.) | Bolted Cover, Gasketed | | 1.6 | |
| Access Hatch (24-in. Diam.) | Unbolted Cover, Gasketed | | 11 | |
| Access Hatch (24-in. Diam.) | Unbolted Cover, Ungasketed | | 25 | |
| Automatic Gauge Float Well | Bolted Cover, Gasketed | | 2.8 | |
| Automatic Gauge Float Well | Unbolted Cover, Gasketed | | 15 | |
| Automatic Gauge Float Well | Unbolted Cover, Ungasketed | | 28 | |
| Column Well (24-in.Diam.) | Built-Up Col. –Sliding Cover, Gask. | | 33 | |
| .Column Well (24-in.Diam.) | Built-Up Col. –Sliding Cover, Ungask. | | 47 | |
| Column Well (24-in.Diam.) | Pipe ColFlex. Fabric Sleeve Seal | | 10 | |
| Column Well (24-in.Diam.) | Pipe Col. –Sliding Cover, Gask. | | 25 | |
| Column Well (24-in.Diam.) | Pipe Col. –Sliding Cover, Ungask. | | 32 | |
| Ladder Well (36-in. Diam.) | Sliding Cover, Ungasketed | | 76 | |
| Ladder Well (36-in. Diam.) | Sliding Cover, Gasketed | | 56 | |
| Roof Leg or Hanger Well | Adjustable | | 7.9 | |
| Roof Leg or Hanger Well | Fixed | | 0 | |
| Sample Pipe or Well (24-in. Diam.) | Slit Fabric Seal 10% Open | | 12 | |
| Sample Pipe or Well (24-in. Diam.) | Slotted Pipe-Sliding Cover, Gask. | | 44 | |
| Sample Pipe or Well (24-in. Diam.) | Slotted Pipe-Sliding Cover, Ungask. | | 57 | |
| Stub Drain (1-in. Diam.) | | | 1.2 | |
| Vacuum Breaker (10-in. Diam.) | Weighted Mech. Actuation, Gask. | | 6.2 | |
| Vacuum Breaker (10-in. Diam.) | Weighted Mech. Actuation, Ungask. | | 0.9 | |
| | Tr | otal deck fitting | loss factor, | _i lb-mole/ye |



 \bigcirc

INTERNAL FLOATING ROOF STORAGE TANK SUMMARY

| Table 7(d) INTERNAL FLOATIN COOF TANK SUMMARY | |
|--|---------|
| Permit No Tank No. T-150-1 | |
| III. Liquid Properties of Stored Material See Tanks 4.09 for Details | |
| 1. Chemical Category: Organic Liquids [] Petroleum Distillates [X] Crude | Oils [] |
| 2. Single or Multi-Component Liquid | |
| Single []Complete Section III.3 | |
| Multiple [] Complete Section III.4 | |
| 3. Single Component Information | |
| a. Chemical Name: Gasoline Blendstock – including Reformate | |
| b. CAS Number: | |
| d. True Vapor Pressure at Average Liquid Surface Temperature: | psia. |
| e. Liquid Molecular Weight: | |
| 4. Multiple Component Information | |
| a. Mixture Name: Heavy Condensate | |
| b. Average Liquid Surface Temperature:°F. | |
| c. Minimum Liquid Surface Temperature: °F. | |
| d. Maximum Liquid Surface Temperature: °F. | |
| e. True Vapor Pressure at Average Liquid Surface Temperature: | psia. |
| f. True Vapor Pressure at Minimum Liquid Surface Temperature: | psia. |
| g. True Vapor Pressure at Maximum Liquid Surface Temperature: | psia. |
| h. Liquid Molecular Weight: | |

. Chemical Components Information

| Chemical Name | CAS Number | Percent of Total Liquid Weight (typical) | Percent of Total Vapor Weight(typical | Molecular Weight |
|---------------|------------|---|--|---------------------|
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

Permit No.

Tank No. **T-150-1**

SEE TANKS 4.09 PRINTOUT FOR DETAILS

IV. Fittings Information

| | | | Deck fitting loss factor | Quantity | |
|------------------------------------|---------------------------------------|----------|-----------------------------|----------|--|
| Fitting Type | Fitting Status | Quantity | KF | X KF | |
| Access Hatch (24-in. Diam.) | Bolted Cover, Gasketed | | 1.6 | | |
| Access Hatch (24-in. Diam.) | Unbolted Cover, Gasketed | | 11 | | |
| Access Hatch (24-in. Diam.) | Unbolted Cover, Ungasketed | | 25 | | |
| Automatic Gauge Float Well | Bolted Cover, Gasketed | | 2.8 | | |
| Automatic Gauge Float Well | Unbolted Cover, Gasketed | | 15 | | |
| Automatic Gauge Float Well | Unbolted Cover, Ungasketed | | 28 | | |
| Column Well (24-in.Diam.) | Built-Up Col. –Sliding Cover, Gask. | | 33 | | |
| .Column Well (24-in.Diam.) | Built-Up Col. –Sliding Cover, Ungask. | | 47 | | |
| Column Well (24-in.Diam.) | Pipe ColFlex. Fabric Sleeve Seal | | 10 | | |
| Column Well (24-in.Diam.) | Pipe Col. –Sliding Cover, Gask. | | 25 | | |
| Column Well (24-in.Diam.) | Pipe Col. –Sliding Cover, Ungask. | | 32 | | |
| Ladder Well (36-in. Diam.) | Sliding Cover, Ungasketed | | 76 | | |
| Ladder Well (36-in. Diam.) | Sliding Cover, Gasketed | | 56 | | |
| Roof Leg or Hanger Well | Adjustable | | 7.9 | | |
| Roof Leg or Hanger Well | Fixed | | 0 | | |
| Sample Pipe or Well (24-in. Diam.) | Slit Fabric Seal 10% Open | | 12 | | |
| Sample Pipe or Well (24-in. Diam.) | Slotted Pipe-Sliding Cover, Gask. | | 44 | | |
| Sample Pipe or Well (24-in. Diam.) | Slotted Pipe-Sliding Cover, Ungask. | | 57 | | |
| Stub Drain (1-in. Diam.) | | | 1.2 | | |
| Vacuum Breaker (10-in. Diam.) | Weighted Mech. Actuation, Gask. | | 6.2 | | |
| | | | 1 | | |

Weighted Mech. Actuation, Ungask.

Total deck fitting loss factor, lb-mole/year

0.9

T

Т

Vacuum Breaker (10-in. Diam.)

| | | \bigcirc | TABLE 7(d) | \bigcirc |
|---|--|--|--|--|
| | INTER Tank | NAL FLOATING T-150-9 will be b u | ROOF STORAGE TA ailt exactly the same a | 02-95 NK SUMMARY as T-150-5 |
| I. Ta 1. 2. 3. 5. 6. Pr | Applicantification (Use a Applicant's Name: CM Location (indicate on plot Tank No. T-150-5FINTank T-150-5FINTank T-150-Status:New tank [X]evious permit or exemptio | separate form for G Brownsville II L of plan and provide 4. 5 Altered tank n number(s) | each tank). LC coordinates): 663959 Emission Point No. T CIN] Relocation [] | E 2872016 N 150-5 Change of Service [] |
| II. T 1. 2. 3 4 | ank Physical Characteristant Dimensions a. Shell Height : | ics ft. ft. ft. Tank Volume: 15 25 ESTIMATED 3,7 Rate: 7,500 BBL/H withdrawal rate.) f? Yes [] No 16 0.7 ft. aracteristics Light Rust [X] White/White [X] ay/Medium [] food [X] No [] Welded[X] Solted Tanks Only) us Sheet Construct us Sheet Construct lar Panel Construct Bolted Tanks Only] :235 I Controlled [] itings Information, | <u>0 M BBLS</u> gallo <u>750,000 BBLS/YR</u> <u>IR</u> gallons/hou [X] Dense Rust [] Aluminum/Specu Red/Primer [] Other Poor [] Aluminum/Specu Red/Primer [] Other Poor [] Liquid-mounted [] [] Liquid-mounted [] [] Con 5 ft. wide | ons. gallons/year. r. (Use the higher of the maximum fill Gunite Lining [] ular [] Aluminum/Diffuse [] [] (Describe) ular [] Aluminum/Diffuse [] [] (Describe) Mechanical Shoe [X]]] itings nt used to calculate the roof fitting loss |

T-150-5 Table 7d IFR.doc

| Table 7(d) INTERNAL FLOATINC OOF Page 2 | - TANK SUMMARY | \bigcirc | | |
|--|---|--|---------------------------------------|--|
| Permit No Tank N | 10. T-150-5 | | | |
| III. Liquid Properties of Stored Materia | I See Tanks 4.09 for D | etails | · · · · · · · · · · · · · · · · · · · | |
| 1. Chemical Category: Organic L | iquids [] Petroleum D | istillates [X] Crude | Oils [] | |
| 2. Single or Multi-Component Liqu | id | | | |
| Single []Complete Section III.3 | 3 | | | |
| Multiple [] Complete Section | 111.4 | | | |
| 3. Single Component Information | | | | |
| a. Chemical Name: Gasoline | Blendstock – Including | g Natural Gasoline (| Condensate | |
| b. CAS Number: | | | | |
| d. True Vapor Pressure at Avera | age Liquid Surface Te | mperature: | psia. | |
| e. Liquid Molecular Weight: | e. Liquid Molecular Weight: | | | |
| 4. Multiple Component Information | on | | | |
| a. Mixture Name: Heavy Conc | densate | | | |
| b. Average Liquid Surface Temperature: °F. | | | | |
| c. Minimum Liquid Surface Ten | nperature: | °F. | | |
| d. Maximum Liquid Surface Ter | mperature: | °F. | | |
| e. True Vapor Pressure at Aver | e. True Vapor Pressure at Average Liquid Surface Temperature: psia. | | | |
| f. True Vapor Pressure at Minin | f. True Vapor Pressure at Minimum Liquid Surface Temperature: psia. | | | |
| g. True Vapor Pressure at Maxi | g. True Vapor Pressure at Maximum Liquid Surface Temperature: psia. | | | |
| h. Liquid Molecular Weight: | | | | |
| j. Chemical Components Information | | | | |
| Chemical Name CAS Number | Percent of Total Liquid Weight (typical) | Percent of Total Vapor Weight(typical | Molecular Weight | |

Permit No.

Tank No. **T-150-5**

IV. Fittings Information SEE TANKS 4.09 PRINTOUT FOR DETAILS

| | | | Deck fitting loss factor | Quantity |
|------------------------------------|---------------------------------------|----------|-----------------------------|------------------|
| Fitting Type | Fitting Status | Quantity | KF | X K _F |
| Access Hatch (24-in. Diam.) | Bolted Cover, Gasketed | | 1.6 | |
| Access Hatch (24-in. Diam.) | Unbolted Cover, Gasketed | | 11 | |
| Access Hatch (24-in. Diam.) | Unbolted Cover, Ungasketed | | 25 | |
| Automatic Gauge Float Well | Bolted Cover, Gasketed | | 2.8 | |
| Automatic Gauge Float Well | Unbolted Cover, Gasketed | | 15 | |
| Automatic Gauge Float Well | Unbolted Cover, Ungasketed | | 28 | |
| Column Well (24-in.Diam.) | Built-Up Col. –Sliding Cover, Gask. | | 33 | |
| .Column Well (24-in.Diam.) | Built-Up Col. –Sliding Cover, Ungask. | | 47 | |
| Column Well (24-in.Diam.) | Pipe ColFlex. Fabric Sleeve Seal | | 10 | |
| Column Well (24-in.Diam.) | Pipe Col. –Sliding Cover, Gask. | | 25 | |
| Column Well (24-in.Diam.) | Pipe Col. –Sliding Cover, Ungask. | | 32 | |
| Ladder Well (36-in. Diam.) | Sliding Cover, Ungasketed | | 76 | |
| Ladder Well (36-in. Diam.) | Sliding Cover, Gasketed | | 56 | |
| Roof Leg or Hanger Well | Adjustable | | 7.9 | |
| Roof Leg or Hanger Well | Fixed | | 0 | |
| Sample Pipe or Well (24-in. Diam.) | Slit Fabric Seal 10% Open | | 12 | |
| Sample Pipe or Well (24-in. Diam.) | Slotted Pipe-Sliding Cover, Gask. | | 44 | |
| Sample Pipe or Well (24-in. Diam.) | Slotted Pipe-Sliding Cover, Ungask. | | 57 | |
| Stub Drain (1-in. Diam.) | | | 1.2 | |
| Vacuum Breaker (10-in. Diam.) | Weighted Mech. Actuation, Gask. | | 6.2 | |
| Vacuum Breaker (10-in. Diam.) | Weighted Mech. Actuation, Ungask. | | 0.9 | |
| | Т- | | and factor it | melekies |

Total deck fitting loss factor, lb-mole/year

SHORT TERM MAX EMISSIONS FOR GASOLINE MARINE LOADING CENTURION T-250-1 250 M BBL CAPACITY IFR DIAMETER = 224 ft Withdrawal Loss lb/hr

0.775765 lb/hr

$Lw = 0.943 \times Q \times C \times W / D \times (1 + (Nc \times F/D))$

| Nc = Support Columns | 31 |
|-------------------------|--------|
| Fc = Effective column D | 0.7 |
| D (ft) = | 224 ft |

| (1 + (Nc x F/D)) = | 1.096875 |
|---------------------|---------------|
| Q (bbls/hr) = | 20000 bbls/hr |
| C = clingage factor | 0.0015 |
| W (density) = | 5.6 lb/gal |
| D (ft) = | 224 ft |
| 0.943 = (constant) | 0.943 |
| | |

Lw = (lb/hr)

Standing Loss lb/hr

- Tanks 4.09
 Rim Seal Loss lb/month nominalize (/31/24)
 167.23 lb/mo (July)

 P* @ 87 F
 0.331806 lb/hr

 P* @ 95 F
 0.303337

 P*/P* Upcorrect
 1.31865

 Rim Seal Loss lb/hr
 0.437535
- 528.6 lb/mo (July) Tanks 4.09 Roof Fitting Loss lb/month 0.710484 lb/hr nominalize (/31/24) P* @ 87 F 0.230036 P* @ 95 F 0.303337 P*/P* Upcorrect 1.31865 Roof Fitting Loss lb/hr 0.93688 lb/hr 1.374415 lb/hr Total Standing Loss VP psia Liquid Temp F 95 10.5
 - 87 8.94

