CHAPTER 2

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ACRONYMS AND ABBREVIATIONS

Acronym/Abbreviation	Definition
µmhos~~MHOS~~/cm @ 25C	micromhos per centimeter at 25 degrees Celsius
Δz	vertical distance between midpoint of well screens
Δh	difference in water level between wells
ac-ft	acre-feet
amsl	above mean sea level
bgs	below ground surface
BTOC	below top of casing
$CaCO_3$	calcium carbonate
CCGCD	Calhoun County Groundwater Conservation District
CCW	counterclockwise
CGD	Commercial Grade Dedication
CHB	constant head boundary
CHG BAL	charge balance
CPT	cone penetrometer test
CSM	Conceptual Site Model
Dow	Dow Chemical Corporation
EPA	U.S. Environmental Protection Agency
ER	Environmental Report
ESP	early site permit
ft.	feet
ft/day	feet per day
ft^2/day	square feet per day
ft/ft	feet per foot
LMGS	Project Long Mott
GAM	groundwater availability model
GBRA	Guadalupe-Blanco River Authority
gpd	gallons per day
gpm	gallons per minute
i_h	horizontal hydraulic gradient

i_v	vertical hydraulic gradient
ID	identification
in.	inch
IPL	In-plant Lagoon (area)
K	hydraulic conductivity
km	kilometer
L	length
LMGS	Long Mott Generating Station
m	meter
m/day	meters per day
m^3	cubic meters
mfg	manufacturing
mg/L	milligrams per liter
mi.	mile
mV	millivolt
MW	groundwater monitoring well
N	nitrogen
NAVD 88	North American Vertical Datum of 1988
NLF	North Landfill
"P"	Identifies aquifer pumping test wells
pCi/L	picocuries per liter
pH	potential of hydrogen
PSAR	Preliminary Safety Analysis Report
PWS	public water system
RCRA	Resource Conservation and Recovery Act
"S"	Identifies sentinel wells
SDO	Seadrift Operations
TCEQ	Texas Commission on Environmental Quality
TOC	top of casing
TWDB	Texas Water Development Board
USGS	U.S. Geological Survey
V	version

2.4.12 GROUNDWATER

This subsection describes the hydrogeologic conditions at and near the LMGS site, as well as regional and local groundwater resources that could be affected by the construction and operation of the proposed LMGS. It also summarizes the regional data for the physical and hydrologic characterization of these groundwater resources to provide the basic data needed to evaluate impacts on the aquifers of the area. A subsurface investigation was initiated at the LMGS site in October 2023 and completed in September 2025; i~~. I~~nvestigation results ~~through late September 2024~~ are presented herein.~~ Additional site-specific data will be provided by the end of second quarter 2026 to update and recalibrate the groundwater model.~~

The LMGS site (Figure 2.4.12-1) is located on the coastal plain of southeastern Texas in Calhoun County. Regional and local surface water features are described in Subsection 2.4.1. A geologic overview is presented in Subsection 2.5.1, and a geotechnical description for plant construction is presented in Subsection 2.5.4. ~~Note that e~~Elevations discussed in this subsection are reported in the North American Vertical Datum of 1988 (NAVD 88). However, ~~I~~in some cases, cited references may use a different datum.

2.4.12.1 Description of On-site Use

This subsection describes ~~the~~ regional and local physiography and geomorphology, groundwater aquifers, geologic formations, and groundwater sources and sinks. It also describes on-site uses of groundwater, including groundwater production wells and groundwater requirements of the LMGS site.

2.4.12.1.1 Physiography and Geomorphology

The LMGS site is located in Calhoun County, Texas, approximately 8 mi (13 km) northeast of San Antonio Bay. For the purposes of the hydrogeologic investigation, the LMGS site is defined as the area evaluated for the proposed LMGS. Seadrift is approximately 8 mi (13 km) southeast of the LMGS and Port Lavaca is approximately 10 mi (16 km) northeast of the LMGS.

The LMGS site is located in the Coastal Prairies sub-province of the Gulf Coastal Plains physiographic province. The Coastal Prairies sub-province forms a broad band of nearly flat prairies along the Texas Gulf Coast (Figure 2.4.12-2). Ground surface elevation varies from approximately 0 ft (0 m) above mean sea level (amsl) along the coast to approximately 300 ft (91 m) amsl along the western boundary of the sub-province (BEG, 1996).

Calhoun County is located within the gently rolling plains of South Texas. The ground surface elevation in Calhoun County varies from sea level at the Gulf of Mexico and at water bodies connected to it, to approximately 56 ft (17 m) amsl in the northwestern part of Calhoun County. The topography of the site and its immediate environs is depicted on Figure 2.4.12-3. The LMGS site is located on a relatively flat plain east of the Guadalupe River valley, downstream (south) of the city of Victoria, Texas. The LMGS site has the following topographic features, shown in Figure 2.4.12-3:

- The topography in the area of the LMGS site is characterized as mainly flat lying to gently sloping. There is approximately 10 ft (3 m) of natural relief across the LMGS site, which spans approximately 2 mi (3 km) from north to south and 3 mi (5 km) from east to west (refer to Figure 2.4.12-3). Ground surface elevations are slightly higher in the western portion of the LMGS site (approximately 29 to 34 ft [9 to 10 m] amsl) than in the eastern portion of the site (25 to 29 ft amsl). The berms enclosing the Seadrift Operations (SDO) facility Cooling Water Basins reach a maximum height of approximately 37 ft (11 m) NAVD 88 (USGS, 2024b).
- The major topographic feature in the vicinity of the site is a 25- to 30-foot escarpment located to the west, between the site and the Victoria Barge Canal.
- The LMGS site is located near tributaries to the Guadalupe Estuary that include streams that discharge to bayous, wetlands, and transitional coastal areas of the estuary (Figure 2.4.12-3). Areas contributing to the estuary inflow include the Guadalupe and San Antonio River Basins and portions of the Lavaca-Guadalupe and San Antonio-Nueces Coastal Basins (TWDB, 1980).
- The primary surface water drainage feature at the site is West Coloma Creek, which flows to the south and is west of the LMGS site (Figure 2.4.12-1). The site is bounded to the south by the Guadalupe-Blanco River Authority (GBRA) Calhoun Canal and to the southwest by Cooling Water Basin #5 (Figure 2.4.12-1).

Regional and local surface water features and a detailed geologic description are presented in Subsections 2.4.1 and 2.5.1, respectively.

2.4.12.1.2 Regional Groundwater Aquifers

The hydrogeologic materials underlying the Coastal Prairies sub-province consist of deltaic sands and muds (BEG, 1996). The LMGS site is underlain by a thick wedge of southeasterly dipping sedimentary deposits of Oligocene to Holocene age. The site overlies what has been referred to as the "Coastal Lowland Aquifer System" (Ryder, 1996). This aquifer system contains numerous local aquifers in a thick sequence of mostly unconsolidated Coastal Plain sediments of alternating and interfingering beds of clay, silt, sand, and gravel. The sediments reach thicknesses of thousands of feet and contain groundwater that ranges from fresh to saline. The majority of groundwater usage is for municipal, industrial, and irrigation needs (Ryder, 1996).

The lithology of the aquifer system is generally sand, silt, and clay and reflects three depositional environments: continental (alluvial plain),; transitional (delta, lagoon, and beach),; and marine (continental shelf). The depositional basin thickens toward the Gulf of Mexico, resulting in a wedge-shaped configuration of hydrogeologic units. Numerous oscillations of ancient shorelines resulted in a complex, overlapping mixture of sand, silt, and clay (Ryder, 1996).

As part of the U.S. Geological Survey (USGS) Regional Aquifer System Analysis program, the aquifer system was subdivided into five permeable zones and two confining units. The term "Gulf Coast Aquifer" is generally used in Texas to describe the composite of sands, silts, and clays of the Coastal Lowland Aquifer System, as shown on Figure 2.4.12-4 (George et al., 2011).

Figure 2.4.12-5 compares the Gulf Coast Aquifer and the Coastal Lowlands Aquifer System terminologies (Ryder, 1996). Hydrogeologic cross sections of the Coastal Lowlands Aquifer System and the Gulf Coast Aquifer are shown on Figure 2.4.12-6 (George et al., 2011) and Figure 2.4.12-7 (Baker, 1979), respectively. The Gulf Coast Aquifer nomenclature is used herein to describe the hydrogeologic units at the LMGS site.

The Gulf Coast Aquifer is subdivided into four major hydrogeologic units based on mineralogy and hydraulic properties (from Chowdhury et al., 2006). These are, from shallowest to deepest:

- The Chicot Aquifer, which consists of the Willis Sand, the Bentley Formation, the Montgomery Formation, the Beaumont Clay, and surficial alluvial deposits.
- The Evangeline Aquifer, which consists of the Goliad Sand.
- The Jasper Aquifer, which consists of the Oakville Sandstone and the Fleming Formation. The upper part of the Fleming Formation forms the Burkeville confining system.
- The Catahoula Confining System, which includes the Frio Formation, Anahuac Formation, and the Catahoula Tuff or Sandstone.

The base of the Gulf Coast Aquifer is identified as either its contact with the top of the Eocene/Oligocene Vicksburg-Jackson Confining Unit or the approximate depth where the concentration of total dissolved solids in groundwater exceeds 10,000 milligrams per liter (mg/L). The base of the aquifer varies from approximate elevation 300 ft (91 m) near the updip limit to approximate elevation 6,000 ft (1,829 m) below sea level midway between the updip limit and the coastline (Ryder, 1996). For the purpose of this hydrogeologic investigation, only the upper portions of Chicot Aquifer are of concern.

The Gulf Coast Aquifer is recharged by the infiltration of precipitation that falls on topographically high aquifer outcrop areas in the northern and western portions of the province. Discharge occurs by evapotranspiration, loss of water to streams and rivers as base flow, upward leakage to shallow aquifers in low-lying coastal areas or in the Gulf of Mexico, and pumping (Ryder, 1996).

Water-bearing zones in the Gulf Coast Aquifer are under confined conditions, except for shallow zones in outcrop areas. In the shallow zones, the specific yield for sandy deposits generally ranges from 10 to 30 percent. For confined aquifers, the storage coefficient is estimated to range from 1×10^{-4} to 1×10^{-3} (Ryder, 1996).

The productivity of the aquifer system is directly proportional to the thickness of sand in the aquifer system. The thickness of the aggregated sand within the aquifer ranges from 0 ft at the updip limit to as much as 2,000 ft (610 m) in the east. Estimated values of transmissivity are reported to range from less than 5,000 to nearly 35,000 ft^2/day (Ryder, 1996).

Groundwater quality in the Gulf Coast Aquifer in the vicinity of Calhoun County is characterized as good but declines to the southwest due to increased chloride concentrations and saltwater intrusion near the coast (Chowdhury et al., 2006). The Gulf Coast Aquifer in the area of the LMGS site has not been declared a sole source aquifer by the U.S. Environmental Protection Agency (EPA) in Texas (EPA, 2024a). A sole source aquifer is defined as the sole or principal source of drinking water that supplies 50 percent or more of drinking water for an area, with no reasonably available alternative source should the aquifer become contaminated. Figure 2.4.12-8 shows the location of sole source aquifers in EPA Region 6, within which ~~encompasses~~ the LMGS site lies.

The nearest Texas sole source aquifer is the Edwards I and II aquifer system, located approximately 150 mi (241 km) northwest of the LMGS site. The identified sole source aquifers are beyond the boundaries of the local and regional hydrogeologic systems associated with the LMGS site. Therefore, site related activities are not expected to affect any of the sole source aquifers (EPA, 2024a).

2.4.12.1.3 Local Hydrology

Calhoun County covers an area of approximately 1,032 mi^2 (2,673 km^2) and is bounded by Refugio, Victoria, Jackson, and Matagorda Counties (CCGCD, 2023). Based on land use cover data from the USGS (NLCD, 2019), the primary land use types in Calhoun County include:

- Open water (45.3 percent)
- Wetlands, herbaceous and woody (18.3 percent)
- Hay/pasture (13.7 percent)
- Agriculture/croplands (11 percent)
- Vegetated/wooded; various classifications (7.3 percent)
- Developed; multiple classifications (3.5 percent)
- Barren land (0.9 percent)

Groundwater usage in Calhoun County is under the jurisdiction of the Calhoun County Groundwater Conservation District (CCGCD). The estimated groundwater usage in Calhoun County has fluctuated between a low of 1,211 ac-ft (1,493,744 m^3) in 2017 to a high of 3,128~~3,218~~ ac-ft (3,858,325~~3,969,339~~ m^3) in 2011, with the largest user group being manufacturing (CCGCD, 2023).

The Guadalupe River (which forms the western boundary of inland Calhoun County), Green Lake, Mission Lake, Guadalupe Bay, the Victoria Barge Canal, the GBRA Calhoun Canal, and East and West Coloma Creeks are the major surface water bodies in the site vicinity.

Numerous bayous, wetland areas, and unnamed streams exist west of the site, near Green and Mission Lakes (Carothers et al., 2015).

A water balance for Calhoun County is estimated using the average annual precipitation from 1951 to 1980, which was approximately 39 inches. The corresponding average annual runoff was approximately six inches. The remaining 33 inches of precipitation is estimated to evaporate, transpire by plants, or percolate into the subsurface to recharge the shallow aquifers (Ryder, 1996).

Recharge to the Gulf Coast Aquifer System in Calhoun County is estimated to be 2,573 ac-ft per year (3,173,744 m^3/year) (CCGCD, 2023). As shown on Figure 2.4.12-9, much of the surface geology in Calhoun County in the vicinity of the project area is Beaumont clay (USGS, 2024a). Recharge rates are expected to be limited in areas with a predominance of low-permeability silts and clays and higher where the Holocene alluvium and Beaumont Formation contain more sand than clay.

The principal aquifers in Calhoun County are the Chicot Aquifer and the underlying Evangeline Aquifer. As shown in Figure 2.4.12-7, the shallower Chicot Aquifer is up to 1,200 ft (366 m) thick along the coast. The Evangeline Aquifer ranges in thickness from a few hundred feet inland to over 2,000 ft (610 m) along the coast (Baker, 1979). Regional groundwater flow direction in the Chicot Aquifer is generally to the southeast from Calhoun County toward the Gulf of Mexico (Figure 2.4.12-10) (Chowdhury et al., 2006). Local groundwater flow is described in Subsection 2.4.12.2.2.

The Goliad Sand of the Evangeline Aquifer and the Willis Formation, Lissie Formation, Beaumont Formation, and Holocene alluvium of the Chicot Aquifer are the primary stratigraphic units at the LMGS site and surrounding area (CCGCD, 2023). The following subsections describe the pertinent details of these geologic units.

2.4.12.1.3.1 Holocene Alluvium

The Holocene alluvium is composed primarily of fluvial basin and floodplain deposits. The fluvial basin deposits include terrace gravels, sands, and point bar deposits. Fluvial basin sediments include clay- to gravel-sized material. The floodplain deposits are flat lying and include mostly sand and gravel in the deeper strata, and silt and clay in the shallower zones. The Holocene alluvium typically occurs in the immediate vicinity of rivers. The Holocene alluvium is usually coarser grained than Beaumont Formation sediments. The Holocene alluvium is often in contact with the overlying Beaumont Formation because it is incised into the Beaumont Formation (Exelon, 2012).

Because the Holocene alluvium occurs only on a local scale (and cannot be correlated regionally), it is typically included in the Chicot Aquifer. The Holocene alluvium is the most geographically widespread among the Texas Gulf Coast stratigraphic units and often serves as a hydraulic connection between surface water and groundwater (Exelon, 2012).

2.4.12.1.3.2 Beaumont Formation

The Beaumont Formation (Pleistocene aged) is composed primarily of poorly bedded, marly, reddish-brown clay with lesser amounts of interbedded sand. Beaumont Formation sediments often form natural levees and deltaic~~s~~ deposits emplaced in riverine environments and less often in shallow marine and lagoonal bays and embayments. Beaumont clays significantly impede infiltration of rainwater (Exelon, 2012).

Three sand layers and four clay layers were identified at the LMGS site based on the results of the hydrogeologic investigation described ~~below~~ in Subsection 2.4.12.1.4. The interbedded sands and clays found at the LMGS site are interpreted as belongi~~i~~ng ~~part of~~to the Beaumont Formation. A generalized hydrogeologic cross section created for the area immediately southwest of the LMGS site is presented as~~on~~ Figure 2.4.12-11 (Jacobs, 2023).

2.4.12.1.3.3 Lissie Formation

The Pleistocene aged Lissie Formation ~~is Pleistocene aged and~~ is composed primarily of reddish, orange, and gray sands. These sands are fine- to coarse-grained and are cross-bedded. Other Lissie Formation sediments include sand, silt, and mud deposited in floodplain environments or in river deltas. The Lissie Formation (undifferentiated) is thought to be equivalent in age to the Bentley and Montgomery Formations, although the wide range of sediment types, the discontinuous bedding nature, and scarcity of index fossils and distinct borehole electrical log signatures complicate lithologic correlation. The Lissie Formation (undifferentiated) and the Bentley Formation define the base of the Pleistocene by most authors. The Montgomery Formation is at times included in the younger Beaumont Formation (Exelon, 2012).

2.4.12.1.3.4 Willis Formation

The Willis Formation (Pleistocene aged) consists of reddish, gravelly, coarse-grained sand lacking fossils. Willis Formation sediments include fluvial and deltaic deposits in upward-coarsening sequences, which are interpreted as delta-front facies (Exelon, 2012).

2.4.12.1.3.5 Goliad Sand

The Pliocene Goliad Sand includes primarily whitish- to pinkish-gray, coarse-grained sediments, with cobbles, clay balls, and basal wood fragments~~ at the base of the formation~~. There are finer-grained sands cemented together with caliche in the upper part of the Goliad Sand. The sands are interbedded with locally marly grayish clays, and the presence of caliche, gravel, and irregular bedding suggests a high-energy fluvial depositional environment. The hydrogeologic boundary between the Evangeline and Chicot Aquifers is the top of the Goliad Sand (Exelon, 2012).

2.4.12.1.4 Site-Specific Hydrogeology

A subsurface investigation was initiated at the LMGS site in October 2023 and completed in September 2025. Results from this i~~I~~nvestigation ~~results through late September 2024~~ are presented herein.~~ Additional site-specific data from continued investigatory activities will be provided by the end of second quarter 2026.~~

Subsurface information was ~~collected~~obtained from geotechnical borings, geologic/geophysical borings, cone penetrometer tests (CPTs), shallow test pits, and groundwater monitoring and test wells. A detailed description of the geotechnical investigation, including the location of borings and CPTs, boring logs, and soil testing data, is provided in Subsection 2.5.4. A summary of the field investigation activities related to groundwater characterization is presented below. Well locations are presented on Figure 2.4.12-12.

- Groundwater monitoring wells: Ten three-well groundwater monitoring well clusters (MW-1 through MW-6 and MW-101 through MW-104 include 30 individual monitoring wells at 10 locations) were installed throughout the LMGS site and environs. Each cluster includes three individual monitoring well~~ screen~~s installed within three different hydrostratigraphic units represented by the A Sand, C Sand, and E Sand units as denoted with the suffix “A”, “C”, and “E”, respectively. These units are described later in this subsection. Monitoring wells MW-105 through MW-113 include one- and two-well clusters (12 individual monitoring wells at nine locations) completed in the A and C Sands and were installed in the area of the proposed LMGS. The wells were completed to depths ranging from approximately 17 to 200 ft (5 to 61 m) below ground surface (bgs) to provide adequate spatial distribution for determining groundwater flow directions and hydraulic gradients.
- Two stilling wells (SW-1 and SW-2) were installed in West Coloma Creek to monitor creek water levels to determine A Sand/creek groundwater/surface water interactions.
- Aquifer pumping tests: Two aquifer pumping test well~~ (P denotes pumping test well)~~ clusters were installed (P denotes pumping test well). Each cluster consists of one test well (pumping well) and multiple water level sentinel (observation~~monitoring~~) wells. Pumping wells were installed in the C Sand and E Sand units; ~~, and~~ sentinel wells ~~Well clusters~~ were installed in the A Sand, C Sand, and ~~Sand and~~ E Sand units at depths of approximately 25 ft (8 m), 100 ft (30 m) and 162 ft (49 m) bgs, respectively. Aquifer pumping tests were conducted at each location. The aquifer pumping tests are discussed in Subsection 2.4.12.2.4.1.
- Slug tests: Field hydraulic conductivity tests (slug tests) were conducted in each of the 42~~30~~ monitoring wells and in each of the 21~~12 of the~~ sentinel wells. The results of the slug tests are discussed in Subsection 2.4.12.2.4.1.

Well installations described in this report began in October 2023 and were completed in September 2024. Figure 2.4.12-12 provides a well location map. Well construction details are presented in Table 2.4.12-1. The groundwater monitoring wells at the LMGS site and environs are named in multiple~~four~~ series, which represent the well function~~location~~ and screen depth intervals of the monitoring wells, as follows:

- "MW" identifies groundwater monitoring wells. MW-1 through MW-6 were installed as part of the Environmental Report (ER) program but were installed under the Nuclear Quality Assurance guidelines, and thus data from these wells can be used in this Preliminary Safety Analysis Report (PSAR). MW-101 through MW-104 were installed to support the PSAR program only.
- "P" identifies aquifer pumping test wells. P-1 is screened in the C Sand; P-2 is screened in the E Sand.
- "S" identifies sentinel wells. These wells serve as water level monitoring wells during aquifer pumping tests. Slug tests were also performed on select sentinel wells. Sentinel wells include wells screened in the A, C, and E Sand aquifer zones.
- "SW" identifies a stilling well installed in West Coloma Creek. Two such stilling wells were installed to obtain water level data in the creek itself.
- ~~Monitoring wells MW-105 through MW-113 were installed in the area of the proposed LMGS.~~
- An "A" suffix in the monitoring well name indicates the well is screened in the A Sand zone.
- A "C" suffix in the monitoring well name indicates the well is screened in the C Sand zone.
- An "E" suffix in the monitoring well name indicates the well is screened in the E Sand zone.

The hydrogeologic investigation targeted strata in the upper Chicot Aquifer; deeper aquifers (e.g., Evangeline Aquifer) were not investigated.

Well identifications and the hydrogeologic unit for each well are summarized in Table 2.4.12-1. A conceptual hydrostratigraphic model was developed from the geotechnical cross sections to describe the shallow portion of the Chicot Aquifer at the site. This model subdivided the upper Chicot Aquifer into three aquifer zones: a confined shallow A Sand zone; a confined intermediate depth C Sand zone; and a deep, confined E Sand zone. Each sand zone has an associated overlying clay unit.

The hydrostratigraphic designations are informal and are based primarily on nomenclature adopted for investigations performed at the neighboring SDO facility (Jacobs, 2023). The hydrogeologic conditions encountered during the subsurface site investigation generally correspond to results from previous investigations performed at the SDO facility and the various aquifer zones investigated. This includes the A Sand (and the overlying Stratum III Clay), the C Sand (and the overlying Stratum V/VII Clay), and the E Sand (and the overlying Stratum IX Clay).

The confining units (Strata III, V/VII, and IX) consist primarily of clay; however, some sand and silt zones occur within these units. Only trace amounts of gravel were observed in soil samples collected within confining units. Hydrostratigraphic cross sections were created for the site. A map depicting the location of four cross sections (A to A′, B to B′, C to C′, and D to D′) is presented on Figure 2.4.12-13. Cross sections A to A′, B to B′, C to C′, and D to D′ are presented on Figure 2.4.12-14 through Figure 2.4.12-17, respectively.

Stratigraphic layers and well screen placements depicted on the cross sections (Figures 2.4.12-14 through Figure 2.4.12-17) were determined based on field classification of materials. However, for the A Sand unit, the actual effective thickness may be greater than depicted due to the presence of interbedded sand lenses and the heterogeneous nature of this unit. The results of the investigation indicate that the boundary between the A Sand and underlying confining unit is typically transitional in nature.

The confining layer overlying the A Sand (Stratum III) is thinnest at MW-6A at approximately 6 ft (2 m), and thickest at MW-104A, where the confining layer is approximately 24 ft (7 m) thick. The A Sand unit varies in thickness from approximately 1 foot (0.3 m) (MW-1A) to 8 ft (2 m) (MW-101A). In most places, the A Sand consists of distinct sand layers or clayey sand of varying gradation, but in some places, it includes only sandy lenses or sandy zones within otherwise predominantly clayey materials. The average thickness of the A Sand is approximately 4 ft (1 m).

The confining layer overlying the C Sand (Stratum V/VII) varies from approximately 35 ft (11 m) at MW-107 to 77 ft (23 m) at MW-103 and has an average thickness of 54 ft (16 m). The C Sand unit varies in thickness from approximately 6 ft (2 m) (MW-103C) to 60 ft (18 m) (MW-4C) and has an average thickness of 29 ft (9 m). The C Sand is composed of interbedded sands, clayey sands, and silty sands. In places (especially at MW-107 and MW-101) there are distinct interbedded clay layers within the C Sand unit.

The confining layer overlying the C Sand (Stratum V/VII) varies from approximately 29 ft (9 m) at S-4 to 118 ft (36 m) at MW-2 and has an average thickness of 51 ft (16 m). The E Sand unit varies in thickness from approximately 5 ft (2 m) (MW-2E) to 32 ft (10 m) (MW-102E) and has an average thickness of 20 ft (6 m). In most places, the E Sand consists of mostly sand and silty sand, with lower amounts of clayey sand and clay lenses.

Monthly water level monitoring began in February 2024, following the ~~final~~ installation of the initial ~~the~~ 30 PSAR monitoring wells (MW-1 through MW-6 and MW-101 through MW-104). In September 2024, t~~T~~hese locations were supplemented by 12 additional PSAR monitoring wells (MW-105 through MW-113), and nine wells~~,~~ located at the SDO facility that were ~~, and~~ brought into the analysis through a Commercial Grade Dedication (CGD) process. Water level monitoring was completed in September 2025.

Water level data collected from these wells were used to generate potentiometric surface maps, measure hydraulic gradients, and determine groundwater flow direction. Monthly potentiometric surface maps are presented on Figure~~s~~ 2.4.12-18 (Sheets 1 through 57~~24~~).

2.4.12.1.5 Groundwater Sources and Sinks

In the Chicot and Evangeline Aquifers, groundwater flows from areas of recharge (areas where permeable layers outcrop at the surface) to areas of discharge (either at the Gulf of Mexico or the other surface water bodies). The Chicot Aquifer outcrop areas occur in northern Victoria County and areas north and west of the county. Shallow groundwater discharges as seeps or base flow to surface water bodies or migrates vertically to underlying aquifers. Deeper groundwater discharges as base flow to large rivers (including the Guadalupe River) or to the Gulf of Mexico (Exelon, 2012).

The Evangeline Aquifer outcrops in areas to the north and west of Victoria County (Figure 2.4.12-7). Recharge in these areas occur as direct infiltration of precipitation (rainfall) to permeable materials. Superimposed on this regional flow pattern are areas with heavy pumping within the aquifer. Significant groundwater withdrawals (pumping) can influence and even reverse the regional flow pattern (Exelon, 2012). A further description of regional groundwater use and flow patterns is presented in Subsection 2.4.12.2.

The Holocene alluvium is recharged by direct infiltration of rainfall and also by groundwater flow from the shallow Beaumont Formation. Similar to Victoria County Station (which is~~,~~ in the vicinity of the LMGS site), flow paths in the alluvium would likely have limited extent due to limited surface exposure. Discharge from the Holocene alluvium in this area contributes to the base flow of the main rivers in the area (Exelon, 2012).

The primary existing surface water features in the immediate vicinity of the site are a series of storage basins and West Coloma Creek. The basins were designed for water storage but are presumed~~assumed~~ to be unlined based on historical potentiometric data ~~–~~(Hall, 1985). However, only ~~minimal~~slight ~~groundwater~~ discharge to groundwater is expected from them. The only proposed change to surface water features at the LMGS site is the addition of a stormwater retention basin. Given that the basin is clay-lined and located in an area characterized by clay-rich Beaumont material at the surface, the impact to groundwater recharge is expected to be negligible.

Impacts related to remedial groundwater pumping are discussed in Subsection 2.4.12.3.1.1.

2.4.12.1.5.1 Site-Specific Groundwater Recharge

Limited published data are available for the immediate vicinity of the site, but groundwater flow in the eastern portion of Calhoun County in the Chicot Aquifer is generally to the south-southeast as described in Subsection 2.4.12.2.2 (see Figure 2.4.12-10). The Beaumont Formation crops out throughout the LMGS site and receives recharge from infiltration of precipitation (Figure 2.4.12-9). Surface recharge is expected to be higher in the northeastern part of the LMGS site, where the Beaumont Formation is mapped ~~composed mostly of~~as predominantly sand ~~sand with lesser amounts of clay~~. The Holocene alluvium, which crops out approximately 0.25 mi (0.4 km) west of the LMGS site, receives recharge from infiltration of precipitation (USGS, 2024a).

The proposed nuclear facility uses an existing cooling basin, and no significant alterations to the existing surface water configuration (other than a small stormwater retention basin) are planned. Therefore, no significant changes or impacts on the groundwater recharge are expected from construction of surface impoundments. Some reduction in recharge resulting from the presence of new plant structures is expected but impacts on water levels are expected to be small (i.e., groundwater recharge is reduced or eliminated at building footprints and in paved areas).

2.4.12.1.5.2 Site-Specific Groundwater Discharge

The primary areas for groundwater discharge typically include areas where creek and river channels have been incised into the underlying saturated zone, lakes and basins, and seeps and springs. There are no creeks or river channels at the LMGS site; however, West Coloma Creek is approximately 500 ft (152 m) east of the plant layout (Figure 2.4.12-1). Groundwater discharge may occur to a limited extent in areas where West Coloma Creek incises sandier zones of the Beaumont Formation. However, based on the geologic map (see Figure 2.4.12-9), the Beaumont Formation is mostly clay-rich where the creek crosses the LMGS site, and little groundwater discharge is expected (USGS, 2024a).

Based on hydrostratigraphic cross sections A to A' through D to D' (Figures 2.4.12-14 through 2.4.12-17), West Coloma Creek does not intersect the A Sand zone. However, groundwater elevation data indicate there may be an upward flow component from the A Sand that is likely contributing to base flow within the creek over much of the year (refer to stilling wells SW-1 and SW-2 hydrographs, presented in Figure 2.4.12-21, Sheets 21 and 22, respectively). In addition, most of the potentiometric maps of the A Sand since September 2024 indicate a probable convergence of A Sand groundwater to the creek location.

2.4.12.1.6 On-site Use of Groundwater

Groundwater is not being withdrawn at the LMGS site nor will it be discharged to the ground as a result of this project.

2.4.12.2 Groundwater Sources

This subsection describes the present and projected regional water use at, and in the vicinity of, the LMGS site - specifically:

- Information pertaining to existing users
- Historic groundwater levels
- Groundwater flow direction and gradients
- Seasonal and long-term variations of the aquifers
- Horizontal and vertical permeability and total and effective porosity of the geologic formations beneath the site
- Reversibility of groundwater flow
- Effects of water use on gradients and groundwater levels beneath the site
- Groundwater recharge areas

This information has been organized into five subcategories: (1) historical and projected groundwater use, (2) groundwater flow directions, (3) temporal groundwater trends, (4) aquifer properties, and (5) hydrogeochemical characteristics.

2.4.12.2.1 Historical and Projected Groundwater Use

Historical, current, and projected groundwater use in the vicinity of the LMGS site is evaluated using information obtained from the EPA, the Texas Water Development Board (TWDB), and the CCGCD.

2.4.12.2.1.1 Historical Groundwater Use

The use of groundwater from the Gulf Coast Aquifer system was limited and stable during the early 1900s (until about the late 1930s). Groundwater use increased significantly between 1940 and 1960, when approximately 800 million gallons per day (gpd) w~~as~~ere withdrawn from the aquifer system. Through the mid-1980s, groundwater withdrawals increased relatively slowly, and by 1985, daily withdraws from the aquifer system exceeded 1,000 million gpd. Most of these withdrawals were in the east-central area of the aquifer system, centered primarily in the Houston area (Harris County). The biggest uses of groundwater included public supply (approximately 476 million gpd), and agriculture (447 million gpd). Areas of heavy agricultural groundwater pumping were associated with rice irrigation in Jackson, Wharton, and portions of adjacent counties (Exelon, 2012).

Due to groundwater overuse issues (including land subsidence, saltwater encroachment, and stream base-flow depletion), some areas have reduced their use of groundwater. The TWDB developed groundwater use projections to the year 2030. Among the 10 counties that used the most groundwater from the Gulf Coast Aquifer system during 1985, significant declines in pumping were projected from six counties (Colorado, Harris, Jackson, Jasper, Matagorda, and Wharton); increased groundwater use was projected in four counties (Brazoria, Fort Bend, Victoria, and Waller) (Exelon, 2012).

2.4.12.2.1.2 Current Groundwater Use

Current groundwater use data for Calhoun County are available from the EPA, TWDB, and CCGCD. The EPA monitors drinking water supply systems throughout the country and maintains the results in the Safe Drinking Water Information System. Table 2.4.12-2 presents a listing of safe drinking water supply systems in Calhoun County as of June 2024 (EPA, 2024b).

Groundwater use, as estimated by the TWDB for 2021 by each of the 12 counties within 50 mi (80.4 km) of the LMGS site, is summarized in Table 2.4.12-3. During 2021, the TWDB estimated that groundwater use in Calhoun County from the Gulf Coast Aquifer totaled 1,546 ac-ft (1.38 million gpd). Groundwater usage based on the TWDB's water use categories for 2021 in Calhoun County were:

- Municipal – 35 percent
- Manufacturing – 18 percent
- Irrigation – 34 percent
- Livestock – 12 percent
- Power Generation – 1 percent
- Mining – 0 percent

Groundwater from several major and minor aquifers is the primary source of drinking water for 7 of the 12 counties. Irrigation systems are the largest users (79.6 percent) of groundwater in the 50-mi (80.4-km) region, followed by municipal water supply systems (13 percent), and livestock (2.8 percent). Smaller amounts of groundwater are used by manufacturing, power generation, and mining (TWDB, 2021).

Groundwater in the vicinity of the site is primarily used for domestic and irrigation purposes, with ~~irrigation and livestock~~ other purposes making up a smaller percentage of the well usages. A data query of the TWDB statewide well database on water wells, including supply wells, located within 5 mi (8 km) of the LMGS site (TWDB, 2024a) is summarized in Table 2.4.12-4, and the well locations ~~of the wells~~ are shown on Figure 2.4.12-19.

A Texas Commission on Environmental Quality (TCEQ) public water systems database query indicates that the nearest public water system (TX-0290076) is located more than 4 mi (6.4 km) northeast of the LMGS site and consists of one well at a campground (Sweetwater Recreational Vehicle Campground). The well produces water from the Chicot Aquifer, has a total production capacity of approximately 56 ac-ft (69,075 m^3) per year, and serves a population of 67 people (TCEQ, 2024). Table 2.4.12-5 summarizes the public water systems located within 6 mi (9.6 km) of the LMGS site. The nearest domestic or irrigation supply well is located approximately 0.8 mi (1.2 km) west of the proposed LMGS.

2.4.12.2.1.3 Projected Groundwater Use

There are numerous water planning authorities in the state of Texas; the LMGS site is in the South Central Texas Regional Water Planning Area (Region L). This area extends from the Gulf Coast to the Hill Country and includes all or parts of 21 counties, portions of 9 river and coastal basins, the Guadalupe Estuary, and San Antonio Bay. The portion of the Gulf Coast Aquifer that includes the LMGS site lies within Groundwater Management Area 15 and the CCGCD.

Water planning in the region is particularly complex because of the intricate relationships between the region's surface and groundwater resources. Since the late 1990s, the TWDB has commissioned the development of mathematical groundwater availability models (GAMs) for the north, south, and central portions of the Gulf Coast Aquifer to predict how the aquifer might respond to increased pumping and drought. These groundwater availability models were developed with substantial stakeholder input. The goal is to provide reliable projections of groundwater availability to ensure adequate supplies or identify inadequate supplies over the current planning period (Waterstone, 2003).

The regional water plan adopted by Region L in 2021 defines groundwater availability as the amount of groundwater available for use in the region as determined by analysis of aquifer recharge, existing groundwater demands, projected groundwater demands, limits of drawdown, and the annual groundwater availability calculations provided in each of the Region L groundwater conservation district's comprehensive water plans. The Region L water plan relies on the TWDB application of GAMs to illustrate projected changes in regional aquifer levels (desired future conditions) consistent with modeled available groundwater estimates and portrays spring discharges and surface water/groundwater interactions at the end of a planning period. According to the GAMs summarized in Region L's water plan, the groundwater supplies available from the Gulf Coast Aquifer in the region are projected to generally increase from 2020 to 2070. The projected groundwater supply available in Calhoun County from the Gulf Coast Aquifer is 7,565 ac-ft per year (9,331,276 m^3/year) throughout the 2020-through-2070 projection period (Black & Veach, 2020).

2.4.12.2.2 Groundwater Flow

Limited historical groundwater level data exist for the site; however, regional investigations indicate that groundwater flow in the Chicot Aquifer is generally southeast toward the Gulf of Mexico, as shown in Figure 2.4.12-10 (Chowdhury et al., 2006). Regional groundwater flow in the Evangeline Aquifer is also generally to the south and east toward the Gulf of Mexico, based on groundwater level data collected by the TWDB between 2001 and 2005 (Figure 2.4.12-20) (Chowdhury et al., 2006). Localized heavy groundwater pumping has resulted in declining water levels in some parts of the Gulf Coast Aquifer (including Harris and Kleberg Counties). Heavy pumping has also led to large cones of depression in these pumping areas, diverting groundwater flow from the Gulf of Mexico to the pumping centers (Exelon, 2012).

Groundwater data from the A Sand and C Sand aquifer zones from the neighboring SDO facility indicate that groundwater in these zones generally flows to the east (A Sand) and west (C Sand), respectively (Jacobs, 2023).

Between October 2023 and September~~February~~ 2024, 42 groundwater monitoring wells ~~clusters~~ (MW-1 through MW-6, and MW-101 through MW-113~~04~~) were installed at 19~~0~~ locations~~ (30 individual wells)~~ to investigate groundwater flow directions and horizontal and vertical hydraulic gradients (i_v) at the LMGS site. Each of the ~~10 ~~well clusters at MW-1 through MW-6 and MW-101 through MW-104 include a well completed in the A Sand, C Sand, and E Sand aquifer zones. Wells MW-105, MW-107, and MW-111 are two-well clusters with wells completed in the A and C Sand aquifer zones. MW-106, MW-108, MW-109, MW-110, MW-112, and MW-113 are individual wells completed in the A Sand only.

~~During August–September 2024, nine additional A Sand wells (MW-105A through MW-113A) and three additional C Sand wells (MW-105C, MW-107C, and MW-111C) were installed and added to the groundwater monitoring network. ~~In addition, nine existing SDO facility A Sand monitoring wells (C-87-50A, C-98-344A, NE-00-130A, NE-03-131A, NE-87-19A, NE-98-118A, NE-91-63A, NE-86-18A, and C-81-A1) were added to the groundwater monitoring network through the CGD process. However, no historical data from these wells were used in the following analyses.

The two aquifer pumping test well clusters were installed for hydraulic conductivity (slug) testing and aquifer performance testing. These well clusters include two pumping wells (P-1 and P-2) and 21 monitoring wells (S-1 through S-21). One of the monitoring wells (S-7, screened in the C Sand unit) was added to the groundwater monitoring network. Groundwater depth measurements were collected between February 29 and September 224, 20254, and converted to groundwater elevations. Groundwater elevation data are presented in Table 2.4.12-6 and reported in ft NAVD88.

Potentiometric surface maps were prepared with groundwater elevation and flow directions for the A Sand, C Sand, and E Sand units for February 2024 through September 20254. These potentiometric surface maps are presented on Figure 2.4.12-18 (Sheets 1 through 5724). The maps for February through August 2024 include data from wells MW-1 through MW-6, MW-101 through MW-104, and S-7. Beginning with ~~in For the~~ the September 24, 2024, event, this and subsequent potentiometric surface maps include additional groundwater elevation datas ~~were measured~~ from 18 additional A Sand wells (MW-105A through MW-113A, and the 9 SDO facility monitoring wells), and 3 additional C Sand wells (MW-105C, MW-107C, and MW-111C).

The September ~~24,~~ 2024, and subsequent C and E Sand potentiometric surface maps are generally consistent with ~~previous~~ C and E Sand maps from February through August 2024. However, the September 2024 and subsequent A Sand potentiometric surface maps are ~~for September 24, 2024, is~~ more refined and covers a larger geographic extent than ~~previous~~ A Sand maps created for the February through August 2024 events.

In the A Sand, groundwater generally flows from southwest to northeast in the area west of West Coloma Creek. Based on potentiometric maps of the A Sand which include the expanded monitoring network data, groundwater ~~and becomes more easterly~~ east of the creek flows westerly toward the creek. Convergence of potentiometric elevation contours shown on some of the maps suggests West Coloma Creek ~~may~~likely exerts an influence on shallow groundwater flow direction in this area and may at times be a discharge point for A Sand groundwater passing under the LMGS project area. The highest A Sand potentiometric elevations were measured in C-81-1A~~MW-101A~~, with a maximum value of 27.83~~25.69~~ ft (8.48~~7.83~~ m) NAVD 88 (April 29, 2025~~August 8, 2024~~). This location is closest to Cooling Water Basin No. 5 which is interpreted as the most likely contributor to A Sand groundwater in that vicinity. The lowest A Sand elevations were measured in MW-102A with a minimum value of 17.26~~47~~ ft (5.26~~32~~ m) NAVD 88 (December 18,~~July 4,~~ 2024). This location corresponds to the furthest downstream or downgradient location in the A Sand monitoring network.

The September ~~24,~~ 2024, and subsequent A Sand potentiometric surface maps indicates groundwater flow direction across the LMGS site is generally consistent with February through August 2024~~previous~~ events. However, the inclusion of additional wells indicates that Cooling Water Basin #No. 5 has an influence on flow, with groundwater flowing away from the basin to the east, west, and north. Potentiometric surface contours were developed assuming that this is an unlined basin, with a basin water elevation above the local potentiometric surface elevation ~~, is~~ and it is in hydraulic communication with the A Sand. Also, during the September 2024 event, the ~~groundwater elevation in MW-107A appeared to be anomalously low.~~c ~~It is suspected~~onvergence of isocontours near MW-107A indicates ~~There are indications~~ that there may be communication between the A Sand at this location ~~well~~ and nearby West Coloma Creek.

The C Sand potentiometric surface maps indicate groundwater flows from east to west across the LMGS site. The highest groundwater elevation was measured in MW-4C and MW-103C, with a maximum value of 9.4 ft (2.9 m) NAVD 88 (March 25, 2024). The lowest C Sand groundwater elevation was measured in MW-101C, with minimum value of 7.26~~55~~ ft (2.21~~30~~ m) NAVD (December 18~~September 24~~, 2024).

The E Sand potentiometric surface maps indicate groundwater flows generally from north to south ~~across~~beneath the LMGS site. Although groundwater flow in the E Sand appears to have a more easterly component during the February 2024 event, the lower water levels reported in wells MW-4E and MW-102E relative to other events may be ~~are considered~~ outliers. Therefore, flow direction and hydraulic gradients for this month may not be representative of typical~~actual~~ conditions.~~ The groundwater elevation reported in MW-5E during the September 2025 event (1.70 ft or 0.52 m NAVD 88) also appears to be an outlier; groundwater in the vicinity of this well may not be representative of actual conditions.~~

The potentiometric surface maps are used to estimate horizontal hydraulic gradients at the LMGS site. For each map, a horizontal hydraulic gradient~~s~~ (i_h) is~~are~~ calculated by drawing a flow line on the potentiometric surface map and determining the head loss (Δh) over the horizontal projection of the flow path length (L) to determine the horizontal hydraulic gradient (i_h which is equivalent to $\Delta h/L$). Representative average and maximum h~~H~~orizontal hydraulic gradient calculations ~~-~~are summarized in Table 2.4.12-7 ~~and are presented~~based on the respective potentiometric surface map for each event.

The A Sand potentiometric map surfaces indicate average horizontal hydraulic gradients range from 0.0010 feet/foot (ft/ft) (April 22, 2024) to 0.0024~~3~~ ft/ft (September 22, 2025~~February 29, 2024~~) with an overall average value of 0.001~~87~~7 ft/ft. The C Sand potentiometric map surfaces indicate average hydraulic gradients range from 0.00029~~3~~ ft/ft (February 29, ~~and July 4,~~ 2024) to 0.00081 ft/ft (June 17, 2024) with an overall average value of 0.00046~~5~~ ft/ft. The E Sand potentiometric map surfaces indicate average hydraulic gradients range from 0.0000~~8~~75~~2~~ ft/ft (~~every event except February 29~~November 22, 2024) to 0.0013 ft/ft (February 29, 2024) with an overall average value of 0.00023~~43~~ ft/ft.~~ As discussed previously, the low groundwater elevations measured in MW-4E and MW-102E during the February 29, 2024, and in MW-5E during the September 22, 2025, event are considered outliers; therefore, the hydraulic gradient reported for February 2024these months may not be representative~~.

The average of the maximum horizontal hydraulic gradients based on the potentiometric surface maps for the A Sand, C Sand, and E Sand, is calculated at 0.013 ft/ft, 0.00087 ft/ft, and 0.00063 ft/ft, respectively.

The vertical component of the hydraulic gradient, i_v, is calculated by dividing the difference in hydraulic head between adjacent upper and lower monitoring wells by the vertical distance between them. The vertical distance is ~~assumed~~taken to be from the midpoint elevation of the upper monitoring well screen to the midpoint elevation of the lower monitoring well screen. Vertical hydraulic gradients were calculated for each well cluster that included an A to C Sand, A to E Sand, and/or C to E Sand well pair. Table 2.4.12-8 presents the calculated i_v values.

Groundwater elevation data from the monitoring well pairs indicate a downward flow potential (as indicated by i_v values above zero; i_v values below zero would indicate an upward flow potential) between the A and C Sand, the A and E Sand, and the C and E Sand well pairs. No upward i_v values were measured.

The average downward i_v values were ~~highest~~greatest ~~from~~ among the A to C Sand well pairs with a ~~maximum~~ i_v value of 0.~~30~~27~~296~~ ft/ft at well pair MW-11~~0~~1A/C~~C on August 4, 2024~~. The overall~~8-month~~ average i_v for A to C Sand well pairs was 0.20~~199~~ ft/ft. The maximum A to E Sand i_v value was 0.16~~0~~ ft/ft in well pair MW-1A/E (on February 29, 2024, March 25, 2024, and August 4, 2024). The overall~~8-month~~ average i_v for A to E Sand well pairs was 0.13~~24~~ ft/ft. The lowest i_v values were observed in the C to E Sand well pairs. The lowest ~~i_v~~ average i_v value reported was 0.0384~~5~~ ft/ft in wells MW-2C/E. ~~(July 4, and September 24October 22, 2024).~~ The overall~~8-month~~ average i_v value for C to E Sand well pairs was 0.071 ft/ft.

Groundwater velocities depend on the hydraulic gradients and the hydraulic conductivity (K) and effective porosity of the water-bearing zone. Using the geometric mean of K from the slug tests (5.17 ft/day), horizontal travel times or velocities in the A Sand are calculated at 0.04~~7~~4~~3~~ ft/day (0.013 m/day) assuming an overall~~8-month~~ average gradient of 0.0017~~87~~ ft/ft with a maximum velocity calculated at 0.34~~08~~ ft/day (0.10~~2~~ m/day) assuming a maximum gradient of 0.013~~042~~ ft/ft. The average velocity is calculated using the overall~~8-month~~ average of hydraulic gradients measured across the LMGS site. The maximum velocity is calculated using the overall~~8-month~~ average of maximum local hydraulic gradients represented on the contour maps near LMGS. The maximum velocity in the A Sand using the maximum hydraulic gradient and arithmetic mean of K values (8.17 ft/day) is 0.53~~18~~ ft/day (0.16~~05~~ m/day).

Average and maximum flow velocities for the C Sand and E Sand were calculated using~~by~~ the same method as the A Sand. Average and maximum flow velocities for the C Sand and E Sand are lower than ~~similar to~~ those for the A Sand~~, while maximum flow velocities are slightly lower~~ (see Table 2.4.12-12).

2.4.12.2.3 Temporal Groundwater Trends

Limited regional groundwater level data are available in the vicinity of the LMGS site. The nearest active TWDB water level monitoring well (well number 8017502) is approximately 12 mi (19 km) north-northwest of the site and is screened in the Goliad Sand of the Evangeline Aquifer to a depth of 1,026 ft (313 m) bgs. Water level depths in this well were generally between 53 to 62 ft (16 to 19 m) bgs between 1993 and 2003, between approximately 25 to 53 ft (8 to 16 m) from 2003 until 2009, and between 30 to 40 ft (9 to 12 m) bgs from 2009 until 2024 (TWDB, 2024a).

At the SDO facility (immediately west of the LMGS site), groundwater level monitoring has been performed at the North Landfill (NLF) site since January 1983, and since July 1991 at the NLF Expansion Cell. The most recent available report (2022) indicates water level elevations in the A Sand range from approximately 26.29 ft (8.01 m) amsl (well NE-03-131A) to 27.43 ft (8.36 m) amsl (well NE-87-20A), and in the C Sand from approximately 9.73 ft (2.97 m) amsl (well NE-91-67C) to 10.55 ft (3.22 m) amsl (well NE-82-4C). The groundwater flow direction in the A Sand is generally toward the east-southeast, and toward the west in the C Sand. The groundwater elevations and groundwater flow directions from the 2022 report were generally consistent with previous annual reports (Jacobs, 2023).

Hydrographs for the monitoring wells ~~MW-1 through MW-6 and MW-101 through MW-104~~ were prepared and are presented on Figure 2.4.12-21 (Sheets 1 through 31~~10~~). The hydrographs include plots of groundwater elevation versus time (including both manual monthly readings and hourly transducer readings) and include daily rainfall data. Monthly manual groundwater levels were recorded between February 29 and September 22~~4~~, 2025~~4~~. Rainfall data were obtained from the Victoria Regional Airport, approximately 24 mi (39 km) north/northwest of the site.

- Hourly transducer data were collected between June 7, 2024, and August 13, 2025, with a gap between March 25, 2025, and May 1, 2025, while the transducers were removed for calibration.
- A Sand: potentiometric head trends in the A Sand wells ~~tend to~~ show ~~higher~~ greater fluctuations over the reporting period compared to the C and E Sand wells. A Sand potentiometric heads fluctuated approximately 1.5 to 3.0 ft (0.5 to 0.9~~1~~ m) and between September 2024 and September 2025 ~~tended to be~~were lower overall ~~st~~ in~~during the July 4, 2024, event and highest during the August 4, 2024, event~~December 2024 and August 2025.
- C Sand: groundwater potentiometric heads were generally stable throughout the reporting period. Most wells exhibited fluctuations of less than approximately 1 ft (0.3 m).
- E Sand: ~~other than the previously mentioned water levels that are thought to be outliers~~with minor exceptions (MW-4E and MW-102E on February 29, 2024, and MW-5E on September 22, 2025), groundwater potentiometric heads were generally stable throughout the reporting period, although there was more fluctuation in the E Sand wells than in the C Sand. Most wells exhibited fluctuations of less than approximately 1.0 to 2.0 ft (0.3 to 0.6 m).
- West Coloma Creek: hydrographs from the two stilling wells SW-1 and SW-2 (Figure 2.4.12-21, Sheets 21 and 22, respectively) indicate that over most of the monitoring period, there is an upward ~~head differentia~~vertical gradient~~l~~ between the A Sand and the~~to the~~ creek.

Among the A Sand wells, hydrographs show an overall groundwater elevation decrease from March to June 2024, an~~d~~ increase in July and August 2024, ~~before~~ decreasing from August 2024 to January 2025, increasing from January to February 2025, decreasing from February to April 2025, an increase in May 2025, decreasing from May to August 2025, then an increase in September 2025. Similar trends are observed but at smaller magnitude in the C and E Sand wells.

Monthly rainfall data collected from the Victoria Regional Airport suggests that for the A Sand, ~~lower and highe~~downward and upward~~r~~ water level trends ~~in April through June and higher water levels in July and August~~ appear to ~~correlate with periods~~ coincide with or follow ~~of~~ periods of lower and higher rainfall amounts, respectively. There is little to no apparent effect of rainfall on water levels in the C Sand and E Sand wells.

~~Infiltration at outcrop areas may also influence potentiometric head trends at the site.~~ An elevation survey that shows A Sand potentiometric surface elevations close to the bottom elevation of West Coloma Creek indicates that some recharge to the A Sand may occur during periods of high flow. Based on site topography, t~~T~~he creek may also be a point of discharge to A Sand groundwater at other times and within some areas along the creek (USGS, 2024b). A Sand potentiometric heads and flow direction in the LMGS site area may also be influenced by seepage from Cooling Water Basins #5 and #6.

Figure 2.4.12-7 is a regional hydrogeologic cross section through the Gulf Coast Aquifer system. The figure shows that the outcrop area of the Chicot Aquifer extends inland from the LMGS site to approximately the southeastern DeWitt County line, where the ground surface elevation is approximately 150 ft (46 m). Precipitation falling on the outcrop area recharges groundwater in the Chicot Aquifer. The higher ground surface elevation inland near DeWitt County induces a regional hydraulic gradient within the aquifer toward the southeast and the Gulf of Mexico, where the ground surface elevation is nominally 0 ft (Baker, 1979).

A Chicot Aquifer potentiometric surface map, using water level data from 2001 to 2005 (Figure 2.4.12-10), indicates a southeastern regional groundwater flow direction in the general vicinity of the LMGS site (Chowdhury et al., 2006). Figure 2.4.12-22 shows modeled 1999 groundwater elevations in the Chicot Aquifer simulated by the TWDB GAM (Chowdhury et al., 2004). These figures show a similar regional flow direction between these time periods.

2.4.12.2.4 Aquifer Properties

The aquifer properties at the LMGS site are ~~measured~~derived from field tests and are described in detail in Subsection 2.4.12.2.4.1 and Subsection 2.4.12.2.4.2. Aquifer parameters supporting hydrogeologic characterization include transmissivity, storativity, and K.

2.4.12.2.4.1 Hydrogeological Parameters

Hydrogeologic field tests conducted at the LMGS site included well slug tests and aquifer pumping tests. Slug tests were performed on wells MW-1 through MW-6, MW-101 through MW-113~~04~~, and S-1 through S-21~~12~~. ~~Other well slug testing results will be provided by the end of second quarter 2026.~~

Two aquifer pumping tests were performed at the LMGS site in August and September 2024; one test each at test well clusters centered at pumping well P-1 (C Sand) and P-2 (E Sand).

The data obtained from the aquifer pumping tests were used to evaluate the transmissivity and storativity of each water-bearing zone.

The following definitions are cited in the Victoria County Station early site permit (ESP) Site Safety Analysis Report (Exelon, 2012):

- *Transmissivity is defined as the rate at which a fluid of a specified density and viscosity is transmitted through a unit width of an aquifer or confining bed under a unit hydraulic gradient. Transmissivity is a function of the properties of the fluid, the porous medium, and the thickness of the porous medium.*
- *Storativity (storage coefficient) is defined as the volume of water released from or taken into storage per unit surface area of the aquifer per unit change in head.*
- *Hydraulic conductivity is defined as the coefficient of proportionality that describes flow per unit of time under a unit hydraulic gradient through a unit area of a porous medium and is a function of the properties of the fluid and the porous medium. Hydraulic conductivity can be calculated by dividing the transmissivity by the saturated thickness.*

<u>Slug Test Analysis</u>

Hydraulic conductivity (K) can be estimated from ~~the~~a number of slug test methods, which evaluate~~s~~ the aquifer response to an instantaneous change in water level in the test well. A disadvantage of ~~the~~a slug test method is that it measures K only in the immediate vicinity of the test well. However, because the slug test requires minimal equipment and can be performed rapidly, slug testing can be readily performed in multiple wells, offering an efficient determination of spatial variability in K.

Slug tests were conducted in 63~~42~~ site wells at the LMGS site. Slug test results are presented in Table 2.4.12-9 (Sheets 1 through 3).~~ and summarized below.~~

~~Aquifer Zone~~	~~Minimum (ft/day)~~	~~Maximum (ft/day)~~	~~Geometric Mean (ft/day)~~
~~A Sand~~	~~0.1708~~	~~42.32~~	~~5.023.85 (Hvorslev)~~ ~~2.671.43 (Bouwer-Rice)~~
~~C Sand~~	~~0.02759~~	~~64.951.93~~	~~14.220.15 (Hvorslev)~~ ~~7.9411.26 (Bouwer-Rice)~~
~~E Sand~~	~~0.0527~~	~~320.10~~	~~10.2 (Hvorslev)~~ ~~8.04 (Bouwer-Rice)~~

~~Notes:~~
~~1. Minimum value = lowest value of the mean test results.~~
~~2. Maximum value = highest value of the mean test results.~~
~~3. Geometric mean = geometric mean of the average value for the analytical method results per well.~~

Two methods were used for slug test analysis: Hvorslev and Bouwer-Rice. According to Brown et al., Bouwer-Rice is a preferred method for partially penetrating wells (i.e., wells that are not screened across the entire aquifer thickness) (Brown et al., 1995). The K maps presented on

Figure 2.4.12-23 (Sheets 1 through 3) include Hvorslev results (average of rising and falling head tests) for fully penetrating wells and Bouwer-Rice results for partially penetrating wells.

The data presented in Table 2.4.12-9 suggest variations in the materials tested, indicative of heterogeneous conditions. Hydraulic conductivity values in the A Sand ~~are widely spread and do not suggest any particular spatial pattern~~tend to be higher across the central portion of the site, spanning the region between MW-108A and MW-103A.. The distribution of K in the C and E Sand zones ~~also~~ does not appear to be related to any consistent hydrogeologic conditions, i.e., no pattern suggestive of a preferential pathway is apparent. The area of low K near C Sand wells S-7, S-9, and S-11 could be a function of testing density (i.e., the tests were performed among closely spaced wells), although it may correlate to a zone of lower conductivity materials (silt or clay lenses). The test results indicate ~~an~~ areas of lower K in the C Sand that occur near the pumping well arrays and near well MW-107C~~trends southeast to northwest across the western portion of the LMGS site~~.

<u>Pumping Test Analysis</u>

Two aquifer pumping tests were performed at the LMGS site in August and September 2024 - one test each at test well clusters centered at pumping well P-1 (C Sand) and P-2 (E Sand). Each test consisted of a centrally located pumping well surrounded by 11 sentinel wells. Water level transducer data from the long-term water level monitoring network were also evaluated as part of the data assessment. The data obtained from the aquifer pumping tests were used to evaluate the transmissivity and storativity of the aquifer. Because of historically low yields observed in the A Sand zone (and confirmed during well development during this project), no aquifer pumping test was performed in the A Sand.

Results of the pumping tests are summarized in Table 2.4.12-10. The C Sand aquifer pumping test was conducted using pumping well (test well) P-1 and 11 sentinel wells (S-7 through S-12 and S-17 through S-21) located at distances of approximately 25 to 120 ft (8 to 37 m) from the test well (Figure 2.4.12-12~~24~~). Pressure transducers equipped with data loggers were used to measure water level drawdown and recovery in the test well and sentinel wells. Water level data from the surrounding long-term water level monitoring network were reviewed but not formally analyzed.

P-1 was pumped at a rate of 30 gallons per minute (gpm) for approximately 97 hours. Based on the results presented in Table 2.4.12-10 (Sheet 1 of 2), a transmissivity of ~~approximately~~ 1,010~~1.8~~ ft^2/day, a storage coefficient of approximately 1.15~~2~~ x 10^{-3}, and a K of approximately 24.7 ft/day (~~8~~ 7.53 m/day) (using a saturated thickness of 40.9 ft [12.5 m]) are ~~estimated~~ calculated for the C Sand at this location.

P-2 was pumped at a rate of 20 gpm for approximately 49 hours. Based on the results presented in Table 2.4.12-10 (Sheet 2 of 2), a transmissivity of ~~approximately~~ 594~~.0~~ ft^2/day, a storage coefficient of ~~approximately~~ 4.63~~2~~ x 10^{-5}, and a K of ~~approximately~~ 28.6 ft/day (~~9~~ 8.72 m/day) (using a saturated thickness of 20.8 ft. [6.34 m]) are estimated for the E Sand at this location.

Water level transducer data collected from overlying aquifer zones during the P-1 and P-2 pumping tests indicate there is no communication/connection between the A and C Sands, the A and E Sands, or the C and E Sands.

2.4.12.2.4.2 Geotechnical Parameters

~~At the time of report preparation, geotechnical laboratory analysis was still ongoing. Results from geotechnical testing will be provided by the end of second quarter 2026.~~Geotechnical parameters incorporated into Subsection 2.4.12 are limited to grain-size analysis data. Grain-size results from soil borings were used to refine visual lithologic classifications and hydrostratigraphic cross sections and support the overall Conceptual Site Model (CSM). Geotechnical testing results are discussed in Subsection 2.5.4.

2.4.12.2.5 Hydrogeochemical Characteristics

Although local hydrogeochemical data are not available and groundwater is not withdrawn for use at the proposed LMGS, regional hydrogeochemical data are available from monitoring wells within 6 mi (9.6 km) of the LMGS site and include selected inorganics and radionuclides. These data were obtained from the TWDB online data viewer portal (TWBD, 2024a). The following radionuclide test data were available: radium 228 was reported in two samples at values of 1.05 and 1.4 picocuries per liter (pCi/L), and uranium was reported in three samples ranging from 0.0103 to 0.0121 mg/L (TWDB, 2024b). Data are presented in Table 2.4.12-11. The data indicate that the highest reported total alkalinity value was 374 mg/L and the highest nitrate ion value was 17.44 mg/L.

2.4.12.3 Subsurface Pathways

This subsection evaluates subsurface pathways for offsite exposure resulting from a liquid effluent release at the LMGS site. To assist with this evaluation, a groundwater flow model was developed to aid in assessing groundwater flow conditions at the LMGS site.

2.4.12.3.1 Groundwater Flow Model

A numerical groundwater flow model was developed to assist with interpretation of the subsurface hydrogeologic materials and to simulate groundwater flow conditions. Steady-state modeling efforts began while the subsurface site investigation was being conducted; these efforts were refined as subsurface data interpretations and evaluations were completed. This subsection presents the development and conclusions of the ~~final~~ steady-state groundwater modeling effort. Because the A Sand is most likely to be affected by any accidental release (see Subsection 2.4.12.3.1.1 below), and because testing described above indicates no appreciable interactions among the A, C, and E Sands, only the A Sand was modeled.

A three-dimensional, variable-thickness one-layer groundwater flow model was developed to evaluate potential impacts of the groundwater flow system on potential releases.

The groundwater flow model was developed within the USGS Model Muse groundwater modeling environment (Winston, 2005). The package consists of a series of pre- and post-processors that feed information to the groundwater flow model program selected for the LMGS (MODFLOW). MODFLOW is a three dimensional finite-difference groundwater flow model also developed by the USGS (Harbaugh, 2005). A subsidiary USGS package known as MODPATH (Pollock, 2016) is used to perform particle tracking to estimate travel time from a postulated radwaste accidental release to groundwater within the LMGS to the nearest receptor for simulation of the accidental release pathway for radionuclides.

A detailed description of the construction, calibration, and results of the model is included here in Subsection 2.4.12~~3~~. A description of sorption and radioactive decay effects on offsite exposure is also presented in Subsection 2.4.13.

2.4.12.3.1.1 Hydrogeologic Conceptual Site Model

A ~~conceptual site model (~~CSM~~)~~ summarizes the overall qualitative understanding of how the local and regional topography, climate, geomorphology, stratigraphy, groundwater use patterns, hydrology, and boundary conditions affect groundwater flow in any potentially affected water-bearing zone. The hydrogeologic CSM presented here relies on data and observations from the recently completed ~~portions of the ongoing~~ investigation~~s~~ of the LMGS site and environs and ~~occasionally~~ references documented historical investigations of the adjacent SDO facility for comparison purposes only. The principal features referenced in this CSM are depicted on Figures 2.4.12-1 and 2.4.12-12.

Regionally, the principal aquifer at the LMGS site is the Chicot Aquifer, which is several hundred feet thick and dips southeasterly toward the Gulf of Mexico. However, beneath the LMGS site, to a depth of about 200 ft (61 m), there are only three thinner continuous water-bearing zones, the successively deeper A, C, and E Sands. B and D Sand zones are present at the adjacent SDO facility, but these are either not continuous or not present beneath the LMGS site and are not discussed further in this analysis. ~~–~~The A Sand unit is generally considered continuous across the site in terms of being a connected, water-transmitting hydrostratigraphic unit. Although some exploratory points did not encounter coarse-grained material (generally fine to medium sand), coarse-grained materials were identified in a majority of the boring logs in the A Sand. In addition, the range of hydraulic conductivity measurements and the recorded water levels in the monitoring wells indicate that coarse-grained materials are present in the A Sand unit sufficient to transmit groundwater across the site.

Hydraulic properties for these three water-bearing zones are described in Subsection 2.4.12.2.4.1. These data indicate that the LMGS site groundwater flow can be conceptualized as a layer-cake system of alternating low K silts and clays with sandier zone layers that ~~permit~~conduct groundwater flow.

Any LMGS-related release to groundwater would ~~most likely~~potentially only affect the A Sand water-bearing zone. Historical information for the NLF area at the SDO facility (Jacobs, 2023) suggest that the A and C Sand zones are not hydraulically connected. Further, pumping tests conducted for this PSAR have shown that sustained pumping in the C Sand did not result in any drawdown in sentinel wells in the A Sand (Subsection 2.4.12.2.4.1) in the vicinity of the proposed facility. The remainder of this CSM discussion is focused on the A Sand and briefly discusses the C and E Sands for the sake of completeness.

<u>Water-Bearing Zone Stratigraphy</u>

The A Sand zone beneath and adjacent to the LMGS site is characterized as thin, relatively low K, silty or clayey sands that have low horizontal hydraulic gradients. The coarse-grained material within the A Sand may pinch out ~~entirely~~ in places in the vicinity of the LMGS site but present in sufficient quantities to transmit flow. Boring data collected for this PSAR indicate that the A Sand may be about 4 ft (1 m) thick on average. The A Sand is confined above and below by clay aquitards that average about 13 and 55 ft (4 and 17 m) thick, respectively (Subsection 2.4.12.2.4.1). These aquitard layers have been designated in historical documents as the Stratum III and Stratum V units, respectively.

The C Sand zone also contains some clayey interbedded layers, so the defined thickness of the C Sand zone may contain a thinner layer of more permeable sands. The average thickness of the C Sand is interpreted from boring data as about 29 ft (9 m). The C and lower E Sands are also segregated by the Stratum IX Clay unit, which is about 54 ft (16.4 m) thick, on average.

The E Sand unit was first encountered ranging from about 18 to 118 ft (5 to 36 m) below the C Sand. Most E Sand borings were terminated at a depth of about 200 ft (61 m) bgs, so the thickness of the unit may not be fully determined at some PSAR exploration locations.

<u>Groundwater Flow</u>

Groundwater is confined in all three water-bearing zones investigated. Piezometric heads in the A Sand, based on LMGS data, average about 21 ft (6 m) ~~bgs~~NAVD88 at the LMGS site, or about 5 to 7 ft bgs. Piezometric heads in the C Sand are about 13 ft (4 m) lower than in the A Sand, and piezometric heads in the E Sand are about 5 ft (2 m) lower than in the C Sand. While there are consistent downward hydraulic gradients (Subsection 2.4.12.2.2), the low vertical K of the aquitards (Jacobs, 2023) prevents any significant vertical component of flow between the A and C Sand units.

Horizontal groundwater flow in the A Sand is primarily toward the east or northeast through the NLF area into the LMGS site. A Sand groundwater flow through the NLF area is complicated by the obstructions that the landfills and wastewater treatment lagoon pose to the A Sand flow field. The closed Non-hazardous Waste Landfill and the active NLF Expansion Cell at the SDO facility have barrier walls that extend into the clays underlying the A Sand. Similarly, the liners of the closed NLF and the Wastewater Treatment ~~Lagoon~~Reactor also penetrate through the A Sand into the underlying clay stratum and cause groundwater to flow around them (ERM, 1994). However, at the west LMGS site boundary, the groundwater field encounters no further obstructions. Based on interpretations of flow direction from the September 2024 and subsequent monthly manual water level measurement events, A Sand groundwater flows mainly east to southeast and may discharge into West Coloma Creek at times. The height of water in the creek may locally affect flow patterns seasonally in response to storm runoff to the creek or periods when the creek is at low flow~~dry~~, but A Sand groundwater flow rates are estimated to be very slow. A Sand well potentiometric heads varied between about 1 to 3 ft (0.3 to 1 m) during the monitoring period~~ from February to September 2024~~.

The SDO facility maintains a Resource Conservation and Recovery Act (RCRA) monitoring program for the licensed waste management facilities in the adjacent NLF area (Jacobs, 2023) and the nearby In-Plant Lagoon (IPL) area (Jacobs, 2021). Water levels and water quality samples are taken semi-annually, typically in January and July, or annually, and reported annually. For this PSAR, six wells in the NLF area and three in the IPL area were accepted from 16 prospective candidate wells from the SDO facility monitoring well programs through a CGD process as suitable for yielding accurate water level data to help understand upgradient conditions for A Sand groundwater flow into the LMGS site. ~~Going forward,~~W~~ w~~ater level data were~~will be~~ collected from these wells to supplement the PSAR-installed explorations and to help calibrate the numerical groundwater model (no historical data from the SDO facility wells will be used for these purposes).~~ An updated and recalibrated groundwater model will be provided by the end of second quarter 2026.~~ While the record of measurements since the inception of the program in the 1980s indicates variable flow directions, on average, groundwater flows in both the A and C Sands are consistent with the interpretation of A Sand groundwater flow from the September 2024 and subsequent measurement events.

Based on potentiometric maps~~ for February through September 2024~~, groundwater flow direction in the C Sand is interpreted as relatively consistent in both flow direction and gradient throughout the period of observation. Groundwater flows generally southwest in the C Sand through the LMGS site and the SDO facility property toward the surface waters at the western edge of the SDO facility property. There are no apparent stresses on the C Sand based on the consistent flow directions and gradients. Potentiometric heads measured in the C Sand wells differed by less than a foot ~~between February and September 2024~~during the monitoring period.

Groundwater flows toward the south or southeast in the E Sand toward the Gulf of Mexico, based on the data collected to date. Water level comparisons between the C and E Sands indicate a consistent downward head differential, but the connection may be weak as evidenced by the typical piezometric head difference of about 5 ft (1.5 m) and the results of the pumping test (Subsection 2.4.12.2.4.1). Potentiometric heads in the E Sand wells ~~also differed~~varied by approximately 1.5 ft (0.5 m) ~~less than a foot between February and September 2024~~during the monitoring period.

Using the geometric mean K from slug tests performed during the LMGS site investigation, the measurement of hydraulic gradients, and assumed effective porosity values, the average horizontal groundwater flow velocity in the A Sand is estimated as 0.04~~7~~4~~3~~ ft/day (0.0143~~09~~ m/day). This value is higher than values estimated in historical documents that estimate an average flow rate in the A Sand of about 1 ft (0.1 m) per year (about 0.003 ft/day) in the NLF area (ERM, 1994). The average horizontal groundwater flow velocity through the C Sand is ~~estimated ~~calculated as 0.018~~3~~ ft/day (0.0055~~1~~ m/day). The average horizontal flow velocity in the E Sand is estimated to be approximately 0.009~~8~~4~~1~~ ft/day (0.~~003 ~~0029 m/day). Groundwater flow velocities are summarized in Table 2.4.12-12.~~ Pum~~

Groundwater flow direction is discussed in greater detail in Subsection 2.4.12.2.2.

Sources and Sinks

Regionally, the Chicot Aquifer is recharged as the sandier water-bearing zones that dip toward the Gulf of Mexico rise to the north and intersect the surface of the ground. The A, C, and E Sands do not receive much recharge, if any, from local precipitation events because of the low vertical permeability of the overlying clayey aquitards. Groundwater flows in the C and E Sands do not appear to be affected by any SDO facility activities. However, the 1994 Task 5 RCRA Facility Investigation concluded that Basin #No. 5 and perhaps Basin #No. 6 (also identified in some reports and figures as Basin #No. 31) leak and locally recharge the A Sand (Hall, 1985). Changes in the operating levels in these basins may result in varying recharge rates and locally variable interpretations of A Sand groundwater flow directions. Because the A Sand is confined, pressure may propagate through this water-bearing zone without actually resulting in much lateral movement of the groundwater because of its low flow velocity.

A Sand groundwater is intercepted for treatment in the IPL area. A plume of primarily bis (2-chloroethyl) ether (BCEE) has been pumped from two remedial measure interceptor trenches (via pumping at Sumps 7 and 8) and treated since 1985 (Jacobs, 2021). Pumping in this area appears to have caused higher frequency and greater magnitude groundwater level oscillations (relative to other A Sand wells in the network) in wells C-87-50A and C-98-344A (Figure 2.4.12- 21, Sheets 23 and 24).

Site Use of Groundwater

The SDO facility does not use groundwater for processes; surface water is pumped from the GBRA Calhoun Canal into cooling water basins and lagoons that are shown on Figure 2.4.12-1. Further, the A Sand zone is generally too thin and of relatively low K (low yielding) that it is not considered a suitable source as water supply. Groundwater use by other surrounding entities is discussed in Subsection 2.4.12.2.1.1 and Subsection 2.4.12.2.1.2 of this PSAR.

2.4.12.3.1.2 Groundwater Model Development

Hydrogeologic information for the LMGS site was obtained primarily from the site subsurface investigation program and regional publications and databases to develop a stratigraphic model of the A Sand of the Chicot Aquifer within the area of the LMGS site. LMGS site groundwater level measurements were used as primary calibration targets for the groundwater model.

As previously noted, because of the lack of apparent connectivity among the A, C, and E Sands inferred by the pumping tests and incorporated into Subsection 2.4.12.3.1.1, Hydrogeologic Conceptual Site Model, only the A Sand was modeled. Because the A Sand is relatively thin, only one variable-thickness layer was chosen to represent the components of the A Sand.

2.4.12.3.1.2.1 Description of Hydro-lithologic Units

The various hydro-lithologic units included in the LMGS conceptual model were defined based on the results of a detailed subsurface investigation at the LMGS site. ~~An updated and~~

~~recalibrated groundwater model will be provided by the end of the second quarter 2026.~~ Four hydrostratigraphic cross sections (A through D to A’ through D’) were constructed to evaluate the distribution of hydro-lithologic units at the site. A cross section location map is provided on Figure 2.4.12-13; cross sections are provided on Figure 2.4.12-14 through Figure 2.4.12-17.

The hydrogeologic cross sections provide a conceptual model of the stratigraphy beneath the LMGS site and its vicinity. This stratigraphic conceptual model provides the basis for interpolating elevations of the bottom of each stratum. The ~~-~~strata elevations were interpolated based on a triangular grid for the top and bottom elevations of the numerical model active layer.

The horizontal hydraulic conductivity (K_h) values derived from the slug tests (refer to Subection 2.4.12.2.4.1, Hydrogeological Parameters) for the A Sand were the initial ~~bounds~~parameter values used in the LMGS site groundwater model. The ~~Bouwer-Rice geometric mean~~ selected K_h arithmetic average value of 8.17~~1.43~~ ft/day was used as the initial default value throughout the model domain.

2.4.12.3.1.3 Numerical Model

The model area was established to encompass the LMGS site and surrounding pertinent hydrogeologic features as determined in Subsection 2.4.12.3.1.1, Hydrogeologic Conceptual Site Model. The model domain is depicted on Figure 2.4.12-24~~5~~. Groundwater flow directions are interpreted as generally west to east across the LMGS site to the West Coloma Creek and typically converging to the creek on the east side of the creek as well. That is, the creek serves as a probable closest discharge location (sink) for groundwater potentially affected by the LMGS~~northeast to southwest past the creek~~.

The model grid consists of 181 columns, 132 rows, and 1 layer. The uniform ~~G~~grid spacing is 50 ft (15 m) by 50 ft (15 m)~~ grid blocks throughout~~. Figure 2.4.12-24~~5~~ provides a plan view of the model domain showing the grid and calibration wells. The top of the A Sand layer ranges from 3 to 21 ft (1 to 6 m) elevation (NAVD88). The bottom of the A Sand layer ranges from -2 to 15 ft (-0.6 to 4.5 m) elevation.

In MODFLOW, ~~A~~a layer type is defined for each layer in the model. The layer type represents the hydrogeologic conditions anticipated for each layer. For the LMGS model, this model layer type is type 0 confined (where the transmissivity is ~~and storage coefficient are~~ constant at each model grid block throughout the simulation). The MODFLOW default method for assigning inter-block transmissivity using the harmonic mean is retained.

The solver used in the model is the Preconditioned Conjugate Gradient.

2.4.12.3.1.4 Boundary Conditions

Because the A Sand is a confined unit, no direct recharge or evapotranspiration are modeled. A constant head boundary was assigned to represent Operating Basin ~~#~~No. 5 in the model. That basin is represented by a constant head elevation ~~head~~ of 26.5 ft (8 m) NAVD88. An additional northern constant head boundary was used to configure boundaries based on the

A Sand potentiometric surface map of September 2024 (Figure 2.4.12-18 [Sheet 22 of 24]). It ~~has~~was assigned an initial ~~an~~ elevation of 22~~3~~ ft (7 m) and is shown as a thick black line segment in Figure 2.4.12-25~~6~~. An initially specified western constant head boundary was assigned an initial elevation of 22 ft (7 m) NAVD88 and is shown as a thick black line segment in Figure 2.4.12-25.~~ was eliminated as not significant in calibration and is not shown~~.

Drain boundaries were assigned in layer 1 to represent leakage of the A Sand to West Coloma Creek~~ as suggested by the September 2024 water level in MW-107A~~. The elevation of the drain was ~~used as a calibration value and~~ set at an equal slope from 19.2 to 18.5 ft (5.9 to 5.6~~.~~5 m) NAVD88 elevation. The drain is shown in blue on Figure 2.4.12-25~~6~~.

2.4.12.3.1.5 Model Calibration

Model calibration involved adjusting uncertain input parameters to obtain the best match between observed and simulated groundwater levels and the lowest water balance error. The input parameters with the most uncertainty are drain leakage, fixed head boundary position and values, and K. The model was calibrated by systematically varying these parameters over a plausible range to determine the values that yielded the best model fit to the observed potentiometric head data. Given the average nature of the water levels which spanned 8.84 feet, a target of 0.75 of a foot was set as the average of the absolute value of the residuals. The target average difference should be less than +/- 0.25 foot and the target scaled standard deviation should be less than 0.10~~Best fit was based on a combination of two factors: (1) minimized root-mean-square errors at the calibration points that represent both over- and under-estimates and seek to minimize total error, and (2) the total sum of signed errors, which seeks to identify biases in estimates leading to systematic over- or under-estimates for all calibration points~~. Results of the calibration are included in Table 2.4.12-13. Table 2.4.12-14 presents final calibrated model parameters.

2.4.12.3.2 Groundwater Modeling Summary and Conclusions

A three-dimensional variable-thickness, one-layer groundwater flow model was developed and calibrated to evaluate groundwater level and assess the conditions on the accidental release and transport of radionuclides in groundwater. The constructed model is calibrated sufficiently to represent average groundwater elevation conditions ~~observed~~ observed between February 2024 and September 2025~~in September 2024~~ as a static model. This numerical model has been constructed solely for estimating travel times using particle tracking from a potential accidental release in the power block area being transported by groundwater to West Coloma Creek. It may not be appropriate for other uses

2.4.12.4 Monitoring or Safeguards Requirements

Groundwater level monitoring at the LMGS site uses the groundwater monitoring wells installed in 2023 and 2024 for the site subsurface investigation. As part of the detailed design for the construction permit application, the groundwater monitoring well network and environmental monitoring program is evaluated with respect to the Nuclear Energy Institute

Groundwater Protection Initiative (NEI 07-07) (NEI, 2007) and 10 CFR 20.1406 to determine whether any modifications are required to adequately monitor plant effects on the groundwater.

Some of the existing LMGS monitoring wells are expected to be taken out of service before construction activities begin to avoid their inadvertent destruction. For long-term groundwater monitoring purposes, the remaining monitoring well network is evaluated to determine the need for replacement wells. The evaluation forms the basis for the groundwater monitoring program described in the following paragraphs. Considerations to revise the site groundwater monitoring program include the following:

- Chicot Aquifer: Periodic water level measurements in the A, C, and E Sand aquifer zone monitoring wells and collection of geochemical samples and analysis will be performed in selected monitoring wells. The water level monitoring program objective is to detect changes in flow patterns in the aquifer zones of interest that might affect accident analysis and track temporal trends in groundwater levels that might affect structural stability.
- Operational Monitoring: The process and effluent monitoring program and implementation schedule will be described at the operating license application stage.

Groundwater level measurements in the Chicot Aquifer monitoring wells are collected during construction and after plant startup. Selection of monitoring wells to be included in the program is made before the start of operation. The selection process is based on well condition and position relative to the LMGS and other monitoring wells to provide optimal spatial distribution for potentiometric map preparation and i_v assessment. Additionally, the long-term viability of the monitoring wells (i.e., the likelihood that the well will survive construction activities) is considered in the selection process. Monitoring frequency and duration is determined during detailed design at the operating license application stage.

Geochemical sampling and analysis in the Chicot Aquifer is performed during construction and after startup. Analysis may include field parameters (potential of hydrogen [pH], temperature, specific conductance, oxidation-reduction potential, and dissolved oxygen), major cations, major anions, total dissolved solids, and silica. Sampling is performed in site production wells and selected monitoring wells. The monitoring wells to be sampled, the sampling frequency, and the sampling duration is determined later.

Safeguards minimize the potential for adverse impacts to groundwater from the construction and operation of the new units. These safeguards include the use of lined containment structures around storage tanks (where appropriate) and hazardous materials storage areas, emergency cleanup procedures to capture and remove surface contaminants, and other measures deemed necessary to prevent or minimize adverse impacts to the groundwater beneath the LMGS site.

