



October 24, 2025

Bryan Davey, Director
Sierra County Department of Public Works
P.O. Box 98
Downieville, California 95936

Re: Loyalton Landfill Groundwater Conditions and Monitoring Concerns

This letter summarizes concerns as to the potential impacts groundwater recharge in the Smithneck Creek area may have on groundwater conditions beneath the Loyalton Landfill and the landfill's monitoring requirements.

Groundwaters exist beneath the landfill at depths ranging from 30 feet to 50 feet as measured from below the base of waste disposal. These elevations have remained relatively consistent over the past thirty-five years. The landfill's groundwater monitoring network presently consisting of nine wells at the site (MW-2, MW-3, MW-5, MW-6, MW-7, MW-8, MW-9, MW-10, and MY Well). These wells are monitored twice a year to determine groundwater quality, depth to water, and direction of flow. Based on these measurements, groundwaters flow westward and northwestward beneath the site towards Sierra Valley at gradients ranging from 0.5% to 1.4% with minor variations. Cross-sections of the landfill and recent groundwater elevations are shown in Figures 3, 4, and 5.

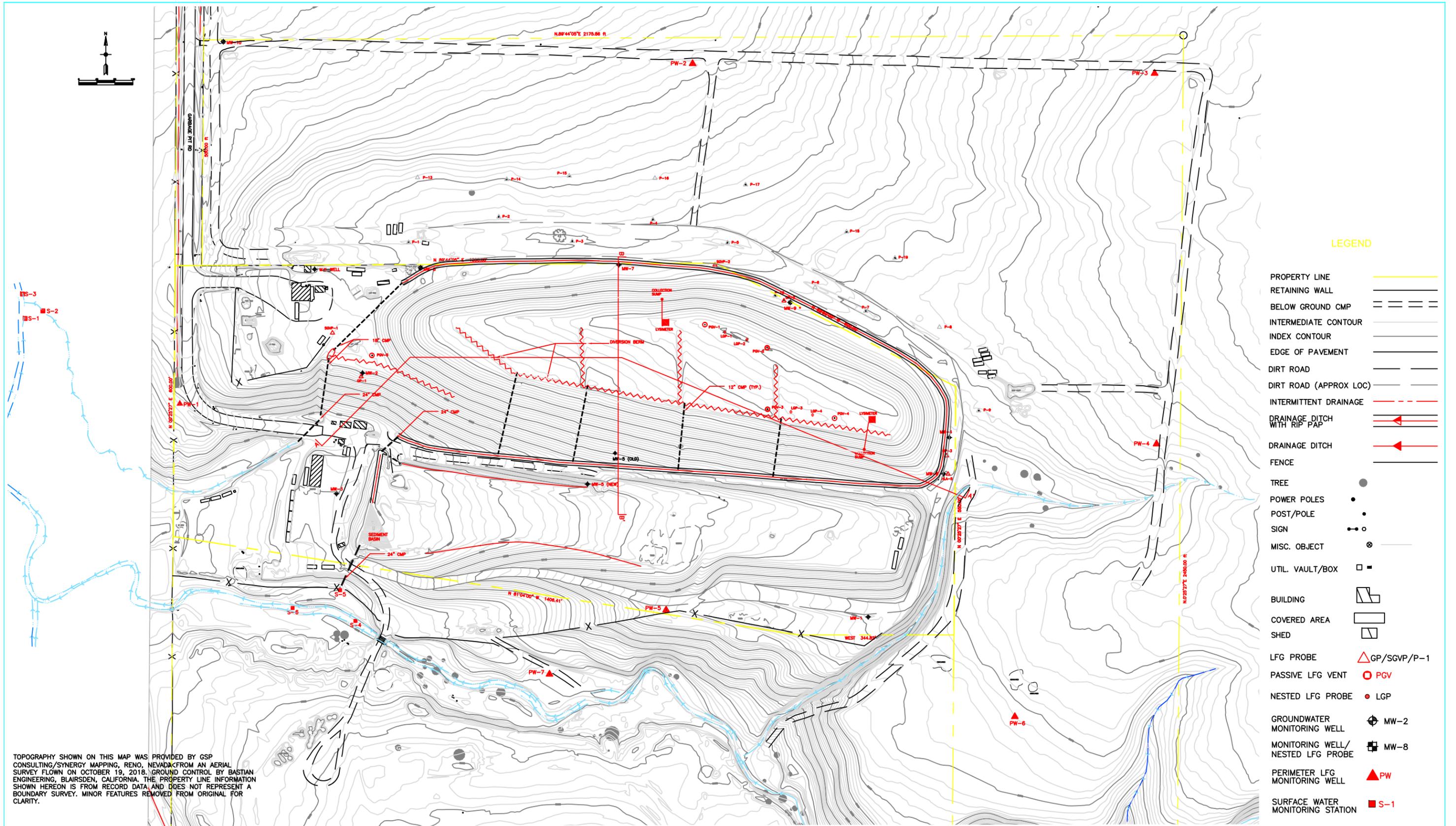
The monitoring network has six wells located in the down-gradient direction (MW-2, MW-7, MW-8, MW-9, MW-10, and MY Well) from which the landfill's impacts to groundwater quality are assessed. For example, monitoring wells MW-7, MW-8, and MW-9 are located on the immediate northern boundary of waste disposal to characterize water quality impacts at the periphery. These wells show elevated concentrations of a number of constituents. Monitoring well MW-10 is located 500 feet down-gradient of the landfill to bracket the extent of these water quality impacts. i.e., there are no appreciable impacts to water quality at this point.