Maximum Short Term Loss 2.15018 lb/hr

SHORT TERM MAX EMISSIONS FOR DIESEL FUEL STORAGE TANK CENTURION T-250-3 100 M BBL WORKING CAPACITY IFR DIAMETER = 224 ft Withdrawal Loss Ib/hr

 $Lw = 0.943 \times Q \times C \times W / D \times (1 + (Nc \times F/D))$

| Nc = Support Columns | 31 |
|-------------------------|--------|
| Fc = Effective column D | 0.7 |
| D (ft) = | 224 ft |

| $(1 + (Nc \times F/D)) =$ | 1.096875 | |
|---------------------------|----------|---------|
| Q (bbls/hr) = | 28000 | bbls/hr |
| C = clingage factor | 0.0015 | |
| W (density) = | 7.1 | lb/gal |
| D (ft) = | 224 | ft |
| 0.943 = (constant) | 0.943 | |
| | | |

Lw = (lb/hr)

1.376983 lb/hr

Standing Loss lb/hr

| | Rim Seal Loss Ib/hr | 0.000757 |
|------------|------------------------|-------------------|
| | P*/P* Upcorrect | 1.230895 |
| | P* @ 95 F | 0.000272 |
| | P* @ 87 F | 0.000221 |
| | nominalize (/31/24) | 0.000615 lb/hr |
| Tanks 4.09 | Rim Seal Loss Ib/month | 0.31 lb/mo (July) |

1.06 lb/mo (July) Tanks 4.09 Roof Fitting Loss lb/month 0.001425 lb/hr nominalize (/31/24) P* @ 87 F 0.000221 P* @ 95 F 0.000272 P*/P* Upcorrect 1.230895 Roof Fitting Loss lb/hr 0.001754 lb/hr 0.002511 lb/hr **Total Standing Loss** Liquid Temp F VP psia 95 0.016

87 0.013

Maximum Short Term Loss 1.379493 lb/hr

SHORT TERM MAX EMISSIONS FOR REFORMATE TRANSFERS CENTURION T-150-1 150 M BBL WORKING CAPACITY IFR DIAMETER = 168 ft Withdrawal Loss lb/hr

$Lw = 0.943 \times Q \times C \times W / D \times (1 + (Nc \times F/D))$

| Nc = Support Columns | 16 |
|-------------------------|--------|
| Fc = Effective column D | 0.7 |
| D (ft) = | 168 ft |

| 1.066667 |
|--------------|
| 7500 bbls/hr |
| 0.0015 |
| 7.15 lb/gal |
| 168 ft |
| 0.943 |
| |

Lw = (lb/hr)

0.481604 lb/hr

Standing Loss lb/hr

| | Rim Seal Loss Ib/hr | 0.025692 |
|------------|------------------------|--------------------|
| | P*/P* Upcorrect | 1.247452 |
| | P* @ 95 F | 0.015884 |
| | P* @ 87 F | 0.012733 |
| | nominalize (/31/24) | 0.020595 lb/hr |
| Tanks 4.09 | Rim Seal Loss lb/month | 10.38 lb/mo (July) |

| Tanks 4.09 | Roof Fitting Loss lb/month | 24.2 lb/mo (July) |
|------------|----------------------------|-------------------|
| | nominalize (/31/24) | 0.032527 lb/hr |
| | P* @ 87 F | 0.012733 |
| | P* @ 95 F | 0.015884 |
| | P*/P* Upcorrect | 1.247452 |
| | Roof Fitting Loss lb/hr | 0.040576 lb/hr |
| | Total Standing Loss | 0.066267 lb/hr |
| | Liquid Temp F | VP psia |
| | | 95 0.905 |
| | | 87 0.73 |

Maximum Short Term Loss 0.547871 lb/hr

SHORT TERM MAX EMISSIONS FOR NAT GASOLINE TRANSFERS CENTURION T-150-5 150 M BBL WORKING CAPACITY IFR DIAMETER = 168 ft Withdrawal Loss lb/hr

$Lw = 0.943 \times Q \times C \times W / D \times (1 + (Nc \times F/D))$

| Nc = Support Columns | 16 |
|-------------------------|--------|
| Fc = Effective column D | 0.7 |
| D (ft) = | 168 ft |

| (1 + (Nc x F/D)) = | 1.066667 | |
|---------------------|----------|---------|
| Q (bbls/hr) = | 7500 | bbls/hr |
| C = clingage factor | 0.0015 | |
| W (density) = | 6.1 | lb/gal |
| D (ft) = | 168 | ft |
| 0.943 = (constant) | 0.943 | |
| Lw = (lb/hr) | 0.410879 | lb/hr |

Standing Loss lb/hr

| | Rim Seal Loss Ib/hr | 0.24391 |
|------------|------------------------|-------------------|
| | P*/P* Upcorrect | 1.249296 |
| | P* @ 95 F | 0.25791 |
| | P* @ 87 F | 0.206445 |
| | nominalize (/31/24) | 0.195238 lb/hr |
| Tanks 4.09 | Rim Seal Loss lb/month | 98.4 lb/mo (July) |

 Tanks 4.09
 Roof Fitting Loss Ib/month nominalize (/31/24)
 229.4 Ib/mo (July)

 P* @ 87 F
 0.308333 Ib/hr

 P* @ 95 F
 0.206445

 P*/P* Upcorrect
 1.249296

 Roof Fitting Loss Ib/hr
 0.3852 Ib/hr

 Total Standing Loss
 0.62911 Ib/hr

| Liquid Temp F | VF | o psia |
|---------------|----|--------|
| | 95 | 9.584 |
| | 87 | 8.34 |

Maximum Short Term Loss 1.039988 lb/hr

20170425 CENTURION BROWNSVILLE PBR NAT GASOLINE TANK T-150-5 SHORT TERM EMISSIONS.xls

Centurion Brownsville Seagoing Barge/Ship Loading Calculation

Ulta Low Sulphur Diesel Fuel No loading controls

Loading Equation Annual Emissions

Seagoing Barge/Ship

LI = 12.46 x ((Q x 42)/1000) x MW x VP x S/(T+460)

| 12,000,000 bbls/yr 130 lb/lb-mole | loading rate |
|--------------------------------------|---|
| 0.011 psia | 76 F |
| 0.2 | Sat Factor for Seagoing Barge/Ship loading |
| 76 F | Annual Average product storage temperature |
| 3351 lb/vr | |
| | 12,000,000 bbls/yr 130 lb/lb-mole 0.011 psia 0.2 76 F 3351 lb/yr |

1.68 tons/yr

| Collection Loss | lb/yr |
|-----------------|--------------|
| na | 0.00 tons/yr |
| T.O. DRE 99.9% | lb/yr |
| na | 1.68 tons/yr |
| Total VOC | 1.68 tons/yr |

Loading Equation Hourly Emissions Seagoing Barge/Ship Inerted

LI = 12.46 x ((Q x 42)/1000) x MW x VP x S/(T+460)

| Q = | 15,000 bbls/hr | loading rate | |
|------|----------------|---------------------------------------|---|
| MW = | 130 lb/lb-mc | ble | |
| VP | 0.016 psia | at 95 F Maximum Daily | |
| S = | 0.2 | Sat Factor for Seagoing Barge loading | |
| T = | 95 F | Maximum product storage temperature | e |

| LI = | 5.88 lb/hr |
|------|------------|
| | |

| Collection Loss at 0% | |
|-----------------------|-----------|
| na | 0.0 lb/hr |

| T.O. DRE 0% | 5.88 lb/hr |
|-------------|------------|
| Total VOC | 5.88 lb/hr |

Marine Loading Rates

It should be noted that the Gasoline short term emission rates to meet the PBR are based on worst case/highest temperatures/and vapor pressures as documented for summer months. This limits the loading rates to the awaiting ships/seagoing barges.

As the temperature of the liquid product loaded drops during annual natural air temperature changes, the vapor pressure of the liquid will drop and the emissions based on the limited loading rate will drop. Centurion will document the loading temperatures and as necessary can increase the loading rates to a most efficient rate during these periods of lower temperatures without exceeding the conditions of the PBR.

Centurion Brownsville Seagoing Barge/Ship Loading Calculation

Blended Gasoline high 11.5 RVP Thermal Oxidizer designed for 99.9% DRE

| Loading | Equation A | Innual I | Emissic | ons |
|---------|--------------------|------------|-------------|-----------------------------------|
| Seagoin | g Barge/Ship | ļ | Inerted | l Only |
| LI = | 12.46 x ((Q x 42)/ | 1000) x M' | W x VP x S | 5/(T+460) |
| Q = | 10,000,000 bk | ols/yr l | loading rat | te |
| MW = | 65 lb, | /lb-mole | | |
| VP | 8.1 ps | sia 7 | 76 F | Annual Average |
| S = | 0.2 | 5 | Sat Factor | for Seagoing Barge/Ship loading |
| T = | 76 F | / | Annual Av | erage product storage temperature |
| LI = | 1028089 lb | /yr | | |
| | 514.04 to | ons/yr | | |

Collection Efficiency 99.89% per TCEQ

| Total VOC | 1.08 tons/yr |
|-----------------|---------------|
| | 0.51 tons/yr |
| T.O. DRE 99.9% | 1,027 lb/yr |
| | 0.57 tons/yr |
| Collection Loss | 1130.90 lb/yr |
| | |

Blended Gasoline high 11.5 RVP Thermal Oxidizer designed for 99.9% DRE

Loading Equation Hourly Emissions

Seagoing Barge/Ship Inerted

Ll =

12.46 x ((Q x 42)/1000) x MW x VP x S/(T+460)

| Q = 13 | ,000 bbls/hr | loading rate |
|--------|---------------|---------------------------------------|
| MW = | 65 lb/lb-mole | 2 |
| VP | 8.9 psia | at 87 F Maximum Daily |
| S = | 0.2 | Sat Factor for Seagoing Barge loading |
| Τ= | 87 F | Maximum product storage temperature |

LI = 1439 lb/hr

| 1.6 lb/hr | Collection Efficiency 99 | .89% per TCEQ |
|-----------|---------------------------------|---------------|
| 2.0 10/11 | | 1.6 lb/hr |

| T.O. DRE 99.9% | 1.4 lb/hr |
|----------------|-----------|
| Total VOC | 3.0 lb/hr |



Nox, CO and PM Emissions Generated During Marine Loading

Thermal Oxidizer

106.261 & 106.262

Hourly Emissions 13000 bph

| | | Flow to Combustor | | % | | Heat Generate | d |
|--------------|-----------|-------------------|--------|------------|-------|---------------|--------|
| | | LB/hr | BTU/lb | Combustion | | BTU/hr | |
| | VOC | 1439 | 19000 | 99.9 | | 27,313,659 | |
| SCF | Supp Fuel | 0.0 | 1000 | 100 | | 0 | |
| Process Flow | v | 72994.7 | SCFH | | | | |
| Natural Gas | Flow | 0.0 | SCFH | | Total | 27,313,659 | BTU/hr |

| And a second sec | | | | | | | |
|--|---------|--------|--------------|----------------|-----------|------------|-------|
| NOx Factor | | 0.07 | lb/10^ 6 BTU | | | | |
| CO Factor | | 0.004 | lb/10^ 6 BTU | | | | |
| PM Factor | | 0.0076 | lb/10^ 6 BTU | <u> </u> | | | _ |
| HOURLY | | lb/hr | | | PBR Limit | | |
| NOx Generat | ted | 1.912 | | 261 | 6 | lb/hr |] |
| CO Generate | ed | 0.109 | | 261 | 6 | lb/hr | |
| PM2.5 Gene | rated | 0.208 | | 262 | L/K | Emax=0.214 | |
| voc | | 3.000 | | 262 | L/K | Emax=6.0 | |
| | PM2.5 | | | Gasoline | | | |
| L for PM 2.5 | = | 3.000 | mg/m3 | L for Gasoline | 5 = | 800.000 | mg/m3 |
| Distance to r | eceptor | 2000 | ft | Distance to re | eceptor | 2000 | ft |
| Distance | K value | 14 | | Distance | K value | 14 | |
| Emax = L/K | | 0.214 | lb/hr | Emax = L/K | | 6.000 | lb/hr |

Annual Emissions 10,000,000 bbls/yr

| Flow to Combustor | | % | Heat Generated | | | |
|-------------------|-----------|------------|----------------|------------|--------|--|
| | | LB/yr | BTU/lb | Combustion | BTU/yr | |
| | voc | 1026958 | 19000 | 99.9 | 2.E+10 | |
| SCF | Supp Fuel | 56,149,733 | 1000 | 100 | 6.E+10 | |
| Process Flov | v | 56149732.6 | SCFY | | | |

Process Flow 56149732.6 Natural Gas Flow 11229946.5

| 1229946.5 | | SCFY |
|-----------|---|------|
| | - | |

Total 7.56.E+10 BTU/yr

Natural Gas flow = 20% of Process Gas flow

| NOx Factor | 0.07 | lb/10^ 6 BTU |
|-----------------|----------|--------------|
| CO Factor | 0.004 | lb/10^ 6 BTU |
| PM Factor | 0.0076 | lb/10^ 6 BTU |
| ANNUAL | lb/yr | tons/yr |
| NOx Generated | 5294.970 | 2.647 |
| CO Generated | 302.570 | 0.151 |
| PM2.5 Generated | 574.882 | 0.287 |