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Table 2.4.12-1
LMGS Monitoring Well Construction Details
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Well ID [a]	Hydrogeologic Unit	Northing [b] (ft)	Easting [b] (ft)	TOC Elevation [b] (ft NAVD 88)	Ground Surface Elevation [b] (ft NAVD 88)	Well Diameter (in.)	Well Depth (ft bgs)	Top of Screen (ft bgs) [c]	Bottom of Screen (ft bgs) [c]	Top of Screen [c] (ft NAVD 88)	Bottom of Screen [c] (ft NAVD 88)
MW-1A	A Sand	13381701.7	2686123.1	29.07	26.2	4	17.0	9.7	14.7	16.5	11.5
MW-1C	C Sand	13381707.5	2686109.8	29.13	26.2	4	85.0	62.7	82.7	-36.5	-56.5
MW-1E	E Sand	13381692.7	2686106.9	29.22	26.0	4	151.7	129.1	149.1	-103.1	-123.1
MW-2A	A Sand	13382471.1	2685446.5	29.52	26.9	4	20.5	13.2	18.2	13.7	8.7
MW-2C	C Sand	13382461.4	2685449.8	29.50	26.7	4	77.0	64.2	74.2	-37.5	-47.5
MW-2E	E Sand	13382469.8	2685457.0	29.58	26.8	4	199.6	187.3	197.3	-160.5	-170.5
MW-3A	A Sand	13383546.4	2686910.7	28.96	26.0	4	22.0	14.7	19.7	11.3	6.3
MW-3C	C Sand	13383549.1	2686928.7	28.79	26.1	4	94.4	71.7	91.7	-45.6	-65.6
MW-3E[d]	E Sand	13383561.6	2686915.8	28.94	26.3	4	167.6	154.8	164.8	-128.5	-138.5
MW-4A	A Sand	13382618.3	2688082.4	28.92	26.0	4	22.0	14.7	19.7	11.3	6.3
MW-4C	C Sand	13382603.8	2688075.8	28.88	26.0	4	102.3	79.9	99.9	-53.9	-73.9
MW-4E	E Sand	13382622.1	2688075.9	28.83	26.0	4	166.2	143.8	163.8	-117.8	-137.8
MW-5A	A Sand	13381262.9	2687393.5	28.95	26.7	4	22.0	14.7	19.7	12.0	7.0
MW-5C	C Sand	13381265.0	2687404.0	29.30	26.7	4	102.6	79.8	99.8	-53.1	-73.1
MW-5E	E Sand	13381275.3	2687394.1	29.19	26.7	4	159.5	137.2	157.2	-110.5	-130.5
MW-6A	A Sand	13380964.3	2686574.0	29.53	26.9	4	22.0	14.7	19.7	12.2	7.2
MW-6C	C Sand	13380963.0	2686581.0	29.18	26.8	4	111.0	88.1	108.1	-61.3	-81.3
MW-6E	E Sand	13380958.5	2686586.2	29.03	26.4	4	186.6	163.7	183.7	-137.3	-157.3
MW-101A	A Sand	13382657.0	2684165.3	30.37	27.8	4	27.5	15.0	25.0	12.8	2.8
MW-101C	C Sand	13382642.1	2684173.8	30.29	27.8	4	92.5	70.0	90.0	-42.2	-62.2
MW-101E	E Sand	13382654.7	2684188.0	30.49	27.8	4	187.4	169.9	184.9	-142.1	-157.1
MW-102A	A Sand	13380787.4	2688525.0	29.07	26.1	4	22.7	10.2	20.2	15.9	5.9
MW-102C	C Sand	13380796.1	2688509.4	28.70	25.7	4	95.2	82.7	92.7	-57.0	-67.0
MW-102E	E Sand	13380805.0	2688525.3	28.16	25.2	4	158.7	136.2	156.2	-111.0	-131.0
MW-103A	A Sand	13383944.7	2688492.7	29.24	26.3	4	17.5	10.0	15.0	16.3	11.3
MW-103C	C Sand	13383935.7	2688486.6	29.33	26.3	4	97.5	85.0	95.0	-58.7	-68.7
MW-103E	E Sand	13383931.2	2688497.4	29.39	26.4	4	170.6	148.2	168.2	-121.8	-141.8

Table 2.4.12-1
LMGS Monitoring Well Construction Details
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Well ID [a]	Hydrogeologic Unit	Northing [b] (ft)	Easting [b] (ft)	TOC Elevation [b] (ft NAVD 88)	Ground Surface Elevation [b] (ft NAVD 88)	Well Diameter (in.)	Well Depth (ft bgs)	Top of Screen (ft bgs) [c]	Bottom of Screen (ft bgs) [c]	Top of Screen [c] (ft NAVD 88)	Bottom of Screen [c] (ft NAVD 88)
MW-104A	A Sand	13383948.8	2686013.3	29.36	26.8	4	34.2	21.8	31.8	5.0	-5.0
MW-104C	C Sand	13383938.9	2686017.2	29.64	26.9	4	93.4	71.0	91.0	-44.1	-64.1
MW-104E	E Sand	13383955.8	2686023.0	28.94	26.2	4	177.8	165.4	175.4	-139.2	-149.2
MW-105A	A Sand	13381936.4	2685649.3	30.27	26.6	4	22.9	10.0	20.0	16.6	6.6
MW-105C	C Sand	13381928.1	2685639.2	30.68	27.0	4	87.9	65.0	85.0	-38.0	-58.0
MW-106A	A Sand	13382298.3	2686187.0	29.60	26.2	4	23.9	11.0	21.0	15.2	5.2
MW-107A	A Sand	13382687.4	2686710.0	29.54	26.4	4	22.9	10.0	20.0	16.4	6.4
MW-107C	C Sand	13382677.7	2686699.2	29.36	26.1	4	79.9	57.0	77.0	-30.9	-50.9
MW-108A	A Sand	13381571.9	2685899.3	29.72	26.8	4	23.9	11.0	21.0	15.8	5.8
MW-109A	A Sand	13381929.2	2686464.2	29.17	26.0	4	23.9	11.0	21.0	15.0	5.0
MW-110A	A Sand	13382328.5	2687005.2	31.62	28.4	4	23.9	11.0	21.0	17.4	7.4
MW-111A	A Sand	13381159.6	2686220.1	30.22	26.9	4	24.9	12.0	22.0	14.9	4.9
MW-111C	C Sand	13381151.7	2686208.3	30.65	27.2	4	83.7	60.8	80.8	-33.6	-53.6
MW-112A	A Sand	13381504.1	2686755.0	29.18	25.9	4	23.9	11.0	21.0	14.9	4.9
MW-113A	A Sand	13381144.4	2687005.0	29.90	26.5	4	23.9	11.0	21.0	15.5	5.5
P-1	C Sand	13381982.6	2687150.5	28.79	26.7	6	102.0	80.0	100.0	-53.3	-73.3
P-2	E Sand	13381819.0	2686940.0	28.24	25.7	6	167.5	145.5	165.5	-119.8	-139.8
S-1	E Sand	13381846.4	2686977.2	28.53	25.7	4	162.4	139.9	159.9	-114.2	.134.2
S-2	E Sand	13381862.0	2686908.8	28.92	25.8	4	162.3	139.8	159.8	-114.0	-134.0
S-3	E Sand	13381777.9	2686975.1	28.66	26.0	4	162.4	140.0	160.0	-114.0	-134.0
S-4	E Sand	13381790.5	2686904.1	28.68	25.6	4	162.2	139.8	159.8	-114.2	-134.2
S-5	E Sand	13381767.2	2686867.5	28.64	25.8	4	162.6	140.2	160.2	-114.4	-134.4
S-6	E Sand	13381745.4	2686837.0	28.59	25.7	4	162.6	140.2	160.2	-114.5	-134.5
S-7	C Sand	13382013.8	2687186.4	30.71	27.9	4	99.8	77.4	97.4	-49.5	-69.5
S-8	C Sand	13382024.0	2687117.5	29.11	26.3	4	99.7	77.3	97.3	-51.0	-71.0
S-9	C Sand	13381936.9	2687189.2	29.47	27.0	4	99.8	77.4	97.4	-50.4	-70.4
S-10	C Sand	13381959.4	2687115.8	27.98	25.3	4	100.0	77.6	97.6	-52.3	-72.3

Table 2.4.12-1
LMGS Monitoring Well Construction Details
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Well ID [a]	Hydrogeologic Unit	Northing [b] (ft)	Easting [b] (ft)	TOC Elevation [b] (ft NAVD 88)	Ground Surface Elevation [b] (ft NAVD 88)	Well Diameter (in.)	Well Depth (ft bgs)	Top of Screen (ft bgs) [c]	Bottom of Screen (ft bgs) [c]	Top of Screen [c] (ft NAVD 88)	Bottom of Screen [c] (ft NAVD 88)
S-11	C Sand	13381936.2	2687085.2	28.50	25.5	4	100.0	77.5	97.5	-52.0	-72.0
S-12	C Sand	13381914.5	2687054.0	28.62	25.4	4	100.0	77.5	97.5	-52.1	-72.1
S-13	A Sand	13381822.7	2686905.0	27.86	25.6	4	24.7	11.5	21.5	14.1	4.1
S-14	A Sand	13381848.7	2686938.7	27.80	26.7	4	24.7	11.5	21.5	15.2	5.2
S-15	A Sand	13381810.6	2686975.6	27.68	25.9	4	24.7	11.5	21.5	14.4	4.4
S-16	A Sand	13381777.1	2686947.0	28.08	25.9	4	24.7	11.5	21.5	14.4	4.4
S-17	A Sand	13381988.0	2687120.4	27.25	25.4	4	24.7	11.5	21.5	13.9	3.9
S-18	A Sand	13382018.8	2687155.1	29.21	27.4	4	24.7	11.5	21.5	15.9	5.9
S-19	A Sand	13381973.4	2687190.6	29.52	27.4	4	24.7	11.5	21.5	15.9	5.9
S-20	A Sand	13381946.4	2687155.5	28.23	25.9	4	24.6	11.4	21.4	14.5	4.5
S-21	C Sand	13381832.9	2686959.8	27.87	25.7	4	102.2	79.0	99.0	-53.3	-73.3
SW-1[e]	Coloma Creek	13,383,881.0	2,685,966.4	19.59	18.7	4	2.5	-0.5	2.0	19.2	16.7
SW-2[e]	Coloma Creek	13,382,046.4	2,687,230.4	19.47	18.7	4	2.5	-0.5	2.0	19.2	16.7
C-87-50A [e][f]	A Sand	13378641.9	2685312.8	32.91	29.4	2	25.1	16.9	24.5	16.0	8.4
C-98-344A [e][f]	A Sand	13377519.8	2686245.9	41.63	38.6	2	48.9	36.3	46.3	5.3	-4.7
NE-00-130A [e][f]	A Sand	13381163.4	2685571.7	35.49	31.3	2	23.7	15.6	23.1	19.9	12.4
NE-03-131A [e][f]	A Sand	13380748.9	2685458.4	34.36	31.4	2	24.8	16.5	24.0	17.9	10.4
NE-87-19A [e][f]	A Sand	13380848.5	2684714.2	29.73	27.1	2	26.2	16.0	21.0	13.7	8.7
NE-98-118A [e][f]	A Sand	13380992.9	2685695.8	34.14	31.3	2	25.6	15.4	23.0	18.7	11.1
NE-91-63A [e][f]	A Sand	13381389.1	2685260.7	33.72	31.3	2	23.3	13.2	22.9	20.5	10.8
NE-86-18A [e][f]	A Sand	13381193.0	2686051.7	29.21	26.7	2	22.6	12.3	17.8	16.9	11.4
C-81-A1 [e][f]	A Sand	13379406.9	2688044.7	30.49	27.9	2	23.1	18.3	23.0	12.2	7.5

a "A" suffix wells are installed in the A Sand zone; "C" suffix wells are screened in the C Sand; "E" suffix wells are screened in the E Sand.
b Coordinates are Texas State Plane South Central Zone (North American Datum of 1983); elevations are North American Vertical Datum of 1988.
c Observation well screens are 0.010 inches slot width.
d Surveyed coordinates and elevations for MW-3E (abandoned) are presented in the survey report as replacement boring MW-3ER at the final well installation.
e SW-1 and SW-2 are stilling wells installed in West Coloma Creek.
f Existing Seadrift Facility monitoring well. Well and well screen depths are referenced to top of casing (TOC).

Key: bgs = below ground surface; BTOC = below top of casing; ft = feet; in. = inches; ID = identification; NAVD 88 = North American Vertical Datum of 1988; LMGS = Long Mott Generating Station

Table 2.4.12-2
Listing of EPA Safe Drinking Water Information System Groundwater Systems in Calhoun County, Texas
Page 1 of 2

Water System Name	Water System Type [a]	County Served	Population Served	Primary Water Source Type	System Status	Water System ID
City of Point Comfort	Community	Calhoun	759	Surface Water	Active	TX0290001
City of Port Lavaca	Community	Calhoun	11,854	Purchased Surface Water	Active	TX0290002
City of Seadrift	Community	Calhoun	1577	Groundwater	Active	TX0290004
Enchanted Harbor	Community	Calhoun	165	Purchased Groundwater	Active	TX0290050
GBRA Calhoun County Rural Water System	Community	Calhoun	4482	Purchased Surface Water	Active	TX0290007
GBRA Port Lavaca	Community	Calhoun	0	Surface Water	Active	TX0290005
Port Alto Hoa District 1	Community	Calhoun	213	Groundwater	Active	TX0290027
Port Alto Water Supply Corporation	Community	Calhoun	96	Groundwater	Active	TX0290028
Port O'Connor Improvement District	Community	Calhoun	1064	Purchased Surface Water	Active	TX0290065
Seaport Lakes Subdivision	Community	Calhoun	42	Groundwater	Active	TX0290066
Sunilandings Utilities	Community	Calhoun	495	Groundwater	Active	TX0290056
Alcoa Point Comfort Operations	Non-Transient, Non-Community Water	Calhoun	30	Groundwater	Active	TX0290014
El Campo Beach Property Owner Assn	Non-Transient, Non-Community Water	Calhoun	90	Groundwater	Active	TX0290060
Formosa Point Comfort I	Non-Transient, Non-Community Water	Calhoun	2400	Purchased Surface Water	Active	TX0290074

Table 2.4.12-2
Listing of EPA Safe Drinking Water Information System Groundwater Systems in Calhoun County, Texas
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Water System Name	Water System Type [a]	County Served	Population Served	Primary Water Source Type	System Status	Water System ID
Formosa Point Comfort II	Non-Transient, Non-Community Water	Calhoun	250	Purchased Surface Water	Active	TX0290072
Ineos Green Lake Plant	Non-Transient, Non-Community Water	Calhoun	250	Surface Water	Active	TX0290051
Seadrift Coke Plant	Non-Transient, Non-Community Water	Calhoun	110	Surface Water	Active	TX0290054
Union Carbide Seadrift Plant	Non-Transient, Non-Community Water	Calhoun	683	Surface Water	Active	TX0290003
Machaceks Rockin M Recreational Vehicle Park & Campground	Transient, Non-Community Water Systems	Calhoun	25	Groundwater	Active	TX0290075
Port Alto Investments	Transient, Non-Community Water Systems	Calhoun	162	Groundwater	Active	TX0290064
Shoalwater Flats Association	Transient, Non-Community Water Systems	Calhoun	165	Groundwater	Active	TX0290036
Sweetwater Recreational Vehicle Campgrounds	Transient, Non-Community Water Systems	Calhoun	75	Groundwater	Active	TX0290076

Source: https://enviro.epa.gov/envirofacts/sdwis/search
[a] Community water systems serve the same people year-round (e.g. in homes or businesses); non-transient, non-community water systems serve the same people, but not year-round (e.g. schools that have their own water system); and transient, non-community water systems do not consistently serve the same people (e.g. rest stops, campgrounds, gas stations).
Key: EPA = U.S. Environmental Protection Agency; GBRA = Guadalupe-Blanco River Authority; ID = identification

Table 2.4.12-3
Water Use Survey Historical Summary Estimates (Includes Reuse) by County

(All volumes are in acre-feet unless otherwise noted. 1 acre-foot = 325,851 gallons)

Year	County	Popula-tion	Munici-pal	Manu-facturing	Mining	Power	Irrigation	Live-stock	Municipal Ground Water	Municipal Surface Water	Munici-pal Reuse	Mfg Ground Water	Mfg Surface Water	Mfg Reuse	Mining Ground Water	Mining Surface Water	Mining Reuse & Brackish	Power Ground Water	Power Surface Water	Power Reuse	Irrigation Ground Water	Irrigation Surface Water	Irriga-tion Reuse	Live-stock Ground Water	Live-stock Surface Water	Live-stock Reuse	Calhoun County Ground-water Total	Calhoun County Surface Water Total
2021	Aransas	24,510	3,937	0	0	0	0	50	598	3,269	70	0	0	0	0	0	0	0	0	0	0	0	0	35	15	0		
2021	Bee	30,924	5,364	0	3	0	1,983	543	2,818	2,546	0	0	0	0	0	0	3	0	0	0	1,983	0	0	435	108	0		
2021	Calhoun	19,727	2,628	32,701	0	18	9,460	267	544	2,084	0	276	30,624	1,801	0	0	0	18	0	0	521	8,939	0	187	80	0	1,546	41,727
2021	Dewitt	19,918	2,769	13	2,494	0	442	1,585	2,769	0	0	13	0	0	1,546	0	948	0	0	0	442	0	0	951	634	0		
2021	Goliad	7,163	922	0	0	5,767	3,336	721	922	0	0	0	0	0	0	0	0	223	5,544	0	3,336	0	0	577	144	0		
2021	Jackson	15,121	1,643	496	0	0	53,924	626	1,643	0	0	28	468	0	0	0	0	0	0	0	53,923	1	0	407	219	0		
2021	Lavaca	20,544	2,701	501	1,779	0	7,120	1,889	2,701	0	0	501	0	0	1,103	0	676	0	0	0	7,062	58	0	1,417	472	0		
2021	Matagorda	36,344	4,913	11,340	0	81,044	72,155	925	4,913	0	0	2,175	9,165	0	0	0	0	1,329	79,715	0	27,576	44,579	0	601	324	0		
2021	Refugio	6,756	895	0	0	0	724	461	895	0	0	0	0	0	0	0	0	0	0	0	724	0	0	415	46	0		
2021	San Patricio	69,699	10,481	12,948	0	953	4,005	280	2,562	7,186	733	15	12,933	0	0	0	0	0	953	0	3,970	35	0	140	140	0		
2021	Victoria	90,964	14,492	9,412	4	780	8,889	857	3,772	10,720	0	290	9,122	0	4	0	0	767	13	0	8,881	8	0	514	343	0		
2021	Wharton	41,721	5,614	177	0	2,244	120,899	1,024	5,614	0	0	177	0	0	0	0	0	2,244	0	0	74,453	46,446	0	772	252	0		
							Total (all counties)		29,751			3,475			2,653			4,581			182,871			6,451			229,782	
							Percentage (all counties)		12.9475			1.5123			1.15457			1.99363			79.5846			2.80744				
							Total (Calhoun County)		544			276			0			18			521			187				
							Percentage (Calhoun County)		35.1876			17.8525			0			1.16429			33.6999			12.0957				

Source: TWDB, 2021

Key: Mfg = manufacturing

Table 2.4.12-4
Water Well Details within 5 Mi of the Site
Page 1 of 7

Well Report Tracking Number/State Well Number	Well Owner	Latitude	Longitude	Well Type	Well Use	Depth (feet)	Aquifer Listed
6250	Fritz Wilke	28.583055	-96.709723	New Well	Domestic	260	NA
12464	John Smith	28.455004	-96.702223	Replacement	Domestic	308	NA
15452	Charles Crober	28.563612	-96.751112	New Well	Domestic	115	NA
28747	John F. Smith	28.462778	-96.703334	New Well	Domestic	225	NA
30324	Aaron Vasquez	28.484722	-96.763334	New Well	Domestic	180	NA
30328	David Lundine	28.451112	-96.711945	New Well	Domestic	212	NA
30337	E. O. Ruddick	28.54195	-96.761945	New Well	Domestic	165	NA
31608	Joe Sterling	28.591389	-96.688056	New Well	Domestic	75	NA
40609	Gable O'Briant	28.552223	-96.7375	New Well	Domestic	98	NA
43952	Travis Tatum	28.53	-96.718611	New Well	Domestic	72	NA
43955	M.G. Simons	28.521111	-96.727222	New Well	Domestic	365	NA
43959	Eddie Stribling	28.507501	-96.675	New Well	Domestic	265	NA
44125	Charles Willoughby	28.602223	-96.719167	New Well	Domestic	247	NA
45893	Doris Mills	28.564723	-96.779167	New Well	Domestic	170	NA
46128	Doris Mills	28.564723	-96.779167	New Well	Domestic	170	NA
64179	Jimmy Vasquez	28.485278	-96.763612	New Well	Domestic	180	NA
65926	Kevin McKamey	28.616944	-96.733611	New Well	Domestic	225	NA
99538	Willie Wooldridge	28.463612	-96.741667	New Well	Domestic	90	NA
104115	Calvin Hammet	28.560834	-96.755556	New Well	Domestic	90	NA
106046	C & E Operating	28.487222	-96.724722	New Well	Domestic	320	NA
106049	C & E Operating	28.535278	-96.675	New Well	Domestic	290	NA
128946	Corey Wilke	28.582222	-96.710001	New Well	Domestic	117	NA
134625	Stanley + Mary Matson	28.566944	-96.762223	New Well	Domestic	95	NA
136049	Corey Wilke	28.582222	-96.710001	New Well	Domestic	208	NA
154603	Devra Hunter	28.57	-96.762223	New Well	Domestic	80	NA
171014	Bobby Townsend	28.483055	-96.849722	New Well	Domestic	195	NA
186394	Ricky Whatley	28.478611	-96.775833	New Well	Domestic	190	NA
197201	Crystal Priest	28.524444	-96.717778	Replacement	Domestic	265	NA
252253	Willam Hahn	28.541111	-96.706945	New Well	Domestic	258	NA
252254	Ed Myers	28.574722	-96.717222	Replacement	Domestic	240	NA
263759	Chuck Matson	28.559445	-96.719167	New Well	Domestic	255	NA
264076	Chuck Mattson	28.559445	-96.719167	New Well	Domestic	255	NA
326654	Gilbert Garza	28.595834	-96.735278	New Well	Domestic	86	NA
349101	Mr. Evans	28.465834	-96.740278	New Well	Domestic	92	NA
351514	Troy Brousard	28.568611	-96.717222	New Well	Domestic	252	NA
351515	Laura Willoghby	28.599167	-96.735834	New Well	Domestic	215	NA
366643	Chuck Mattson	28.559445	-96.718889	Replacement	Domestic	58	NA
386558	Art Henkel	28.4925	-96.851389	New Well	Domestic	160	NA
401932	Barney Geryk	28.581111	-96.678333	New Well	Domestic	247	NA
415480	Belle Smith	28.55365	-96.749433	New Well	Domestic	88	NA
415481	Belle Smith	28.546717	-96.760817	New Well	Domestic	103	NA
422502	Maria Plascencia	28.580933	-96.70125	New Well	Domestic	230	NA
465028	Jennifer Cabrera	28.542083	-96.772417	New Well	Domestic	93	NA
466177	Robert Penland	28.577778	-96.7075	New Well	Domestic	56	NA
467382	Steve De La Cruz	28.597233	-96.733833	New Well	Domestic	205	NA
481847	Kavin Griffith	28.583778	-96.696394	New Well	Domestic	330	NA
480605	Carlos Cabrera	28.5424	-96.77245	New Well	Domestic	97	NA
499468	Walter White	28.55077	-96.817508	New Well	Domestic	202	NA
499469	Tom & Sandra Crenshaw	28.575	-96.691667	New Well	Domestic	222	NA
514885	Jenny McGrew	28.574056	-96.764861	Replacement	Domestic	84	NA
519853	Clark Constructors, LLC.	28.593278	-96.770167	New Well	Domestic	325	NA
531072	Karena Mendez	28.549219	-96.76316	New Well	Domestic	72	NA
535017	Iron Horse Acres, LLC.	28.5825	-96.806889	New Well	Domestic	137	NA
535019	Karen Henderson	28.5486	-96.7847	New Well	Domestic	165	NA

Table 2.4.12-4
Water Well Details within 5 Mi of the Site
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Well Report Tracking Number/State Well Number	Well Owner	Latitude	Longitude	Well Type	Well Use	Depth (feet)	Aquifer Listed
540039	Geranimo O. Trevinio	28.597483	-96.734917	New Well	Domestic	210	NA
555425	Jose Rodriguez	28.588889	-96.683889	New Well	Domestic	238	NA
560358	Kevin D. Haun	28.5275	-96.728333	New Well	Domestic	253	NA
563074	James Brown	28.589936	-96.698031	New Well	Domestic	68	NA
563079	Robert Penland	28.580771	-96.708614	New Well	Domestic	54	NA
574626	William D. Wooldridge	28.458333	-96.759444	New Well	Domestic	208	NA
574685	Knute L. Dietze II	28.573889	-96.763056	New Well	Domestic	128	NA
586700	Maricela Narvaes Rodriguez	28.461383	-96.741683	New Well	Domestic	210	NA
593024	Clayton H. Boerm	28.593889	-96.691389	New Well	Domestic	238	NA
598123	Colton P. Kveton	28.576389	-96.697222	New Well	Domestic	268	NA
609598	Mallory P. Galloway	28.49255	-96.74468	New Well	Domestic	83	NA
646937	Hose Huerta	28.445081	-96.72192	New Well	Domestic	205	NA
126994	Ineos USA, LLC	28.522222	-96.786945	New Well	Environmental Soil Boring	45	NA
126999	Ineos USA, LLC	28.522222	-96.786945	New Well	Environmental Soil Boring	50	NA
127003	Ineos USA, LLC	28.522222	-96.786945	New Well	Environmental Soil Boring	35	NA
127075	Ineos USA, LLC	28.522222	-96.786945	New Well	Environmental Soil Boring	40	NA
127076	Ineos USA, LLC	28.522222	-96.786945	New Well	Environmental Soil Boring	45	NA
127078	Ineos USA, LLC	28.522222	-96.786945	New Well	Environmental Soil Boring	45	NA
127080	Ineos USA, LLC	28.522222	-96.786945	New Well	Environmental Soil Boring	45	NA
145981	Ineos USA LLC	28.5725	-96.824444	New Well	Environmental Soil Boring	35	NA
145986	Ineos USA LLC	28.5725	-96.824444	New Well	Environmental Soil Boring	35	NA
145989	Ineos USA LLC	28.5725	-96.824444	New Well	Environmental Soil Boring	35	NA
187218	Ineos Nitriles	28.555834	-96.858334	New Well	Environmental Soil Boring	43	NA
412199	Texas Department of Transportation	28.499346	-96.838901	New Well	Environmental Soil Boring	15	NA
412200	Texas Department of Transportation	28.499346	-96.838901	New Well	Environmental Soil Boring	15	NA
412204	Texas Department of Transportation	28.499346	-96.838901	New Well	Environmental Soil Boring	15	NA
412205	Texas Department of Transportation	28.499346	-96.838901	New Well	Environmental Soil Boring	15	NA
412207	Texas Department of Transportation	28.499346	-96.838901	New Well	Environmental Soil Boring	15	NA
412208	Texas Department of Transportation	28.499346	-96.838901	New Well	Environmental Soil Boring	15	NA
412211	Texas Department of Transportation	28.499346	-96.838901	New Well	Environmental Soil Boring	15	NA
412213	Texas Department of Transportation	28.499346	-96.838901	New Well	Environmental Soil Boring	15	NA
412216	Texas Department of Transportation	28.499346	-96.838901	New Well	Environmental Soil Boring	15	NA
412349	Texas Department of Transportation	28.499346	-96.838901	New Well	Environmental Soil Boring	15	NA
412678	INEOS Nitriles USA, LLC	28.571556	-96.83	New Well	Environmental Soil Boring	15	NA
412679	INEOS Nitriles USA, LLC	28.571556	-96.83	New Well	Environmental Soil Boring	15	NA
412680	INEOS Nitriles USA, LLC	28.571556	-96.83	New Well	Environmental Soil Boring	15	NA
412681	INEOS Nitriles USA, LLC	28.571556	-96.83	New Well	Environmental Soil Boring	15	NA

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Water Well Details within 5 Mi of the Site
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Well Report Tracking Number/State Well Number	Well Owner	Latitude	Longitude	Well Type	Well Use	Depth (feet)	Aquifer Listed
412686	INEOS Nitriles USA, LLC	28.571556	-96.83	New Well	Environmental Soil Boring	15	NA
412702	INEOS Nitriles USA, LLC	28.571556	-96.83	New Well	Environmental Soil Boring	15	NA
412705	INEOS Nitriles USA, LLC	28.571556	-96.83	New Well	Environmental Soil Boring	15	NA
412706	INEOS Nitriles USA, LLC	28.571556	-96.83	New Well	Environmental Soil Boring	15	NA
412708	INEOS Nitriles USA, LLC	28.571556	-96.83	New Well	Environmental Soil Boring	15	NA
412709	INEOS Nitriles USA, LLC	28.571556	-96.83	New Well	Environmental Soil Boring	15	NA
412789	INEOS Nitriles USA, LLC	28.571556	-96.83	New Well	Environmental Soil Boring	100	NA
412769	INEOS Nitriles USA, LLC	28.571556	-96.83	New Well	Environmental Soil Boring	40	NA
412711	INEOS Nitriles USA, LLC	28.571556	-96.83	New Well	Environmental Soil Boring	25	NA
412719	INEOS Nitriles USA, LLC	28.571556	-96.83	New Well	Environmental Soil Boring	25	NA
412721	INEOS Nitriles USA, LLC	28.571556	-96.83	New Well	Environmental Soil Boring	25	NA
412723	INEOS Nitriles USA, LLC	28.571556	-96.83	New Well	Environmental Soil Boring	5	NA
412724	INEOS Nitriles USA, LLC	28.571556	-96.83	New Well	Environmental Soil Boring	20	NA
412727	INEOS Nitriles USA, LLC	28.571556	-96.83	New Well	Environmental Soil Boring	20	NA
412728	INEOS Nitriles USA, LLC	28.571556	-96.83	New Well	Environmental Soil Boring	20	NA
412730	INEOS Nitriles USA, LLC	28.571556	-96.83	New Well	Environmental Soil Boring	20	NA
412682	INEOS Nitriles USA, LLC	28.571556	-96.83	New Well	Environmental Soil Boring	15	NA
412683	INEOS Nitriles USA, LLC	28.571556	-96.83	New Well	Environmental Soil Boring	15	NA
412685	INEOS Nitriles USA, LLC	28.571556	-96.83	New Well	Environmental Soil Boring	15	NA
412687	INEOS Nitriles USA, LLC	28.571556	-96.83	New Well	Environmental Soil Boring	15	NA
412688	INEOS Nitriles USA, LLC	28.571556	-96.83	New Well	Environmental Soil Boring	15	NA
412689	INEOS Nitriles USA, LLC	28.571556	-96.83	New Well	Environmental Soil Boring	15	NA
412692	INEOS Nitriles USA, LLC	28.571556	-96.83	New Well	Environmental Soil Boring	15	NA
412809	INEOS Nitriles USA, LLC	28.571556	-96.83	New Well	Environmental Soil Boring	15	NA
412811	INEOS Nitriles USA, LLC	28.571556	-96.83	New Well	Environmental Soil Boring	15	NA
412812	INEOS Nitriles USA, LLC	28.571556	-96.83	New Well	Environmental Soil Boring	15	NA
412813	INEOS Nitriles USA, LLC	28.571556	-96.83	New Well	Environmental Soil Boring	15	NA
412814	INEOS Nitriles USA, LLC	28.571556	-96.83	New Well	Environmental Soil Boring	15	NA
552629	TxDOT	28.49934	-96.839426	New Well	Environmental Soil Boring	5	NA
552652	TxDOT	28.49934	-96.839426	New Well	Environmental Soil Boring	13	NA
42141	C&E Operating	28.505278	-96.741389	New Well	Industrial	240	NA
103768	C & E Operating	28.524722	-96.721111	New Well	Industrial	320	NA
152355	Ridge Property Trust	28.491945	-96.764167	New Well	Industrial	300	NA
171007	C & E Operating	28.491667	-96.735278	New Well	Industrial	260	NA
171024	C & E Operating	28.552223	-96.708889	New Well	Industrial	280	NA

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Water Well Details within 5 Mi of the Site
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Well Report Tracking Number/State Well Number	Well Owner	Latitude	Longitude	Well Type	Well Use	Depth (feet)	Aquifer Listed
171146	C & E Operating	28.520555	-96.726111	New Well	Industrial	320	NA
26070	Joe D. Brett	28.553889	-96.733889	New Well	Irrigation	420	NA
264087	Fred Arnald	28.574722	-96.716944	New Well	Irrigation	275	NA
510239	Hatchbend Country Club	28.589517	-96.702533	New Well	Irrigation	221	NA
510240	Hatchbend Country Club	28.589517	-96.702733	New Well	Irrigation	221	NA
117236	Seadrift Coke L.P.	28.514723	-96.795	New Well	Monitor	40	NA
117237	Seadrift Coke L.P.	28.514723	-96.793334	New Well	Monitor	35	NA
117239	Seadrift Coke L.P.	28.513889	-96.799445	New Well	Monitor	40	NA
117247	Seadrift Coke L.P.	28.511112	-96.798889	New Well	Monitor	40	NA
117248	Seadrift Coke L.P.	28.511112	-96.796111	New Well	Monitor	40	NA
117251	Seadrift Coke L.P.	28.510556	-96.794445	New Well	Monitor	40	NA
117259	Seadrift Coke L.P.	28.513056	-96.796667	New Well	Monitor	45	NA
117267	Seadrift Coke L.P.	28.512501	-96.795834	New Well	Monitor	45	NA
117276	Seadrift Coke L.P.	28.512501	-96.795834	New Well	Monitor	40	NA
125772	Ineos USA, Inc.	28.522222	-96.786945	New Well	Monitor	60	NA
125775	Ineos USA, Inc.	28.522222	-96.786945	New Well	Monitor	60	NA
125777	Ineos USA, Inc.	28.522222	-96.786945	New Well	Monitor	60	NA
125780	Ineos USA, Inc.	28.522222	-96.786945	New Well	Monitor	57.5	NA
126965	Ineos USA, LLC	28.522222	-96.786945	New Well	Monitor	30	NA
126968	Ineos USA, LLC	28.522222	-96.786945	New Well	Monitor	40	NA
126975	Ineos USA, LLC	28.522222	-96.786945	New Well	Monitor	30	NA
126979	Ineos USA, LLC	28.522222	-96.786945	New Well	Monitor	25	NA
126991	Ineos USA, LLC	28.522222	-96.786945	New Well	Monitor	35	NA
126992	Ineos USA, LLC	28.522222	-96.786945	New Well	Monitor	40	NA
126993	Ineos USA, LLC	28.522222	-96.786945	New Well	Monitor	25	NA
136176	Seadrift Coke L.P.	28.519167	-96.786389	New Well	Monitor	56	NA
136180	Seadrift Coke L.P.	28.519167	-96.786389	New Well	Monitor	55	NA
136185	Seadrift Coke L.P.	28.519167	-96.786389	New Well	Monitor	15	NA
136320	Seadrift Coke, L.P.	28.510556	-96.797222	New Well	Monitor	51.5	NA
136327	Seadrift Coke, L.P.	28.510556	-96.797222	New Well	Monitor	60	NA
136329	Seadrift Coke, L.P.	28.508334	-96.7975	New Well	Monitor	15	NA
136331	Seadrift Coke, L.P.	28.508334	-96.7975	New Well	Monitor	50	NA
136332	Seadrift Coke, L.P.	28.511112	-96.795278	New Well	Monitor	50	NA
136334	Seadrift Coke, L.P.	28.512501	-96.795278	New Well	Monitor	62	NA
136337	Seadrift Coke, L.P.	28.512501	-96.795278	New Well	Monitor	67	NA
136338	Seadrift Coke, L.P.	28.513612	-96.796111	New Well	Monitor	57	NA
136363	Seadrift Coke, L.P.	28.508334	-96.7975	New Well	Monitor	75	NA
136373	Seadrift Coke, L.P.	28.508334	-96.7975	New Well	Monitor	57.5	NA
136376	Seadrift Coke, L.P.	28.508334	-96.7975	New Well	Monitor	54	NA
136380	Seadrift Coke, L.P.	28.508334	-96.7975	New Well	Monitor	45	NA
136382	Seadrift Coke, L.P.	28.508334	-96.7975	New Well	Monitor	108	NA
136384	Seadrift Coke, L.P.	28.508334	-96.7975	New Well	Monitor	50	NA
145994	Ineos USA LLC	28.5725	-96.824444	New Well	Monitor	40	NA
145997	Ineos USA LLC	28.5725	-96.824444	New Well	Monitor	45	NA
148776	Ineos USA LLC	28.559167	-96.854445	New Well	Monitor	35	NA
173611	Seadrift Coke, L.P.	28.519167	-96.786389	New Well	Monitor	35	NA
187201	Ineos Nitriles	28.555834	-96.858334	New Well	Monitor	35	NA
187208	Ineos Nitriles	28.555834	-96.858334	New Well	Monitor	46	NA
187212	Ineos Nitriles	28.555834	-96.858334	New Well	Monitor	39	NA
187216	Ineos Nitriles	28.555834	-96.858334	New Well	Monitor	38	NA
253316	Seadrift Coke, L.P.	28.513334	-96.791667	New Well	Monitor	50	NA
253318	Seadrift Coke, L.P.	28.513334	-96.791667	New Well	Monitor	55	NA
253321	Seadrift Coke, L.P.	28.513334	-96.791667	New Well	Monitor	57	NA
253323	Seadrift Coke, L.P.	28.513334	-96.791667	New Well	Monitor	60	NA
294250	Seadrift Coke, L.P.	28.535834	-96.807223	New Well	Monitor	15	NA

Table 2.4.12-4
Water Well Details within 5 Mi of the Site
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Well Report Tracking Number/State Well Number	Well Owner	Latitude	Longitude	Well Type	Well Use	Depth (feet)	Aquifer Listed
294254	Seadrift Coke, L.P.	28.519722	-96.798334	New Well	Monitor	47	NA
294257	Seadrift Coke, L.P.	28.512223	-96.794722	New Well	Monitor	50	NA
303029	Seadrift Coke, L.P.	28.519167	-96.786389	New Well	Monitor	45	NA
303036	Seadrift Coke, L.P.	28.519167	-96.786389	New Well	Monitor	49	NA
303041	Seadrift Coke, L.P.	28.519167	-96.786389	New Well	Monitor	52	NA
303044	Seadrift Coke, L.P.	28.519167	-96.786389	New Well	Monitor	65	NA
343226	Union Carbide Corporation,	28.516667	-96.7675	New Well	Monitor	20	NA
389679	Union Carbide Corporation	28.510556	-96.769444	Replacement	Monitor	20	NA
412737	INEOS Nitriles USA, LLC	28.571556	-96.83	New Well	Monitor	22.5	NA
412779	INEOS Nitriles USA, LLC	28.571556	-96.83	New Well	Monitor	65	NA
412783	INEOS Nitriles USA, LLC	28.571556	-96.83	New Well	Monitor	60	NA
412787	INEOS Nitriles USA, LLC	28.571556	-96.83	New Well	Monitor	70	NA
412805	INEOS Nitriles USA, LLC	28.571556	-96.83	New Well	Monitor	77.5	NA
478359	Dow	28.512144	-96.762344	Replacement	Monitor	35	NA
478362	Dow	28.514567	-96.763239	Replacement	Monitor	25	NA
552641	Texas Department of Transportation	28.49934	-96.839426	New Well	Monitor	11	NA
567166	INEOS Nitriles USA, LLC	28.568531	-96.836681	New Well	Monitor	45	NA
567167	INEOS Nitriles USA, LLC	28.574858	-96.831722	New Well	Monitor	50	NA
630567	INEOS Nitriles USA LLC	28.559411	-96.857525	New Well	Monitor	62	NA
630570	INEOS Nitriles USA LLC	28.559411	-96.857525	New Well	Monitor	65	NA
630571	INEOS Nitriles USA LLC	28.559411	-96.857525	New Well	Monitor	65	NA
630573	INEOS Nitriles USA LLC	28.559411	-96.857525	New Well	Monitor	45	NA
612886	Harold L. Evans	28.49592	-96.71747	New Well	Other	70	NA
93560	Bob McCarn	28.465278	-96.697778	New Well	Rig Supply	220	NA
123249	C & E Operating	28.471389	-96.691667	New Well	Rig Supply	300	NA
251970	C&E Operating	28.511667	-96.703612	New Well	Rig Supply	300	NA
403001	Edde Drilling	28.600001	-96.750001	New Well	Rig Supply	200	NA
462821	B & L Exploration	28.583499	-96.7501	New Well	Rig Supply	200	NA
492376	B & L Exploration LLC	28.613139	-96.739778	New Well	Rig Supply	200	NA
70497	William H. Hahn	28.525833	-96.737222	New Well	Stock	70	NA
71746	David Hahn	28.529167	-96.719722	New Well	Stock	95	NA
158335	Joe D. Brett	28.562778	-96.675278	New Well	Stock	120	NA
254750	David Hahn	28.520555	-96.741945	Replacement	Stock	83	NA
270820	Willie Wooldridge	28.453889	-96.755556	New Well	Stock	210	NA
273767	Richard Williams	28.552501	-96.736945	New Well	Stock	80	NA
274965	Ray Mccaskill	28.569167	-96.784167	New Well	Stock	80	NA
274966	Ray Mccaskill	28.590278	-96.689722	New Well	Stock	230	NA
277210	Shawkat A. Khan	28.551112	-96.751945	New Well	Stock	82	NA
292181	Troy Broussard	28.569722	-96.717222	New Well	Stock	233	NA
310005	Joey + Mallery Gallaway	28.488889	-96.741111	New Well	Stock	98	NA
414609	Mike Hahn	28.516717	-96.683533	New Well	Stock	272	NA
510507	Edward P. Powers	28.58375	-96.70205	New Well	Stock	342	NA
522633	Albert Malaer	28.571111	-96.731667	New Well	Stock	140	NA
531147	Tom & Sandy Crenshaw	28.577748	-96.674167	New Well	Stock	260	NA
606897	John Daniel	28.55827	-96.70731	New Well	Stock	80	NA
609567	Edward Powers	28.583056	-96.700833	New Well	Stock	63	NA
646938	Honath Family Trust	28.491983	-96.736071	New Well	Stock	80	NA
117231	Seadrift Coke L.P.	28.514167	-96.795278	New Well	Test Well	40	NA

Table 2.4.12-4
Water Well Details within 5 Mi of the Site
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Well Report Tracking Number/State Well Number	Well Owner	Latitude	Longitude	Well Type	Well Use	Depth (feet)	Aquifer Listed
117277	Seadrift Coke L.P.	28.512501	-96.795834	New Well	Test Well	40	NA
117281	Seadrift Coke L.P.	28.512501	-96.795834	New Well	Test Well	13	NA
117284	Seadrift Coke L.P.	28.512501	-96.795834	New Well	Test Well	13	NA
117286	Seadrift Coke L.P.	28.512501	-96.795834	New Well	Test Well	13	NA
117287	Seadrift Coke L.P.	28.512501	-96.795834	New Well	Test Well	10	NA
117288	Seadrift Coke L.P.	28.512501	-96.795834	New Well	Test Well	15	NA
802690	J. C. Williams	28.538611	-96.760278	Withdrawal of Water	Domestic	887	112BMLS - Beaumont Clay and Lissie Formation
8034302	Howard L. Shafer	28.463889	-96.755556	Withdrawal of Water	Domestic	285	112GLFC - Gulf Coast Aquifer
8026502	Charles Krause, Jr.	28.553056	-96.795834	Withdrawal of Water	Domestic	80	112GLFC - Gulf Coast Aquifer
8035401	Isabella Walker	28.443334	-96.723055	Withdrawal of Water	Domestic	59	112BMNT - Beaumont Clay
8026602	Stanley Matson	28.576667	-96.765556	Withdrawal of Water	Domestic	75	112BMNT - Beaumont Clay
8027401	Edward L. Arnold	28.5547223	-96.708889	Withdrawal of Water	Domestic	110	112GLFC - Gulf Coast Aquifer
8027701	Stofer-Eiband	28.510556	-96.735556	Withdrawal of Water	Domestic	62	112BMNT - Beaumont Clay
8034303	Union Carbide Co.	28.4986111	-96.774167	Withdrawal of Water	Domestic	90	112BMNT - Beaumont Clay
8026604	Michael Hahn	28.570483	-96.752553	Withdrawal of Water	Domestic		NA
8026903	O. B. Cassell	28.5225	-96.784167	Withdrawal of Water	Domestic	899	112BMLS - Beaumont Clay and Lissie Formation
8027802	Quintana Petroleum Co.	28.528055	-96.692778	Withdrawal of Water	Industrial	240	112BMNT - Beaumont Clay
8026603	Otto Marek	28.558056	-96.778055	Withdrawal of Water	Irrigation	269	112BMNT - Beaumont Clay
8026901	O.B. Cassell	28.520833	-96.780555	Withdrawal of Water	Irrigation	295	112BMNT - Beaumont Clay
8034601	Margaret Roemer	28.449722	-96.762778	Withdrawal of Water	Stock	90	112BMNT - Beaumont Clay
8026802	Clyde Bauer	28.520833	-96.798889	Withdrawal of Water	Stock	230	112BMNT - Beaumont Clay
8026804	Richard Lucas	28.503056	-96.812778	Withdrawal of Water	Stock	113	112BMNT - Beaumont Clay
8034603	H. V. Heyland	28.440556	-96.753612	Withdrawal of Water	Stock	68	112BMNT - Beaumont Clay
8026801	Clyde Bauer	28.526667	-96.804445	Withdrawal of Water	Stock	90	112BMNT - Beaumont Clay
8027801	George Duncan	28.511945	-96.683055	Withdrawal of Water	Stock	240	112BMNT - Beaumont Clay
8026803	Clyde Bauer	28.516389	-96.804723	Withdrawal of Water	Stock	105	112BMNT - Beaumont Clay

Table 2.4.12-4
Water Well Details within 5 Mi of the Site
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Well Report Tracking Number/State Well Number	Well Owner	Latitude	Longitude	Well Type	Well Use	Depth (feet)	Aquifer Listed
8026501	R.E. Whatley	28.549072	-96.802317	Withdrawal of Water	Unused	267	112BMNT - Beaumont Clay
8026601	W.H. Crober	28.556112	-96.768055	Withdrawal of Water	Unused	234	112BMNT - Beaumont Clay
8034602	H. V. Heyland	28.446111	-96.758056	Withdrawal of Water	Unused	240	112BMNT - Beaumont Clay
8027402	J. A. Martin	28.582778	-96.7225	Withdrawal of Water	Unused	48	112BMNT - Beaumont Clay
8034301	Lester Shafer	28.463612	-96.755556	Withdrawal of Water	Unused	281	112BMNT - Beaumont Clay
8027501	A.G. Shafer	28.580833	-96.695834	Withdrawal of Water	Unused	258	112BMNT - Beaumont Clay
8027103	Johnson Spring	28.616667	-96.744722	Spring	NA	NA	NA
8026701	CR GWTD	28.521111	-96.854445	Oil or Gas	NA	NA	NA

Source: TWDB, 2024b
Note: Well Locations are presented on Figure 2.4.12-19.
Key: Dow = Dow Chemical Corporation; mi = miles; NA = not applicable

Table 2.4.12-5
Public Water System Details

TCEQ PWS No.	State Well No.	System Name	Latitude	Longitude	Drill Date	Well Depth (ft)	Aquifer
TX-0290076	466177	Sweetwater Recreational Vehicle Campgrounds	28.578849	-96.707571	10/10/2017	56	Chicot

Key: ft = feet; PWS = public water system; TCEQ = Texas Commission on Environmental Quality

Table 2.4.12-6
LMGS Groundwater Measurements
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Monitoring Well ID	Date Gauged	TOC Elevation (NAVD 88)	Depth to Groundwater (ft BTOC)	Groundwater Elevation (NAVD 88)
MW-1A	2/29/2024	29.07	5.9	23.2
	3/25/2024	29.07	5.7	23.4
	4/22/2024	29.07	6.8	22.3
	5/21/2024	29.07	7.2	21.9
	6/17/2024	29.07	7.5	21.6
	7/4/2024	29.07	6.76	22.31
	8/4/2024	29.07	5.22	23.85
	9/24/2024	29.07	7.16	21.91
MW-1C	2/29/2024	29.13	21.0	8.1
	3/25/2024	29.13	20.8	8.3
	4/22/2024	29.13	21.1	8.0
	5/21/2024	29.13	21.2	7.9
	6/17/2024	29.13	21.4	7.7
	7/4/2024	29.13	21.32	7.81
	8/4/2024	29.13	20.98	8.15
	9/24/2024	29.13	21.42	7.71
MW-1E	2/29/2024	29.22	26.2	3.0
	3/25/2024	29.22	26.0	3.2
	4/22/2024	29.22	26.0	3.2
	5/21/2024	29.22	26.1	3.1
	6/17/2024	29.22	26.2	3.0
	7/4/2024	29.22	25.97	3.25
	8/4/2024	29.22	25.70	3.52
	9/24/2024	29.22	26.09	3.13
MW-2A	2/29/2024	29.52	6.3	23.2
	3/25/2024	29.52	6.0	23.5
	4/22/2024	29.52	7.2	22.3
	5/21/2024	29.52	7.7	21.8
	6/17/2024	29.52	8.2	21.3
	7/4/2024	29.52	7.63	21.89

Table 2.4.12-6
LMGS Groundwater Measurements
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Monitoring Well ID	Date Gauged	TOC Elevation (NAVD 88)	Depth to Groundwater (ft BTOC)	Groundwater Elevation (NAVD 88)
	8/4/2024	29.52	5.70	23.82
	9/24/2024	29.52	7.60	21.92
MW-2C	2/29/2024	29.50	21.4	8.1
	3/25/2024	29.50	21.2	8.3
	4/22/2024	29.50	21.5	8.0
	5/21/2024	29.50	21.6	7.9
	6/17/2024	29.50	21.8	7.7
	7/4/2024	29.50	21.72	7.78
	8/4/2024	29.50	21.39	8.11
	9/24/2024	29.50	21.83	7.67
MW-2E	2/29/2024	29.58	26.3	3.3
	3/25/2024	29.58	26.2	3.4
	4/22/2024	29.58	26.2	3.4
	5/21/2024	29.58	26.3	3.3
	6/17/2024	29.58	26.3	3.3
	7/4/2024	29.58	26.11	3.47
	8/4/2024	29.58	25.89	3.69
	9/24/2024	29.58	26.24	3.34
MW-3A	2/29/2024	28.96	9.0	20.0
	3/25/2024	28.96	8.5	20.5
	4/22/2024	28.96	9.0	20.0
	5/21/2024	28.96	8.8	20.2
	6/17/2024	28.96	8.6	20.4
	7/4/2024	28.96	7.67	21.29
	8/4/2024	28.96	7.69	21.27
	9/24/2024	28.96	8.42	20.54
MW-3C	2/29/2024	28.79	19.8	9.0
	3/25/2024	28.79	19.6	9.2
	4/22/2024	28.79	19.8	9.0
	5/21/2024	28.79	19.9	8.9

Table 2.4.12-6
LMGS Groundwater Measurements
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~~Monitoring Well ID~~	~~Date Gauged~~	~~TOC Elevation (NAVD 88)~~	~~Depth to Groundwater (ft BTOC)~~	~~Groundwater Elevation (NAVD 88)~~
	~~6/17/2024~~	~~28.79~~	~~20.2~~	~~8.6~~
	~~7/4/2024~~	~~28.79~~	~~20.11~~	~~8.68~~
	~~8/4/2024~~	~~28.79~~	~~19.85~~	~~8.94~~
	~~9/24/2024~~	~~28.79~~	~~20.24~~	~~8.55~~
~~MW-3E~~	~~2/29/2024~~	~~28.94~~	~~25.6~~	~~3.3~~
	~~3/25/2024~~	~~28.94~~	~~25.4~~	~~3.5~~
	~~4/22/2024~~	~~28.94~~	~~25.4~~	~~3.5~~
	~~5/21/2024~~	~~28.94~~	~~25.5~~	~~3.4~~
	~~6/17/2024~~	~~28.94~~	~~25.6~~	~~3.3~~
	~~7/4/2024~~	~~28.94~~	~~25.36~~	~~3.58~~
	~~8/4/2024~~	~~28.94~~	~~25.15~~	~~3.79~~
	~~9/24/2024~~	~~28.94~~	~~25.50~~	~~3.44~~
~~MW-4A~~	~~2/29/2024~~	~~28.92~~	~~10.4~~	~~18.5~~
	~~3/25/2024~~	~~28.92~~	~~9.7~~	~~19.2~~
	~~4/22/2024~~	~~28.92~~	~~9.9~~	~~19.0~~
	~~5/21/2024~~	~~28.92~~	~~9.7~~	~~19.2~~
	~~6/17/2024~~	~~28.92~~	~~9.5~~	~~19.4~~
	~~7/4/2024~~	~~28.92~~	~~8.56~~	~~20.36~~
	~~8/4/2024~~	~~28.92~~	~~8.20~~	~~20.72~~
	~~9/24/2024~~	~~28.92~~	~~8.95~~	~~19.97~~
~~MW-4C~~	~~2/29/2024~~	~~28.88~~	~~19.7~~	~~9.2~~
	~~3/25/2024~~	~~28.88~~	~~19.5~~	~~9.4~~
	~~4/22/2024~~	~~28.88~~	~~19.8~~	~~9.1~~
	~~5/21/2024~~	~~28.88~~	~~19.9~~	~~9.0~~
	~~6/17/2024~~	~~28.88~~	~~20.1~~	~~8.8~~
	~~7/4/2024~~	~~28.88~~	~~20.04~~	~~8.84~~
	~~8/4/2024~~	~~28.88~~	~~19.75~~	~~9.13~~
	~~9/24/2024~~	~~28.88~~	~~20.14~~	~~8.74~~
~~MW-4E~~	~~2/29/2024~~	~~28.83~~	~~27.6~~	~~1.2~~
	~~3/25/2024~~	~~28.83~~	~~25.5~~	~~3.3~~

Table 2.4.12-6
LMGS Groundwater Measurements
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Monitoring Well ID	Date Gauged	TOC Elevation (NAVD 88)	Depth to Groundwater (ft BTOC)	Groundwater Elevation (NAVD 88)
	4/22/2024	28.83	25.7	3.1
	5/21/2024	28.83	25.5	3.3
	6/17/2024	28.83	25.6	3.2
	7/4/2024	28.83	25.40	3.43
	8/4/2024	28.83	25.19	3.64
	9/24/2024	28.83	25.53	3.30
MW-5A	2/29/2024	28.95	8.1	20.9
	3/25/2024	28.95	8.0	21.0
	4/22/2024	28.95	8.3	20.7
	5/21/2024	28.95	8.4	20.6
	6/17/2024	28.95	8.8	20.2
	7/4/2024	28.95	8.36	20.59
	8/4/2024	28.95	7.84	21.11
	9/24/2024	28.95	8.47	20.48
MW-5C	2/29/2024	29.30	20.7	8.6
	3/25/2024	29.30	20.5	8.8
	4/22/2024	29.30	20.8	8.5
	5/21/2024	29.30	20.9	8.4
	6/17/2024	29.30	21.1	8.2
	7/4/2024	29.30	21.05	8.25
	8/4/2024	29.30	20.68	8.62
	9/24/2024	29.30	21.13	8.17
MW-5E	2/29/2024	29.19	26.2	3.0
	3/25/2024	29.19	26.0	3.2
	4/22/2024	29.19	26.1	3.1
	5/21/2024	29.19	26.1	3.1
	6/17/2024	29.19	26.2	3.0
	7/4/2024	29.19	25.99	3.20
	8/4/2024	29.19	25.71	3.48
	9/24/2024	29.19	26.11	3.08

Table 2.4.12-6
LMGS Groundwater Measurements
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Monitoring Well ID	Date Gauged	TOC Elevation (NAVD 88)	Depth to Groundwater (ft BTOC)	Groundwater Elevation (NAVD 88)
MW-6A	2/29/2024	29.53	6.0	23.5
	3/25/2024	29.53	6.2	23.3
	4/22/2024	29.53	7.0	22.5
	5/21/2024	29.53	7.2	22.3
	6/17/2024	29.53	7.4	22.1
	7/4/2024	29.53	6.90	22.63
	8/4/2024	29.53	5.93	23.60
	9/24/2024	29.53	7.22	22.31
MW-6C	2/29/2024	29.20	20.9	8.3
	3/25/2024	29.20	20.7	8.5
	4/22/2024	29.20	20.9	8.3
	5/21/2024	29.20	21.1	8.1
	6/17/2024	29.20	21.3	7.9
	7/4/2024	29.20	21.21	7.97
	8/4/2024	29.20	20.82	8.36
	9/24/2024	29.20	21.30	7.88
MW-6E	2/29/2024	29.03	26.2	2.8
	3/25/2024	29.03	25.9	3.1
	4/22/2024	29.03	26.0	3.0
	5/21/2024	29.03	26.0	3.0
	6/17/2024	29.03	26.1	2.9
	7/4/2024	29.03	25.93	3.10
	8/4/2024	29.03	25.64	3.39
	9/24/2024	29.03	26.02	3.01
MW-101A	2/29/2024	30.37	5.5	24.9
	3/25/2024	30.37	5.8	24.6
	4/22/2024	30.37	7.3	23.1
	5/21/2024	30.37	7.5	22.9
	6/17/2024	30.37	7.7	22.7
	7/4/2024	30.37	6.14	24.23

Table 2.4.12-6
LMGS Groundwater Measurements
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~~Monitoring Well ID~~	~~Date Gauged~~	~~TOC Elevation (NAVD 88)~~	~~Depth to Groundwater (ft BTOC)~~	~~Groundwater Elevation (NAVD 88)~~
	~~8/4/2024~~	~~30.37~~	~~4.68~~	~~25.69~~
	~~9/24/2024~~	~~30.37~~	~~7.54~~	~~22.83~~
~~MW-101C~~	~~2/29/2024~~	~~30.29~~	~~22.3~~	~~8.0~~
	~~3/25/2024~~	~~30.29~~	~~22.2~~	~~8.1~~
	~~4/22/2024~~	~~30.29~~	~~22.4~~	~~7.9~~
	~~5/21/2024~~	~~30.29~~	~~22.5~~	~~7.8~~
	~~6/17/2024~~	~~30.29~~	~~22.7~~	~~7.6~~
	~~7/4/2024~~	~~30.29~~	~~22.62~~	~~7.67~~
	~~8/4/2024~~	~~30.29~~	~~22.35~~	~~7.94~~
	~~9/24/2024~~	~~30.29~~	~~22.74~~	~~7.55~~
~~MW-101E~~	~~2/29/2024~~	~~30.49~~	~~26.9~~	~~3.6~~
	~~3/25/2024~~	~~30.49~~	~~26.8~~	~~3.7~~
	~~4/22/2024~~	~~30.49~~	~~26.9~~	~~3.6~~
	~~5/21/2024~~	~~30.49~~	~~26.9~~	~~3.6~~
	~~6/17/2024~~	~~30.49~~	~~27.0~~	~~3.5~~
	~~7/4/2024~~	~~30.49~~	~~26.79~~	~~3.70~~
	~~8/4/2024~~	~~30.49~~	~~26.63~~	~~3.86~~
	~~9/24/2024~~	~~30.49~~	~~26.92~~	~~3.57~~
~~MW-102A~~	~~2/29/2024~~	~~29.07~~	~~11.4~~	~~17.7~~
	~~3/25/2024~~	~~29.07~~	~~10.1~~	~~19.0~~
	~~4/22/2024~~	~~29.07~~	~~11.4~~	~~17.7~~
	~~5/21/2024~~	~~29.07~~	~~11.4~~	~~17.7~~
	~~6/17/2024~~	~~29.07~~	~~11.6~~	~~17.5~~
	~~7/4/2024~~	~~29.07~~	~~11.60~~	~~17.47~~
	~~8/4/2024~~	~~29.07~~	~~11.06~~	~~18.01~~
	~~9/24/2024~~	~~29.07~~	~~11.52~~	~~17.55~~
~~MW-102C~~	~~2/29/2024~~	~~28.70~~	~~20.1~~	~~8.6~~
	~~3/25/2024~~	~~28.70~~	~~19.9~~	~~8.8~~
	~~4/22/2024~~	~~28.70~~	~~20.2~~	~~8.5~~
	~~5/21/2024~~	~~28.70~~	~~20.3~~	~~8.4~~

Table 2.4.12-6
LMGS Groundwater Measurements
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Monitoring Well ID	Date Gauged	TOC Elevation (NAVD 88)	Depth to Groundwater (ft BTOC)	Groundwater Elevation (NAVD 88)
	6/17/2024	28.70	20.5	8.2
	7/4/2024	28.70	20.42	8.28
	8/4/2024	28.70	20.06	8.64
	9/24/2024	28.70	20.52	8.18
MW-102E	2/29/2024	28.16	27.1	1.1
	3/25/2024	28.16	25.1	3.1
	4/22/2024	28.16	25.2	3.0
	5/21/2024	28.16	25.3	2.9
	6/17/2024	28.16	25.4	2.8
	7/4/2024	28.16	25.12	3.04
	8/4/2024	28.16	24.86	3.30
	9/24/2024	28.16	25.26	2.90
MW-103A	2/29/2024	29.24	8.5	20.7
	3/25/2024	29.24	8.1	21.1
	4/22/2024	29.24	9.0	20.2
	5/21/2024	29.24	9.1	20.1
	6/17/2024	29.24	8.9	20.3
	7/4/2024	29.24	6.51	22.73
	8/4/2024	29.24	6.38	22.86
	9/24/2024	29.24	8.50	20.74
MW-103C	2/29/2024	29.33	20.0	9.3
	3/25/2024	29.33	19.9	9.4
	4/22/2024	29.33	20.1	9.2
	5/21/2024	29.33	20.2	9.1
	6/17/2024	29.33	20.4	8.9
	7/4/2024	29.33	20.36	8.97
	8/4/2024	29.33	20.12	9.21
	9/24/2024	29.33	20.50	8.83
MW-103E	2/29/2024	29.39	26.0	3.4
	3/25/2024	29.39	25.8	3.6

Table 2.4.12-6
LMGS Groundwater Measurements
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Monitoring Well ID	Date Gauged	TOC Elevation (NAVD 88)	Depth to Groundwater (ft BTOC)	Groundwater Elevation (NAVD 88)
	4/22/2024	29.39	25.8	3.6
	5/21/2024	29.39	25.9	3.5
	6/17/2024	29.39	26.0	3.4
	7/4/2024	29.39	25.73	3.66
	8/4/2024	29.39	25.52	3.87
	9/24/2024	29.39	25.89	3.50
MW-104A	2/29/2024	29.36	8.7	20.7
	3/25/2024	29.36	8.3	21.1
	4/22/2024	29.36	9.1	20.3
	5/21/2024	29.36	9.4	20.0
	6/17/2024	29.36	9.5	19.9
	7/4/2024	29.36	8.51	20.85
	8/4/2024	29.36	7.87	21.49
	9/24/2024	29.36	8.98	20.38
MW-104C	2/29/2024	29.64	20.9	8.7
	3/25/2024	29.64	20.8	8.8
	4/22/2024	29.64	21.0	8.6
	5/21/2024	29.64	21.1	8.5
	6/17/2024	29.64	21.3	8.3
	7/4/2024	29.64	21.24	8.40
	8/4/2024	29.64	21.00	8.64
	9/24/2024	29.64	21.39	8.25
MW-104E	2/29/2024	28.94	25.5	3.4
	3/25/2024	28.94	25.3	3.6
	4/22/2024	28.94	25.3	3.6
	5/21/2024	28.94	25.4	3.5
	6/17/2024	28.94	25.4	3.5
	7/4/2024	28.94	25.23	3.71
	8/4/2024	28.94	25.07	3.87
	9/24/2024	28.94	25.37	3.57

Table 2.4.12-6
LMGS Groundwater Measurements

Monitoring Well ID	Date Gauged	TOC Elevation (NAVD 88)	Depth to Groundwater (ft BTOC)	Groundwater Elevation (NAVD 88)
MW-105A	9/24/2024	30.27	8.60	21.67
MW-105C	9/24/2024	30.68	23.20	7.48
MW-106A	9/24/2024	29.60	8.62	20.98
MW-107A	9/24/2024	29.54	11.23	18.31
MW-107C	9/24/2024	29.36	20.95	8.41
MW-108A	9/24/2024	29.72	7.84	21.88
MW-109A	9/24/2024	29.17	8.15	21.02
MW-110A	9/24/2024	31.62	11.98	19.64
MW-111A	9/24/2024	30.22	8.31	21.91
MW-111C	9/24/2024	30.65	22.98	7.67
MW-112A	9/24/2024	29.18	7.59	21.59
MW-113A	9/24/2024	29.90	8.20	21.70
S-7	2/29/2024	30.71	22.0	8.7
	3/25/2024	30.71	21.8	8.9
	4/22/2024	30.71	22.0	8.7
	5/21/2024	30.71	22.1	8.6
	6/17/2024	30.71	22.4	8.3
	7/4/2024	30.71	22.29	8.42
	8/4/2024	30.71	21.99	8.72
	9/24/2024	30.71	22.43	8.28
C-87-50A	9/24/2024	32.91	7.72	25.19
C-98-344A	9/24/2024	41.63	16.63	25.00
NE-00-130A	9/24/2024	35.49	12.93	22.56
NE-03-131A	9/24/2024	34.36	10.51	23.85
NE-87-19A	9/24/2024	29.73	4.89	24.84
NE-98-118A	9/24/2024	34.14	11.53	22.61
NE-91-63A	9/24/2024	33.72	11.11	22.61
NE-86-18A	9/24/2024	29.21	7.16	22.05
C-81-A1	9/24/2024	30.49	4.35	26.14

Table 2.4.12-6
LMGS Groundwater Measurements
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Monitoring Well ID	Date Gauged	TOC Elevation (ft NAVD88)	Depth to Groundwater (ft BTOC)	Groundwater Elevation (ft NAVD88)
MW-1A	2/29/2024	29.07	5.9	23.2
MW-1A	3/25/2024	29.07	5.7	23.4
MW-1A	4/22/2024	29.07	6.8	22.3
MW-1A	5/21/2024	29.07	7.2	21.9
MW-1A	6/17/2024	29.07	7.5	21.6
MW-1A	7/4/2024	29.07	6.76	22.31
MW-1A	8/4/2024	29.07	5.22	23.85
MW-1A	9/24/2024	29.07	7.16	21.91
MW-1A	10/22/2024	29.07	7.76	21.31
MW-1A	11/22/2024	29.07	8.04	21.03
MW-1A	12/18/2024	29.07	8.24	20.83
MW-1A	1/28/2025	29.07	7.10	21.97
MW-1A	2/25/2025	29.07	7.10	21.97
MW-1A	3/25/2025	29.07	7.60	21.47
MW-1A	4/29/2025	29.07	6.64	22.43
MW-1A	6/5/2025	29.07	7.18	21.89
MW-1A	7/15/2025	29.07	7.25	21.82
MW-1A	8/13/2025	29.07	8.30	20.77
MW-1A	9/22/2025	29.07	7.43	21.64
MW-1C	2/29/2024	29.13	21.0	8.1
MW-1C	3/25/2024	29.13	20.8	8.3
MW-1C	4/22/2024	29.13	21.1	8.0
MW-1C	5/21/2024	29.13	21.2	7.9
MW-1C	6/17/2024	29.13	21.4	7.7
MW-1C	7/4/2024	29.13	21.32	7.81
MW-1C	8/4/2024	29.13	20.98	8.15
MW-1C	9/24/2024	29.13	21.42	7.71
MW-1C	10/22/2024	29.13	21.63	7.50
MW-1C	11/22/2024	29.13	21.69	7.44
MW-1C	12/18/2024	29.13	21.69	7.44
MW-1C	1/28/2025	29.13	21.50	7.63
MW-1C	2/25/2025	29.13	21.46	7.67
MW-1C	3/25/2025	29.13	21.59	7.54
MW-1C	4/29/2025	29.13	21.33	7.80
MW-1C	6/5/2025	29.13	21.34	7.79
MW-1C	7/15/2025	29.13	21.28	7.85
MW-1C	8/13/2025	29.13	21.56	7.57
MW-1C	9/22/2025	29.13	21.59	7.54
MW-1E	2/29/2024	29.22	26.2	3.0
MW-1E	3/25/2024	29.22	26.0	3.2
MW-1E	4/22/2024	29.22	26.0	3.2

**Table 2.4.12-6
LMGS Groundwater Measurements
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Monitoring Well ID	Date Gauged	TOC Elevation (ft NAVD88)	Depth to Groundwater (ft BTOC)	Groundwater Elevation (ft NAVD88)
MW-1E	5/21/2024	29.22	26.1	3.1
MW-1E	6/17/2024	29.22	26.2	3.0
MW-1E	7/4/2024	29.22	25.97	3.25
MW-1E	8/4/2024	29.22	25.70	3.52
MW-1E	9/24/2024	29.22	26.09	3.13
MW-1E	10/22/2024	29.22	26.08	3.14
MW-1E	11/22/2024	29.22	26.57	2.65
MW-1E	12/18/2024	29.22	26.68	2.54
MW-1E	1/28/2025	29.22	26.35	2.87
MW-1E	2/25/2025	29.22	26.16	3.06
MW-1E	3/25/2025	29.22	26.41	2.81
MW-1E	4/29/2025	29.22	26.39	2.83
MW-1E	6/5/2025	29.22	26.46	2.76
MW-1E	7/15/2025	29.22	26.56	2.66
MW-1E	8/13/2025	29.22	26.92	2.30
MW-1E	9/22/2025	29.22	26.80	2.42
MW-2A	2/29/2024	29.52	6.3	23.2
MW-2A	3/25/2024	29.52	6.0	23.5
MW-2A	4/22/2024	29.52	7.2	22.3
MW-2A	5/21/2024	29.52	7.7	21.8
MW-2A	6/17/2024	29.52	8.2	21.3
MW-2A	7/4/2024	29.52	7.63	21.89
MW-2A	8/4/2024	29.52	5.70	23.82
MW-2A	9/24/2024	29.52	7.60	21.92
MW-2A	10/22/2024	29.52	8.38	21.14
MW-2A	11/22/2024	29.52	8.80	20.72
MW-2A	12/18/2024	29.52	9.00	20.52
MW-2A	1/28/2025	29.52	7.50	22.02
MW-2A	2/25/2025	29.52	7.32	22.20
MW-2A	3/25/2025	29.52	7.92	21.60
MW-2A	4/29/2025	29.52	6.82	22.70
MW-2A	6/5/2025	29.52	7.45	22.07
MW-2A	7/15/2025	29.52	7.64	21.88
MW-2A	8/13/2025	29.52	8.94	20.58
MW-2A	9/22/2025	29.52	8.51	21.01
MW-2C	2/29/2024	29.50	21.4	8.1
MW-2C	3/25/2024	29.50	21.2	8.3
MW-2C	4/22/2024	29.50	21.5	8.0
MW-2C	5/21/2024	29.50	21.6	7.9
MW-2C	6/17/2024	29.50	21.8	7.7
MW-2C	7/4/2024	29.50	21.72	7.78
MW-2C	8/4/2024	29.50	21.39	8.11

Table 2.4.12-6
LMGS Groundwater Measurements
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Monitoring Well ID	Date Gauged	TOC Elevation (ft NAVD88)	Depth to Groundwater (ft BTOC)	Groundwater Elevation (ft NAVD88)
MW-2C	9/24/2024	29.50	21.83	7.67
MW-2C	10/22/2024	29.50	22.04	7.46
MW-2C	11/22/2024	29.50	22.16	7.34
MW-2C	12/18/2024	29.50	22.10	7.40
MW-2C	1/28/2025	29.50	21.94	7.56
MW-2C	2/25/2025	29.50	21.90	7.60
MW-2C	3/25/2025	29.50	21.98	7.52
MW-2C	4/29/2025	29.50	21.75	7.75
MW-2C	6/5/2025	29.50	21.75	7.75
MW-2C	7/15/2025	29.50	21.81	7.69
MW-2C	8/13/2025	29.50	21.98	7.52
MW-2C	9/22/2025	29.50	22.01	7.49
MW-2E	2/29/2024	29.58	26.3	3.3
MW-2E	3/25/2024	29.58	26.2	3.4
MW-2E	4/22/2024	29.58	26.2	3.4
MW-2E	5/21/2024	29.58	26.3	3.3
MW-2E	6/17/2024	29.58	26.3	3.3
MW-2E	7/4/2024	29.58	26.11	3.47
MW-2E	8/4/2024	29.58	25.89	3.69
MW-2E	9/24/2024	29.58	26.24	3.34
MW-2E	10/22/2024	29.58	26.33	3.25
MW-2E	11/22/2024	29.58	26.85	2.73
MW-2E	12/18/2024	29.58	26.90	2.68
MW-2E	1/28/2025	29.58	26.53	3.05
MW-2E	2/25/2025	29.58	26.34	3.24
MW-2E	3/25/2025	29.58	26.62	2.96
MW-2E	4/29/2025	29.58	26.57	3.01
MW-2E	6/5/2025	29.58	26.67	2.91
MW-2E	7/15/2025	29.58	26.77	2.81
MW-2E	8/13/2025	29.58	27.18	2.40
MW-2E	9/22/2025	29.58	26.97	2.61
MW-3A	2/29/2024	28.96	9.0	20.0
MW-3A	3/25/2024	28.96	8.5	20.5
MW-3A	4/22/2024	28.96	9.0	20.0
MW-3A	5/21/2024	28.96	8.8	20.2
MW-3A	6/17/2024	28.96	8.6	20.4
MW-3A	7/4/2024	28.96	7.67	21.29
MW-3A	8/4/2024	28.96	7.69	21.27
MW-3A	9/24/2024	28.96	8.42	20.54
MW-3A	10/22/2024	28.96	8.82	20.14
MW-3A	11/22/2024	28.96	9.03	19.93
MW-3A	12/18/2024	28.96	9.33	19.63

Table 2.4.12-6
LMGS Groundwater Measurements
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Monitoring Well ID	Date Gauged	TOC Elevation (ft NAVD88)	Depth to Groundwater (ft BTOC)	Groundwater Elevation (ft NAVD88)
MW-3A	1/28/2025	28.96	7.95	21.01
MW-3A	2/25/2025	28.96	7.56	21.40
MW-3A	3/25/2025	28.96	7.67	21.29
MW-3A	4/29/2025	28.96	6.48	22.48
MW-3A	6/5/2025	28.96	8.11	20.85
MW-3A	7/15/2025	28.96	8.61	20.35
MW-3A	8/13/2025	28.96	8.95	20.01
MW-3A	9/22/2025	28.96	7.26	21.70
MW-3C	2/29/2024	28.79	19.8	9.0
MW-3C	3/25/2024	28.79	19.6	9.2
MW-3C	4/22/2024	28.79	19.8	9.0
MW-3C	5/21/2024	28.79	19.9	8.9
MW-3C	6/17/2024	28.79	20.2	8.6
MW-3C	7/4/2024	28.79	20.11	8.68
MW-3C	8/4/2024	28.79	19.85	8.94
MW-3C	9/24/2024	28.79	20.24	8.55
MW-3C	10/22/2024	28.79	20.45	8.34
MW-3C	11/22/2024	28.79	20.48	8.31
MW-3C	12/18/2024	28.79	20.57	8.22
MW-3C	1/28/2025	28.79	20.29	8.50
MW-3C	2/25/2025	28.79	20.26	8.53
MW-3C	3/25/2025	28.79	20.41	8.38
MW-3C	4/29/2025	28.79	20.08	8.71
MW-3C	6/5/2025	28.79	20.06	8.73
MW-3C	7/15/2025	28.79	20.04	8.75
MW-3C	8/13/2025	28.79	20.35	8.44
MW-3C	9/22/2025	28.79	20.38	8.41
MW-3E	2/29/2024	28.94	25.6	3.3
MW-3E	3/25/2024	28.94	25.4	3.5
MW-3E	4/22/2024	28.94	25.4	3.5
MW-3E	5/21/2024	28.94	25.5	3.4
MW-3E	6/17/2024	28.94	25.6	3.3
MW-3E	7/4/2024	28.94	25.36	3.58
MW-3E	8/4/2024	28.94	25.15	3.79
MW-3E	9/24/2024	28.94	25.50	3.44
MW-3E	10/22/2024	28.94	25.59	3.35
MW-3E	11/22/2024	28.94	26.15	2.79
MW-3E	12/18/2024	28.94	26.20	2.74
MW-3E	1/28/2025	28.94	25.76	3.18
MW-3E	2/25/2025	28.94	25.54	3.40
MW-3E	3/25/2025	28.94	25.84	3.10
MW-3E	4/29/2025	28.94	25.80	3.14

Table 2.4.12-6
LMGS Groundwater Measurements
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Monitoring Well ID	Date Gauged	TOC Elevation (ft NAVD88)	Depth to Groundwater (ft BTOC)	Groundwater Elevation (ft NAVD88)
MW-3E	6/5/2025	28.94	25.86	3.08
MW-3E	7/15/2025	28.94	26.07	2.87
MW-3E	8/13/2025	28.94	26.54	2.40
MW-3E	9/22/2025	28.94	26.13	2.81
MW-4A	2/29/2024	28.92	10.4	18.5
MW-4A	3/25/2024	28.92	9.7	19.2
MW-4A	4/22/2024	28.92	9.9	19.0
MW-4A	5/21/2024	28.92	9.7	19.2
MW-4A	6/17/2024	28.92	9.5	19.4
MW-4A	7/4/2024	28.92	8.56	20.36
MW-4A	8/4/2024	28.92	8.20	20.72
MW-4A	9/24/2024	28.92	8.95	19.97
MW-4A	10/22/2024	28.92	9.19	19.73
MW-4A	11/22/2024	28.92	9.41	19.51
MW-4A	12/18/2024	28.92	9.71	19.21
MW-4A	1/28/2025	28.92	8.67	20.25
MW-4A	2/25/2025	28.92	8.29	20.63
MW-4A	3/25/2025	28.92	8.45	20.47
MW-4A	4/29/2025	28.92	6.79	22.13
MW-4A	6/5/2025	28.92	8.35	20.57
MW-4A	7/15/2025	28.92	8.80	20.12
MW-4A	8/13/2025	28.92	9.10	19.82
MW-4A	9/22/2025	28.92	7.37	21.55
MW-4C	2/29/2024	28.88	19.7	9.2
MW-4C	3/25/2024	28.88	19.5	9.4
MW-4C	4/22/2024	28.88	19.8	9.1
MW-4C	5/21/2024	28.88	19.9	9.0
MW-4C	6/17/2024	28.88	20.1	8.8
MW-4C	7/4/2024	28.88	20.04	8.84
MW-4C	8/4/2024	28.88	19.75	9.13
MW-4C	9/24/2024	28.88	20.14	8.74
MW-4C	10/22/2024	28.88	20.36	8.52
MW-4C	11/22/2024	28.88	20.35	8.53
MW-4C	12/18/2024	28.88	20.45	8.43
MW-4C	1/28/2025	28.88	20.20	8.68
MW-4C	2/25/2025	28.88	20.16	8.72
MW-4C	3/25/2025	28.88	20.29	8.59
MW-4C	4/29/2025	28.88	19.98	8.90
MW-4C	6/5/2025	28.88	19.98	8.90
MW-4C	7/15/2025	28.88	19.92	8.96
MW-4C	8/13/2025	28.88	20.25	8.63
MW-4C	9/22/2025	28.88	20.29	8.59

Table 2.4.12-6
LMGS Groundwater Measurements
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Monitoring Well ID	Date Gauged	TOC Elevation (ft NAVD88)	Depth to Groundwater (ft BTOC)	Groundwater Elevation (ft NAVD88)
MW-4E	2/29/2024	28.83	27.6	1.2
MW-4E	3/25/2024	28.83	25.5	3.3
MW-4E	4/22/2024	28.83	25.7	3.1
MW-4E	5/21/2024	28.83	25.5	3.3
MW-4E	6/17/2024	28.83	25.6	3.2
MW-4E	7/4/2024	28.83	25.40	3.43
MW-4E	8/4/2024	28.83	25.19	3.64
MW-4E	9/24/2024	28.83	25.53	3.30
MW-4E	10/22/2024	28.83	25.60	3.23
MW-4E	11/22/2024	28.83	26.14	2.69
MW-4E	12/18/2024	28.83	26.24	2.59
MW-4E	1/28/2025	28.83	25.81	3.02
MW-4E	2/25/2025	28.83	25.57	3.26
MW-4E	3/25/2025	28.83	25.85	2.98
MW-4E	4/29/2025	28.83	25.79	3.04
MW-4E	6/5/2025	28.83	25.92	2.91
MW-4E	7/15/2025	28.83	26.12	2.71
MW-4E	8/13/2025	28.83	26.56	2.27
MW-4E	9/22/2025	28.83	26.26	2.57
MW-5A	2/29/2024	28.95	8.1	20.9
MW-5A	3/25/2024	28.95	8.0	21.0
MW-5A	4/22/2024	28.95	8.3	20.7
MW-5A	5/21/2024	28.95	8.4	20.6
MW-5A	6/17/2024	28.95	8.8	20.2
MW-5A	7/4/2024	28.95	8.36	20.59
MW-5A	8/4/2024	28.95	7.84	21.11
MW-5A	9/24/2024	28.95	8.47	20.48
MW-5A	10/22/2024	28.95	8.85	20.10
MW-5A	11/22/2024	28.95	8.89	20.06
MW-5A	12/18/2024	28.95	8.93	20.02
MW-5A	1/28/2025	28.95	8.20	20.75
MW-5A	2/25/2025	28.95	8.20	20.75
MW-5A	3/25/2025	28.95	8.40	20.55
MW-5A	4/29/2025	28.95	8.00	20.95
MW-5A	6/5/2025	28.95	8.14	20.81
MW-5A	7/15/2025	28.95	8.40	20.55
MW-5A	8/13/2025	28.95	8.88	20.07
MW-5A	9/22/2025	28.95	8.34	20.61
MW-5C	2/29/2024	29.30	20.7	8.6
MW-5C	3/25/2024	29.30	20.5	8.8
MW-5C	4/22/2024	29.30	20.8	8.5
MW-5C	5/21/2024	29.30	20.9	8.4