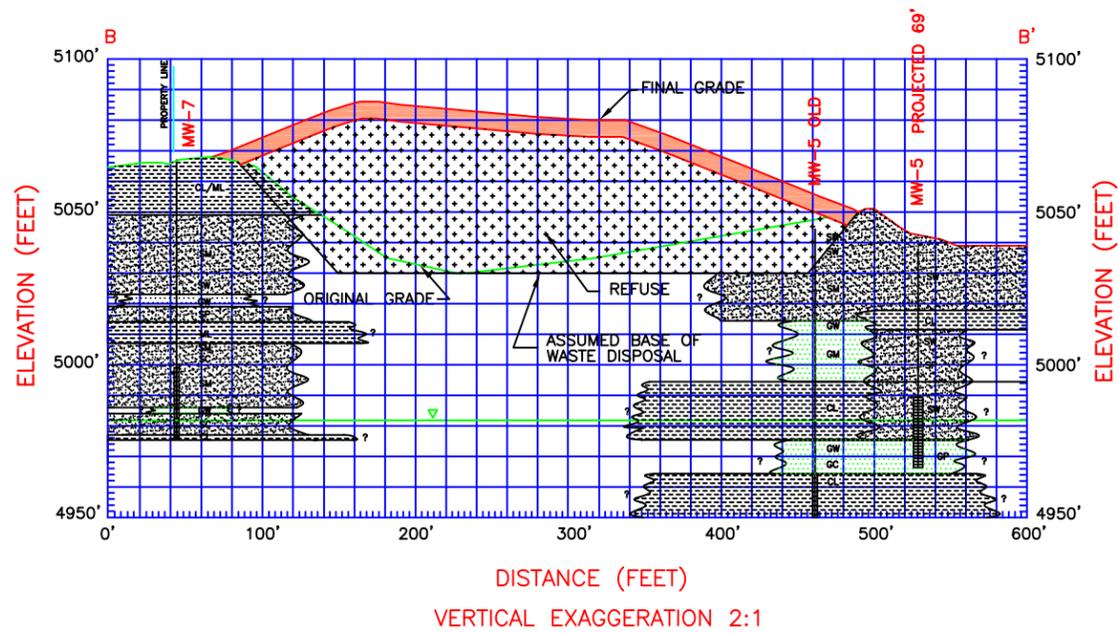
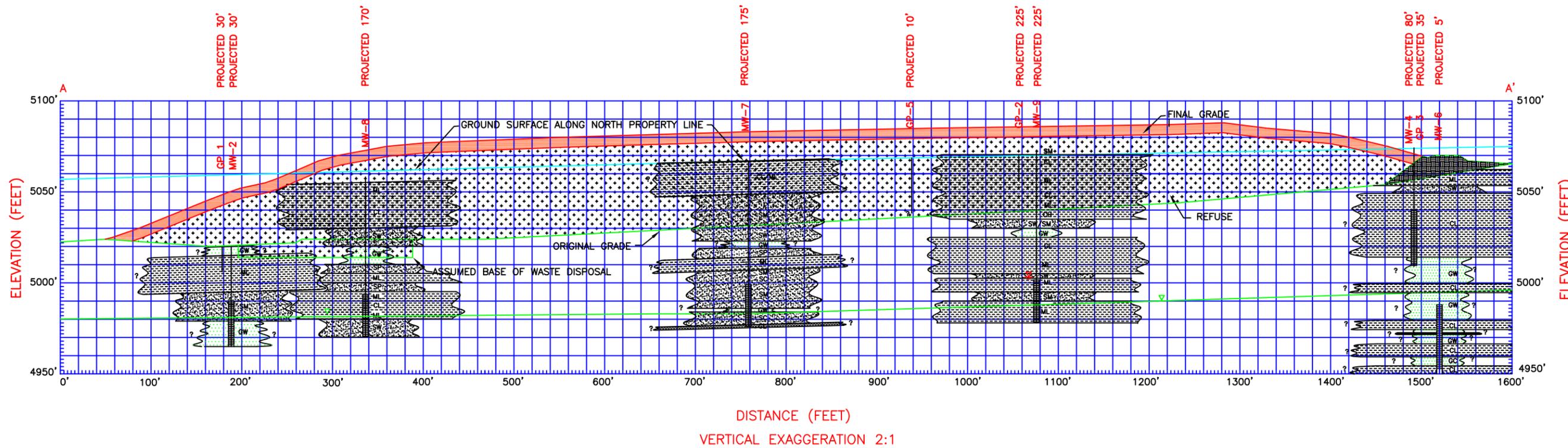
There are two primary concerns with respect to alterations in groundwater conditions beneath the site that might be caused by recharge in the area. The first concern is groundwater elevation. It is critical that groundwaters not rise to the depth of waste disposal as this would adversely impact water quality beneath the site. A rise in groundwater elevations could also impact landfill gas migration beneath the site since gases migrate downward to the top of the groundwater table and then horizontally outward from the landfill. The second concern is groundwater flow direction. If the direction of flow is altered the direction of water quality impacts will also be altered and the current monitoring network may not be adequate to assess conditions, particularly with respect to MW-10 that serves as a sentry to off-site migration.