Texas Commission on Environmental Quality Table 4 Combustion Units

| Emission Point Number (fr | rom Flow Diagram): | | | | | | |
|-----------------------------|---|---------------------------------|-------------------------|--|--|--|--|
| Model Number (if availabl | e): | <u> </u> | | | | | |
| Name of Device: Marine Th | nermal Oxidizer | | | | | | |
| Manufacturer: TBD | | | | | | | |
| | Characteristic | s of Input | | | | | |
| | Chemical Composition | of Waste Material* | | | | | |
| Material | Minimum Value Expected lb/hr | Average Value Expected lb/hr | Design Maximum lb/hr | | | | |
| VOC | 0 | | 6677 | | | | |
| 02 | 2098 | | 1227 | | | | |
| N2 | 6905 | | 4038 | | | | |
| Natural Gas | 2410 | | 0 | | | | |
| Gross heating value of wa | ste material as Btu/lb <i>(Wet Basi</i> | s if applicable): 20,406.4 | | | | | |
| Ai | r Supplied for Waste Material | in SCFM (70°F and 14.7 psia |) | | | | |
| Minimum: 4,724 | Ν | faximum: 13,566 | | | | | |
| | Waste Material of Contaminat | ted Gas – Total Flow Rate | | | | | |
| Minimum Expected (lb/hr) |): 11,413 D | Design Maximum (lb/hr): 11,9 | 42 | | | | |
| | Waste Material of Contaminate | ed Gas - Inlet Temperature | | | | | |
| Minimum Expected (°F): an | nbient D | Oesign Maximum (°F): 90 | | | | | |
| | Chemical Compo | sition of Fuel | | | | | |
| Material | Minimum Value Expected lb/hr | Average Value Expected lb/hr | Design Maximum lb/hr | | | | |
| | | | | | | | |
| Gross heat value of fuel (F | Btu/lb): | | | | | | |
| | Air Supplied for Fuel in SC | rm (70°F and 14.7 psia) | | | | | |
| Minimum | 1 | Maximum: | | | | | |

Texas Commission on Environmental Quality Table 4 Combustion Units

| | Characteristi | cs of Output | a Nor Long. | | | | | | |
|---|--|--|--|--|--|--|--|--|--|
| Chemical Composition of Flue Gas Released | | | | | | | | | |
| Material Minimum Value Expe lb/hr | | Average Value Expected lb/hr | Design Maximum lb/hr | | | | | | |
| CO2 | 8116 | | 21775 | | | | | | |
| H2O | 7122 | | 19110 | | | | | | |
| N2 | 76656 | | 205672 | | | | | | |
| 02 | 13804 | | 37036 | | | | | | |
| Temperature at stack | exit (°F): 1800 | | | | | | | | |
| | Total Flow Rate of Flu | e Gas Released (lb/hr) | | | | | | | |
| Minimum Expected:10 | 5,698 | Maximum Expected:283,59 | 03 | | | | | | |
| | Velocity at Stack Exit of 1 | Flue Gas Released (ft/sec) | | | | | | | |
| Minimum Expected: 13 | 3.8 | Maximum Expected: 37.1 | | | | | | | |
| | Combustion Uni | t Characteristics | | | | | | | |
| Chamber Volume from | n Drawing (ft³): 7985 | | | | | | | | |
| Chamber Velocity at A | verage Chamber Temperature (ft | :/sec): 37.1 | | | | | | | |
| Average Chamber Ten | perature (°F): 1800 | Average Residence Time (sec): 1.55 | | | | | | | |
| Exhaust Stack Height (| (ft): 70 | Exhaust Stack Diameter (ft): 13 | | | | | | | |
| | Additional Information for | Catalytic Combustion Unit | S | | | | | | |
| Number and Type of (| Catalyst Elements: n/a | | | | | | | | |
| Catalyst Bed Velocity | (ft/sec): n/a | | | | | | | | |
| Maximum Flow Rate p | er Catalytic Unit (Manufacturer's | Specifications) Specify Uni | ts: | | | | | | |
| <u>n/a</u> | | | | | | | | | |
| Attach separate sheets regarding principle of dimensioned and to se | s as necessary providing a descri operation and the basis for calcu cale, to show clearly the design a | ption of the combustion un lating its efficiency. Supply nd conditions. Submit expla | it, including details y an assembly drawing, anations on control for | | | | | | |

temperature, air flow rates, fuel rates, and other operation variables.

| | | | | | | | | ADOPTED VALUES | | | | | | | | | | | | |
|-----|--|---------------------------|------------------------|---------------------------------|---|--|---------------------|----------------|------------|----|----|---------|------------------------------|----------|---------------------------------|------------|-----------|-----------------|------------|----------|
| St | Substance [CAS No.] | | (p | TWA (ppm/mg/m ³) | | STEL/C (ppm/mg/m ³) | | | Notations | | | | TLV Basis—Critical Effect(s) | | | | | | | |
| Pa | Paraquat [4685-14-7] | | | | 0. 0. | 5 mg/m ² 1 mg/m ² | 3 3 (R) | _ | | | _ | | 257.18 | | Pulmonary edema; kidney; liver; | | | y; liver; | | |
| Pa | arathion [! | 56-38-2] | | | | 0. | 1 mg/m ² | 3 | | | | Skin; A | 4; BEI | 291 | .27 | Choline | aic | | <u>a</u> _ | |
| Pa | articulate (| polycycli | c aromat | ic hydro | carbons | (PPAH), | see Coa | l tar pito | h volatile | IS | | | | <u> </u> | | | | | | |
| Pa | Particulates (Insoluble) Not Otherwise | | | 10 | 10 mg/m ³ (E, I) 2 mg/m ³ (E, R) | | | | | | | Lung | | | | | | | | |
| Pe | Pentahorane (19624-22-7) | | | | 0.005 ppm | | | 0.015 opm | | | | | 17 | | | | | | | |
| Pe | intachloro | onaphtha | lene [13: | 21-64-8] | | 0. | 5 mg/m ³ | • • | | | | Skin | | 300. | 40 | Chlorace | e liver (| CNS | | |
| Pe | intachloro | nitroben | zene (82 | -68-8] | <u>_</u> | 0. | 5 mg/m ³ | 1 | _ | | | A4 | | 295. | 36 | Liver | | | | <u> </u> |
| Pe | ntachloro | phenol [| 87-86-5 | | | 0.9 | 5 mg/m ³ | 1 | | | | Skin; A | 3; BEI | 266. | 35 | Irritation | ; CVS; CI | NS | | |
| Pe | intaerythri | itol (115 | -77-5] | | | 10 | mg/m ³ | | | | | · | | 136. | 15 | Irritation | - | | | |
| Pe | ntane, all i | isomers | 78-78-4; | 109-66- | 0; 463-8; | 2-1] 60 | 0 ppm | 176 | b— | | | | | 72. | 15 | Irritation | ; narcosi | S | | |
| 2-1 | Pentanon | e, <i>see</i> M | ethyl pro | pyl ketor | 18 | | | | | | | | | | | _ | | | | |
| * F | Pentyl acet 123-92-2 | tate (all is 2; 625-16 | iomers) [-1; 624-4 | 628-63-7 1-9; 620 | '; 626-38 -11-1] | -0; 50 | ppm | | 100 ppr | n | | | | 130. | 20 | Irritation | | | <u> </u> | |
| | | | | | | | | | | | | | <u> </u> | | | | | | | |
| Ţ | T | | | 9 79 | Π | Т | m | | Л | | 11 | Π | | | - | | | TU | (TT | 6 |
| | | | | | | | | | | | | | | | e e en | | | nna í ma Tar | | |

| ADOPTED VALUES | | | | | | | | |
|---|---|------------------------------------|-----------|----------------------------|--|--|--|--|
| Substance [CAS No.] | TWA (ppm/mg/m ³) | STEL/C (ppm/mg/m ³) | Notations | Mol Wat | TLV Basis—Critical Effect(s) | | | |
| Perchioroethylene (Tetrachloroethylene) [127-18-4] | 25 ppm | 100 ppm | A3; BEI | 165.80 | Irritation: CNS | | | |
| Perchloromethyl mercaptan [594-42-3] | 0.1 ppm | | | 185.87 | Irritation: pulmopary edema | | | |
| Perchloryl fluoride [7616-94-6] | 3 ppm | 6 ppm | | 102.46 | Irritation: blood | | | |
| Perfluoroisobutylene [382-21-8] | | C 0.01 ppm | | 200.04 | Irritation; pulmonany edema | | | |
| Perlite [93763-70-3] | 10 mg/m ³ (E) | | A4 | | | | | |
| Persulfates Ammonium persulfate [7727-54-0] Potassium persulfate [7727-21-1] Sodium persulfate [7775-27-1] | 0.1 mg/m ³ 0.1 mg/m ³ 0.1 mg/m ³ | | | 228.18 270.32 238 13 | Irritation; dermatitis | | | |
| Petroleum distillates, see Gasoline; Stoddard solve | nt; VM&P naphtha | | | 200.10 | ······································ | | | |
| Phenacyl chloride, see α -Chloroacetophenone | | | | | | | | |

| Phenol [108-95-2] | 5 ppm | | Skin; A4; BEI | 94.11 | Irritation: CNS: blood | |
|---------------------------------|---------------------|------|---------------|--------|-----------------------------------|-------|
| Phenothiazine [92-84-2] | 5 mg/m ³ | | Skin | 199.26 | Irritation: ocular: liver: kidney | · |
| N-Phenyl-beta-naphthylamine [13 | 5-88-6] — | | A4 | 219.29 | Irritation | |
| PM2.5 | D=2000' | K=14 | Emax | 3 | 4=0,214 | UB/Ha |

ទួ

 \hat{C}

| Pollutant | Emission Factor (lb/10 ⁶ scf) | Emission Factor Rating |
|--|---|------------------------|
| CO ₂ ^b | 120,000 | А |
| Lead | 0.0005 | D |
| N ₂ O (Uncontrolled) | 2.2 | Е |
| N ₂ O (Controlled-low-NO _x burner) | 0.64 | Е |
| PM (Total) ^e | 7.6 | D |
| PM (Condensable) [°] | 5.7 | D |
| PM (Filterable) ^c | 1.9 | В |
| SO2 ^d | 0.6 | A |
| тос | 11 | В |
| Methane | 2.3 | В |
| voc | 5.5 | С |

TABLE 1.4-2. EMISSION FACTORS FOR CRITERIA POLLUTANTS AND GREENHOUSE GASES FROM NATURAL GAS COMBUSTION^a

^a Reference 11. Units are in pounds of pollutant per million standard cubic feet of natural gas fired. Data are for all natural gas combustion sources. To convert from lb/10⁶ scf to kg/10⁶ m³, multiply by 16. To convert from lb/10⁶ scf to 1b/MMBtu, divide by 1,020. The emission factors in this table may be converted to other natural gas heating values by multiplying the given emission factor by the ratio of the specified heating value to this average heating value. TOC = Total Organic Compounds. VOC = Volatile Organic Compounds.

^b Based on approximately 100% conversion of fuel carbon to CO₂. CO₂[lb/10⁶ scf] = (3.67) (CON) (C)(D), where CON = fractional conversion of fuel carbon to CO₂, C = carbon content of fuel by weight (0.76), and D = density of fuel, $4.2x10^4$ lb/10⁶ scf.

^c All PM (total, condensible, and filterable) is assumed to be less than 1.0 micrometer in diameter. Therefore, the PM emission factors presented here may be used to estimate PM₁₀, PM_{2.5} or PM₁ emissions. Total PM is the sum of the filterable PM and condensible PM. Condensible PM is the particulate matter collected using EPA Method 202 (or equivalent). Filterable PM is the particulate matter collected on, or prior to, the filter of an EPA Method 5 (or equivalent) sampling train.

^d Based on 100% conversion of fuel sulfur to SO₂. Assumes sulfur content is natural gas of 2,000 grains/10⁶ scf. The SO₂ emission factor in this table can be converted to other natural gas sulfur contents by multiplying the SO₂ emission factor by the ratio of the site-specific sulfur content (grains/10⁶ scf) to 2,000 grains/10⁶ scf.

| PHOENIX ENGINEERING INC. | FUGITIV | E EMISSIO | N CALCULA | ATIONS | DATE: | 5/3/2017 | | | |
|--|---|-------------------------------------|--|---------------------|--|---|--|--|--|
| 8868 Gulf Freeway, Suite 500 Houston, Texes 77017 | | | | | JOB NO: | 78261 | | | |
| REFERENCE: CONTROL PLAN: ADDITIONAL FACTORS: | TCEQ FACTO SOCMI W/O | DRS 1/10/1996 C2, 28VHP | | | | | | | |
| CLIENT: | CENTURION Brownsville T | BROWNSVILI | E TERMINALS | | | | | | |
| UNIT: | Gasoline Stora | ige and Diesel Si | orage Terminal | | | | | | |
| EMISSION SOURCE | PROCESS STREAM TYPE | VOC SOURCE LBS/HR | CONTROL EFFICIENCY | NOTES | NO. OF EMISSION SOURCES | TOTAL EMISSION LBS/HR | | | |
| VALVES | B | 0.0089 | 97% | | 60 | 0.01602 | | | |
| | D | 0.0035 | 97% 0% | | 432 124 | 0.04536 0.08680 | | | |
| PUMPS SEALS | C D | 0.0386 0.0161 | 85% 0% | | 8 4 | 0.04632 0.06440 | | | |
| COMPRESSOR SEALS | В | 0.5027 | 85% | | 14 | 1.05567 | | | |
| RELIEF VALVES | В | 0.2293 | 97% | | 0 | 0.00000 | | | |
| FLANGES | B C D | 0.0029 0.0005 0.00007 | 97% 97% 97% | 7 7 7 | 945 532 323 | 0.08222 0.00798 0.00068 | | | |
| OPEN ENDED LINES | A | 0.0040 | 97% | | | 0.00000 | | | |
| SAMPLE CONNECTION | A | 0.0330 | 97% | | 0 | 0.00000 | | | |
| PROCESS STREAM LEG | END | u | | | EMISSION TO | TALS | | | |
| A All Streams B Gas/Vapor Streams C Light Liquid & Gas/Li D Heavy Liquid Streams | quid Streams | | | | LBS/HR LBS/DAY LBS/YR TONS/YR | 1.40544 33.73064 12311.68331 6.15584 | | | |
| Light Liquid > 0.044 PSL | A VP @ 68°F | | | T | ONS/1 YEAR | 6.15584 | | | |
| | MOLFR I | COMPONENT | ſ | Lbs/Hr 1.4054433 | Lbs/Day 33.7306392 | Ton/Yr 6.155841654 | | | |
| | 0 | | | 0 | 0 0 | 0 | | | |
| | 1 | | | 1.4054433 | 33.7306392 | 6.155841654 | | | |
| Fugitive Emission Factor N 1. Factors are taken from 1 | Fugitive Emission Factor Notes: 1. Factors are taken from EPA Document, EPA-453/R-93-026, June 1993, Page 2-10, except SOCMI w/o C2 and w/ C2 whic | | | | | | | | |
| <u>Control Efficiency Notes:</u> 7. If an applicant decides to valve credit may be use the weekly physical insp | to monitor their d instead of the pections. | flanges using an 30%. If this op | organic vapor an tion is chosen, in | addition to th |) at the same leak e OVA monitorin | definition of valves g the company shall | | | |

MSS EMISSIONS

Ferry Equations, incorporated into AP-42 Chapter 7, have been used to estimate the emissions from degassing the volume of VOC vapors below the roof landed and liquid emptied tank.

