

NEVADA DIVISION OF ENVIRONMENTAL PROTECTION
FACT SHEET
(Pursuant to NAC 445A.236)

Permittee Name: United States Air Force
4349 Duffer Dr., Ste. 1601
Nellis Air Force Base (AFB), NV 89191-7007
(Nellis AFB located in Clark County)

Permit Number: # NEV94006

Location: Site ST-27 / SS-28 Groundwater Treatment Facility:
4743 Range Rd., Nellis AFB, NV 89115
Latitude: 36° 14' 47" N, Longitude: 115° 2' 47" W
Township 20S, Range 62E, NE¼NE¼ Section 4

Sunrise Vista Golf Club – Hole #3 Falcon Course Outfall:
2841 Kinley Dr., Nellis AFB 89191
Latitude: 36° 13' 7" N, Longitude: 115° 2' 40" W
Township 20S, Range 62E, SE¼SE¼ Section 9

General: Discharge permit # NEV94006, in effect since 8/8/94 and issued by the Bureau of Water Pollution Control (BWPC), is being publicly noticed for a five-year permit renewal. The groundwater treatment facility located at Site ST-27 receives hydrocarbon contaminated groundwater from the Site ST-27 extraction well network and the Site SS-28 plume containment system. The main hydrocarbon contaminant, JP-8 (kerosene) jet fuel, was released from leaking underground storage tanks formerly located at Site #27. These tanks were removed in 1989. Other contaminants of concern in the shallow groundwater aquifer at Nellis AFB include MTBE (from transfer of conventional gasoline fuel in the pipeline delivery system) and TCE (a common metal degreasing liquid used during engine repair and overhaul).

The ST-27 groundwater treatment facility can process peak flow periods up to 200 GPM from a 30+ well extraction network and the plume containment system. The principle treatment operations include oil/water separation (free product removal), two-stage iron and manganese removal system (to prevent fouling of the air stripper tower packing), packed-bed air stripper tower, bag filters (sediment removal), and parallel, liquid-phase GAC units. The GAC units were added in 2007 (Canisters #1-2) and 2009 (Canisters #3-4) to address DRO hydrocarbons (Diesel Range Organics) not amenable to complete removal via air stripping (during peak flow periods, a portion of the flow may be bypassed from the stripper tower and treated primarily by GAC). The current site contractor is URS Corp., which maintains an office trailer at this site.

Bureau of Corrective Actions Sites: There are three other groundwater remediation sites regulated by the NDEP Bureau of Corrective Actions (BCA), which are located within a one-mile radius of Sites ST-27 and SS-28: Rebel Oil Fuel Terminal (diesel), CA-NV Pipeline Co. aka Texaco Oil Co. (gasoline), and the Las Vegas Fuel Terminal (gasoline). Information from BCA indicates that eventual completion of remediation activity at ST-27 / SS-28 may result in shutdown of the treatment facility within the next year or so. Maintenance of an active discharge permit from BWPC is required for any periods of treated effluent being discharged to the golf course. At this

course. At this time, Nellis AFB has not requested termination of this permit from BWPC.

Wellhead Protection Area: The treated effluent from the ST-27 facility is discharged to the Sunrise Vista Golf Club (military use only, 36-hole golf course) located on Nellis AFB two miles south of ST-27. The effluent is discharged into a lined irrigation pond located on Hole # 3 of the 9-hole Falcon Golf Course. The discharge pipe, ditch culvert and pond are all posted “No Drinking” to denote non-potable water. The irrigation pond supplies water for turf (spray) and landscape (drip) watering. Hole #3 is located within the 3,000 feet, Drinking Water Protection Area #3 (DWPA #3) of two supply wells (#5-6) owned and operated by Nellis AFB. These supply wells are presently used only for course irrigation. Depth to groundwater at this course varies from 70 to 90 feet below ground surface with a general SE (southeast) gradient towards the Las Vegas Wash. At the proposed discharge limits, no adverse impact to the shallow aquifer is expected from irrigation with the treated effluent. The shallow aquifer system in the Las Vegas Valley is not presently recognized as a potable aquifer for background contaminant species including elevated levels of TDS (salts) and hardness (calcium and magnesium).

