

**ENGINEERING EVALUATION
CONOCOPHILLIPS SAN FRANCISCO REFINERY; PLANT 16
APPLICATION 10332**

1.0 BACKGROUND

ConocoPhillips has applied to increase the permitted throughput at the S-305 Naphtha Hydrotreater (Unit 230). S-305 receives a medium naphtha stream from the Unit 267 crude unit, and produces diesel and gasoline blending stocks (see block diagram in application). S-305 includes two major process vessels: a naphtha prefractionator and a naphtha hydrotreater. The prefractionator splits the naphtha feed into gasoline and diesel blending stocks. The hydrotreater removes sulfur and nitrogen impurities from the gasoline blending stock (naphtha) using hydrogen in a catalyzed environment to convert hydrogen to H₂S and ammonia compounds.

S-305 throughput is currently limited to 9.21E6 bbl/yr in Condition 20989, Part A, and ConocoPhillips has proposed a new limit of 10.22E6 bbl/yr. Also, Table II-A of the facility Major Facility Permit indicates that this unit has a capacity of 25,300 bbl/day. ConocoPhillips has proposed to increase this capacity to 28,000 bbl/day, such that the annual limit corresponds to the daily limit multiplied by 365 day/yr of operation. [Note: A throughput increase to 9.23E6 bbl/yr is currently proposed as a correction in Revision 1 of the facility Major Facility Permit. This proposed increase in Revision 1 would be rendered moot by the larger increase proposed in this application.]

The proposed increase will be realized by optimization of process relief valve settings (not atmospheric relief valves), including replacement of some valves within S-305. No other physical changes will be made. Operational changes include increases in feed rate and production rate.

1.1 Emission Increase

Upstream Sources, Heaters and Tanks

The application includes a block diagram of the major refinery process vessels, including the two S-305 process vessels, which are in series. The primary feed to these vessels is from the S-350 crude unit and the S-300 crude/coker unit. Both of these units have existing annual throughput limits that will remain in effect (Condition 383, Part 2 for S-350; Condition 476, Part B.1 and Condition 21092, Part 1 for S-300). Heaters related to these process units have annual limits on fuel firing in Condition 20989, Part A.

Secondary feeds to S-305 are "Santa Maria Pressure Distillate" (SMPD) from tank storage (imported to the refinery via pipeline) and naphtha from S-307. S-307 has an existing annual throughput limit in Condition 20989, Part A, which will remain in effect. Heaters related to S-307 have annual fuel firing limits in Condition 1694, Part F.1. There is currently no throughput limit for SMPD since the pipeline is not a permitted source. However, ConocoPhillips has submitted Application 5814 to reconfigure the

process flow for SMPD such that it no longer flows directly to S-305. Instead, it will be introduced into S-300 as a diluent for San Joaquin Valley crude. As such, it will be subject to the throughput limits at S-300. The throughput limits for S-300 in Application 5814 already include an allowance for SMPD.

All related storage tanks (S-184, S-186, S-444) listed in Table 3 of the application have annual throughput limits (Conditions 20989, 20989 and 12129, respectively).

Thus, upstream sources and storage tanks will continue to be subject to specific annual throughput limits if S-305 is granted a higher throughput limit. These upstream sources and storage tanks will not be considered to be modified and no emission increase will be quantified for these sources.

Downstream Sources and Heaters

S-305 products flow to S-304 (from the S-305 prefractionator) and to S-306 and S-370 (from the S-305 hydrotreater). Each of these sources has an annual throughput limit in Condition 20989, Part A. Heaters related to S-304 and S-306 have annual fuel firing limits in Condition 1694, Part F.2. Heaters related to S-370 have annual fuel firing limits in Condition 20989, Part A.

Thus, downstream sources will continue to be subject to specific annual throughput limits if S-305 is granted a higher throughput limit. These upstream sources will not be considered to be modified and no emission increase will be quantified for these sources.

S-305 Fugitive Emissions

Emissions at process vessels like S-305 are generally limited to emissions of organics from related fugitive emission sources (since heaters are permitted as separate sources). ConocoPhillips has indicated that although some internal process relief valves may be replaced, that there will be no net increase in the number of fugitive components at S-305. Thus, no emission increase will be quantified at S-305 for fugitive emissions.