For the emissions only one (1) tank, the largest Gasoline tank has been assumed to be taken out of service each year. Gasoline and Gasoline Blendstocks will be degassed to control when taken out of service and if necessary refilled using the control device.

Centurion will contract a portable control device, most probably an Internal Combustion Unit (ICE) with a tested 99.9% DRE, for this operation.

Other than the VOC emissions the portable ICE unit will generate NOx and CO. Testing shows NOx = 0.34 lb/hr/unit and CO = 0.26 lb/hr/unit during operations.

Two units for 48 hours will be estimated per year.

NOx = 0.34 x 2 x 48 = 32.6 lb/yr = 0.016 tons/yr

CO = 0.26 x 2 x 48 = 25.0 lb/yr = 0.013 tons/yr

5/2/17 Centurian Brownsville Terminal IFR TANK S = 0.60

| 1 | TANK ID | | | | | | | | | | | |
|---|------------|-------------------|---------------|--------------------|---------|------------|-------|---------|-----------|---------|---------|------|
| 1 | TANK CAF | PACITY | | | | 250 | | | M BBLS | | | |
| 1 | ROOF RE | FLOAT | DATE | 10/7/2017 | 7 1:00 | | | | | | | |
| 1 | ROOF LAN | NDING | DATE | 10/5/2017 | 1:00 | 224 | | | | | | |
| 1 | TANK DIA | METER = D | | | | 200 | | | FT | | | |
| 1 | LEG HEIG | HT | | Assumed | | 5 | FT | | | | GAL | |
| 1 | LIQUID HE | EIGHT = hle | | Back calculated | | 0 | FT | | 0.00 | | GAL | |
| 2 | VAPOR HI | EIGHT = hv | | Calculated from da | ata | | | 5 | FT | BELOV | V ROOF | BBLS |
| 2 | TANK VAF | POR SPACE | VOLUME = | Vv | | | | 196940 | CU FT | | 35074 | |
| 1 | PRODUCT | Г | | | N | lat Gas Co | ond | | | | | |
| 1 | Mv = MOL | E WT | | | | 68 | | | LB/LB-MOL | .E | | |
| 1 | TEMP F | | | | | 95 | | | F | | | |
| 1 | A | | | | | 6.719 | | | | | | |
| 1 | В | | | | | 1248.99 | | | | | | |
| 1 | С | | | | | 273.15 | | | | | | |
| 2 | P = PROD | UCT VP | | | | | | 8.960 | PSIA | | AP-42 | |
| 1 | WI = LIQ D | DENSITY | | | | 5.85 | | | LB/GAL | | AP-42 | |
| 0 | Pa = ATM | OS PRESSL | JRE | | | | | 14.700 | PSIA | | | |
| 0 | R CONST | ANT | | | | | | 10.73 | PSIA CU F | T/LB-MC | DLE R | |
| 0 | DELTA Tv | | | | | | | 21.7 | F | | | |
| 2 | DAYS = no | t k | | | | 2.00 | | | | | | |
| 2 | Ke = VAPO | OR SPACE E | EXP FACTO | R | | | 0.324 | 4252995 | | | | |
| 2 | Ks = STAN | NDING IDLE | SAT FACTO |)R | | | 0.296 | 5345451 | < = 0.6 | 0.2 | 2963454 | 51 |
| 0 | S = FILLIN | IG SATURA | TION FACTO | OR | | | | 0.6 | | | | |
| | | | | | | | | | | | | |
| | | | | | | | I | B | TONS | | | |
| | Ls = | STANDING | GIDLE LOSS | 5 | | | 3 | 872.370 | 1.936 | | | |
| | | | | | | | | | | | | |
| | Lf = | DEGASSIN | IG LOSS | | | | 12 | 089.708 | 6.045 | | | |
| | | | | | | | | | | | | |
| | TOTAL | | | | | | 15 | 962.078 | 7.981 | | | |
| | TOTAL | PORTABL | E ICE UNIT, | VC = 99.+% DRE | | | | 15.962 | 0.080 | | | |
| | | | | | | | | | | | | |
| | Lc = | CLINGAGE | E LOSS | 0.042 X C X W X | A | | | 11.572 | 0.005786 | | | |
| | C = 0.0015 | 5, A = AREA | OF TANK F | LOOR (SQ FT) W : | = LIQ D | EN | | | | | | |
| | Ke =(delta | Tv/Tla) +((de | eltaPv-deltaF | b)/(Pa-Pva)) | | | SLOW | / FILL | FULL FILL | | | |
| | | | | | | | BBLS/ | HR | BBLS/HR | | | |
| | delta Tv | = | (79.1-57.4) = | | 21.7 F | र | | | | | | |
| | Tla | = | =(T+460) | | 555 F | र | | | | | | |
| | delta Pv | = | Pvx-Pvn | | 1.637 p | osia | EMISS | SION | EMISSION | | | |
| | Pvx | = | 9.808 | | p | osia | RATE | | RATE | | | |
| | Pvn | = | 8.171 | | p | osia | LB/HR | | LB/HR | | | |
| | delta Pb | = | | | 0 | | #D | IV/0! | #DIV/0! | | | |
| | Pa | = | | 14 | 1.700 p | osia | | | | | | |
| | Pva | = | | 8 | 8.960 p | osia | | | | | | |
| | Ke | = | | 0.32425 | 52995 | | | | | | | |

()
STORM WATER COLLECTION EMISSIONS

Centurion may install if necessary, a small 10-12 M bbl IFR tank to accumulate the storm water, if contaminated, from areas around pump manifolds designed for spill prevention. Uncontaminated storm water will flow off site without unnecessary handling. Another option is a small oil water separator.

The VOC product accumulated below the IFR will be equivalent to gasoline.

The emissions and facilities will be authorized under 106.532.

TANKS 4.0.9d Emissions Report - Detail Format Tank Indentification and Physical Characteristics

| Identification User Identification: | |
|--|------------------------------|
| City: | CENTORION BROWNSVILLE WITK-1 |
| State: | |
| Company: | |
| Type of Tank: | Internal Floating Roof Tank |
| Description: | Water/Oil Storage Tank |
| Tank Dimensions | 4 |
| Diameter (ft): | 36 50 |
| Volume (gallons): | 336,000,00 |
| Turnovers: | 1.00 |
| Self Supp. Roof? (y/n): | Y |
| No. of Columns: | 0.00 |
| | 0.00 |
| Paint Characteristics | |
| Internal Shell Condition: | l ight Rust |
| Shell Color/Shade: | White/White |
| Shell Condition | Good |
| Roof Color/Shade: | White/White |
| Roof Condition: | Good |
| Rim-Seal System | |
| Primary Seal: | Mechanical Shoe |
| Secondary Seal | Rim-mounted |
| Deck Characteristics | |
| Deck Fitting Category: | Detail |
| Deck Type: | Bolted |
| Construction: | Sheet |
| Deck Seam: | Sheet: 7 Ft Wide |
| Deck Seam Len. (ft): | 146.49 |
| | |

Deck Fitting/Status

| Access Hatch (24-in. Diam.)/Bolted Cover. Gasketed | Quantity |
|--|----------|
| Automatic Gauge Float Well/Bolted Cover, Gasketed | 1 |
| Roof Leg or Hanger Well/Fixed | 1 |
| Sample Pipe or Well (24-in. Diam.)/Slit Fabric Seal 10% Open | 11 |
| Stub Drain (1-in. Diameter)/Slit Fabric Seal 10% Open | 1 |
| Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation. Gask | 11 |
| | 1 |

Meterological Data used in Emissions Calculations: Brownsville, Texas (Avg Atmospheric Pressure = 14.72 psia)

file:///C:/Program%20Files%20(x86)/Tanks409d/summarydisplay.htm

TANKS 4.0.9d Emissions Report - Detail Format Liquid Contents of Storage Tank

CENTURION BROWNSVILLE WTTK-1 - Internal Floating Roof Tank

| Mixture/Component | Month | Da Tem Avg. | iily Liquid S perature (de Min. | urf. eg F) Max. | Liquid Bulk Temp (deg F) | Vapo Avg. | r Pressure Min. | (psia) Max. | Vapor Mol. Weight | Liquid Mass Fract | Vapor Mass Fract | Mol. | Basis for Vapor Pressure |
|-------------------|-------------|-------------------|---------------------------------------|-----------------------|-----------------------------------|--------------|--------------------|----------------|-------------------------|-------------------------|------------------------|-----------|--------------------------------|
| Gasoline (RVP 11) | lan | 68 71 | 64 20 | 73 24 | 72.94 | 0 7007 | | | | TTGGC. | 11404 | a Aeiñtir | |
| Gasoline (RVP 11) | Feb | 70.24 | GE 44 | 75.21 | 73.04 | 0.7937 | N/A | N/A | 65.0000 | | | 92.00 | Option 4: RVP=11, ASTM Slope=3 |
| Gasoline (RVP 11) | Mar | 72.56 | 69.95 | 70.20 | 73.84 | 7.0017 | N/A | N/A | 65.0000 | | | 92.00 | Option 4: RVP=11, ASTM Slope=3 |
| Gasoline (RVP 11) | Ann | 70.30 | 74.57 | 78.76 | 73.84 | 7.4254 | N/A | N/A | 65.0000 | | | 92.00 | Option 4: RVP=11, ASTM Slope=3 |
| Gazolino (RVP 11) | Apr Mari | 70.73 | /1.5/ | 81.89 | 73.84 | 7.8631 | N/A | N/A | 65.0000 | | | 92.00 | Option 4: RVP=11, ASTM Slope=3 |
| | May | 78.98 | 73,94 | 84.01 | 73.84 | 8.1858 | N/A | N/A | 65.0000 | | | 92.00 | Ontion 4: RVP=11 ASTM Slope=2 |
| Gascline (RVP 11) | Jun | 80.56 | 75.26 | 85.87 | 73.84 | 8.4200 | N/A | N/A | 65.0000 | | | 92.00 | Option 4: BVB-11, ASTA Stope-3 |
| Gasoline (RVP 11) | Jul | 81.31 | 75.68 | 86.94 | 73.84 | 8.5318 | N/A | N/A | 65,0000 | | | 02.00 | Option 4. RVP=11, ASTM Stope=3 |
| Gasoline (RVP 11) | Aug | 81.09 | 75.54 | 86.64 | 73.84 | 8 4991 | N/A | N/A | 65,0000 | | | 92.00 | Option 4: RVP=11, ASTM Slope=3 |
| Gasoline (RVP 11) | Sep | 79.55 | 74.50 | 84 61 | 73 84 | 8 2704 | N/A | NVA | 65.0000 | | | 92.00 | Option 4: RVP=11, ASTM Slope=3 |
| Gasoline (RVP 11) | Oct | 76 57 | 71 42 | 81 72 | 73.94 | 7 9400 | NUA | NUA | 65.0000 | | | 92.00 | Option 4: RVP=11, ASTM Slope=3 |
| Gasoline (RVP 11) | Nov | 73.02 | 69.25 | 77.90 | 73.04 | 7.0409 | N/A | N/A | 65.0000 | | | 92.00 | Option 4: RVP=11, ASTM Slope=3 |
| Gasoline (RVP 11) | Dee | 60.02 | 65.25 65.24 | 77.00 | 73.84 | 1.3537 | N/A | N/A | 65.0000 | | | 92.00 | Option 4: RVP=11, ASTM Stope=3 |
| | 060 | 09.62 | 00.31 | 74.33 | 73.84 | 6.9349 | N/A | N/A | 65.0000 | | | 92.00 | Option 4: RVP=11, ASTM Slope=3 |

TANKS 4.0.9d Emissions Report - Detail Format Detail Calculations (AP-42)