Flow: As remediation activities near completion, flow now averages only 4 GPM (6,000 GPD). Three years previous at the last BWPC site inspection, the discharge rate averaged a higher 14 GPM (20,000 GPD). For this renewal, the applicant requests a flow limit of 34.72 GPM (50,000 GPD), which is down from the current flow limit of 150 GPM (216,000 GPD). URS data indicates the peak (instantaneous) treatment capacity rating is 200 GPM (288,000 GPD).

Rationale for Proposed Limits:

BTEX: BTEX denotes the petroleum-derived compounds of benzene, ethylbenzene, toluene and xylenes common to petroleum-derived fuels. For BTEX, the Division adopts the Federal drinking water limits expressed in units of $\mu\text{g/l}$ (micrograms per liter) with 1.0 $\mu\text{g/l}$ equivalent to one part per billion. The specific BTEX limits in this discharge permit are: benzene (5 $\mu\text{g/l}$), ethylbenzene (100 $\mu\text{g/l}$), toluene (100 $\mu\text{g/l}$) and xylenes (200 $\mu\text{g/l}$).

MTBE: Methyl Tertiary Butyl Ether (MTBE) is a gasoline-additive, which is being phased out throughout the U.S. due to groundwater contamination concern from leaking Underground Storage Tank (UST) and fuel dispensing pipelines. For this discharge site, the Division applies the interim MTBE action level of 20 $\mu\text{g/l}$ for a site located in close proximity to receptors and/or a sensitive environment. This limit also takes into account discharge of a non-odorous effluent into the irrigation pond.

TPH: TPH is not one individual contaminant (compound) but rather a range of Gas (GRO), Diesel (DRO) and Oil-Range (ORO) Petroleum Hydrocarbons (e.g., $\text{C}_6 - \text{C}_{40}$) found in petroleum. There is no State or Federal drinking water limit for TPH. For groundwater remediation of a hydrocarbon release, the Division’s discharge standard is 1.0 mg/l TPH, which is applied in this permit. At a TPH level of 1.0 mg/l, regulatory history indicates neither odor nor aesthetic (e.g., sheen) concern with effluent treated to this level.

Chlorinated Solvents: The common degreasing solvents used historically at military installations include Trichloroethane (TCA), Trichloroethene (TCE), and Tetrachloroethene (PCE). To address the trace presence of chlorinated solvent contaminants, the Division adopts the drinking water standards of: TCA – 0.2 mg/l, TCE – 5 $\mu\text{g/l}$ and PCE – 5 $\mu\text{g/l}$.

pH: This parameter denotes the measure of acidity or alkalinity in water. For treated effluent, the Division applies the discharge standard of 6.0 to 9.0 Standard Units (SU), which is considered an acceptable pH level in the drinking water range. For reference, the pH of distilled water is 7.0 SU.

DMR Analysis: Since the last BWPC inspection in Feb. 2007, BTEX and chlorinated solvents were discharged at their respective Non-Detect (ND) levels. Five monthly TPH exceedances were reported, and the last occurrence was reported in Feb. 2009 (8.4 mg/l). The cause of the elevated TPH levels was due to partial bypass of the GAC media during a high flow period, which was addressed in Feb. 2009 with completion of the parallel (second) GAC train. pH monitoring is in the slightly alkaline range (8 to 8.5 SU) due to the background groundwater hardness. No data on MTBE effluent was required in the last permit, but is requested for this renewal upon discussion with BCA (MTBE levels in the groundwater are generally indicated to be < 20 µg/l at Nellis AFB and readily amenable to treatment with GAC adsorption). MSDS data for JP-8 jet fuel indicates the primary contaminants at ST-27 would include kerosene (99.9%) and naphthalene (< 1%) constituents. The iron and manganese removal system is not meant to meet an applicable metal discharge standard but to prevent fouling (scaling) of the stripping tower packing.

