

## INFORMATION SHEET

ORDER NO. R5-2014-XXXX

GLENN COUNTY

GLENN COUNTY CLASS III MUNICIPAL SOLID WASTE LANDFILL

GLENN COUNTY

Glenn County (Discharger) owns and operates the Glenn County Class III Municipal Solid Waste Landfill (Glenn County Landfill), located approximately five miles west of the town of Artois, Glenn County. Glenn County first leased the landfill property in 1971 and began land disposal operations in 1972.

Glenn County Landfill is located at the western edge of the Sacramento Valley where the terrain changes from relatively flat ground to the east to hilly ground to the west. The landfill is situated on a drainage divide between shallow valleys north and south of the site. Both valleys drain toward the east. The southern valley contains White Cabin Creek and the northern valley contains the headwaters of Wilson Creek. Both creeks flow under the Tehama-Colusa Canal east of the landfill and are tributary to Willow Creek a mile north of the town of Willows. Land immediately surrounding the landfill is range land used for dry-land grazing of livestock. There are no irrigated lands adjoining the landfill property. The nearest permanent residence is approximately 5,000 feet northeast of the facility's eastern boundary. A seasonal residence used by sheepherders is located approximately 1,800 feet west of the facility's western boundary.

Glenn County Landfill is located in the northwestern part of the Colusa Sub-basin, a sub-basin of the Sacramento Valley groundwater basin. In the area near the landfill, the Sacramento Valley groundwater basin is filled with Tertiary-age sediments that are thickest in the central part of the valley and thin to the east and west. The Tehama Formation underlies the landfill area and parts of the Stony Creek alluvial fan, which runs from southern Tehama County to the town of Willows. The Tehama Formation consists of interbedded clay, silt, sand, and gravel that are thought to be alluvial in origin. The Tehama Formation is one of the main water-bearing formations in the Sacramento Valley groundwater basin. In general, the Tehama Formation is moderately to highly permeable with moderate to high (100 to over 1,000 gallons per minute) groundwater yields.

Originally, the Glenn County Landfill encompassed 192.62 acres of land that were leased from the Coleman Foley Marital Trust. The lack of ownership created permitting difficulties and the county wanted to expand the facility boundary to provide a buffer area around the landfill. The county elected to obtain the property and expansion area via eminent domain. In August 2009, Glenn County was awarded pre-judgment possession of the property through the eminent domain action. The original landfill site and the added 163.77 acres of expansion area increased the total landfill property to 356.39 acres.

Glenn County Landfill consists of one unlined waste management unit (Unit) referred to as Area A covering approximately 76.3 acres, Expansion Area B located in the northeastern part of the property which is used for obtaining borrow soil, a perimeter site access road, an equipment shop located at the west end of the facility, and a scale house and recyclable material public drop off area at the eastern part of the property. At the west end of the facility, the Unit was split by an internal access road leading to the equipment shop. Wastes are not buried beneath the road or equipment shop. In 2006, the Discharger began placing baled waste tires along the internal road. The baled waste tires are stacked on top of each other until a sufficient elevation is reached that corresponds with proposed final cover contours. Waste tires are considered inert, so this was not a lateral expansion of the Unit.

Glenn County anticipates accepting wastes for disposal through September 2016, and then completing a phased final closure of the landfill by November 2018. While operating, the landfill accepts municipal solid waste consisting primarily of municipal and industrial refuse, construction and demolition wastes, green waste, fiberglass, and baled waste tires. A temporary transfer station and inert disposal cell will be constructed prior to final closure of the landfill. A permanent transfer station and a second inert disposal cell may be constructed and operated in the future, depending on local needs.

The current groundwater monitoring network for the landfill consists of 11 wells (M-4, M-5A, M-5B, M-6, M-7A, M-7B, M-8, M-9, M-10, M-11, and M-12), although three of these wells have been dry since installation (M-5A, M-9 and M-10). Wells M-7A and M-7B are nested in the same boring and monitor different higher-permeability intervals. Wells M-4, M-6, M-11 and M-12 are installed into the deepest laterally continuous aquifer penetrated beneath the site at approximately 90 to 100 feet MSL (Zone D). A suction lysimeter (SL-1) is located along the northwestern boundary of the Unit. Total depth of SL-1 is 26.5 feet bgs.