Table 2.4.12-6
LMGS Groundwater Measurements
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Monitoring Well ID	Date Gauged	TOC Elevation (ft NAVD88)	Depth to Groundwater (ft BTOC)	Groundwater Elevation (ft NAVD88)
MW-5C	6/17/2024	29.30	21.1	8.2
MW-5C	7/4/2024	29.30	21.05	8.25
MW-5C	8/4/2024	29.30	20.68	8.62
MW-5C	9/24/2024	29.30	21.13	8.17
MW-5C	10/22/2024	29.30	21.36	7.94
MW-5C	11/22/2024	29.30	21.35	7.95
MW-5C	12/18/2024	29.30	21.39	7.91
MW-5C	1/28/2025	29.30	21.25	8.05
MW-5C	2/25/2025	29.30	21.13	8.17
MW-5C	3/25/2025	29.30	21.24	8.06
MW-5C	4/29/2025	29.30	21.05	8.25
MW-5C	6/5/2025	29.30	21.01	8.29
MW-5C	7/15/2025	29.30	20.99	8.31
MW-5C	8/13/2025	29.30	21.20	8.10
MW-5C	9/22/2025	29.30	21.29	8.01
MW-5E	2/29/2024	29.19	26.2	3.0
MW-5E	3/25/2024	29.19	26.0	3.2
MW-5E	4/22/2024	29.19	26.1	3.1
MW-5E	5/21/2024	29.19	26.1	3.1
MW-5E	6/17/2024	29.19	26.2	3.0
MW-5E	7/4/2024	29.19	25.99	3.20
MW-5E	8/4/2024	29.19	25.71	3.48
MW-5E	9/24/2024	29.19	26.11	3.08
MW-5E	10/22/2024	29.19	26.12	3.07
MW-5E	11/22/2024	29.19	26.56	2.63
MW-5E	12/18/2024	29.19	26.70	2.49
MW-5E	1/28/2025	29.19	26.38	2.81
MW-5E	2/25/2025	29.19	26.20	2.99
MW-5E	3/25/2025	29.19	26.46	2.73
MW-5E	4/29/2025	29.19	26.34	2.85
MW-5E	6/5/2025	29.19	26.48	2.71
MW-5E	7/15/2025	29.19	26.62	2.57
MW-5E	8/13/2025	29.19	26.96	2.23
MW-5E	9/22/2025	29.19	27.49	1.70
MW-6A	2/29/2024	29.53	6.0	23.5
MW-6A	3/25/2024	29.53	6.2	23.3
MW-6A	4/22/2024	29.53	7.0	22.5
MW-6A	5/21/2024	29.53	7.2	22.3
MW-6A	6/17/2024	29.53	7.4	22.1
MW-6A	7/4/2024	29.53	6.90	22.63
MW-6A	8/4/2024	29.53	5.93	23.60
MW-6A	9/24/2024	29.53	7.22	22.31

Table 2.4.12-6
LMGS Groundwater Measurements
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Monitoring Well ID	Date Gauged	TOC Elevation (ft NAVD88)	Depth to Groundwater (ft BTOC)	Groundwater Elevation (ft NAVD88)
MW-6A	10/22/2024	29.53	7.76	21.77
MW-6A	11/22/2024	29.53	7.61	21.92
MW-6A	12/18/2024	29.53	7.56	21.97
MW-6A	1/28/2025	29.53	6.51	23.02
MW-6A	2/25/2025	29.53	6.81	22.72
MW-6A	3/25/2025	29.53	7.13	22.40
MW-6A	4/29/2025	29.53	6.56	22.97
MW-6A	6/5/2025	29.53	6.98	22.55
MW-6A	7/15/2025	29.53	7.38	22.15
MW-6A	8/13/2025	29.53	7.92	21.61
MW-6A	9/22/2025	29.53	7.12	22.41
MW-6C	2/29/2024	29.18	20.9	8.3
MW-6C	3/25/2024	29.18	20.7	8.5
MW-6C	4/22/2024	29.18	20.9	8.3
MW-6C	5/21/2024	29.18	21.1	8.1
MW-6C	6/17/2024	29.18	21.3	7.9
MW-6C	7/4/2024	29.18	21.21	7.97
MW-6C	8/4/2024	29.18	20.82	8.36
MW-6C	9/24/2024	29.18	21.30	7.88
MW-6C	10/22/2024	29.18	21.52	7.66
MW-6C	11/22/2024	29.18	21.52	7.66
MW-6C	12/18/2024	29.18	21.59	7.59
MW-6C	1/28/2025	29.18	21.36	7.82
MW-6C	2/25/2025	29.18	21.32	7.86
MW-6C	3/25/2025	29.18	21.43	7.75
MW-6C	4/29/2025	29.18	21.13	8.05
MW-6C	6/5/2025	29.18	21.18	8.00
MW-6C	7/15/2025	29.18	21.15	8.03
MW-6C	8/13/2025	29.18	21.36	7.82
MW-6C	9/22/2025	29.18	21.47	7.71
MW-6E	2/29/2024	29.03	26.2	2.8
MW-6E	3/25/2024	29.03	25.9	3.1
MW-6E	4/22/2024	29.03	26.0	3.0
MW-6E	5/21/2024	29.03	26.0	3.0
MW-6E	6/17/2024	29.03	26.1	2.9
MW-6E	7/4/2024	29.03	25.93	3.10
MW-6E	8/4/2024	29.03	25.64	3.39
MW-6E	9/24/2024	29.03	26.02	3.01
MW-6E	10/22/2024	29.03	26.05	2.98
MW-6E	11/22/2024	29.03	26.52	2.51
MW-6E	12/18/2024	29.03	26.71	2.32
MW-6E	1/28/2025	29.03	26.33	2.70

Table 2.4.12-6
LMGS Groundwater Measurements
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Monitoring Well ID	Date Gauged	TOC Elevation (ft NAVD88)	Depth to Groundwater (ft BTOC)	Groundwater Elevation (ft NAVD88)
MW-6E	2/25/2025	29.03	26.11	2.92
MW-6E	3/25/2025	29.03	26.39	2.64
MW-6E	4/29/2025	29.03	26.25	2.78
MW-6E	6/5/2025	29.03	26.43	2.60
MW-6E	7/15/2025	29.03	26.52	2.51
MW-6E	8/13/2025	29.03	26.91	2.12
MW-6E	9/22/2025	29.03	26.75	2.28
MW-101A	2/29/2024	30.37	5.5	24.9
MW-101A	3/25/2024	30.37	5.8	24.6
MW-101A	4/22/2024	30.37	7.3	23.1
MW-101A	5/21/2024	30.37	7.5	22.9
MW-101A	6/17/2024	30.37	7.7	22.7
MW-101A	7/4/2024	30.37	6.14	24.23
MW-101A	8/4/2024	30.37	4.68	25.69
MW-101A	9/24/2024	30.37	7.54	22.83
MW-101A	10/22/2024	30.37	8.35	22.02
MW-101A	11/22/2024	30.37	8.64	21.73
MW-101A	12/18/2024	30.37	8.88	21.49
MW-101A	1/28/2025	30.37	5.72	24.65
MW-101A	2/25/2025	30.37	6.53	23.84
MW-101A	3/25/2025	30.37	7.32	23.05
MW-101A	4/29/2025	30.37	6.05	24.32
MW-101A	6/5/2025	30.37	6.99	23.38
MW-101A	7/15/2025	30.37	7.20	23.17
MW-101A	8/13/2025	30.37	8.03	22.34
MW-101A	9/22/2025	30.37	6.65	23.72
MW-101C	2/29/2024	30.29	22.3	8.0
MW-101C	3/25/2024	30.29	22.2	8.1
MW-101C	4/22/2024	30.29	22.4	7.9
MW-101C	5/21/2024	30.29	22.5	7.8
MW-101C	6/17/2024	30.29	22.7	7.6
MW-101C	7/4/2024	30.29	22.62	7.67
MW-101C	8/4/2024	30.29	22.35	7.94
MW-101C	9/24/2024	30.29	22.74	7.55
MW-101C	10/22/2024	30.29	23.00	7.29
MW-101C	11/22/2024	30.29	22.99	7.30
MW-101C	12/18/2024	30.29	23.03	7.26
MW-101C	1/28/2025	30.29	22.88	7.41
MW-101C	2/25/2025	30.29	22.80	7.49
MW-101C	3/25/2025	30.29	22.92	7.37
MW-101C	4/29/2025	30.29	22.68	7.61
MW-101C	6/5/2025	30.29	22.65	7.64

Table 2.4.12-6
LMGS Groundwater Measurements
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Monitoring Well ID	Date Gauged	TOC Elevation (ft NAVD88)	Depth to Groundwater (ft BTOC)	Groundwater Elevation (ft NAVD88)
MW-101C	7/15/2025	30.29	22.59	7.70
MW-101C	8/13/2025	30.29	22.99	7.30
MW-101C	9/22/2025	30.29	22.93	7.36
MW-101E	2/29/2024	30.49	26.9	3.6
MW-101E	3/25/2024	30.49	26.8	3.7
MW-101E	4/22/2024	30.49	26.9	3.6
MW-101E	5/21/2024	30.49	26.9	3.6
MW-101E	6/17/2024	30.49	27.0	3.5
MW-101E	7/4/2024	30.49	26.79	3.70
MW-101E	8/4/2024	30.49	26.63	3.86
MW-101E	9/24/2024	30.49	26.92	3.57
MW-101E	10/22/2024	30.49	27.06	3.43
MW-101E	11/22/2024	30.49	27.54	2.95
MW-101E	12/18/2024	30.49	27.54	2.95
MW-101E	1/28/2025	30.49	27.70	2.79
MW-101E	2/25/2025	30.49	27.46	3.03
MW-101E	3/25/2025	30.49	27.58	2.91
MW-101E	4/29/2025	30.49	27.54	2.95
MW-101E	6/5/2025	30.49	27.45	3.04
MW-101E	7/15/2025	30.49	27.46	3.03
MW-101E	8/13/2025	30.49	27.91	2.58
MW-101E	9/22/2025	30.49	27.59	2.90
MW-102A	2/29/2024	29.07	11.4	17.7
MW-102A	3/25/2024	29.07	10.1	19.0
MW-102A	4/22/2024	29.07	11.4	17.7
MW-102A	5/21/2024	29.07	11.4	17.7
MW-102A	6/17/2024	29.07	11.6	17.5
MW-102A	7/4/2024	29.07	11.60	17.47
MW-102A	8/4/2024	29.07	11.06	18.01
MW-102A	9/24/2024	29.07	11.52	17.55
MW-102A	10/22/2024	29.07	11.66	17.41
MW-102A	11/22/2024	29.07	11.69	17.38
MW-102A	12/18/2024	29.07	11.81	17.26
MW-102A	1/28/2025	29.07	11.60	17.47
MW-102A	2/25/2025	29.07	11.60	17.47
MW-102A	3/25/2025	29.07	11.66	17.41
MW-102A	4/29/2025	29.07	10.99	18.08
MW-102A	6/5/2025	29.07	10.75	18.32
MW-102A	7/15/2025	29.07	11.01	18.06
MW-102A	8/13/2025	29.07	11.38	17.69
MW-102A	9/22/2025	29.07	11.39	17.68
MW-102C	2/29/2024	28.70	20.1	8.6

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LMGS Groundwater Measurements
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Monitoring Well ID	Date Gauged	TOC Elevation (ft NAVD88)	Depth to Groundwater (ft BTOC)	Groundwater Elevation (ft NAVD88)
MW-102C	3/25/2024	28.70	19.9	8.8
MW-102C	4/22/2024	28.70	20.2	8.5
MW-102C	5/21/2024	28.70	20.3	8.4
MW-102C	6/17/2024	28.70	20.5	8.2
MW-102C	7/4/2024	28.70	20.42	8.28
MW-102C	8/4/2024	28.70	20.06	8.64
MW-102C	9/24/2024	28.70	20.52	8.18
MW-102C	10/22/2024	28.70	20.73	7.97
MW-102C	11/22/2024	28.70	20.72	7.98
MW-102C	12/18/2024	28.70	20.79	7.91
MW-102C	1/28/2025	28.70	20.59	8.11
MW-102C	2/25/2025	28.70	20.54	8.16
MW-102C	3/25/2025	28.70	20.66	8.04
MW-102C	4/29/2025	28.70	20.35	8.35
MW-102C	6/5/2025	28.70	20.38	8.32
MW-102C	7/15/2025	28.70	20.39	8.31
MW-102C	8/13/2025	28.70	20.61	8.09
MW-102C	9/22/2025	28.70	20.66	8.04
MW-102E	2/29/2024	28.16	27.1	1.1
MW-102E	3/25/2024	28.16	25.1	3.1
MW-102E	4/22/2024	28.16	25.2	3.0
MW-102E	5/21/2024	28.16	25.3	2.9
MW-102E	6/17/2024	28.16	25.4	2.8
MW-102E	7/4/2024	28.16	25.12	3.04
MW-102E	8/4/2024	28.16	24.86	3.30
MW-102E	9/24/2024	28.16	25.26	2.90
MW-102E	10/22/2024	28.16	25.23	2.93
MW-102E	11/22/2024	28.16	25.64	2.52
MW-102E	12/18/2024	28.16	25.82	2.34
MW-102E	1/28/2025	28.16	25.52	2.64
MW-102E	2/25/2025	28.16	25.34	2.82
MW-102E	3/25/2025	28.16	25.58	2.58
MW-102E	4/29/2025	28.16	25.40	2.76
MW-102E	6/5/2025	28.16	25.60	2.56
MW-102E	7/15/2025	28.16	25.76	2.40
MW-102E	8/13/2025	28.16	26.12	2.04
MW-102E	9/22/2025	28.16	25.96	2.20
MW-103A	2/29/2024	29.24	8.5	20.7
MW-103A	3/25/2024	29.24	8.1	21.1
MW-103A	4/22/2024	29.24	9.0	20.2
MW-103A	5/21/2024	29.24	9.1	20.1
MW-103A	6/17/2024	29.24	8.9	20.3

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LMGS Groundwater Measurements
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Monitoring Well ID	Date Gauged	TOC Elevation (ft NAVD88)	Depth to Groundwater (ft BTOC)	Groundwater Elevation (ft NAVD88)
MW-103A	7/4/2024	29.24	6.51	22.73
MW-103A	8/4/2024	29.24	6.38	22.86
MW-103A	9/24/2024	29.24	8.50	20.74
MW-103A	10/22/2024	29.24	9.09	20.15
MW-103A	11/22/2024	29.24	9.35	19.89
MW-103A	12/18/2024	29.24	9.72	19.52
MW-103A	1/28/2025	29.24	6.82	22.42
MW-103A	2/25/2025	29.24	7.56	21.68
MW-103A	3/25/2025	29.24	7.93	21.31
MW-103A	4/29/2025	29.24	5.66	23.58
MW-103A	6/5/2025	29.24	8.01	21.23
MW-103A	7/15/2025	29.24	8.88	20.36
MW-103A	8/13/2025	29.24	9.26	19.98
MW-103A	9/22/2025	29.24	6.53	22.71
MW-103C	2/29/2024	29.33	20.0	9.3
MW-103C	3/25/2024	29.33	19.9	9.4
MW-103C	4/22/2024	29.33	20.1	9.2
MW-103C	5/21/2024	29.33	20.2	9.1
MW-103C	6/17/2024	29.33	20.4	8.9
MW-103C	7/4/2024	29.33	20.36	8.97
MW-103C	8/4/2024	29.33	20.12	9.21
MW-103C	9/24/2024	29.33	20.50	8.83
MW-103C	10/22/2024	29.33	20.71	8.62
MW-103C	11/22/2024	29.33	20.72	8.61
MW-103C	12/18/2024	29.33	20.73	8.60
MW-103C	1/28/2025	29.33	20.58	8.75
MW-103C	2/25/2025	29.33	20.54	8.79
MW-103C	3/25/2025	29.33	20.65	8.68
MW-103C	4/29/2025	29.33	20.32	9.01
MW-103C	6/5/2025	29.33	20.33	9.00
MW-103C	7/15/2025	29.33	20.31	9.02
MW-103C	8/13/2025	29.33	20.60	8.73
MW-103C	9/22/2025	29.33	20.65	8.68
MW-103E	2/29/2024	29.39	26.0	3.4
MW-103E	3/25/2024	29.39	25.8	3.6
MW-103E	4/22/2024	29.39	25.8	3.6
MW-103E	5/21/2024	29.39	25.9	3.5
MW-103E	6/17/2024	29.39	26.0	3.4
MW-103E	7/4/2024	29.39	25.73	3.66
MW-103E	8/4/2024	29.39	25.52	3.87
MW-103E	9/24/2024	29.39	25.89	3.50
MW-103E	10/22/2024	29.39	26.01	3.38

Table 2.4.12-6
LMGS Groundwater Measurements
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Monitoring Well ID	Date Gauged	TOC Elevation (ft NAVD88)	Depth to Groundwater (ft BTOC)	Groundwater Elevation (ft NAVD88)
MW-103E	11/22/2024	29.39	26.63	2.76
MW-103E	12/18/2024	29.39	26.62	2.77
MW-103E	1/28/2025	29.39	26.15	3.24
MW-103E	2/25/2025	29.39	25.90	3.49
MW-103E	3/25/2025	29.39	26.23	3.16
MW-103E	4/29/2025	29.39	26.22	3.17
MW-103E	6/5/2025	29.39	26.30	3.09
MW-103E	7/15/2025	29.39	26.54	2.85
MW-103E	8/13/2025	29.39	27.03	2.36
MW-103E	9/22/2025	29.39	26.58	2.81
MW-104A	2/29/2024	29.36	8.7	20.7
MW-104A	3/25/2024	29.36	8.3	21.1
MW-104A	4/22/2024	29.36	9.1	20.3
MW-104A	5/21/2024	29.36	9.4	20.0
MW-104A	6/17/2024	29.36	9.5	19.9
MW-104A	7/4/2024	29.36	8.51	20.85
MW-104A	8/4/2024	29.36	7.87	21.49
MW-104A	9/24/2024	29.36	8.98	20.38
MW-104A	10/22/2024	29.36	9.79	19.57
MW-104A	11/22/2024	29.36	9.80	19.56
MW-104A	12/18/2024	29.36	10.13	19.23
MW-104A	1/28/2025	29.36	8.00	21.36
MW-104A	2/25/2025	29.36	8.31	21.05
MW-104A	3/25/2025	29.36	8.79	20.57
MW-104A	4/29/2025	29.36	7.63	21.73
MW-104A	6/5/2025	29.36	8.51	20.85
MW-104A	7/15/2025	29.36	9.42	19.94
MW-104A	8/13/2025	29.36	9.99	19.37
MW-104A	9/22/2025	29.36	8.73	20.63
MW-104C	2/29/2024	29.64	20.9	8.7
MW-104C	3/25/2024	29.64	20.8	8.8
MW-104C	4/22/2024	29.64	21.0	8.6
MW-104C	5/21/2024	29.64	21.1	8.5
MW-104C	6/17/2024	29.64	21.3	8.3
MW-104C	7/4/2024	29.64	21.24	8.40
MW-104C	8/4/2024	29.64	21.00	8.64
MW-104C	9/24/2024	29.64	21.39	8.25
MW-104C	10/22/2024	29.64	21.60	8.04
MW-104C	11/22/2024	29.64	21.63	8.01
MW-104C	12/18/2024	29.64	21.67	7.97
MW-104C	1/28/2025	29.64	21.48	8.16
MW-104C	2/25/2025	29.64	21.43	8.21

Table 2.4.12-6
LMGS Groundwater Measurements
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Monitoring Well ID	Date Gauged	TOC Elevation (ft NAVD88)	Depth to Groundwater (ft BTOC)	Groundwater Elevation (ft NAVD88)
MW-104C	3/25/2025	29.64	21.56	8.08
MW-104C	4/29/2025	29.64	21.26	8.38
MW-104C	6/5/2025	29.64	21.28	8.36
MW-104C	7/15/2025	29.64	21.24	8.40
MW-104C	8/13/2025	29.64	21.55	8.09
MW-104C	9/22/2025	29.64	21.57	8.07
MW-104E	2/29/2024	28.94	25.5	3.4
MW-104E	3/25/2024	28.94	25.3	3.6
MW-104E	4/22/2024	28.94	25.3	3.6
MW-104E	5/21/2024	28.94	25.4	3.5
MW-104E	6/17/2024	28.94	25.4	3.5
MW-104E	7/4/2024	28.94	25.23	3.71
MW-104E	8/4/2024	28.94	25.07	3.87
MW-104E	9/24/2024	28.94	25.37	3.57
MW-104E	10/22/2024	28.94	25.57	3.37
MW-104E	11/22/2024	28.94	26.17	2.77
MW-104E	12/18/2024	28.94	26.15	2.79
MW-104E	1/28/2025	28.94	25.65	3.29
MW-104E	2/25/2025	28.94	25.39	3.55
MW-104E	3/25/2025	28.94	25.79	3.15
MW-104E	4/29/2025	28.94	25.76	3.18
MW-104E	6/5/2025	28.94	25.75	3.19
MW-104E	7/15/2025	28.94	25.98	2.96
MW-104E	8/13/2025	28.94	26.48	2.46
MW-104E	9/22/2025	28.94	26.03	2.91
MW-105A	9/24/2024	30.27	8.60	21.67
MW-105A	10/22/2024	30.27	8.78	21.49
MW-105A	11/22/2024	30.27	9.09	21.18
MW-105A	12/18/2024	30.27	9.26	21.01
MW-105A	1/28/2025	30.27	8.17	22.10
MW-105A	2/25/2025	30.27	8.27	22.00
MW-105A	3/25/2025	30.27	8.78	21.49
MW-105A	4/29/2025	30.27	7.92	22.35
MW-105A	6/5/2025	30.27	8.38	21.89
MW-105A	7/15/2025	30.27	8.23	22.04
MW-105A	8/13/2025	30.27	9.16	21.11
MW-105A	9/22/2025	30.27	8.44	21.83
MW-105C	9/24/2024	30.68	23.20	7.48
MW-105C	10/22/2024	30.68	23.30	7.38
MW-105C	11/22/2024	30.68	23.31	7.37
MW-105C	12/18/2024	30.68	23.28	7.40
MW-105C	1/28/2025	30.68	23.11	7.57

Table 2.4.12-6
LMGS Groundwater Measurements
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Monitoring Well ID	Date Gauged	TOC Elevation (ft NAVD88)	Depth to Groundwater (ft BTOC)	Groundwater Elevation (ft NAVD88)
MW-105C	2/25/2025	30.68	23.07	7.61
MW-105C	3/25/2025	30.68	23.11	7.57
MW-105C	4/29/2025	30.68	22.91	7.77
MW-105C	6/5/2025	30.68	22.99	7.69
MW-105C	7/15/2025	30.68	22.87	7.81
MW-105C	8/13/2025	30.68	23.18	7.50
MW-105C	9/22/2025	30.68	23.20	7.48
MW-106A	9/24/2024	29.60	8.62	20.98
MW-106A	10/22/2024	29.60	8.42	21.18
MW-106A	11/22/2024	29.60	9.33	20.27
MW-106A	12/18/2024	29.60	9.55	20.05
MW-106A	1/28/2025	29.60	8.19	21.41
MW-106A	2/25/2025	29.60	7.97	21.63
MW-106A	3/25/2025	29.60	8.35	21.25
MW-106A	4/29/2025	29.60	7.30	22.30
MW-106A	6/5/2025	29.60	7.98	21.62
MW-106A	7/15/2025	29.60	8.22	21.38
MW-106A	8/13/2025	29.60	9.65	19.95
MW-106A	9/22/2025	29.60	9.18	20.42
MW-107A	9/24/2024	29.54	11.23	18.31
MW-107A	10/22/2024	29.54	10.31	19.23
MW-107A	11/22/2024	29.54	10.56	18.98
MW-107A	12/18/2024	29.54	10.71	18.83
MW-107A	1/28/2025	29.54	9.32	20.22
MW-107A	2/25/2025	29.54	9.13	20.41
MW-107A	3/25/2025	29.54	9.63	19.91
MW-107A	4/29/2025	29.54	8.83	20.71
MW-107A	6/5/2025	29.54	9.28	20.26
MW-107A	7/15/2025	29.54	9.83	19.71
MW-107A	8/13/2025	29.54	10.72	18.82
MW-107A	9/22/2025	29.54	10.05	19.49
MW-107C	9/24/2024	29.36	20.95	8.41
MW-107C	10/22/2024	29.36	21.19	8.17
MW-107C	11/22/2024	29.36	21.22	8.14
MW-107C	12/18/2024	29.36	21.23	8.13
MW-107C	1/28/2025	29.36	21.05	8.31
MW-107C	2/25/2025	29.36	21.03	8.33
MW-107C	3/25/2025	29.36	21.13	8.23
MW-107C	4/29/2025	29.36	20.85	8.51
MW-107C	6/5/2025	29.36	20.83	8.53
MW-107C	7/15/2025	29.36	20.81	8.55
MW-107C	8/13/2025	29.36	21.08	8.28

Table 2.4.12-6
LMGS Groundwater Measurements
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Monitoring Well ID	Date Gauged	TOC Elevation (ft NAVD88)	Depth to Groundwater (ft BTOC)	Groundwater Elevation (ft NAVD88)
MW-107C	9/22/2025	29.36	21.14	8.22
MW-108A	9/24/2024	29.72	7.84	21.88
MW-108A	10/22/2024	29.72	8.11	21.61
MW-108A	11/22/2024	29.72	8.33	21.39
MW-108A	12/18/2024	29.72	8.51	21.21
MW-108A	1/28/2025	29.72	7.55	22.17
MW-108A	2/25/2025	29.72	7.67	22.05
MW-108A	3/25/2025	29.72	8.12	21.60
MW-108A	4/29/2025	29.72	7.38	22.34
MW-108A	6/5/2025	29.72	7.80	21.92
MW-108A	7/15/2025	29.72	7.65	22.07
MW-108A	8/13/2025	29.72	8.46	21.26
MW-108A	9/22/2025	29.72	7.71	22.01
MW-109A	9/24/2024	29.17	8.15	21.02
MW-109A	10/22/2024	29.17	8.38	20.79
MW-109A	11/22/2024	29.17	8.74	20.43
MW-109A	12/18/2024	29.17	8.99	20.18
MW-109A	1/28/2025	29.17	7.72	21.45
MW-109A	2/25/2025	29.17	7.54	21.63
MW-109A	3/25/2025	29.17	7.93	21.24
MW-109A	4/29/2025	29.17	6.81	22.36
MW-109A	6/5/2025	29.17	7.46	21.71
MW-109A	7/15/2025	29.17	7.71	21.46
MW-109A	8/13/2025	29.17	9.08	20.09
MW-109A	9/22/2025	29.17	8.15	21.02
MW-110A	9/24/2024	31.62	11.98	19.64
MW-110A	10/22/2024	31.62	12.70	18.92
MW-110A	11/22/2024	31.62	12.77	18.85
MW-110A	12/18/2024	31.62	12.82	18.80
MW-110A	1/28/2025	31.62	11.78	19.84
MW-110A	2/25/2025	31.62	11.69	19.93
MW-110A	3/25/2025	31.62	12.10	19.52
MW-110A	4/29/2025	31.62	11.29	20.33
MW-110A	6/5/2025	31.62	11.50	20.12
MW-110A	7/15/2025	31.62	12.04	19.58
MW-110A	8/13/2025	31.62	12.50	19.12
MW-110A	9/22/2025	31.62	11.87	19.75
MW-111A	9/24/2024	30.22	8.31	21.91
MW-111A	10/22/2024	30.22	8.39	21.83
MW-111A	11/22/2024	30.22	8.48	21.74
MW-111A	12/18/2024	30.22	8.61	21.61
MW-111A	1/28/2025	30.22	7.65	22.57

Table 2.4.12-6
LMGS Groundwater Measurements
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Monitoring Well ID	Date Gauged	TOC Elevation (ft NAVD88)	Depth to Groundwater (ft BTOC)	Groundwater Elevation (ft NAVD88)
MW-111A	2/25/2025	30.22	7.88	22.34
MW-111A	3/25/2025	30.22	8.28	21.94
MW-111A	4/29/2025	30.22	7.61	22.61
MW-111A	6/5/2025	30.22	7.94	22.28
MW-111A	7/15/2025	30.22	8.04	22.18
MW-111A	8/13/2025	30.22	8.75	21.47
MW-111A	9/22/2025	30.22	7.91	22.31
MW-111C	9/24/2024	30.65	22.98	7.67
MW-111C	10/22/2024	30.65	23.18	7.47
MW-111C	11/22/2024	30.65	23.18	7.47
MW-111C	12/18/2024	30.65	23.23	7.42
MW-111C	1/28/2025	30.65	23.03	7.62
MW-111C	2/25/2025	30.65	22.98	7.67
MW-111C	3/25/2025	30.65	23.09	7.56
MW-111C	4/29/2025	30.65	22.84	7.81
MW-111C	6/5/2025	30.65	22.85	7.80
MW-111C	7/15/2025	30.65	22.81	7.84
MW-111C	8/13/2025	30.65	23.11	7.54
MW-111C	9/22/2025	30.65	23.13	7.52
MW-112A	9/24/2024	29.18	7.59	21.59
MW-112A	10/22/2024	29.18	8.23	20.95
MW-112A	11/22/2024	29.18	8.49	20.69
MW-112A	12/18/2024	29.18	8.62	20.56
MW-112A	1/28/2025	29.18	7.50	21.68
MW-112A	2/25/2025	29.18	7.40	21.78
MW-112A	3/25/2025	29.18	7.69	21.49
MW-112A	4/29/2025	29.18	6.95	22.23
MW-112A	6/5/2025	29.18	7.29	21.89
MW-112A	7/15/2025	29.18	7.63	21.55
MW-112A	8/13/2025	29.18	8.67	20.51
MW-112A	9/22/2025	29.18	7.80	21.38
MW-113A	9/24/2024	29.90	8.20	21.70
MW-113A	10/22/2024	29.90	8.76	21.14
MW-113A	11/22/2024	29.90	8.84	21.06
MW-113A	12/18/2024	29.90	8.86	21.04
MW-113A	1/28/2025	29.90	7.81	22.09
MW-113A	2/25/2025	29.90	7.88	22.02
MW-113A	3/25/2025	29.90	8.11	21.79
MW-113A	4/29/2025	29.90	7.52	22.38
MW-113A	6/5/2025	29.90	7.77	22.13
MW-113A	7/15/2025	29.90	8.11	21.79
MW-113A	8/13/2025	29.90	8.78	21.12

Table 2.4.12-6
LMGS Groundwater Measurements
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Monitoring Well ID	Date Gauged	TOC Elevation (ft NAVD88)	Depth to Groundwater (ft BTOC)	Groundwater Elevation (ft NAVD88)
MW-113A	9/22/2025	29.90	8.09	21.81
S-7	2/29/2024	30.71	22.0	8.7
S-7	3/25/2024	30.71	21.8	8.9
S-7	4/22/2024	30.71	22.0	8.7
S-7	5/21/2024	30.71	22.1	8.6
S-7	6/17/2024	30.71	22.4	8.3
S-7	7/4/2024	30.71	22.29	8.42
S-7	8/4/2024	30.71	21.99	8.72
S-7	9/24/2024	30.71	22.43	8.28
S-7	10/22/2024	30.71	22.61	8.10
S-7	11/22/2024	30.71	22.65	8.06
S-7	12/18/2024	30.71	22.67	8.04
S-7	1/28/2025	30.71	22.49	8.22
S-7	2/25/2025	30.71	22.44	8.27
S-7	3/25/2025	30.71	22.56	8.15
S-7	4/29/2025	30.71	22.25	8.46
S-7	6/5/2025	30.71	22.28	8.43
S-7	7/15/2025	30.71	22.27	8.44
S-7	8/13/2025	30.71	22.52	8.19
S-7	9/22/2025	30.71	22.58	8.13
SW-1	11/22/2024	19.59	0.81	18.78
SW-1	12/18/2024	19.59	1.24	18.35
SW-1	1/28/2025	19.59	NM	NM
SW-1	2/25/2025	19.59	NM	NM
SW-1	3/25/2025	19.59	NM	NM
SW-1	4/29/2025	19.59	-0.23	19.82
SW-1	6/5/2025	19.59	NM	NM
SW-1	7/15/2025	19.59	0.10	19.49
SW-1	8/13/2025	19.59	0.63	18.96
SW-1	9/22/2025	19.59	-0.15	19.74
SW-2	11/22/2024	19.47	0.91	18.56
SW-2	12/18/2024	19.47	1.07	18.40
SW-2	1/28/2025	19.47	NM	NM
SW-2	2/25/2025	19.47	NM	NM
SW-2	3/25/2025	19.47	NM	NM
SW-2	4/29/2025	19.47	0.05	19.42
SW-2	6/5/2025	19.47	0.18	19.29
SW-2	7/15/2025	19.47	0.49	18.98
SW-2	8/13/2025	19.47	0.46	19.01
SW-2	9/22/2025	19.47	0.26	19.21
C-87-50A	9/24/2024	32.91	7.72	25.19
C-87-50A	10/22/2024	32.91	7.98	24.93

**Table 2.4.12-6
LMGS Groundwater Measurements
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Monitoring Well ID	Date Gauged	TOC Elevation (ft NAVD88)	Depth to Groundwater (ft BTOC)	Groundwater Elevation (ft NAVD88)
C-87-50A	11/22/2024	32.91	7.45	25.46
C-87-50A	12/18/2024	32.91	7.32	25.59
C-87-50A	1/28/2025	32.91	7.16	25.75
C-87-50A	2/25/2025	32.91	6.98	25.93
C-87-50A	3/25/2025	32.91	6.97	25.94
C-87-50A	4/29/2025	32.91	6.77	26.14
C-87-50A	6/5/2025	32.91	6.79	26.12
C-87-50A	7/15/2025	32.91	7.12	25.79
C-87-50A	8/13/2025	32.91	7.43	25.48
C-87-50A	9/22/2025	32.91	7.29	25.62
C-98-344A	9/24/2024	41.63	16.63	25.00
C-98-344A	10/22/2024	41.63	14.83	26.80
C-98-344A	11/22/2024	41.63	16.21	25.42
C-98-344A	12/18/2024	41.63	16.44	25.19
C-98-344A	1/28/2025	41.63	15.50	26.13
C-98-344A	2/25/2025	41.63	15.48	26.15
C-98-344A	3/25/2025	41.63	15.35	26.28
C-98-344A	4/29/2025	41.63	15.47	26.16
C-98-344A	6/5/2025	41.63	15.95	25.68
C-98-344A	7/15/2025	41.63	16.00	25.63
C-98-344A	8/13/2025	41.63	15.91	25.72
C-98-344A	9/22/2025	41.63	15.57	26.06
NE-00-130A	9/24/2024	35.49	12.93	22.56
NE-00-130A	10/22/2024	35.49	13.27	22.22
NE-00-130A	11/22/2024	35.49	13.41	22.08
NE-00-130A	12/18/2024	35.49	13.63	21.86
NE-00-130A	1/28/2025	35.49	13.05	22.44
NE-00-130A	2/25/2025	35.49	13.11	22.38
NE-00-130A	3/25/2025	35.49	13.57	21.92
NE-00-130A	4/29/2025	35.49	13.11	22.38
NE-00-130A	6/5/2025	35.49	13.19	22.30
NE-00-130A	7/15/2025	35.49	12.98	22.51
NE-00-130A	8/13/2025	35.49	13.51	21.98
NE-00-130A	9/22/2025	35.49	13.03	22.46
NE-03-131A	9/24/2024	34.36	10.51	23.85
NE-03-131A	10/22/2024	34.36	10.50	23.86
NE-03-131A	11/22/2024	34.36	10.57	23.79
NE-03-131A	12/18/2024	34.36	10.59	23.77
NE-03-131A	1/28/2025	34.36	9.58	24.78
NE-03-131A	2/25/2025	34.36	9.98	24.38
NE-03-131A	3/25/2025	34.36	10.69	23.67
NE-03-131A	4/29/2025	34.36	9.77	24.59

Table 2.4.12-6
LMGS Groundwater Measurements
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Monitoring Well ID	Date Gauged	TOC Elevation (ft NAVD88)	Depth to Groundwater (ft BTOC)	Groundwater Elevation (ft NAVD88)
NE-03-131A	6/5/2025	34.36	9.86	24.50
NE-03-131A	7/15/2025	34.36	10.37	23.99
NE-03-131A	8/13/2025	34.36	11.08	23.28
NE-03-131A	9/22/2025	34.36	10.11	24.25
NE-87-19A	9/24/2024	29.73	4.89	24.84
NE-87-19A	10/22/2024	29.73	5.26	24.47
NE-87-19A	11/22/2024	29.73	5.29	24.44
NE-87-19A	12/18/2024	29.73	5.53	24.20
NE-87-19A	1/28/2025	29.73	3.63	26.10
NE-87-19A	2/25/2025	29.73	4.58	25.15
NE-87-19A	3/25/2025	29.73	5.79	23.94
NE-87-19A	4/29/2025	29.73	4.30	25.43
NE-87-19A	6/5/2025	29.73	4.33	25.40
NE-87-19A	7/15/2025	29.73	5.62	24.11
NE-87-19A	8/13/2025	29.73	6.46	23.27
NE-87-19A	9/22/2025	29.73	5.04	24.69
NE-98-118A	9/24/2024	34.14	11.53	22.61
NE-98-118A	10/22/2024	34.14	11.94	22.20
NE-98-118A	11/22/2024	34.14	12.06	22.08
NE-98-118A	12/18/2024	34.14	12.22	21.92
NE-98-118A	1/28/2025	34.14	11.73	22.41
NE-98-118A	2/25/2025	34.14	11.80	22.34
NE-98-118A	3/25/2025	34.14	12.18	21.96
NE-98-118A	4/29/2025	34.14	11.74	22.40
NE-98-118A	6/5/2025	34.14	11.85	22.29
NE-98-118A	7/15/2025	34.14	11.63	22.51
NE-98-118A	8/13/2025	34.14	12.16	21.98
NE-98-118A	9/22/2025	34.14	11.72	22.42
NE-91-63A	9/24/2024	33.72	11.11	22.61
NE-91-63A	10/22/2024	33.72	11.58	22.14
NE-91-63A	11/22/2024	33.72	11.74	21.98
NE-91-63A	12/18/2024	33.72	12.00	21.72
NE-91-63A	1/28/2025	33.72	11.40	22.32
NE-91-63A	2/25/2025	33.72	11.45	22.27
NE-91-63A	3/25/2025	33.72	11.93	21.79
NE-91-63A	4/29/2025	33.72	11.47	22.25
NE-91-63A	6/5/2025	33.72	11.56	22.16
NE-91-63A	7/15/2025	33.72	11.16	22.56
NE-91-63A	8/13/2025	33.72	11.70	22.02
NE-91-63A	9/22/2025	33.72	11.13	22.59
NE-86-18A	9/24/2024	29.21	7.16	22.05
NE-86-18A	10/22/2024	29.21	7.30	21.91

Table 2.4.12-6
LMGS Groundwater Measurements
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Monitoring Well ID	Date Gauged	TOC Elevation (ft NAVD88)	Depth to Groundwater (ft BTOC)	Groundwater Elevation (ft NAVD88)
NE-86-18A	11/22/2024	29.21	7.44	21.77
NE-86-18A	12/18/2024	29.21	7.55	21.66
NE-86-18A	1/28/2025	29.21	6.83	22.38
NE-86-18A	2/25/2025	29.21	6.98	22.23
NE-86-18A	3/25/2025	29.21	7.39	21.82
NE-86-18A	4/29/2025	29.21	6.84	22.37
NE-86-18A	6/5/2025	29.21	7.09	22.12
NE-86-18A	7/15/2025	29.21	6.92	22.29
NE-86-18A	8/13/2025	29.21	7.60	21.61
NE-86-18A	9/22/2025	29.21	6.94	22.27
C-81-1A	9/24/2024	30.49	4.35	26.14
C-81-1A	10/22/2024	30.49	5.48	25.01
C-81-1A	11/22/2024	30.49	5.25	25.24
C-81-1A	12/18/2024	30.49	4.54	25.95
C-81-1A	1/28/2025	30.49	2.82	27.67
C-81-1A	2/25/2025	30.49	2.98	27.51
C-81-1A	3/25/2025	30.49	3.65	26.84
C-81-1A	4/29/2025	30.49	2.66	27.83
C-81-1A	6/5/2025	30.49	3.05	27.44
C-81-1A	7/15/2025	30.49	3.96	26.53
C-81-1A	8/13/2025	30.49	4.80	25.69
C-81-1A	9/22/2025	30.49	3.58	26.91

Key: BTOC = below top of casing; ft = feet; ID = identification; NAVD 88 = North American Vertical Datum of 1988; LMGS = Long Mott Generating Station; TOC = top of casing; NM = not measured; negative depth to water measurements in stilling well readings indicate water was above the top of casing: these measurements were made using a steel tape.

Table 2.4.12-7
LMGS Horizontal Hydraulic Gradient Calculations
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			Average Gradient Calculation			Maximum Gradient Calculation		
Date	**Hydrostratigraphic Unit**	**Flow Direction**	**Δh (ft)**	**L (ft)**	**i_h(avg) (ft/ft)**	**Δh (feet)**	**L (feet)**	**i_h(max) (feet per foot)**
2/29/2024	A Sand	West to East	5.0	2,150	0.0023	2.0	550	0.0036
	C Sand	East to West	1.0	3,420	0.00029~~3~~	0.5	930	0.00054
	E Sand	East to West	2.0	1,490	0.0013	2.0	510	0.0039
3/25/2024	A Sand	West to East	5.0	3,310	0.0015	1.0	250	0.0040
	C Sand	East to West	1.0	2,370	0.00042	0.5	620	0.00081
	E Sand	North to South	0.5	3,170	0.00016~~2~~	0.1	230	0.00043
4/22/2024	A Sand	West to East	4.0	3,870	0.0010	1.0	330	0.0030
	C Sand	East to West	1.0	1,350	0.00074	0.5	290	0.0017
	E Sand	North to South	0.6	2,770	0.00022	0.3	460	0.00065~~7~~
5/21/2024	A Sand	West to East	3.0	2,590	0.0012	1.0	350	0.0029
	C Sand	East to West	1.0	1,680	0.00060	0.5	320	0.0016
	E Sand	North to South	0.5	3,260	0.00015~~2~~	0.2	440	0.00045
6/17/2024	A Sand	West to East	3.0	1,850	0.0016	1.0	300	0.0033
	C Sand	East to West	0.5	620	0.00081	NC	NC	NC
	E Sand	North to South	0.6	3,200	0.00019~~2~~	0.2	620	0.00032
7/4/2024	A Sand	West to East	4.0	2,340	0.0017	2.0	530	0.0038
	C Sand	East to West	1.0	3,030	0.00033	0.5	890	0.00056
	E Sand	North to South	0.6	2,890	0.00021	0.1	310	0.00032
8/4/2024	A Sand	West to East	5.0	2,650	0.0019	1.0	380	0.0026
	C Sand	East to West	1.0	2,630	0.00038~~4~~	0.5	1,310	0.00038~~4~~
	E Sand	North to South	0.4	2,450	0.00016~~2~~	0.1	480	0.00021
9/24/2024	A Sand	West to East	5.0	2,540	0.0020	3.0	280	0.011~~07~~
	C Sand	East to West	1.0	1,680	0.00060	0.5	690	0.00072
	E Sand	North to South	0.6	3,460	0.00017~~2~~	0.1	400	0.00025
10/22/2024	A Sand	West to East	5.0	2,640	0.0019	5.0	220	0.023
	C Sand	East to West	1.0	2,180	0.00046	0.5	710	0.00070
	E Sand	North to South	0.3	2,130	0.00014	0.1	300	0.00033
11/22/2024	A Sand	West to East	4.0	2,410	0.0017	4.0	300	0.013
	C Sand	East to West	1.0	1,960	0.00051	0.5	450	0.0011
	E Sand	North to South	0.2	2,650	0.000075	0.2	790	0.00025
12/18/2024	A Sand	West to East	4.0	2,100	0.0019	4.0	290	0.014
	C Sand	East to West	1.0	2,840	0.00035	0.5	380	0.0013
	E Sand	North to South	0.3	2,960	0.00010	0.1	270	0.00037
1/28/2025	A Sand	West to East	5.0	2,430	0.0021	5.0	250	0.020
	C Sand	East to West	1.0	2,350	0.00043	0.5	990	0.00051

Table 2.4.12-7
LMGS Horizontal Hydraulic Gradient Calculations
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Date	Hydrostratigraphic Unit	Flow Direction	Δh (ft)	L (ft)	i_h(avg) (ft/ft)	Δh (feet)	L (feet)	i_h(max) (feet per foot)
	E Sand	North to South	0.5	2,690	0.00019	0.2	400	0.00050
2/25/2025	A Sand	West to East	4.0	2,410	0.0017	5.0	230	0.022
	C Sand	East to West	1.0	2,710	0.00037	0.5	1,060	0.00047
	E Sand	North to South	0.6	3,030	0.00020	0.1	220	0.00045
3/25/2025	A Sand	West to East	3.0	2,350	0.0013	5.0	270	0.019
	C Sand	East to West	1.0	2,640	0.00038	0.5	930	0.00054
	E Sand	North to South	0.5	2,810	0.00018	0.2	720	0.00028
4/29/2025	A Sand	West to East	4.0	2,430	0.0016	5.0	210	0.024
	C Sand	East to West	1.0	2,990	0.00033	0.5	520	0.0010
	E Sand	North to South	0.3	1,960	0.00015	0.1	390	0.00026
6/5/2025	A Sand	West to East	4.0	2,190	0.0018	5.0	230	0.022
	C Sand	East to West	1.0	2,950	0.00034	0.5	310	0.0016
	E Sand	North to South	0.5	2,840	0.00018	0.1	310	0.00032
7/15/2025	A Sand	West to East	4.0	2,610	0.0015	4.0	210	0.019
	C Sand	East to West	1.0	2,480	0.00040	0.5	580	0.00086
	E Sand	North to South	0.4	2,600	0.00015	0.2	790	0.00025
8/13/2025	A Sand	West to East	5.0	2,510	0.0020	4.0	200	0.020
	C Sand	East to West	1.0	2,220	0.00045	0.5	800	0.00063
	E Sand	North to South	0.4	3,090	0.00013	0.1	380	0.00026
9/22/2025	A Sand	West to East	5.0	2,180	0.0023	4.0	190	0.021
	C Sand	East to West	1.0	2,010	0.00050	0.5	830	0.00060
	E Sand	North to South	1.1	3,210	0.00034	0.4	180	0.0022
			Overall Average (A Sand) = 0.0017			**Overall Average (A Sand) = 0.013~~042~~**		
			Overall Average (C Sand) = 0.00046~~5~~			**Overall Average (C Sand) = 0.00087~~9~~**		
			Overall Average (E Sand) = 0.00023			**Overall Average (E Sand) = 0.00063~~8~~**		

Notes:
Δh = difference in hydraulic head between contour lines used to calculate horizontal gradient (i_h).
L = horizontal distance between contour lines used to calculate horizontal gradient (ih); L measured in ArcMap and rounded to the nearest 10-foot increment.
Δh and L values were obtained from the potentiometric surface maps for February 2024 through September 2025~~4~~ events.
i_h = horizontal hydraulic gradient; calculated by the formula $i_h = \Delta h/L$.
i_h(avg) = average hydraulic gradient, typically calculated from highest to lowest contour interval in vicinity of nuclear island~~across site~~
Key: ft = feet; ft/ft = feet per foot; LMGS = Long Mott Generating Station

Table 2.4.12-8
LMGS Vertical Hydraulic Gradient Calculations
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Well Cluster	Date	A Sand				C Sand				E Sand				A to C Sand			A to E Sand			C to E Sand		
		Top of Screen (ft NAVD 88)	Bottom of Screen (ft NAVD 88)	Midpoint (ft NAVD 88)	Ground-water Elevation (ft NAVD 88)	Top of Screen ft (NAVD 88)	Bottom of Screen (ft NAVD 88)	Midpoint (ft NAVD 88)	Ground-water Elevation (ft NAVD 88)	Top of Screen (ft NAVD 88)	Bottom of Screen (ft NAVD 88)	Midpoint (ft NAVD 88)	Ground-water Elevation (ft NAVD 88)	Δz	Δh	i_v	Δz	Δh	i_v	Δz	Δh	i_v
MW-1A MW-1C MW-1E	2/29/2024	16.5	11.5	14.0	23.2	-36.5	-56.5	-46.5	8.1	-103.1	-123.1	-113.1	3.0	60.5	15.0	0.25~~49~~	127.1	20.2	0.16~~59~~	66.6	5.1	0.077
	3/25/2024	16.5	11.5	14.0	23.4	-36.5	-56.5	-46.5	8.3	-103.1	-123.1	-113.1	3.2	60.5	15.0	0.25~~49~~	127.1	20.2	0.16~~59~~	66.6	5.1	0.077
	4/22/2024	16.5	11.5	14.0	22.3	-36.5	-56.5	-46.5	8.0	-103.1	-123.1	-113.1	3.2	60.5	14.2	0.24~~35~~	127.1	19.1	0.15~~0~~	66.6	4.8	0.072
	5/21/2024	16.5	11.5	14.0	21.9	-36.5	-56.5	-46.5	7.9	-103.1	-123.1	-113.1	3.1	60.5	13.9	0.23~~0~~	127.1	18.8	0.15~~48~~	66.6	4.8	0.072
	6/17/2024	16.5	11.5	14.0	21.6	-36.5	-56.5	-46.5	7.7	-103.1	-123.1	-113.1	3.0	60.5	13.8	0.23~~29~~	127.1	18.6	0.15~~46~~	66.6	4.7	0.071
	7/4/2024	16.5	11.5	14.0	22.31	-36.5	-56.5	-46.5	7.81	-103.1	-123.1	-113.1	3.25	60.5	14.50	0.24~~0~~	127.1	19.06	0.15~~0~~	66.6	4.56	0.068
	8/4/2024	16.5	11.5	14.0	23.85	-36.5	-56.5	-46.5	8.15	-103.1	-123.1	-113.1	3.52	60.5	15.70	0.26~~0~~	127.1	20.33	0.16~~0~~	66.6	4.63	0.070
	9/24/2024~~9/24/2024~~	16.5~~16.5~~	11.5~~11.5~~	14.0~~14.0~~	21.91~~21.91~~	-36.5~~-36.5~~	-56.5~~-56.5~~	-46.5~~-46.5~~	7.71~~7.71~~	-103.1~~-103.1~~	-123.1~~-123.1~~	-113.1~~-113.1~~	3.13~~3.13~~	60.5~~60.5~~	14.20~~14.20~~	0.23~~0.235~~	127.1~~127.1~~	18.78~~18.78~~	0.15~~0.148~~	66.6~~66.6~~	4.58~~4.58~~	0.069~~0.069~~
	10/22/2024	16.5	11.5	14.0	21.31	-36.5	-56.5	-46.5	7.50	-103.1	-123.1	-113.1	3.14	60.5	13.81	0.23	127.1	18.17	0.14	66.6	4.36	0.065
	11/22/2024	16.5	11.5	14.0	21.03	-36.5	-56.5	-46.5	7.44	-103.1	-123.1	-113.1	2.65	60.5	13.59	0.22	127.1	18.38	0.14	66.6	4.79	0.072
	12/18/2024	16.5	11.5	14.0	20.83	-36.5	-56.5	-46.5	7.44	-103.1	-123.1	-113.1	2.54	60.5	13.39	0.22	127.1	18.29	0.14	66.6	4.90	0.074
	1/28/2025	16.5	11.5	14.0	21.97	-36.5	-56.5	-46.5	7.63	-103.1	-123.1	-113.1	2.87	60.5	14.34	0.24	127.1	19.10	0.15	66.6	4.76	0.071
	2/25/2025	16.5	11.5	14.0	21.97	-36.5	-56.5	-46.5	7.67	-103.1	-123.1	-113.1	3.06	60.5	14.30	0.24	127.1	18.91	0.15	66.6	4.61	0.069
	3/25/2025	16.5	11.5	14.0	21.47	-36.5	-56.5	-46.5	7.54	-103.1	-123.1	-113.1	2.81	60.5	13.93	0.23	127.1	18.66	0.15	66.6	4.73	0.071
	4/29/2025	16.5	11.5	14.0	22.43	-36.5	-56.5	-46.5	7.80	-103.1	-123.1	-113.1	2.83	60.5	14.63	0.24	127.1	19.60	0.15	66.6	4.97	0.075
	6/5/2025	16.5	11.5	14.0	21.89	-36.5	-56.5	-46.5	7.79	-103.1	-123.1	-113.1	2.76	60.5	14.10	0.23	127.1	19.13	0.15	66.6	5.03	0.076
	7/15/2025	16.5	11.5	14.0	21.82	-36.5	-56.5	-46.5	7.85	-103.1	-123.1	-113.1	2.66	60.5	13.97	0.23	127.1	19.16	0.15	66.6	5.19	0.078
	8/13/2025	16.5	11.5	14.0	20.77	-36.5	-56.5	-46.5	7.57	-103.1	-123.1	-113.1	2.30	60.5	13.20	0.22	127.1	18.47	0.15	66.6	5.27	0.079
	9/22/2025	16.5	11.5	14.0	21.64	-36.5	-56.5	-46.5	7.54	-103.1	-123.1	-113.1	2.42	60.5	14.10	0.23	127.1	19.22	0.15	66.6	5.12	0.077
														Average =		0.23~~41~~			0.15~~2~~			0.073~~2~~

Table 2.4.12-8
LMGS Vertical Hydraulic Gradient Calculations
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Well Cluster	Date	A Sand				C Sand				E Sand				A to C Sand			A to E Sand			C to E Sand		
		Top of Screen (ft NAVD 88)	Bottom of Screen (ft NAVD 88)	Midpoint (ft NAVD 88)	Ground-water Elevation (ft NAVD 88)	Top of Screen ft (NAVD 88)	Bottom of Screen (ft NAVD 88)	Midpoint (ft NAVD 88)	Ground-water Elevation (ft NAVD 88)	Top of Screen (ft NAVD 88)	Bottom of Screen (ft NAVD 88)	Midpoint (ft NAVD 88)	Ground-water Elevation (ft NAVD 88)	Δz	Δh	i_v	Δz	Δh	i_v	Δz	Δh	i_v
	2/29/2024	13.7	8.7	11.2	23.2	-37.5	-47.5	-42.5	8.1	-160.5	-170.5	-165.5	3.3	53.7	15.1	0.28~~2~~	176.7	19.9	0.11~~3~~	123.0	4.8	0.039
	3/25/2024	13.7	8.7	11.2	23.5	-37.5	-47.5	-42.5	8.3	-160.5	-170.5	-165.5	3.4	53.7	15.2	0.28~~3~~	176.7	20.1	0.11~~4~~	123.0	4.9	0.040
	4/22/2024	13.7	8.7	11.2	22.3	-37.5	-47.5	-42.5	8.0	-160.5	-170.5	-165.5	3.4	53.7	14.3	0.2~~6~~7	176.7	18.9	0.11~~07~~	123.0	4.6	0.038
	5/21/2024	13.7	8.7	11.2	21.8	-37.5	-47.5	-42.5	7.9	-160.5	-170.5	-165.5	3.3	53.7	13.9	0.26~~59~~	176.7	18.5	0.10~~5~~	123.0	4.6	0.038
	6/17/2024	13.7	8.7	11.2	21.3	-37.5	-47.5	-42.5	7.7	-160.5	-170.5	-165.5	3.3	53.7	13.6	0.25~~4~~	176.7	18.0	0.10~~2~~	123.0	4.4	0.036
	7/4/2024	13.7	8.7	11.2	21.89	-37.5	-47.5	-42.5	7.78	-160.5	-170.5	-165.5	3.47	53.7	14.11	0.26~~3~~	176.7	18.42	0.10~~4~~	123.0	4.31	0.035
	8/4/2024	13.7	8.7	11.2	23.82	-37.5	-47.5	-42.5	8.11	-160.5	-170.5	-165.5	3.69	53.7	15.71	0.29~~3~~	176.7	20.13	0.11~~4~~	123.0	4.42	0.036
	9/24/2024	13.7	8.7	11.2	21.92	-37.5	-47.5	-42.5	7.67	-160.5	-170.5	-165.5	3.34	53.7	14.25	0.27~~65~~	176.7	18.58	0.11~~05~~	123.0	4.33	0.035
	10/22/2024	13.7	8.7	11.2	21.14	-37.5	-47.5	-42.5	7.46	-160.5	-170.5	-165.5	3.25	53.7	13.68	0.25	176.7	17.89	0.10	123.0	4.21	0.034
MW-2A MW-2C MW-2E	11/22/2024	13.7	8.7	11.2	20.72	-37.5	-47.5	-42.5	7.34	-160.5	-170.5	-165.5	2.73	53.7	13.38	0.25	176.7	17.99	0.10	123.0	4.61	0.037
	12/18/2024	13.7	8.7	11.2	20.52	-37.5	-47.5	-42.5	7.40	-160.5	-170.5	-165.5	2.68	53.7	13.12	0.24	176.7	17.84	0.10	123.0	4.72	0.038
	1/28/2025	13.7	8.7	11.2	22.02	-37.5	-47.5	-42.5	7.56	-160.5	-170.5	-165.5	3.05	53.7	14.46	0.27	176.7	18.97	0.11	123.0	4.51	0.037
	2/25/2025	13.7	8.7	11.2	22.20	-37.5	-47.5	-42.5	7.60	-160.5	-170.5	-165.5	3.24	53.7	14.60	0.27	176.7	18.96	0.11	123.0	4.36	0.035
	3/25/2025	13.7	8.7	11.2	21.60	-37.5	-47.5	-42.5	7.52	-160.5	-170.5	-165.5	2.96	53.7	14.08	0.26	176.7	18.64	0.11	123.0	4.56	0.037
	4/29/2025	13.7	8.7	11.2	22.70	-37.5	-47.5	-42.5	7.75	-160.5	-170.5	-165.5	3.01	53.7	14.95	0.28	176.7	19.69	0.11	123.0	4.74	0.039
	6/5/2025	13.7	8.7	11.2	22.07	-37.5	-47.5	-42.5	7.75	-160.5	-170.5	-165.5	2.91	53.7	14.32	0.27	176.7	19.16	0.11	123.0	4.84	0.039
	7/15/2025	13.7	8.7	11.2	21.88	-37.5	-47.5	-42.5	7.69	-160.5	-170.5	-165.5	2.81	53.7	14.19	0.26	176.7	19.07	0.11	123.0	4.88	0.040
	8/13/2025	13.7	8.7	11.2	20.58	-37.5	-47.5	-42.5	7.52	-160.5	-170.5	-165.5	2.40	53.7	13.06	0.24	176.7	18.18	0.10	123.0	5.12	0.042
	9/22/2025	13.7	8.7	11.2	21.01	-37.5	-47.5	-42.5	7.49	-160.5	-170.5	-165.5	2.61	53.7	13.52	0.25	176.7	18.40	0.10	123.0	4.88	0.040
														Average =		0.26~~71~~			0.11~~08~~			0.038~~7~~

Table 2.4.12-8
LMGS Vertical Hydraulic Gradient Calculations
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Well Cluster	Date	A Sand				C Sand				E Sand				A to C Sand			A to E Sand			C to E Sand		
		Top of Screen (ft NAVD 88)	Bottom of Screen (ft NAVD 88)	Midpoint (ft NAVD 88)	Ground-water Elevation (ft NAVD 88)	Top of Screen ft (NAVD 88)	Bottom of Screen (ft NAVD 88)	Midpoint (ft NAVD 88)	Ground-water Elevation (ft NAVD 88)	Top of Screen (ft NAVD 88)	Bottom of Screen (ft NAVD 88)	Midpoint (ft NAVD 88)	Ground-water Elevation (ft NAVD 88)	Δz	Δh	i_v	Δz	Δh	i_v	Δz	Δh	i_v
MW-3A MW-3C MW-3E	2/29/2024	11.3	6.3	8.8	20.0	-45.6	-65.6	-55.6	9.0	-128.5	-138.5	-133.5	3.3	64.4	11.0	0.17~~0~~	142.3	16.6	0.12~~17~~	77.9	5.7	0.073
	3/25/2024	11.3	6.3	8.8	20.5	-45.6	-65.6	-55.6	9.2	-128.5	-138.5	-133.5	3.5	64.4	11.3	0.17~~5~~	142.3	16.9	0.12~~19~~	77.9	5.7	0.073
	4/22/2024	11.3	6.3	8.8	20.0	-45.6	-65.6	-55.6	9.0	-128.5	-138.5	-133.5	3.5	64.4	11.0	0.17~~0~~	142.3	16.4	0.12~~15~~	77.9	5.5	0.070
	5/21/2024	11.3	6.3	8.8	20.2	-45.6	-65.6	-55.6	8.9	-128.5	-138.5	-133.5	3.4	64.4	11.3	0.17~~5~~	142.3	16.7	0.12~~18~~	77.9	5.5	0.070
	6/17/2024	11.3	6.3	8.8	20.4	-45.6	-65.6	-55.6	8.6	-128.5	-138.5	-133.5	3.3	64.4	11.8	0.18~~3~~	142.3	17.0	0.12~~0~~	77.9	5.3	0.067
	7/4/2024	11.3	6.3	8.8	21.29	-45.6	-65.6	-55.6	8.68	-128.5	-138.5	-133.5	3.58	64.4	12.61	0.20~~196~~	142.3	17.71	0.12~~4~~	77.9	5.10	0.066
	8/4/2024	11.3	6.3	8.8	21.27	-45.6	-65.6	-55.6	8.94	-128.5	-138.5	-133.5	3.79	64.4	12.33	0.19~~1~~	142.3	17.48	0.12~~3~~	77.9	5.15	0.066
	9/24/2024	11.3	6.3	8.8	20.54	-45.6	-65.6	-55.6	8.55	-128.5	-138.5	-133.5	3.44	64.4	11.99	0.19~~86~~	142.3	17.10	0.12~~0~~	77.9	5.11	0.066
	10/22/2024	11.3	6.3	8.8	20.14	-45.6	-65.6	-55.6	8.34	-128.5	-138.5	-133.5	3.35	64.4	11.80	0.18	142.3	16.79	0.12	77.9	4.99	0.064
	11/22/2024	11.3	6.3	8.8	19.93	-45.6	-65.6	-55.6	8.31	-128.5	-138.5	-133.5	2.79	64.4	11.62	0.18	142.3	17.14	0.12	77.9	5.52	0.071
	12/18/2024	11.3	6.3	8.8	19.63	-45.6	-65.6	-55.6	8.22	-128.5	-138.5	-133.5	2.74	64.4	11.41	0.18	142.3	16.89	0.12	77.9	5.48	0.070
	1/28/2025	11.3	6.3	8.8	21.01	-45.6	-65.6	-55.6	8.50	-128.5	-138.5	-133.5	3.18	64.4	12.51	0.19	142.3	17.83	0.13	77.9	5.32	0.068
	2/25/2025	11.3	6.3	8.8	21.40	-45.6	-65.6	-55.6	8.53	-128.5	-138.5	-133.5	3.40	64.4	12.87	0.20	142.3	18.00	0.13	77.9	5.13	0.066
	3/25/2025	11.3	6.3	8.8	21.29	-45.6	-65.6	-55.6	8.38	-128.5	-138.5	-133.5	3.10	64.4	12.91	0.20	142.3	18.19	0.13	77.9	5.28	0.068
	4/29/2025	11.3	6.3	8.8	22.48	-45.6	-65.6	-55.6	8.71	-128.5	-138.5	-133.5	3.14	64.4	13.77	0.21	142.3	19.34	0.14	77.9	5.57	0.072
	6/5/2025	11.3	6.3	8.8	20.85	-45.6	-65.6	-55.6	8.73	-128.5	-138.5	-133.5	3.08	64.4	12.12	0.19	142.3	17.77	0.12	77.9	5.65	0.073
	7/15/2025	11.3	6.3	8.8	20.35	-45.6	-65.6	-55.6	8.75	-128.5	-138.5	-133.5	2.87	64.4	11.60	0.18	142.3	17.48	0.12	77.9	5.88	0.076
	8/13/2025	11.3	6.3	8.8	20.01	-45.6	-65.6	-55.6	8.44	-128.5	-138.5	-133.5	2.40	64.4	11.57	0.18	142.3	17.61	0.12	77.9	6.04	0.078
	9/22/2025	11.3	6.3	8.8	21.70	-45.6	-65.6	-55.6	8.41	-128.5	-138.5	-133.5	2.81	64.4	13.29	0.21	142.3	18.89	0.13	77.9	5.60	0.072
														Average =		0.19~~81~~			0.12~~19~~			0.070~~69~~

Table 2.4.12-8
LMGS Vertical Hydraulic Gradient Calculations
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Well Cluster	Date	A Sand				C Sand				E Sand				A to C Sand			A to E Sand			C to E Sand		
		Top of Screen (ft NAVD 88)	Bottom of Screen (ft NAVD 88)	Midpoint (ft NAVD 88)	Ground-water Elevation (ft NAVD 88)	Top of Screen ft (NAVD 88)	Bottom of Screen (ft NAVD 88)	Midpoint (ft NAVD 88)	Ground-water Elevation (ft NAVD 88)	Top of Screen (ft NAVD 88)	Bottom of Screen (ft NAVD 88)	Midpoint (ft NAVD 88)	Ground-water Elevation (ft NAVD 88)	Δz	Δh	i_v	Δz	Δh	i_v	Δz	Δh	i_v
	2/29/2024	11.3	6.3	8.8	18.5	-53.9	-73.9	-63.9	9.2	-117.8	-137.8	-127.8	1.2	72.7	9.3	0.13~~28~~	136.6	17.3	0.13~~27~~	63.9	8.0	0.12~~4~~
	3/25/2024	11.3	6.3	8.8	19.2	-53.9	-73.9	-63.9	9.4	-117.8	-137.8	-127.8	3.3	72.7	9.8	0.14~~35~~	136.6	15.9	0.12~~16~~	63.9	6.1	0.095
	4/22/2024	11.3	6.3	8.8	19.0	-53.9	-73.9	-63.9	9.1	-117.8	-137.8	-127.8	3.1	72.7	9.9	0.14~~37~~	136.6	15.9	0.12~~16~~	63.9	6.0	0.093
	5/21/2024	11.3	6.3	8.8	19.2	-53.9	-73.9	-63.9	9.0	-117.8	-137.8	-127.8	3.3	72.7	10.2	0.14~~1~~	136.6	15.9	0.12~~16~~	63.9	5.7	0.088
	6/17/2024	11.3	6.3	8.8	19.4	-53.9	-73.9	-63.9	8.8	-117.8	-137.8	-127.8	3.2	72.7	10.6	0.15~~46~~	136.6	16.2	0.12~~19~~	63.9	5.6	0.087
	7/4/2024	11.3	6.3	8.8	20.36	-53.9	-73.9	-63.9	8.84	-117.8	-137.8	-127.8	3.43	72.7	11.52	0.16~~58~~	136.6	16.93	0.12~~4~~	63.9	5.41	0.085
	8/4/2024	11.3	6.3	8.8	20.72	-53.9	-73.9	-63.9	9.13	-117.8	-137.8	-127.8	3.64	72.7	11.59	0.16~~59~~	136.6	17.08	0.13~~25~~	63.9	5.49	0.086
	9/24/2024	11.3	6.3	8.8	19.97	-53.9	-73.9	-63.9	8.74	-117.8	-137.8	-127.8	3.30	72.7	11.23	0.15~~4~~	136.6	16.67	0.12~~2~~	63.9	5.44	0.085
MW-4A MW-4C MW-4E	10/22/2024	11.3	6.3	8.8	19.73	-53.9	-73.9	-63.9	8.52	-117.8	-137.8	-127.8	3.23	72.7	11.21	0.15	136.6	16.50	0.12	63.9	5.29	0.083
	11/22/2024	11.3	6.3	8.8	19.51	-53.9	-73.9	-63.9	8.53	-117.8	-137.8	-127.8	2.69	72.7	10.98	0.15	136.6	16.82	0.12	63.9	5.84	0.091
	12/18/2024	11.3	6.3	8.8	19.21	-53.9	-73.9	-63.9	8.43	-117.8	-137.8	-127.8	2.59	72.7	10.78	0.15	136.6	16.62	0.12	63.9	5.84	0.091
	1/28/2025	11.3	6.3	8.8	20.25	-53.9	-73.9	-63.9	8.68	-117.8	-137.8	-127.8	3.02	72.7	11.57	0.16	136.6	17.23	0.13	63.9	5.66	0.089
	2/25/2025	11.3	6.3	8.8	20.63	-53.9	-73.9	-63.9	8.72	-117.8	-137.8	-127.8	3.26	72.7	11.91	0.16	136.6	17.37	0.13	63.9	5.46	0.085
	3/25/2025	11.3	6.3	8.8	20.47	-53.9	-73.9	-63.9	8.59	-117.8	-137.8	-127.8	2.98	72.7	11.88	0.16	136.6	17.49	0.13	63.9	5.61	0.088
	4/29/2025	11.3	6.3	8.8	22.13	-53.9	-73.9	-63.9	8.90	-117.8	-137.8	-127.8	3.04	72.7	13.23	0.18	136.6	19.09	0.14	63.9	5.86	0.092
	6/5/2025	11.3	6.3	8.8	20.57	-53.9	-73.9	-63.9	8.90	-117.8	-137.8	-127.8	2.91	72.7	11.67	0.16	136.6	17.66	0.13	63.9	5.99	0.094
	7/15/2025	11.3	6.3	8.8	20.12	-53.9	-73.9	-63.9	8.96	-117.8	-137.8	-127.8	2.71	72.7	11.16	0.15	136.6	17.41	0.13	63.9	6.25	0.098
	8/13/2025	11.3	6.3	8.8	19.82	-53.9	-73.9	-63.9	8.63	-117.8	-137.8	-127.8	2.27	72.7	11.19	0.15	136.6	17.55	0.13	63.9	6.36	0.10
	9/22/2025	11.3	6.3	8.8	21.55	-53.9	-73.9	-63.9	8.59	-117.8	-137.8	-127.8	2.57	72.7	12.96	0.18	136.6	18.98	0.14	63.9	6.02	0.094
														Average =		0.1~~4~~5			0.13~~21~~			0.092~~3~~

Table 2.4.12-8
LMGS Vertical Hydraulic Gradient Calculations

Well Cluster	Date	A Sand				C Sand				E Sand				A to C Sand			A to E Sand			C to E Sand		
		Top of Screen (ft NAVD 88)	Bottom of Screen (ft NAVD 88)	Midpoint (ft NAVD 88)	Ground-water Elevation (ft NAVD 88)	Top of Screen ft (NAVD 88)	Bottom of Screen (ft NAVD 88)	Midpoint (ft NAVD 88)	Ground-water Elevation (ft NAVD 88)	Top of Screen (ft NAVD 88)	Bottom of Screen (ft NAVD 88)	Midpoint (ft NAVD 88)	Ground-water Elevation (ft NAVD 88)	Δz	Δh	i_v	Δz	Δh	i_v	Δz	Δh	i_v
MW-5A MW-5C MW-5E	2/29/2024	12.0	7.0	9.5	20.9	-53.1	-73.1	-63.1	8.6	-110.5	-130.5	-120.5	3.0	72.6	12.3	0.17~~69~~	130.0	17.9	0.14~~37~~	57.4	5.6	0.098
	3/25/2024	12.0	7.0	9.5	21.0	-53.1	-73.1	-63.1	8.8	-110.5	-130.5	-120.5	3.2	72.6	12.2	0.1~~6~~7	130.0	17.8	0.14~~37~~	57.4	5.6	0.098
	4/22/2024	12.0	7.0	9.5	20.7	-53.1	-73.1	-63.1	8.5	-110.5	-130.5	-120.5	3.1	72.6	12.2	0.1~~6~~7	130.0	17.6	0.14~~35~~	57.4	5.4	0.094
	5/21/2024	12.0	7.0	9.5	20.6	-53.1	-73.1	-63.1	8.4	-110.5	-130.5	-120.5	3.1	72.6	12.2	0.1~~6~~7	130.0	17.5	0.13~~4~~	57.4	5.3	0.092
	6/17/2024	12.0	7.0	9.5	20.2	-53.1	-73.1	-63.1	8.2	-110.5	-130.5	-120.5	3.0	72.6	12.0	0.16~~5~~	130.0	17.2	0.13~~2~~	57.4	5.2	0.091
	7/4/2024	12.0	7.0	9.5	20.59	-53.1	-73.1	-63.1	8.25	-110.5	-130.5	-120.5	3.20	72.6	12.34	0.17~~0~~	130.0	17.39	0.13~~4~~	57.4	5.05	0.088
	8/4/2024	12.0	7.0	9.5	21.11	-53.1	-73.1	-63.1	8.62	-110.5	-130.5	-120.5	3.48	72.6	12.49	0.17~~2~~	130.0	17.63	0.14~~36~~	57.4	5.14	0.090
	9/24/2024	12.0	7.0	9.5	20.48	-53.1	-73.1	-63.1	8.17	-110.5	-130.5	-120.5	3.08	72.6	12.31	0.17~~0~~	130.0	17.40	0.13~~4~~	57.4	5.09	0.089
	10/22/2024	12.0	7.0	9.5	20.10	-53.1	-73.1	-63.1	7.94	-110.5	-130.5	-120.5	3.07	72.6	12.16	0.17	130.0	17.03	0.13	57.4	4.87	0.085
	11/22/2024	12.0	7.0	9.5	20.06	-53.1	-73.1	-63.1	7.95	-110.5	-130.5	-120.5	2.63	72.6	12.11	0.17	130.0	17.43	0.13	57.4	5.32	0.093
	12/18/2024	12.0	7.0	9.5	20.02	-53.1	-73.1	-63.1	7.91	-110.5	-130.5	-120.5	2.49	72.6	12.11	0.17	130.0	17.53	0.13	57.4	5.42	0.094
	1/28/2025	12.0	7.0	9.5	20.75	-53.1	-73.1	-63.1	8.05	-110.5	-130.5	-120.5	2.81	72.6	12.70	0.17	130.0	17.94	0.14	57.4	5.24	0.091
	2/25/2025	12.0	7.0	9.5	20.75	-53.1	-73.1	-63.1	8.17	-110.5	-130.5	-120.5	2.99	72.6	12.58	0.17	130.0	17.76	0.14	57.4	5.18	0.090
	3/25/2025	12.0	7.0	9.5	20.55	-53.1	-73.1	-63.1	8.06	-110.5	-130.5	-120.5	2.73	72.6	12.49	0.17	130.0	17.82	0.14	57.4	5.33	0.093
	4/29/2025	12.0	7.0	9.5	20.95	-53.1	-73.1	-63.1	8.25	-110.5	-130.5	-120.5	2.85	72.6	12.70	0.17	130.0	18.10	0.14	57.4	5.40	0.094
	6/5/2025	12.0	7.0	9.5	20.81	-53.1	-73.1	-63.1	8.29	-110.5	-130.5	-120.5	2.71	72.6	12.52	0.17	130.0	18.10	0.14	57.4	5.58	0.097
	7/15/2025	12.0	7.0	9.5	20.55	-53.1	-73.1	-63.1	8.31	-110.5	-130.5	-120.5	2.57	72.6	12.24	0.17	130.0	17.98	0.14	57.4	5.74	0.10
	8/13/2025	12.0	7.0	9.5	20.07	-53.1	-73.1	-63.1	8.10	-110.5	-130.5	-120.5	2.23	72.6	11.97	0.16	130.0	17.84	0.14	57.4	5.87	0.10
	9/22/2025	12.0	7.0	9.5	20.61	-53.1	-73.1	-63.1	8.01	-110.5	-130.5	-120.5	1.70	72.6	12.60	0.17	130.0	18.91	0.15	57.4	6.31	0.11
														Average =		0.17~~68~~			0.14~~35~~			0.094~~2~~

Table 2.4.12-8
LMGS Vertical Hydraulic Gradient Calculations
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Well Cluster	Date	A Sand				C Sand				E Sand				A to C Sand			A to E Sand			C to E Sand		
		Top of Screen (ft NAVD 88)	Bottom of Screen (ft NAVD 88)	Midpoint (ft NAVD 88)	Ground-water Elevation (ft NAVD 88)	Top of Screen ft (NAVD 88)	Bottom of Screen (ft NAVD 88)	Midpoint (ft NAVD 88)	Ground-water Elevation (ft NAVD 88)	Top of Screen (ft NAVD 88)	Bottom of Screen (ft NAVD 88)	Midpoint (ft NAVD 88)	Ground-water Elevation (ft NAVD 88)	Δz	Δh	i_v	Δz	Δh	i_v	Δz	Δh	i_v
	2/29/2024	12.2	7.2	9.7	23.5	-61.3	-81.3	-71.3	8.3	-137.3	-157.3	-147.3	2.8	81.0	15.3	0.19~~88~~	157.0	20.7	0.13~~2~~	76.0	5.5	0.072
	3/25/2024	12.2	7.2	9.7	23.3	-61.3	-81.3	-71.3	8.5	-137.3	-157.3	-147.3	3.1	81.0	14.9	0.18~~3~~	157.0	20.2	0.13~~29~~	76.0	5.4	0.070
	4/22/2024	12.2	7.2	9.7	22.5	-61.3	-81.3	-71.3	8.3	-137.3	-157.3	-147.3	3.0	81.0	14.3	0.18~~76~~	157.0	19.5	0.12~~4~~	76.0	5.3	0.069
	5/21/2024	12.2	7.2	9.7	22.3	-61.3	-81.3	-71.3	8.1	-137.3	-157.3	-147.3	3.0	81.0	14.3	0.18~~76~~	157.0	19.3	0.12~~3~~	76.0	5.1	0.066
	6/17/2024	12.2	7.2	9.7	22.1	-61.3	-81.3	-71.3	7.9	-137.3	-157.3	-147.3	2.9	81.0	14.3	0.18~~76~~	157.0	19.2	0.12~~2~~	76.0	5.0	0.065
	7/4/2024	12.2	7.2	9.7	22.63	-61.3	-81.3	-71.3	7.97	-137.3	-157.3	-147.3	3.10	81.0	14.66	0.18~~1~~	157.0	19.53	0.12~~4~~	76.0	4.87	0.064
	8/4/2024	12.2	7.2	9.7	23.60	-61.3	-81.3	-71.3	8.36	-137.3	-157.3	-147.3	3.39	81.0	15.24	0.19~~88~~	157.0	20.21	0.13~~29~~	76.0	4.97	0.065
	9/24/2024	12.2	7.2	9.7	22.31	-61.3	-81.3	-71.3	7.88	-137.3	-157.3	-147.3	3.01	81.0	14.43	0.1~~7~~8	157.0	19.30	0.12~~3~~	76.0	4.87	0.064
MW-6A MW-6C MW-6E	10/22/2024	12.2	7.2	9.7	21.77	-61.3	-81.3	-71.3	7.66	-137.3	-157.3	-147.3	2.98	81.0	14.11	0.17	157.0	18.79	0.12	76.0	4.68	0.062
	11/22/2024	12.2	7.2	9.7	21.92	-61.3	-81.3	-71.3	7.66	-137.3	-157.3	-147.3	2.51	81.0	14.26	0.18	157.0	19.41	0.12	76.0	5.15	0.068
	12/18/2024	12.2	7.2	9.7	21.97	-61.3	-81.3	-71.3	7.59	-137.3	-157.3	-147.3	2.32	81.0	14.38	0.18	157.0	19.65	0.13	76.0	5.27	0.069
	1/28/2025	12.2	7.2	9.7	23.02	-61.3	-81.3	-71.3	7.82	-137.3	-157.3	-147.3	2.70	81.0	15.20	0.19	157.0	20.32	0.13	76.0	5.12	0.067
	2/25/2025	12.2	7.2	9.7	22.72	-61.3	-81.3	-71.3	7.86	-137.3	-157.3	-147.3	2.92	81.0	14.86	0.18	157.0	19.80	0.13	76.0	4.94	0.065
	3/25/2025	12.2	7.2	9.7	22.40	-61.3	-81.3	-71.3	7.75	-137.3	-157.3	-147.3	2.64	81.0	14.65	0.18	157.0	19.76	0.13	76.0	5.11	0.067
	4/29/2025	12.2	7.2	9.7	22.97	-61.3	-81.3	-71.3	8.05	-137.3	-157.3	-147.3	2.78	81.0	14.92	0.18	157.0	20.19	0.13	76.0	5.27	0.069
	6/5/2025	12.2	7.2	9.7	22.55	-61.3	-81.3	-71.3	8.00	-137.3	-157.3	-147.3	2.60	81.0	14.55	0.18	157.0	19.95	0.13	76.0	5.40	0.071
	7/15/2025	12.2	7.2	9.7	22.15	-61.3	-81.3	-71.3	8.03	-137.3	-157.3	-147.3	2.51	81.0	14.12	0.17	157.0	19.64	0.13	76.0	5.52	0.073
	8/13/2025	12.2	7.2	9.7	21.61	-61.3	-81.3	-71.3	7.82	-137.3	-157.3	-147.3	2.12	81.0	13.79	0.17	157.0	19.49	0.12	76.0	5.70	0.075
	9/22/2025	12.2	7.2	9.7	22.41	-61.3	-81.3	-71.3	7.71	-137.3	-157.3	-147.3	2.28	81.0	14.70	0.18	157.0	20.13	0.13	76.0	5.43	0.071
														Average =		0.18~~1~~			0.13~~26~~			0.068~~7~~