CENTURION BROWNSVILLE WTTK-1 - Internal Floating Roof Tank

| Month: | January | February | March | April | May | kuno | haba | A | O and a sub- | | | <u> </u> |
|---|-------------|-------------|-------------|-------------|-------------|-------------------|-------------------|----------------|--------------|-------------|-------------|-------------|
| Rim Seal Losses (lb): | 18,2168 | 18 9863 | 20 6147 | 22 2001 | 22 7000 | 04 0005 | July | August | September | October | November | December |
| Seal Factor A (lb-mole/ft-yr): | 0.6000 | 0 6000 | 0,6000 | 0 6000 | 23.7000 | 24.8035 | 25.3112 | 25.1617 | 24.1367 | 22.2977 | 20.3333 | 18.7371 |
| Seal Factor B (ib-mole/ft-yr (mph)^n): | 0.4000 | 0 4000 | 0.4000 | 0.0000 | 0.6000 | 0.6000 | 0.6000 | 0.6000 | 0.6000 | 0.6000 | 0.6000 | 0.6000 |
| Value of Vapor Pressure Function: | 0.1536 | 0.1601 | 0 1738 | 0 1897 | 0.4000 | 0.4000 | 0.4000 | 0.4000 | 0.4000 | 0.4000 | 0.4000 | 0.4000 |
| Vapor Pressure at Daily Average Liquid | | | 0 | 0.1007 | 0.2003 | 0.2091 | 0.2134 | 0.2121 | 0.2035 | 0.1880 | 0.1714 | 0.1580 |
| Surface Temperature (psia): | 6.7937 | 7.0017 | 7 4254 | 7 8631 | 8 1959 | 9 4200 | 0.5340 | 0.4004 | | | | |
| Tank Diameter (ft): | 36.5000 | 36,5000 | 36 5000 | 36 5000 | 36,5000 | 26 5000 | 0.0010 | 0.4991 | 8.2704 | 7.8409 | 7.3537 | 6.9349 |
| Vapor Molecular Weight (Ib/Ib-mole): | 65,0000 | 65 0000 | 65,0000 | 65,0000 | 65,0000 | 30.3000 | 36.5000 | 35.5000 | 36.5000 | 36.5000 | 36.5000 | 36.5000 |
| Product Factor: | 1 0000 | 1 0000 | 1 0000 | 1 0000 | 4.0000 | 00.000 | 65.0000 | 65.0000 | 65.0000 | 65.0000 | 65.0000 | 65.0000 |
| | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Withdrawal Losses (lb): | 0 1447 | 0 1447 | 0 1447 | 0 1447 | 0 4 4 4 7 | 0.4.477 | | | | | | |
| Number of Columns: | 0,0000 | 0,0000 | 0.0000 | 0.1447 | 0.1447 | 0.144/ | 0.144/ | 0.1447 | 0.1447 | 0.1447 | 0.1447 | 0.1447 |
| Effective Column Diameter (ft): | 0,0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Net Throughput (gal/mo.); | 28 000 0000 | 28 000 0000 | 28 000 0000 | 29 000 0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Shell Clingage Factor (bbl/1000 soft); | 0 0015 | 0.0015 | 20,000.0000 | 20,000.0000 | 28,000.0000 | 28,000.0000 | 28,000.0000 | 28,000.0000 | 28,000.0000 | 28,000.0000 | 28,000.0000 | 28,000.0000 |
| Average Organic Liquid Density (lb/gal); | 5 6000 | 5 6000 | 5 6000 | 5,6000 | 0.0015 | 0.0015 | 0.0015 | 0.0015 | 0.0015 | 0.0015 | 0.0015 | 0.0015 |
| Tank Diameter (ft): | 36 5000 | 36 5000 | 36 5000 | 36,5000 | 3.0000 | 5.6000 | 5.6000 | 5.6000 | 5.6000 | 5.6000 | 5.6000 | 5.6000 |
| | | 00.0000 | 00.0000 | 30.3000 | 30.5000 | 30,5000 | 36.5000 | 36.5000 | 36.5000 | 36.5000 | 36.5000 | 36.5000 |
| Deck Fitting Losses (Ib): | 29,7790 | 31 0369 | 33 6080 | 36 6012 | 39 9503 | 40 5464 | 44 0700 | | | | | |
| Value of Vapor Pressure Function: | 0 1536 | 0 1601 | 0 1738 | 0 1997 | 0.0003 | 40.0464 | 41.3/63 | 41.1319 | 39.4564 | 36.4501 | 33.2389 | 30.6296 |
| Vapor Molecular Weight (Ib/Ib-mole): | 65 0000 | 65 0000 | 65 0000 | 65,0000 | 0.2003 | 0.2091 | 0.2134 | 0.2121 | 0.2035 | 0.1880 | 0.1714 | 0.1580 |
| Product Factor: | 1 0000 | 1 0000 | 1 0000 | 4 0000 | 05.0000 | 65.0000 | 65.0000 | 65.0000 | 65.0000 | 65.0000 | 65.0000 | 65.0000 |
| Tot. Roof Fitting Loss Fact. (Ib-mole/vr): | 35 8000 | 35,8000 | 35 8000 | 25 8000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| 0 | 00.0000 | 00.0000 | 33.0000 | 33.8000 | 35.8000 | 35.8000 | 35.8000 | 35.8000 | 35.8000 | 35.8000 | 35.8000 | 35.8000 |
| Deck Seam Losses (ib): | 21,7207 | 22 6382 | 24 5708 | 26 6069 | 79 2279 | 00 5744 | | | | | | |
| Deck Seam Length (ft): | 146,4900 | 146 4900 | 146 4900 | 146 4900 | 20.3373 | 29.3/44 | 30.1797 | 30.0014 | 28.7793 | 26.5865 | 24.2443 | 22.3411 |
| Deck Seam Loss per Unit Length | | | | 140.4000 | 140.4000 | 140.4900 | 140.4900 | 146.4900 | 146.4900 | 146.4900 | 146.4900 | 146.4900 |
| Factor (lb-mole/ft-yr): | 0.1400 | 0 1400 | 0 1400 | 0.1400 | 0 1 400 | 0 4 400 | 0.4.000 | | | | | |
| Deck Seam Length Factor(ft/soft); | 0 1400 | 0 1400 | 0.1400 | 0.1400 | 0.1400 | 0.1400 | 0.1400 | 0.1400 | 0.1400 | 0.1400 | 0.1400 | 0.1400 |
| Tank Diameter (ft); | 36,5000 | 36 5000 | 26 5000 | 28 5000 | 0.1400 | 0.1400 | 0.1400 | 0.1400 | 0.1400 | 0.1400 | 0.1400 | 0.1400 |
| Vapor Molecular Weight (lb/lb-mole) | 65 0000 | 65,0000 | 30.5000 | 35.5000 | 35.5000 | 36.5000 | 36.5000 | 36.5000 | 36.5000 | 36.5000 | 36.5000 | 36.5000 |
| Product Factor | 1 0000 | 1 0000 | 4 0000 | 65.0000 | 65.0000 | 65.0000 | 65.0000 | 65.0000 | 65.0000 | 65.0000 | 65.0000 | 65.0000 |
| | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| | | | | | | | | | | | | |
| Total Losses (ib): | 69.8611 | 72.8061 | 79 0381 | 85 8329 | 91 0083 | 05 0680 | 07 0449 | 00 4007 | | | | |
| | | | | | | | 57.0115 | 30.4397 | 92.51/1 | 85.4790 | 77.9611 | 71.8526 |
| Roof Fitting/Status | | | | Quentit | | n a/lb-molo6r) | KEN/h mala/ | actors | | | | |
| Access Hatch (24-in, Diam,)/Bolted Cover, Gasketed | | | | General | 7 NF | aqio-11010/9/) | NFU(ID-ITIOIO/()/ | <u>nprrm))</u> | | m | Losses(lb) | |
| Automatic Gauge Float Weil/Bolted Cover, Gasketed | | | | | | 1.60 | | 0.00 | 0. | 00 | 19.3568 | |
| Roof Leg or Hanger Well/Fixed | | | | | | 2.80 | | 0.00 | 0. | 00 | 33.8744 | |
| Sample Pipe or Well (24-in, Diam)/Slit Fabric Seal 10% One | n | | | 1 | 1 | 0.00 | | 0.00 | 0. | 00 | 0.0000 | |
| Stub Drain (1-in. Diameter)/ | | | | | 1 | 12.00 | | 0.00 | 0. | 00 | 145.1761 | |
| Vacuum Breaker (10-in Diam)/Weighted Mech Actuation G | ack | | | 1 | 1 | 1.20 | | 0.00 | 0. | 00 | 159.6937 | |
| | adr. | | | | 1 | 6.20 | | 1.20 | 0. | 94 | 75.0076 | |

TANKS 4.0.9d Emissions Report - Detail Format Individual Tank Emission Totals

Emissions Report for: January, February, March, April, May, June, July, August, September, October, November, December

CENTURION BROWNSVILLE WTTK-1 - Internal Floating Roof Tank

| | | | Losses(lbs) | | |
|-------------------|---------------|----------------|-------------------|----------------|-----------------|
| Components | Rim Seal Loss | Withdrawl Loss | Deck Fitting Loss | Deck Seam Loss | Total Emissions |
| Gasoline (RVP 11) | 264.76 | 1.74 | 432.80 | 315.68 | 1,014.97 |

EMERGENCY STANDBY GENERATOR

The facility will install an emergency electric generator driven by a Natural Gas fired engine. The system meets the definition of "emergency" and will be tested approximately 15 minutes every week for weekly maintenance. It is estimated to run only 16 hours/yr., maximum.

A recently purchased unit with a rated HP of 47 for similar service, had the following Manufacturer specifications that meet the latest EPA standards for RICE units.

- CO = 131.6 Grams/HP-hr. calculated emissions 0.11 tons/yr.
- NOx = 1.59 Grams/HP-hr. calculated emissions 0.001 tons/yr.
- VOC = 0.1 Grams/HP-hr. calculated emissions 0.0001 tons/yr.

Storage and Use of Butane

Butane will be received at the Centurion Brownsville facility by truck or pipeline, and stored in the six (6) horizontal high pressure storage tanks.

The butane is used in the blending of the finished Gasoline.

APD MARINE LOADING COLLECTION EFFICIENCY GUIDANCE (FINAL September 21, 2016)

Introduction

The TCEQ's previous guidance regarding marine loading collection efficiencies for ocean-going marine vessels has been 95 percent. With ILTA's noted commitments resulting in as many as 50 ship testing results, the TCEQ has evaluated the information confirming that collection efficiencies for inerted, ocean-going vessels were well beyond 95%, and in consideration of federal and state regulations applicable to ship loading, the TCEQ Air Permits Division (APD) agrees that a shift in our policy regarding collection efficiency is warranted. The control efficiencies listed below are supported by the test data and information submitted by ILTA.

Category 1: 99.0% - No additional testing required Category 2: >99.0 to 99.49% – 1 initial demonstration of compliance test within 12 months Category 3: 99.5 to 99.89% – 1 test per year for 3 years Category 4: 99.9% – 3 tests per year for 5 years

Further, applicants that have accepted more stringent testing frequencies may revise their permits with the adjusted requirements. This change to testing requirements can be accomplished by permit alteration. However, if the permit holder proposes to increase loading throughput, a permit amendment will be necessary to account for potential actual increases as well as any possible increases from other facilities (such as storage tanks). Credit will be given for tests that have already been completed provided that the tests are deemed acceptable by the TCEQ and that they have been conducted over an appropriate time frame. If granted, credit for prior tests will be noted in the altered or amended permit.

Use of the higher collection efficiencies by a regulated entity is contingent upon acceptance of revised permit conditions appropriate to the chosen category of collection efficiency. Note that the collection efficiencies represented by the applicant are enforceable representations, and the required tests will serve to demonstrate compliance. Any subsequent test that results in a measured collection efficiency lower than the represented value will be considered as a violation of the permit, and will be subject to possible enforcement action. For Title V sources, non-compliant tests must be reported as permit deviations.

The use of 99% capture efficiency is acceptable for sources authorized under Permit by Rule (PBR) provided the regulated entity certifies to following the additional monitoring, inspection, and recordkeeping requirements indicated in the attached Special Condition No. 1. The use of collection efficiencies higher than 99% will require testing to demonstrate compliance and will not be authorized via PBR. Through this process, it has been well demonstrated that facilities adhering to the additional monitoring, inspection, and recordkeeping requirements in the attached Special Condition No. 1 have regularly achieved 99 percent capture efficiency. If an applicant commits to and follows these requirements, the facility should achieve 99 percent capture efficiency. Documentation of the compliance with the requirements in Special Condition No. 1 will serve as a demonstration of compliance rather than testing. As testing would not be required it would be acceptable to authorize a facility with 99% capture efficiency and representations of compliance required in the Special Condition No. 1 with the applicable PBR.

Special Conditions for Category 1 (99.0%)

- 1. The following additional requirements apply to loading of a VOC which has a vapor pressure equal to or greater than 0.5 pounds per square inch absolute (psia) under actual storage conditions onto inerted marine vessels (ships).
 - A. Before loading, the owner or operator of the marine terminal shall verify that the marine vessel has passed an annual vapor tightness test as specified in 40 CFR §63.565(c) (September 19, 1995) or 40 CFR §61.304(f) (October 17, 2000) within the previous twelve months.
 - B. The pressure at the vapor collection connection of an inerted marine vessel must be maintained such that the pressure in a vessels' cargo tanks do not go below 0.2 pounds per square inch gauge (psig) or exceed 80% of the lowest setting of any of the vessel's pressure relief valves. The lowest vessel cargo tank or vent header pressure relief valve setting for the vessel being loaded shall be recorded. Pressure shall be continuously monitored while the vessel is being loaded. Pressure shall be recorded at fifteen minute intervals.
 - C. VOC loading rates shall be recorded during loading. The loading rate must not exceed the maximum permitted loading rate.
 - D. During loading, the owner or operator of the marine terminal or of the marine vessel shall conduct audio, olfactory, and visual checks for leaks once every 8 hours for on-shore equipment and on board the ship.
 - (1) If a liquid leak is detected during loading and cannot be repaired immediately (for example, by tightening a bolt or packing gland), then the loading operation shall cease until the leak is repaired.
 - (2) If a vapor leak is detected by sight, sound, smell, or hydrocarbon gas analyzer during the loading operation, then a "first attempt" shall be made to repair the leak. Loading operations need not be ceased if the first attempt to repair the leak is not successful provided that the first attempt effort is documented by the owner or operator of the marine vessel and a copy of the repair log is made available to a representative of the marine terminal.
 - (3) If the attempt to repair the leak is not successful and loading continues, emissions from the loading operation for that ship shall be calculated assuming a collection efficiency of 95%.
 - (4) Date and time of each inspection shall be noted in the operator's log or equivalent. Records shall be maintained at the plant site of all repairs and replacements made due to leaks. These records shall be made available to representatives of the Texas Commission on Environmental Quality (TCEQ) upon request.

Special Conditions for Category 2: (>99.0 - 99.49%) (in addition to Condition 1)

- 2. VOC collection efficiency tests of inerted ocean-going marine vessels shall be conducted as follows to demonstrate a collection efficiency of 99.49% as represented in the permit application.
 - A. Testing shall be conducted using the protocol agreed to by the Executive Director on XX/XX/XXXX. Any revision to the approved testing protocol shall require approval from the Executive Director prior to implementation. The permittee shall maintain a copy of the approved protocol on site.
 - B. Complying test results shall be obtained in accordance with the protocol for a minimum of one vessel. The test shall be conducted within twelve months of the first loading of an inerted ocean-going marine vessel.
 - C. The results of the test shall be submitted to the TCEQ Regional Office with a copy to the TCEQ Air Permits Division within 60 days after completion of the test.
 - D. The TCEQ Regional Office must be notified at least 48 hours prior to testing. The facility owner or operator may request a waiver from the 48 hour advance notification requirement from the TCEQ Regional Office.
 - E. The permit holder shall maintain the following records for each ship tested for a period of 5 years from the date of testing:
 - (1) The most recent vapor tightness certificate;
 - (2) A recent, completed Standard Tanker Chartering Questionnaire form (Q88); and
 - (3) Records of each incidence of testing conducted in accordance with this condition.