2.0 CHANGES TO MAJOR FACILITY PERMIT

As discussed in Section 1.0, the following changes are required to Permit Conditions and the facility Major Facility Permit:

2.1 Amend Table II-A of the Major Facility Permit for S-305:

305	U230 Prefractionator/Naphtha Hydrotreater	NA	NA	28,000 ^{25,300} bbl/day
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2.2 Amend Condition 20989, Part A for S-305 for S-305:

305	Table II-A	10.229 ²¹ E 6 bbl
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3.0 DEMONSTRATION OF MINOR REVISION

This evaluation will demonstrate that the proposed changes to the facility Major Facility Permit constitute a minor revision of that permit. The definition of a minor revision to a major facility permit appears in Regulation 2, Rule 6:

- 2-6-215 Minor Permit Revision:** Any revision to a federally enforceable condition on a major facility review permit which:
- 215.1 is not a significant permit revision; and
 - 215.2 is not an administrative permit amendment.
 - 215.3 Deleted

Thus, a minor revision is any revision that is neither significant nor administrative. These definitions follow:

- 2-6-201 Administrative Permit Amendment:** A non-substantive amendment to a major facility review permit. The following amendments are administrative amendments: changes in recordkeeping format that are not relaxations of applicable requirements, the correction of typographical errors, changes in permit format that are not alterations of applicable requirements, changes in source descriptions that are not alterations of applicable requirements, changes in the descriptions of applicable requirements that add detail but do not affect substantive requirements, deletion of requirements containing sunset dates that have passed, the identification of administrative changes at a facility (such as a replacement of the facility's responsible official or a change in ownership or operational control of the facility which involves no physical or operational changes to the facility), the deletion of sources, the approval of a District rule into the SIP, the imposition of more frequent emission monitoring requirements, and changes to applicable requirements and related monitoring that are not federally enforceable.

Because the proposed changes will amend federally-enforceable throughput limits, they are not administrative.

- 2-6-226 Significant Permit Revision:** Any revision to a federally enforceable condition contained in a major facility review permit that can be defined as follows:
- 226.1 The incorporation of a change considered a major modification under 40 CFR Parts 51 (NSR) or 52 (PSD);
 - 226.2 The incorporation of a change considered a modification under 40 CFR Parts 60 (NSPS), 61 (NESHAPS), or Section 112 of the Clean Air Act (HAP);
 - 226.3 Any significant change or relaxation of any applicable monitoring, reporting or recordkeeping condition;
 - 226.4 The establishment of or change to a permit term or condition allowing a facility to avoid an applicable requirement, including:
 - 4.1 a federally enforceable emission limit assumed in order to avoid classification as a modification under any provision of Title I of the federal Clean Air Act, or
 - 4.2 an alternative hazardous air pollutant emission limit pursuant to Section 112(i)(5) of the Clean Air Act;
 - 226.5 The establishment of or change to a case-by-case determination of any emission limit or other standard;
 - 226.6 The establishment of or change to a facility-specific determination for ambient impacts, visibility analysis, or increment analysis on portable sources; or
 - 226.7 The incorporation of any requirement promulgated by the U. S. EPA under the authority of the Clean Air Act provided that three or more years remain on the permit term.

Each of these items is addressed here:

226.1 Because no emission increase is proposed, the proposed amendments do not constitute a major modification for NSR or PSD.

226.2 The facility Major Facility Permit indicates that S-305 is not subject to any NSPS, NESHAP or MACT standard, although the refinery is generally subject to NESHAP Subpart CC. Thus, S-305 is not modified in accordance with the NSPS, NESHAP or Section 112 standards.

226.3 The proposed amendments do not include any relaxations of monitoring, reporting or recordkeeping requirements.

226.4 All emission limits related to S-305 (fugitive component leak rate limits, pollutant-specific emission rate limits for heaters) will be unchanged. As discussed in Section 1.1, the proposed throughput increase will not result in a permitted emission increase. Thus, the proposed amendments will not be considered to allow avoidance of an applicable requirement.

226.5 The proposed amendments do not include a change or establishment of a case-by-case determination of an emission limit or other standard, such as a fugitive component emission rate limit or pollutant-specific emission rate limits for heaters. All existing emission limits will remain in effect.

226.6 As discussed in Section 4.0, no ambient impacts or visibility impacts will result from the proposed amendments.

226.7 No new federal requirements are incorporated into the Major Facility Permit as a result of the proposed amendments.

Therefore, the proposed revision is not a significant revision of the Major Facility Permit and may be considered a minor permit revision.

4.0 CEQA and Other Regulations

This application is categorically exempt from CEQA in accordance with Regulation 2-1-312.11 because the proposed permit condition amendments will not result in an emission increase and because no significant environmental impacts will result. A completed Appendix H form has been submitted by the applicant and indicates that no significant impacts will result from this project.

As discussed in Section 3.0, S-305 will remain subject to the same District and federal requirements after implementation of the proposed amendments.

5.0 RECOMMENDATION

Grant Authority to Construct to ConocoPhillips for:

S-305 Unit 230 Prefractionator / Naphtha Hydrotreater:
optimize internal valve settings, replace existing valves
to increase production capacity to 28,000 bbl/day

Submit a minor revision to U.S. EPA to the Major Facility Permit
for ConocoPhillips, including the amendments to Permit Condition
20989 and Table II-A of the facility Major Facility Permit.

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