Table 2.4.12-8
LMGS Vertical Hydraulic Gradient Calculations
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Well Cluster	Date	A Sand				C Sand				E Sand				A to C Sand			A to E Sand			C to E Sand		
		Top of Screen (ft NAVD 88)	Bottom of Screen (ft NAVD 88)	Midpoint (ft NAVD 88)	Ground-water Elevation (ft NAVD 88)	Top of Screen ft (NAVD 88)	Bottom of Screen (ft NAVD 88)	Midpoint (ft NAVD 88)	Ground-water Elevation (ft NAVD 88)	Top of Screen (ft NAVD 88)	Bottom of Screen (ft NAVD 88)	Midpoint (ft NAVD 88)	Ground-water Elevation (ft NAVD 88)	Δz	Δh	i_v	Δz	Δh	i_v	Δz	Δh	i_v
MW-101A MW-101C MW-101E	2/29/2024	12.8	2.8	7.8	24.9	-42.2	-62.2	-52.2	8.0	-142.1	-157.1	-149.6	3.6	60.0	16.9	0.28~~1~~	157.4	21.3	0.14~~35~~	97.4	4.4	0.045
	3/25/2024	12.8	2.8	7.8	24.6	-42.2	-62.2	-52.2	8.1	-142.1	-157.1	-149.6	3.7	60.0	16.5	0.27~~5~~	157.4	20.9	0.13~~3~~	97.4	4.4	0.045
	4/22/2024	12.8	2.8	7.8	23.1	-42.2	-62.2	-52.2	7.9	-142.1	-157.1	-149.6	3.6	60.0	15.2	0.25~~3~~	157.4	19.5	0.12~~4~~	97.4	4.3	0.044
	5/21/2024	12.8	2.8	7.8	22.9	-42.2	-62.2	-52.2	7.8	-142.1	-157.1	-149.6	3.6	60.0	15.1	0.25~~1~~	157.4	19.3	0.12~~2~~	97.4	4.2	0.043
	6/17/2024	12.8	2.8	7.8	22.7	-42.2	-62.2	-52.2	7.6	-142.1	-157.1	-149.6	3.5	60.0	15.1	0.25~~1~~	157.4	19.2	0.12~~2~~	97.4	4.1	0.042
	7/4/2024	12.8	2.8	7.8	24.23	-42.2	-62.2	-52.2	7.67	-142.1	-157.1	-149.6	3.70	60.0	16.56	0.28~~76~~	157.4	20.53	0.13~~0~~	97.4	3.97	0.041
	8/4/2024	12.8	2.8	7.8	25.69	-42.2	-62.2	-52.2	7.94	-142.1	-157.1	-149.6	3.86	60.0	17.75	0.30~~296~~	157.4	21.83	0.14~~39~~	97.4	4.08	0.042
	9/24/2024	12.8	2.8	7.8	22.83	-42.2	-62.2	-52.2	7.55	-142.1	-157.1	-149.6	3.57	60.0	15.28	0.25~~5~~	157.4	19.26	0.12~~2~~	97.4	3.98	0.041
	10/22/2024	12.8	2.8	7.8	22.02	-42.2	-62.2	-52.2	7.29	-142.1	-157.1	-149.6	3.43	60.0	14.73	0.25	157.4	18.59	0.12	97.4	3.86	0.040
	11/22/2024	12.8	2.8	7.8	21.73	-42.2	-62.2	-52.2	7.30	-142.1	-157.1	-149.6	2.95	60.0	14.43	0.24	157.4	18.78	0.12	97.4	4.35	0.045
	12/18/2024	12.8	2.8	7.8	21.49	-42.2	-62.2	-52.2	7.26	-142.1	-157.1	-149.6	2.95	60.0	14.23	0.24	157.4	18.54	0.12	97.4	4.31	0.044
	1/28/2025	12.8	2.8	7.8	24.65	-42.2	-62.2	-52.2	7.41	-142.1	-157.1	-149.6	2.79	60.0	17.24	0.29	157.4	21.86	0.14	97.4	4.62	0.047
	2/25/2025	12.8	2.8	7.8	23.84	-42.2	-62.2	-52.2	7.49	-142.1	-157.1	-149.6	3.03	60.0	16.35	0.27	157.4	20.81	0.13	97.4	4.46	0.046
	3/25/2025	12.8	2.8	7.8	23.05	-42.2	-62.2	-52.2	7.37	-142.1	-157.1	-149.6	2.91	60.0	15.68	0.26	157.4	20.14	0.13	97.4	4.46	0.046
	4/29/2025	12.8	2.8	7.8	24.32	-42.2	-62.2	-52.2	7.61	-142.1	-157.1	-149.6	2.95	60.0	16.71	0.28	157.4	21.37	0.14	97.4	4.66	0.048
	6/5/2025	12.8	2.8	7.8	23.38	-42.2	-62.2	-52.2	7.64	-142.1	-157.1	-149.6	3.04	60.0	15.74	0.26	157.4	20.34	0.13	97.4	4.60	0.047
	7/15/2025	12.8	2.8	7.8	23.17	-42.2	-62.2	-52.2	7.70	-142.1	-157.1	-149.6	3.03	60.0	15.47	0.26	157.4	20.14	0.13	97.4	4.67	0.048
	8/13/2025	12.8	2.8	7.8	22.34	-42.2	-62.2	-52.2	7.30	-142.1	-157.1	-149.6	2.58	60.0	15.04	0.25	157.4	19.76	0.13	97.4	4.72	0.048
	9/22/2025	12.8	2.8	7.8	23.72	-42.2	-62.2	-52.2	7.36	-142.1	-157.1	-149.6	2.90	60.0	16.36	0.27	157.4	20.82	0.13	97.4	4.46	0.046
														Average =		0.26~~7~~			0.13~~28~~			0.045~~3~~

Table 2.4.12-8
LMGS Vertical Hydraulic Gradient Calculations
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Well Cluster	Date	A Sand				C Sand				E Sand				A to C Sand			A to E Sand			C to E Sand		
		Top of Screen (ft NAVD 88)	Bottom of Screen (ft NAVD 88)	Midpoint (ft NAVD 88)	Ground-water Elevation (ft NAVD 88)	Top of Screen ft (NAVD 88)	Bottom of Screen (ft NAVD 88)	Midpoint (ft NAVD 88)	Ground-water Elevation (ft NAVD 88)	Top of Screen (ft NAVD 88)	Bottom of Screen (ft NAVD 88)	Midpoint (ft NAVD 88)	Ground-water Elevation (ft NAVD 88)	Δz	Δh	i_v	Δz	Δh	i_v	Δz	Δh	i_v
	2/29/2024	15.9	5.9	10.9	17.7	-57.0	-67.0	-62.0	8.6	-111.0	-131.0	-121.0	1.1	72.9	9.1	0.12~~4~~	131.9	16.6	0.13~~26~~	59.0	7.5	0.13~~28~~
	3/25/2024	15.9	5.9	10.9	19.0	-57.0	-67.0	-62.0	8.8	-111.0	-131.0	-121.0	3.1	72.9	10.2	0.14~~0~~	131.9	15.9	0.12~~1~~	59.0	5.7	0.097
	4/22/2024	15.9	5.9	10.9	17.7	-57.0	-67.0	-62.0	8.5	-111.0	-131.0	-121.0	3.0	72.9	9.2	0.13~~26~~	131.9	14.7	0.11~~2~~	59.0	5.5	0.094
	5/21/2024	15.9	5.9	10.9	17.7	-57.0	-67.0	-62.0	8.4	-111.0	-131.0	-121.0	2.9	72.9	9.3	0.13~~27~~	131.9	14.8	0.11~~2~~	59.0	5.5	0.094
	6/17/2024	15.9	5.9	10.9	17.5	-57.0	-67.0	-62.0	8.2	-111.0	-131.0	-121.0	2.8	72.9	9.3	0.13~~27~~	131.9	14.7	0.11~~2~~	59.0	5.4	0.092
	7/4/2024	15.9	5.9	10.9	17.47	-57.0	-67.0	-62.0	8.28	-111.0	-131.0	-121.0	3.04	72.9	9.19	0.13~~26~~	131.9	14.43	0.11~~09~~	59.0	5.24	0.089
	8/4/2024	15.9	5.9	10.9	18.01	-57.0	-67.0	-62.0	8.64	-111.0	-131.0	-121.0	3.30	72.9	9.37	0.13~~29~~	131.9	14.71	0.11~~2~~	59.0	5.34	0.091
	9/24/2024	15.9	5.9	10.9	17.55	-57.0	-67.0	-62.0	8.18	-111.0	-131.0	-121.0	2.90	72.9	9.37	0.13~~29~~	131.9	14.65	0.11~~1~~	59.0	5.28	0.089
MW-102A MW-102C MW-102E	10/22/2024	15.9	5.9	10.9	17.41	-57.0	-67.0	-62.0	7.97	-111.0	-131.0	-121.0	2.93	72.9	9.44	0.13	131.9	14.48	0.11	59.0	5.04	0.085
	11/22/2024	15.9	5.9	10.9	17.38	-57.0	-67.0	-62.0	7.98	-111.0	-131.0	-121.0	2.52	72.9	9.40	0.13	131.9	14.86	0.11	59.0	5.46	0.093
	12/18/2024	15.9	5.9	10.9	17.26	-57.0	-67.0	-62.0	7.91	-111.0	-131.0	-121.0	2.34	72.9	9.35	0.13	131.9	14.92	0.11	59.0	5.57	0.094
	1/28/2025	15.9	5.9	10.9	17.47	-57.0	-67.0	-62.0	8.11	-111.0	-131.0	-121.0	2.64	72.9	9.36	0.13	131.9	14.83	0.11	59.0	5.47	0.093
	2/25/2025	15.9	5.9	10.9	17.47	-57.0	-67.0	-62.0	8.16	-111.0	-131.0	-121.0	2.82	72.9	9.31	0.13	131.9	14.65	0.11	59.0	5.34	0.091
	3/25/2025	15.9	5.9	10.9	17.41	-57.0	-67.0	-62.0	8.04	-111.0	-131.0	-121.0	2.58	72.9	9.37	0.13	131.9	14.83	0.11	59.0	5.46	0.093
	4/29/2025	15.9	5.9	10.9	18.08	-57.0	-67.0	-62.0	8.35	-111.0	-131.0	-121.0	2.76	72.9	9.73	0.13	131.9	15.32	0.12	59.0	5.59	0.095
	6/5/2025	15.9	5.9	10.9	18.32	-57.0	-67.0	-62.0	8.32	-111.0	-131.0	-121.0	2.56	72.9	10.00	0.14	131.9	15.76	0.12	59.0	5.76	0.098
	7/15/2025	15.9	5.9	10.9	18.06	-57.0	-67.0	-62.0	8.31	-111.0	-131.0	-121.0	2.40	72.9	9.75	0.13	131.9	15.66	0.12	59.0	5.91	0.10
	8/13/2025	15.9	5.9	10.9	17.69	-57.0	-67.0	-62.0	8.09	-111.0	-131.0	-121.0	2.04	72.9	9.60	0.13	131.9	15.65	0.12	59.0	6.05	0.10
	9/22/2025	15.9	5.9	10.9	17.68	-57.0	-67.0	-62.0	8.04	-111.0	-131.0	-121.0	2.20	72.9	9.64	0.13	131.9	15.48	0.12	59.0	5.84	0.099
														Average =		0.13~~28~~			0.11~~4~~			0.096~~7~~

Table 2.4.12-8
LMGS Vertical Hydraulic Gradient Calculations
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Well Cluster	Date	A Sand				C Sand				E Sand				A to C Sand			A to E Sand			C to E Sand		
		Top of Screen (ft NAVD 88)	Bottom of Screen (ft NAVD 88)	Midpoint (ft NAVD 88)	Ground-water Elevation (ft NAVD 88)	Top of Screen ft (NAVD 88)	Bottom of Screen (ft NAVD 88)	Midpoint (ft NAVD 88)	Ground-water Elevation (ft NAVD 88)	Top of Screen (ft NAVD 88)	Bottom of Screen (ft NAVD 88)	Midpoint (ft NAVD 88)	Ground-water Elevation (ft NAVD 88)	Δz	Δh	i_v	Δz	Δh	i_v	Δz	Δh	i_v
	2/29/2024	16.3	11.3	13.8	20.7	-58.7	-68.7	-63.7	9.3	-121.8	-141.8	-131.8	3.4	77.5	11.4	0.15~~47~~	145.6	17.4	0.12~~19~~	68.1	5.9	0.087
	3/25/2024	16.3	11.3	13.8	21.1	-58.7	-68.7	-63.7	9.4	-121.8	-141.8	-131.8	3.6	77.5	11.7	0.15~~1~~	145.6	17.6	0.12~~1~~	68.1	5.8	0.086
	4/22/2024	16.3	11.3	13.8	20.2	-58.7	-68.7	-63.7	9.2	-121.8	-141.8	-131.8	3.6	77.5	11.0	0.14~~2~~	145.6	16.7	0.11~~4~~	68.1	5.6	0.083
	5/21/2024	16.3	11.3	13.8	20.1	-58.7	-68.7	-63.7	9.1	-121.8	-141.8	-131.8	3.5	77.5	11.0	0.14~~2~~	145.6	16.7	0.11~~4~~	68.1	5.6	0.083
	6/17/2024	16.3	11.3	13.8	20.3	-58.7	-68.7	-63.7	8.9	-121.8	-141.8	-131.8	3.4	77.5	11.4	0.15~~47~~	145.6	17.0	0.12~~16~~	68.1	5.5	0.081
	7/4/2024	16.3	11.3	13.8	22.73	-58.7	-68.7	-63.7	8.97	-121.8	-141.8	-131.8	3.66	77.5	13.76	0.1~~7~~8	145.6	19.07	0.13~~1~~	68.1	5.31	0.078
	8/4/2024	16.3	11.3	13.8	22.86	-58.7	-68.7	-63.7	9.21	-121.8	-141.8	-131.8	3.87	77.5	13.65	0.18~~76~~	145.6	18.99	0.13~~0~~	68.1	5.34	0.078
	9/24/2024	16.3	11.3	13.8	20.74	-58.7	-68.7	-63.7	8.83	-121.8	-141.8	-131.8	3.50	77.5	11.91	0.15~~4~~	145.6	17.24	0.12~~18~~	68.1	5.33	0.078
	10/22/2024	16.3	11.3	13.8	20.15	-58.7	-68.7	-63.7	8.62	-121.8	-141.8	-131.8	3.38	77.5	11.53	0.15	145.6	16.77	0.12	68.1	5.24	0.077
MW-103A MW-103C MW-103E	11/22/2024	16.3	11.3	13.8	19.89	-58.7	-68.7	-63.7	8.61	-121.8	-141.8	-131.8	2.76	77.5	11.28	0.15	145.6	17.13	0.12	68.1	5.85	0.086
	12/18/2024	16.3	11.3	13.8	19.52	-58.7	-68.7	-63.7	8.60	-121.8	-141.8	-131.8	2.77	77.5	10.92	0.14	145.6	16.75	0.12	68.1	5.83	0.086
	1/28/2025	16.3	11.3	13.8	22.42	-58.7	-68.7	-63.7	8.75	-121.8	-141.8	-131.8	3.24	77.5	13.67	0.18	145.6	19.18	0.13	68.1	5.51	0.081
	2/25/2025	16.3	11.3	13.8	21.68	-58.7	-68.7	-63.7	8.79	-121.8	-141.8	-131.8	3.49	77.5	12.89	0.17	145.6	18.19	0.12	68.1	5.30	0.078
	3/25/2025	16.3	11.3	13.8	21.31	-58.7	-68.7	-63.7	8.68	-121.8	-141.8	-131.8	3.16	77.5	12.63	0.16	145.6	18.15	0.12	68.1	5.52	0.081
	4/29/2025	16.3	11.3	13.8	23.58	-58.7	-68.7	-63.7	9.01	-121.8	-141.8	-131.8	3.17	77.5	14.57	0.19	145.6	20.41	0.14	68.1	5.84	0.086
	6/5/2025	16.3	11.3	13.8	21.23	-58.7	-68.7	-63.7	9.00	-121.8	-141.8	-131.8	3.09	77.5	12.23	0.16	145.6	18.14	0.12	68.1	5.91	0.087
	7/15/2025	16.3	11.3	13.8	20.36	-58.7	-68.7	-63.7	9.02	-121.8	-141.8	-131.8	2.85	77.5	11.34	0.15	145.6	17.51	0.12	68.1	6.17	0.091
	8/13/2025	16.3	11.3	13.8	19.98	-58.7	-68.7	-63.7	8.73	-121.8	-141.8	-131.8	2.36	77.5	11.25	0.15	145.6	17.62	0.12	68.1	6.37	0.094
	9/22/2025	16.3	11.3	13.8	22.71	-58.7	-68.7	-63.7	8.68	-121.8	-141.8	-131.8	2.81	77.5	14.03	0.18	145.6	19.90	0.14	68.1	5.87	0.086
														Average =		0.16~~55~~			0.12~~1~~			0.084~~2~~

Table 2.4.12-8
LMGS Vertical Hydraulic Gradient Calculations
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Well Cluster	Date	A Sand				C Sand				E Sand				A to C Sand			A to E Sand			C to E Sand		
		Top of Screen (ft NAVD 88)	Bottom of Screen (ft NAVD 88)	Midpoint (ft NAVD 88)	Ground-water Elevation (ft NAVD 88)	Top of Screen ft (NAVD 88)	Bottom of Screen (ft NAVD 88)	Midpoint (ft NAVD 88)	Ground-water Elevation (ft NAVD 88)	Top of Screen (ft NAVD 88)	Bottom of Screen (ft NAVD 88)	Midpoint (ft NAVD 88)	Ground-water Elevation (ft NAVD 88)	Δz	Δh	i_v	Δz	Δh	i_v	Δz	Δh	i_v
	2/29/2024	5.0	-5.0	0.0	20.7	-44.1	-64.1	-54.1	8.7	-139.2	-149.2	-144.2	3.4	54.0	11.9	0.22~~1~~	144.2	17.2	0.12~~19~~	90.1	5.3	0.059
	3/25/2024	5.0	-5.0	0.0	21.1	-44.1	-64.1	-54.1	8.8	-139.2	-149.2	-144.2	3.6	54.0	12.2	0.23~~26~~	144.2	17.4	0.12~~1~~	90.1	5.2	0.058
	4/22/2024	5.0	-5.0	0.0	20.3	-44.1	-64.1	-54.1	8.6	-139.2	-149.2	-144.2	3.6	54.0	11.6	0.22~~15~~	144.2	16.6	0.12~~15~~	90.1	5.0	0.055
	5/21/2024	5.0	-5.0	0.0	20.0	-44.1	-64.1	-54.1	8.5	-139.2	-149.2	-144.2	3.5	54.0	11.4	0.21~~1~~	144.2	16.4	0.11~~4~~	90.1	5.0	0.055
	6/17/2024	5.0	-5.0	0.0	19.9	-44.1	-64.1	-54.1	8.3	-139.2	-149.2	-144.2	3.5	54.0	11.5	0.21~~3~~	144.2	16.3	0.11~~3~~	90.1	4.8	0.053
	7/4/2024	5.0	-5.0	0.0	20.85	-44.1	-64.1	-54.1	8.40	-139.2	-149.2	-144.2	3.71	54.0	12.45	0.23~~0~~	144.2	17.14	0.12~~19~~	90.1	4.69	0.052
	8/4/2024	5.0	-5.0	0.0	21.49	-44.1	-64.1	-54.1	8.64	-139.2	-149.2	-144.2	3.87	54.0	12.85	0.24~~38~~	144.2	17.62	0.12~~2~~	90.1	4.77	0.053
	9/24/2024	5.0	-5.0	0.0	20.38	-44.1	-64.1	-54.1	8.25	-139.2	-149.2	-144.2	3.57	54.0	12.13	0.22~~5~~	144.2	16.81	0.12~~17~~	90.1	4.68	0.052
MW-104A	10/22/2024	5.0	-5.0	0.0	19.57	-44.1	-64.1	-54.1	8.04	-139.2	-149.2	-144.2	3.37	54.0	11.53	0.21	144.2	16.20	0.11	90.1	4.67	0.052
MW-104C	11/22/2024	5.0	-5.0	0.0	19.56	-44.1	-64.1	-54.1	8.01	-139.2	-149.2	-144.2	2.77	54.0	11.55	0.21	144.2	16.79	0.12	90.1	5.24	0.058
MW-104E	12/18/2024	5.0	-5.0	0.0	19.23	-44.1	-64.1	-54.1	7.97	-139.2	-149.2	-144.2	2.79	54.0	11.26	0.21	144.2	16.44	0.11	90.1	5.18	0.057
	1/28/2025	5.0	-5.0	0.0	21.36	-44.1	-64.1	-54.1	8.16	-139.2	-149.2	-144.2	3.29	54.0	13.20	0.24	144.2	18.07	0.13	90.1	4.87	0.054
	2/25/2025	5.0	-5.0	0.0	21.05	-44.1	-64.1	-54.1	8.21	-139.2	-149.2	-144.2	3.55	54.0	12.84	0.24	144.2	17.50	0.12	90.1	4.66	0.052
	3/25/2025	5.0	-5.0	0.0	20.57	-44.1	-64.1	-54.1	8.08	-139.2	-149.2	-144.2	3.15	54.0	12.49	0.23	144.2	17.42	0.12	90.1	4.93	0.055
	4/29/2025	5.0	-5.0	0.0	21.73	-44.1	-64.1	-54.1	8.38	-139.2	-149.2	-144.2	3.18	54.0	13.35	0.25	144.2	18.55	0.13	90.1	5.20	0.058
	6/5/2025	5.0	-5.0	0.0	20.85	-44.1	-64.1	-54.1	8.36	-139.2	-149.2	-144.2	3.19	54.0	12.49	0.23	144.2	17.66	0.12	90.1	5.17	0.057
	7/15/2025	5.0	-5.0	0.0	19.94	-44.1	-64.1	-54.1	8.40	-139.2	-149.2	-144.2	2.96	54.0	11.54	0.21	144.2	16.98	0.12	90.1	5.44	0.060
	8/13/2025	5.0	-5.0	0.0	19.37	-44.1	-64.1	-54.1	8.09	-139.2	-149.2	-144.2	2.46	54.0	11.28	0.21	144.2	16.91	0.12	90.1	5.63	0.062
	9/22/2025	5.0	-5.0	0.0	20.63	-44.1	-64.1	-54.1	8.07	-139.2	-149.2	-144.2	2.91	54.0	12.56	0.23	144.2	17.72	0.12	90.1	5.16	0.057
														Average =		0.22~~2~~			0.12~~18~~			0.056~~5~~
	9/24/2024	16.6	6.6	11.6	21.67	-38.0	-58.0	-48.0	7.48~~5~~	No E Sand well at this location				59.6	14.19	0.24~~38~~	NA	NA	NA	NA	NA	NA
	10/22/2024	16.6	6.6	11.6	21.49	-38.0	-58.0	-48.0	7.38	No E Sand well at this location				59.6	14.11	0.24	NA	NA	NA	NA	NA	NA
	11/22/2024	16.6	6.6	11.6	21.18	-38.0	-58.0	-48.0	7.37	No E Sand well at this location				59.6	13.81	0.23	NA	NA	NA	NA	NA	NA
	12/18/2024	16.6	6.6	11.6	21.01	-38.0	-58.0	-48.0	7.40	No E Sand well at this location				59.6	13.61	0.23	NA	NA	NA	NA	NA	NA
	1/28/2025	16.6	6.6	11.6	22.10	-38.0	-58.0	-48.0	7.57	No E Sand well at this location				59.6	14.53	0.24	NA	NA	NA	NA	NA	NA
	2/25/2025	16.6	6.6	11.6	22.00	-38.0	-58.0	-48.0	7.61	No E Sand well at this location				59.6	14.39	0.24	NA	NA	NA	NA	NA	NA
MW-105A MW-105C	3/25/2025	16.6	6.6	11.6	21.49	-38.0	-58.0	-48.0	7.57	No E Sand well at this location				59.6	13.92	0.23	NA	NA	NA	NA	NA	NA
	4/29/2025	16.6	6.6	11.6	22.35	-38.0	-58.0	-48.0	7.77	No E Sand well at this location				59.6	14.58	0.24	NA	NA	NA	NA	NA	NA
	6/5/2025	16.6	6.6	11.6	21.89	-38.0	-58.0	-48.0	7.69	No E Sand well at this location				59.6	14.20	0.24	NA	NA	NA	NA	NA	NA
	7/15/2025	16.6	6.6	11.6	22.04	-38.0	-58.0	-48.0	7.81	No E Sand well at this location				59.6	14.23	0.24	NA	NA	NA	NA	NA	NA
	8/13/2025	16.6	6.6	11.6	21.11	-38.0	-58.0	-48.0	7.50	No E Sand well at this location				59.6	13.61	0.23	NA	NA	NA	NA	NA	NA
	9/22/2025	16.6	6.6	11.6	21.83	-38.0	-58.0	-48.0	7.48	No E Sand well at this location				59.6	14.35	0.24	NA	NA	NA	NA	NA	NA
														Average =		0.24~~38~~						

Table 2.4.12-8
LMGS Vertical Hydraulic Gradient Calculations

Well Cluster	Date	A Sand				C Sand				E Sand				A to C Sand			A to E Sand			C to E Sand		
		Top of Screen (ft NAVD 88)	Bottom of Screen (ft NAVD 88)	Midpoint (ft NAVD 88)	Ground-water Elevation (ft NAVD 88)	Top of Screen ft (NAVD 88)	Bottom of Screen (ft NAVD 88)	Midpoint (ft NAVD 88)	Ground-water Elevation (ft NAVD 88)	Top of Screen (ft NAVD 88)	Bottom of Screen (ft NAVD 88)	Midpoint (ft NAVD 88)	Ground-water Elevation (ft NAVD 88)	Δz	Δh	i_v	Δz	Δh	i_v	Δz	Δh	i_v
Well Cluster	Date	A Sand				C Sand				E Sand				A to C Sand			A to E Sand			C to E Sand		
		Top of Screen (ft NAVD 88)	Bottom of Screen (ft NAVD 88)	Midpoint (ft NAVD 88)	Ground-water Elevation (ft NAVD 88)	Top of Screen ft (NAVD 88)	Bottom of Screen (ft NAVD 88)	Midpoint (ft NAVD 88)	Ground-water Elevation (ft NAVD 88)	Top of Screen (ft NAVD 88)	Bottom of Screen (ft NAVD 88)	Midpoint (ft NAVD 88)	Ground-water Elevation (ft NAVD 88)	Δz	Δh	i_v	Δz	Δh	i_v	Δz	Δh	i_v
	9/24/2024	16.4	6.4	11.4	18.31	-30.9	-50.9	-40.9	8.41	No E Sand well at this location				52.3	9.90	0.189	NA	NA	NA	NA	NA	NA
	10/22/2024	16.4	6.4	11.4	19.23	-30.9	-50.9	-40.9	8.17	No E Sand well at this location				52.3	11.06	0.21	NA	NA	NA	NA	NA	NA
	11/22/2024	16.4	6.4	11.4	18.98	-30.9	-50.9	-40.9	8.14	No E Sand well at this location				52.3	10.84	0.21	NA	NA	NA	NA	NA	NA
	12/18/2024	16.4	6.4	11.4	18.83	-30.9	-50.9	-40.9	8.13	No E Sand well at this location				52.3	10.70	0.20	NA	NA	NA	NA	NA	NA
	1/28/2025	16.4	6.4	11.4	20.22	-30.9	-50.9	-40.9	8.31	No E Sand well at this location				52.3	11.91	0.23	NA	NA	NA	NA	NA	NA
	2/25/2025	16.4	6.4	11.4	20.41	-30.9	-50.9	-40.9	8.33	No E Sand well at this location				52.3	12.08	0.23	NA	NA	NA	NA	NA	NA
MW-107A MW-107C	3/25/2025	16.4	6.4	11.4	19.91	-30.9	-50.9	-40.9	8.23	No E Sand well at this location				52.3	11.68	0.22	NA	NA	NA	NA	NA	NA
	4/29/2025	16.4	6.4	11.4	20.71	-30.9	-50.9	-40.9	8.51	No E Sand well at this location				52.3	12.20	0.23	NA	NA	NA	NA	NA	NA
	6/5/2025	16.4	6.4	11.4	20.26	-30.9	-50.9	-40.9	8.53	No E Sand well at this location				52.3	11.73	0.22	NA	NA	NA	NA	NA	NA
	7/15/2025	16.4	6.4	11.4	19.71	-30.9	-50.9	-40.9	8.55	No E Sand well at this location				52.3	11.16	0.21	NA	NA	NA	NA	NA	NA
	8/13/2025	16.4	6.4	11.4	18.82	-30.9	-50.9	-40.9	8.28	No E Sand well at this location				52.3	10.54	0.20	NA	NA	NA	NA	NA	NA
	9/22/2025	16.4	6.4	11.4	19.49	-30.9	-50.9	-40.9	8.22	No E Sand well at this location				52.3	11.27	0.22	NA	NA	NA	NA	NA	NA
														Average =		0.21189						
	9/24/2024	14.9	4.9	9.9	21.91	-33.6	-53.6	-43.6	7.67	No E Sand well at this location				53.5	14.24	0.2766	NA	NA	NA	NA	NA	NA
	10/22/2024	14.9	4.9	9.9	21.83	-33.6	-53.6	-43.6	7.47	No E Sand well at this location				53.5	14.36	0.27	NA	NA	NA	NA	NA	NA
	11/22/2024	14.9	4.9	9.9	21.74	-33.6	-53.6	-43.6	7.47	No E Sand well at this location				53.5	14.27	0.27	NA	NA	NA	NA	NA	NA
	12/18/2024	14.9	4.9	9.9	21.61	-33.6	-53.6	-43.6	7.42	No E Sand well at this location				53.5	14.19	0.27	NA	NA	NA	NA	NA	NA
	1/28/2025	14.9	4.9	9.9	22.57	-33.6	-53.6	-43.6	7.62	No E Sand well at this location				53.5	14.95	0.28	NA	NA	NA	NA	NA	NA
	2/25/2025	14.9	4.9	9.9	22.34	-33.6	-53.6	-43.6	7.67	No E Sand well at this location				53.5	14.67	0.27	NA	NA	NA	NA	NA	NA
MW-111A MW-111C	3/25/2025	14.9	4.9	9.9	21.94	-33.6	-53.6	-43.6	7.56	No E Sand well at this location				53.5	14.38	0.27	NA	NA	NA	NA	NA	NA
	4/29/2025	14.9	4.9	9.9	22.61	-33.6	-53.6	-43.6	7.81	No E Sand well at this location				53.5	14.80	0.28	NA	NA	NA	NA	NA	NA
	6/5/2025	14.9	4.9	9.9	22.28	-33.6	-53.6	-43.6	7.80	No E Sand well at this location				53.5	14.48	0.27	NA	NA	NA	NA	NA	NA
	7/15/2025	14.9	4.9	9.9	22.18	-33.6	-53.6	-43.6	7.84	No E Sand well at this location				53.5	14.34	0.27	NA	NA	NA	NA	NA	NA
	8/13/2025	14.9	4.9	9.9	21.47	-33.6	-53.6	-43.6	7.54	No E Sand well at this location				53.5	13.93	0.26	NA	NA	NA	NA	NA	NA
	9/22/2025	14.9	4.9	9.9	22.31	-33.6	-53.6	-43.6	7.52	No E Sand well at this location				53.5	14.79	0.28	NA	NA	NA	NA	NA	NA
														Average =		0.2766						
														OverallMonthly Average =		0.20199			0.1324			0.071

Table 2.4.12-8
LMGS Vertical Hydraulic Gradient Calculations
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Notes:
Screen elevations are in feet (ft.) NAVD 88 (North American Vertical Datum of 1988).
A positive i_v represents a downward hydraulic gradient.
A negative i_v represents an upward hydraulic gradient.
NA = not applicable, well pair does not exist.
LMGS = Long Mott Generating Station

Δz = Vertical distance between midpoint of well screens (feet)
Δh = Difference in water level between wells (feet)
i_v = Vertical hydraulic gradient (Δh / Δz) (feet per foot)

Table 2.4.12-9
LMGS Slug Test Results
(Sheet 1 of 3)

A Sand Slug Test Results

Well ID	Aquifer Type	Date	Test	Hydraulic Conductivity (ft/day)		Selected Hydraulic Conductivity (1~~, 2~~) (ft/day)
				Hvorslev	Bouwer-Rice	
MW-1A	Confined	4/29/2024	Rising 1	11.9~~4~~		11.6
			Falling 1	11.~~1~~2~~6~~	2.51	
MW-2A	Confined	4/28/2024	Rising 1	1.09		1.62
			Falling 1	2.15	0.91	
MW-3A	Confined	4/27/2024	Rising 1	3.65		3.83
			Falling 1	4.01	0.969~~7~~	
MW-4A [a]	Confined	4/27/2024	Rising 1	3.17		3.79~~8~~
			Falling 1	4.00	3.79	
MW-5A	Confined	4/30/2024	Rising 1	9.50		8.50
			Falling 1	7.50	2.54	
MW-6A	Confined	5/8/2024	Rising 1	0.425~~3~~		0.509
			Falling 1	0.594	0.197~~20~~	
MW-101A	Confined	4/28/2024	Rising 1	7.89		8.18~~2~~
			Falling 1	8.47	3.92	
MW-102A	Confined	4/26/2024	Rising 1	0.616~~2~~		0.678~~7~~
			Falling 1	0.741	0.180	
MW-103A	Confined	4/26/2024	Rising 1	42.3~~2~~		41.4
			Falling 1	40.4~~39~~	10.5~~0~~	
MW-104A	Confined	4/23/2024	Rising 1	3.15		3.03
			Falling 1	2.91	1.13	
MW-105A	Confined	10/12/2024	Rising 1	9.34		9.21
			Falling 1	9.08	6.03	
MW-106A	Confined	10/8/2024	Rising 1	6.62		6.74
			Falling 1	6.86	4.47	
MW-107A	Confined	10/13/2024	Rising 1	1.62		1.60
			Falling 1	1.59	0.779	
MW-108A	Confined	10/27/2024	Rising 1	19.1		19.0
			Falling 1	18.9	11.3	
MW-109A	Confined	10/26/2024	Rising 1	7.02		7.39
			Falling 1	7.58	4.74	
			Rising 2	7.56		
			Falling 2	7.38	4.75	
MW-110A	Confined	10/26/2024	Rising 1	9.95		10.9
			Falling 1	11.0	3.77	
			Rising 2	11.8		
			Falling 2	10.9	3.85	
MW-111A	Confined	10/15/2024	Rising 1	4.91		4.92
			Falling 1	4.93	3.78	
MW-112A	Confined	10/25/2024	Rising 1	7.38		7.04
			Falling 1	6.70	4.18	
MW-113A	Confined	10/25/2024	Rising 1	0.170		5.34
			Falling 1	10.5	4.49	
S-13	Confined	8/20/2024	Rising 1	12.1		12.0
			Falling 1	11.9	3.65	
S-14	Confined	8/21/2024	Rising 1	9.44		9.32
			Falling 1	9.54	3.25	
		10/28/2024	Rising 2	9.04		
			Falling 2	9.20	3.14	
			Rising 3	9.26		
			Falling 3	9.45	3.30	
S-15	Confined	8/6/2024	Rising 1	6.30		6.26
			Falling 1	6.23	2.11	
S-16	Confined	10/27/2024	Rising 1	9.26		9.65
			Falling 1	10.1	3.35	
S-17	Confined	10/27/2024	Rising 1	2.21		2.53
			Falling 1	2.85	1.77	

Table 2.4.12-9
LMGS Slug Test Results
(Sheet 2 of 3)

Well ID	Aquifer Type	Date	Test	Hydraulic Conductivity (ft/day)		Selected Hydraulic Conductivity (1~~, 2~~) (ft/day)
				Hvorslev	Bouwer-Rice	
S-18	Confined	8/6/2024	Rising 1	10.5	-	11.9
			Falling 1	13.3	3.26	
S-19	Confined	8/20/2024	Rising 1	3.67	-	4.48
			Falling 1	5.29	1.46	
S-20	Confined	8/5/2024	Rising 1	8.14	-	8.70
			Falling 1	9.26	3.07	
S - Series Wells Average (wells S-13 through S-20 are proximal to one another)				8.35	2.84	8.11
Average				**8.26**	**4.14**	**8.17**
Geometric Mean				**5.02**	**2.67**	**5.17**

C Sand Slug Test Results

Well ID	Aquifer Type	Date	Test	Hydraulic Conductivity (ft/day)		Selected Hydraulic Conductivity(1~~, 2~~) (ft/day)
				Hvorslev	Bouwer-Rice	
MW-1C	Confined	4/29/2024	Rising 1	7.90		10.1
			Falling 1	12.2~~3~~	9.57	
MW-2C	Confined	4/28/2024	Rising 1	48.7~~0~~		42.1
			Falling 1	35.8~~2~~		
			Rising 2	36.0~~95~~		
			Falling 2	46.9~~86~~	29.2~~16~~	
MW-3C	Confined	4/27/2024	Rising 1	39.7~~69~~		38.9
			Falling 1	39.3~~28~~		
			Rising 2	37.5~~3~~		
			Falling 2	39.2~~0~~	32.4~~1~~	
MW-4C [a]	Confined	4/27/2024	Rising 1	3.54		2.62
			Falling 1	3.66	2.62	
MW-5C [a]	Confined	4/30/2024	Rising 1	28.8~~3~~		23.5
			Falling 1	29.1~~07~~	23.5~~45~~	
MW-6C	Confined	5/9/2024	Rising 1	35.6~~0~~		33.2
			Falling 1	30.8~~2~~	30.5~~45~~	
MW-101C [a]	Confined	4/28/2024	Rising 1	4.31		2.41
			Falling 1	4.13	2.41	
MW-102C	Confined	4/25/2024	Rising 1	51.9~~3~~		45.0
			Falling 1	42.2~~4~~		
			Rising 2	41.9~~4~~		
			Falling 2	43.9~~4~~	35.2~~15~~	
MW-103C	Confined	4/26/2024	Rising 1	11.7~~0~~		12.3
			Falling 1	12.9~~4~~	7.08	
MW-104C	Confined	4/24/2024	Rising 1	22.5~~3~~		23.2~~17.0~~
			Falling 1	23.8~~3~~	17.0~~4~~	
MW-105C	Confined	10/12/2024	Rising 1	64.9	-	60.9
			Falling 1	56.8	32.9	
MW-107C	Confined	10/14/2024	Rising 1	0.029	-	0.034
			Falling 1	0.039	0.027	
MW-111C	Confined	10/15/2024	Rising 1	13.2	-	12.4
			Falling 1	11.6	8.45	
S-7 [a]	Confined	4/29/2024	Rising 1	0.759~~6~~		0.593~~6~~
			Falling 1	0.808~~1~~	0.593	
S-8 [a]	Confined	4/29/2024	Rising 1	8.45		6.85~~9~~
			Falling 1	9.32	6.85	
S-9 [a]	Confined	4/29/2024	Rising 1	1.17		1.09~~1~~
			Falling 1	1.48	1.09	
S-10 [a]	Confined	4/30/2024	Rising 1	3.59		3.31
			Falling 1	4.50	3.31	
S-11 [a]	Confined	4/30/2024	Rising 1	0.65		0.778
			Falling 1	1.07	0.778	
S-12 [a]	Confined	4/30/2024	Rising 1	9.31		6.77
			Falling 1	9.21	6.77	
S-21 [a]	Confined	8/6/2024	Rising 1	3.47	-	2.03
			Falling 1	3.40	2.03	

Table 2.4.12-9
LMGS Slug Test Results
(Sheet 3 of 3)

Well ID	Aquifer Type	Date	Test	Hydraulic Conductivity (ft/day)		Selected Hydraulic Conductivity(1, 2) (ft/day)
				Hvorslev	Bouwer-Rice	
S - Series Wells Average (wells S-7 through S-12 and S-21 wells are proximal to one another)				4.0819	3.0623	3.062
Average (using S -Series wells averaged together)				**26.827.38**	**16.717.51**	**22.120.9**
Geometric Mean (using S -Series wells averaged together)				**14.20.15**	**7.9411.26**	**9.8613.4**

E Sand Slug Test Results

Well ID	Aquifer Type	Date	Test	Hydraulic Conductivity (ft/day)		Selected Hydraulic Conductivity (1, 2) (ft/day)
				Hvorslev	Bouwer-Rice	
MW-1E	Confined	4/30/2024	Rising 1	0.883		0.9781.0
			Falling 1	1.07	0.656	
MW-2E	Confined	4/28/2024	Rising 1	2.20		2.34
			Falling 1	2.47	1.28	
MW-3E	Confined	4/27/2024	Rising 1	14.24		15.0
			Falling 1	15.81	8.99	
MW-4E	Confined	4/27/2024	Rising 1	14.9715.0		14.6
			Falling 1	14.31	12.9713.0	
MW-5E	Confined	5/1/2024	Rising 1	47.67		42.5
			Falling 1	31.548		
			Rising 2	42.44		
			Falling 2	48.23	29.02	
MW-6E [a]	Confined	4/23/2024	Rising 1	17.107		12.5
			Falling 1	15.60	12.549	
MW-101E	Confined	4/28/2024	Rising 1	22.51		22.3
			Falling 1	22.01.99	14.32	
MW-102E [a]	Confined	4/25/2024	Rising 1	5.38		4.354
			Falling 1	5.75	4.35	
MW-103E [a]	Confined	4/24/2024	Rising 1	16.23		320.1
			Falling 1	18.84	320.10	
MW-104E	Confined	4/24/2024	Rising 1	5.66		5.78
			Falling 1	5.90	4.27	
S-1	Confined	5/6/2024	Rising 1	0.1091		0.126
			Falling 1	0.144	0.0849	
S-2	Confined	5/7/2024	Rising 1	0.070		0.07731
			Falling 1	0.085	0.0527	
S-3	Confined	5/6/2024	Rising 1	1.67		1.758
			Falling 1	1.83	1.14	
S-4	Confined	4/24/2024	Rising 1	0.356		0.3654
			Falling 1	0.375	0.232	
S-5	Confined	4/29/2024	Rising 1	6.68		6.465
			Falling 1	6.24	3.93	
S-6	Confined	5/1/2024	Rising 1	6.82		6.768
			Falling 1	6.71	4.23	
S - Series Wells Average (wells S-1 through S-6 wells are proximal to one another)				2.59	1.61	2.596
Average (using S -Series wells averaged together)				**11.82**	**26.13**	**40.3**
Geometric Mean (using S -Series wells averaged together)				**10.215**	**8.04**	**10.2**

Notes:
[a] Partially penetrating well screen
(1) Except where noted "a", the selected hydraulic conductivity is based on average of falling and rising head slug test results calculated by Hvorslev Method. Bouwer-Rice Method is selected for only those wells identified as having screens that are partially penetrating the confined unit "a".Selection of average of falling and rising head slug test results calculated by Hvorslev Method or selection of result from Bouwer-Rice Method for only those wells identified as having screens that are partially penetrating the confined unit.
(2) Values rounded to one decimal place
Key: ft/day = feet per day; ID = identification; LMGS = Long Mott Generating Station

Table 2.4.12-10
Summary of LMGS Aquifer Pumping Test Results
(Sheet 1 of 2)

P-1 (C Sand) Aquifer Pumping Test Results

Well ID	Aquifer Type	Date	Test Method	Transmissivity (ft^2/day)	Storativity
S-7	Confined	8/27/24–9/1/24	Theis	956~~.2~~	1.52~~3~~E-03
			Theis (Recovery)	942~~.1~~	1.61~~4~~E-03
S-8	Confined	8/27/24–9/1/24	Theis	1,000~~.3~~	2.59~~88~~E-04
			Theis (Recovery)	983~~.0~~	2.84~~36~~E-04
S-9	Confined	8/27/24–9/1/24	Theis	1,05~~1.~~0	1.90~~898~~E-03
			Theis (Recovery)	1,010~~2.4~~	2.16~~2~~E-03
S-10	Confined	8/27/24–9/1/24	Theis	1,05~~1.~~0	3.88~~4~~E-03
			Theis (Recovery)	1,000~~999.5~~	6.54~~4~~E-04
S-11	Confined	8/27/24–9/1/24	Theis	1,000~~2.2~~	7.84~~0~~E-04
			Theis (Recovery)	983~~2.7~~	8.42~~3~~E-04
S-12	Confined	8/27/24–9/1/24	Theis	1,070~~66.7~~	5.09~~3~~E-04
			Theis (Recovery)	1,030~~1.1~~	5.73~~3~~E-04
S-21	Confined	8/27/24–9/1/24	Theis	1,07~~2~~0~~.7~~	5.29~~1~~E-04
			Theis (Recovery)	1,010~~4.8~~	6.13~~25~~E-04
Average				**1,010~~1.8~~**	**1.15~~2~~E-03**

Table 2.4.12-10
Summary of LMGS Aquifer Pumping Test Results
(Sheet 2 of 2)

P-2 (E Sand) Aquifer Pumping Test Results

Well ID	Aquifer Type	Date	Test Method	Transmissivity (ft^2/day)	Storativity
S-1	Confined	9/12-14/24	Theis	525~~.1~~	8.43~~26~~E-07
			Theis (Recovery)	530~~.3~~	7.35~~46~~E-07
S-2	Confined	9/12-14/24	Theis	580~~.1~~	1.83~~28~~E-08
			Theis (Recovery)	559~~.4~~	3.08~~75~~E-08
S-3	Confined	9/12-14/24	Theis	625~~4.7~~	2.09~~1~~E-07
			Theis (Recovery)	633~~.3~~	1.72~~2~~E-07
S-4	Confined	9/12-14/24	Theis	606~~.1~~	5.37~~68~~E-08
			Theis (Recovery)	610~~09.8~~	5.00~~2~~E-08
S-5	Confined	9/12-14/24	Theis	621~~0.7~~	3.62~~17~~E-05
			Theis (Recovery)	642~~.3~~	2.85~~45~~E-05
S-6	Confined	9/12-14/24	Theis	592~~.2~~	2.57~~69~~E-04
			Theis (Recovery)	604~~.3~~	2.32~~2~~E-04
Average				**594~~.0~~**	**4.63~~2~~E-05**

Key: ft^2/day = square feet per day; ID = Identification; LMGS = Long Mott Generating Station

Table 2.4.12-11
Regional Hydrogeochemical Data
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Well Owner	Date Sampled	Alkalinty, Field (mg/L as $CaCO_3$)	Alkalinity, Lab (mg/L as HCO_3)	Alkalinity, Lab (mg/L as $CaCO_3$)	Alkalinity, Lab (mg/L as OH^-)	Alkalinity, Phenolphthalein (mg/L)	Alkalinty, Total (mg/L as $CaCO_3$)	Alpha (pCi/L)
A.G. Shafer (TWDB #8027501)	5/16/1969	-	-	-	-	0	372	-
	12/12/1980	-	-	-	-	11	368	-
	12/16/1981	-	-	-	-	0	370	-
	4/21/1992	328	-	-	-	0	366	4
Otto Marek (TWDB #8026603)	5/4/1959	-	-	-	-	0	226.17	-
Charles Krause (TWDB #8026502)	9/4/1997	349	-	-	-	0	374	-
	5/2/2001	338	-	-	-	0	337	-
	8/27/2009	357	-	-	-	0.002	349	33.7
	5/9/2013	353	-	-	-	<2	348	17.71
	6/8/2017	360	355	0	0	0	355	20.2
R.E. Whatley (TWDB #8026501)	4/15/1971	-	-	-	-	0	254	-
O.B. Cassell (TWDB #8026903)	11/20/1958	-	-	-	-	0	285.98	-
J.C. Williams (TWDB #8026902)	11/20/1958	-	-	-	-	0	296.64	-
Edward L. Arnold (TWDB #8027401)	7/30/1997	380	-	-	-	0	348	-
Union Carbide Co. (TWDB #8034303)	9/1/1947	-	-	-	-	0	301.55	-
Lester Shafer (TWDB #8034301)	5/16/1969	-	-	-	-	0	246	-
	8/14/1975	-	-	-	-	0	255	-
	6/19/1979	-	-	-	-	0	229	-
Howard L. Shafer (TWDB #8034302)	7/30/1997	264	-	-	-	0	264	-
Margaret Roemer (TWDB #8034601)	9/1/1947	-	-	-	-	0	347.44	-
H.V. Heyland (TWDB #8034602)	9/1/1947	-	-	-	-	0	260.58	-
H.V. Heyland (TWDB #8034603)	9/1/1947	-	-	-	-	0	354	-

Table 2.4.12-11
Regional Hydrogeochemical Data
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Well Owner	Date Sampled	Anion/Cation CHG BAL (percent)	Antimony (mg/L)	Arsenic (mg/L)	Barium (mg/L)	Beryllium (mg/L)	Beta (pCi/L)	Bicarbonate (mg/L)
A.G. Shafer (TWDB #8027501)	5/16/1969	-	-	-	-	-	-	453.97
	12/12/1980	-	-	-	-	-	-	422.24
	12/16/1981	-	-	-	-	-	-	451.53
	4/21/1992	-	-	0.011	0.179	-	5.6	446.65
Otto Marek (TWDB #8026603)	5/4/1959	-	-	-	-	-	-	276
Charles Krause (TWDB #8026502)	9/4/1997	-	<0.001	<0.0015	0.0673	<0.001	-	456.4
	5/2/2001	-	<0.001	0.00202	0.0552	<0.001	-	411.25
	8/27/2009	2.19	<0.00102	<0.00204	0.054	<0.00102	-	425.9
	5/9/2013	-2.87	<0.001	0.0061	0.0484	<0.001	-	424.68
	6/8/2017	-2.7149	<0.001	0.00158	0.0539	<0.001	-	433.223
R.E. Whatley (TWDB #8026501)	4/15/1971	-	-	-	-	-	-	309.97
O.B. Cassell (TWDB #8026903)	11/20/1958	-	-	-	-	-	-	349
J.C. Williams (TWDB #8026902)	11/20/1958	-	-	-	-	-	-	362
Edward L. Arnold (TWDB #8027401)	7/30/1997	-	<0.001	<0.0015	0.0447	<0.001	-	424.68
Union Carbide Co. (TWDB #8034303)	9/1/1947	-	-	-	-	-	-	368
Lester Shafer (TWDB #8034301)	5/16/1969	-	-	-	-	-	-	300.21
	8/14/1975	-	-	-	-	-	-	311.19
	6/19/1979	-	-	-	-	-	-	279.46
Howard L. Shafer (TWDB #8034302)	7/30/1997	-	<0.001	0.0054	0.162	<0.001	-	322.17
Margaret Roemer (TWDB #8034601)	9/1/1947	-	-	-	-	-	-	424
H.V. Heyland (TWDB #8034602)	9/1/1947	-	-	-	-	-	-	318
H.V. Heyland (TWDB #8034603)	9/1/1947	-	-	-	-	-	-	432

**Table 2.4.12-11
Regional Hydrogeochemical Data
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Well Owner	Date Sampled	Boron (mg/L)	Bromide (mg/L)	Cadmium (mg/L)	Calcium (mg/L)	Carbonate (mg/L)	Chloride (mg/L)	Chromium (mg/L)
A.G. Shafer (TWDB #8027501)	5/16/1969	-	-	-	48	0	254	-
	12/12/1980	-	-	-	46.6	13.2	264	-
	12/16/1981	-	-	-	50.6	0	264	-
	4/21/1992	-	1.16	<0.010	42	0	268	<0.20
Otto Marek (TWDB #8026603)	5/4/1959	0.39	-	-	137	0	750	-
Charles Krause (TWDB #8026502)	9/4/1997	0.961	<5	-	181.96	0	714	-
	5/2/2001	0.845	2.04	<0.001	169	0	679	<0.001
	8/27/2009	0.972	2.55	<0.00102	176	0	646	0.00128
	5/9/2013	1.03	2.66	<0.001	176	0	700	0.011
	6/8/2017	103	2.68	<0.001	184	0	729	0.00427
R.E. Whatley (TWDB #8026501)	4/15/1971	-	-	-	120	0	580	-
O.B. Cassell (TWDB #8026903)	11/20/1958	-	-	-	171	0	498	-
J.C. Williams (TWDB #8026902)	11/20/1958	-	-	-	112	0	522	-
Edward L. Arnold (TWDB #8027401)	7/30/1997	0.9	2	-	143	0	717	-
Union Carbide Co. (TWDB #8034303)	9/1/1947	-	-	-	296	0	885	-
Lester Shafer (TWDB #8034301)	5/16/1969	-	-	-	122	0	830	-
	8/14/1975	-	-	-	157	0	870	-
	6/19/1979	-	-	-	115	0	875	-
Howard L. Shafer (TWDB #8034302)	7/30/1997	0.47	3.35	-	121	0	88	-
Margaret Roemer (TWDB #8034601)	9/1/1947	-	-	-	246	0	1100	-
H.V. Heyland (TWDB #8034602)	9/1/1947	-	-	-	156	0	850	-
H.V. Heyland (TWDB #8034603)	9/1/1947	-	-	-	264	0	830	-

Table 2.4.12-11
Regional Hydrogeochemical Data
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Well Owner	Date Sampled	Cobalt (mg/L)	Copper (mg/L)	Fluoride (mg/L)	Hardness (mg/L as $CaCO_3$)	Iodide (mg/L)	Iron (mg/L)	Lead (mg/L)
A.G. Shafer (TWDB #8027501)	5/16/1969	-	-	0.7	177	-	-	-
	12/12/1980	-	-	0.8	162	-	-	-
	12/16/1981	-	-	0.8	166	-	-	-
	4/21/1992	-	<0.20	0.79	171	-	0.267	<0.50
Otto Marek (TWDB #8026603)	5/4/1959	-	-	-	481	-	0.06	-
Charles Krause (TWDB #8026502)	9/4/1997	-	0.0028	0.45	663	<0.15	<0.010	<0.001
	5/2/2001	-	<0.001	0.67	617	-	<0.051	<0.001
	8/27/2009	-	0.0038	1.7	639	-	<0.051	<0.00102
	5/9/2013	-	0.0054	0.52	627	-	1.27	<0.001
	6/8/2017	<0.001	0.0129	0.568	665.202	-	<0.050	<0.001
R.E. Whatley (TWDB #8026501)	4/15/1971	-	-	0.4	431	-	-	-
O.B. Cassell (TWDB #8026903)	11/20/1958	-	-	-	632	-	-	-
J.C. Williams (TWDB #8026902)	11/20/1958	-	-	-	411	-	-	-
Edward L. Arnold (TWDB #8027401)	7/30/1997	0.0011	0.0049	0.27	565	1.06	0.085	<0.001
Union Carbide Co. (TWDB #8034303)	9/1/1947	-	-	-	1112	-	-	-
Lester Shafer (TWDB #8034301)	5/16/1969	-	-	0.6	481	-	-	-
	8/14/1975	-	-	0.4	502	-	-	-
	6/19/1979	-	-	0.4	484	-	-	-
Howard L. Shafer (TWDB #8034302)	7/30/1997	0.001	0.0049	0.35	497	0.45	0.314	<0.001
Margaret Roemer (TWDB #8034601)	9/1/1947	-	-	-	1045	-	-	-
H.V. Heyland (TWDB #8034602)	9/1/1947	-	-	-	656	-	-	-
H.V. Heyland (TWDB #8034603)	9/1/1947	-	-	-	1123	-	-	-

Table 2.4.12-11
Regional Hydrogeochemical Data
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Well Owner	Date Sampled	Lithium (mg/L)	Magnesium (mg/L)	Manganese (mg/L)	Mercury (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Nitrate Nitrogen (mg/L as NO_3)
A.G. Shafer (TWDB #8027501)	5/16/1969	-	14	-	-	-	-	0.4
	12/12/1980	-	11.3	-	-	-	-	<0.1
	12/16/1981	-	9.85	-	-	-	-	0.04
	4/21/1992	-	16	0.081	0.0002	-	-	<0.04
Otto Marek (TWDB #8026603)	5/4/1959	-	34	-	-	-	-	<0.4
Charles Krause (TWDB #8026502)	9/4/1997	0.0406	50.3	0.0012	-	<0.001	0.0022	6.42
	5/2/2001	0.0374	0.0469	0.0421	-	<0.001	0.00206	12.57
	8/27/2009	0.0332	48	0.00696	<0.0002	0.00118	-	17.44
	5/9/2013	0.0564	45.1	0.0121	-	<0.001	-	13.5
	6/8/2017	0.0361	49.5	0.00275	<0.0002	0.00107	-	13.945
R.E. Whatley (TWDB #8026501)	4/15/1971	-	32	-	-	-	-	<0.4
O.B. Cassell (TWDB #8026903)	11/20/1958	-	50	-	-	-	-	1
J.C. Williams (TWDB #8026902)	11/20/1958	-	32	-	-	-	-	1
Edward L. Arnold (TWDB #8027401)	7/30/1997	0.0427	50.2	0.0059	-	0.0012	0.0032	0.31
Union Carbide Co. (TWDB #8034303)	9/1/1947	-	91	-	-	-	-	4
Lester Shafer (TWDB #8034301)	5/16/1969	-	43	-	-	-	-	<0.4
	8/14/1975	-	27	-	-	-	-	<0.4
	6/19/1979	-	48	-	-	-	-	<0.4
Howard L. Shafer (TWDB #8034302)	7/30/1997	0.0398	47.1	0.193	-	0.0042	0.002	<0.18
Margaret Roemer (TWDB #8034601)	9/1/1947	-	105	-	-	-	-	3.2
H.V. Heyland (TWDB #8034602)	9/1/1947	-	-	-	-	-	-	0.8
H.V. Heyland (TWDB #8034603)	9/1/1947	-	113	-	-	-	-	1.8

**Table 2.4.12-11
Regional Hydrogeochemical Data
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Well Owner	Date Sampled	Nitrite plus Nitrate (mg/L as N)	Nitrogen, Ammonia (mg/L as N)	Nitogren, Kjeldahl (mg/L as N)	Oxidation Reduction Potential (mV)	pH	Phosphorus (mg/L)	Potassium (mg/L)
A.G. Shafer (TWDB #8027501)	5/16/1969	-	-	-	-	7.6	-	-
	12/12/1980	-	-	-	-	8.5	-	4
	12/16/1981	-	-	-	-	8.2	-	4
	4/21/1992	-	0.09	0.1	-	7.25	-	6.4
Otto Marek (TWDB #8026603)	5/4/1959	-	-	-	-	7.3	-	5.1
Charles Krause (TWDB #8026502)	9/4/1997	1.45	0.22	<0.5	24.7	6.78	-	4.46
	5/2/2001	2.84	-	-	-	6.82	-	4.29
	8/27/2009	3.94	-	-	-	7.1	0.037	3.88
	5/9/2013	3.05	-	-	-	6.91	<0.02	4.66
	6/8/2017	3.15	-	-	-	6.99	<0.02	4.82
R.E. Whatley (TWDB #8026501)	4/15/1971	-	-	-	-	7.4	-	-
O.B. Cassell (TWDB #8026903)	11/20/1958	-	-	-	-	7.1	-	-
J.C. Williams (TWDB #8026902)	11/20/1958	-	-	-	-	7.2	-	-
Edward L. Arnold (TWDB #8027401)	7/30/1997	0.07	<0.15	<0.5	-127.9	6.92	-	4.35
Union Carbide Co. (TWDB #8034303)	9/1/1947	-	-	-	-	-	-	-
Lester Shafer (TWDB #8034301)	5/16/1969	-	-	-	-	7.2	-	-
	8/14/1975	-	-	-	-	7.7	-	-
	6/19/1979	-	-	-	-	8.2	-	-
Howard L. Shafer (TWDB #8034302)	7/30/1997	<0.04	0.49	<0.5	-67.6	6.96	-	7.47
Margaret Roemer (TWDB #8034601)	9/1/1947	-	-	-	-	-	-	-
H.V. Heyland (TWDB #8034602)	9/1/1947	-	-	-	-	-	-	-
H.V. Heyland (TWDB #8034603)	9/1/1947	-	-	-	-	-	-	-

Table 2.4.12-11
Regional Hydrogeochemical Data
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Well Owner	Date Sampled	Radium 226 (pCi/L)	Radium 228 (pCi/L)	Residual Sodium Carbonate, Calculated	Selenium (mg/L)	Silica (mg/L)	Silver (mg/L)	Sodium Absorption Ratio, Calculated
A.G. Shafer (TWDB #8027501)	5/16/1969	-	-	3.89	-	20	-	8.46
	12/12/1980	-	-	4.11	-	22	-	7.51
	12/16/1981	-	-	4.07	-	21	-	9.26
	4/21/1992	-	-	3.91	<0.002	21	<0.10	8.63
Otto Marek (TWDB #8026603)	5/4/1959	-	-	0	-	22	-	7.17
Charles Krause (TWDB #8026502)	9/4/1997	-	-	0	0.0142	27.2	-	7.89
	5/2/2001	-	-	0	0.0109	14	-	7.26
	8/27/2009	<0.2	1.4	0	0.00831	27.9	<0.00102	7.96
	5/9/2013	0.15	1.05	0	0.0315	26	0.0083	7.67
	6/8/2017	-	-	0	0.0102	22	<0.001	7.3367
R.E. Whatley (TWDB #8026501)	4/15/1971	-	-	0	-	22	-	6.2
O.B. Cassell (TWDB #8026903)	11/20/1958	-	-	0	-	13	-	4.17
J.C. Williams (TWDB #8026902)	11/20/1958	-	-	0	-	21	-	6.46
Edward L. Arnold (TWDB #8027401)	7/30/1997	-	-	0	<0.006	31.57	-	7.72
Union Carbide Co. (TWDB #8034303)	9/1/1947	-	-	0	-	-	-	4.5
Lester Shafer (TWDB #8034301)	5/16/1969	-	-	0	-	17	-	8.66
	8/14/1975	-	-	0	-	20	-	8.94
	6/19/1979	-	-	0	-	21	-	9.25
Howard L. Shafer (TWDB #8034302)	7/30/1997	-	-	0	<0.006	22.21	-	9.14
Margaret Roemer (TWDB #8034601)	9/1/1947	-	-	0	-	-	-	7.24
H.V. Heyland (TWDB #8034602)	9/1/1947	-	-	0	-	-	-	6.89
H.V. Heyland (TWDB #8034603)	9/1/1947	-	-	0	-	-	-	5.76

Table 2.4.12-11
Regional Hydrogeochemical Data
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Well Owner	Date Sampled	Sodium, Calculated (percent)	Sodium (mg/L)	Specific Conductance (µMHOS/cm @ 25C)	Strontium (mg/L)	Sulfate (mg/L)	Thallium (mg/L)	Total Dissolved Solids (mg/L)
A.G. Shafer (TWDB #8027501)	5/16/1969	76	259	1628	-	24	-	843
	12/12/1980	78	270	1683	-	19	-	858
	12/16/1981	78	275	1670	-	27	-	874
	4/21/1992	76	259	1394	-	25	-	858
Otto Marek (TWDB #8026603)	5/4/1959	62	362	2680	-	6.2	-	1452
Charles Krause (TWDB #8026502)	9/4/1997	61	466.52	3390	1.59	137	<0.001	1814
	5/2/2001	59	414	3150	1.59	273	<0.001	1817
	8/27/2009	61	462	3210	1.57	287	<0.00102	1881
	5/9/2013	61	441	2020	1580	325	<0.001	1942
	6/8/2017	58.862	436	-	1.57	301	<0.001	1955.419
R.E. Whatley (TWDB #8026501)	4/15/1971	59	296	2548	-	10	-	1213
O.B. Cassell (TWDB #8026903)	11/20/1958	45	241	2280	-	161	-	1306
J.C. Williams (TWDB #8026902)	11/20/1958	61	301	2180	-	30	-	1196
Edward L. Arnold (TWDB #8027401)	7/30/1997	61	421	3620	1.48	257	<0.001	1834
Union Carbide Co. (TWDB #8034303)	9/1/1947	40	345	3690	-	297	-	2098
Lester Shafer (TWDB #8034301)	5/16/1969	66	437	3381	-	35	-	1632
	8/14/1975	66	461	3588	-	34	-	1722
	6/19/1979	67	468	3458	-	34	-	1699
Howard L. Shafer (TWDB #8034302)	7/30/1997	67	468	3150	1.38	42.6	<0.001	1706
Margaret Roemer (TWDB #8034601)	9/1/1947	52	538	4380	-	301	-	2501
H.V. Heyland (TWDB #8034602)	9/1/1947	57	406	3200	-	78	-	1712
H.V. Heyland (TWDB #8034603)	9/1/1947	46	444	3920	-	540	-	2405

Table 2.4.12-11
Regional Hydrogeochemical Data
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Well Owner	Date Sampled	Uranium (mg/L)	Vanadium (mg/L)	Zinc (mg/L)
A.G. Shafer (TWDB #8027501)	5/16/1969	-	-	-
	12/12/1980	-	-	-
	12/16/1981	-	-	-
	4/21/1992	-	-	<0.20
Otto Marek (TWDB #8026603)	5/4/1959	-	-	-
Charles Krause (TWDB #8026502)	9/4/1997	-	0.0132	0.0153
	5/2/2001	-	0.00188	0.0078
	8/27/2009	0.0121	0.0023	0.0224
	5/9/2013	0.0109	0.0047	0.0732
	6/8/2017	0.0103	0.00387	0.0245
R.E. Whatley (TWDB #8026501)	4/15/1971	-	-	-
O.B. Cassell (TWDB #8026903)	11/20/1958	-	-	-
J.C. Williams (TWDB #8026902)	11/20/1958	-	-	-
Edward L. Arnold (TWDB #8027401)	7/30/1997	-	0.006	0.0144
Union Carbide Co. (TWDB #8034303)	9/1/1947	-	-	-
Lester Shafer (TWDB #8034301)	5/16/1969	-	-	-
	8/14/1975	-	-	-
	6/19/1979	-	-	-
Howard L. Shafer (TWDB #8034302)	7/30/1997	-	0.153	0.0706
Margaret Roemer (TWDB #8034601)	9/1/1947	-	-	-
H.V. Heyland (TWDB #8034602)	9/1/1947	-	-	-
H.V. Heyland (TWDB #8034603)	9/1/1947	-	-	-

Source: www.twdb/texas/gov/mapping/index.asp
Key: CHG BAL = charge balance ; $CaCO_3$ = calcium carbonate; mg/L = milligrams per liter; mV = millivolt; N = nitrogen; NO_3 = nitrate; pCi/L = picocuries per liter; pH = potential of hydrogen; OH- = hydroxide; µMHOS/cm @ 25C = micromhos per centimeter at 25 degrees Celsius; TWDB = Texas Water Development Board

Table 2.4.12-12
LMGS Groundwater Flow Velocities

Unit	Hydraulic Conductivity (K) [a] (ft/day) (Geometric Mean)	Hydraulic Conductivity (K) [b] (ft/day) (Arithmetic Average)	Average Hydraulic Gradient [c] (i)(ft/ft)	Maximum Hydraulic Gradient [c] (i)(ft/ft)	Specific Yield (effective porosity - n)	Average Horizontal Flow Velocity (V – ft/day) (Based on Geometric Mean K Value)	Average Horizontal Flow Velocity (V – ft/day) (Use of Arithmetic Mean K Value)	Maximum Horizontal Flow Velocity (V – ft/day) (Use of Geometric Mean K Value)	Maximum Horizontal Flow Velocity (V – ft/day) (Based on Arithmetic Mean K Value)
A Sand	5.17~~3.9~~	8.17~~3~~	0.0017	0.013~~042~~	0.20	0.044~~3~~	0.069~~7~~	0.34~~08~~	0.53~~18~~
C Sand	9.86~~13.4~~	22.1~~0.9~~	0.00046~~5~~	0.00087~~9~~	0.25	0.018~~3~~	0.041	0.034~~5~~	0.077~~8~~
E Sand	10.2	40.3	0.00023~~3~~	0.00063~~8~~	0.25	0.0094~~1~~	0.037~~5~~	0.026~~3~~	0.10~~3~~

Notes:
[a] Hydraulic conductivity measure represents geometric mean of slug testing results in each unit
[b] Hydraulic conductivity measure represents arithmetic mean of slug testing results in each unit
[c] Represents 19~~8~~-month average or maximum hydraulic gradient for each unit
Key: ft/ft = feet per foot; ft/day = feet per day; LMGS = Long Mott Generating Station
$V = K*i/n$
where
- V = velocity (ft/day)
- K = hydraulic conductivity (ft/day)
- i = horizontal gradient (ft/ft)
- n = effective porosity (unitless)

Table 2.4.12-13
Groundwater Model Calibration Results
(Sheet 1 of 6)

Description	Run	Name	Sum of Squares	Sum of Residuals (observed - simulated)
Initial case	0	PLM_GW_Flow_Model_Calibration_V1	41.87	-0.256
move western CHB more to west	1	PLM_GW_Flow_Model_Calibration_V2	39.31	2.042
Kh = 30 (V3 did not run)	2	PLM_GW_Flow_Model_Calibration_V4	36.58	-0.933
Kh=3 , drain @ 18 ft	3	PLM_GW_Flow_Model_Calibration_V5	32.29	-6.929
west CHB disabled	4	PLM _GW_Flow_Model_Calibration_V6	28.19	0.386
Kh = 11 (V7 did not run right)	5	PLM _GW_Flow_Model_Calibration_V8	25.88	-3.050
Kh=0.1	6	PLM _GW_Flow_Model_Calibration_V9	28.73	0.947
Kh=1	7	PLM _GW_Flow_Model_Calibration_V10	28.37	0.582
Kh=20, remove grid area object Kh setting	8	PLM _GW_Flow_Model_Calibration_V11	24.94	-6.028
Kh=100	9	PLM _GW_Flow_Model_Calibration_V12	40.04	-25.237
Kh=30	10	PLM _GW_Flow_Model_Calibration_V13	24.91	-9.086
Kh=60	11	PLM _GW_Flow_Model_Calibration_V14	29.12	-16.968
Kh=45	12	PLM _GW_Flow_Model_Calibration_V15	26.38	-13.245
Kh=15	13	PLM _GW_Flow_Model_Calibration_V16	25.33	-4.402
Kh=8	14	PLM _GW_Flow_Model_Calibration_V17	26.43	-2.002
Kh=4, Basin CHB 25 ft	15	PLM _GW_Flow_Model_Calibration_V18	27.41	12.077
Kh=15, Basin CHB 25 ft	16	PLM _GW_Flow_Model_Calibration_V19	23.20	8.491
Kh=30, basin CHB = 25 ft	17	PLM _GW_Flow_Model_Calibration_V20	19.94	4.129

Key: V = version; Kh = horizontal hydraulic conductivity (feet/day); CHB = constant head boundary; ft = feet

Table 2.4.12-13
Groundwater Model Calibration Results
(Sheet 2 of 6)

Description	**Run**	**Run Name**	**Head Sum of Squared Difference**	**Sum of Residuals (Observed - Simulated)**	**Average Difference**	**Average Absolute Difference**	**Scaled Standard Deviation**
Initial case	0	PLM GW Flow Model Calibration V0	31.41	-15.088	-0.503	0.853	0.104
Rotate northeastern FHB about 30 degrees clockwise and raise head to 22 feet	1	PLM GW Flow Model Calibration V1	32.73	-19.987	-0.666	0.848	0.094
Activate Western FHB 25 feet	2	PLM GW Flow Model Calibration V2	41.76	-24.765	-0.826	0.938	0.098
Northeastern FHB to 21 feet	3	PLM GW Flow Model Calibration V3	39.70	-22.440	-0.748	0.901	0.102
Kx = 10 ft/day from 30 ft/day	4	PLM GW Flow Model Calibration V4	35.14	-18.209	-0.607	0.855	0.104
Kx = 2 ft/day from 10 ft/day	5	PLM GW Flow Model Calibration V5	33.71	-16.302	-0.543	0.836	0.106
Reset calibration points to new average heads from old	6	PLM GW Flow Model Calibration V6	29.03	-5.504	-0.183	0.837	0.109
Set Kx to mean from GW-001 Table 6 of 8.17 ft/day	7	PLM GW Flow Model Calibration V7	29.38	-6.865	-0.229	0.840	0.109

Table 2.4.12-13
Groundwater Model Calibration Results
(Sheet 3 of 6)

Description	Run	Run Name	Head Sum of Squared Difference	Sum of Residuals (Observed - Simulated)	Average Difference	Average Absolute Difference	Scaled Standard Deviation
Northeastern FHB extended to the southeast and raised to 22 feet. Western FHB changed to 23 feet	8	PLM GW Flow Model Calibration V8	27.74	6.299	0.210	0.782	0.106
Western FHB moved further west past 2 check point wells and raised to 25 feet	9	PLM GW Flow Model Calibration V9	22.26	-7.145	-0.238	0.684	0.094
Set Kx to 2X mean from GW-001 Table 6 of 8.17 (2*8.17 = 16.34) ft/day	10	PLM GW Flow Model Calibration V10	22.26	-9.007	-0.300	0.688	0.093
Set northeastern FHB to 22 feet and shorten it	11	PLM GW Flow Model Calibration V11	22.94	5.543	0.185	0.689	0.097
Basin FHB to average 27 feet, Western FHB to 25 feet	12	PLM GW Flow Model Calibration V12	58.99	-28.055	-0.935	1.086	0.118
Set Kx 10x mean 10*8.17 = 81.7 ft/day	13	PLM GW Flow Model Calibration V13	83.75	-41.722	-1.391	1.409	0.105
Set Kx 1/10 mean = 0.817 ft/day	14	PLM GW Flow Model Calibration V14	54.97	-23.817	-0.794	1.059	0.124
Set Kx back to 8.17 ft/day and extend west FHB across top of basin	15	PLM GW Flow Model Calibration V15	29.48	-15.527	-0.518	0.808	0.096

Table 2.4.12-13
Groundwater Model Calibration Results
(Sheet 4 of 6)

Description	Run	Run Name	Head Sum of Squared Difference	Sum of Residuals (Observed - Simulated)	Average Difference	Average Absolute Difference	Scaled Standard Deviation
Set west FHB to 23 feet and wrap around basin	16	PLM GW Flow Model Calibration V16	21.18	8.832	0.294	0.583	0.089
Set west FHB to 23.5 feet Kx to 5 ft/day	17	PLM GW Flow Model Calibration V17	16.33	1.065	0.036	0.589	0.083
Disable basin FHB	18	PLM GW Flow Model Calibration V18	27.84	9.457	0.315	0.723	0.103
Western FHB to 21 feet, Kx to 8.17 ft/day	19	PLM GW Flow Model Calibration V19	37.98	19.356	0.645	0.764	0.104
Disable checkpoints C_81_A1, C_87_50A, C_98_344A, MW_104A west FHB to 24	20	PLM GW Flow Model Calibration V20	11.45	4.423	0.170	0.547	0.092
Northeastern FHB to 22 feet	21	PLM GW Flow Model Calibration V21	16.42	-9.098	-0.350	0.661	0.103
Western FHB to 24.75 feet and shortened, Basin FHB reactivated and set to 23 feet	22	PLM GW Flow Model Calibration V22	10.52	-4.281	-0.165	0.496	0.088
Landfills added as very low Kh blocks (0.01 ft/day)	23	PLM GW Flow Model recalibrated RC 2 w MPath V3	7.64	-1.771	-0.068	0.443	0.077
Landfills added as very low Kh blocks (0.0001 ft/day)	24	PLM GW Flow Model recalibrated RC 2 w MPath V3_24	7.64	-1.764	-0.068	0.443	0.077

Table 2.4.12-13
Groundwater Model Calibration Results
(Sheet 5 of 6)

Description	Run	Run Name	Head Sum of Squared Difference	Sum of Residuals (Observed - Simulated)	Average Difference	Average Absolute Difference	Scaled Standard Deviation
Drop SW1 and SW2 as calibration points	25	PLM GW Flow Model recalibrated RC 2 w MPath V3_25	6.22	-0.455	-0.019	0.425	0.089
Re-enable C_81_A1, C_87_50A, C_98_344A, MW_104A calibration points	26	PLM GW Flow Model recalibrated RC 2 w MPath V3_26	32.03	8.279	0.318	0.719	0.151
Basin FHB to 26.5	27	PLM GW Flow Model recalibrated RC 2 w MPath V3_27	23.36	-13.657	-0.525	0.755	0.112
West FHB wrap around top of basin 5	28	PLM GW Flow Model recalibrated RC 2 w MPath V3_28	14.42	-9.262	-0.356	0.612	0.093
West FHB wrap around top and side of basin 5 to simulate pot contours	29	PLM GW Flow Model recalibrated RC 2 w MPath V3_29	15.09	-9.788	-0.376	0.621	0.094
West FHB to 24 ft	30	PLM GW Flow Model recalibrated RC 2 w MPath V3_30	7.81	-0.667	-0.026	0.497	0.078

Table 2.4.12-13
Groundwater Model Calibration Results
(Sheet 6 of 6)

Description	Run	Run Name	Head Sum of Squared Difference	Sum of Residuals (Observed - Simulated)	Average Difference	Average Absolute Difference	Scaled Standard Deviation
MW-102A and MW-104A calibration points activated	31	PLM GW Flow Model recalibrated RC 2 w MPath V3_31	10.56	-0.814	-0.029	0.545	0.069

Key: V = version; Kh = horizontal hydraulic conductivity (feet/day); FHB = fixed head boundary; ft = feet; GW = groundwater; PLM = project Long Mott

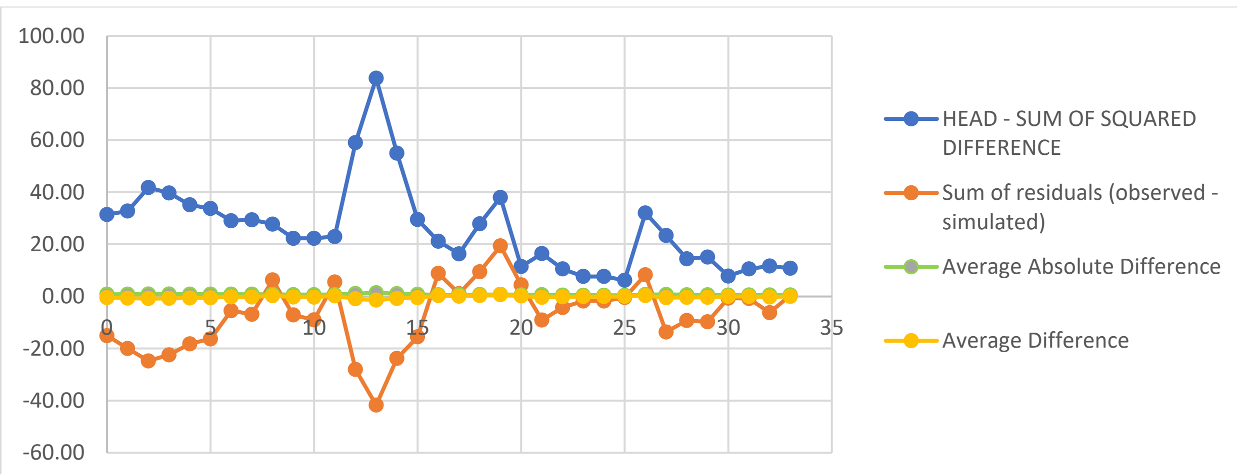


Table 2.4.12-14
Final Calibrated Model Parameters

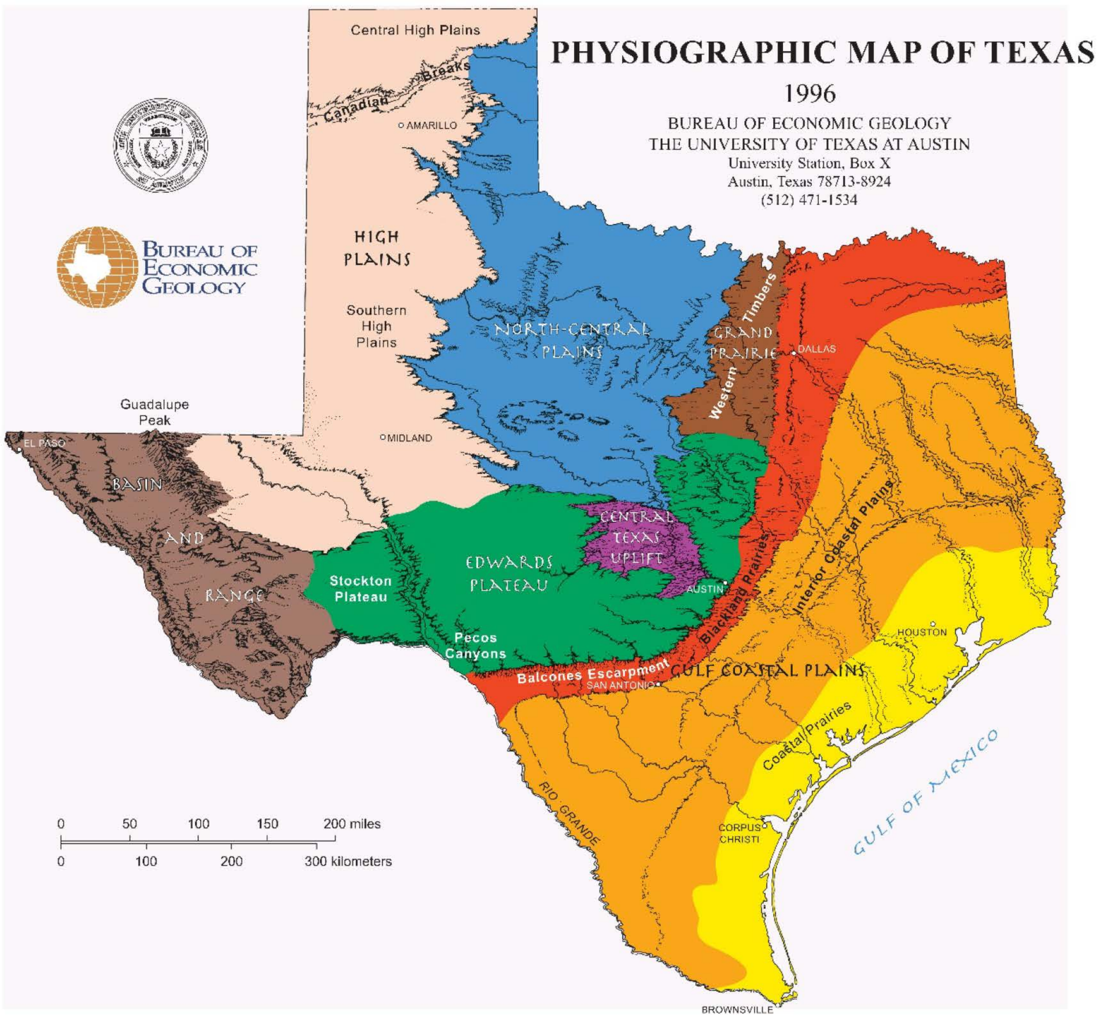
Number of rows	132	
Number of columns	181	
Number of layers	1	
Grid angle	36	degrees CCW
Size of cell (all)	50 x 50	ft
Cell type	Confined	(All)
Model type	Steady State	
Model time	days	
Model length	feet	
Top elevation	variable by cell	
Bottom elevation	variable by cell	
Hydraulic conductivity (horizontal)	8.17~~30~~	ft/day
Hydraulic conductivity isotropy	1.00	
Invert elevation drain	19.2 to 18.5~~18~~	ft
SW basin CHB elevation	26.5~~5~~	ft
Northwest linear CHB elevation	22~~3~~	ft
Western linear CHB elevation	24	ft

Key: CCW = counterclockwise; CHB = constant head boundary; ft = feet

~~Figure 2.4.12-1~~
~~Site Location Map~~

Figure 2.4.12-1
Site Location Map

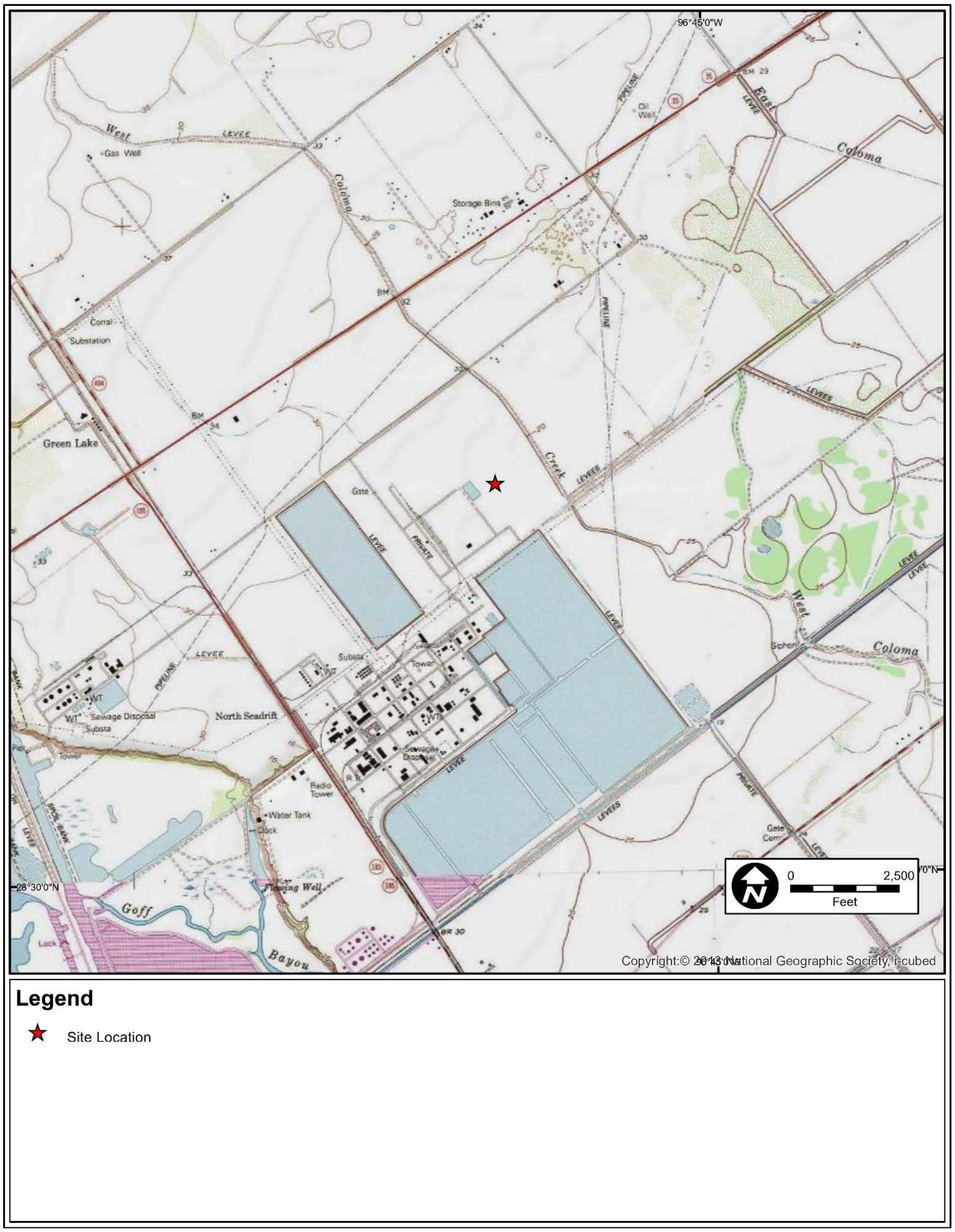
Figure 2.4.12-2
Physiographic Map of Texas



PROVINCE	MAX. ELEV. (ft)	MIN. ELEV. (ft)	TOPOGRAPHY	GEOLOGIC STRUCTURE	BEDROCK TYPES
Gulf Coastal Plains					
Coastal Prairies	300	0	Nearly flat prairie, <1 ft/mi to Gulf	Nearly flat strata	Deltaic sands and muds
Interior Coastal Plains	800	300	Parallel ridges (questas) and valleys	Beds tilted toward Gulf	Unconsolidated sands and muds
Blackland Prairies	1000	450	Low rolling terrain	Beds tilted south and east	Chalks and marls
Grand Prairie	1250	450	Low stairstep hills west; plains east	Strata dip east	Calcareous east; sandy west
Edwards Plateau					
Principal	3000	450	Flat upper surface with box canyons	Beds dip south; normal faulted	Limestones and dolomites
Pecos Canyons	2000	1200	Steep-walled canyons		Limestones and dolomites
Stockton Plateau	4200	1700	Mesa-formed terrain; highs to west	Unfaulted, near-horizontal beds	Carbonates and alluvial sediments
Central Texas Uplift	2000	800	Knobby plain; surrounded by questas	Centripetal dips, strongly faulted	Granites; metamorphics; sediments
North-Central Plains	3000	900	Low north-south ridges (questas)	West dip; minor faults	Limestones; sandstones; shales
High Plains					
Central	4750	2900	Flat prairies slope east and south	Slight dips east and south	Eolian silts and fine sands
Canadian Breaks	3800	2350	Highly dissected; local solution valleys		
Southern	3800	2200	Flat; many playas; local dune fields		
Basin and Range	8750	1700	North-south mountains and basins	Some complex folding and faulting	Igneous; metamorphics; sediments

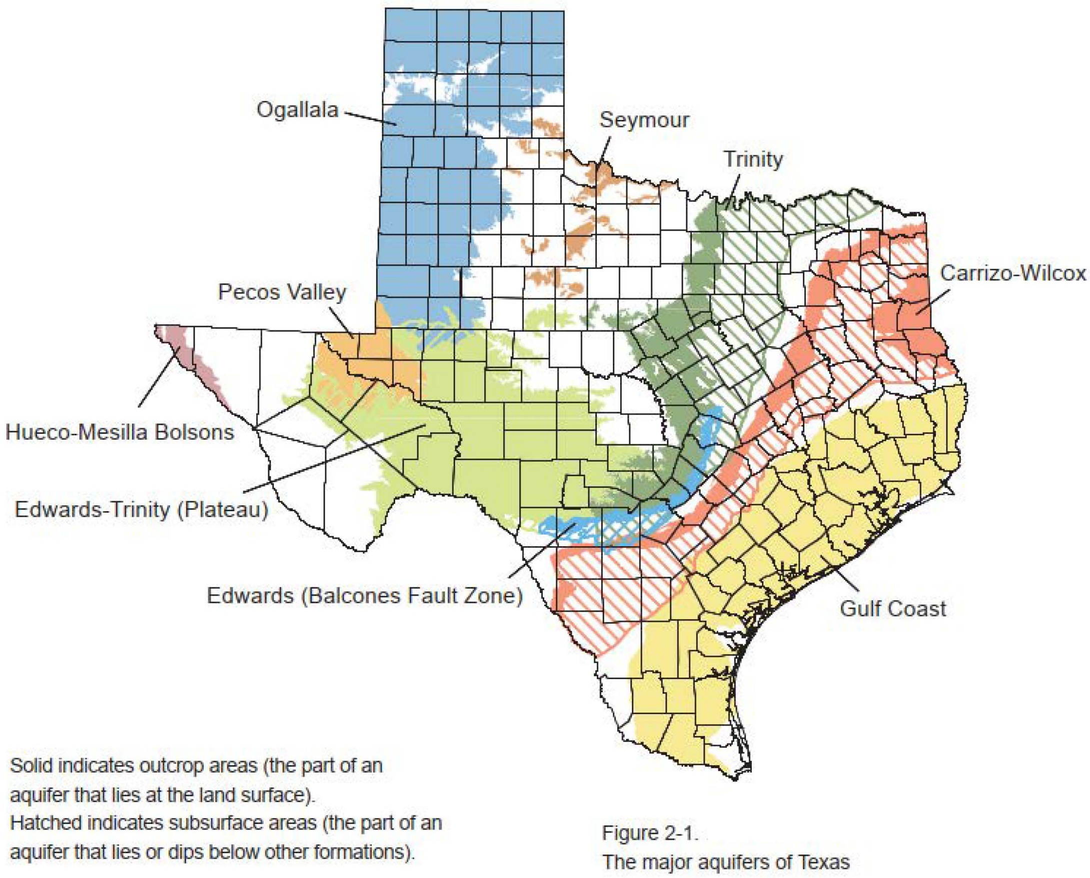
Source: BEG, 1996.