Special Conditions for Category 3: (99.5 - 99.89%) (in addition to Condition 1)

- 2. VOC collection efficiency tests of inerted ocean-going marine vessels shall be conducted as follows to demonstrate a collection efficiency of (99.5 99.89%) as represented in the permit application.
 - A. Testing shall be conducted using the protocol agreed to by the Executive Director on XX/XX/XXXX. Any revision to the approved testing protocol shall require approval from the Executive Director prior to implementation. The permittee shall maintain a copy of the approved protocol on site.
 - B. Complying test results shall be obtained in accordance with the protocol for a minimum of one vessel per year for 3 years. The first test shall be conducted within twelve months of the first loading of an inerted ocean-going marine vessel.
 - C. The results of the test shall be submitted to the TCEQ Regional Office with a copy to the TCEQ Air Permits Division within 60 days after completion of the test.
 - D. The TCEQ Regional Office must be notified at least 48 hours prior to testing. The facility owner or operator may request a waiver from the 48 hour advance notification requirement from the TCEQ Regional Office.
 - E. The permit holder shall maintain the following records for each ship tested for a period of 5 years from the date of testing:

Page | 3

- (1) The most recent vapor tightness certificate;
- (2) A recent, completed Standard Tanker Chartering Questionnaire form (Q88); and
- (3) Records of each incidence of testing conducted in accordance with this condition.
- 3. The following requirements apply if a test conducted per Condition 2 shows collection efficiency lower than assumed in permit emission calculations.
 - A. Emissions from the tested ship shall be calculated at the measured collection efficiency instead of the efficiency assumed for permit calculations.
 - B. Emissions from future instances of ship loading shall continue to be calculated at the lower measured collection efficiency until a test result confirming the permitted collection efficiency is obtained.
 - C. As an alternative to assuming the lower measured collection efficiency for subsequent loading as specified in paragraph B, the regulated entity can assume the permitted collection efficiency in subsequent loading operations provided that the loading activity is monitored with an optical gas imaging instrument as defined in 30 TAC 115.358 and no leaks are observed. If a leak is observed, the lower measured collection efficiency must be used. The observations must occur during a minimum 6 hour period as close to the end of loading as possible.

Special Conditions for Category 4: (99.9 %)

(in addition to Condition 1)

- 2. VOC collection efficiency tests of inerted ocean-going marine vessels shall be conducted as follows to demonstrate a collection efficiency of 99.9% as represented in the permit application.
 - A. Testing shall be conducted using the protocol agreed to by the Executive Director on XX/XX/XXXX. Any revision to the approved testing protocol shall require approval from the Executive Director prior to implementation. The permittee shall maintain a copy of the approved protocol on site.
 - B. Complying test results shall be obtained in accordance with the protocol for a minimum of three vessels per year for five years. The first test shall be conducted within twelve months of the first loading of an inerted ocean-going marine vessel.
 - C. The results of the test shall be submitted to the TCEQ Regional Office with a copy to the TCEQ Air Permits Division within 60 days after completion of the test.
 - D. The TCEQ Regional Office must be notified at least 48 hours prior to testing. The facility owner or operator may request a waiver from the 48 hour advance notification requirement from the TCEQ Regional Office.
 - E. The permit holder shall maintain the following records for each ship tested for a period of 5 years from the date of testing:
 - (1) The most recent vapor tightness certificate;
 - (2) A recent, completed Standard Tanker Chartering Questionnaire form (Q88); and
 - (3) Records of each incidence of testing conducted in accordance with this condition.

- 3. The following requirements apply if a test conducted per Condition 2 shows collection efficiency lower than assumed in permit emission calculations.
 - A. Emissions from the tested ship shall be calculated at the measured collection efficiency instead of the efficiency assumed for permit calculations.
 - B. Emissions from future instances of ship loading shall continue to be calculated at the lower measured collection efficiency until a test result confirming the permitted collection efficiency is obtained.

As an alternative to assuming the lower measured collection efficiency for subsequent loading as specified in paragraph B, the regulated entity can assume the permitted collection efficiency in subsequent loading operations provided that the loading activity is monitored with an optical gas imaging instrument as defined in 30 TAC 115.358 and no leaks are observed. If a leak is observed, the lower measured collection efficiency must be used. The observations must occur during a minimum 6 hour period as close to the end of loading as possible.



Permits by Rule 30 TAC Chapter 106, Section 106.4 "Quick-Check" Applicability Checklist Instructions and Guidance for Using the "Quick-Check" Checklist

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| CO 0.16 NO <sub>x</sub> 2.67 VOC 23.54                                                                                                                                                                                                                                                                           |            |  |  |  |  |  |  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--|--|--|--|--|--|
|                                                                                                                                                                                                                                                                                                                  |            |  |  |  |  |  |  |
| PM 0.29 SO <sub>2</sub> Other                                                                                                                                                                                                                                                                                    |            |  |  |  |  |  |  |
| The following questions require a "Yes," or "No," answer to be indicated for this permit by rule claim:                                                                                                                                                                                                          |            |  |  |  |  |  |  |
| A. Title 30 TAC § 106.4(a)(5): Current Permit by Rule Requirements                                                                                                                                                                                                                                               |            |  |  |  |  |  |  |
| Have you checked to determine if this exempt project is being claimed under the current version of 30 TAC 106? XYES                                                                                                                                                                                              | ⊡no        |  |  |  |  |  |  |
| If "Yes," continue to next question                                                                                                                                                                                                                                                                              |            |  |  |  |  |  |  |
| If "No," please contact the Air Permits Division for a copy of the current permit by rule to be claimed.                                                                                                                                                                                                         |            |  |  |  |  |  |  |
| B. Title 30 TAC § 106.4(a)(7): Permit by rule prohibition check                                                                                                                                                                                                                                                  |            |  |  |  |  |  |  |
| Are there any <u>air permits</u> under the same account containing permit conditions which prohibit or restrict the use of <b>YES</b> permits by rule?                                                                                                                                                           | X NO       |  |  |  |  |  |  |
| If "No," continue to next question                                                                                                                                                                                                                                                                               |            |  |  |  |  |  |  |
| If "Yes," permits by rule may not be used or their use must meet the restrictions of the permit.                                                                                                                                                                                                                 |            |  |  |  |  |  |  |
| A new permit or permit amendment may be required.                                                                                                                                                                                                                                                                |            |  |  |  |  |  |  |
| List permits number(s):                                                                                                                                                                                                                                                                                          |            |  |  |  |  |  |  |
| C. Title 30 TAC § 106.4(b): Circumvention check                                                                                                                                                                                                                                                                  |            |  |  |  |  |  |  |
| Title 30 TAC § 106.4(b) states "No person shall circumvent by artificial limitations the requirements of § 116.110 of this title (covering permitting)." Circumvention by artificial limitations may include but is not limited to:                                                                              |            |  |  |  |  |  |  |
| (1.) A. dividing a complete project into separate segments to circumvent $\$106.4(a)(1)$ limits;                                                                                                                                                                                                                 |            |  |  |  |  |  |  |
| (2.) claiming feed or production rates below the physical capacity of the project's equipment in order to begin<br>constructing facilities before a permit or permit amendment is approved for full scale operations, particu-<br>when the unit will not be economically viable at less than permitted capacity; | n<br>larly |  |  |  |  |  |  |
| (3.) claiming a limited chemical list in order to begin constructing facilities before a permit or permit amend<br>approved for additional chemicals, particularly when the unit will not be economically viable until the<br>additional chemicals are authorized.                                               | nent is    |  |  |  |  |  |  |
| Does your project meet any of the criteria listed above?                                                                                                                                                                                                                                                         | X NO       |  |  |  |  |  |  |
| If "No," continue to next rule question.                                                                                                                                                                                                                                                                         |            |  |  |  |  |  |  |
| If "Yes," a permit by rule may not be claimed.                                                                                                                                                                                                                                                                   |            |  |  |  |  |  |  |
| D. Title 30 TAC § 106.4(c) and (d): Compliance with all Rules                                                                                                                                                                                                                                                    |            |  |  |  |  |  |  |
| Will the facility comply with all rules and regulations of the, the intent of the Texas Clean Air Act, and any local XYES NO permitting or registration requirements?                                                                                                                                            |            |  |  |  |  |  |  |
| If "Yes," continue to next rule question                                                                                                                                                                                                                                                                         |            |  |  |  |  |  |  |
| If "No," a permit by rule may not be claimed                                                                                                                                                                                                                                                                     |            |  |  |  |  |  |  |



### Permits by Rule 30 TAC Chapter 106, Section 106.4 "Quick-Check" Applicability Checklist Instructions and Guidance for Using the "Quick-Check" Checklist

| E. Title 30 TAC § 106.4(a)(1): Emission limits check                                                                                       | ck                         |                               |      |  |  |  |
|--------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|-------------------------------|------|--|--|--|
| The maximum emissions from all facilities at the site, including this permit by rule claim, are less than 25 tpy of XES NO any contaminant |                            |                               |      |  |  |  |
| If the answer to these questions is "Yes," no furthe                                                                                       | er review is needed to com | plete this checklist.         |      |  |  |  |
| Forward all information needed to verify your perm                                                                                         | mit by rule claim.         |                               |      |  |  |  |
| If "No," this checklist cannot be used. Please com                                                                                         | plete the standard 30 TA   | C§106.4 Applicability Checkli | ist. |  |  |  |
| Name: Peter Schmar                                                                                                                         |                            |                               |      |  |  |  |
| Company: CMG Brownsville II, LLC                                                                                                           |                            |                               |      |  |  |  |
| Title: VP of Operations                                                                                                                    |                            |                               |      |  |  |  |
| Facility Name: Centurion Brownsville Terminal                                                                                              |                            |                               |      |  |  |  |
| Phone No.: 918-801-8911                                                                                                                    | Fax No.:                   |                               |      |  |  |  |
| Email Address: peterschmar@gmail.com Account ID No.:                                                                                       |                            |                               |      |  |  |  |
| Location: Brownsville, Texas                                                                                                               |                            |                               |      |  |  |  |
| Signature of Company Officer:                                                                                                              |                            | Date: 57 3,                   | 17   |  |  |  |

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#### Texas Commission on Enviromental Quality Title 30 Texas Administrative Code § 106.261 Permit By Rule (PBR) Checklist Facilities (Emission Limitations)

The following checklist is designed to help you confirm that you meet Title 30 Texas Administrative Code § 106.261 (30 TAC § 106.261) requirements. If you do not meet all the requirements, you may alter the project design or operation in such a way that all the requirements of the PBR are met or you may obtain a construction permit. The PBR forms, tables, checklists, and guidance documents are available from the Texas Commission on Environmental Quality (TCEQ) Air Permits Division website at, www.tceq.texas.gov/permitting/air/air\_permits.html

For additional assistance with your application, including resources to help calculate your emissions, please visit the Small Business and Local Government Assistance (SBLGA) webpage at the following link: www.TexasEnviroHelp.org

| Che | ck The Most Appropriate Answer                                                                                                                                                                                                                            | est #Early and  |
|-----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
|     | Is a description or checklist of how this claim meets the general requirements for the use of PBRs in 30 TAC § 106.4 attached?                                                                                                                            | 🛛 YES 🗌 NO 🗌 NA |
| b1  | Is this claim for construction of a facility authorized in another section of this chapter or for which a standard permit is in effect?                                                                                                                   | 🗌 YES 🕅 NO 🗌 NA |
|     | If "YES," this PBR cannot be used to authorize emissions from the project.                                                                                                                                                                                |                 |
| b2  | Is this claim for any change to any facility authorized under another section of this chapter or authorized under a standard permit?                                                                                                                      | 🗌 YES 🖾 NO 🗌 NA |
|     | If "YES," this PBR cannot be used to authorize emissions from the project.                                                                                                                                                                                |                 |
| al  | Are facilities or changes located at least 100 feet from any recreational area or residence or other structure not occupied or used solely by the owner or operator of the facilities or the owner of the property upon which the facilities are located? | 🕅 YES 🗌 NO 🗌 NA |

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#### Texas Commission on Environmental Quality Title 30 Texas Administrative Code § 106.261 Permit By Rule (PBR) Checklist Facilities (Emission Limitations)

| Check The Most Appropriate Answer (continued)                                                                                                                                                |                               |                       |                   |  |  |  |  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|-----------------------|-------------------|--|--|--|--|
| a2 Are total new or increased emissions, including fugitives, less than or equal to<br>6.0 pounds per hour (lb/hr) and ten tons per year of the following materials <sup>1</sup> YES INO INA |                               |                       |                   |  |  |  |  |
| Check All That Apply                                                                                                                                                                         |                               |                       |                   |  |  |  |  |
| 🔲 acetylene                                                                                                                                                                                  | cyclopentane                  | 🗌 kaolin              | 🗌 propane         |  |  |  |  |
| 🗌 alumina                                                                                                                                                                                    | emery dust                    | □ limestone           | 🗌 propyl alcohol  |  |  |  |  |
| 🗌 argon                                                                                                                                                                                      | 🗌 ethanol                     | 🗌 magnesite           | 🗌 propyl ether    |  |  |  |  |
| 🗌 butane                                                                                                                                                                                     | 🗌 ethyl acetate               | 🗌 marble              | 🗌 propylene       |  |  |  |  |
| 🔲 calcium carbonate                                                                                                                                                                          | 🗌 ethyl ether                 | methyl acetylene      | 🗌 silicon         |  |  |  |  |
| 🔲 calcium silicate                                                                                                                                                                           | 🗌 ethylene                    | 🗌 methyl chloroform   | 🗌 silicon carbide |  |  |  |  |
| 🔀 carbon monoxide                                                                                                                                                                            | 🗌 glycerin mist               | 🗌 methyl cyclohexane  | 🗌 starch          |  |  |  |  |
| 🗌 cellulose fiber                                                                                                                                                                            | 🗌 gypsum                      | 🗌 neon                | □ sucrose         |  |  |  |  |
| 🗌 cement dust                                                                                                                                                                                | 🗌 helium                      | 🗌 nonan               | 🗌 sulfur dioxide  |  |  |  |  |
| 🗌 crude oil                                                                                                                                                                                  | 📋 iron oxide dust             | 🗙 oxides of nitrogen  | 🗌 zinc oxide      |  |  |  |  |
| 🗌 cyclohexane                                                                                                                                                                                | 🗌 isohexane                   | pentaerythritol       | zinc stearate     |  |  |  |  |
| 🔲 cyclohexene                                                                                                                                                                                | 🔲 isopropyl alcohol           | plaster of paris      |                   |  |  |  |  |
| ☑ refinery petroleum fractions (except for pyrolysis naphthas and pyrolysis gasoline) containing less than ten volume percent benzene                                                        |                               |                       |                   |  |  |  |  |
| ☐ fluorocarbons Numbers                                                                                                                                                                      | 11, 12, 13, 14, 21, 22, 23, 1 | 13, 114, 115, and 116 |                   |  |  |  |  |

<sup>&</sup>lt;sup>1</sup>Any upstream and/or downstream actual emission increases that result from a project for which this PBR is claimed need to be authorized appropriately. Any associated upstream and/or downstream emissions authorized as part of the PBR claim will need to be included as part of the total new or increased emissions, unless: 1) these emissions stay below current authorized emission limits; 2) there is not a change to any underlying air authorizations for the applicable units associated with BACT, health and environmental impacts, or other representations (i.e. construction plans, operating procedures, throughputs, maximum emission rates, etc.); and 3) this claim is certified via PI-7 CERT or APD-CERT. Notwithstanding the exclusion of any upstream and/or downstream emissions under this PBR claim, the total of all emission increases, including upstream and/or downstream actual emission increases, are required to be part of the PBR registration to determine major new source review applicability under Title 30 TAC Chapter 116. The emission increases review requirements under 30 TAC Chapter 116.