O&M Manual: An update to the facility's pump and treat O&M Manual, last submitted to BWPC in 1995 (documentation dated Dec. 1994), is requested to incorporate all system changes including the GAC canisters addition.

Proposed Effluent Limitations and Special Conditions:

TABLE 1: EFFLUENT LIMITATIONS

PARAMETERS	DISCHARGE LIMITATIONS		MONITORING REQUIREMENTS		
	30-Day Average	Daily Maximum	Sample Location	Measurement Frequency	Sample Type
Flow Rate (Gallons per Day)	50,000 GPD (34.72 gals/min)		EFF	Continuous	Meter/Totalizer
Benzene (µg/L)	5		EFF	Monthly	Discrete
Toluene (µg/L)	100		EFF	Monthly	Discrete
Ethylbenzene (µg/L)	100		EFF	Monthly	Discrete
Total Xylenes (µg/L)	200		EFF	Monthly	Discrete
Total Petroleum Hydrocarbons (mg/L) (Full-range Purge & Extract – 8015B)	1		EFF	Monthly	Discrete
Methyl tertiary butyl ether (MTBE, µg/L)	20		EFF	Monthly	Discrete
Trichloroethane (TCA, mg/L)	0.2		EFF	Monthly	Discrete
Trichloroethene (TCE, µg/L)	5		EFF	Monthly	Discrete
Tetrachloroethene (PCE, µg/L)	5		EFF	Monthly	Discrete
pH, Std. Units (SU)	Within 6.0 to 9.0		EFF	Monthly	Discrete

Note: All samples are to be taken at the discharge side (effluent or EFF) of the carbon (GAC) vessels.

Schedule of Compliance (SOC): (all compliance deliverables shall be addressed to the attention of the Compliance Coordinator, Bureau of Water Pollution Control):

- The Permittee shall achieve compliance with the effluent limitations upon issuance of the permit.
- Within ninety (90) days of permit issuance, the Permittee shall provide an updated copy of an Operations & Maintenance (O&M) Manual, prepared in accordance with the Division's WTS-2 guidance document: *Minimum Information Required for an Operation and Maintenance Manual for a Wastewater Treatment Plant*. The updated O&M Manual documentation shall be prepared under the supervision of a Nevada Certified Environmental Manager (C.E.M.) or a Nevada Professional Engineer (P.E.).

Procedures for Public Comment: The Notice of the Division's intent to issue this discharge permit, subject to the conditions contained within the permit is being sent to the **Las Vegas Review-Journal** newspaper for publication. The notice is also being electronically mailed to all interested persons requesting listing on our public notification mailing list. Anyone wishing to comment on the proposed permit can do so in writing within a period of thirty (30) calendar days of the date of publication of the public notice in the newspaper. The comment period can be extended at the discretion of the Administrator. The deadline date and time by which all comments are to be submitted (via postmarked mail or time-stamped faxes, e-mails, or hand-delivered items) to the

Division is **Monday, April 12, 2010, by 5:00 P.M. PST.**

A public hearing on the proposed determination can be requested by the applicant, any affected State, any affected interstate agency, the Regional Administrator or any interested agency, person or group of persons.

The request must be filed within the comment period and must indicate the interest of the person filing the request and the reasons why a hearing is warranted.

Any public hearing determined by the Administrator to be held must be conducted in the geographical area of the proposed discharge or any other area the Administrator determines to be appropriate. All public hearings must be conducted in accordance with NAC 445A.238.

The final determination of the Administrator may be appealed to the State Environmental Commission pursuant to NRS 445A.605.

Proposed Determination: The Division has made the tentative determination to issue the proposed water pollution control discharge permit for a period of five (5) years.

Prepared by: Mark A. Kaminski, P.E., Staff Engineer III
Bureau of Water Pollution Control

Date: March 8, 2010