Figure 2.4.12-3
Site Topographic Map



Source: USGS, 2024b.

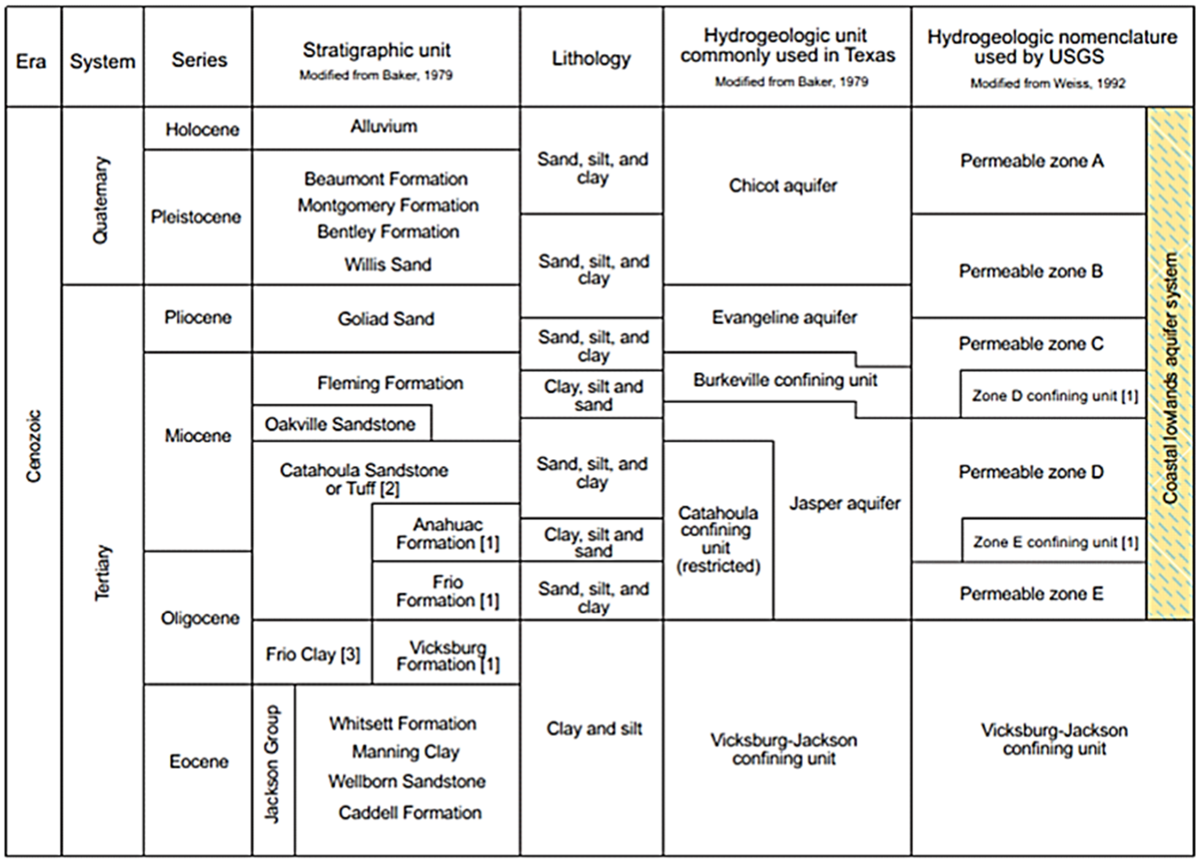
Figure 2.4.12-4
Major Aquifers of Texas



Source: George, et al., 2011.

Figure 2.4.12-5

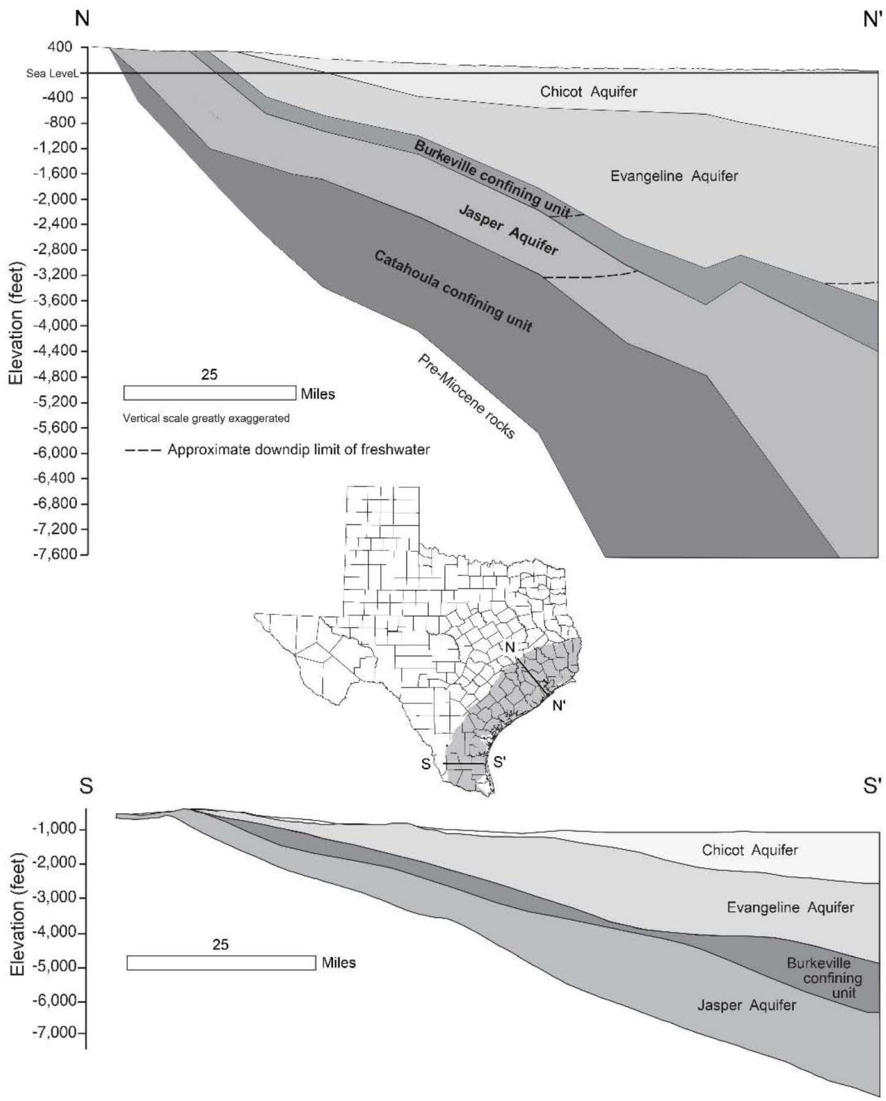
Correlation of USGS and Texas Nomenclature



[1] Present only in the subsurface
[2] Called Catahoula Tuff west of Lavaca County
[3] Not recognized at surface east of Live Oak County

Source: Ryder, 1996.

Figure 2.4.12-6
Generalized Cross Section through the Coastal Lowlands/Coastal Uplands Aquifer System



Cross sections across the Gulf Coast Aquifer (modified from Baker, 1979, 1986; Chowdhury and Mace, 2003; Kasmarek and Robinson, 2004).

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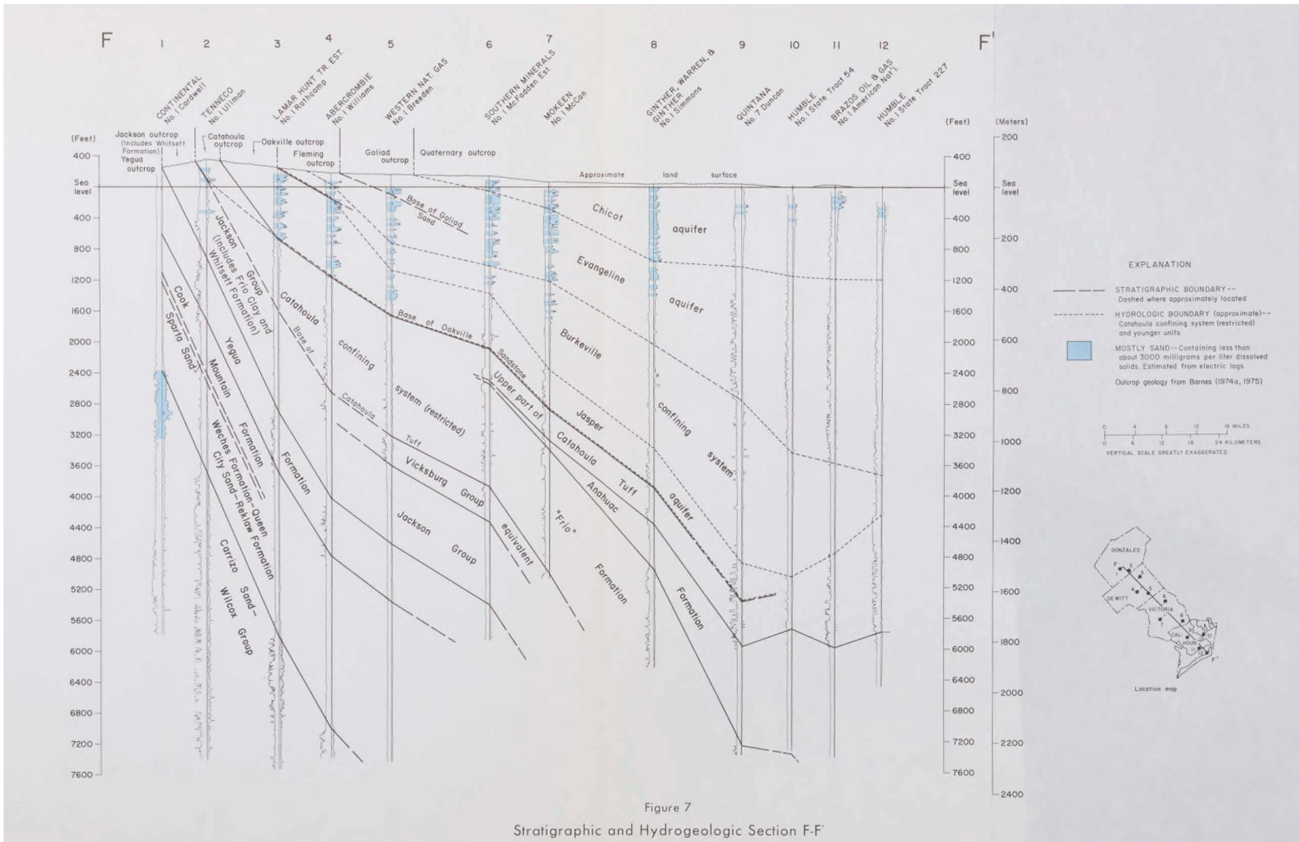
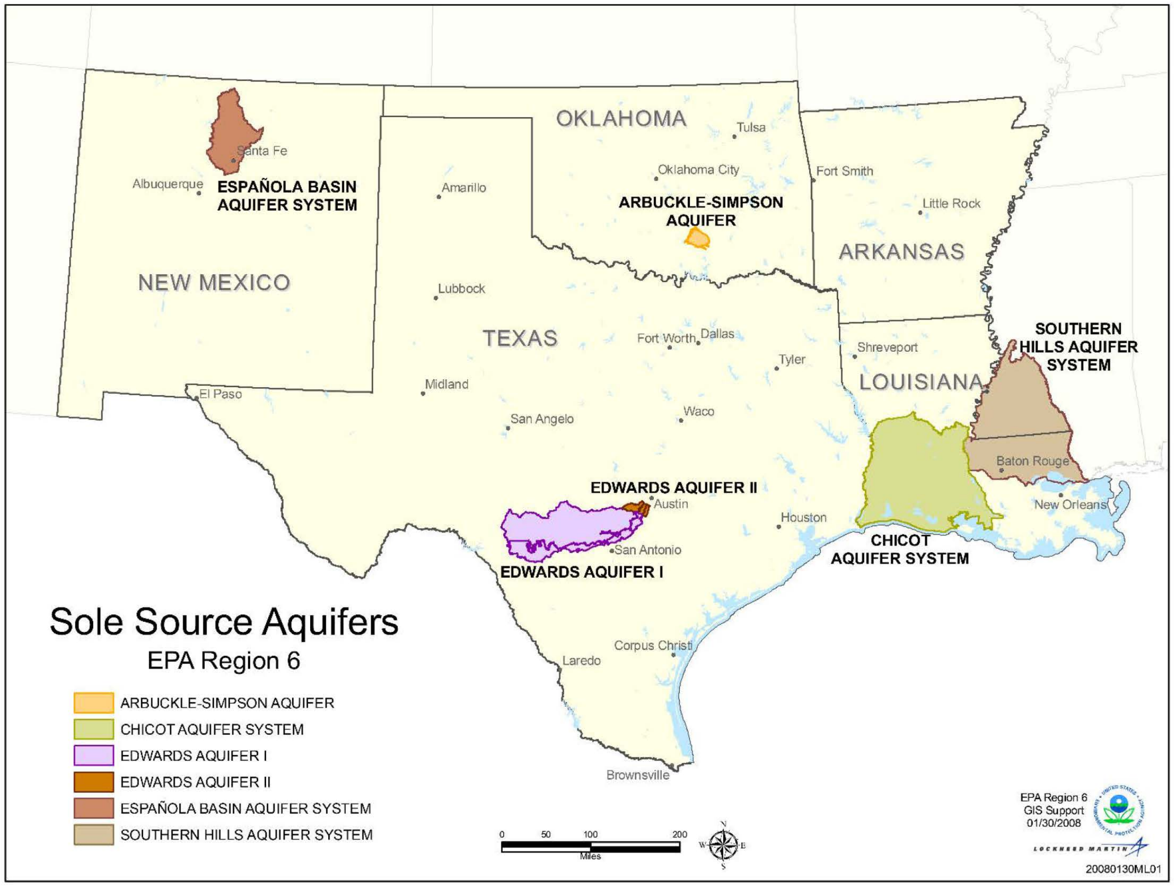
Source: Baker, 1979.

Figure 2.4.12-7
Regional Hydrogeologic Cross Section through the Gulf Coast Aquifer System



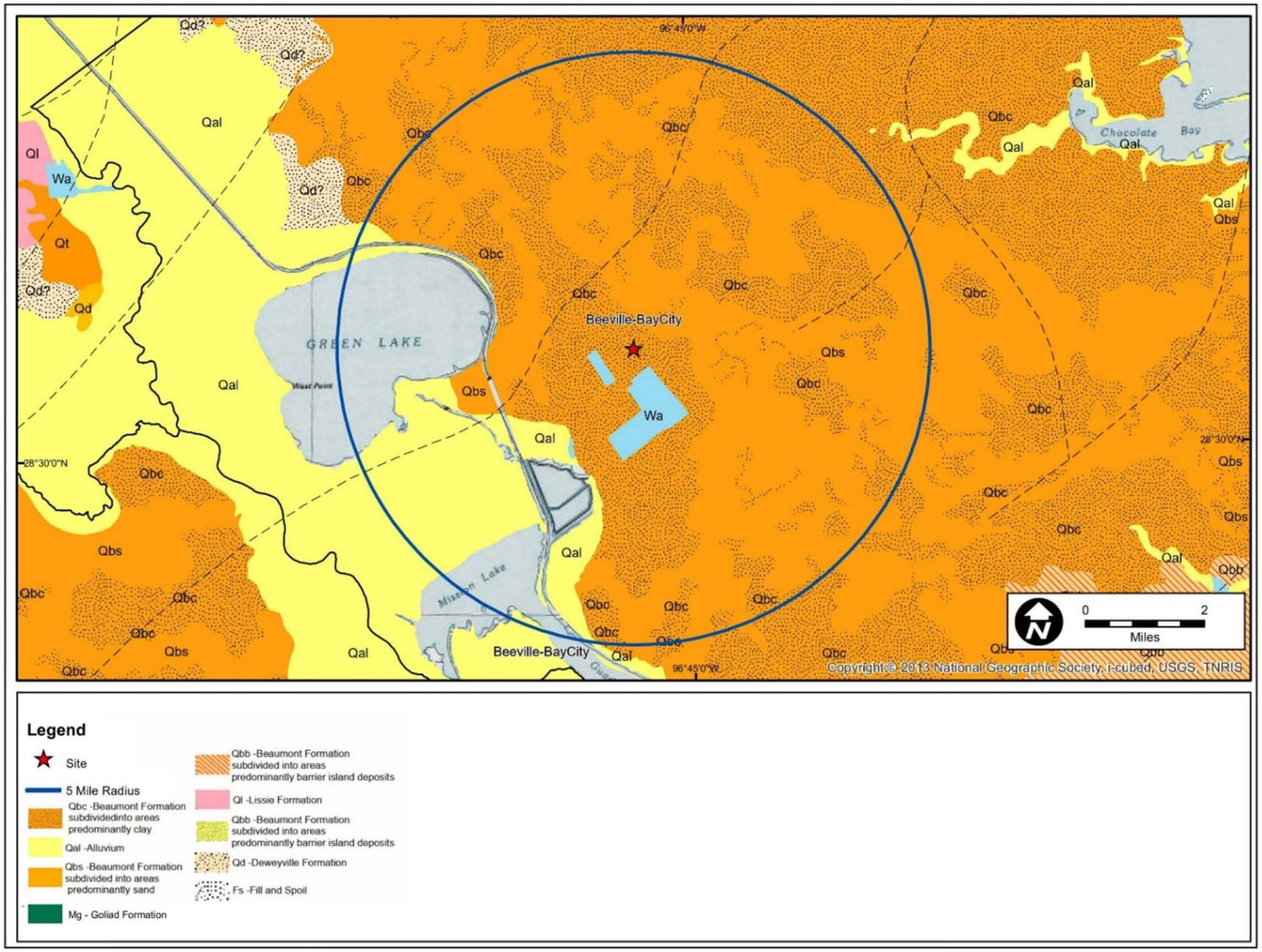
Source: Baker, 1979.

Figure 2.4.12-8
Sole Source Aquifers EPA Region 6



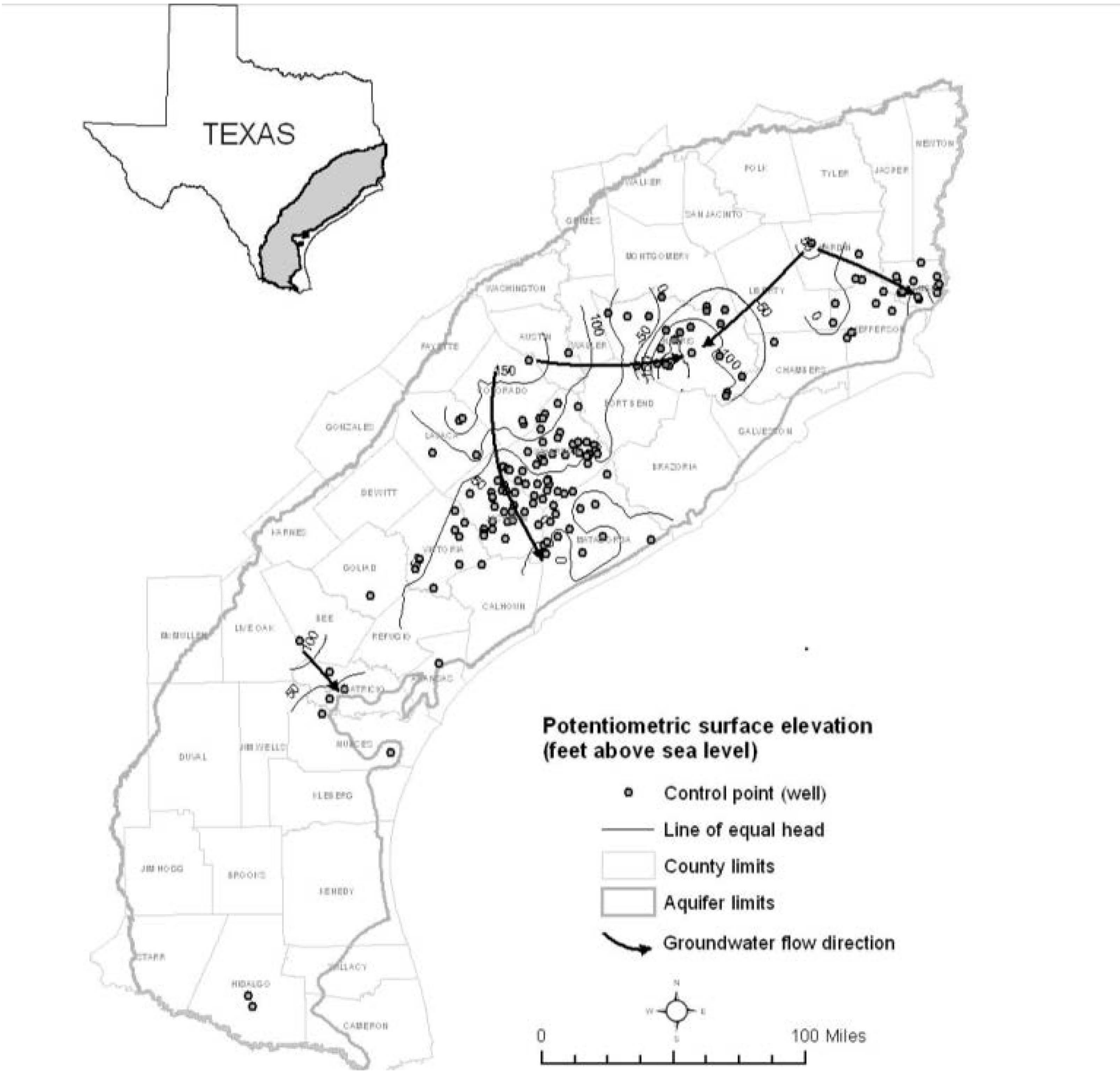
Source: EPA, 2024a.

Figure 2.4.12-9
Geological Map



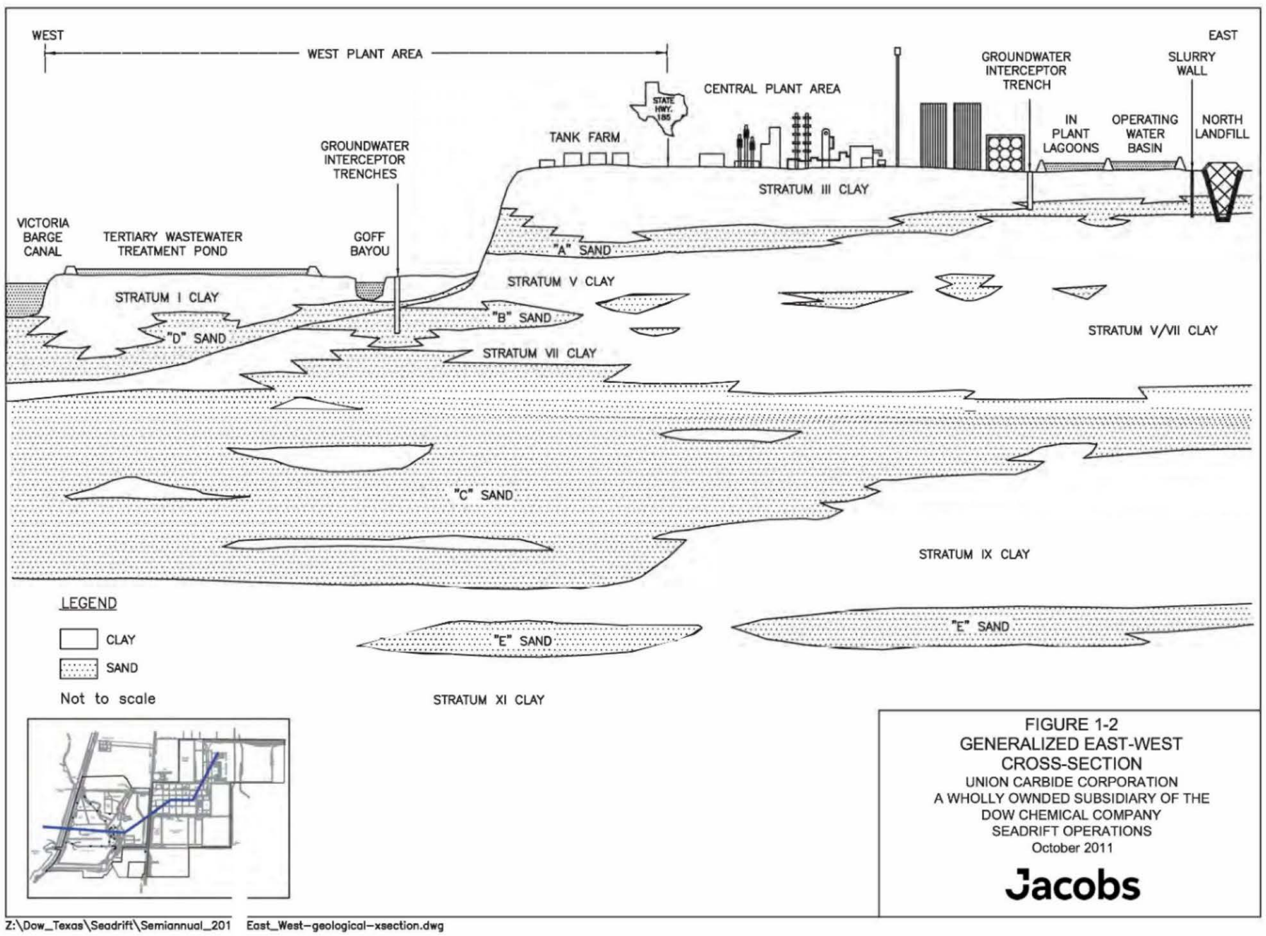
Source, USGS, 2024a.

Figure 2.4.12-10
Regional Potentiometric Surface Map – Chicot Aquifer, including Water Level Measurements from 2001 to 2005



Source: Chowdhury, et al., 2006.

Figure 2.4.12.11
Generalized East-West Cross Section Near Site



Source: Jacobs, 2025.

Figure 2.4.12-12
LMGS Monitoring Well Location Map

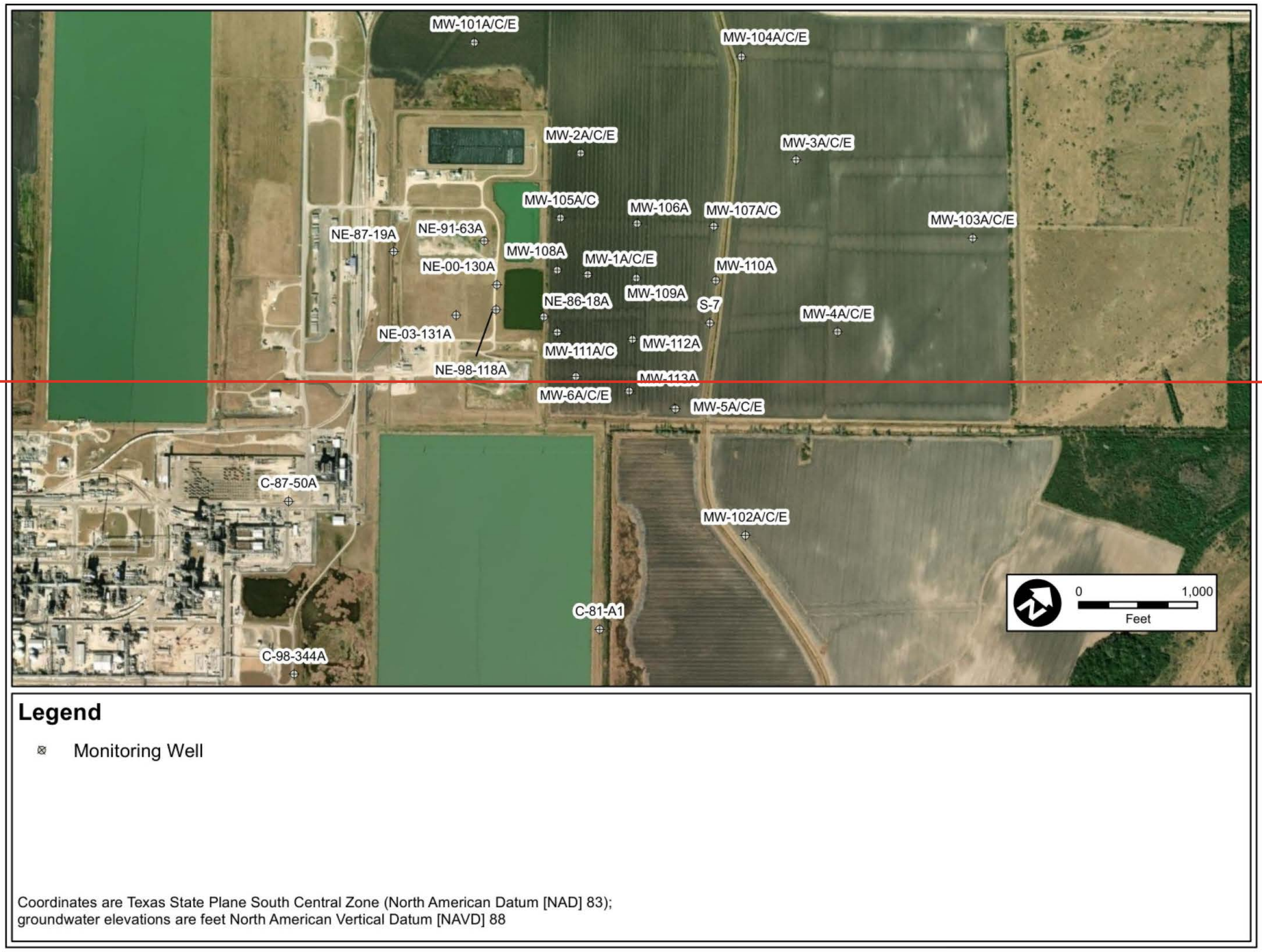
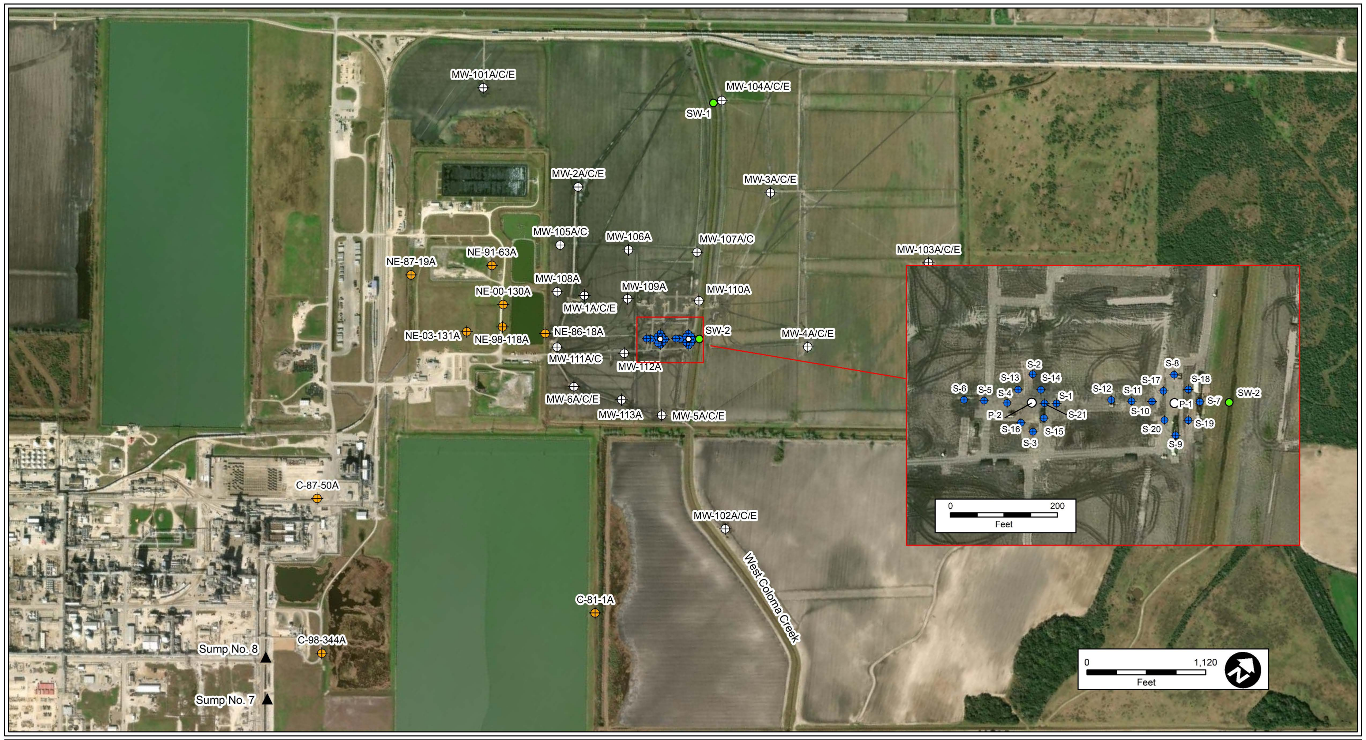


Figure 2.4.12-12
LMGS Monitoring Well Location Map



Legend

- Dow CGD Well
- Monitoring Well
- Pumping Well
- Sentinel Well
- Stilling Well
- Sump

Coordinates are Texas State Plane South Central Zone (North American Datum [NAD] 83);

CGD - Commercial grade dedication; Dow CGD well used for long term groundwater level monitoring

~~**Figure 2.4.12-13**~~
~~**Hydrostratigraphic Cross Section Location Map**~~

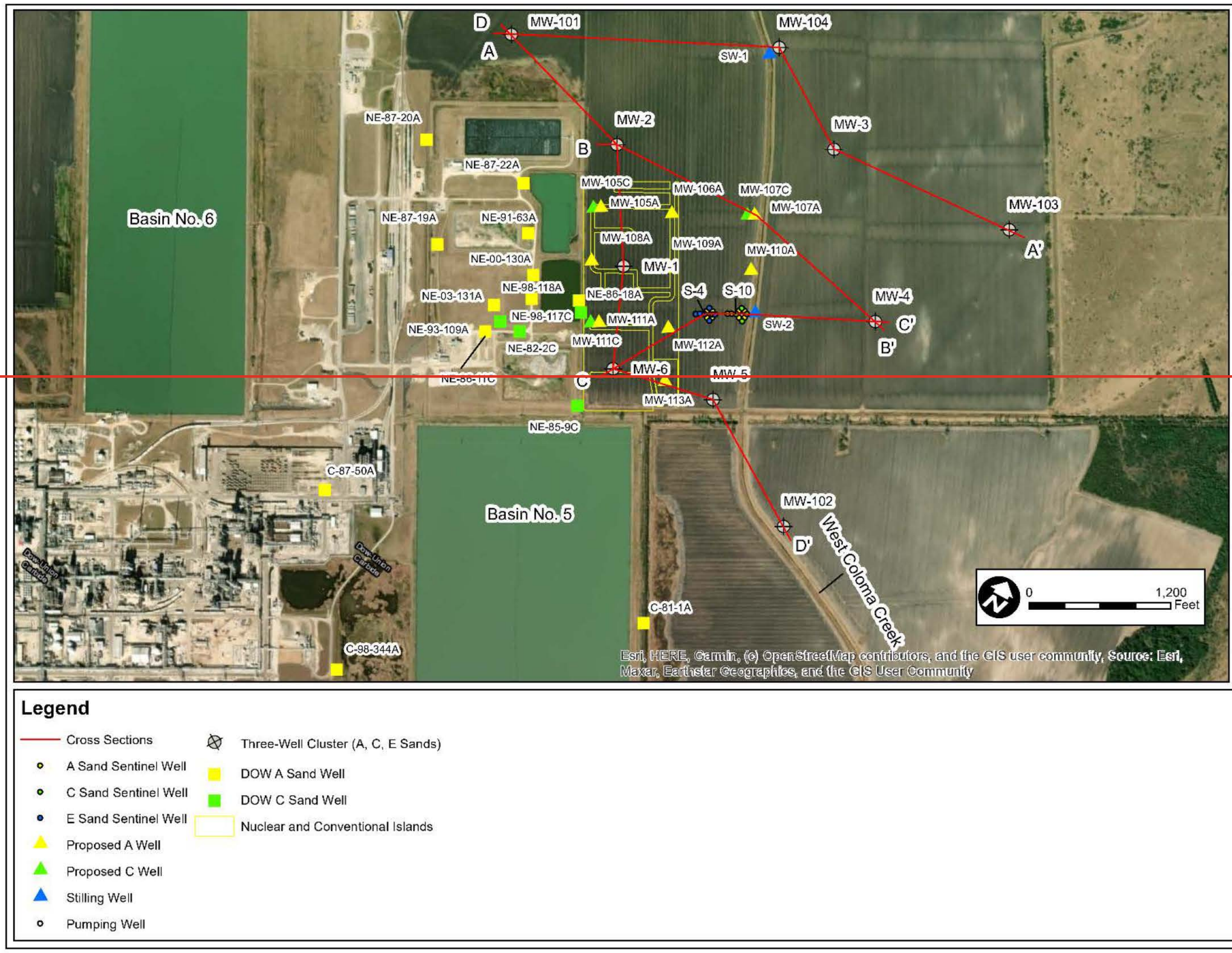


Figure 2.4.12-13
Hydrostratigraphic Cross Section Location Map

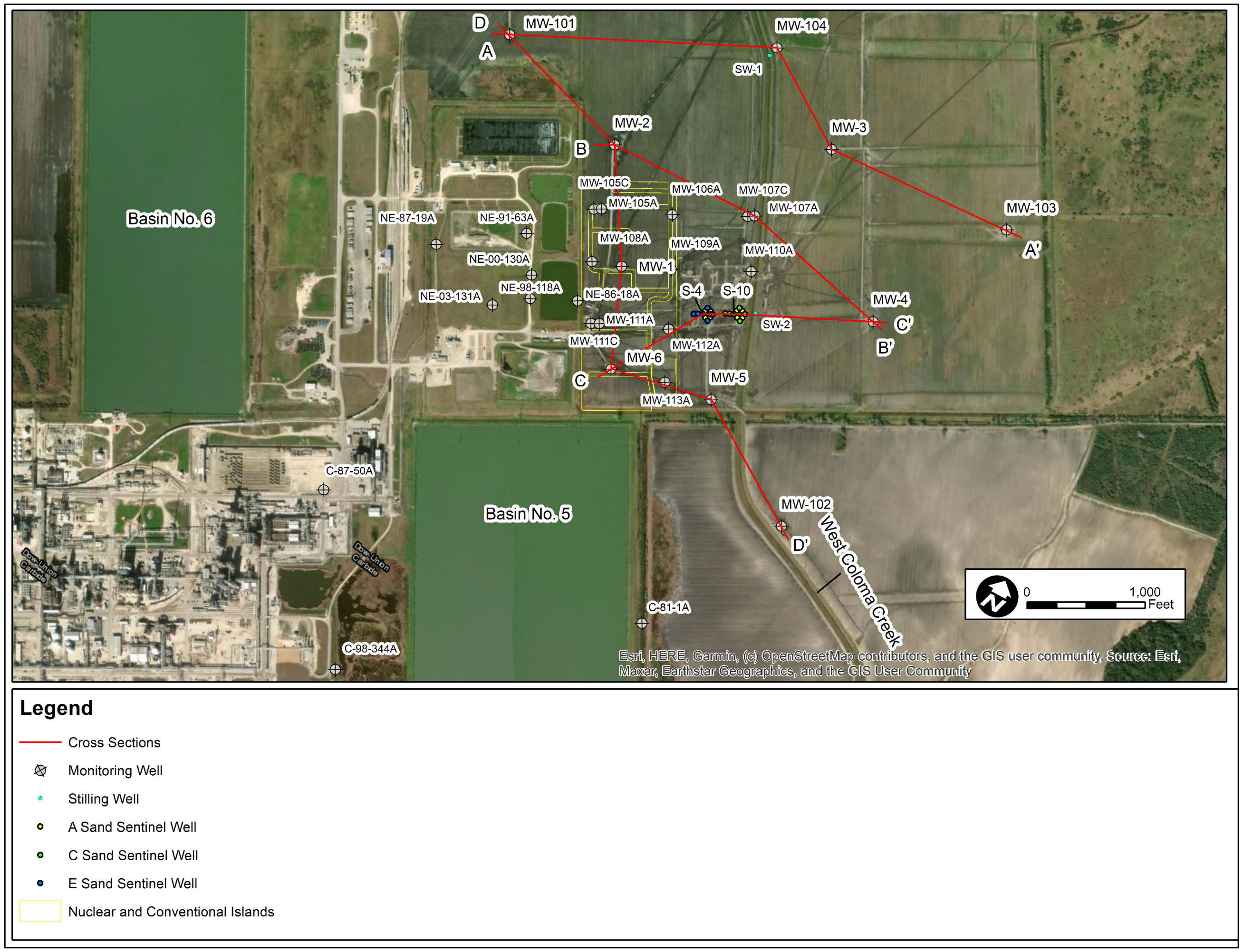


Figure 2.4.12-14
Hydrostratigraphic Cross Section A to A’

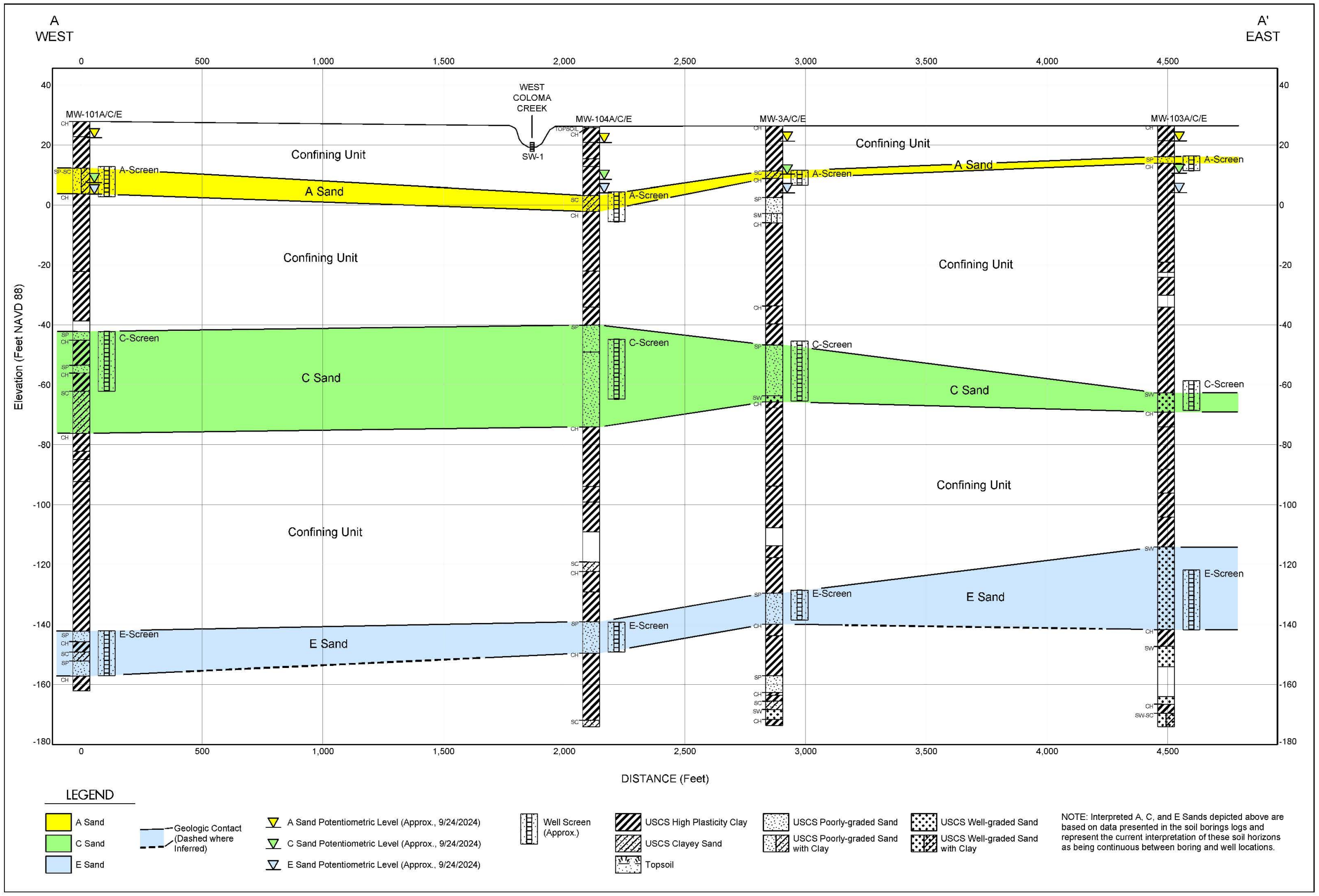


Figure 2.4.12-15
Hydrostratigraphic Cross Section B to B’

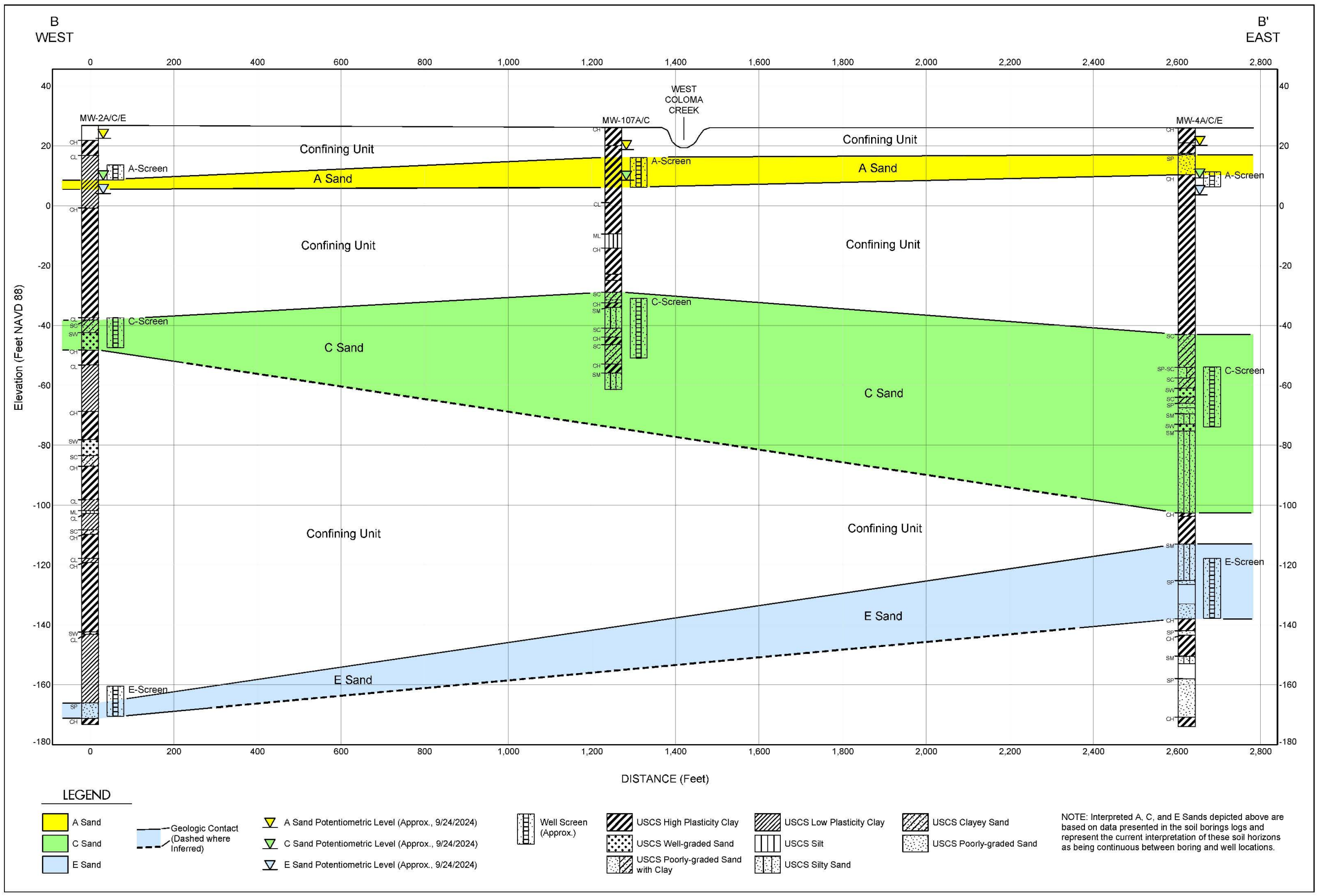


Figure 2.4.12-16
Hydrostratigraphic Cross Section C to C’

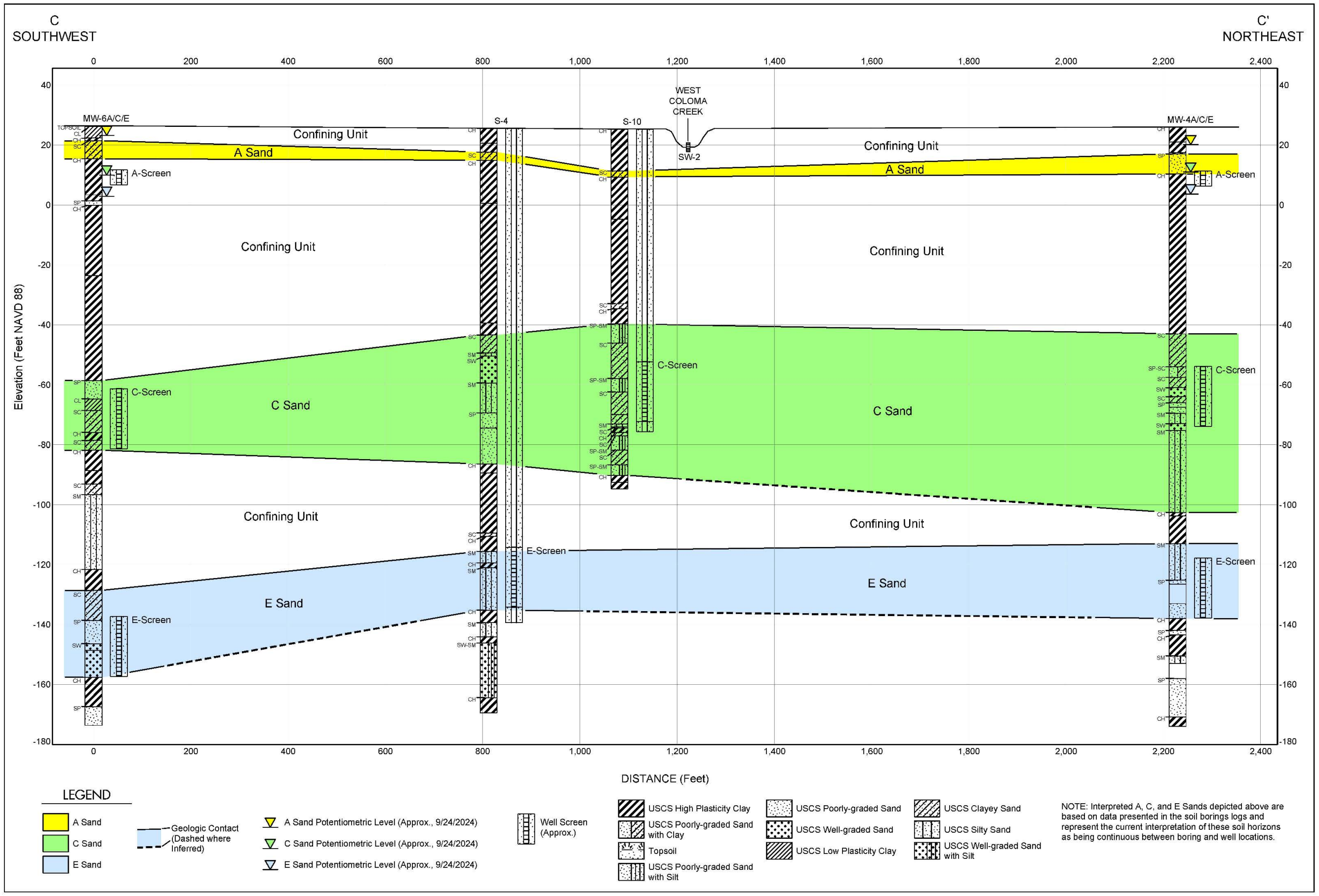


Figure 2.4.12-17
Hydrostratigraphic Cross Section D to D'

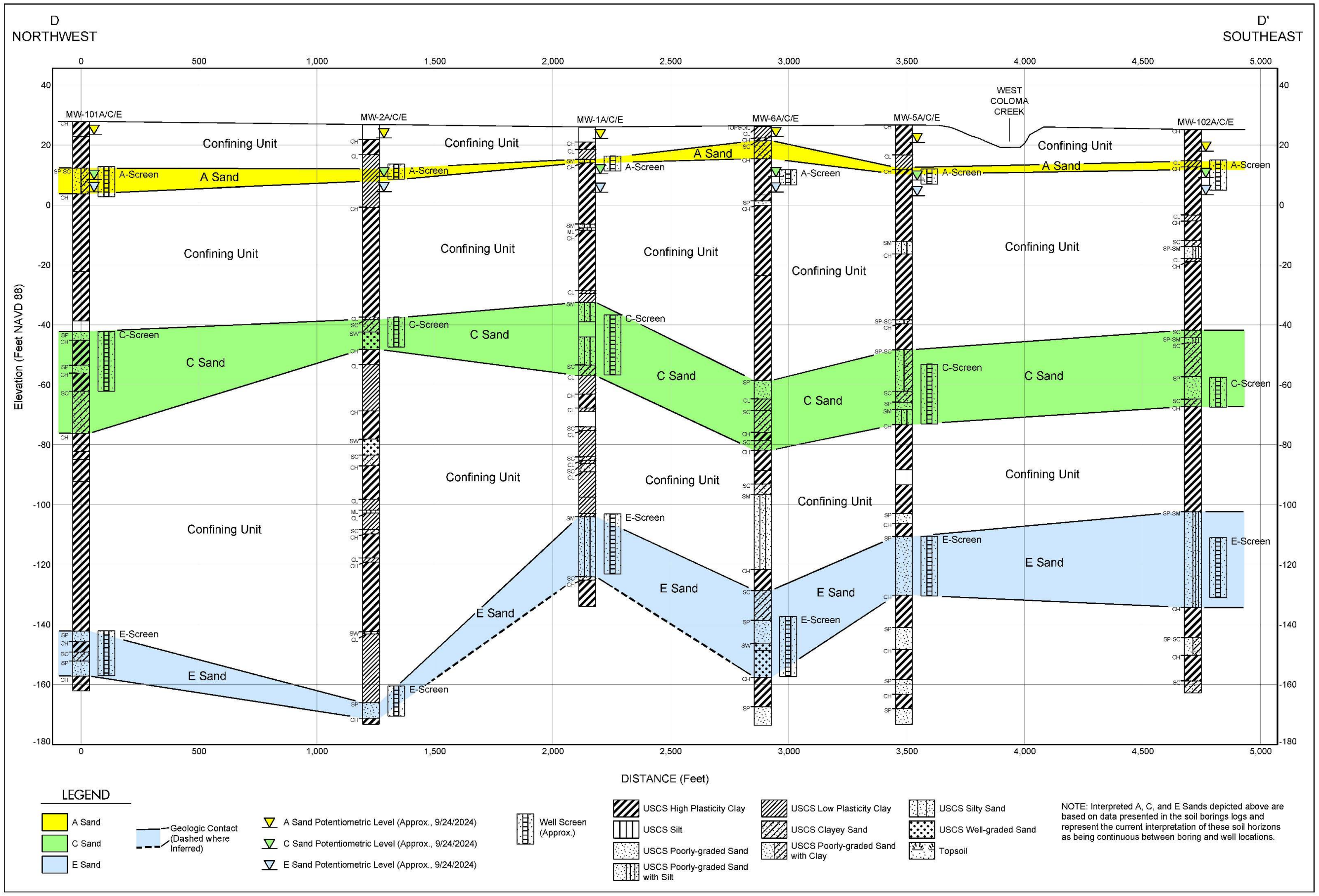
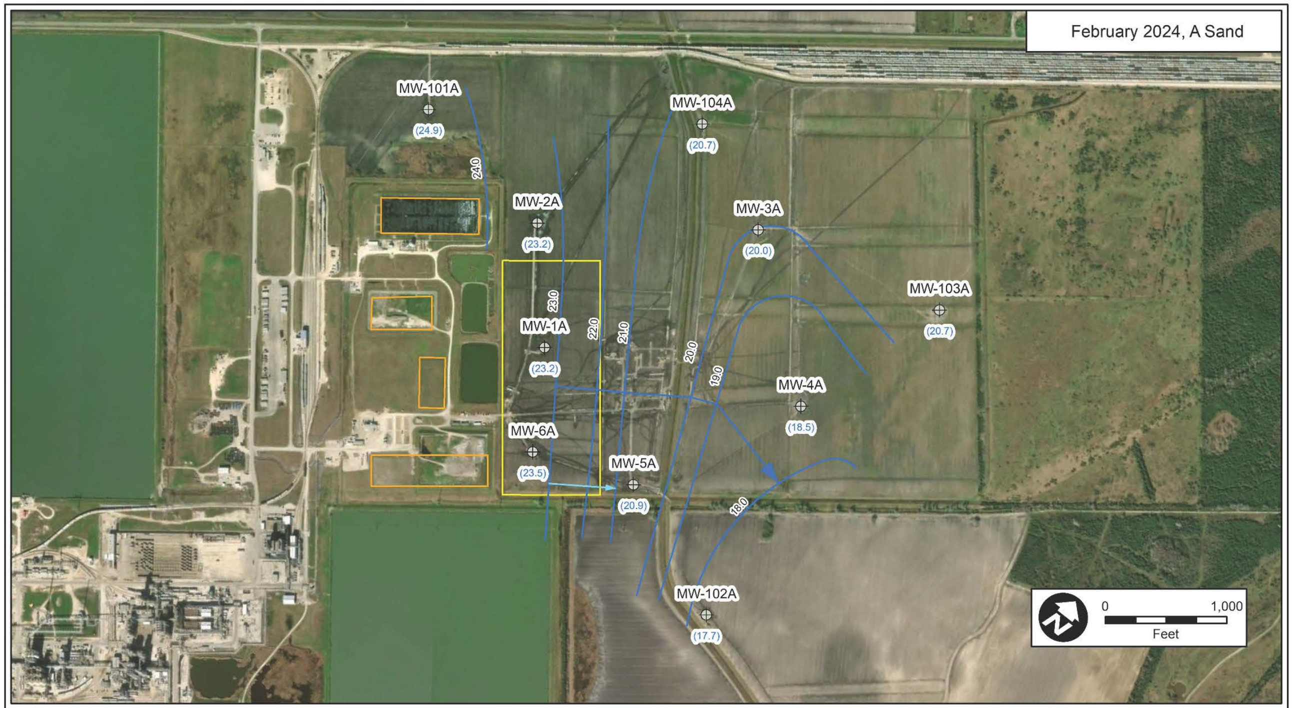


Figure 2.4.12-18
Potentiometric Surface Map, February 29, 2024 (A Sand)
(Sheet 1 of 57)



Legend

- Monitoring Well - A Sand
- Flow line representing distance to compute average horizontal gradient (i_h); i_h reported in feet per foot
- Flow line representing distance to compute maximum i_h; i_h reported in feet per foot
- Potentiometric Surface Contour Line
- North Landfill areas
- Long Mott Generating Station (LGMS)

Coordinates are Texas State Plane South Central Zone (North American Datum [NAD] 83);
Groundwater elevations are feet North American Vertical Datum [NAVD] 88

Figure 2.4.12-18
Potentiometric Surface Map, February 29, 2024 (C Sand)
(Sheet 2 of 57)

Legend

Monitoring Well - C Sand

Flow line representing distance to compute average horizontal gradient (i_h); i_h reported in feet per foot

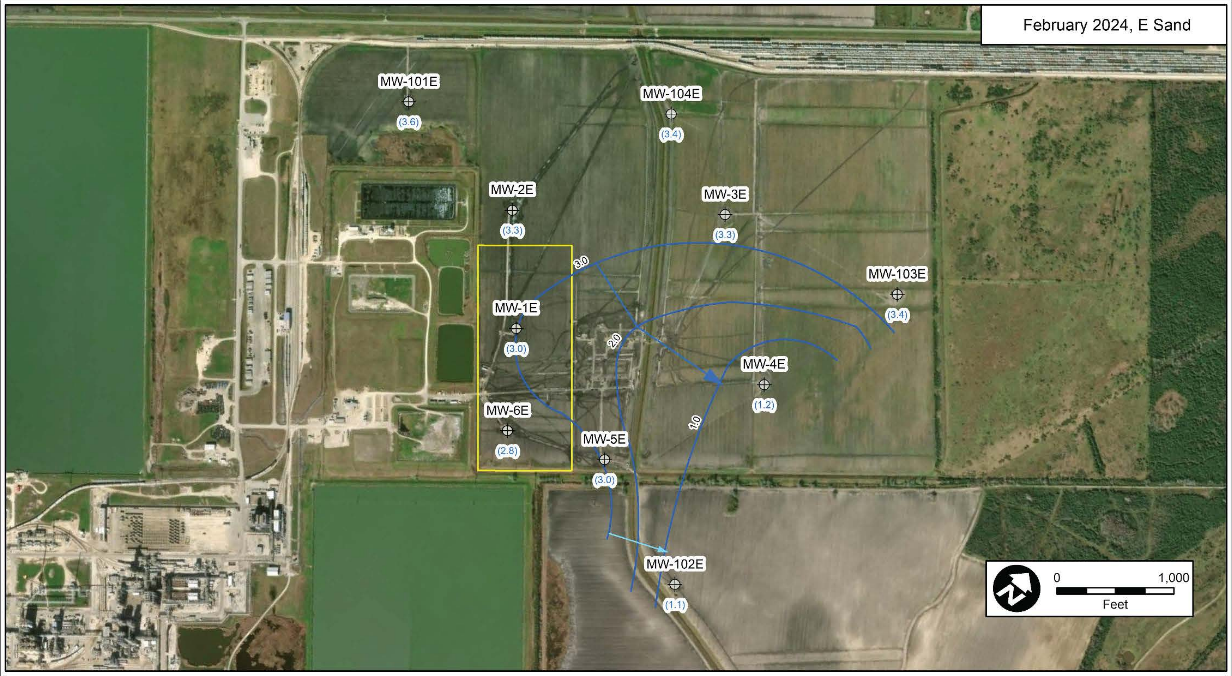
Flow line representing distance to compute maximum i_h; i_h reported in feet per foot

Potentiometric Surface Contour Line

Long Mott Generating Station (LGMS)

Coordinates are Texas State Plane South Central Zone (North American Datum [NAD] 83);
Groundwater elevations are feet North American Vertical Datum [NAVD] 88

Figure 2.4.12-18
Potentiometric Surface Map, February 29, 2024 (E Sand)
(Sheet 3 of 57)

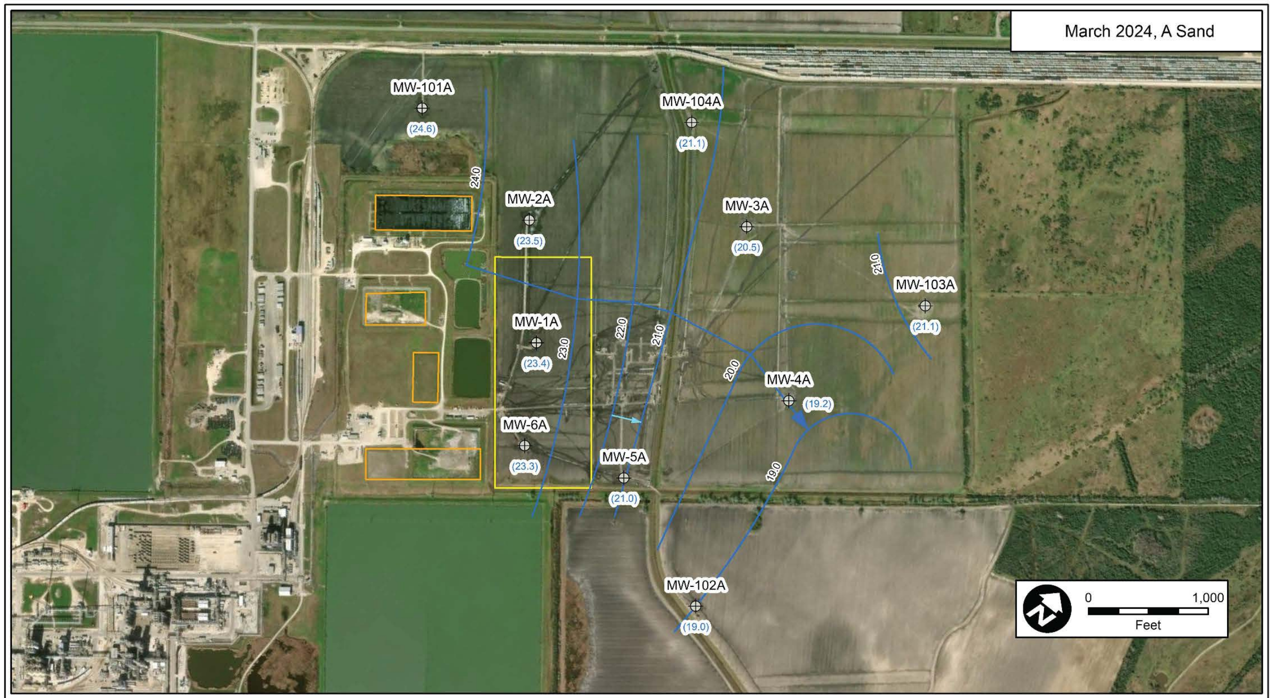


Legend

- Monitoring Well - E Sand
- Flow line representing distance to compute average horizontal gradient (i_h); i_h reported in feet per foot
- Flow line representing distance to compute maximum i_h; i_h reported in feet per foot
- Potentiometric Surface Contour Line
- Long Mott Generating Station (LGMS)

Coordinates are Texas State Plane South Central Zone (North American Datum [NAD] 83);
Groundwater elevations are feet North American Vertical Datum [NAVD] 88

Figure 2.4.12-18
Potentiometric Surface Map, March 25, 2024 (A Sand)
(Sheet 4 of 57)



Legend

- Monitoring Well - A Sand
- Flow line representing distance to compute average horizontal gradient (i_h); i_h reported in feet per foot
- Flow line representing distance to compute maximum i_h; i_h reported in feet per foot
- Potentiometric Surface Contour Line
- Long Mott Generating Station (LGMS)
- North Landfill areas

Coordinates are Texas State Plane South Central Zone (North American Datum [NAD] 83);
Groundwater elevations are feet North American Vertical Datum [NAVD] 88

Figure 2.4.12-18
Potentiometric Surface Map, March 25, 2024 (C Sand)
(Sheet 5 of 57)

Legend

Monitoring Well - C Sand

Flow line representing distance to compute average horizontal gradient (i_h); i_h reported in feet per foot

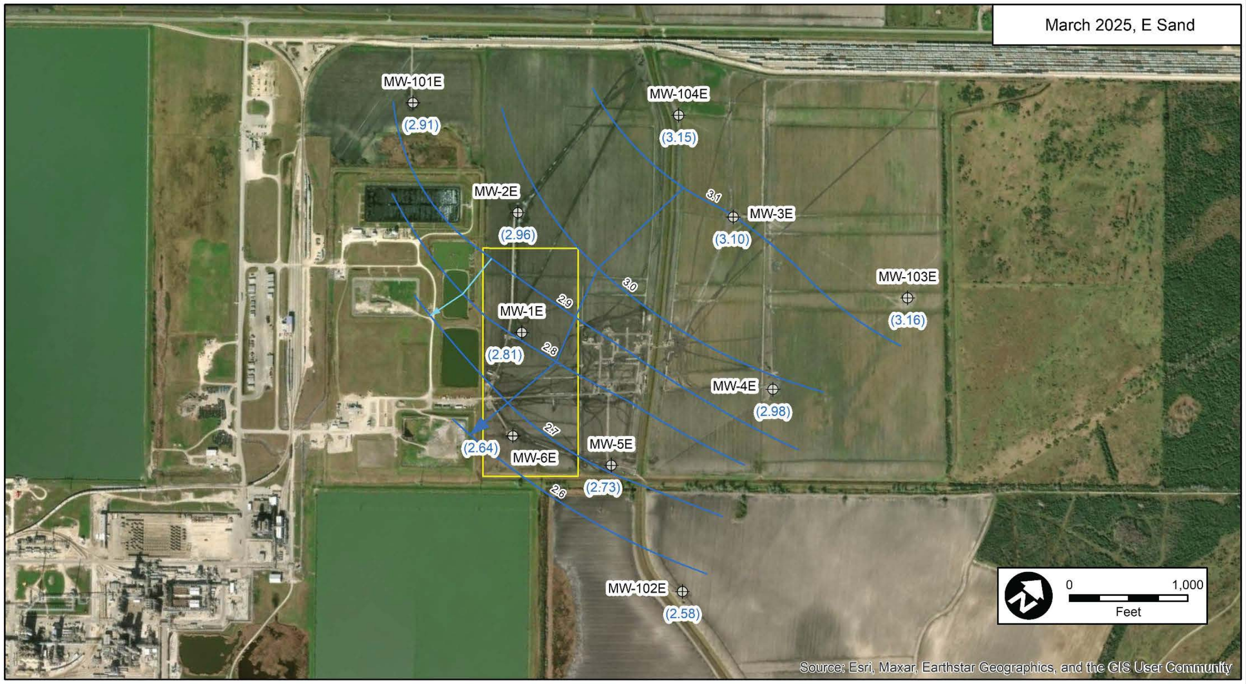
Flow line representing distance to compute maximum i_h; i_h reported in feet per foot

Potentiometric Surface Contour Line

Long Mott Generating Station (LGMS)

Coordinates are Texas State Plane South Central Zone (North American Datum [NAD] 83);
Groundwater elevations are feet North American Vertical Datum [NAVD] 88

Figure 2.4.12-18
Potentiometric Surface Map, March 25, 2024 (E Sand)
(Sheet 6 of 57)

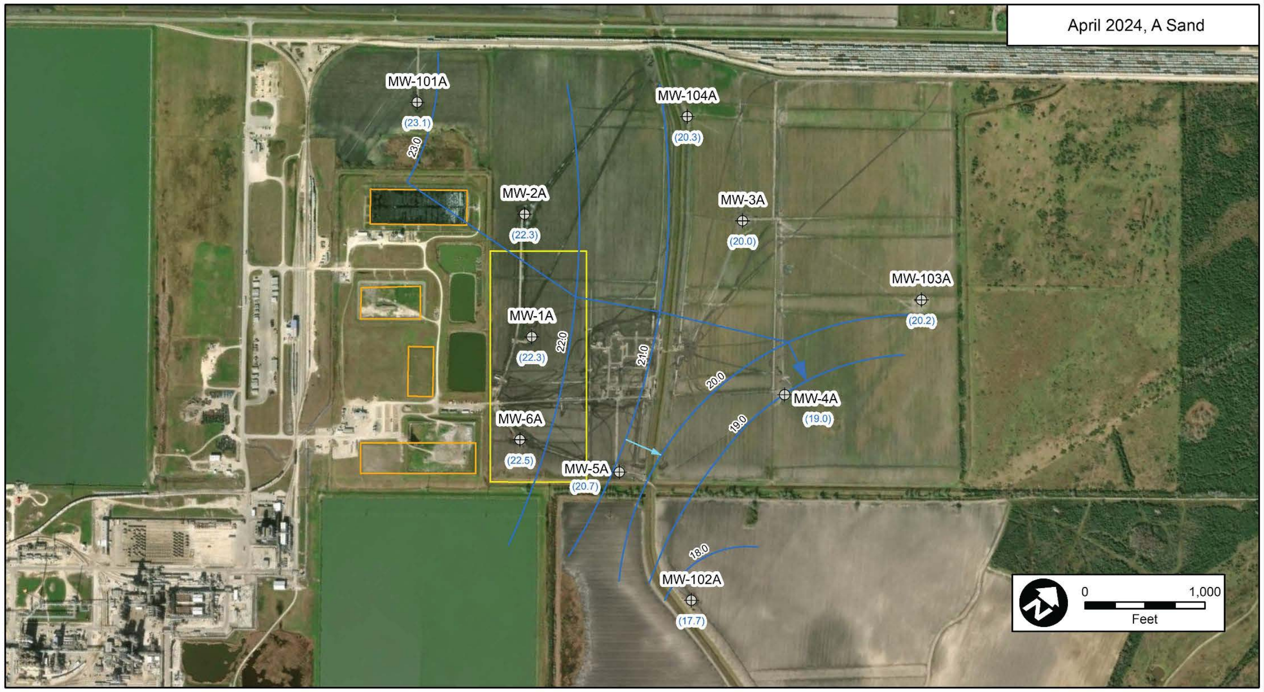


Legend

- Monitoring Well - E Sand
- Flow line representing distance to compute average horizontal gradient (i_h); i_h reported in feet per foot
- Flow line representing distance to compute maximum i_h; i_h reported in feet per foot
- Potentiometric Surface Contour Line
- Long Mott Generating Station (LGMS)