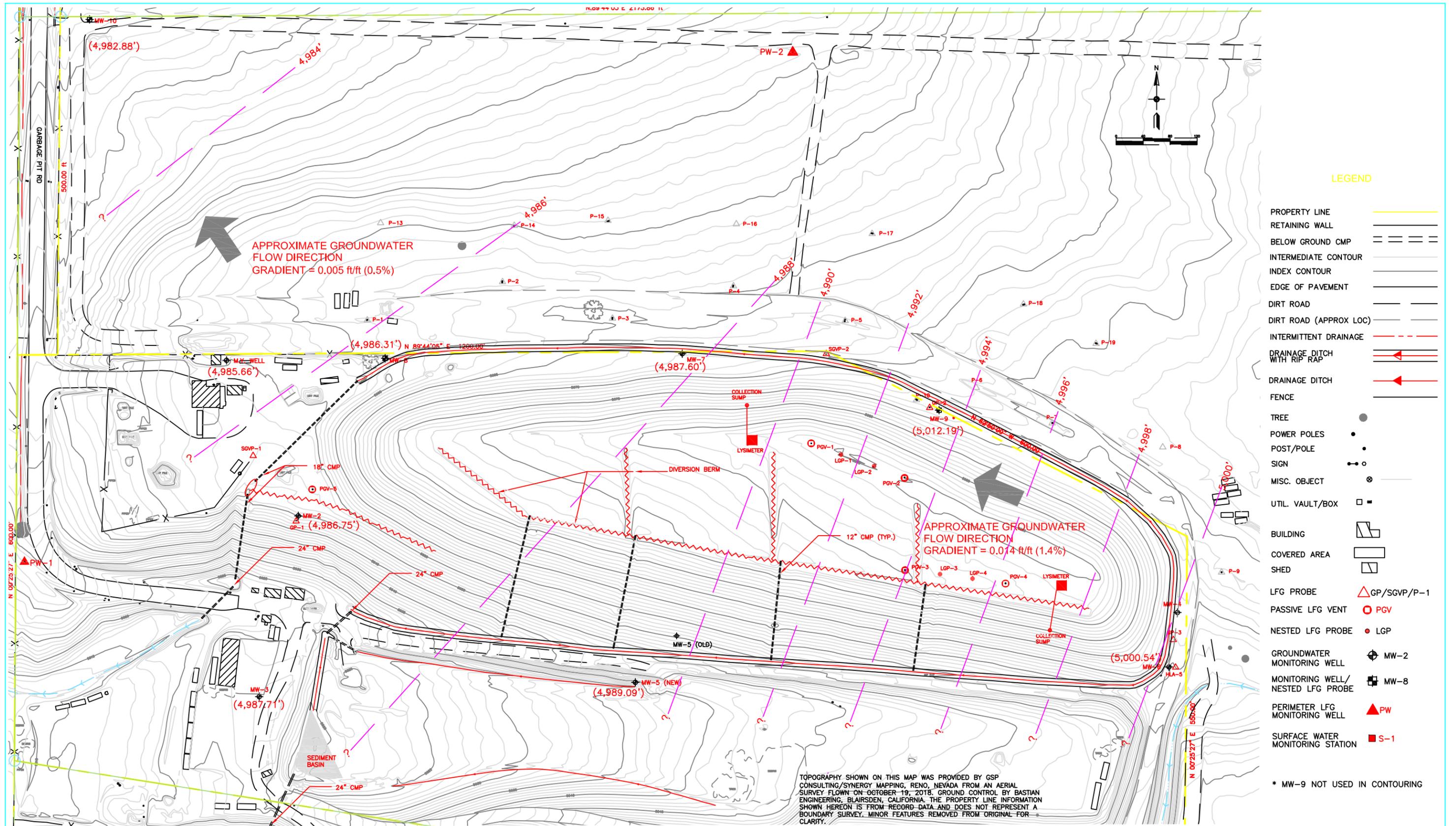
If you have any further questions concerning the above information, please don't hesitate to call.

