

Water Supply

This section describes the water supply, uses, quality, and the wastewater discharges for the South Bay Replacement Project (SBRP).

7.1 Water Supply and Use

LSP South Bay, LLC (Applicant) has chosen to incorporate air-cooled condenser technology into the Project design, significantly reducing the water requirements for the SBRP. The water supply for the Project will be provided by the Sweetwater Authority. The water supply will exit the Project's eastern property line to interconnect with the Sweetwater Authority's existing pipeline located along Bay Boulevard. Potable water will be provided through an approximately 6-inch-diameter pipeline from an existing Sweetwater Authority water main along Bay Boulevard, which is approximately 430 feet east of the site.

The Project is expected to use a maximum daily average of approximately 80 gallons per minute (gpm). This corresponds to a maximum annual usage of 129 acre-feet per year. Water uses are potable/sanitary (e.g. sinks, toilets, showers, drinking fountains, eye wash/safety showers), steam cycle makeup treatment, and non-potable plant process usage (e.g. pump seals, washdowns). The daily maximum water usage rate includes 1 gpm for potable/sanitary uses, 54 gpm for steam cycle makeup treatment, and 25 gpm for plant and equipment drains.

Water for equipment washdown and dust control during the demolition and construction phases also will be supplied by the Sweetwater Authority. In their Will-Serve letter, Sweetwater Authority stated that up to 1,200 gpm of water is available for limited duration (see Appendix 8.14B for the "Will-Serve" letter from the Sweetwater Authority). Table 7.1-1 summarizes the average water usage. There will short periods requiring peak water usage (i.e. SBRP start-up activities), but these activities will be scheduled so as not to exceed the maximum water available from Sweetwater Authority. Hydrostatic testing of pipelines is expected to require approximately 14 gpm for short periods.

The closed loop auxiliary cooling water system will use treated water. The water in the closed loop system will be periodically dosed with a scale inhibitor. Makeup to the closed loop cooling system will be from the plant water system. Additional information about water resources is provided in Section 8.14 – Water Resources.

TABLE 7.1-1Average Water Usage from the Sweetwater Authority in Gallons per Minute (gpm)^a

	LNG Demo/Site Prep Phase	Construction Phase	SBPP Demo Phase	New Substation Phase
LNG Demo/SBRP Site Prep	433	—	—	—
SBRP Construction	—	217	—	—
SBRP Operation	—	—	50 ^b	50 ^b
SBPP Demo	—	—	190	—
SDG&E Substation Construction				88
TOTAL	433	217	240	138

^a Estimations assume a 10-hour work day^b Baseload generation (without duct firing)

7.2 Water Quality

Table 7.2-1 summarizes the expected supply water quality for the SBRP. Water quality is also discussed in Section 8.14, Water Resources.

TABLE 7.2-1

Expected Potable Water Quality

Constituent	Design City Water
Calcium	62 mg/L
Magnesium	30 mg/L
Sodium	93 mg/L
Potassium	5 mg/L
m-Alkalinity, as CaCO ₃	137 mg/L
Chloride	190 mg/L
Sulfate	168 mg/L
Silica	10 mg/L
TSS	10 mg/L
TDS	587 mg/L
pH, S.U.	7.8

Source: Sweetwater Authority Water Quality Report (June 2000 thru May 2004).

mg/L = milligram per liter

7.3 Water Treatment

Upon entering the SBRP plant, the supply water will be distributed to the potable and non-potable usage points. Potable uses will be plumbed directly to the usage points and process water will be directed to the usage points or to one of two 300,000-gallon raw/fire water storage tanks. From these storage tanks, the water will be distributed to the fire water system.

Steam cycle makeup water will be provided from the steam cycle makeup treatment system. The steam cycle makeup treatment system will produce high quality demineralized makeup water from the water supply and from recycle of the HRSG blowdown water. The system will include filtration, reverse osmosis and ion exchange. Demineralized water produced will be directed to a demineralized water storage tank for storage and use in the 150,000-gallon demineralized water storage tank.

7.4 Wastewater Collection and Disposal

An approximately 6-inch wastewater discharge line will exit the Project's eastern property line to interconnect to the City of Chula Vista sewer system located along Bay Boulevard. The City of Chula Vista has provide a "will serve" letter to the Applicant for the connection to the sewer system (see Appendix 8.14C). To minimize water use and discharge, SBRP will be designed to recover and reuse water discharged from other plant sources for water supply to the steam cycle makeup water treatment system. A wastewater system will be developed for the site to convey sanitary wastes and to collect process waste. It is anticipated that the SBRP will be permitted to discharge a maximum of 100,000 gallons per day. To comply with limitations on the maximum permitted sewer discharge rate, wastewater flows will be directed by gravity to a sump or sumps in the power block complex area where they will be collected and pumped to a 300,000-gallon wastewater storage tank. The wastewater storage tank will serve as a surge tank wherein peak system flow rates which are greater than the limiting sewer discharge rate can be accumulated and allowed to drain to the sewer during periods when the system flow rate is below the permitted maximum. Sanitary wastes will bypass the wastewater storage tank and be directly discharged to the sewer. Total maximum expected wastewater discharge is expected to be 83,500 gallons per day.

Stormwater will be discharged via a stormwater detention basin to an existing stormwater drainage system along the western edge of the Project site.

7.4.1 Sanitary Wastewater

Sanitary wastewater from sinks, toilets, showers and other sanitary facilities will be metered at a bypass to the wastewater storage tank and be discharged to the existing sewer along Bay Boulevard. The sanitary wastewater flow will average about 1.0 gpm (see Section 8.14, Water Resources).

7.4.2 Plant Process Water Drainage

Miscellaneous general plant drainage will consist of washdown, sample drainage, equipment leakage, and drainage from facility containment areas. Water from these areas

will be collected in systems of floor drains, sumps, and pipes within the facility and discharged to an oil/water separator. The oil-free discharge water will be discharged to the Chula Vista sewer system. A maximum daily average flow rate of 25 gpm is projected for these plant service water uses

7.4.3 Steam Cycle Blowdown

Steam cycle blowdown will be collected and reused as a portion of the feed to the cycle makeup treatment system. The blowdown will be cooled prior to cycle makeup treatment system.

7.4.4 Cycle Makeup Treatment

Wastewater will be discharged from the cycle makeup treatment system at a maximum daily average flow rate of 32 gpm, to the Chula Vista sewer system.

Plant drainage and storm water discharge permitting is addressed further in Section 8.14 – Water Resources.