Coordinates are Texas State Plane South Central Zone (North American Datum [NAD] 83);
Groundwater elevations are feet North American Vertical Datum [NAVD] 88

Figure 2.4.12-18
Potentiometric Surface Map, April 22, 2024 (A Sand)
(Sheet 7 of 57)



Legend

Monitoring Well - A Sand

Flow line representing distance to compute average horizontal gradient (i_h); i_h reported in feet per foot

Flow line representing distance to compute maximum i_h; i_h reported in feet per foot

Potentiometric Surface Contour Line

North Landfill areas

Long Mott Generating Station (LGMS)

Coordinates are Texas State Plane South Central Zone (North American Datum [NAD] 83);
Groundwater elevations are feet North American Vertical Datum [NAVD] 88

Figure 2.4.12-18
Potentiometric Surface Map, April 22, 2024 (C Sand)
(Sheet 8 of 57)

Legend

Monitoring Well - C Sand

Flow line representing distance to compute average horizontal gradient (i_h); i_h reported in feet per foot

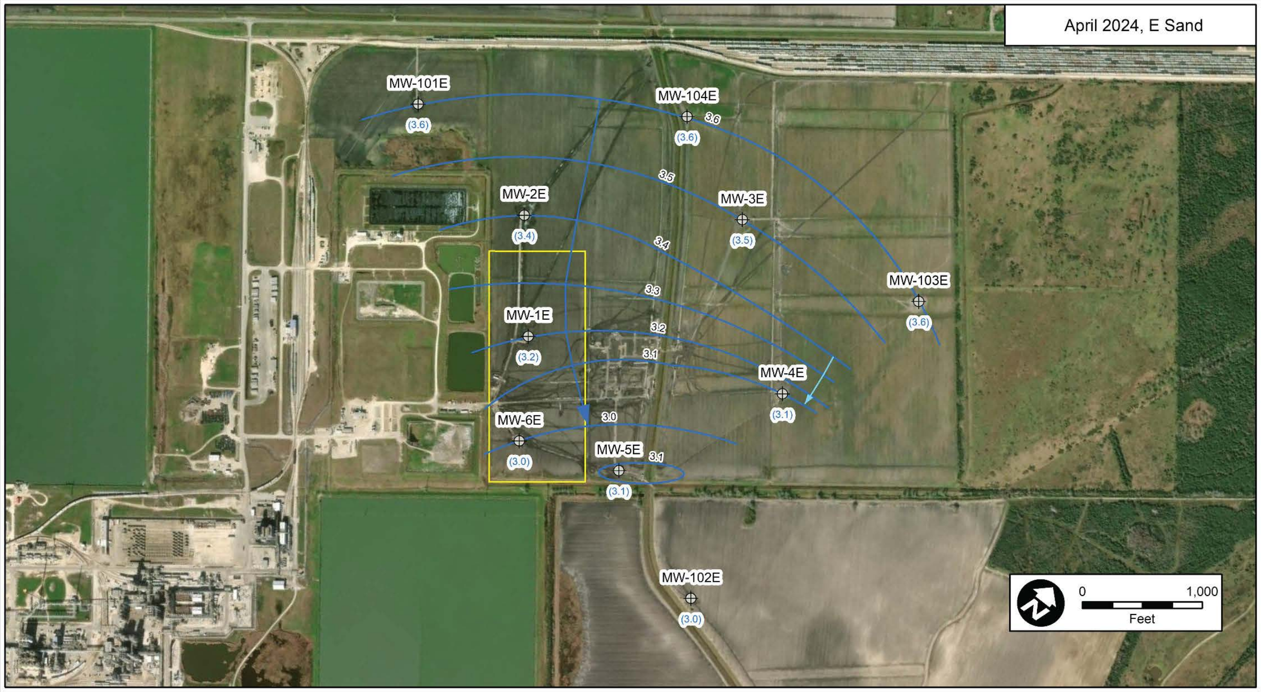
Flow line representing distance to compute maximum i_h; i_h reported in feet per foot

Potentiometric Surface Contour Line

Long Mott Generating Station (LGMS)

Coordinates are Texas State Plane South Central Zone (North American Datum [NAD] 83);
Groundwater elevations are feet North American Vertical Datum [NAVD] 88

Figure 2.4.12-18
Potentiometric Surface Map, April 22, 2024 (E Sand)
(Sheet 9 of 57)



Legend

Monitoring Well - E Sand

Flow line representing distance to compute average horizontal gradient (i_h); i_h reported in feet per foot

Flow line representing distance to compute maximum i_h; i_h reported in feet per foot

Potentiometric Surface Contour Line

Long Mott Generating Station (LGMS)

Coordinates are Texas State Plane South Central Zone (North American Datum [NAD] 83);
Groundwater elevations are feet North American Vertical Datum [NAVD] 88

Figure 2.4.12-18
Potentiometric Surface Map, May 21, 2024 (A Sand)
(Sheet 10 of 57)

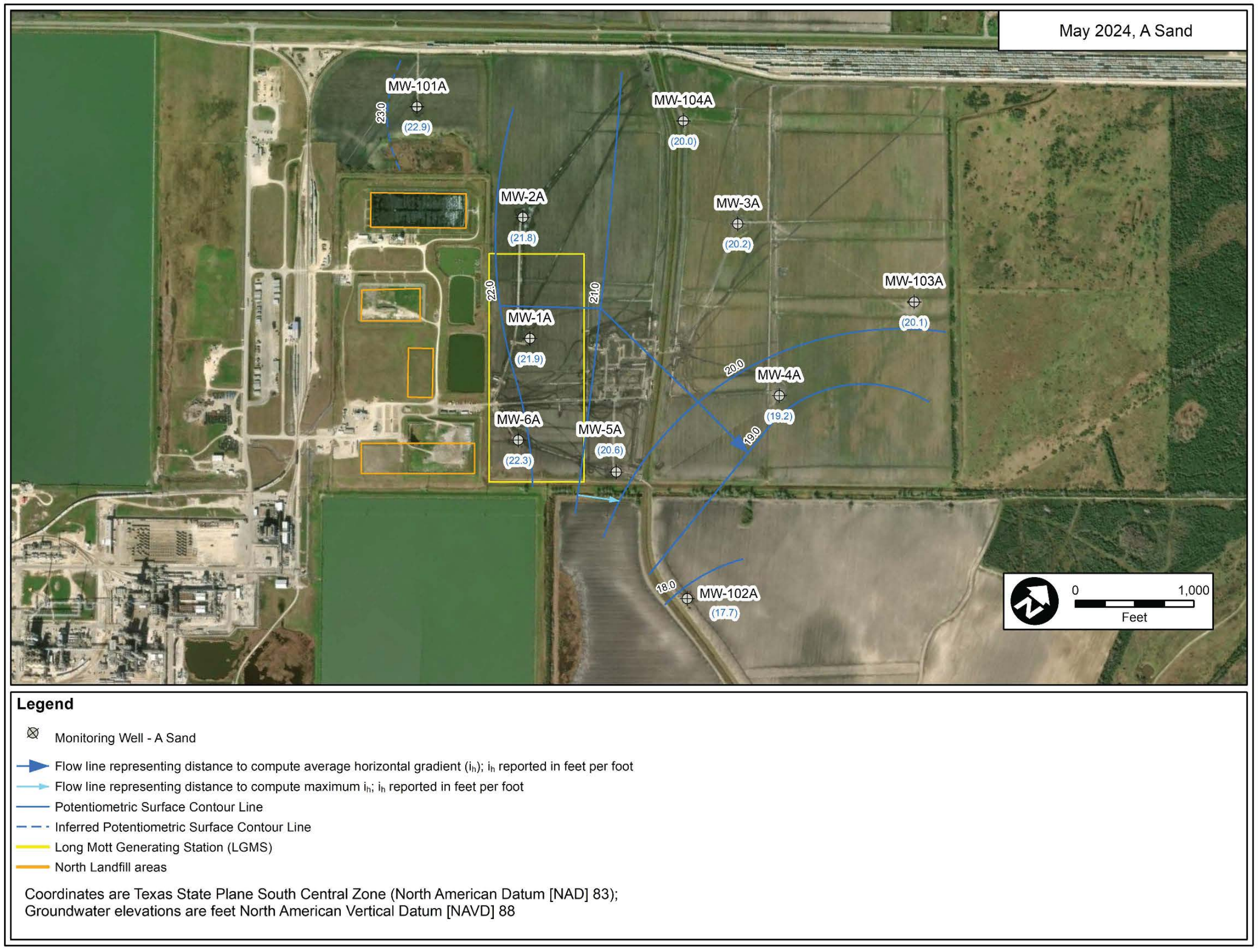


Figure 2.4.12-18
Potentiometric Surface Map, May 21, 2024 (C Sand)
(Sheet 11 of 57)

Legend

Monitoring Well - C Sand

Flow line representing distance to compute average horizontal gradient (i_h); i_h reported in feet per foot

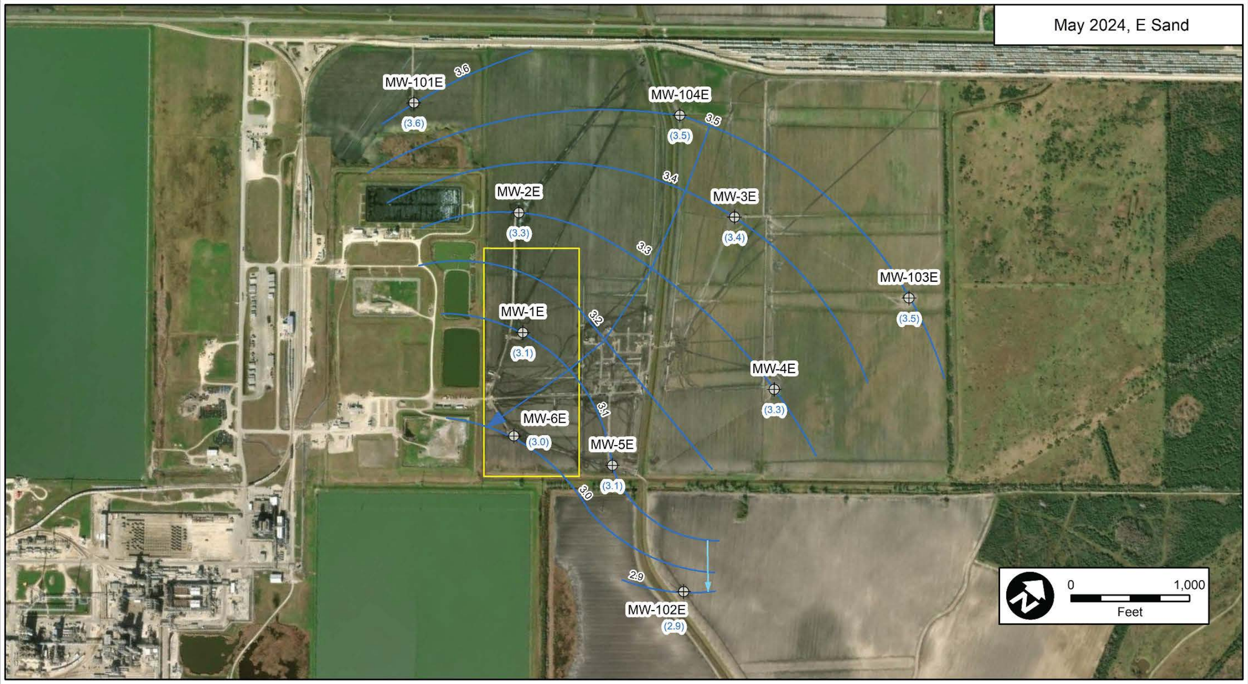
Flow line representing distance to compute maximum i_h; i_h reported in feet per foot

Potentiometric Surface Contour Line

Long Mott Generating Station (LGMS)

Coordinates are Texas State Plane South Central Zone (North American Datum [NAD] 83);
Groundwater elevations are feet North American Vertical Datum [NAVD] 88

Figure 2.4.12-18
Potentiometric Surface Map, May 21, 2024 (E Sand)
(Sheet 12 of 57)

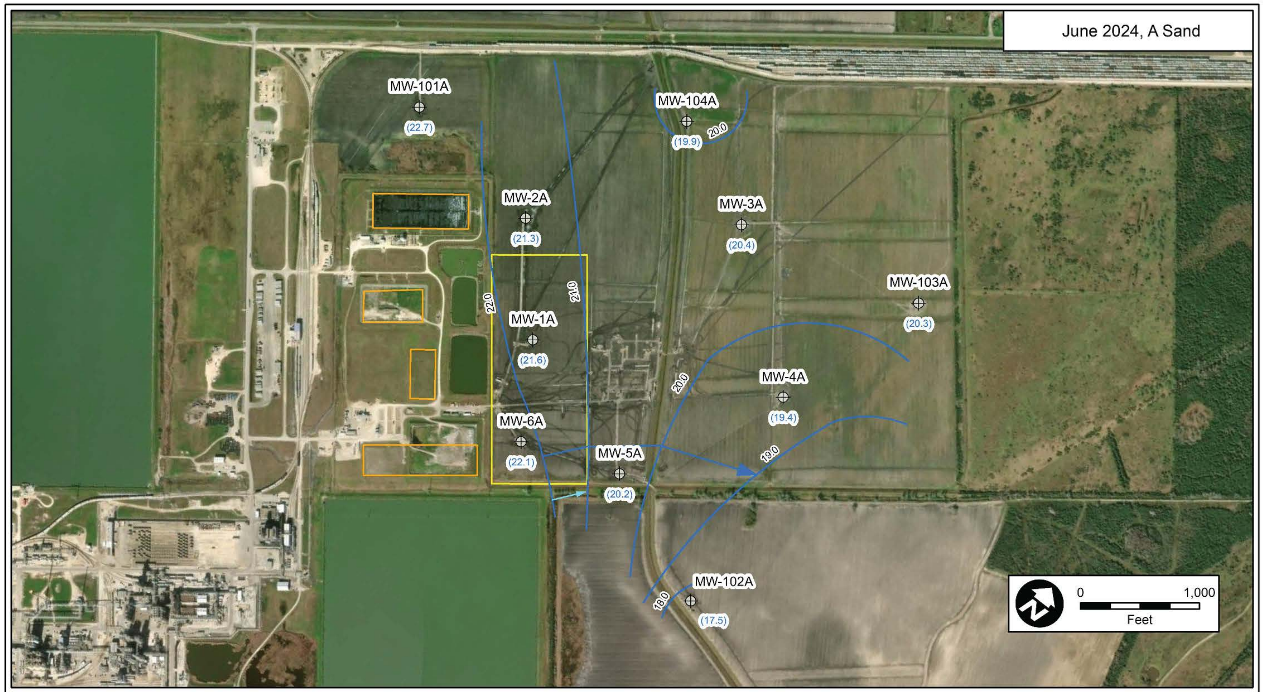


Legend

Monitoring Well - E Sand
Flow line representing distance to compute average horizontal gradient (i_h); i_h reported in feet per foot
Flow line representing distance to compute maximum i_h; i_h reported in feet per foot
Potentiometric Surface Contour Line
Long Mott Generating Station (LGMS)

Coordinates are Texas State Plane South Central Zone (North American Datum [NAD] 83);
Groundwater elevations are feet North American Vertical Datum [NAVD] 88

Figure 2.4.12-18
Potentiometric Surface Map, June 17, 2024 (A Sand)
(Sheet 13 of 57)

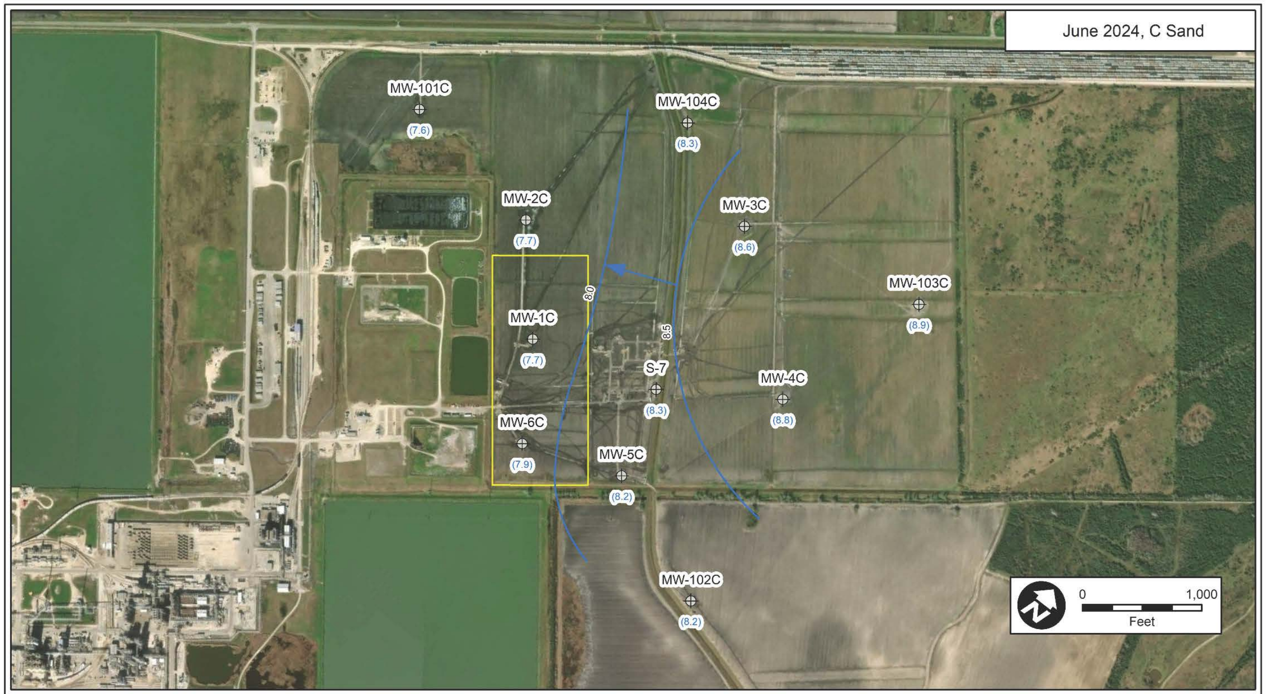


Legend

- Monitoring Well - A Sand
- Flow line representing distance to compute average horizontal gradient (i_h); i_h reported in feet per foot
- Flow line representing distance to compute maximum i_h; i_h reported in feet per foot
- Potentiometric Surface Contour Line
- North Landfill areas
- Long Mott Generating Station (LGMS)

Coordinates are Texas State Plane South Central Zone (North American Datum [NAD] 83);
Groundwater elevations are feet North American Vertical Datum [NAVD] 88

Figure 2.4.12-18
Potentiometric Surface Map, June 17, 2024 (C Sand)
(Sheet 14 of 57)

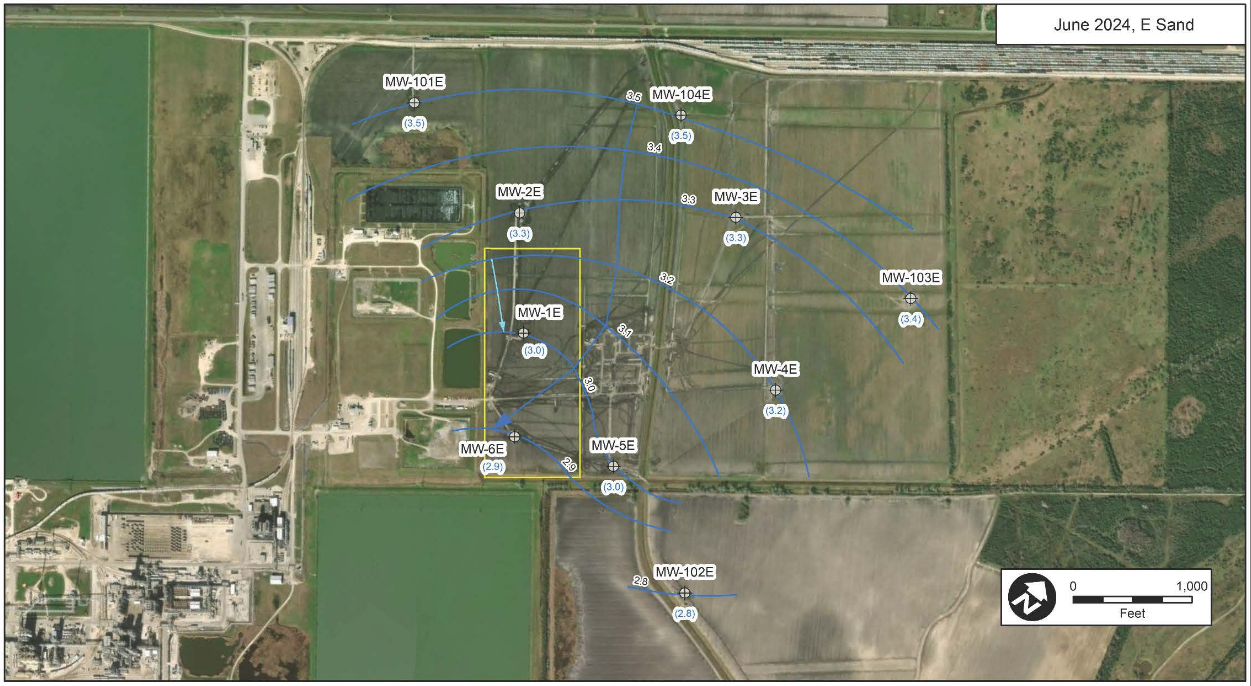


Legend

- Monitoring Well - C Sand
- Flow line representing distance to compute average horizontal gradient (i_h); i_h reported in feet per foot
- Potentiometric Surface Contour Line
- Long Mott Generating Station (LGMS)

Coordinates are Texas State Plane South Central Zone (North American Datum [NAD] 83);
Groundwater elevations are feet North American Vertical Datum [NAVD] 88

Figure 2.4.12-18
Potentiometric Surface Map, June 17, 2024 (E Sand)
(Sheet 15 of 57)

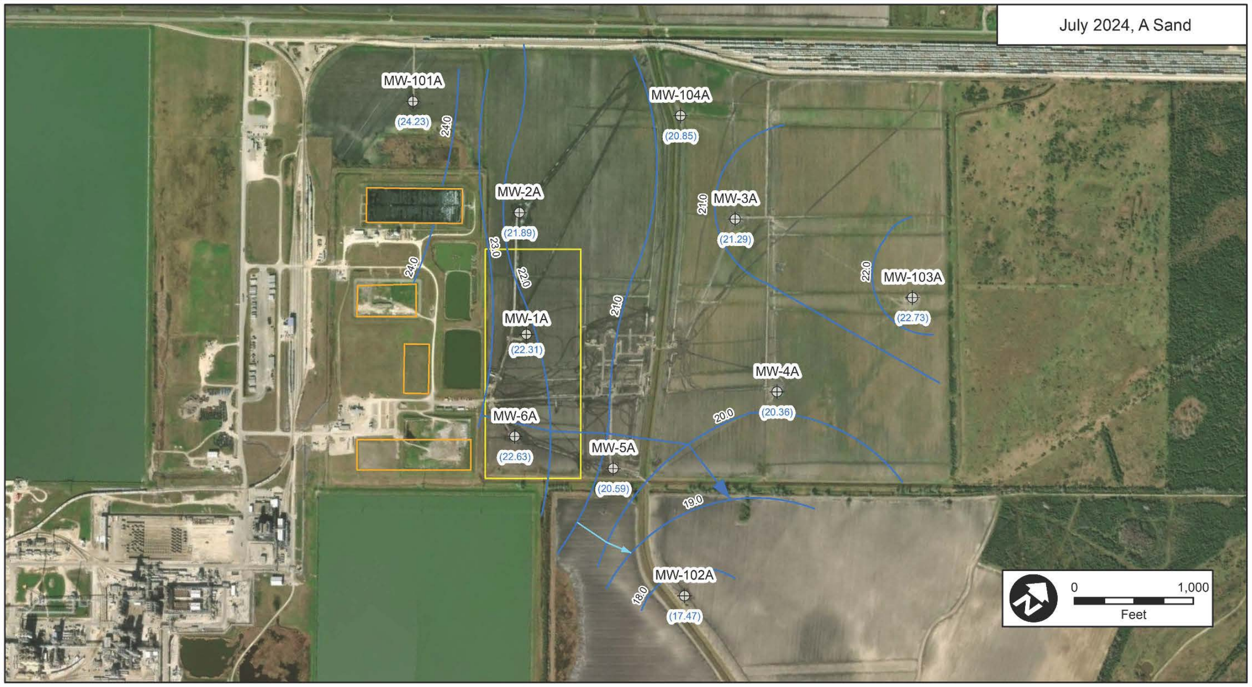


Legend

- Monitoring Well - E Sand
- Flow line representing distance to compute average horizontal gradient (i_h); i_h reported in feet per foot
- Flow line representing distance to compute maximum i_h; i_h reported in feet per foot
- Potentiometric Surface Contour Line
- Long Mott Generating Station (LGMS)

Coordinates are Texas State Plane South Central Zone (North American Datum [NAD] 83);
Groundwater elevations are feet North American Vertical Datum [NAVD] 88

Figure 2.4.12-18
Potentiometric Surface Map, July 4, 2024 (A Sand)
(Sheet 16 of 57)



Legend

Monitoring Well - A Sand

Flow line representing distance to compute average horizontal gradient (i_h); i_h reported in feet per foot

Flow line representing distance to compute maximum i_h; i_h reported in feet per foot

Potentiometric Surface Contour Line

North Landfill areas; groundwater not contoured due to uncertainty related to barrier wall or liner/groundwater interactions

Long Mott Generating Station (LGMS)

Coordinates are Texas State Plane South Central Zone (North American Datum [NAD] 83);
Groundwater elevations are feet North American Vertical Datum [NAVD] 88

Figure 2.4.12-18
Potentiometric Surface Map, July 4, 2024 (C Sand)
(Sheet 17 of 57)

Legend

Monitoring Well - C Sand

Flow line representing distance to compute average horizontal gradient (i_h); i_h reported in feet per foot

Flow line representing distance to compute maximum i_h; i_h reported in feet per foot

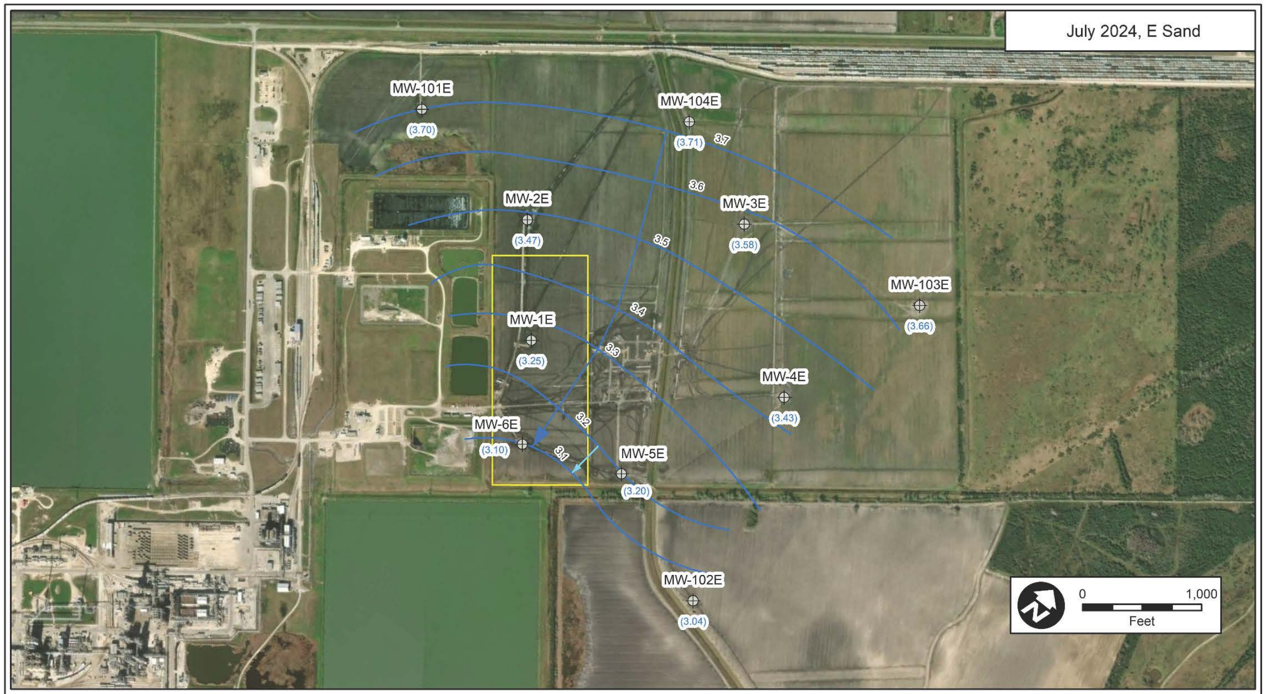
Potentiometric Surface Contour Line

Inferred Potentiometric Surface Contour Line

Long Mott Generating Station (LGMS)

Coordinates are Texas State Plane South Central Zone (North American Datum [NAD] 83);
Groundwater elevations are feet North American Vertical Datum [NAVD] 88

Figure 2.4.12-18
Potentiometric Surface Map, July 4, 2024 (E Sand)
(Sheet 18 of 57)



Legend

Monitoring Well - E Sand

Flow line representing distance to compute average horizontal gradient (i_h); i_h reported in feet per foot

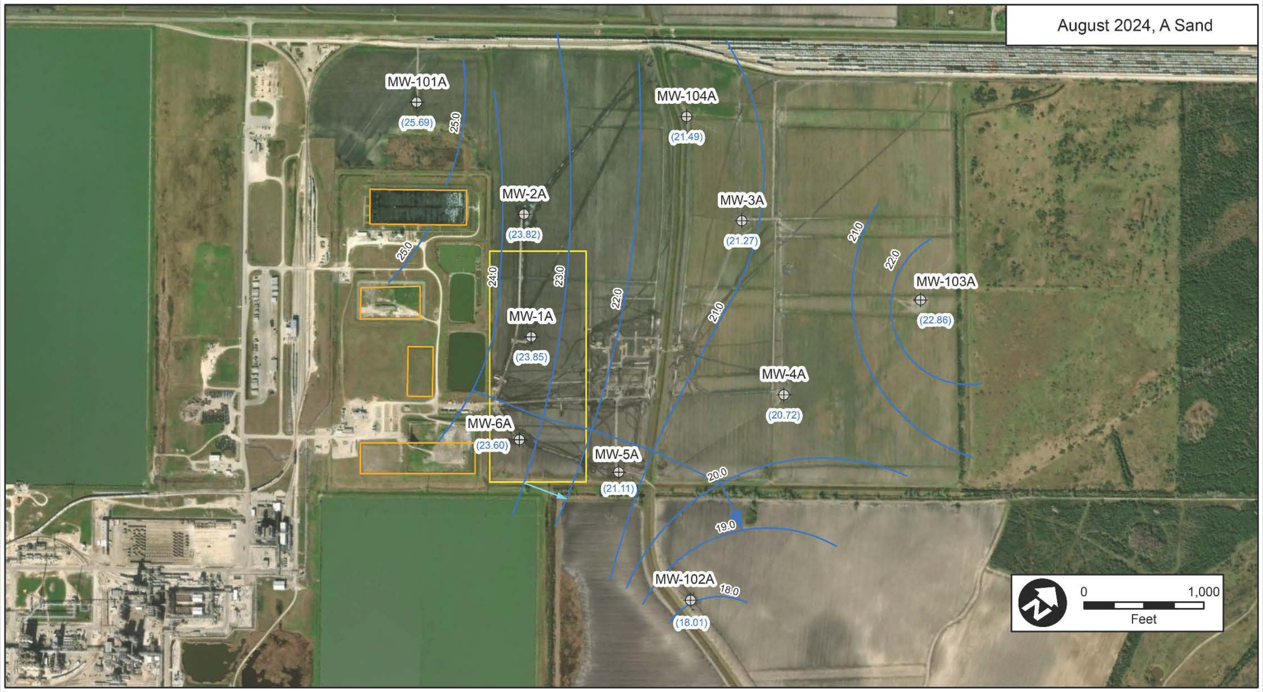
Flow line representing distance to compute maximum i_h; i_h reported in feet per foot

Potentiometric Surface Contour Line

Long Mott Generating Station (LGMS)

Coordinates are Texas State Plane South Central Zone (North American Datum [NAD] 83);
Groundwater elevations are feet North American Vertical Datum [NAVD] 88

Figure 2.4.12-18
Potentiometric Surface Map, August 4, 2024 (A Sand)
(Sheet 19 of 57)



Legend

Monitoring Well - A Sand

Flow line representing distance to compute average horizontal gradient (i_h); i_h reported in feet per foot

Flow line representing distance to compute maximum i_h; i_h reported in feet per foot

Potentiometric Surface Contour Line

North Landfill areas; groundwater not contoured due to uncertainty related to barrier wall or liner/groundwater interactions

Long Mott Generating Station (LGMS)

Coordinates are Texas State Plane South Central Zone (North American Datum [NAD] 83);
Groundwater elevations are feet North American Vertical Datum [NAVD] 88

Figure 2.4.12-18
Potentiometric Surface Map, August 4, 2024 (C Sand)
(Sheet 20 of 57)

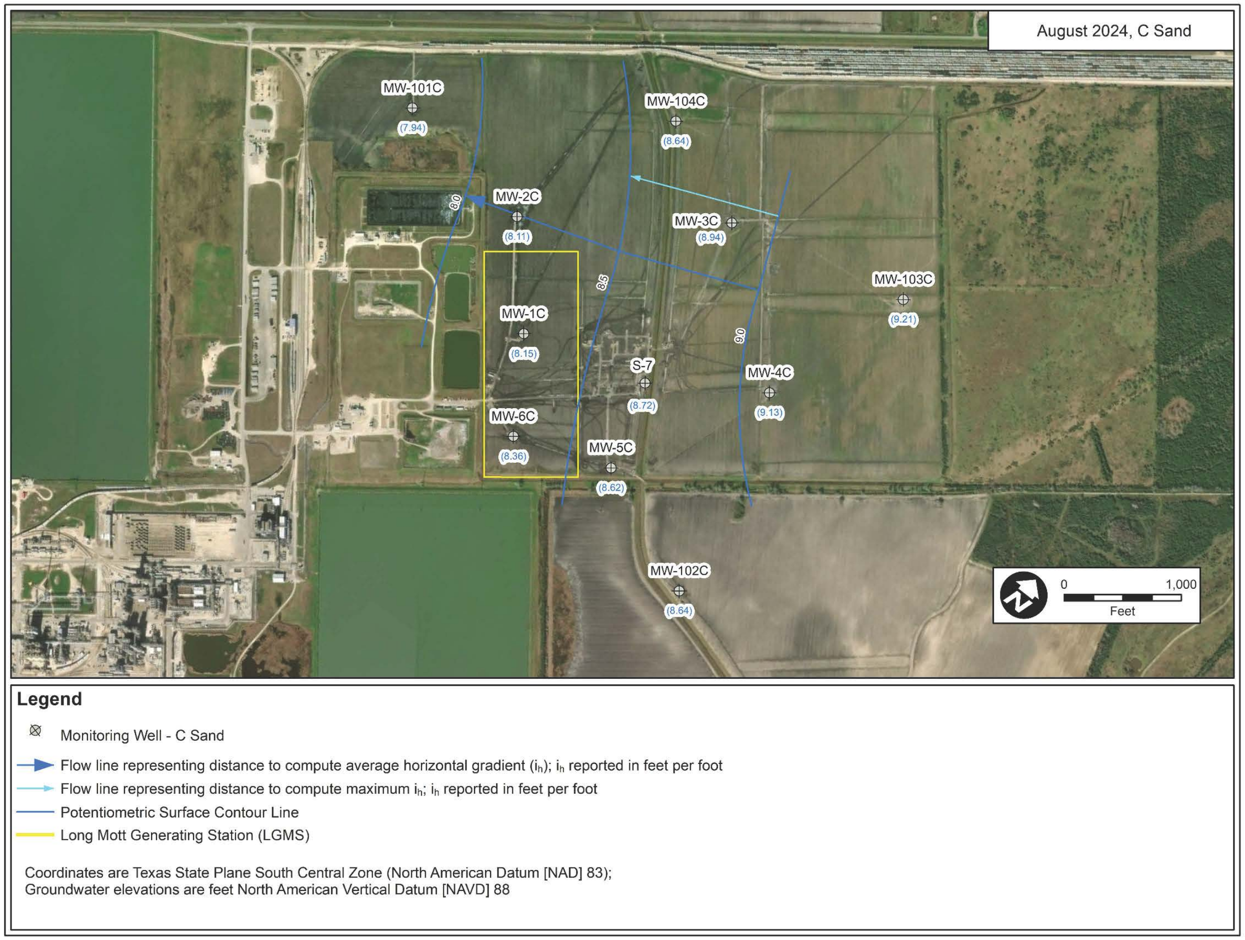


Figure 2.4.12-18
Potentiometric Surface Map, August 4, 2024 (E Sand)
(Sheet 21 of 57)

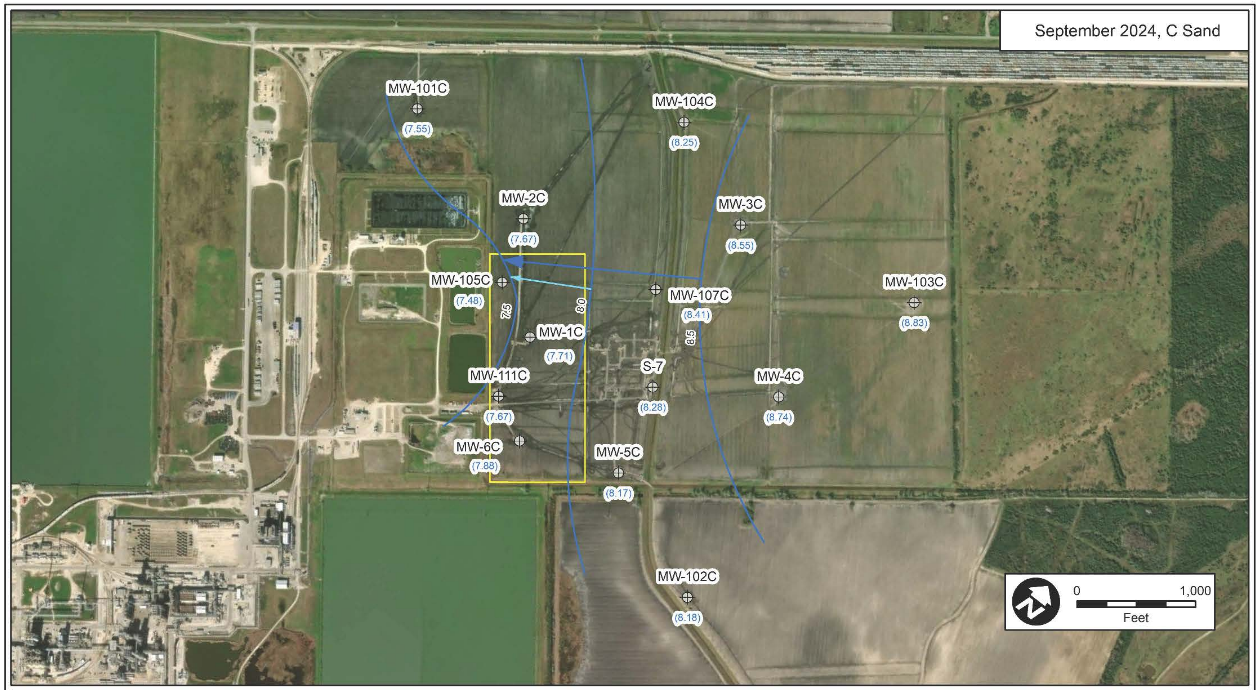
Legend

- Monitoring Well - E Sand
- Flow line representing distance to compute average horizontal gradient (i_h); i_h reported in feet per foot
- Flow line representing distance to compute maximum i_h; i_h reported in feet per foot
- Potentiometric Surface Contour Line
- Long Mott Generating Station (LGMS)

Coordinates are Texas State Plane South Central Zone (North American Datum [NAD] 83);
Groundwater elevations are feet North American Vertical Datum [NAVD] 88

Figure 2.4.12-18
Potentiometric Surface Map, September 24, 2024 (A Sand)
(Sheet 22 of 57)

Figure 2.4.12-18
Potentiometric Surface Map, September 24, 2024 (C Sand)
(Sheet 23 of 57)

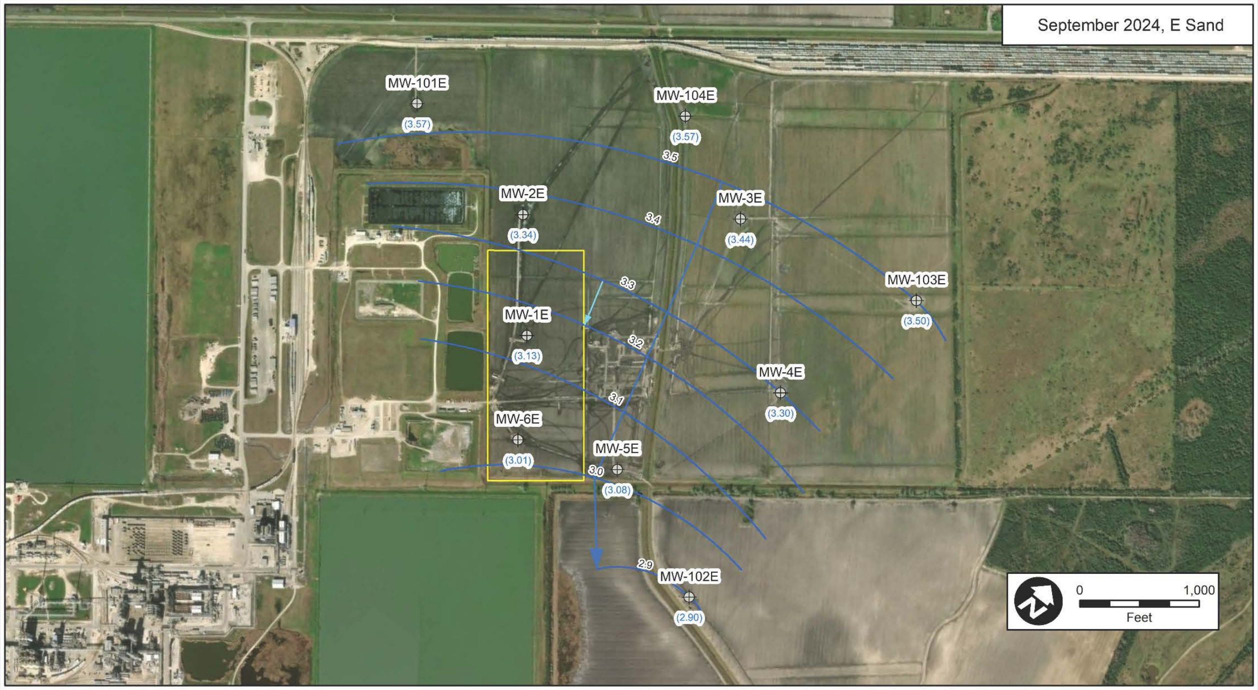


Legend

- Monitoring Well - C Sand
- Flow line representing distance to compute average horizontal gradient (i_h); i_h reported in feet per foot
- Flow line representing distance to compute maximum i_h; i_h reported in feet per foot
- Potentiometric Surface Contour Line
- Long Mott Generating Station (LGMS)

Coordinates are Texas State Plane South Central Zone (North American Datum [NAD] 83);
Groundwater elevations are feet North American Vertical Datum [NAVD] 88

Figure 2.4.12-18
Potentiometric Surface Map, September 24, 2024 (E Sand)
(Sheet 24 of 57)



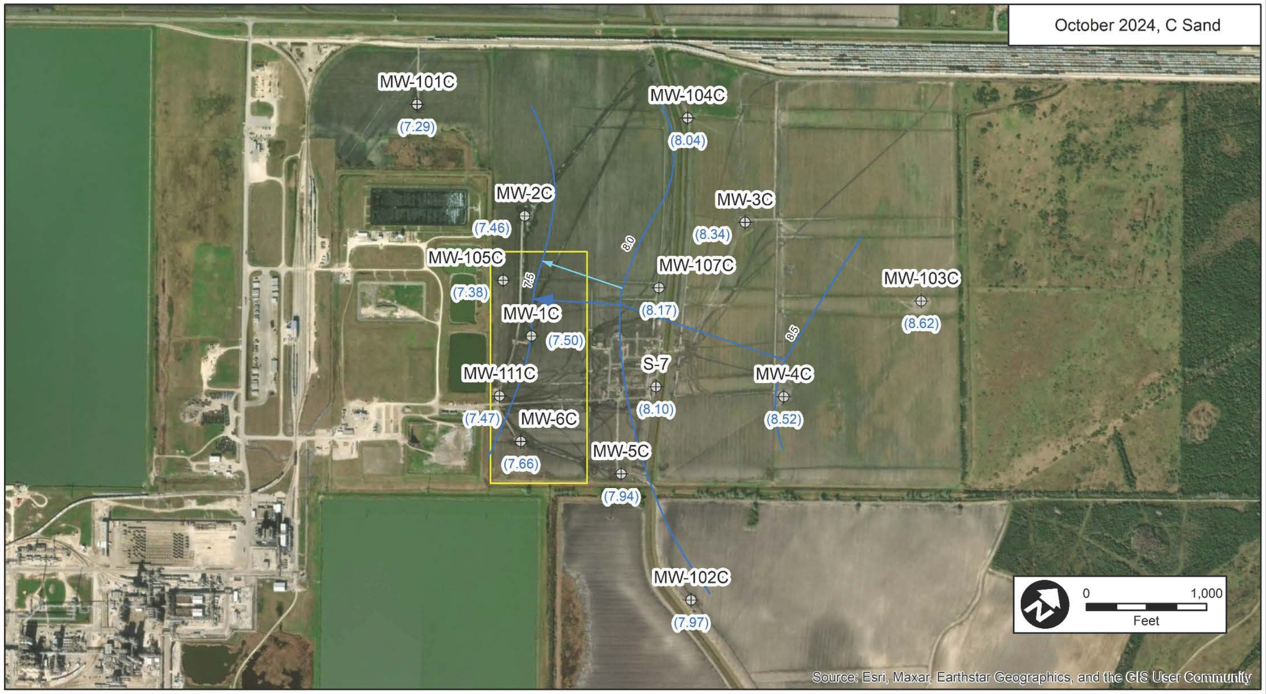
Legend

Monitoring Well - E Sand
Flow line representing distance to compute average horizontal gradient (i_h); i_h reported in feet per foot
Flow line representing distance to compute maximum i_h; i_h reported in feet per foot
Potentiometric Surface Contour Line
Long Mott Generating Station (LGMS)

Coordinates are Texas State Plane South Central Zone (North American Datum [NAD] 83);
Groundwater elevations are feet North American Vertical Datum [NAVD] 88

Figure 2.4.12-18
Potentiometric Surface Map, October 22, 2024 (A Sand)
(Sheet 25 of 57)

Figure 2.4.12-18
Potentiometric Surface Map, October 22, 2024 (C Sand)
(Sheet 26 of 57)



Legend

Monitoring Well - C Sand

Flow line representing distance to compute average horizontal gradient (i_h); i_h reported in feet per foot

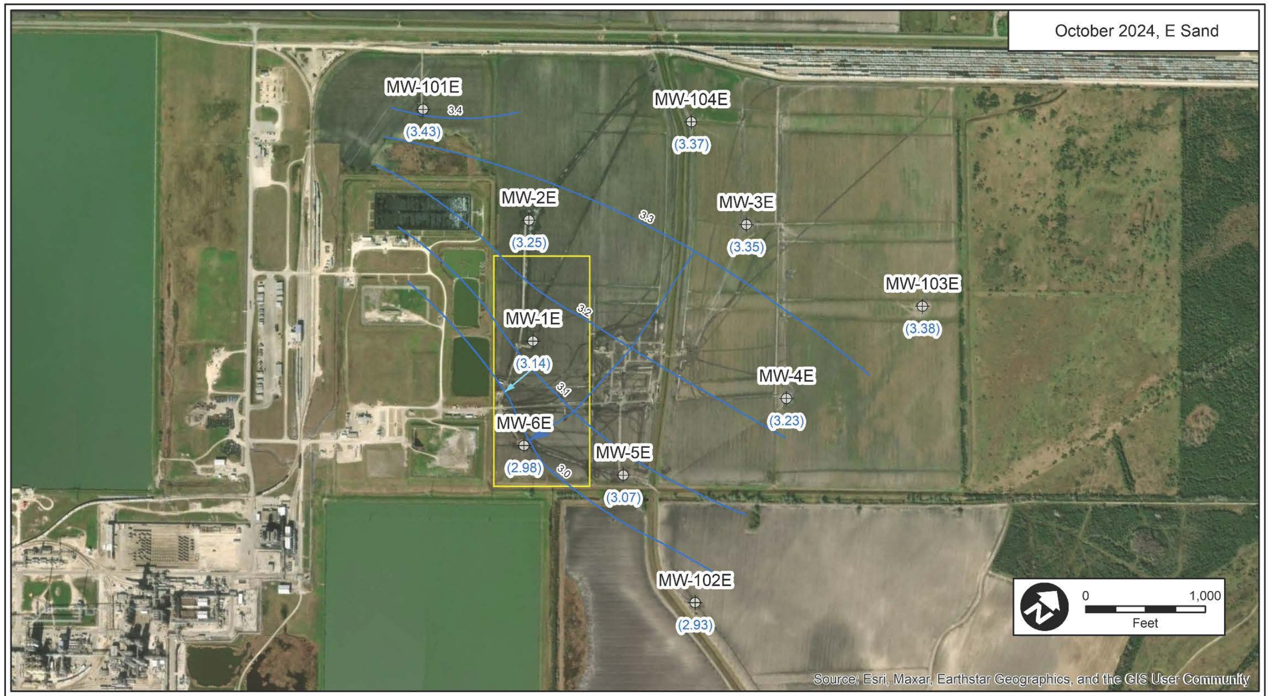
Flow line representing distance to compute maximum i_h; i_h reported in feet per foot

Potentiometric Surface Contour Line

Long Mott Generating Station (LGMS)

Coordinates are Texas State Plane South Central Zone (North American Datum [NAD] 83);
Groundwater elevations are feet North American Vertical Datum [NAVD] 88

Figure 2.4.12-18
Potentiometric Surface Map, October 22, 2024 (E Sand)
(Sheet 27 of 57)



Legend

- Monitoring Well - E Sand
- Flow line representing distance to compute average horizontal gradient (i_h); i_h reported in feet per foot
- Flow line representing distance to compute maximum i_h; i_h reported in feet per foot
- Potentiometric Surface Contour Line
- Long Mott Generating Station (LGMS)

Coordinates are Texas State Plane South Central Zone (North American Datum [NAD] 83);
Groundwater elevations are feet North American Vertical Datum [NAVD] 88

Figure 2.4.12-18
Potentiometric Surface Map, November 22, 2024 (A Sand)
(Sheet 28 of 57)

Legend

- Monitoring Well - A Sand
- Flow line representing distance to compute average horizontal gradient (i_h); i_h reported in feet per foot
- Flow line representing distance to compute maximum i_h; i_h reported in feet per foot
- Potentiometric Surface Contour Lines
- Inferred Potentiometric Surface Contour Lines
- Long Mott Generating Station (LGMS)
- North Landfill areas; groundwater not contoured due to uncertainty related to barrier wall or liner/groundwater interactions

Coordinates are Texas State Plane South Central Zone (North American Datum [NAD] 83);
Groundwater elevations are feet North American Vertical Datum [NAVD] 88

Figure 2.4.12-18
Potentiometric Surface Map, November 22, 2024 (C Sand)
(Sheet 29 of 57)

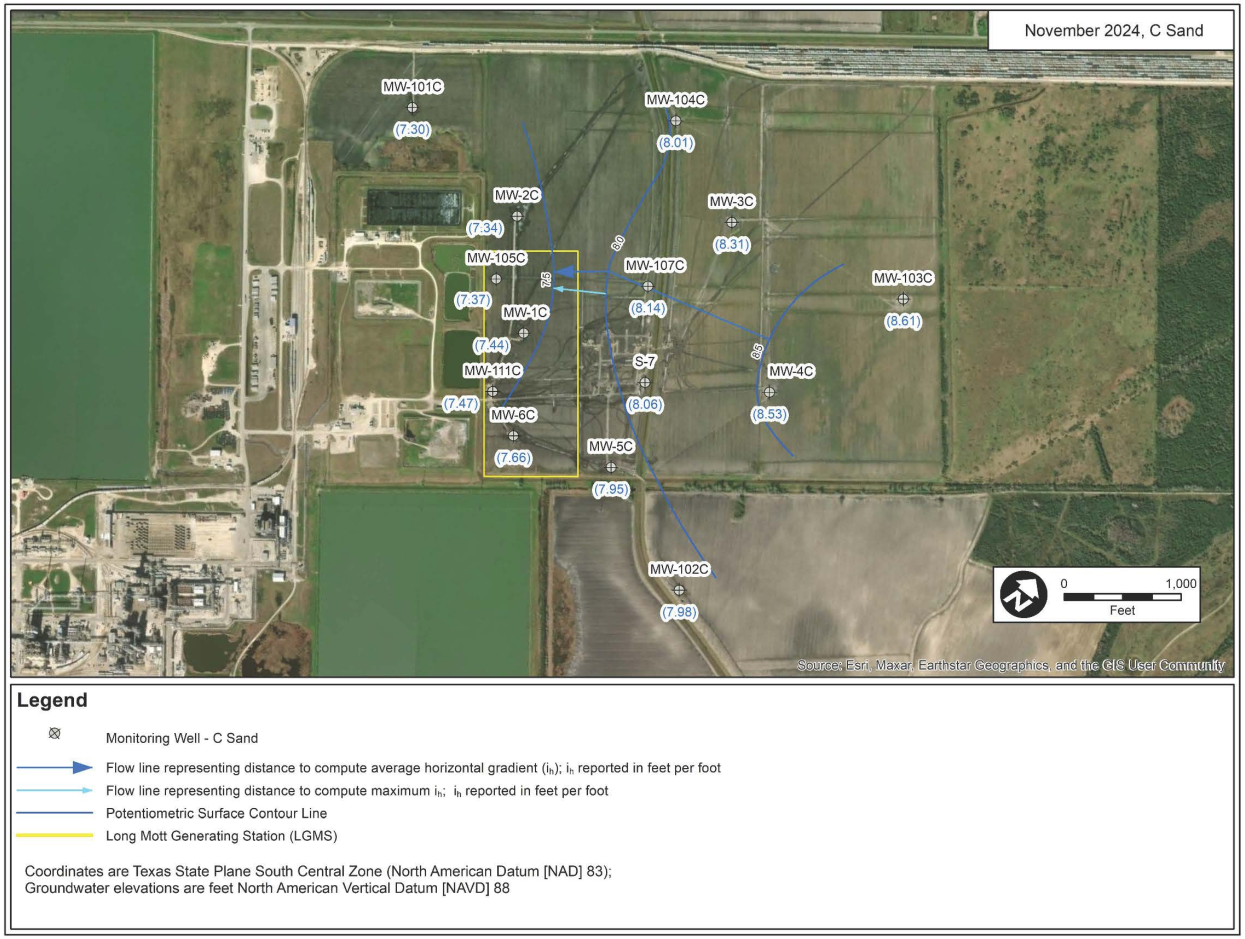


Figure 2.4.12-18
Potentiometric Surface Map, November 22, 2024 (E Sand)
(Sheet 30 of 57)

Legend

- Monitoring Well - E Sand
- Flow line representing distance to compute average horizontal gradient (i_h); i_h reported in feet per foot
- Flow line representing distance to compute maximum i_h; i_h reported in feet per foot
- Potentiometric Surface Contour Line
- Long Mott Generating Station (LGMS)

Coordinates are Texas State Plane South Central Zone (North American Datum [NAD] 83);
Groundwater elevations are feet North American Vertical Datum [NAVD] 88

Figure 2.4.12-18
Potentiometric Surface Map, December 18, 2024 (A Sand)
(Sheet 31 of 57)

Figure 2.4.12-18
Potentiometric Surface Map, December 18, 2024 (C Sand)
(Sheet 32 of 57)

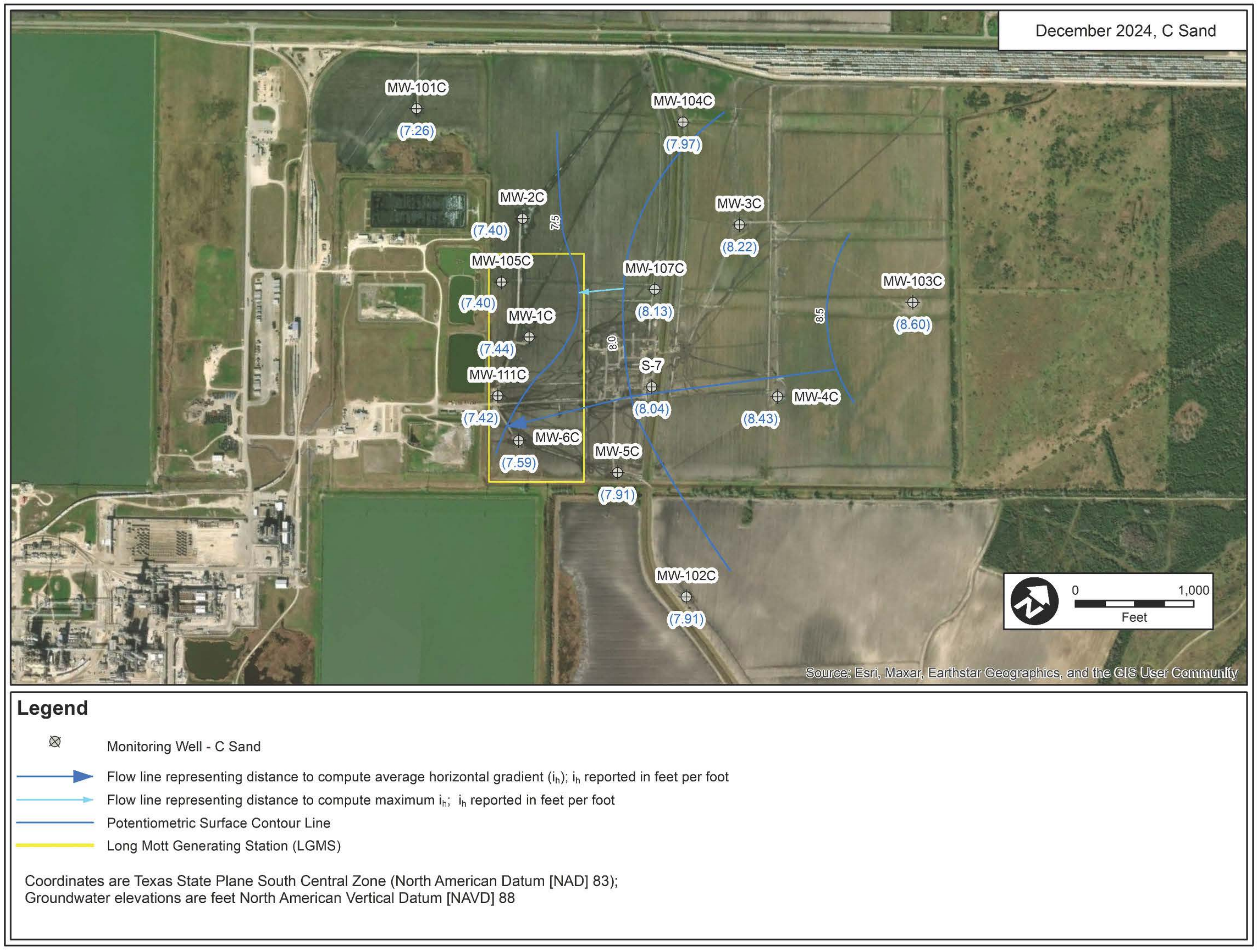


Figure 2.4.12-18
Potentiometric Surface Map, December 18, 2024 (E Sand)
(Sheet 33 of 57)

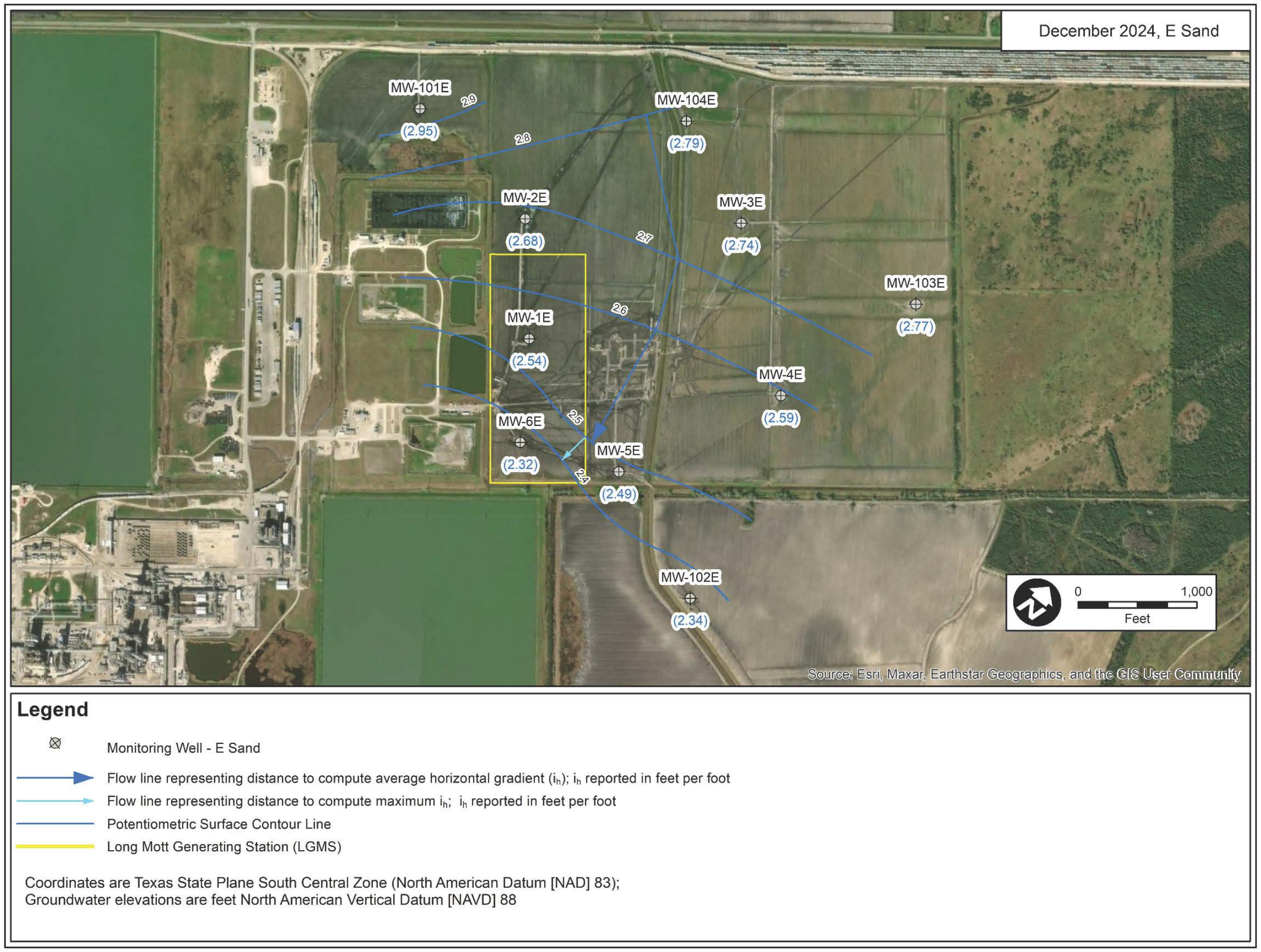


Figure 2.4.12-18
Potentiometric Surface Map, January 28, 2025 (A Sand)
(Sheet 34 of 57)

Figure 2.4.12-18
Potentiometric Surface Map, January 28, 2025 (C Sand)
(Sheet 35 of 57)

Legend

- Monitoring Well - C Sand
- Flow line representing distance to compute average horizontal gradient (i_h); i_h reported in feet per foot
- Flow line representing distance to compute maximum i_h; i_h reported in feet per foot
- Potentiometric Surface Contour Line
- Long Mott Generating Station (LGMS)

Coordinates are Texas State Plane South Central Zone (North American Datum [NAD] 83);
Groundwater elevations are feet North American Vertical Datum [NAVD] 88

Figure 2.4.12-18
Potentiometric Surface Map, January 28, 2025 (E Sand)
(Sheet 36 of 57)

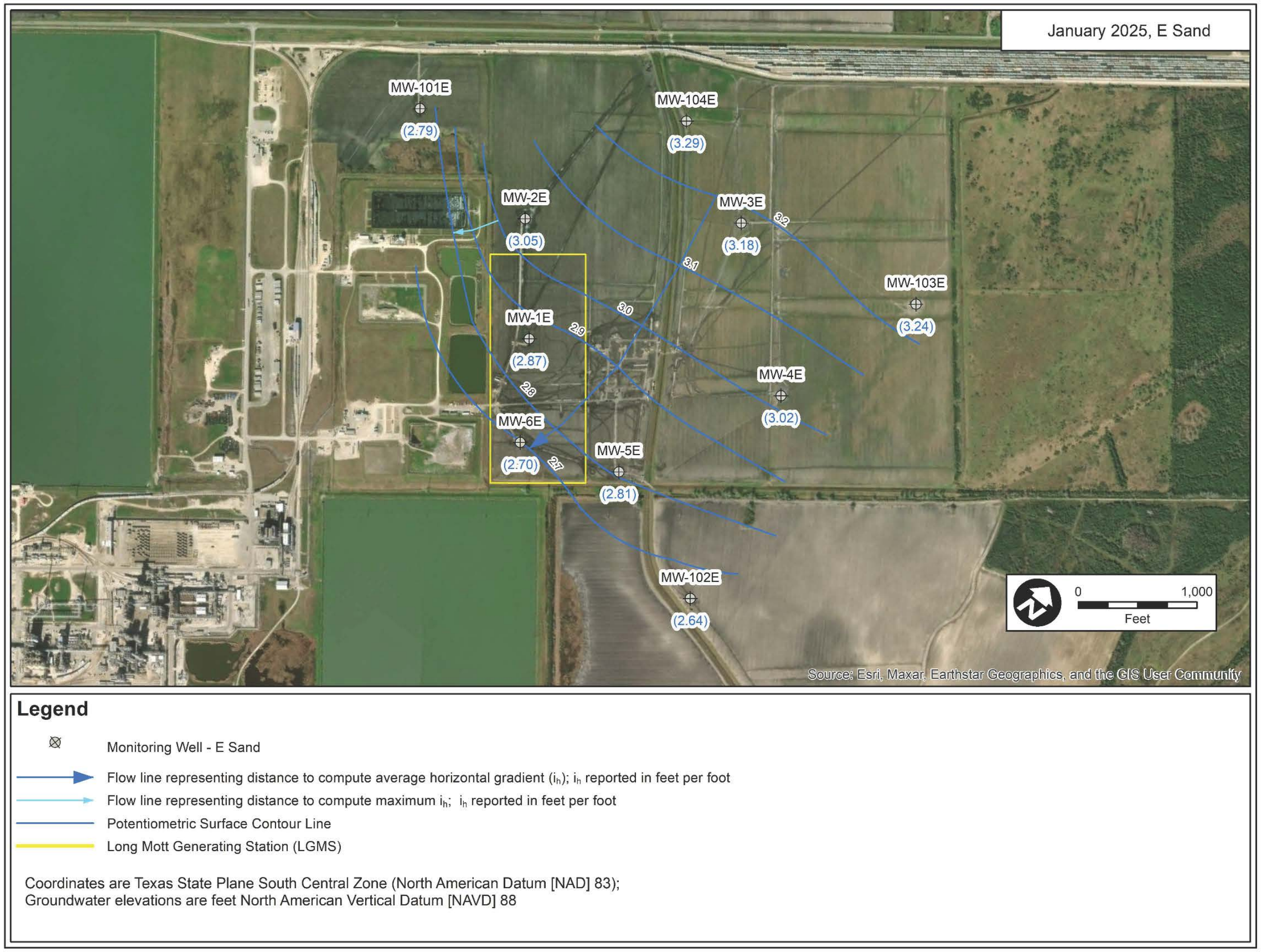


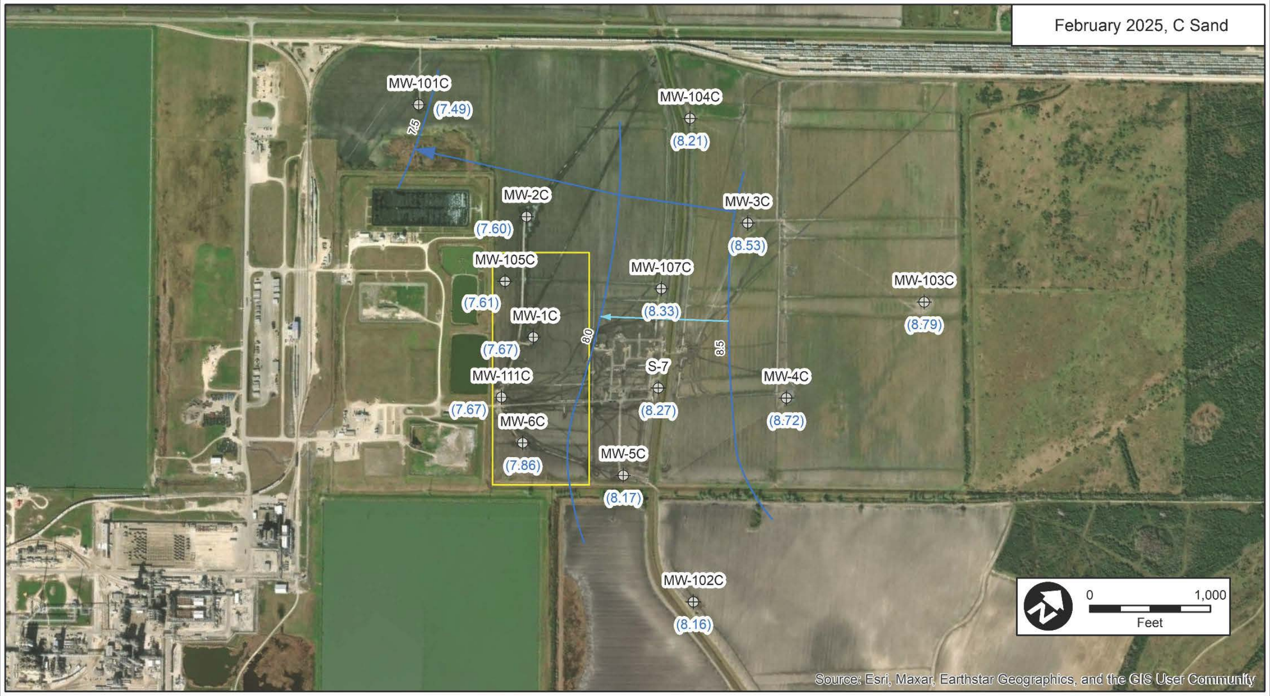
Figure 2.4.12-18
Potentiometric Surface Map, February 25, 2025 (A Sand)
(Sheet 37 of 57)

Legend

- Monitoring Well - A Sand
- Flow line representing distance to compute average horizontal gradient (i_h); i_h reported in feet per foot
- Flow line representing distance to compute maximum i_h; i_h reported in feet per foot
- Potentiometric Surface Contour Lines
- North Landfill areas; groundwater not contoured due to uncertainty related to barrier wall or liner/groundwater interactions
- Long Mott Generating Station (LGMS)

Coordinates are Texas State Plane South Central Zone (North American Datum [NAD] 83);
Groundwater elevations are feet North American Vertical Datum [NAVD] 88

Figure 2.4.12-18
Potentiometric Surface Map, February 25, 2025 (C Sand)
(Sheet 38 of 57)

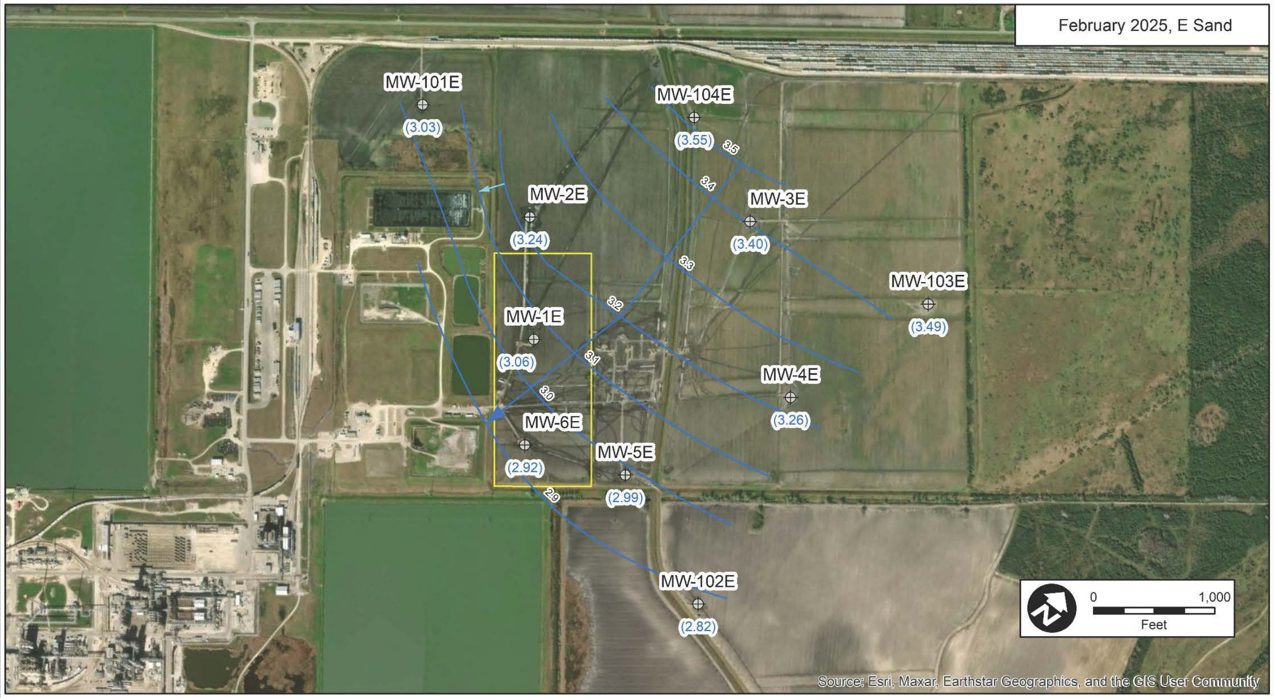


Legend

- Monitoring Well - C Sand
- Flow line representing distance to compute average horizontal gradient (i_h); i_h reported in feet per foot
- Flow line representing distance to compute maximum i_h; i_h reported in feet per foot
- Potentiometric Surface Contour Line
- Long Mott Generating Station (LGMS)

Coordinates are Texas State Plane South Central Zone (North American Datum [NAD] 83);
Groundwater elevations are feet North American Vertical Datum [NAVD] 88

Figure 2.4.12-18
Potentiometric Surface Map, February 25, 2025 (E Sand)
(Sheet 39 of 57)



Legend

- Monitoring Well - E Sand
- Flow line representing distance to compute average horizontal gradient (i_h); i_h reported in feet per foot
- Flow line representing distance to compute maximum i_h; i_h reported in feet per foot
- Potentiometric Surface Contour Line
- Long Mott Generating Station (LGMS)

Coordinates are Texas State Plane South Central Zone (North American Datum [NAD] 83);
Groundwater elevations are feet North American Vertical Datum [NAVD] 88

Figure 2.4.12-18
Potentiometric Surface Map, March 25, 2025 (A Sand)
(Sheet 40 of 57)

Legend

- Monitoring Well - A Sand
- Flow line representing distance to compute average horizontal gradient (i_h); i_h reported in feet per foot
- Flow line representing distance to compute maximum i_h; i_h reported in feet per foot
- Potentiometric Surface Contour Lines
- North Landfill areas; groundwater not contoured due to uncertainty related to barrier wall or liner/groundwater interactions
- Long Mott Generating Station (LGMS)

Coordinates are Texas State Plane South Central Zone (North American Datum [NAD] 83);
Groundwater elevations are feet North American Vertical Datum [NAVD] 88

Figure 2.4.12-18
Potentiometric Surface Map, March 25, 2025 (C Sand)
(Sheet 41 of 57)

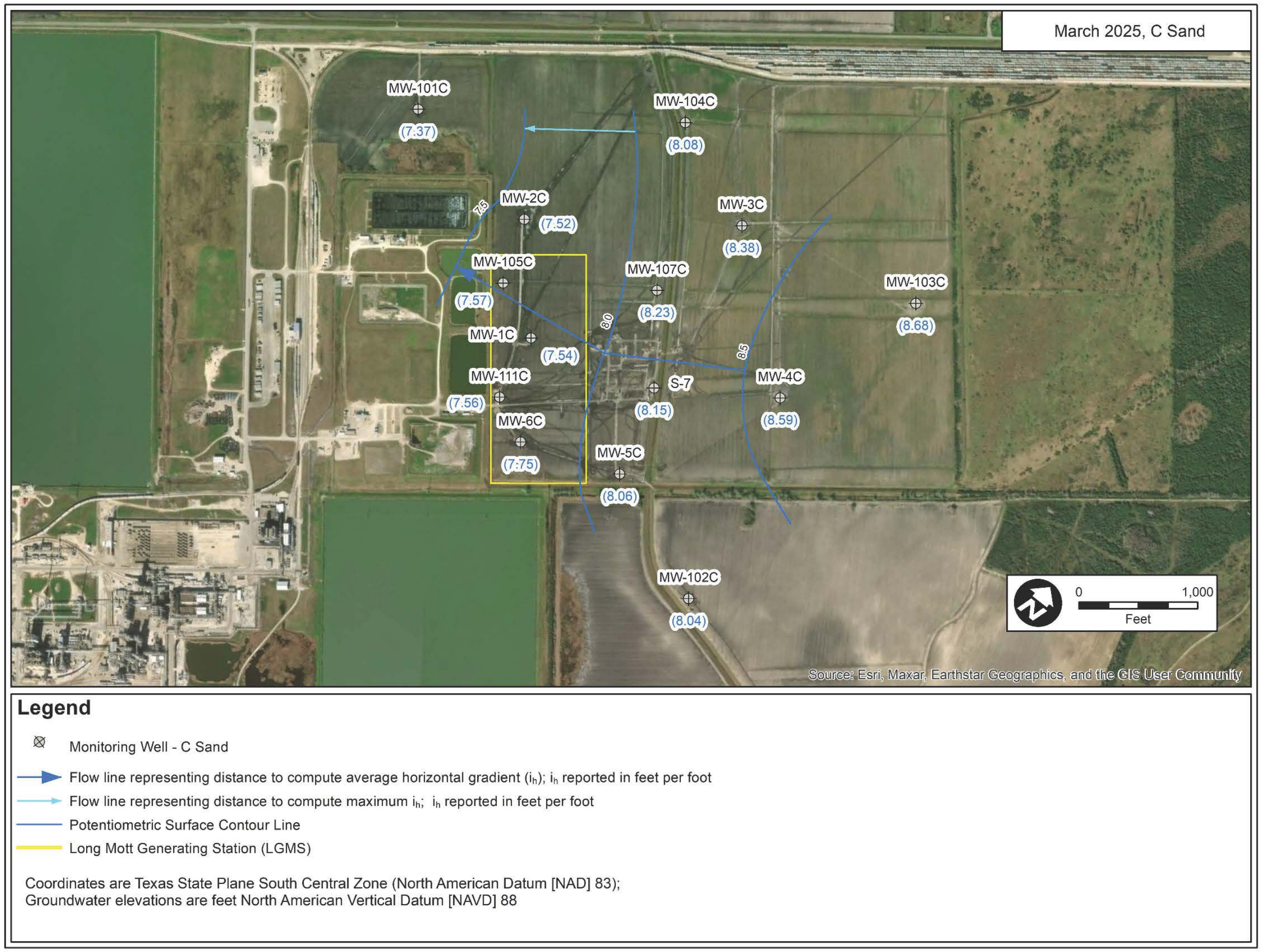
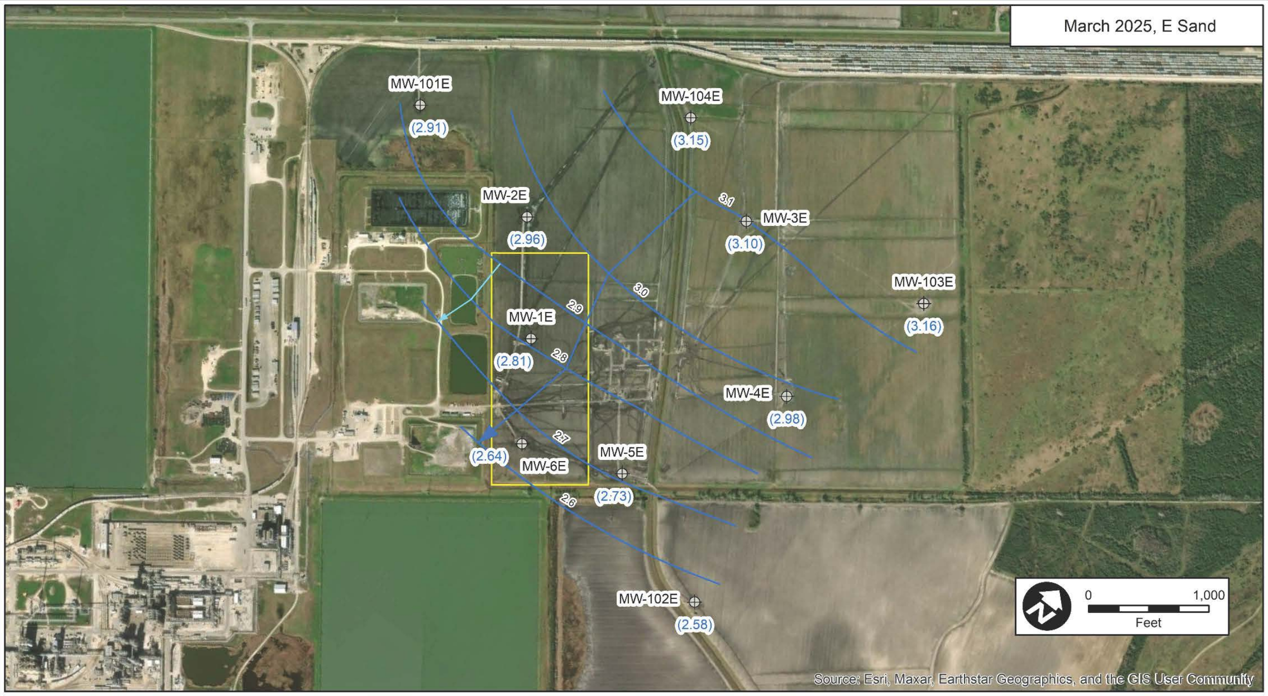