#### Texas Commission on Enviromental Quality Title 30 Texas Administrative Code § 106.261 Permit By Rule (PBR) Checklist Facilities (Emission Limitations)

| Che        | ck Th                                                                                                                                                                                                                                                                     | e Most Appropriate Answer                                                                                                                                                                           |                                                                             |                                 |  |  |  |  |
|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|---------------------------------|--|--|--|--|
| a3         | Are<br>1.0 l<br>cubi<br>of th                                                                                                                                                                                                                                             | total new or increased emissions, including f<br>b/hr of any chemical having a limit value (L)<br>c meter (mg/m³) as listed and referenced in T<br>is title (relating to Facilities (Emission and D | 🗌 YES 🗌 NO 🖾 NA                                                             |                                 |  |  |  |  |
| List       | chemi                                                                                                                                                                                                                                                                     | cal(s):                                                                                                                                                                                             | L value(s):                                                                 |                                 |  |  |  |  |
|            | Are<br>1.0 l                                                                                                                                                                                                                                                              | total new or increased emissions, including f<br>b/hr of any chemical not listed or referenced                                                                                                      | fugitives, less than or equal to<br>1 in Table 262? <sup>1</sup>            | 🗌 YES 🗌 NO 🖾 NA                 |  |  |  |  |
|            | List                                                                                                                                                                                                                                                                      | chemical(s):                                                                                                                                                                                        |                                                                             |                                 |  |  |  |  |
|            | Are<br>limit                                                                                                                                                                                                                                                              | total new or increased emissions, including f<br>value of less than 200 mg/m³? <sup>1</sup>                                                                                                         | fugitives, of a chemical with a                                             | 🗌 yes 🗌 no 🔀 na                 |  |  |  |  |
|            | If "Y<br>§ 10                                                                                                                                                                                                                                                             | ES" the authorization of the chemical is not a 6.262 to authorize the emissions, if applicabl                                                                                                       | llowed under this section. We sug                                           | gest you use 30 TAC             |  |  |  |  |
| a4         | Are<br>equi                                                                                                                                                                                                                                                               | there any changes to or additions of any exis<br>pment?                                                                                                                                             | sting air pollution abatement                                               | 🗌 YES 🗵 NO 🗌 NA                 |  |  |  |  |
| <b>a</b> 5 | Will<br>atmo<br>opac                                                                                                                                                                                                                                                      | there be any visible emissions, except uncon<br>osphere from any point or fugitive source in<br>tity in any six-minute period?                                                                      | nbined water, emitted to the<br>amounts greater than 5.0%                   | 🗌 YES 🖾 NO 🗌 NA                 |  |  |  |  |
| a6         | Are                                                                                                                                                                                                                                                                       | emission increases five tons per year or grea                                                                                                                                                       | ter?                                                                        | 🔀 YES 🗌 NO 🗌 NA                 |  |  |  |  |
|            | If "Y<br>mod                                                                                                                                                                                                                                                              | ES," this checklist must be attached to a Form<br>ification of the facilities.                                                                                                                      | 1 PI-7 within ten days following th                                         | ne installation or              |  |  |  |  |
|            | [Not<br>cher                                                                                                                                                                                                                                                              | e: The notification shall include a description nical names, limit values, and a description o                                                                                                      | n of the project, calculations, data<br>f pollution control equipment, if a | i identifying specific<br>iny.] |  |  |  |  |
| a7         | Are                                                                                                                                                                                                                                                                       | emission increases less than five tons per ye                                                                                                                                                       | ar?                                                                         | 🗍 YES 🗌 NO 🔀 NA                 |  |  |  |  |
|            | If "YES," this checklist must be attached to a Form PI-7 and include a description of the project,<br>calculations, data identifying specific chemical names, limit values, and a description of pollution control<br>equipment, if any. (pick one):                      |                                                                                                                                                                                                     |                                                                             |                                 |  |  |  |  |
|            | Within ten days following the installation or modification of the facilities. The notification shall include a description of the project, calculations, data identifying specific chemical names, limit values, and a description of pollution control equipment, if any |                                                                                                                                                                                                     |                                                                             |                                 |  |  |  |  |
|            |                                                                                                                                                                                                                                                                           | By March 31 of the following year summaricalendar year.                                                                                                                                             | izing all uses of this permit by ru                                         | lle in the previous             |  |  |  |  |

<sup>&</sup>lt;sup>2</sup> Any upstream and/or downstream actual emission increases that result from a project for which this PBR is claimed need to be authorized appropriately. Any associated upstream and/or downstream emissions authorized as part of the PBR claim will need to be included as part of the total new or increased emissions, unless: 1) these emissions stay below current authorized emission limits; 2) there is not a change to any underlying air authorizations for the applicable units associated with BACT, health and environmental impacts, or other representations (i.e. construction plans, operating procedures, throughputs, maximum emission rates, etc.); and 3) this claim is certified via PI-7 CERT or APD-CERT. Notwithstanding the exclusion of any upstream and/or downstream emissions under this PBR claim, the total of all emission increases, including upstream and/or downstream actual emission increases, are required to be part of the PBR registration to determine major new source review applicability under Title 30 TAC Chapter 116. The emission increases associated with the PBR claim and all upstream and/or downstream actual emission increases may not circumvent major new source review requirements under 30 TAC Chapter 116.

## Texas Commission on Environmental Quality Title 30 Texas Administrative Code § 106.262 Permit by Rule (PBR) Checklist Facilities (Emission and Distance Limitations)

The following checklist is designed to help you confirm that you meet Title 30 Texas Administrative Code § 106.262 (30 TAC § 106.262) requirements. If you do not meet all the requirements, you may alter the project design or operation in such a way that all the requirements of the PBR are met or you may obtain a construction permit. The PBR forms, tables, checklists, and guidance documents are available from the Texas Commission on Environmental Quality (TCEQ), Air Permits Division Web site at, www.tceq.texas.gov/nav/permits/air\_permits.html.

For additional assistance with your application, including resources to help calculate your emissions, please visit the Small Business and Local Government Assistance (SBLGA) webpage at the following link: www.TexasEnviroHelp.org

|      | Check the Most Appropriate Answer                                                                                                                                                                                                                                                                                                                                                                   |                         |    |    |  |  |  |  |
|------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|----|----|--|--|--|--|
|      | Is a description or che<br>for the use of PBRs in                                                                                                                                                                                                                                                                                                                                                   | X YES 🗌 NO 🗌 N/A        |    |    |  |  |  |  |
| b1.  | Is this claim for const<br>chapter or for which a<br>be used to authorize e                                                                                                                                                                                                                                                                                                                         | YES X NO 🗌 N/A          |    |    |  |  |  |  |
| b2.  | Is this claim for any c<br>this chapter or author<br>used to authorize emi                                                                                                                                                                                                                                                                                                                          | f<br>e 🔲 YES X NO 🗌 N/A |    |    |  |  |  |  |
| c.   | Is the facility authorized under another section of this chapter or under a standard permit? If "YES," subsection (a)(2) and (3) of this section may be used YES [ to qualify the use of other chemicals at the facility.                                                                                                                                                                           |                         |    |    |  |  |  |  |
| a1.  | 1. Are facilities or changes located at least 100 feet from any recreational area or residence or other structure not occupied or used solely by the owner or operator of the facilities or the owner of the property upon which the facilities X YES □ NO are located?                                                                                                                             |                         |    |    |  |  |  |  |
| a2.  | <ul> <li>Are new or increased emissions, including fugitives, emitted in a quantity less than five tons per year or in a quantity less than E as determined by using the equation E=L/K?<sup>1</sup> See Table 262 Figures 1 and 2. If "YES," the notification shall include a description of the project, calculations for all emissions being claimed X YES □ NO □ N/A under this PBR:</li> </ul> |                         |    |    |  |  |  |  |
| Chen | nical:                                                                                                                                                                                                                                                                                                                                                                                              | L value:                | D: | К: |  |  |  |  |
| a3.  | 3. Is this checklist attached to a Form PI-7 within ten days following the installation or modification of the facilities? <i>If "YES,"</i> the notification shall include a description of the project, calculations, and data identifying specific UYES INO X N/A chemical names, L values, and a description of pollution control equipment, if any.                                             |                         |    |    |  |  |  |  |

<sup>&</sup>lt;sup>1</sup> Any upstream and/or downstream actual emission increases that result from a project for which this PBR is claimed need to be authorized appropriately. Any associated upstream and/or downstream emissions authorized as part of the PBR claim will need to be included as part of the total new or increased emissions, unless: 1) these emissions stay below current authorized emission limits; 2) there is not a change to any underlying air authorizations for the applicable units associated with BACT, health and environmental impacts, or other representations (i.e. construction plans, operating procedures, throughputs, maximum emission rates, etc.); and 3) this claim is certified via PI-7 CERT or APD-CERT. Notwithstanding the exclusion of any upstream and/or downstream emissions under this PBR claim, the total of all emission increases, including upstream and/or downstream actual emission increases, are required to be part of the PBR registration to determine major new source review applicability under Title 30 TAC Chapter 116. The emission increases associated with the PBR claim and all upstream and/or downstream actual emission increases may not circumvent major new source review requirements under 30 TAC Chapter 116.

#### Title 30 Texas Administrative Code § 106.262 Permit by Rule (PBR) Checklist Facilities (Emission and Distance Limitations)

|                                                                         | Check the Most Appropriate Answer                                                                                                                                                                                                     |                                                      |           |                            |  |  |  |
|-------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------|-----------|----------------------------|--|--|--|
| a4. Are one or more of<br>(Check all that appl                          | the following chemicals is hand<br>y) If "YES," answer the following                                                                                                                                                                  | lled for this registration<br><i>four questions.</i> | ?         | 🗌 YES X NO 🗌 N/A           |  |  |  |
| 🗌 acrolein                                                              | diazomethane                                                                                                                                                                                                                          | 🗌 hydrogen sulfide                                   | oz        | one                        |  |  |  |
| 🗌 allyl chloride                                                        | 🗌 diborane                                                                                                                                                                                                                            | ketene                                               | 🗌 per     | ntabornev                  |  |  |  |
| 🔲 ammonia (anhydrous)                                                   | diglycidyl ether                                                                                                                                                                                                                      | methylamine                                          | D pe<br>m | erchloromethyl<br>ercaptan |  |  |  |
| 🔲 arsine                                                                | dimethylhydrazine                                                                                                                                                                                                                     | methyl bromide                                       | 🗌 per     | rchloryl fluoride          |  |  |  |
| 🗌 boron trifluoride                                                     | ethyleneimine                                                                                                                                                                                                                         | 🗌 methyl hydrazine                                   | 🗌 ph      | osgene                     |  |  |  |
| 🗌 bromine                                                               | 🗌 ethyl mercaptan                                                                                                                                                                                                                     | methyl isocyanate                                    | 🗌 ph      | osphine                    |  |  |  |
| 🗌 carbon disulfide                                                      | 🗌 fluorine                                                                                                                                                                                                                            | 🗌 methyl mercaptan                                   | 🗌 ph      | osphorus trichloride       |  |  |  |
| 🗌 chlorine                                                              | formaldehyde (anhydrous)                                                                                                                                                                                                              | 🗌 nickel carbonyl                                    | 🗌 sel     | enium                      |  |  |  |
| Chlorine dioxide                                                        | 🗌 hydrogen bromide                                                                                                                                                                                                                    | nitric acid                                          | he        | xafluoride stibine         |  |  |  |
| 🗌 chlorine trifluoride                                                  | hydrogen chloride                                                                                                                                                                                                                     | nitric oxide                                         | 🗌 liq     | uefied sulfur dioxide      |  |  |  |
| Chloroacetaldehyde                                                      | 🗌 hydrogen cyanide                                                                                                                                                                                                                    | 🗌 nitrogen dioxide                                   | 🗌 sul     | lfur pentafluorid          |  |  |  |
| 🗌 chloropicrin                                                          | 🗌 hydrogen fluoride                                                                                                                                                                                                                   | 🗌 oxygen difluoride                                  | 🗌 tel     | lurium hexafluoride        |  |  |  |
| 🗌 chloroprene                                                           | 🗌 hydrogen selenide                                                                                                                                                                                                                   |                                                      |           |                            |  |  |  |
| Are all facilities are<br>600 feet from any o                           | located at least 300 feet from t<br>off-plant receptor?                                                                                                                                                                               | he nearest property line                             | and       | □ YES □ NO □ N/A           |  |  |  |
| Are the cumulative<br>or more authorizati<br>authorizations) less       | Are the cumulative amount of any of the following chemicals resulting from one or more authorizations under this section (but not including permit YES NO N/A authorizations) less than or equal to 500 pounds on the plant property? |                                                      |           |                            |  |  |  |
| Are all listed chemic<br>compliance with the<br>(49 Code of Federal     | Are all listed chemicals handled only in unheated containers operated in compliance with the United States Department of Transportation regulation YES NO N/A (49 Code of Federal Regulation, Parts 171-178)?                         |                                                      |           |                            |  |  |  |
| a5. Are there any chang<br>equipment?                                   | ges to or additions of any existing                                                                                                                                                                                                   | ng air pollution abateme                             | ent       | 🗌 YES X NO 🗌 N/A           |  |  |  |
| a6. Will there be any vis<br>atmosphere from ar<br>opacity in any six-n | sible emissions, except uncomb<br>ny point or fugitive source in an<br>ninute period?                                                                                                                                                 | ined water, emitted to t<br>nounts greater that 5.0% | he<br>%   | ☐ YES X NO ☐ N/A           |  |  |  |



| D (feet)      | K   | Value Description                                                           |
|---------------|-----|-----------------------------------------------------------------------------|
| 100           | 326 | E=maximum allowable hourly emission, and never to exceed 6 pounds per hour. |
| 200           | 200 |                                                                             |
| 300           | 139 |                                                                             |
| 400           | 104 |                                                                             |
| 600           | 65  |                                                                             |
| 700           | 54  |                                                                             |
| 800           | 46  | K=value from the table on this page. (interpolate intermediate values)      |
| 900           | 39  |                                                                             |
| 1,000         | 34  |                                                                             |
| 2,000         | 14  | D=distance to the nearest off-plant receptor                                |
| 3,000 or more | 8   |                                                                             |



#### Exemption § 106.472 Checklist (Previously Standard Exemption 51) Organic Liquid Loading and Unloading

The following checklist is designed to help you confirm that you meet § 106.472, previously Standard Exemption 51 (STDX 51), requirements. <u>Any "no" answers indicate that the claim of registration may not meet all requirements for the use of Exemption § 106.472, previously Standard Exemption 51.</u> If you do not meet all the requirements, you may alter the project design/operation in such a way that all the requirements of the exemption are met, or obtain a construction permit.