Groundwater monitoring wells at Glenn County Landfill have been completed in at least four different sand/gravel higher-permeability intervals. To better understand the groundwater monitoring network and the water-bearing zones the wells penetrate, the sand/gravel higher-permeability intervals are referenced as Zone A (shallowest zone located between 140 and 200 feet MSL), Zone B (located between 120 and 140 feet MSL), Zone C (located between 100 and 120 feet MSL), and Zone D (deepest zone penetrated located between 90 and 100 MSL). Zone D is the only higher-permeability interval being monitored by at least three wells. The other zones appear laterally discontinuous and are monitored by less than three wells.

Groundwater quality in the vicinity of former well M-5 has been impacted from elevated inorganic constituent concentrations and consistent low-concentration volatile organic compounds (VOCs). In July 2010, the Discharger inspected the integrity of well M-5 using down-hole video and discovered that the PVC casing was damaged at several joints beginning at 28 feet below ground surface (bgs) allowing leachate to enter the well. The well casing acted as a direct conduit for leachate migration to groundwater causing water quality impacts. Well M-5 was destroyed in December 2010 and replaced with two new wells, M-5A and M-5B.

Trilinear diagrams and Stiff patterns for former well M-5, wells M-5B and M-7A, and leachate are similar, although the leachate pattern is about five times larger than well patterns. Some inorganic parameters in former well M-5 had concentrations approaching the concentrations found in pure leachate because the damaged well casing allowed leachate to directly contact groundwater. Water quality in well M-7A shows a more “muted leachate signature” possibly from undergoing chemical changes during downward migration of leachate through subsurface soils.

The uppermost continuously saturated zone beneath the landfill as represented by wells M-4, M-6, M-11, and M-12 does not show impacts from leachate migration. However, isolated shallower higher-permeability intervals have shown groundwater impacts, as represented by wells M-5B, M-7A, and former well M-5. In November 2011, the Discharger submitted a report titled *Hydrogeological Evaluation and Site Review for Glenn County Landfill*. This report concluded that groundwater pollution at the Glenn County Landfill appears to be caused mainly by leachate migration, although landfill gas has the potential to impart VOCs to groundwater. This report recommended constructing a final cover system over the Unit and installing a passive landfill gas collection and venting system below the foundation layer of the final cover as the preferred corrective action for the site.

The Discharger submitted a January 2013 *Final Closure and Post-Closure Maintenance Plan* (FCPCMP) as part of the corrective action program. The FCPCMP proposes an alternative final cover system consisting of, in ascending order, a two-foot thick foundation layer, 40-mil HDPE or LLDPE geomembrane, a geocomposite drainage layer for slopes steeper than 19.4%, an 8-oz geotextile, and a 1.5 foot thick vegetative layer. A passive gas collection and venting system consisting of horizontal collection pipes vented to the atmosphere at risers installed on the ends of each row will be installed beneath the foundation layer. The Discharger’s landfill staff will construct the foundation layer in phases beginning during the 2014 construction season in an effort to reduce final closure costs.

The Waste Discharge Requirements (WDRs) for Glenn County Landfill are being revised to implement a corrective action program that consists of constructing a final cover system over the Unit and installing a passive gas collection and venting system beneath the foundation layer of the final cover system. The revised WDRs also require installation of a new groundwater monitoring well in the deeper laterally continuous aquifer at the hydraulically downgradient edge of the Unit, submittal of an updated Water Quality Protection Standard report, submittal of a non-water release corrective action cost estimate and demonstration of adequate financial assurances in the amount of the water release corrective action estimate or the non-water release corrective action cost estimate, whichever is greater, and completion of final closure construction by 15 November 2018.