Figure 2.4.12-18
Potentiometric Surface Map, March 25, 2025 (E Sand)
(Sheet 42 of 57)



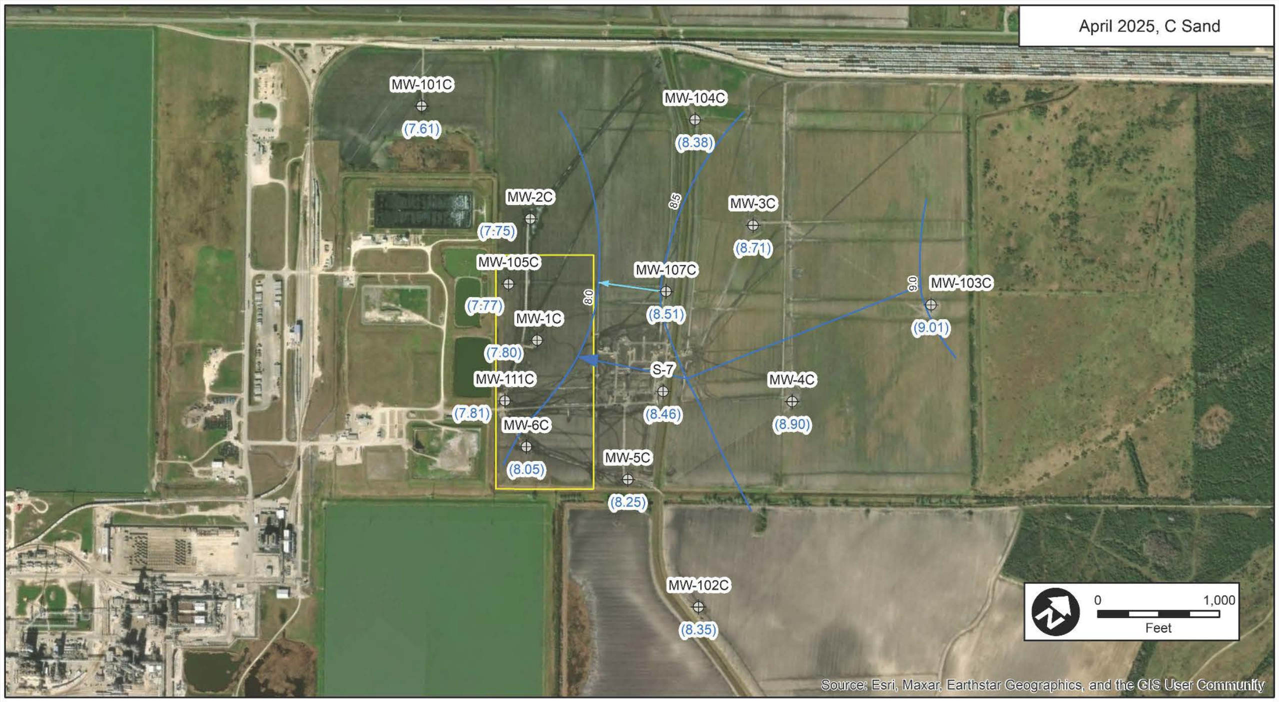
Legend

- Monitoring Well - E Sand
- Flow line representing distance to compute average horizontal gradient (i_h); i_h reported in feet per foot
- Flow line representing distance to compute maximum i_h; i_h reported in feet per foot
- Potentiometric Surface Contour Line
- Long Mott Generating Station (LGMS)

Coordinates are Texas State Plane South Central Zone (North American Datum [NAD] 83);
Groundwater elevations are feet North American Vertical Datum [NAVD] 88

Figure 2.4.12-18
Potentiometric Surface Map, April 29, 2025 (A Sand)
(Sheet 43 of 57)

Figure 2.4.12-18
Potentiometric Surface Map, April 29, 2025 (C Sand)
(Sheet 44 of 57)

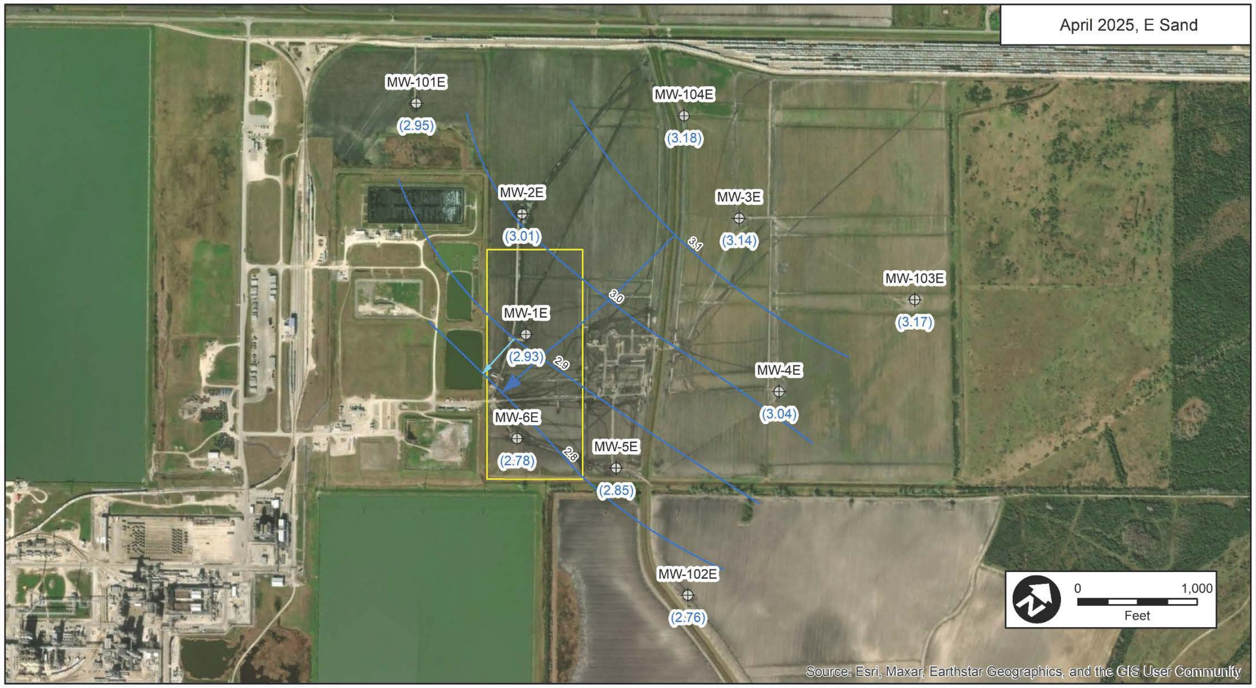


Legend

- Monitoring Well - C Sand
- Flow line representing distance to compute average horizontal gradient (i_h); i_h reported in feet per foot
- Flow line representing distance to compute maximum i_h; i_h reported in feet per foot
- Potentiometric Surface Contour Line
- Long Mott Generating Station (LGMS)

Coordinates are Texas State Plane South Central Zone (North American Datum [NAD] 83);
Groundwater elevations are feet North American Vertical Datum [NAVD] 88

Figure 2.4.12-18
Potentiometric Surface Map, April 29, 2025 (E Sand)
(Sheet 45 of 57)



Legend

- Monitoring Well - E Sand
- Flow line representing distance to compute average horizontal gradient (i_h); i_h reported in feet per foot
- Flow line representing distance to compute maximum i_h; i_h reported in feet per foot
- Potentiometric Surface Contour Line
- Long Mott Generating Station (LGMS)

Coordinates are Texas State Plane South Central Zone (North American Datum [NAD] 83);
Groundwater elevations are feet North American Vertical Datum [NAVD] 88

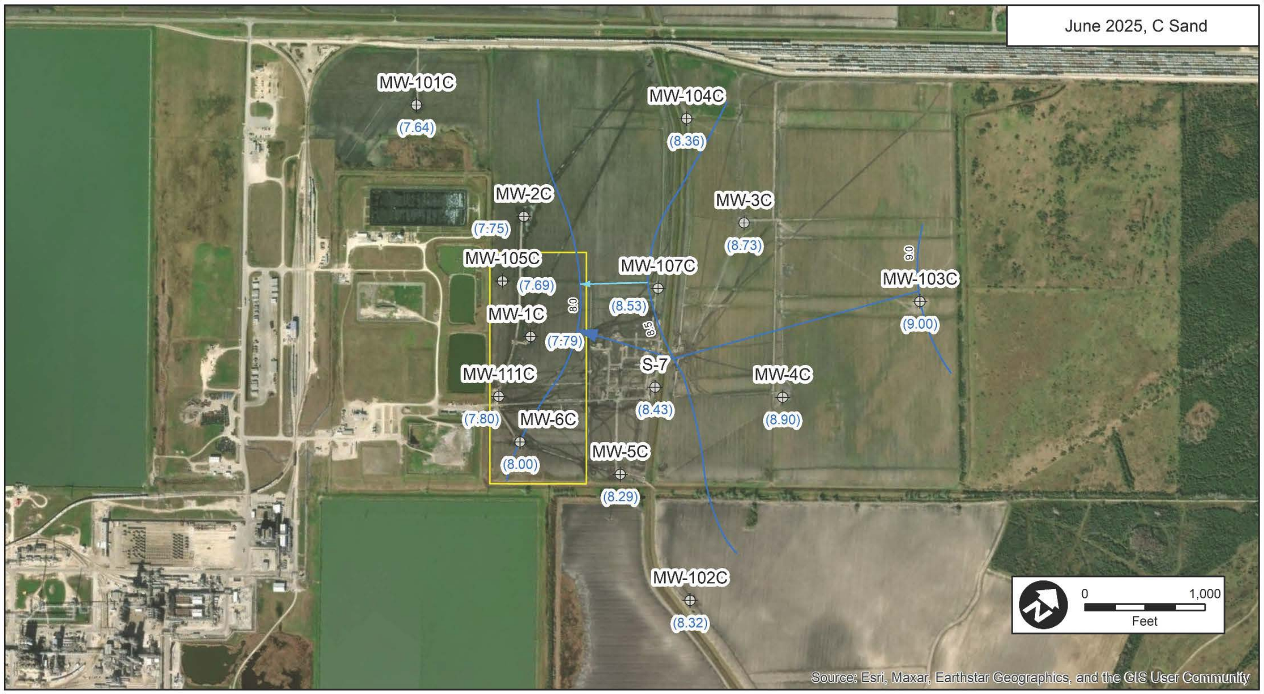
Figure 2.4.12-18
Potentiometric Surface Map, June 5, 2025 (A Sand)
(Sheet 46 of 57)

Legend

- Monitoring Well - A Sand
- Flow line representing distance to compute average horizontal gradient (i_h); i_h reported in feet per foot
- Flow line representing distance to compute maximum i_h; i_h reported in feet per foot
- Potentiometric Surface Contour Lines
- North Landfill areas; groundwater not contoured due to uncertainty related to barrier wall or liner/groundwater interactions
- Long Mott Generating Station (LGMS)

Coordinates are Texas State Plane South Central Zone (North American Datum [NAD] 83);
Groundwater elevations are feet North American Vertical Datum [NAVD] 88

Figure 2.4.12-18
Potentiometric Surface Map, June 5, 2025 (C Sand)
(Sheet 47 of 57)



Legend

Monitoring Well - C Sand

Flow line representing distance to compute average horizontal gradient (i_h); i_h reported in feet per foot

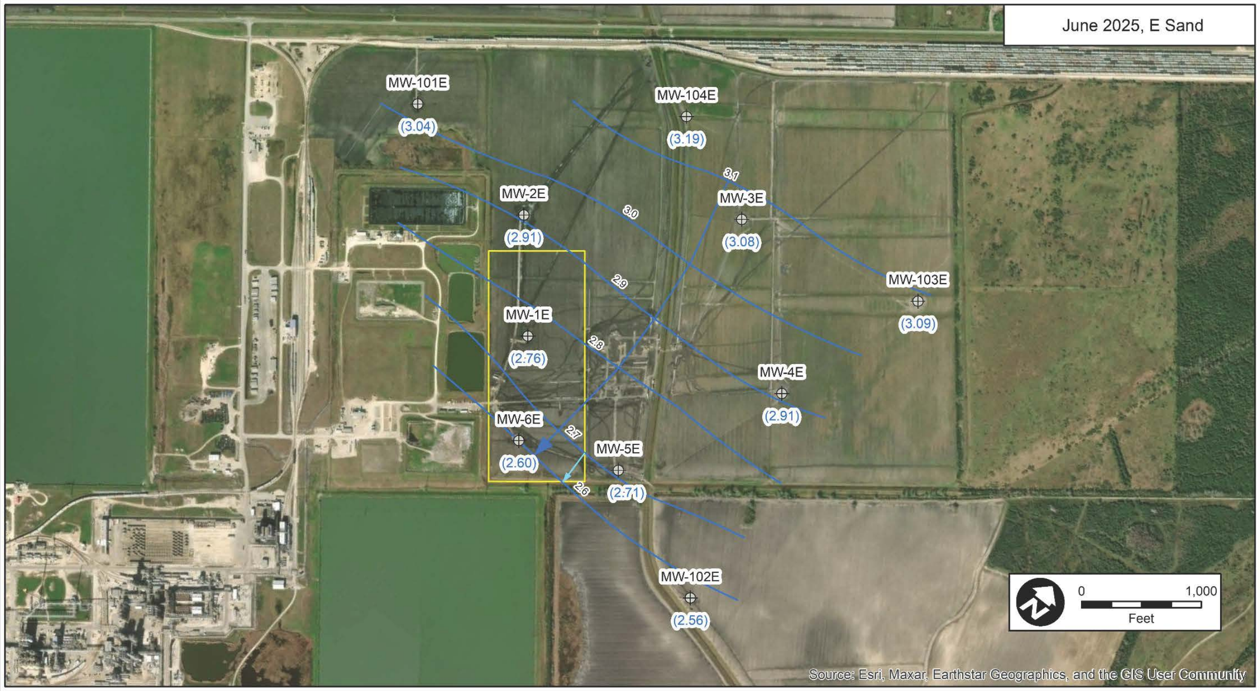
Flow line representing distance to compute maximum i_h; i_h reported in feet per foot

Potentiometric Surface Contour Line

Long Mott Generating Station (LGMS)

Coordinates are Texas State Plane South Central Zone (North American Datum [NAD] 83);
Groundwater elevations are feet North American Vertical Datum [NAVD] 88

Figure 2.4.12-18
Potentiometric Surface Map, June 5, 2025 (E Sand)
(Sheet 48 of 57)



Legend

Monitoring Well - E Sand

Flow line representing distance to compute average horizontal gradient (i_h); i_h reported in feet per foot

Flow line representing distance to compute maximum i_h; i_h reported in feet per foot

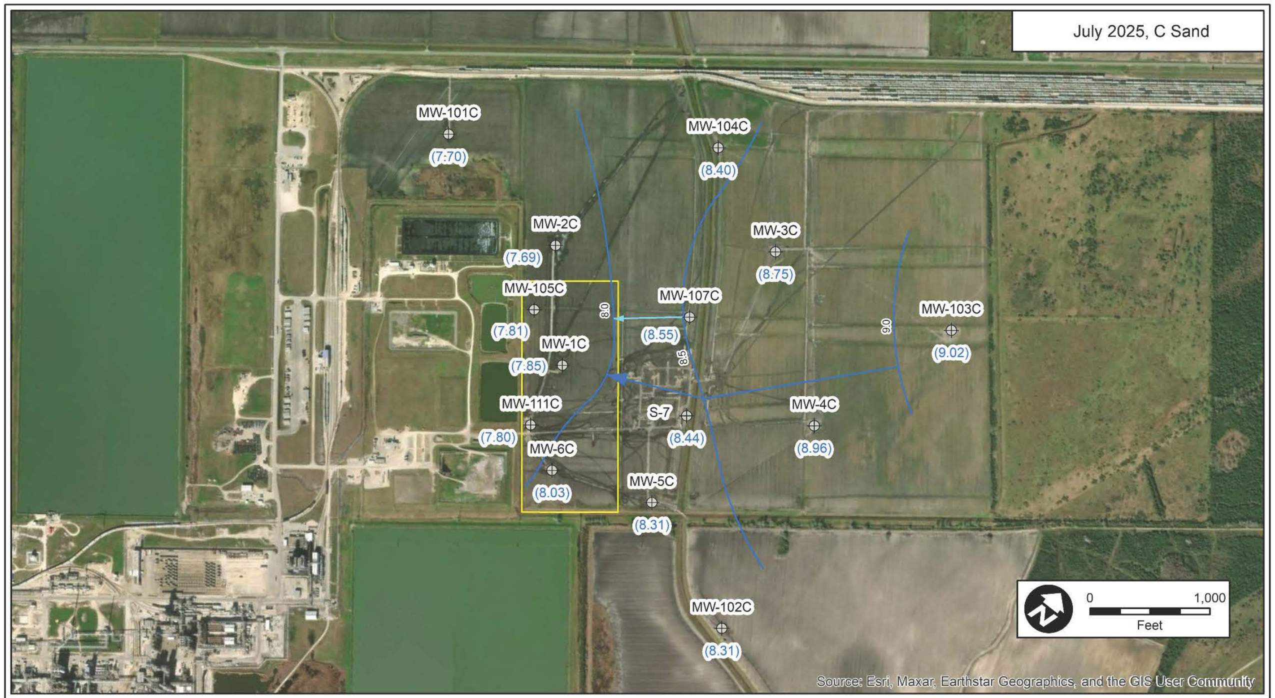
Potentiometric Surface Contour Line

Long Mott Generating Station (LGMS)

Coordinates are Texas State Plane South Central Zone (North American Datum [NAD] 83);
Groundwater elevations are feet North American Vertical Datum [NAVD] 88

Figure 2.4.12-18
Potentiometric Surface Map, July 15, 2025 (A Sand)
(Sheet 49 of 57)

Figure 2.4.12-18
Potentiometric Surface Map, July 15, 2025 (C Sand)
(Sheet 50 of 57)



Legend

Monitoring Well - C Sand

Flow line representing distance to compute average horizontal gradient (i_h); i_h reported in feet per foot

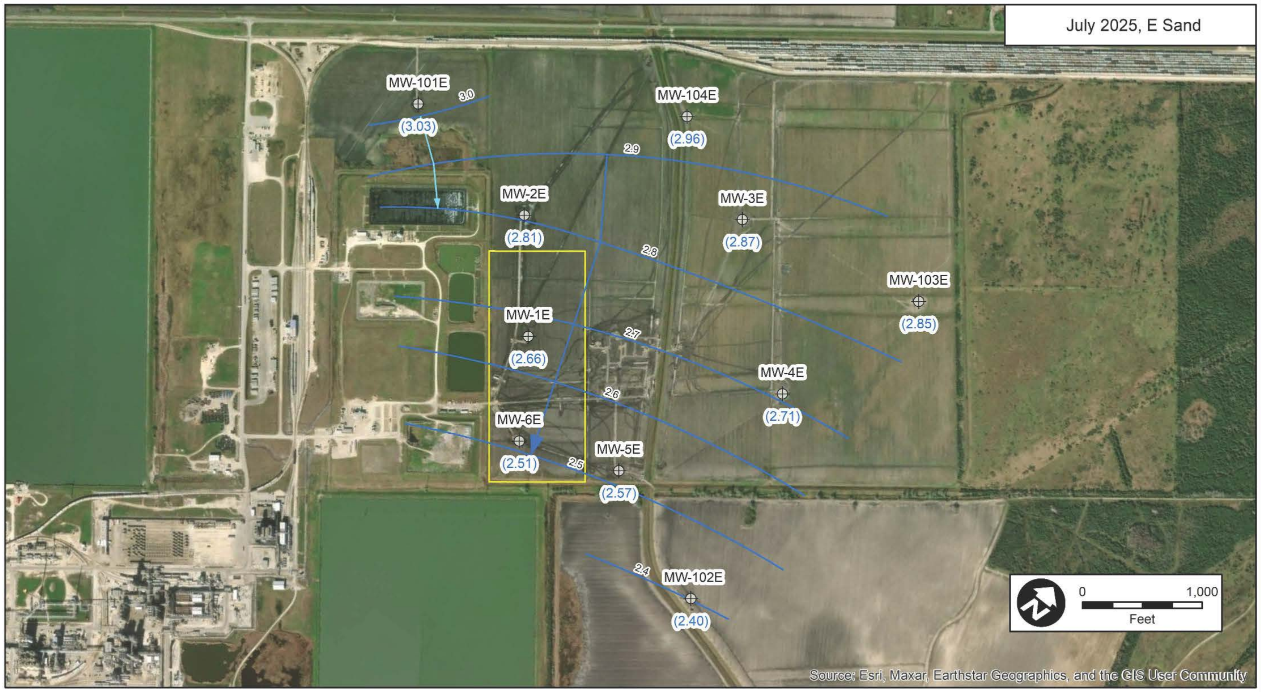
Flow line representing distance to compute maximum i_h; i_h reported in feet per foot

Potentiometric Surface Contour Line

Long Mott Generating Station (LGMS)

Coordinates are Texas State Plane South Central Zone (North American Datum [NAD] 83);
Groundwater elevations are feet North American Vertical Datum [NAVD] 88

Figure 2.4.12-18
Potentiometric Surface Map, July 15, 2025 (E Sand)
(Sheet 51 of 57)



Legend

- Monitoring Well - E Sand
- Flow line representing distance to compute average horizontal gradient (i_h); i_h reported in feet per foot
- Flow line representing distance to compute maximum i_h; i_h reported in feet per foot
- Potentiometric Surface Contour Line
- Long Mott Generating Station (LGMS)

Coordinates are Texas State Plane South Central Zone (North American Datum [NAD] 83);
Groundwater elevations are feet North American Vertical Datum [NAVD] 88

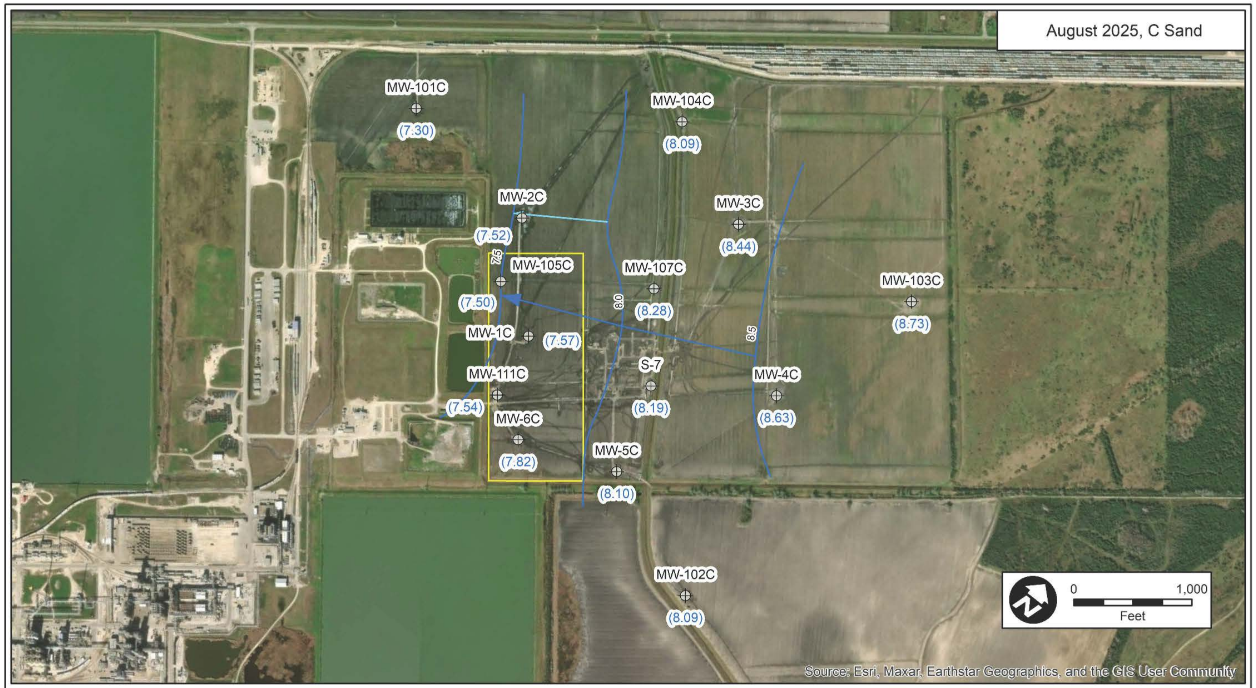
Figure 2.4.12-18
Potentiometric Surface Map, August 13, 2025 (A Sand)
(Sheet 52 of 57)

Legend

- Monitoring Well - A Sand
- Flow line representing distance to compute average horizontal gradient (i_h); i_h reported in feet per foot
- Flow line representing distance to compute maximum i_h; i_h reported in feet per foot
- Potentiometric Surface Contour Lines
- Long Mott Generating Station (LGMS)
- North Landfill areas; groundwater not contoured due to uncertainty related to barrier wall or liner/groundwater interactions

Coordinates are Texas State Plane South Central Zone (North American Datum [NAD] 83);
Groundwater elevations are feet North American Vertical Datum [NAVD] 88

Figure 2.4.12-18
Potentiometric Surface Map, August 13, 2025 (C Sand)
(Sheet 53 of 57)



Legend

- Monitoring Well - C Sand
- Flow line representing distance to compute average horizontal gradient (i_h); i_h reported in feet per foot
- Flow line representing distance to compute maximum i_h; i_h reported in feet per foot
- Potentiometric Surface Contour Line
- Long Mott Generating Station (LGMS)

Coordinates are Texas State Plane South Central Zone (North American Datum [NAD] 83);
Groundwater elevations are feet North American Vertical Datum [NAVD] 88

Figure 2.4.12-18
Potentiometric Surface Map, August 13, 2025 (E Sand)
(Sheet 54 of 57)

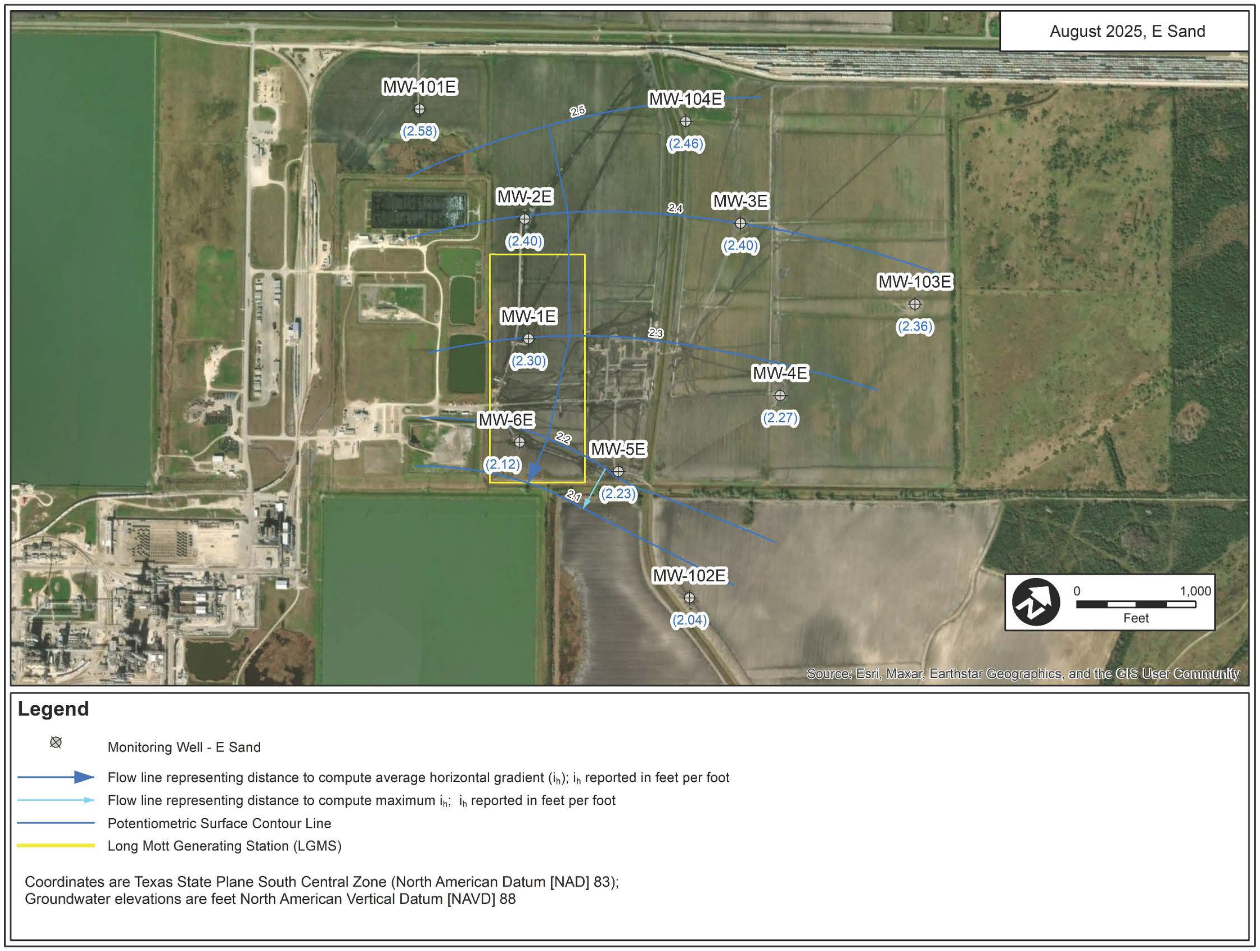
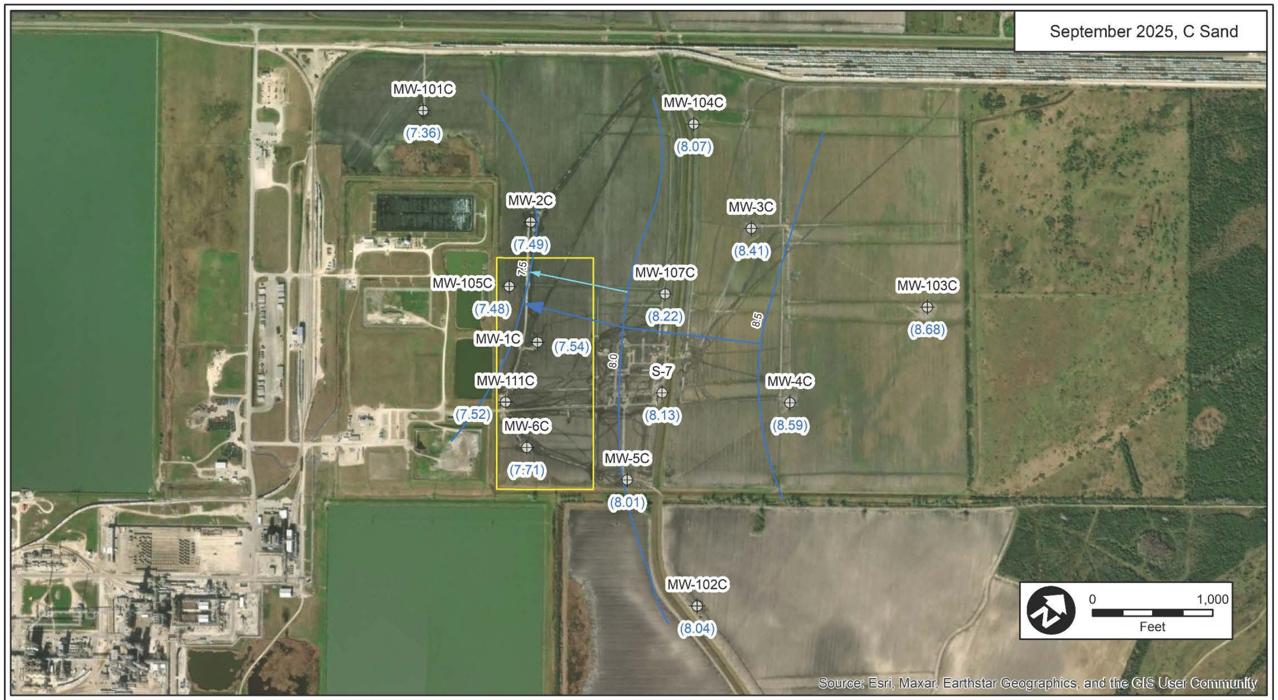


Figure 2.4.12-18
Potentiometric Surface Map, September 22, 2025 (A Sand)
(Sheet 55 of 57)

Figure 2.4.12-18
Potentiometric Surface Map, September 22, 2025 (C Sand)
(Sheet 56 of 57)



Legend

Monitoring Well - C Sand

Flow line representing distance to compute average horizontal gradient (i_h); i_h reported in feet per foot

Flow line representing distance to compute maximum i_h; i_h reported in feet per foot

Potentiometric Surface Contour Line

Long Mott Generating Station (LGMS)

Coordinates are Texas State Plane South Central Zone (North American Datum [NAD] 83);
Groundwater elevations are feet North American Vertical Datum [NAVD] 88

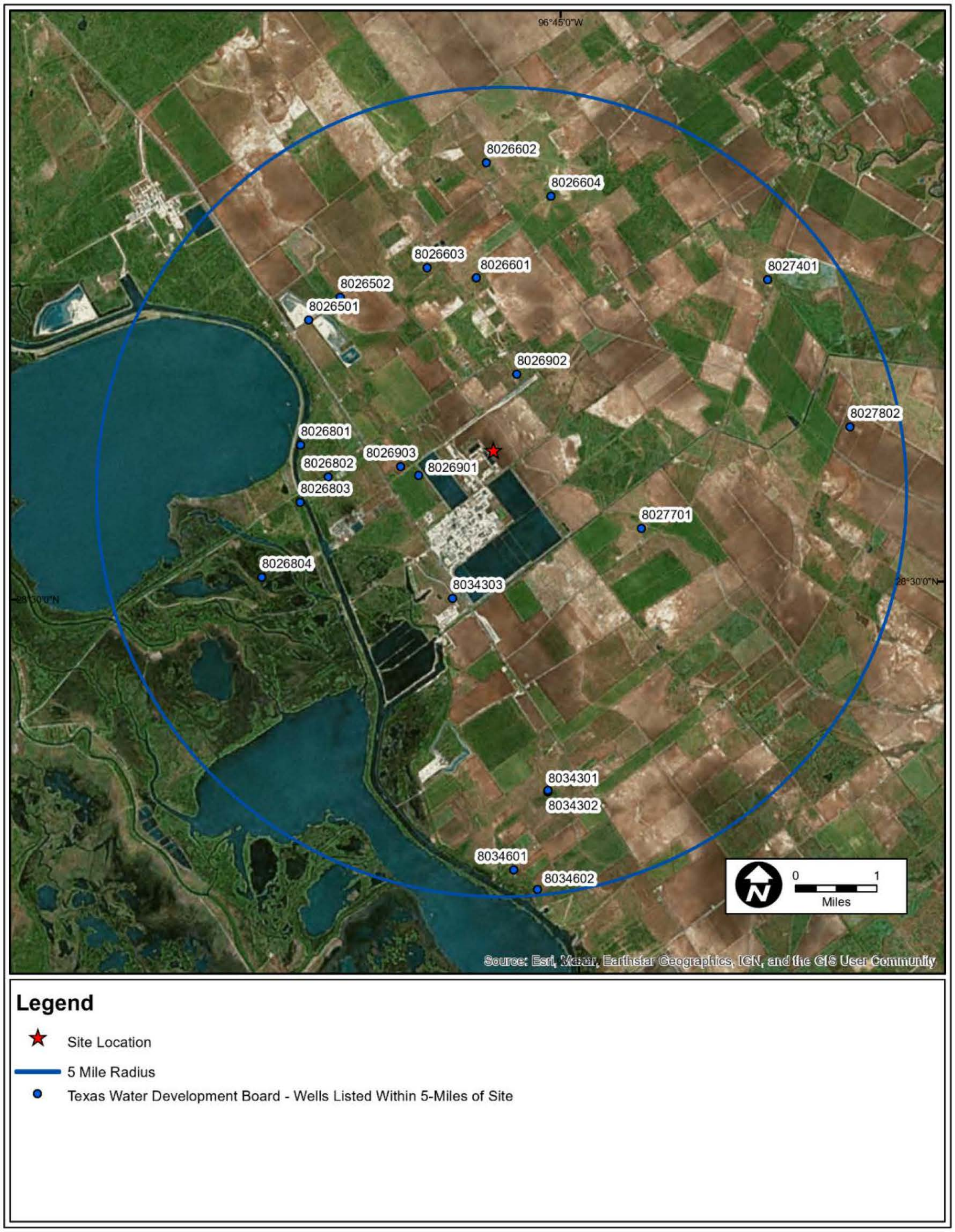
Figure 2.4.12-18
Potentiometric Surface Map, September 22, 2025 (E Sand)
(Sheet 57 of 57)

Legend

- Monitoring Well - E Sand
- Flow line representing distance to compute average horizontal gradient (i_h); i_h reported in feet per foot
- Flow line representing distance to compute maximum i_h; i_h reported in feet per foot
- Potentiometric Surface Contour Line
- Long Mott Generating Station (LGMS)

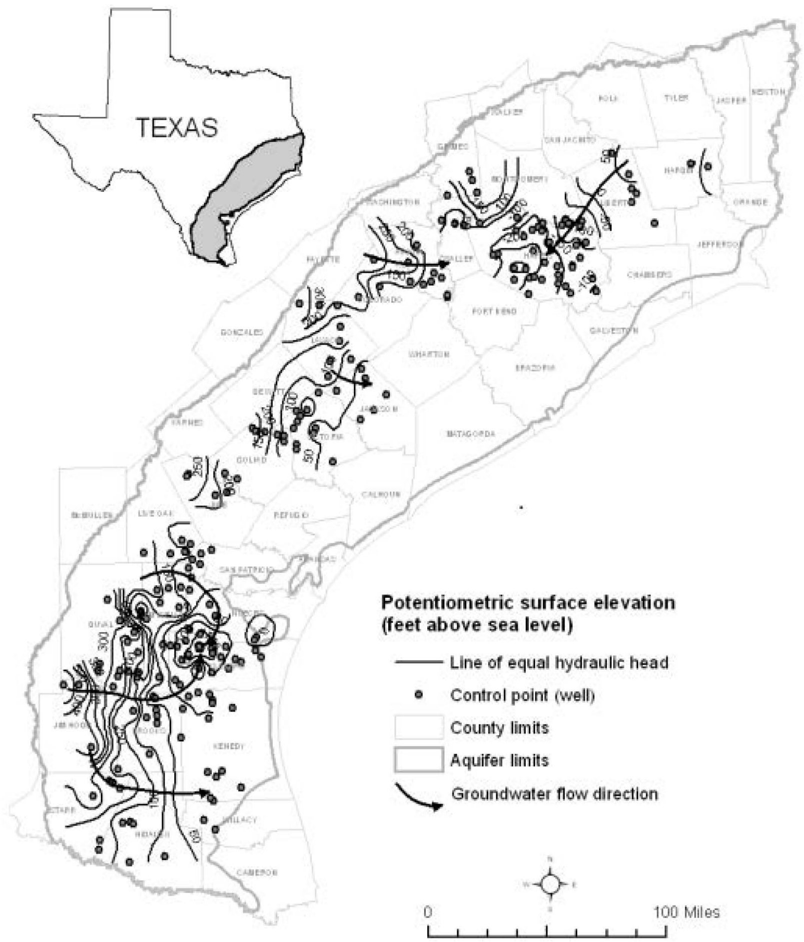
Coordinates are Texas State Plane South Central Zone (North American Datum [NAD] 83);
Groundwater elevations are feet North American Vertical Datum [NAVD] 88

Figure 2.4.12-19
Texas Community Wells within a 5-Mi. Radius



Source: TWDB, 2024a.

Figure 2.4.12-20
Regional Potentiometric Surface Map – Evangeline Aquifer, including Water Level Measurements from 2001 to 2005



Source: Chowdhury, et al., 2006.

~~**Figure 2.4.12-21**~~
~~**Hydrographs for LMGS Monitoring Wells**~~
~~**(Sheet 1 of 10)**~~

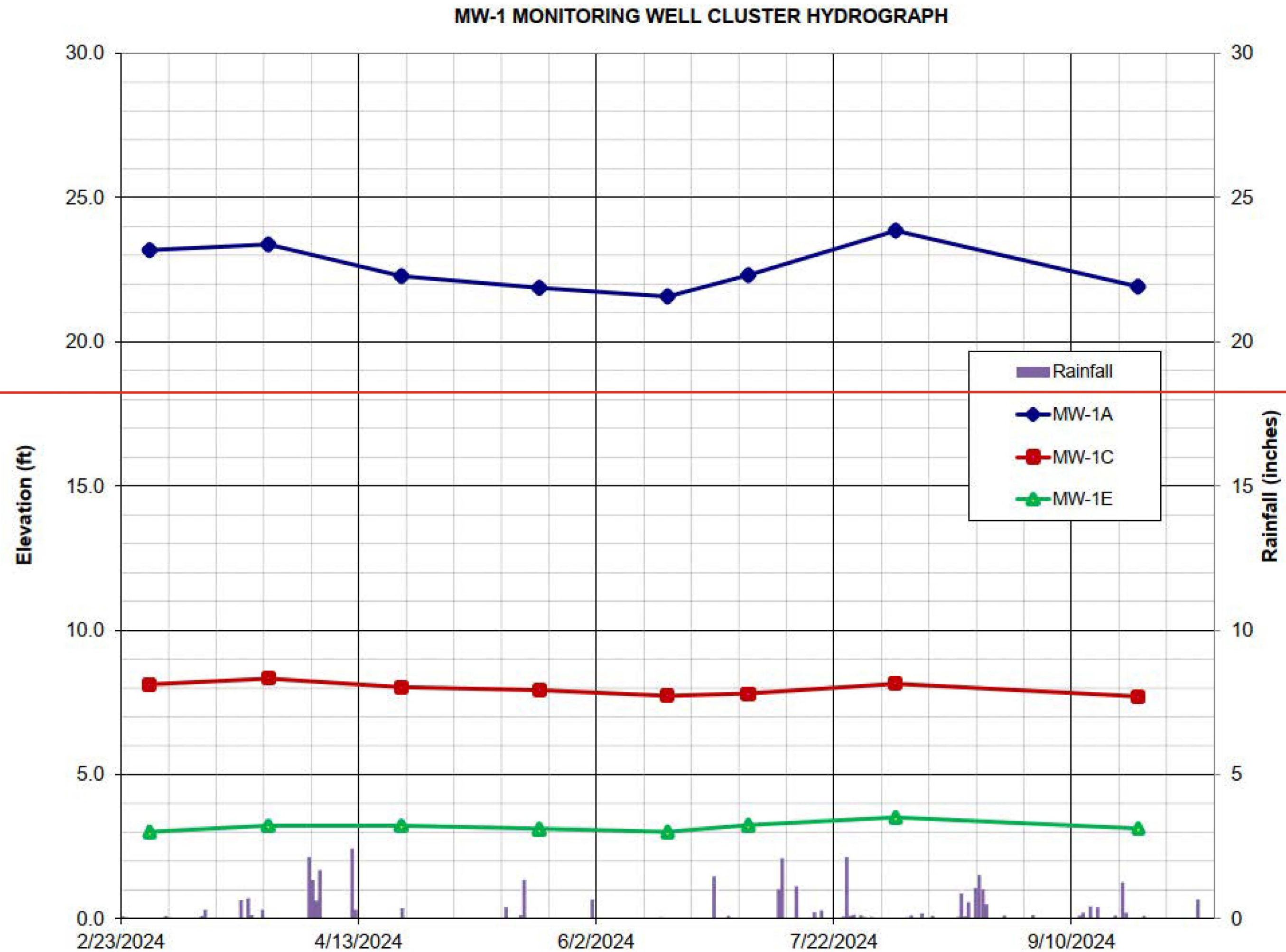
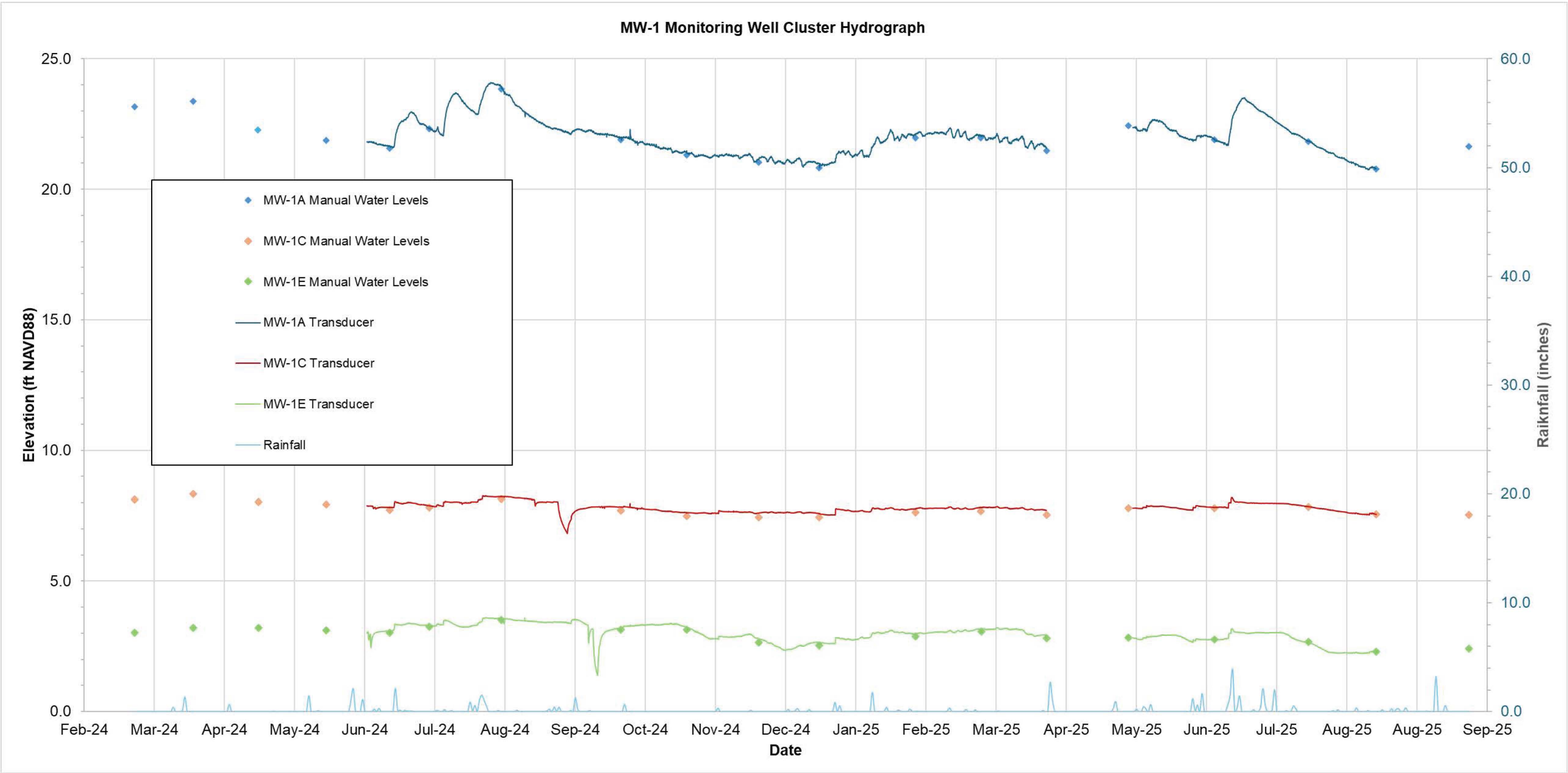


Figure 2.4.12-21
Hydrographs for LMGS Monitoring Wells
(Sheet 1 of ~~10~~31)



~~Figure 2.4.12-21~~
~~Hydrographs for LMGS Monitoring Wells~~
~~(Sheet 2 of 10)~~

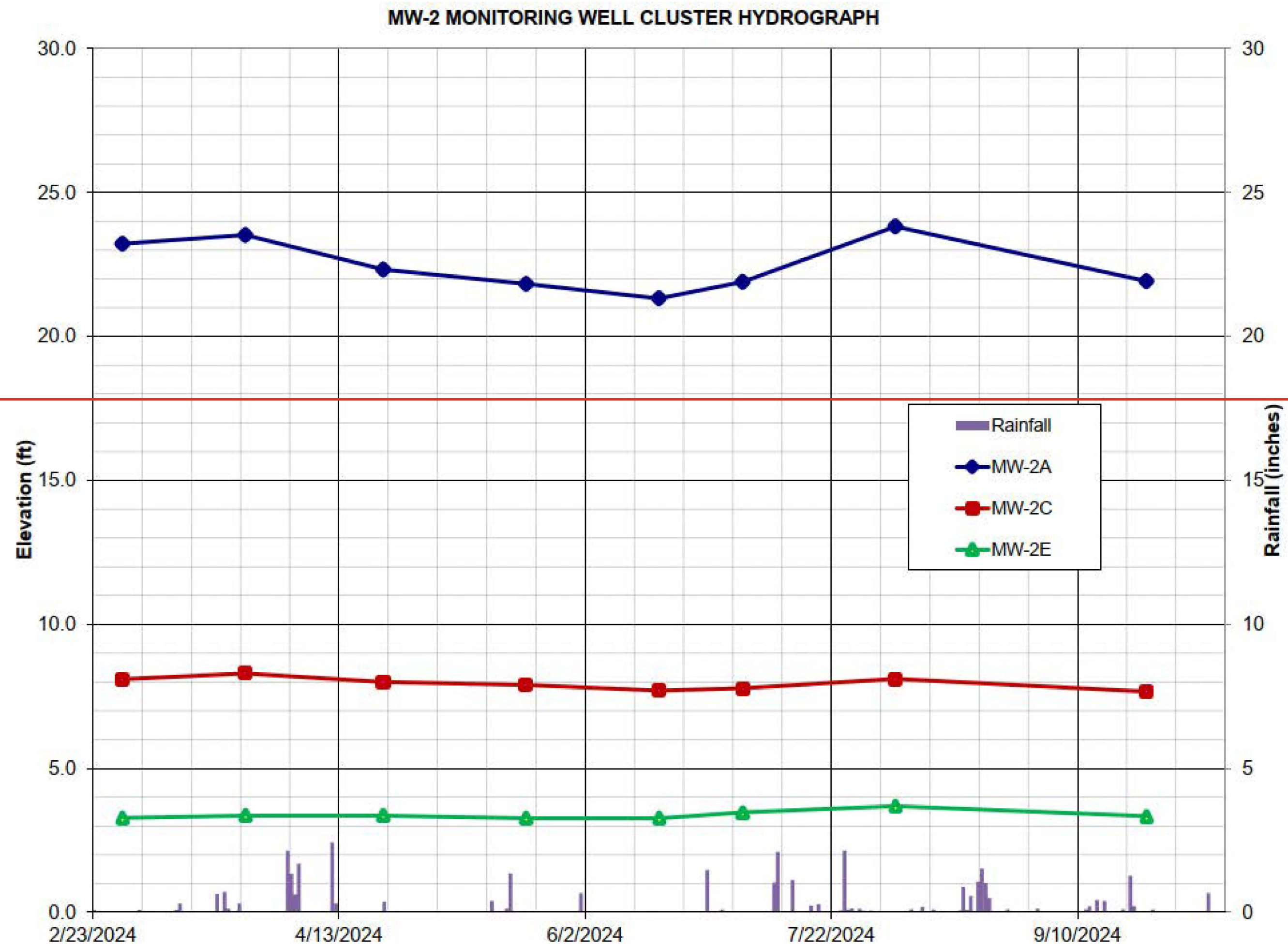


Figure 2.4.12-21
Hydrographs for LMGS Monitoring Wells
(Sheet 2 of ~~10~~31)

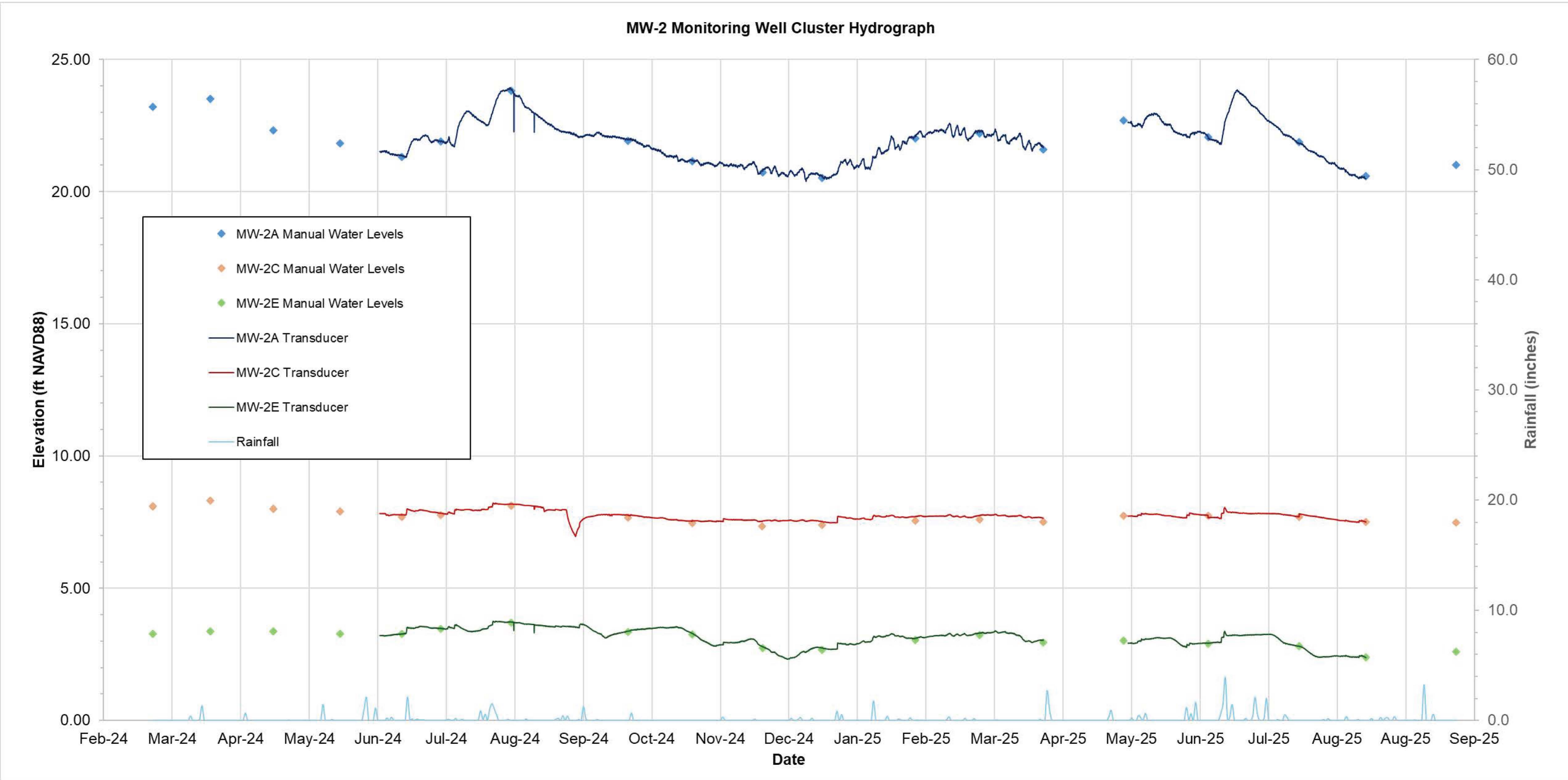


Figure 2.4.12-21
Hydrographs for LMGS Monitoring Wells
(Sheet 3 of 10)

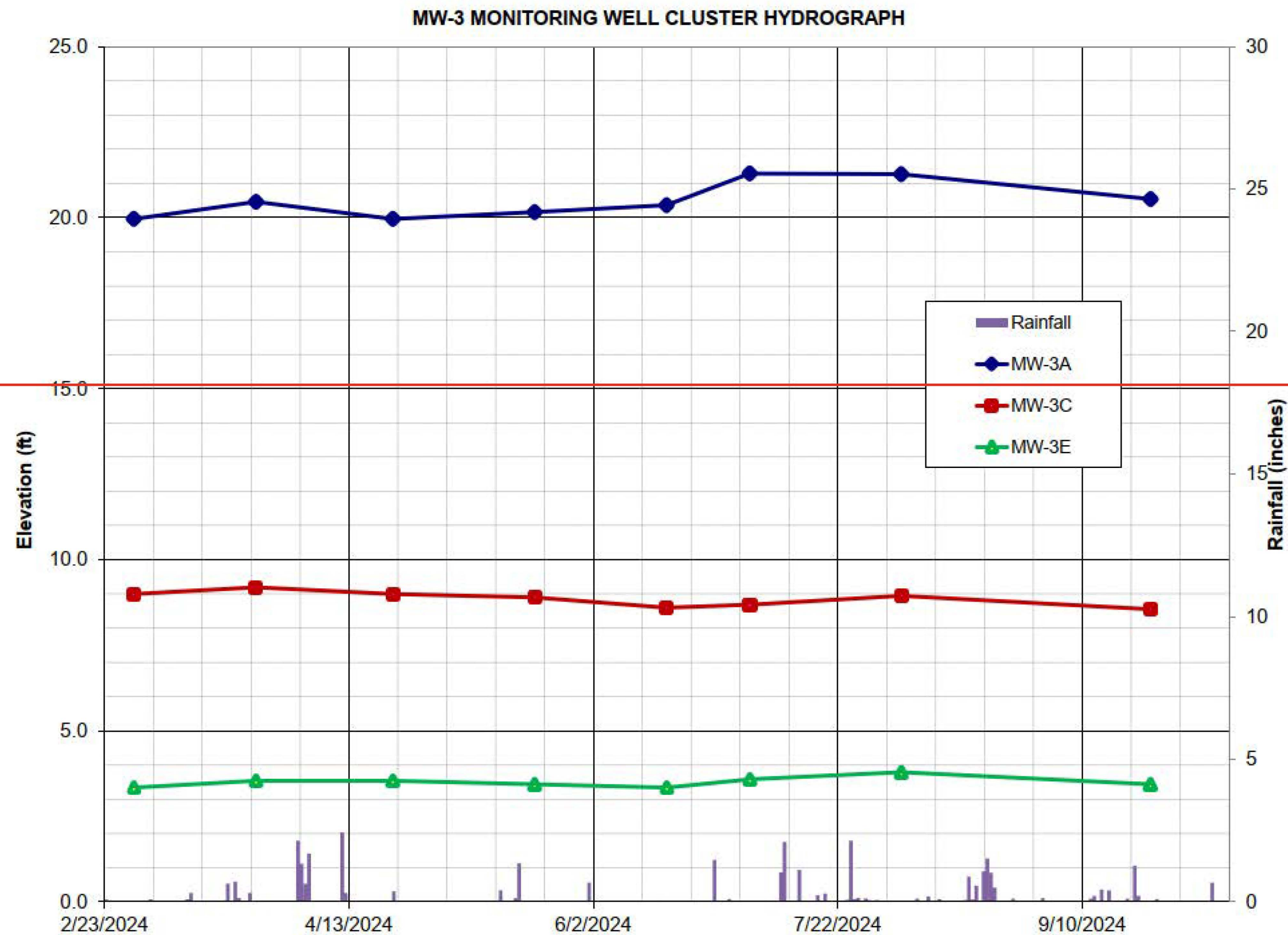
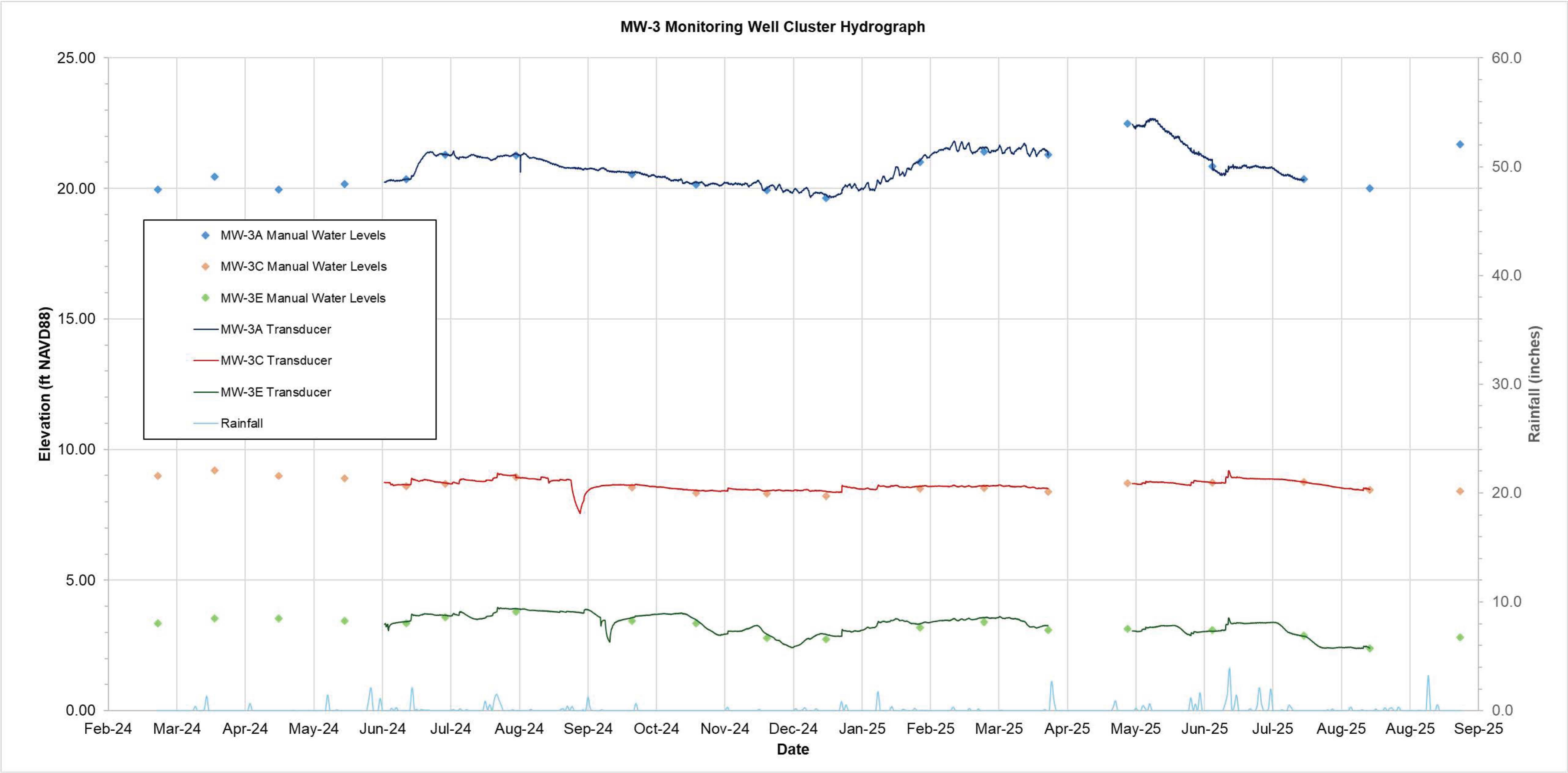


Figure 2.4.12-21
Hydrographs for LMGS Monitoring Wells
(Sheet 3 of ~~10~~31)



~~Figure 2.4.12-21~~
~~Hydrographs for LMGS Monitoring Wells~~
~~(Sheet 4 of 10)~~

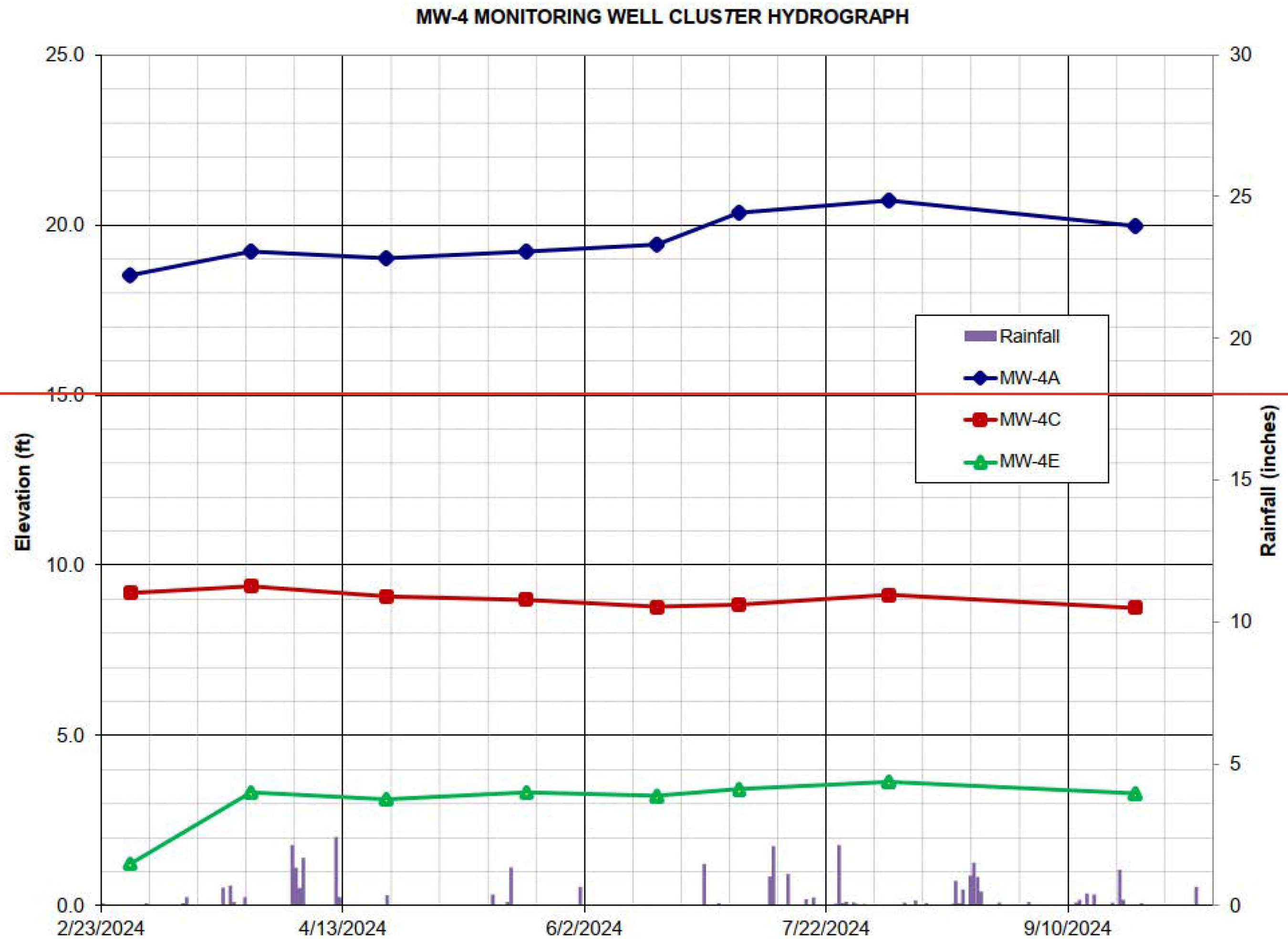
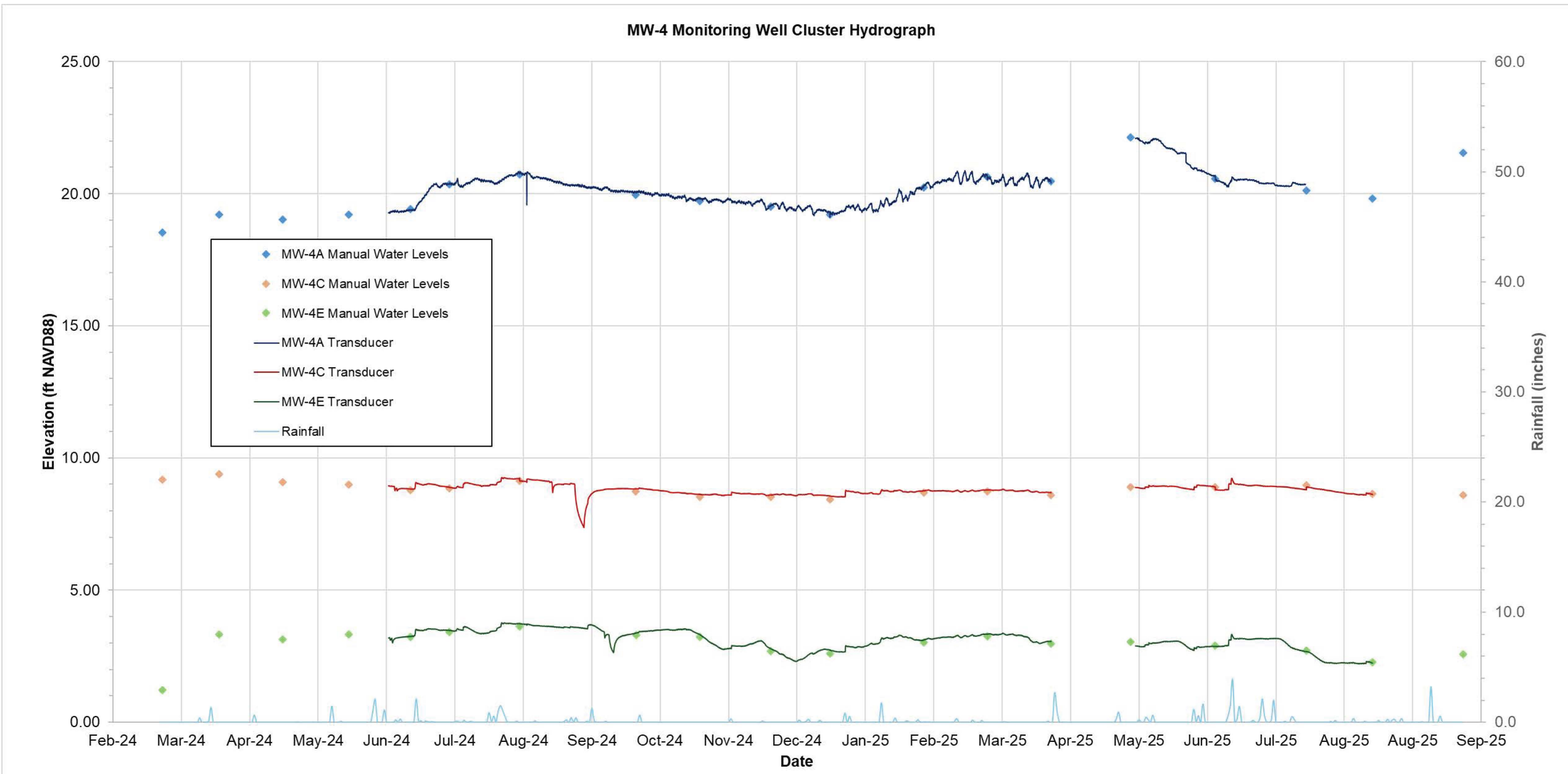


Figure 2.4.12-21
Hydrographs for LMGS Monitoring Wells
(Sheet 4 of ~~10~~31)



~~Figure 2.4.12-21~~
~~Hydrographs for LMGS Monitoring Wells~~
~~(Sheet 5 of 10)~~

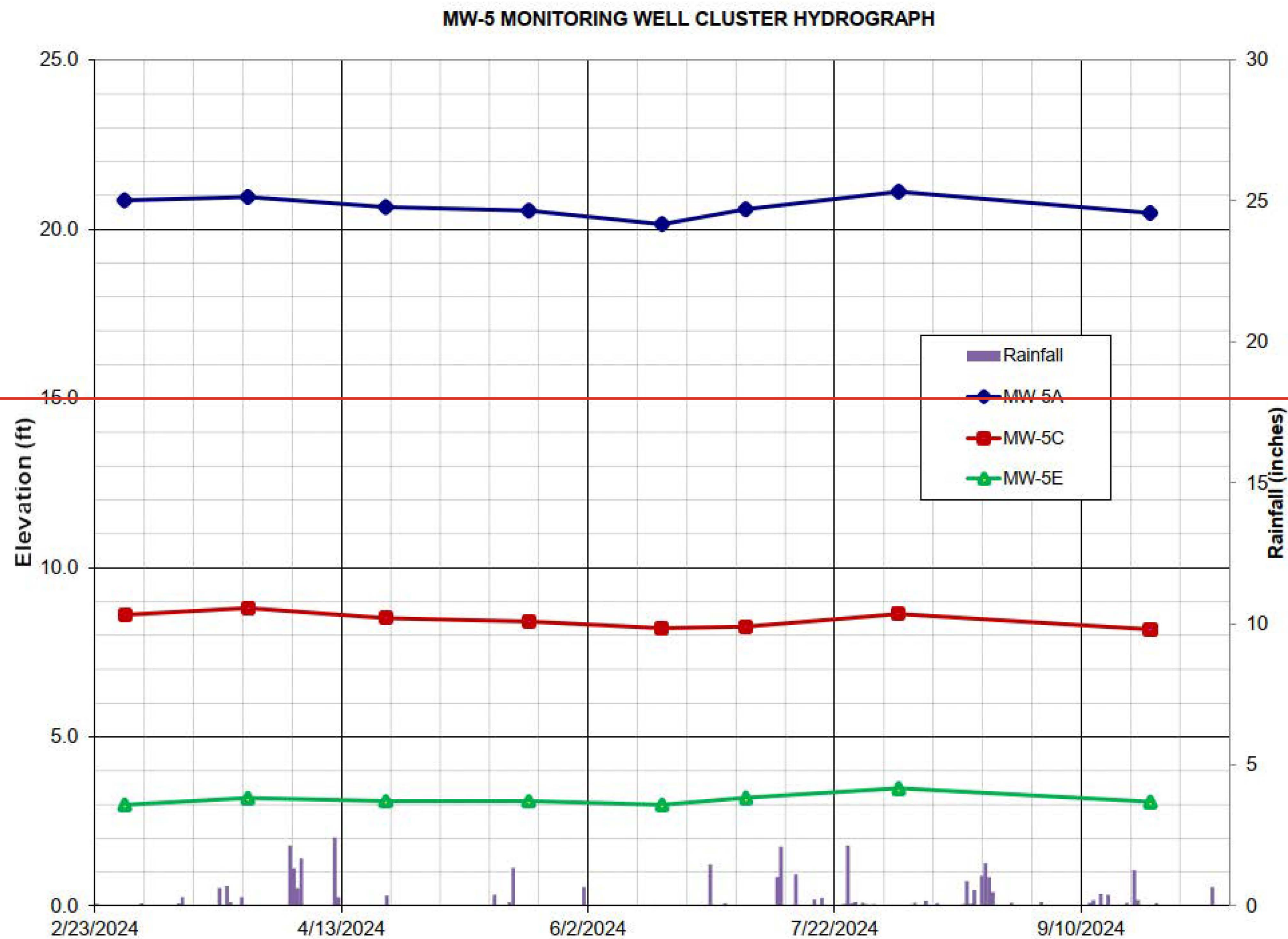
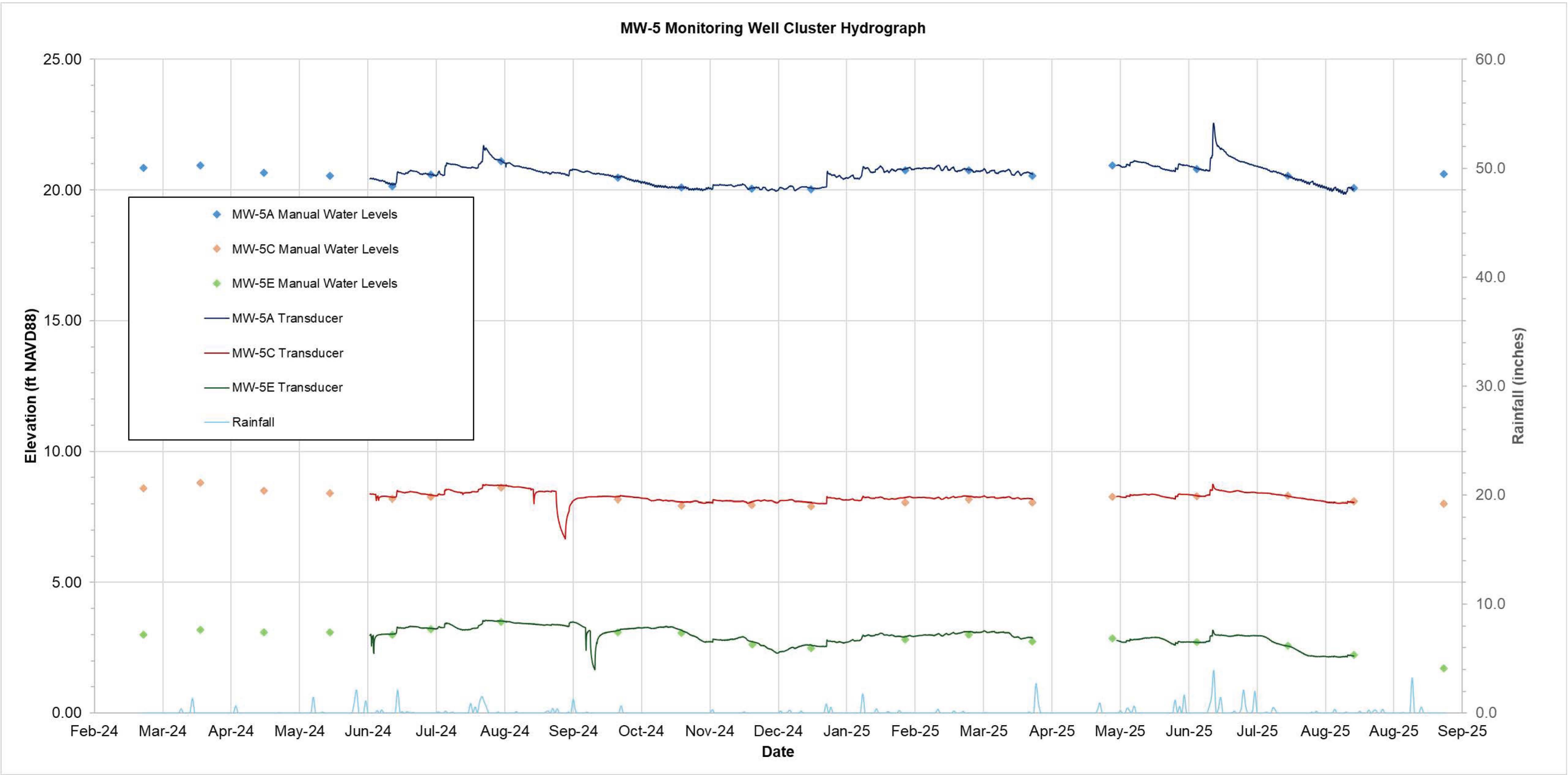


Figure 2.4.12-21
Hydrographs for LMGS Monitoring Wells
(Sheet 5 of ~~10~~31)



~~Figure 2.4.12-21~~
~~Hydrographs for LMGS Monitoring Wells~~
~~(Sheet 6 of 10)~~