Sincerely,

Craig W. Morgan
Principal Engineer







LEGEND

- PROPERTY LINE ———
 - RETAINING WALL
 - BELOW GROUND CMP
 - INTERMEDIATE CONTOUR
 - INDEX CONTOUR
 - EDGE OF PAVEMENT
 - DIRT ROAD
 - DIRT ROAD (APPROX LOC)
 - INTERMITTENT DRAINAGE
 - DRAINAGE DITCH WITH RIP RAP
 - DRAINAGE DITCH
 - FENCE
 - TREE
 - POWER POLES
 - POST/POLE
 - SIGN
 - MISC. OBJECT
 - UTIL. VAULT/BOX
 - BUILDING
 - COVERED AREA
 - SHED
 - LFG PROBE △ GP/SGVP/P-1
 - PASSIVE LFG VENT ○ PGV
 - NESTED LFG PROBE ● LGP
 - GROUNDWATER MONITORING WELL ⊕ MW-2
 - MONITORING WELL/ NESTED LFG PROBE ⊕ MW-8
 - PERIMETER LFG MONITORING WELL ▲ PW
 - SURFACE WATER MONITORING STATION ■ S-1
- * MW-9 NOT USED IN CONTOURING

TOPOGRAPHY SHOWN ON THIS MAP WAS PROVIDED BY GSP CONSULTING/SYNERGY MAPPING, RENO, NEVADA FROM AN AERIAL SURVEY FLOWN ON OCTOBER 19, 2018. GROUND CONTROL BY BASTIAN ENGINEERING, BLAIRSDEN, CALIFORNIA. THE PROPERTY LINE INFORMATION SHOWN HEREON IS FROM RECORD DATA AND DOES NOT REPRESENT A BOUNDARY SURVEY. MINOR FEATURES REMOVED FROM ORIGINAL FOR CLARITY.