For additional assistance with your application, including resources to help calculate your emissions, please visit the Small Business and Local Government Assistance (SBLGA) webpage at the following link: <u>www.TexasEnviroHelp.org</u>

| Please Complete The Following:                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |              |       |       |  |  |  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|-------|-------|--|--|--|
| Have you included a description of how this exemption claim meets the general rule for the use of exemptions (§ 106, Subchapter A checklist is available)?                                                                                                                                                                                                                                                                                                                                           | 🕅 YES        | □ NO  | □ N/A |  |  |  |
| Are all the facilities claimed for exemption specifically named in the general section of § 106.472, previously STDX 51?                                                                                                                                                                                                                                                                                                                                                                             | X YES        | □ NO  | □ N/A |  |  |  |
| [Note: This exemption has been interpreted to allow mixing or blending but not chemical reaction                                                                                                                                                                                                                                                                                                                                                                                                     | ion in tanka | ige.] |       |  |  |  |
| Is the equipment designed to prevent visible emissions?                                                                                                                                                                                                                                                                                                                                                                                                                                              | 🗙 YES        | □ NO  | □ N/A |  |  |  |
| Are all the chemicals to be loaded, unloaded, or stored described in §106.472 (previously STDX 51a-i)?                                                                                                                                                                                                                                                                                                                                                                                               | X YES        | □ NO  | □ N/A |  |  |  |
| Attach a list of the chemicals and identify the appropriate item of § 106.472, previously STDX 51 that applies.                                                                                                                                                                                                                                                                                                                                                                                      |              |       |       |  |  |  |
| Include additional supporting data. For example, a § 106.472, previously STDX 51(i), claim should identify initial boiling points of all compounds to be covered.                                                                                                                                                                                                                                                                                                                                    |              |       |       |  |  |  |
| Will aqueous ammonia solutions, hydrochloric acid, or acetic acid be vented through a water scrubber?                                                                                                                                                                                                                                                                                                                                                                                                | U YES        | □ NO  | N/A   |  |  |  |
| Are facilities loading, unloading, or storing butyric acid, isobutyric acid, methacrylic<br>acid, mercaptans, croton oil, 2-methyl styrene, or any other compound with an initial boiling point of<br>300 degrees F or greater listed in 40 CFR 261, Appendix VIII, located at least 500 feet from any<br>recreational area or residence or other structure not occupied or used solely by the owner or operator<br>of the facility or the owner of the property upon which the facility is located? | ☐ YES        | □ NO  | X N/A |  |  |  |
| List these compounds and show their handling location on an attached scaled plot plan.                                                                                                                                                                                                                                                                                                                                                                                                               |              |       |       |  |  |  |

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## Texas Commission on Enviromental Quality Storage Tank and Change of Service Air Permits by Rule (PBR) Checklist Title 30 Texas Administrative Code § 106.478

Check the most appropriate answer and include any additional information in the spaces provided. If additional space is needed, please include an extra page and reference the rule number. The permit by rule (PBR) forms, tables, checklists, and guidance documents are available from the Texas Commission on Environmental Quality (TCEQ), Air Permits Division website at: www.tceq.texas.gov/permitting/air/nav/air\_pbr.html.

This PBR (§ 106.478) requires registration for storage tanks with a capacity of 25,000 gallons or greater and located in a designated ozone non-attainment area with the commission's Office of Air in Austin before construction begins. The registration shall include a list of all tanks, calculated emissions for each compound in tons per year for each tank, and a Table 7 for each different tank design. The facility may be registered by completing Form PI-7, "Registration for Permits by Rule," or Form PI-7-CERT, "Registration and Certification for Permits by Rule." This checklist should accompany the registration form.

For additional assistance with your application, including resources to help calculate your emissions, please visit the Small Business and Local Government Assistance (SBLGA) webpage at the following link: www.TexasEnviroHelp.org

| Ques                                                                                                                                                                                                       | Questions/Description and Response                                                                                    |                                                                                                                                                                                                         |                                                      |                                             |                                                                          |                     |          |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------|---------------------------------------------|--------------------------------------------------------------------------|---------------------|----------|
| Rule                                                                                                                                                                                                       |                                                                                                                       | Applicability                                                                                                                                                                                           | В.<br>1921 -                                         |                                             |                                                                          | 大学和学生的              |          |
| (7)                                                                                                                                                                                                        |                                                                                                                       | What is the capacity of                                                                                                                                                                                 | the tank?                                            | From 6                                      | ,300,000 to 10,500,0                                                     | 00                  | _gallons |
| (1)                                                                                                                                                                                                        |                                                                                                                       | Is the tank located at least 500 feet from the nearest recreational X YES NO area, residence, or other structure not occupied or used solely by the owner of the facility or the owner of the property? |                                                      |                                             |                                                                          |                     |          |
| Indicate the tank location from the nearest recreational area, residence, or other structure not occupied or used solely by the owner of the facility or the owner of the property: Greater than 3000 feet |                                                                                                                       |                                                                                                                                                                                                         |                                                      |                                             |                                                                          |                     |          |
| (2)                                                                                                                                                                                                        | <b>.</b>                                                                                                              | Is the true vapor pressu<br>than 11.0 psia?                                                                                                                                                             | ire of the                                           | compoui                                     | nd being stored less                                                     | X YES 🗌 NO          |          |
| Indicate the true vapor pressure: 10.5 psia                                                                                                                                                                |                                                                                                                       |                                                                                                                                                                                                         |                                                      |                                             |                                                                          | psia                |          |
| (3)(A)<br>Will any storage tan<br>used to store compo<br>0.5 psia and less tha<br>floating cover or equ                                                                                                    |                                                                                                                       | Will any storage tank w<br>used to store compoun<br>0.5 psia and less than 1<br>floating cover or equiva                                                                                                | vith a capa<br>ds with a<br>1.0 psia b<br>alent cont | acity of 4<br>true vapo<br>e equipp<br>rol? | 0,000 gallons or more<br>or pressure greater that<br>ed with an internal | e XYES 🗌 NO [<br>an | ] N/A    |
| Check the type of tank and control method used:                                                                                                                                                            |                                                                                                                       |                                                                                                                                                                                                         |                                                      |                                             |                                                                          |                     |          |
| X Internal floating roof tank.                                                                                                                                                                             |                                                                                                                       |                                                                                                                                                                                                         |                                                      |                                             |                                                                          |                     |          |
| External floating roof tank using double seal technology with a primary mechanical shoe seal.                                                                                                              |                                                                                                                       |                                                                                                                                                                                                         |                                                      |                                             |                                                                          |                     |          |
|                                                                                                                                                                                                            | ] External floating roof tank using double seal technology with a primary liquid-mounted seal.                        |                                                                                                                                                                                                         |                                                      |                                             |                                                                          |                     |          |
|                                                                                                                                                                                                            | An existing open top floating roof tank having a vapor-mounted primary seal, which is undergoing a change of service. |                                                                                                                                                                                                         |                                                      |                                             |                                                                          |                     |          |

## Texas Commission on Enviromental Quality Storage Tank and Change of Service Air Permits by Rule (PBR) Checklist Title 30 Texas Administrative Code § 106.478

| Questions/I<br>Rule         | Applicability                                                                                                                                                                                                                                                     |  |  |  |  |
|-----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|
| (3)(B)                      | Does the floating roof or floating cover design of the tank X YES NO<br>incorporate sufficient flotation to conform to the requirements<br>of American Petroleum Institute (API) Code 650, Appendix C<br>or an equivalent degree of flotation?                    |  |  |  |  |
| Note: If using API Code 650 | g an equivalent degree of flotation, please describe how the method used is equivalent to<br>, Appendix C.                                                                                                                                                        |  |  |  |  |
| (4)                         | If the compounds have a true vapor pressure of 0.5 psia or less $X YES \square NO \square N/A$ at the maximum storage temperature, will each fixed or cone roof be equipped with a submerged fill pipe or use bottom loading?                                     |  |  |  |  |
| Indicate the lo             | pading method:                                                                                                                                                                                                                                                    |  |  |  |  |
|                             | ged fill pipe X bottom loading                                                                                                                                                                                                                                    |  |  |  |  |
| (5)                         | Is each fixed or cone roof tank not equipped with an internal X YES NO<br>floating roof painted chalk white, except where a dark color is<br>necessary to help the tank absorb or retain heat in order to<br>maintain the material in the tank in a liquid state? |  |  |  |  |
| (6)                         | Have the tank emissions been calculated using the methods X YES NO specified in Section 4.3 of the United States Protection Agency Publication AP-42                                                                                                              |  |  |  |  |
| (7)                         | If the capacity of the tank is 25,000 gallons or more, have you X YES NO provided Form PI-7 or Form PI-7-CERT as part of this registration request?                                                                                                               |  |  |  |  |
| Form P                      | I-7 X Form PI-7-CERT                                                                                                                                                                                                                                              |  |  |  |  |
| (8)                         | Are the chemicals or mixtures of chemicals to be stored limited X YES $\square$ NO to those shown in Table 478?                                                                                                                                                   |  |  |  |  |
| If "NO," ansu               | per the next question.                                                                                                                                                                                                                                            |  |  |  |  |
| (8)                         | Do mixtures of chemicals listed in Table 478 contain more than YES XNO<br>a total of 1.0% percent by volume of all other chemicals not<br>listed in Table 478?                                                                                                    |  |  |  |  |
| If "YES," the J             | facility does not qualify for this PBR.                                                                                                                                                                                                                           |  |  |  |  |
| Indicate the a              | ctual percentage by volume of all unlisted chemicals:                                                                                                                                                                                                             |  |  |  |  |
| Chemical Nai                | ne: Percent Composition (percent):                                                                                                                                                                                                                                |  |  |  |  |
|                             |                                                                                                                                                                                                                                                                   |  |  |  |  |
|                             |                                                                                                                                                                                                                                                                   |  |  |  |  |
|                             |                                                                                                                                                                                                                                                                   |  |  |  |  |

TCEQ 10144 (APDG 5041v7, Revised 04/15) PBR Checklist 106.478 - Storage Tank and Change of Service This form is used by facilities subject to air quality permit requirements and may be revised periodically.

## Texas Commission on Enviromental Quality Storage Tank and Change of Service Air Permits by Rule (PBR) Checklist Title 30 Texas Administrative Code § 106.478

| Questions/Description and Response                           |                                      | and the second |
|--------------------------------------------------------------|--------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Other Applicable Rules and Regulations                       |                                      |                                                                                                                  |
| Is this facility subject to 30 TAC §§ 115.112-119?           |                                      | YES X NO                                                                                                         |
| Why or Why Not: Cameron County not listed                    |                                      |                                                                                                                  |
| Is this facility subject to 30 TAC §§ 115.120-129?           |                                      | YES X NO                                                                                                         |
| Why or Why Not: Cameron County not listed                    |                                      |                                                                                                                  |
| Is this facility subject to 40 CFR Part 60, NSPS Subpart K?  | 27 <sup>-1</sup> 78-1 <sup>1-1</sup> | U YES X NO                                                                                                       |
| Why or Why Not: Construction 2017                            |                                      |                                                                                                                  |
| Is this facility subject to 40 CFR Part 60, NSPS Subpart Kb? |                                      | X YES 🗌 NO                                                                                                       |
| Why or Why Not: Construction 2017 therefore applicable       |                                      |                                                                                                                  |
| Is this facility subject to 40 CFR Part 60, NSPS Subpart NNN | 15                                   | U YES X NO                                                                                                       |
| Why or Why Not: Not a SOCMI facility                         |                                      |                                                                                                                  |
|                                                              |                                      |                                                                                                                  |

**Record Keeping:** There are no additional record keeping requirements other than the general requirements specified in 30 TAC § 106.8. The records must be made available immediately upon request to the commission or any air pollution control program having jurisdiction. If you have any question about the type of records that should be maintained, contact the Air Program in the TCEQ Regional Office for the region in which the site is located.

**Recommended Calculation Methods:** In order to demonstrate compliance with this PBR, the registrant may use the emission factors for each air contaminant from the EPA Compilation of Air Pollutant Emission Factors (AP-42), Fifth Edition, Volume I, Chapter 7: "Liquid Storage Tanks" at: www.epa.gov/ttn/chief/ap42/index.html. The registrant may also use the calculation method for storage tanks that store chemical compounds as described in the TCEQ guidance for "Storage Tanks" at: www.tceq.texas.gov/permitting/air/guidance/newsourcereview/tanks/nsr\_fac\_tanks.html.