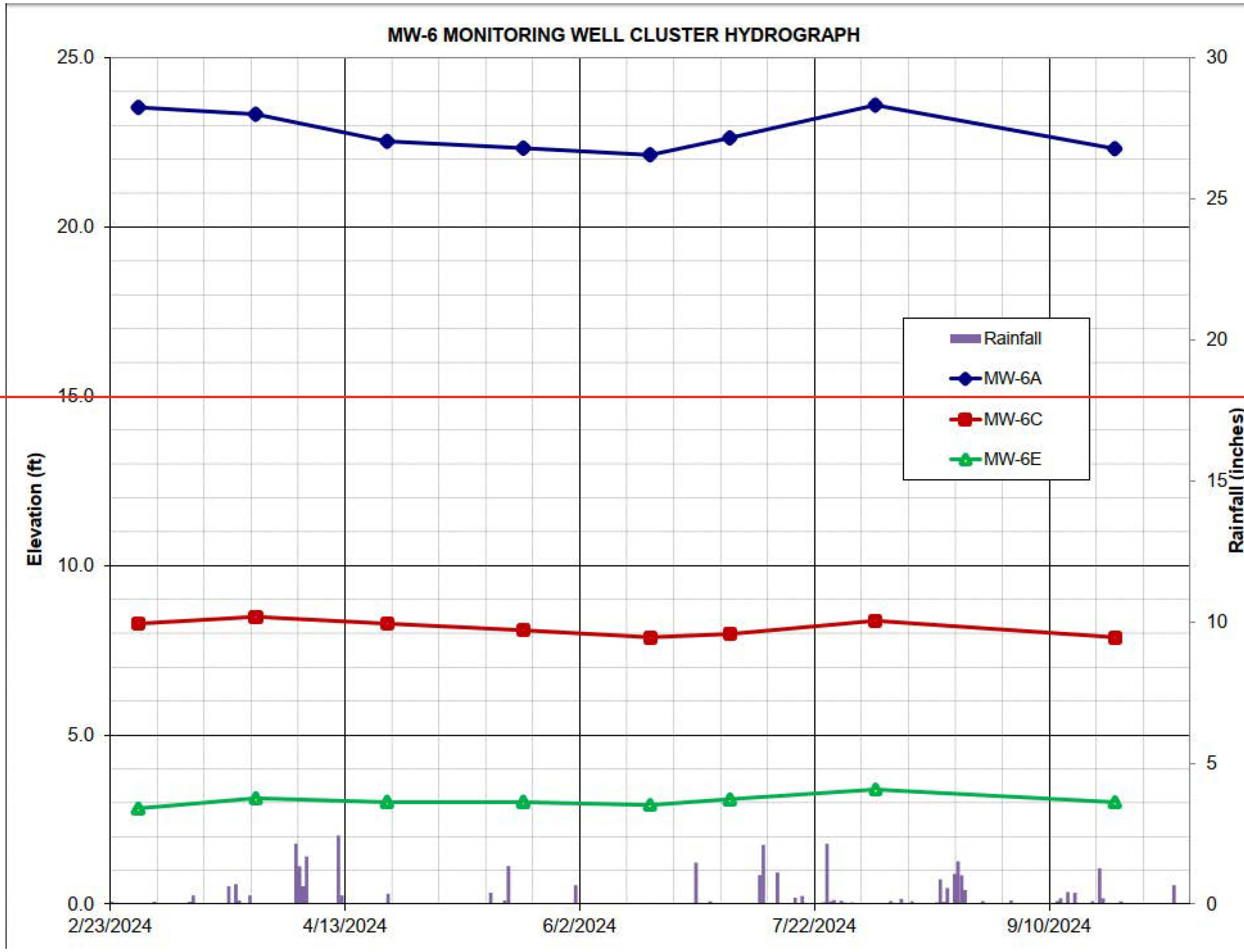
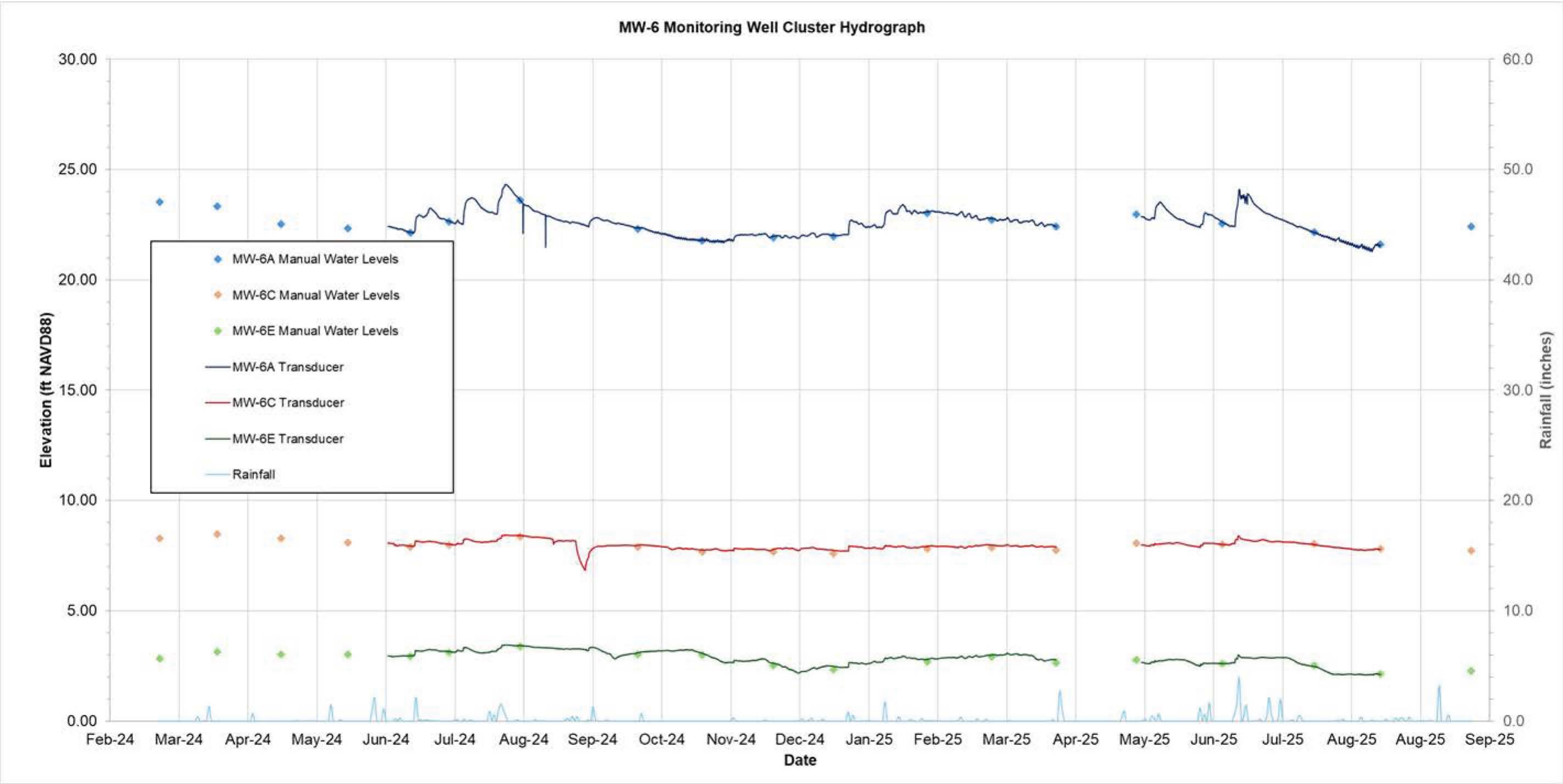


Figure 2.4.12-21
Hydrographs for LMGS Monitoring Wells
(Sheet 6 of ~~10~~31)



~~Figure 2.4.12-21~~
~~Hydrographs for LMGS Monitoring Wells~~
~~(Sheet 7 of 10)~~

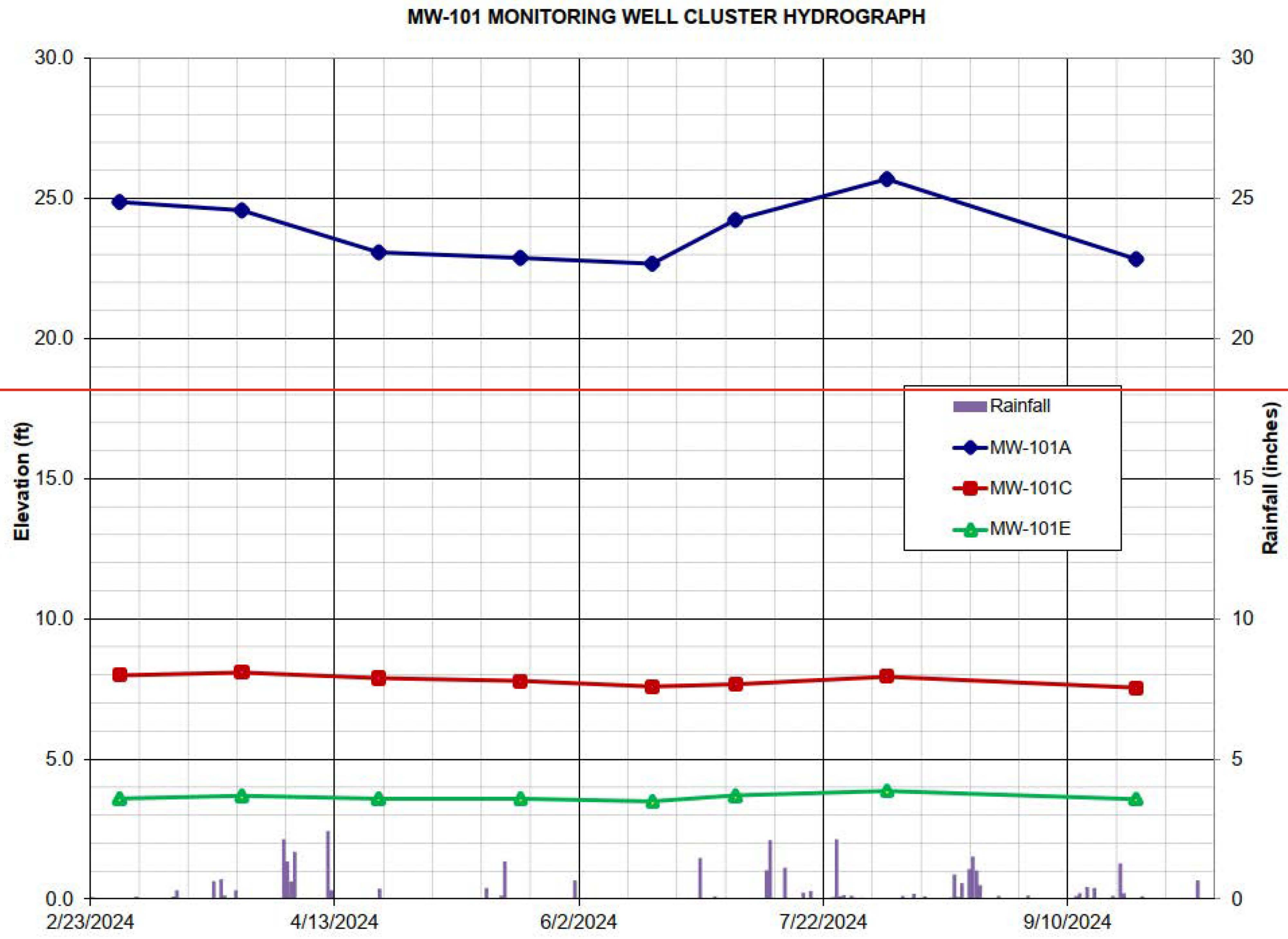
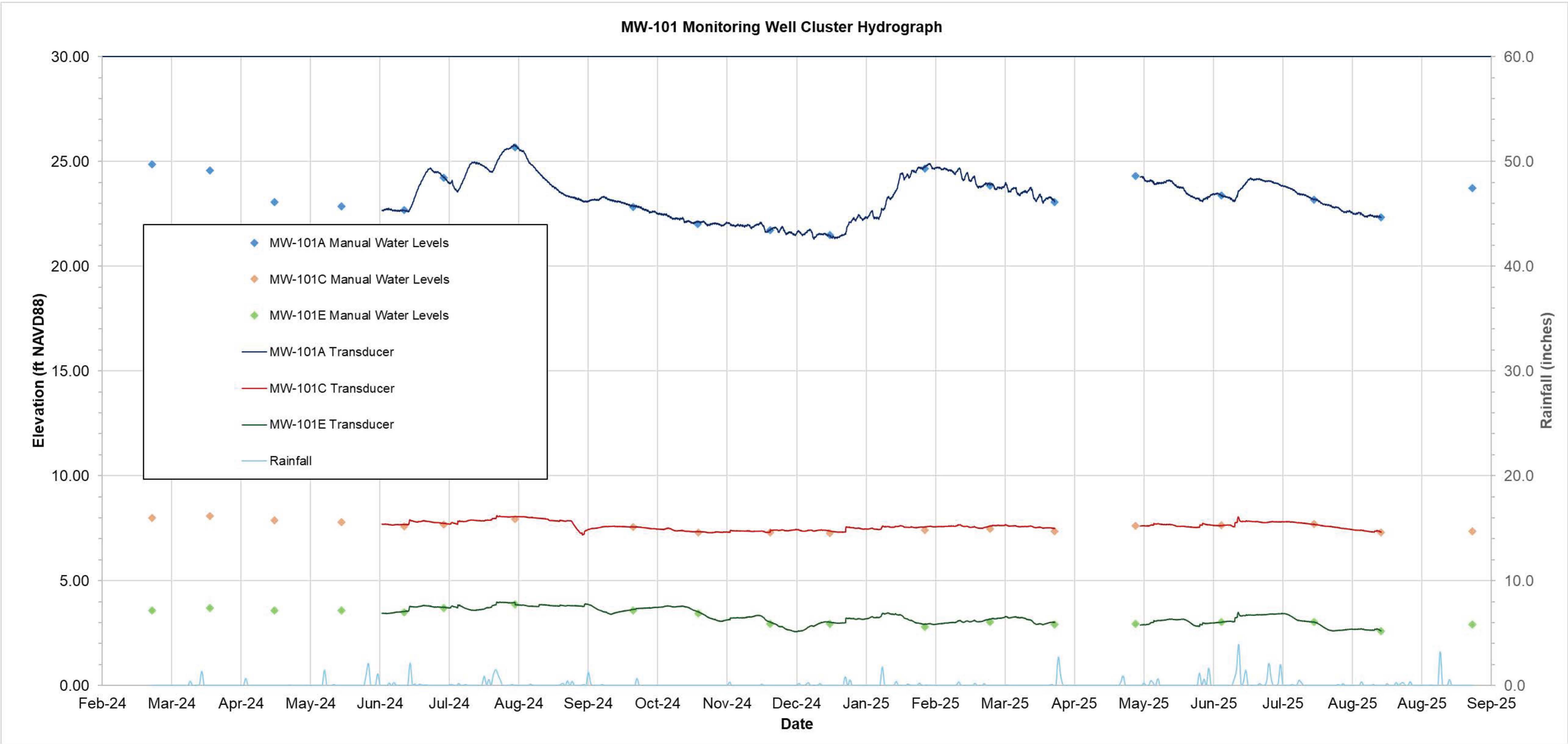


Figure 2.4.12-21
Hydrographs for LMGS Monitoring Wells
(Sheet 7 of ~~10~~31)



~~Figure 2.4.12-21~~

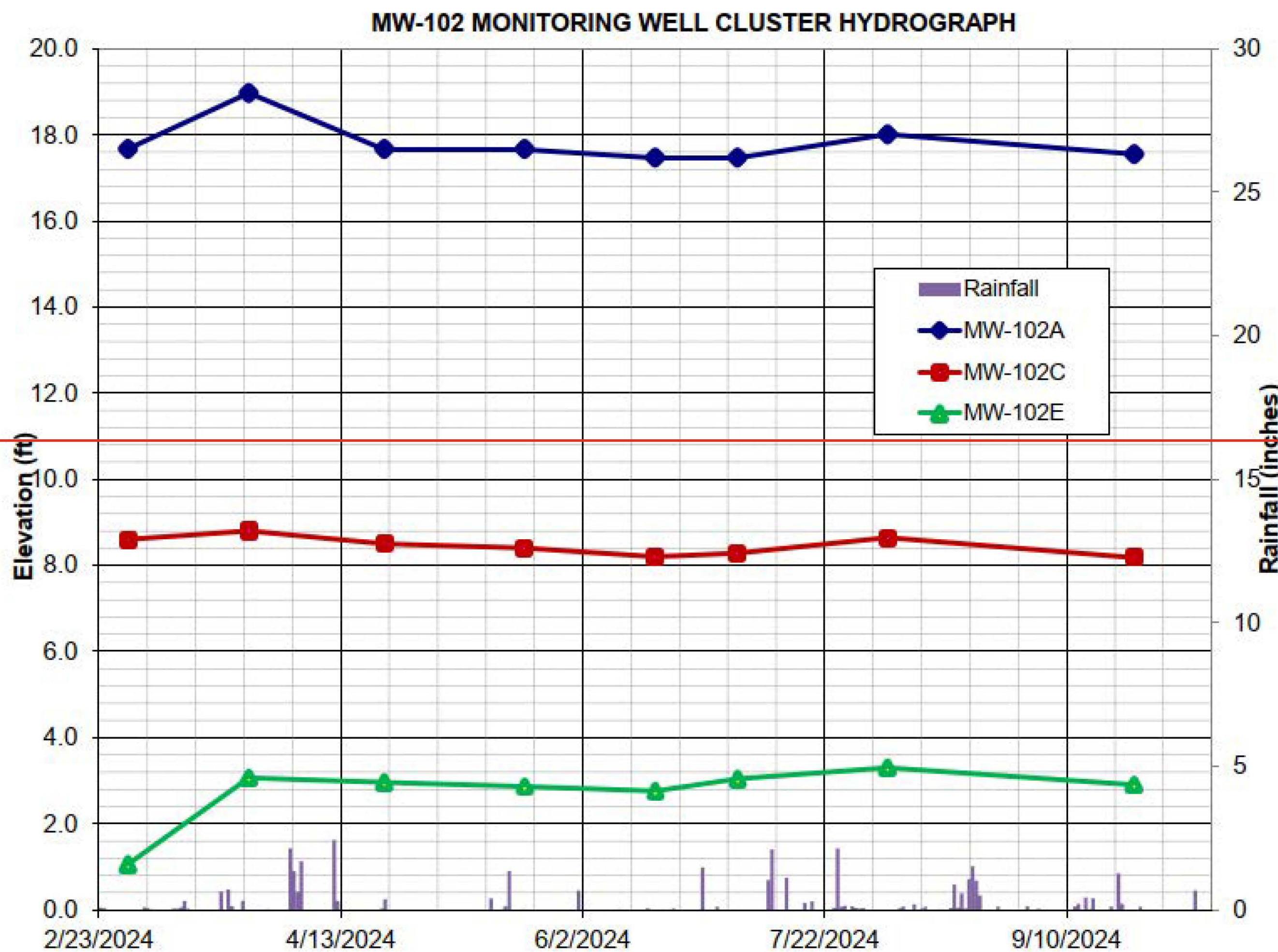
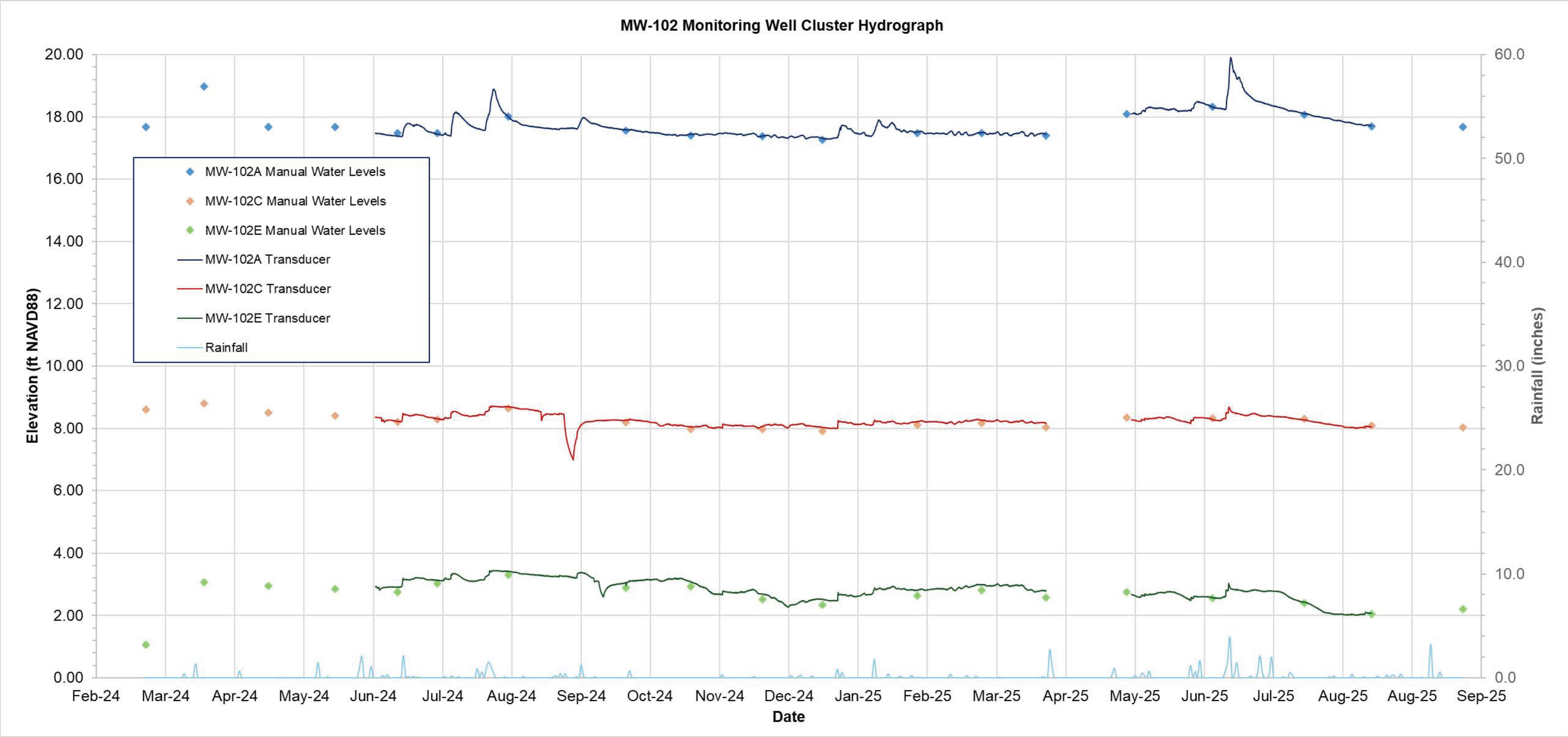


Figure 2.4.12-21
Hydrographs for LMGS Monitoring Wells
(Sheet 8 of ~~10~~31)



~~Figure 2.4.12-21~~
~~Hydrographs for LMGS Monitoring Wells~~
~~(Sheet 9 of 10)~~

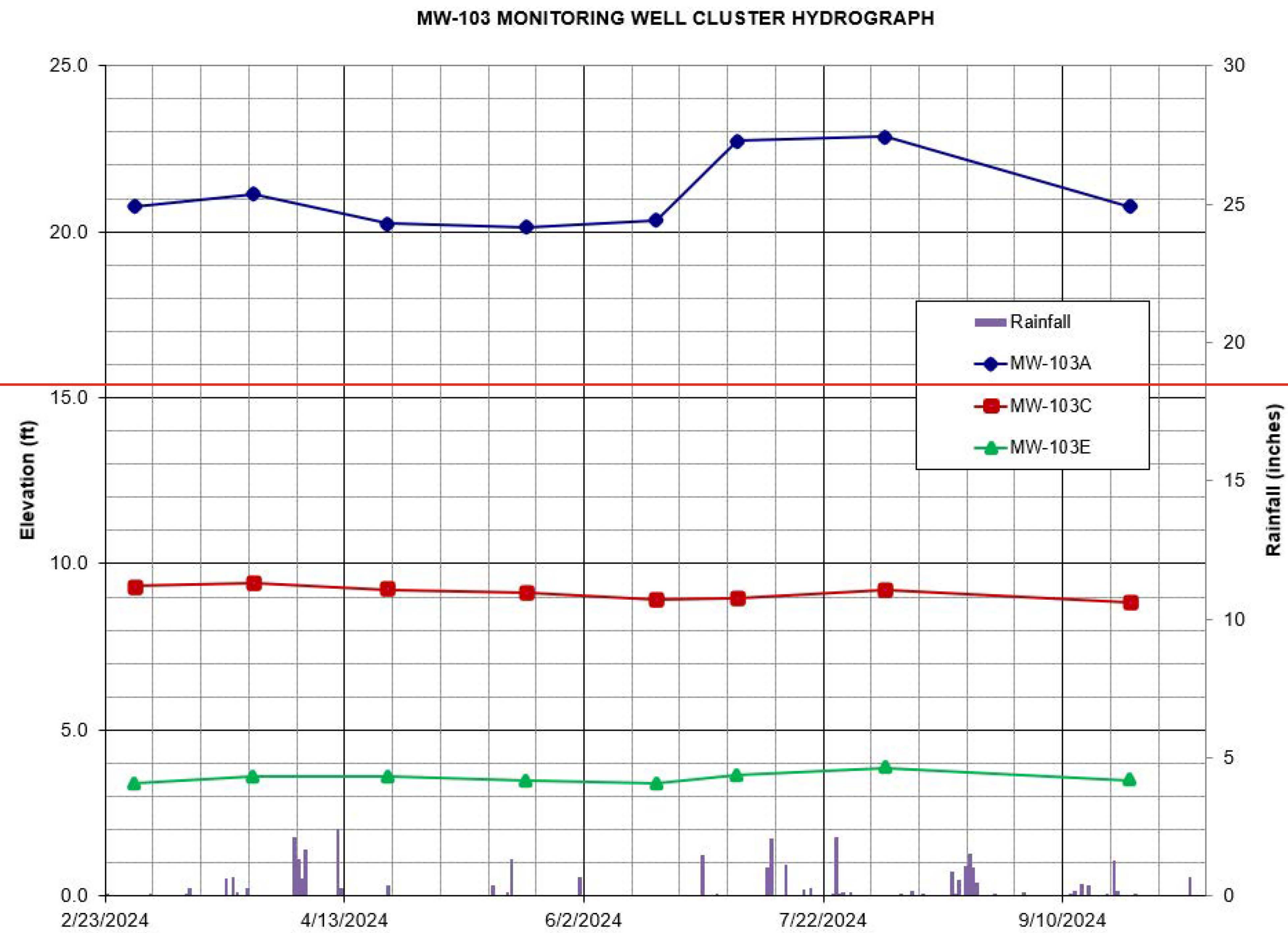
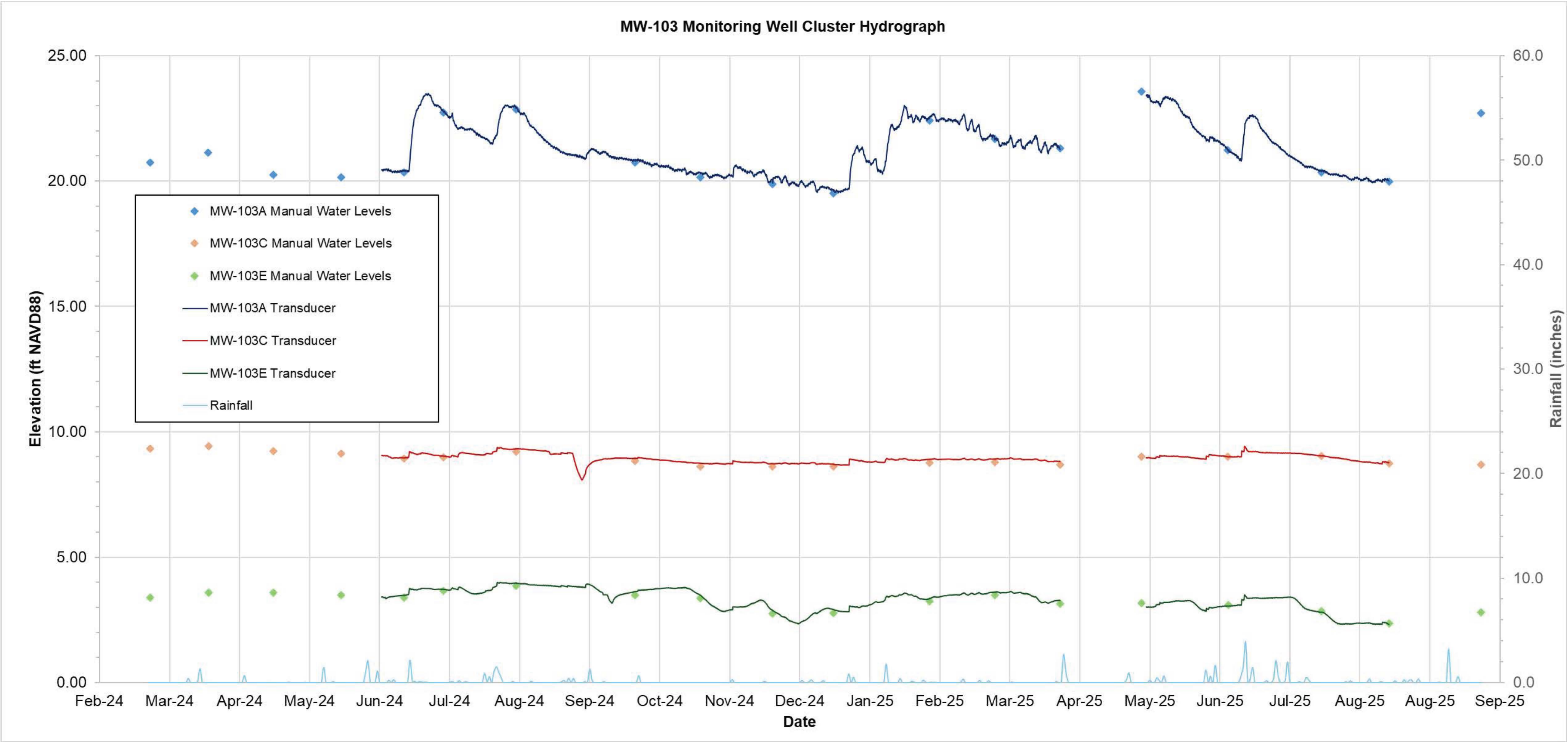


Figure 2.4.12-21
Hydrographs for LMGS Monitoring Wells
(Sheet 9 of ~~10~~31)



~~Figure 2.4.12-21~~
~~Hydrographs for LMGS Monitoring Wells~~
~~(Sheet 10 of 10)~~

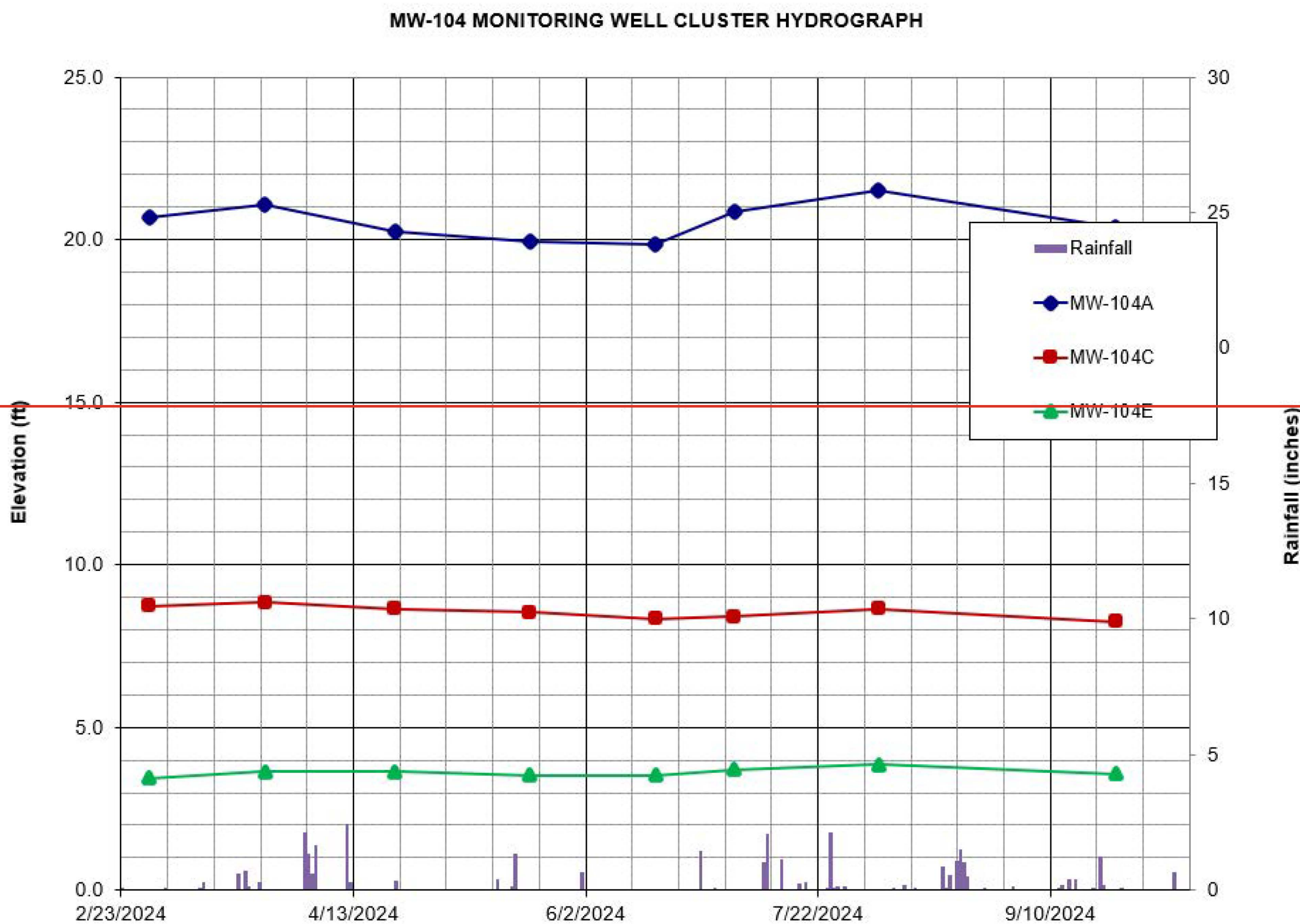


Figure 2.4.12-21
Hydrographs for LMGS Monitoring Wells
(Sheet 10 of ~~10~~31)

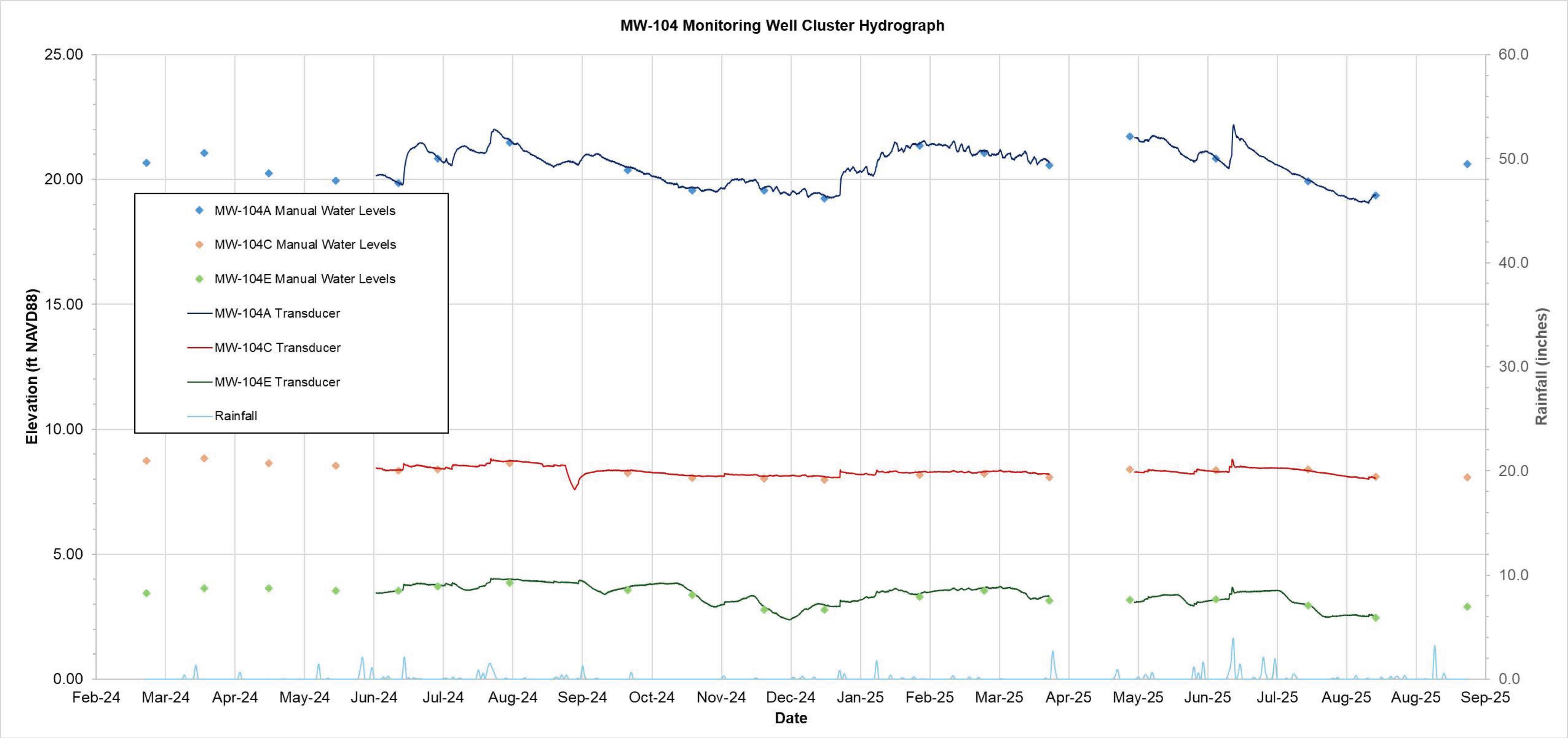


Figure 2.4.12-21
Hydrographs for LMGS Monitoring Wells
(Sheet 11 of 31)

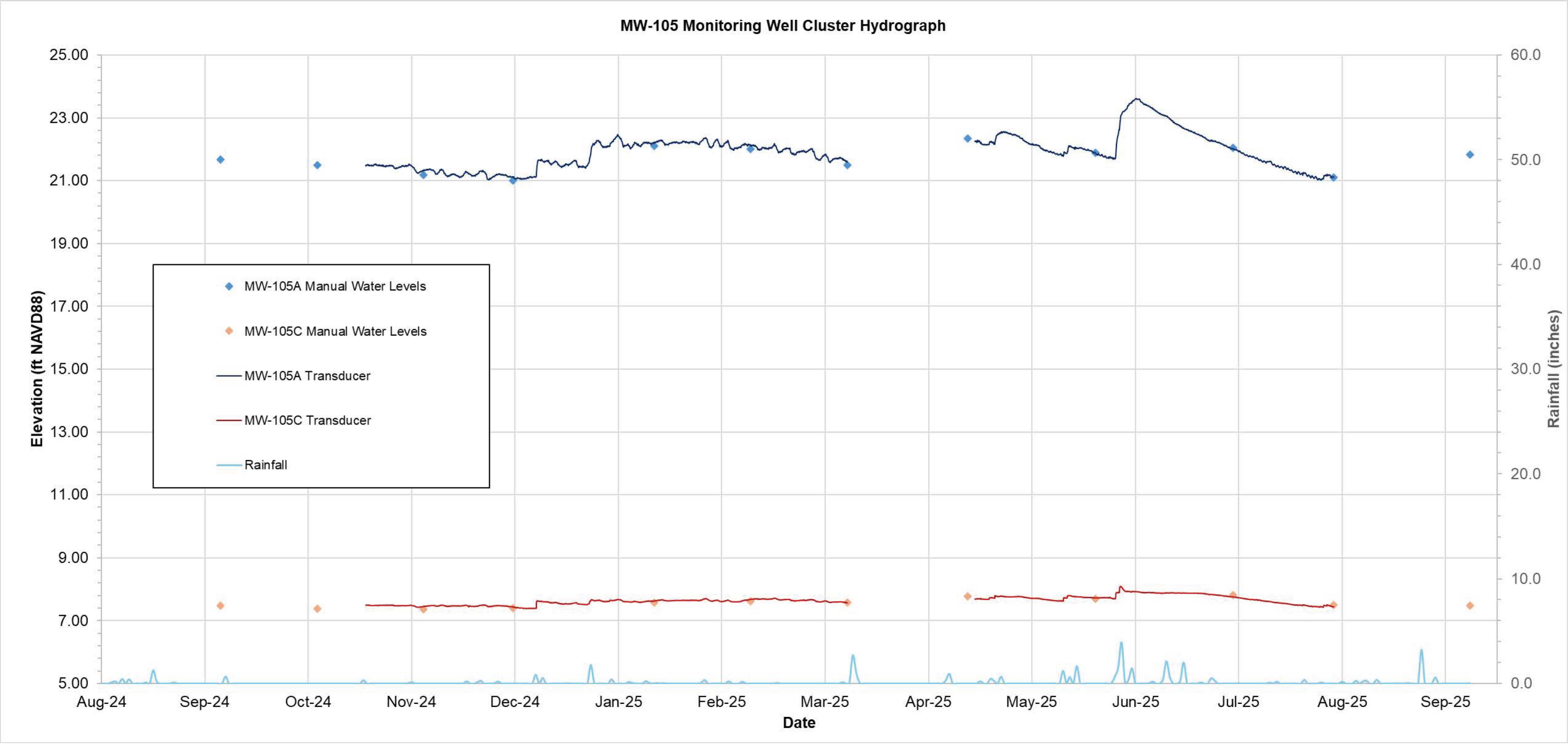


Figure 2.4.12-21
Hydrographs for LMGS Monitoring Wells
(Sheet 12 of 31)

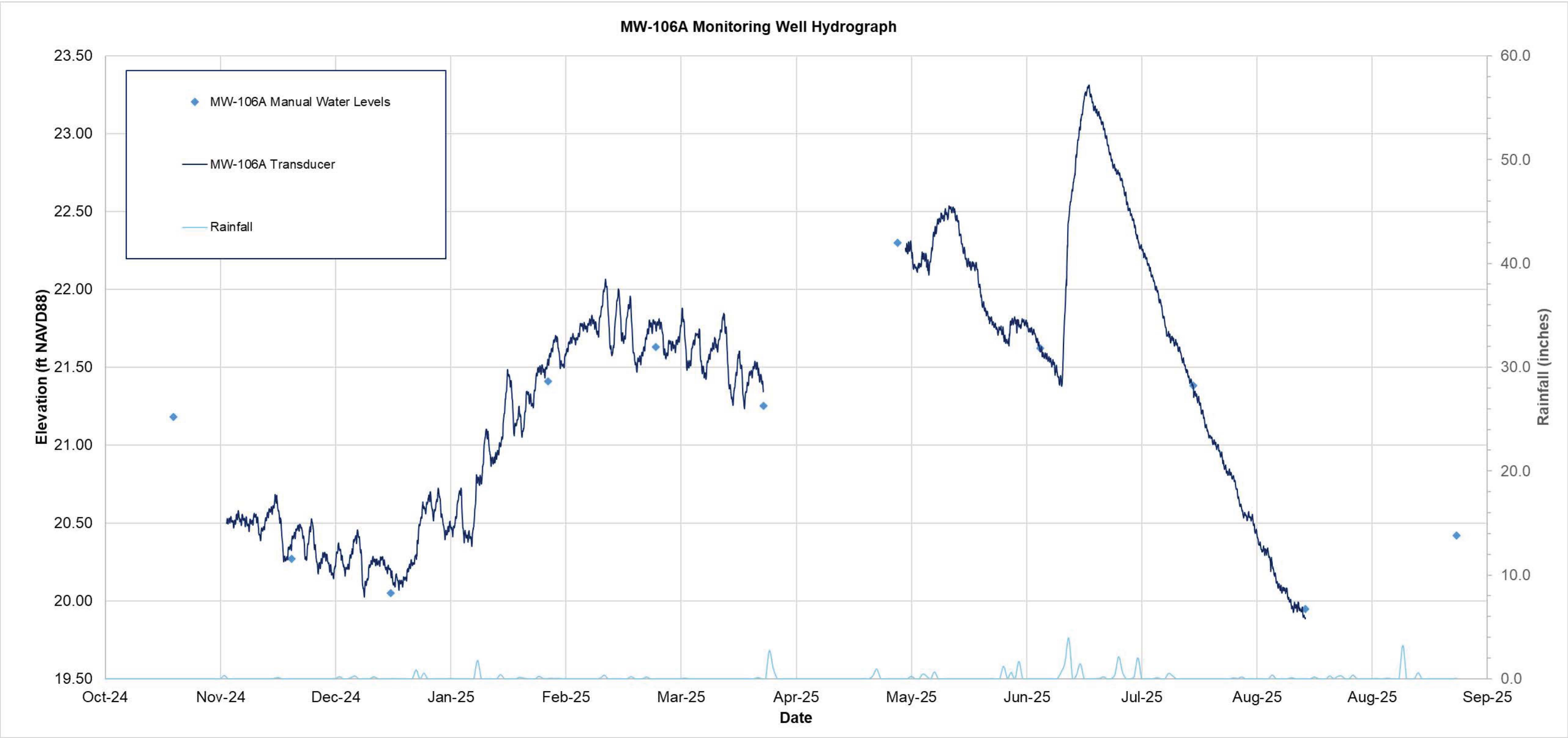


Figure 2.4.12-21
Hydrographs for LMGS Monitoring Wells
(Sheet 13 of 31)

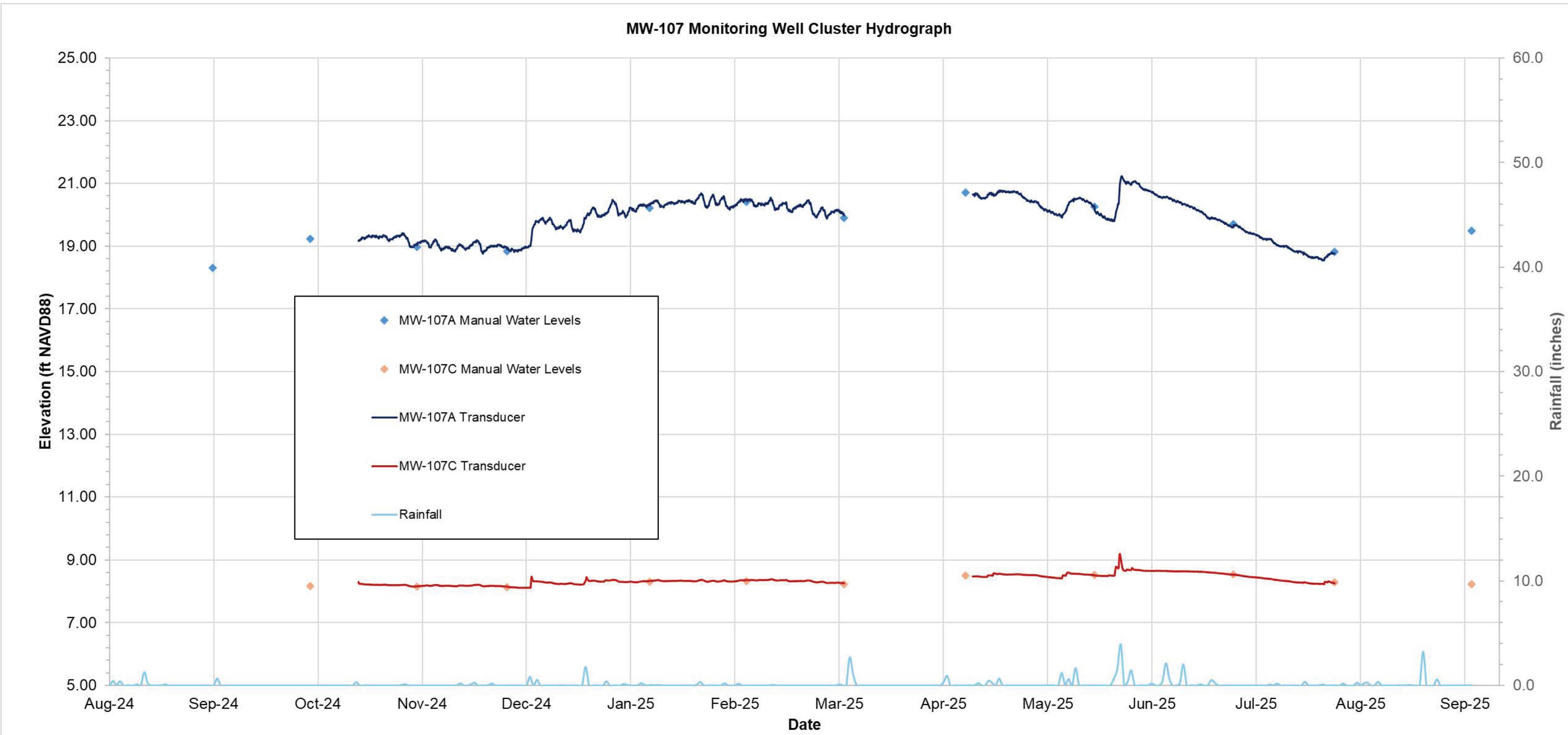


Figure 2.4.12-21
Hydrographs for LMGS Monitoring Wells
(Sheet 14 of 31)

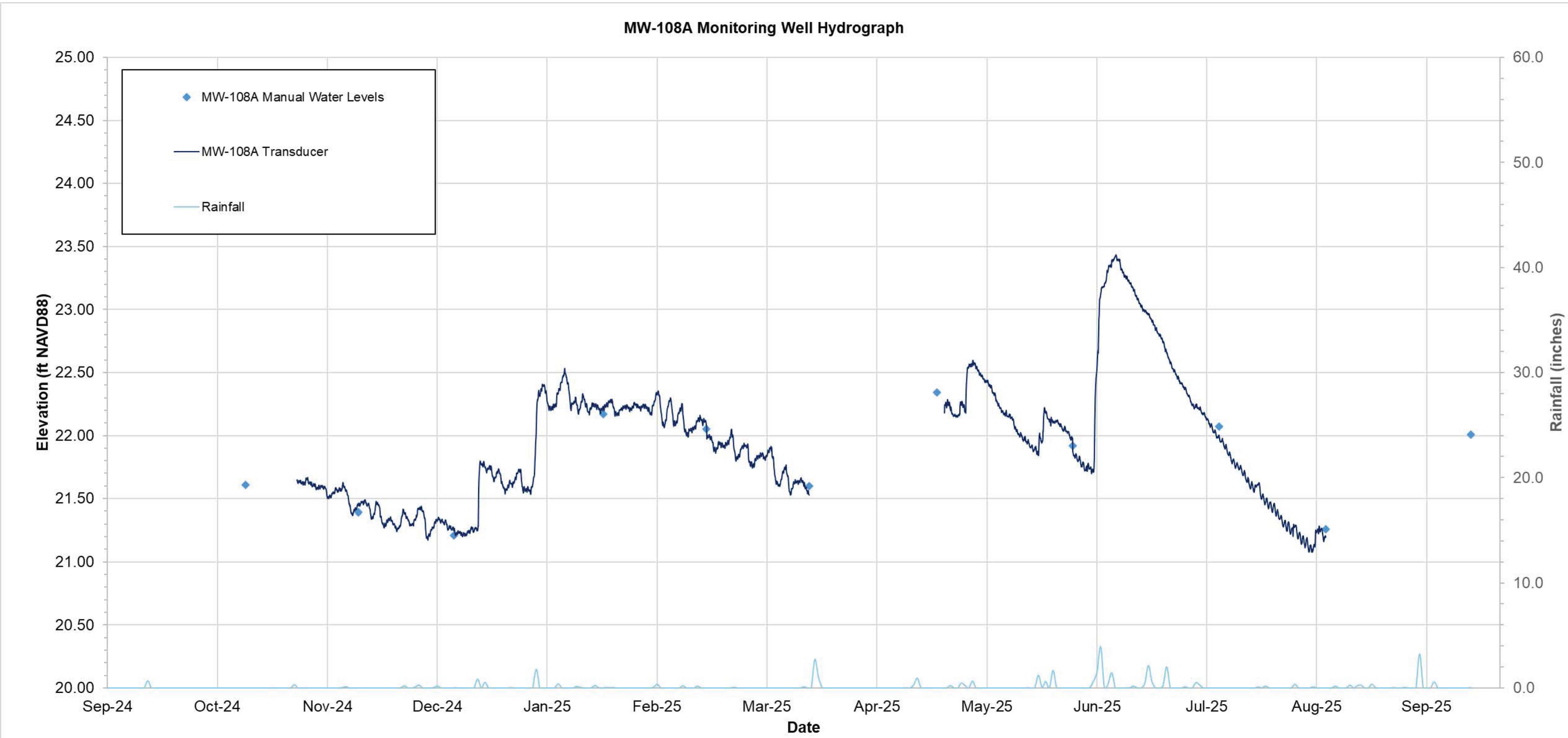


Figure 2.4.12-21
Hydrographs for LMGS Monitoring Wells
(Sheet 15 of 31)

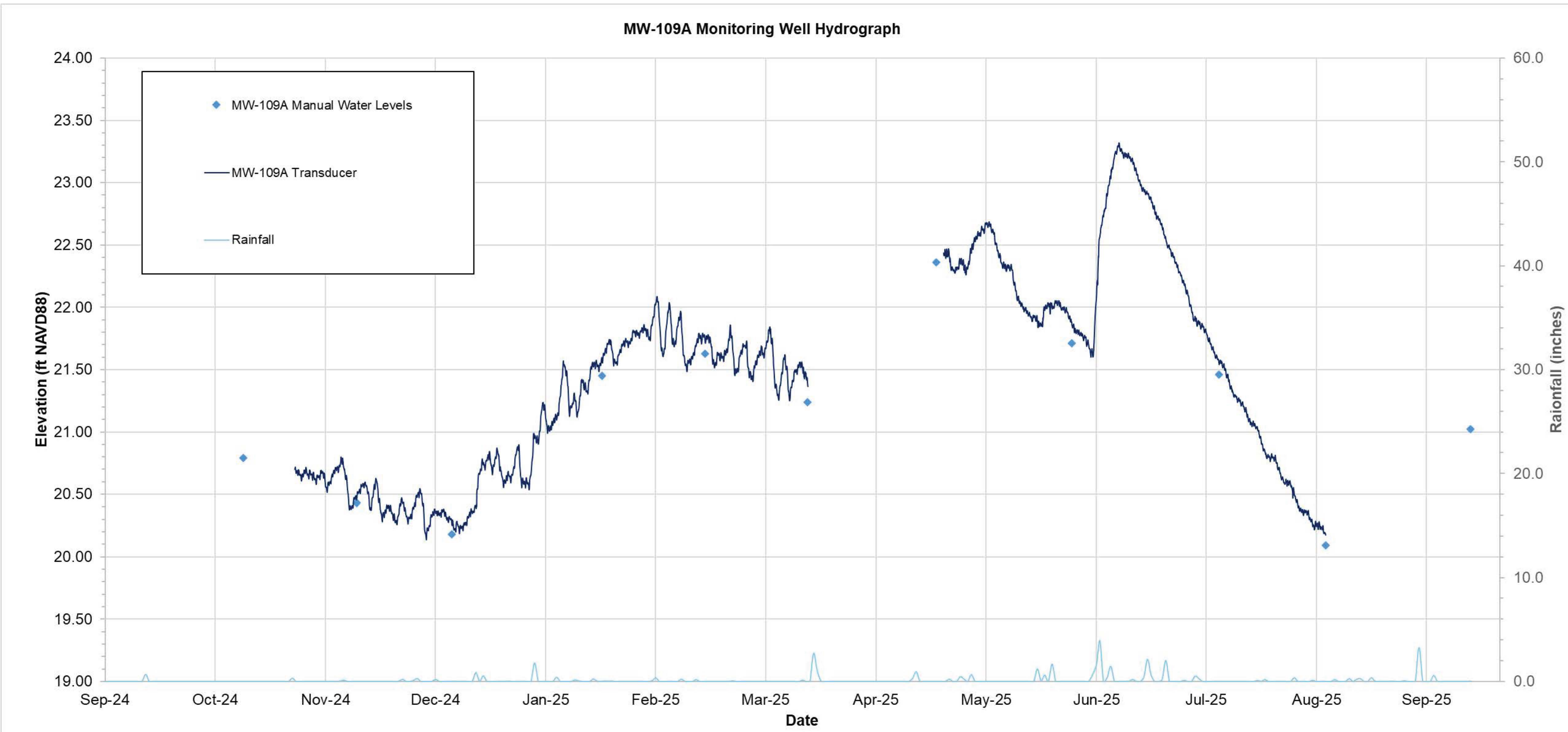


Figure 2.4.12-21
Hydrographs for LMGS Monitoring Wells
(Sheet 16 of 31)

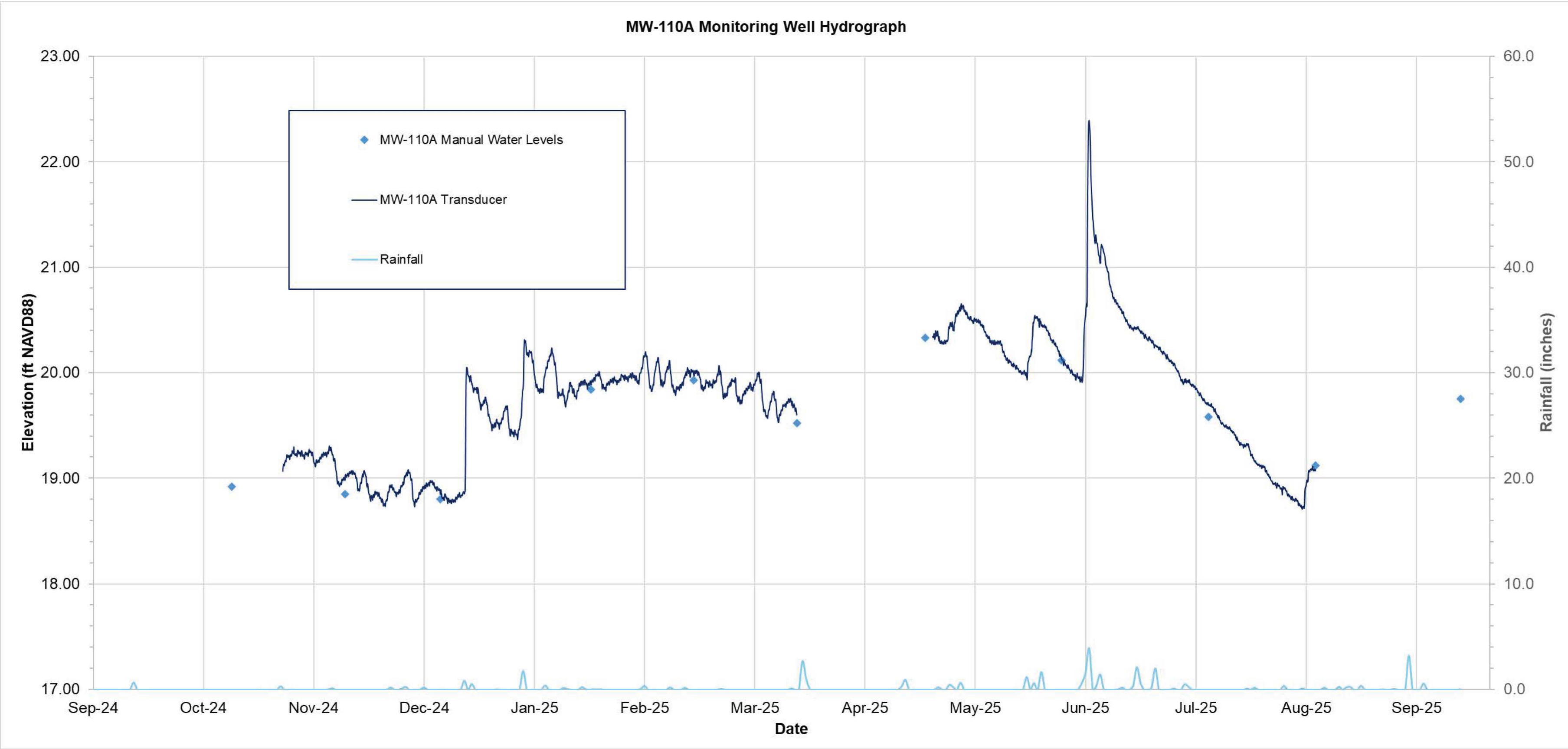


Figure 2.4.12-21
Hydrographs for LMGS Monitoring Wells
(Sheet 17 of 31)

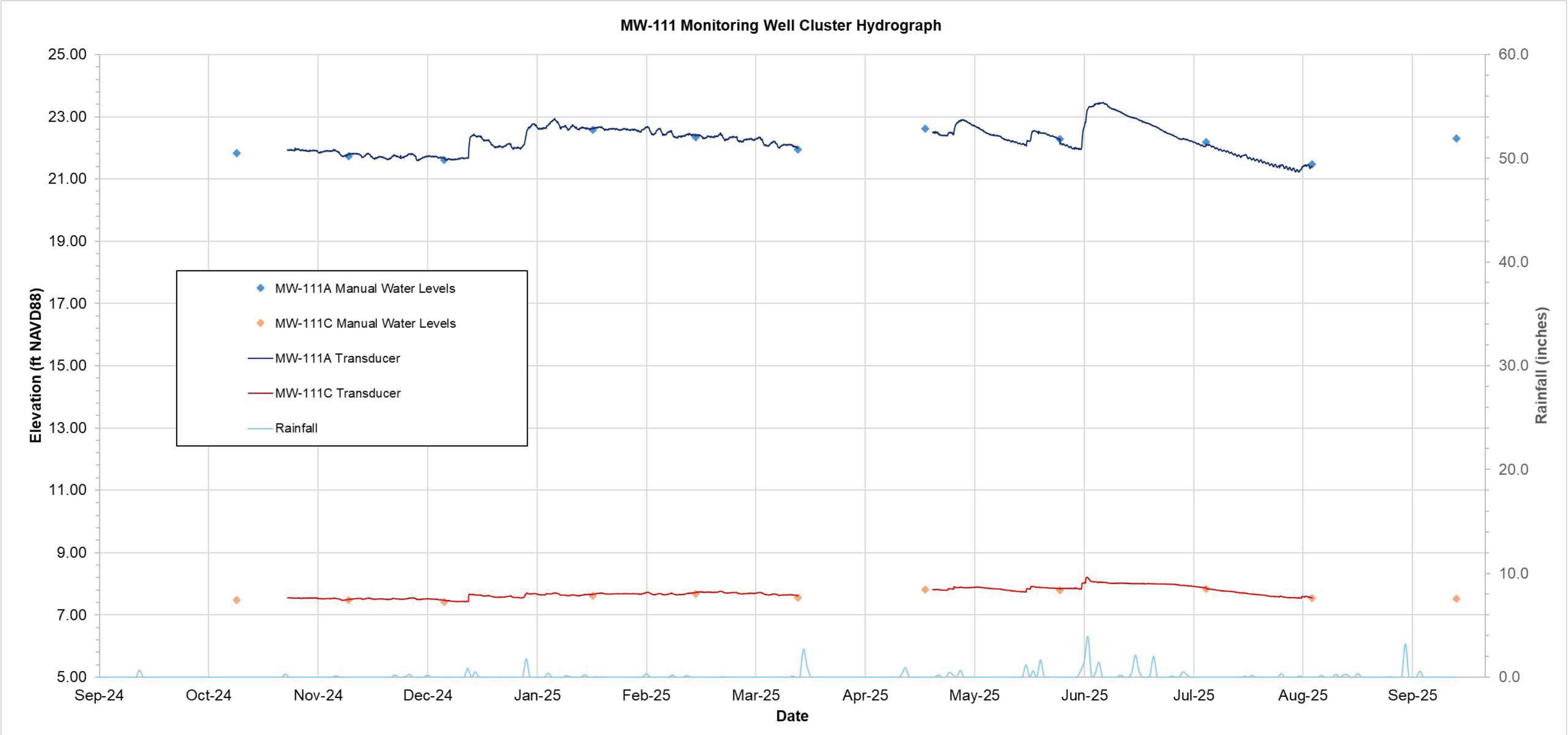


Figure 2.4.12-21
Hydrographs for LMGS Monitoring Wells
(Sheet 18 of 31)

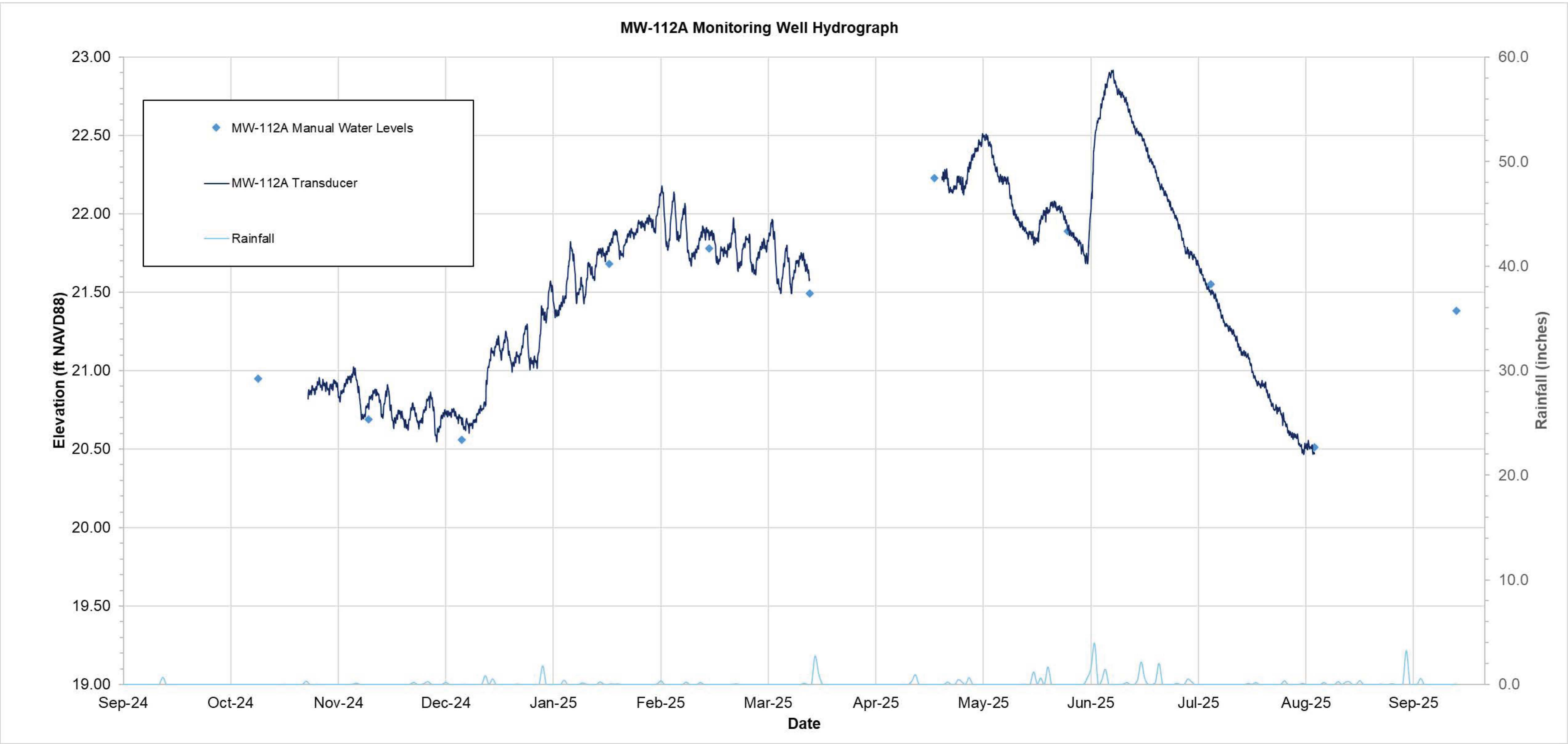


Figure 2.4.12-21
Hydrographs for LMGS Monitoring Wells
(Sheet 19 of 31)

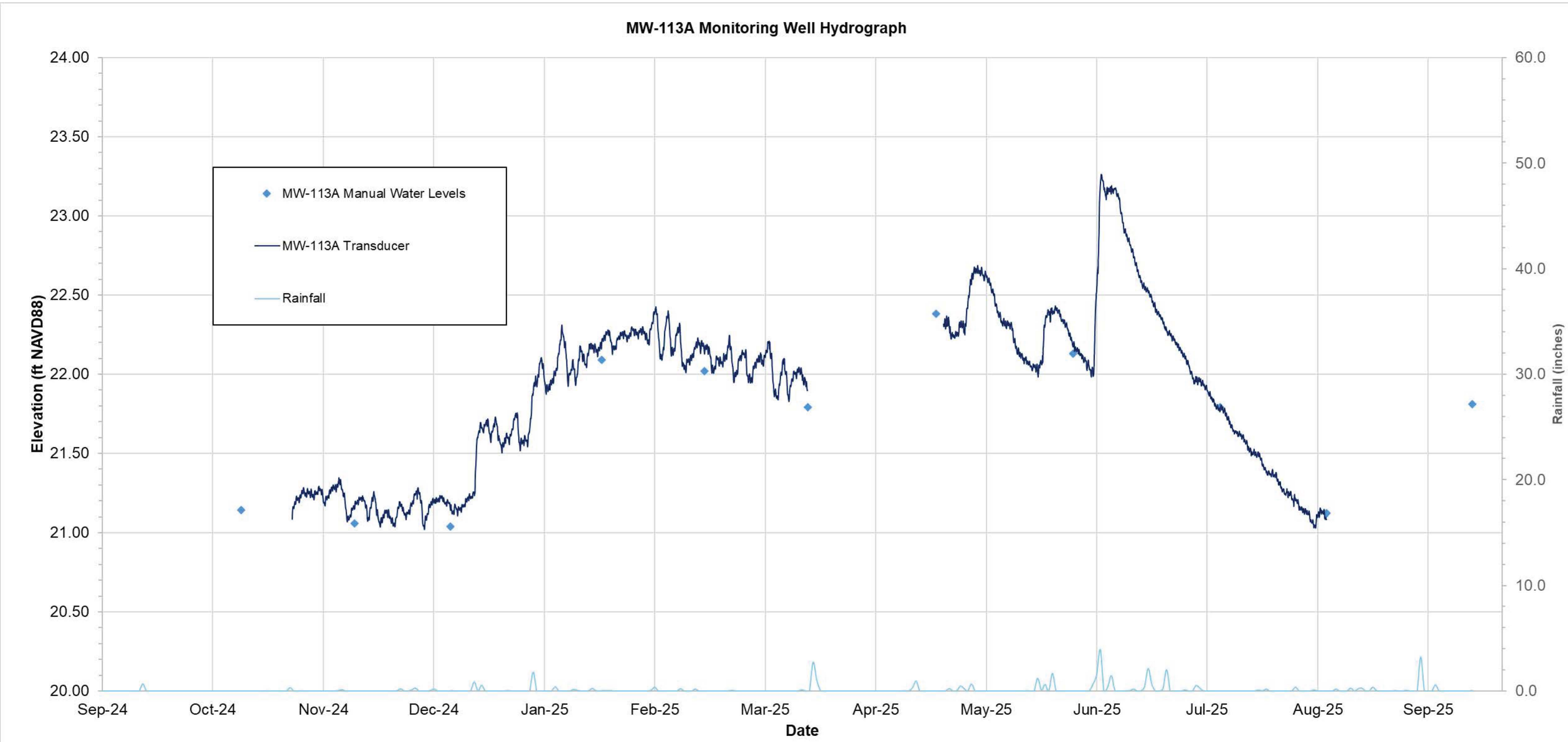


Figure 2.4.12-21
Hydrographs for LMGS Monitoring Wells
(Sheet 20 of 31)

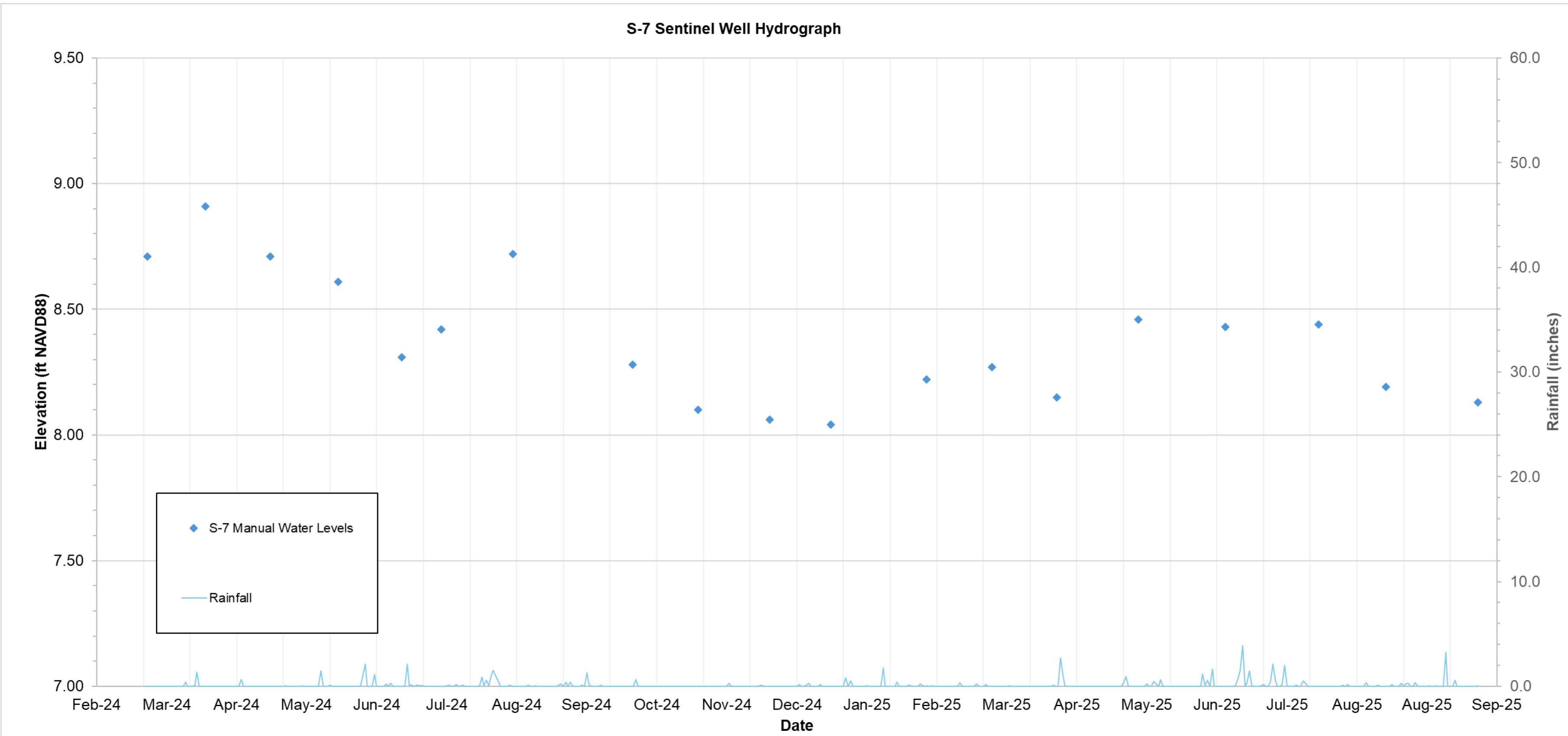


Figure 2.4.12-21
Hydrographs for LMGS Monitoring Wells
(Sheet 21 of 31)

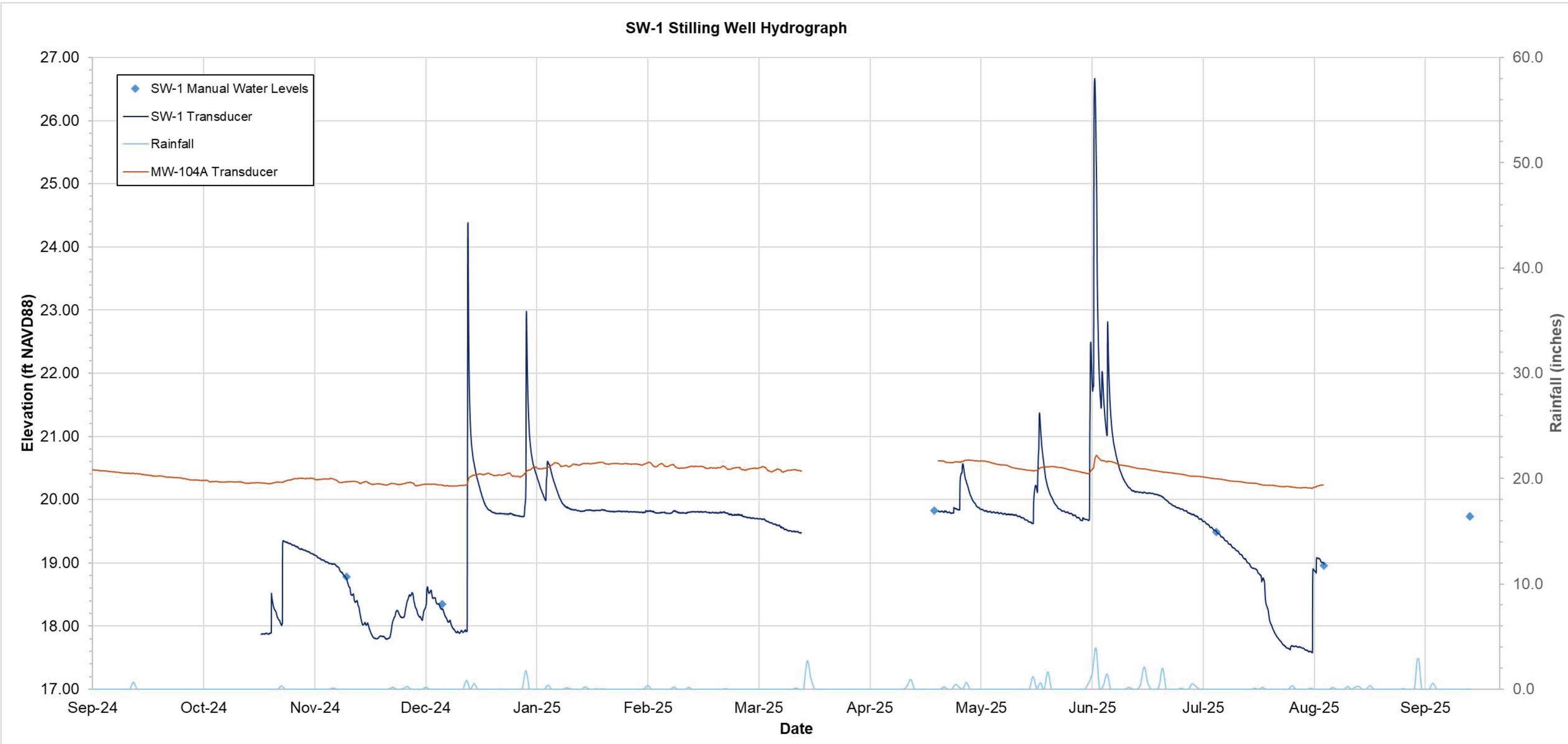


Figure 2.4.12-21
Hydrographs for LMGS Monitoring Wells
(Sheet 22 of 31)

Figure 2.4.12-21
Hydrographs for LMGS Monitoring Wells
(Sheet 23 of 31)

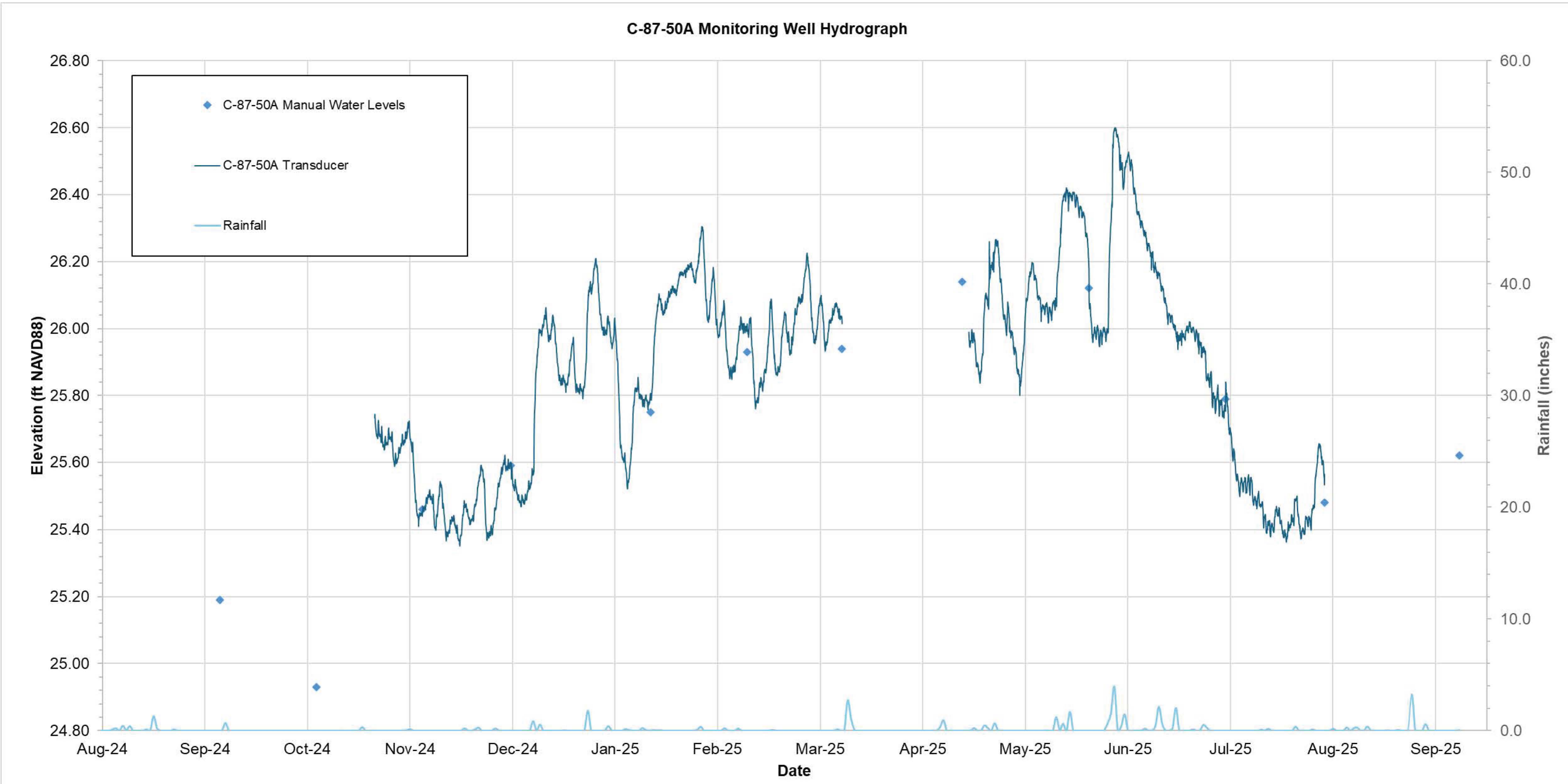


Figure 2.4.12-21
Hydrographs for LMGS Monitoring Wells
(Sheet 24 of 31)

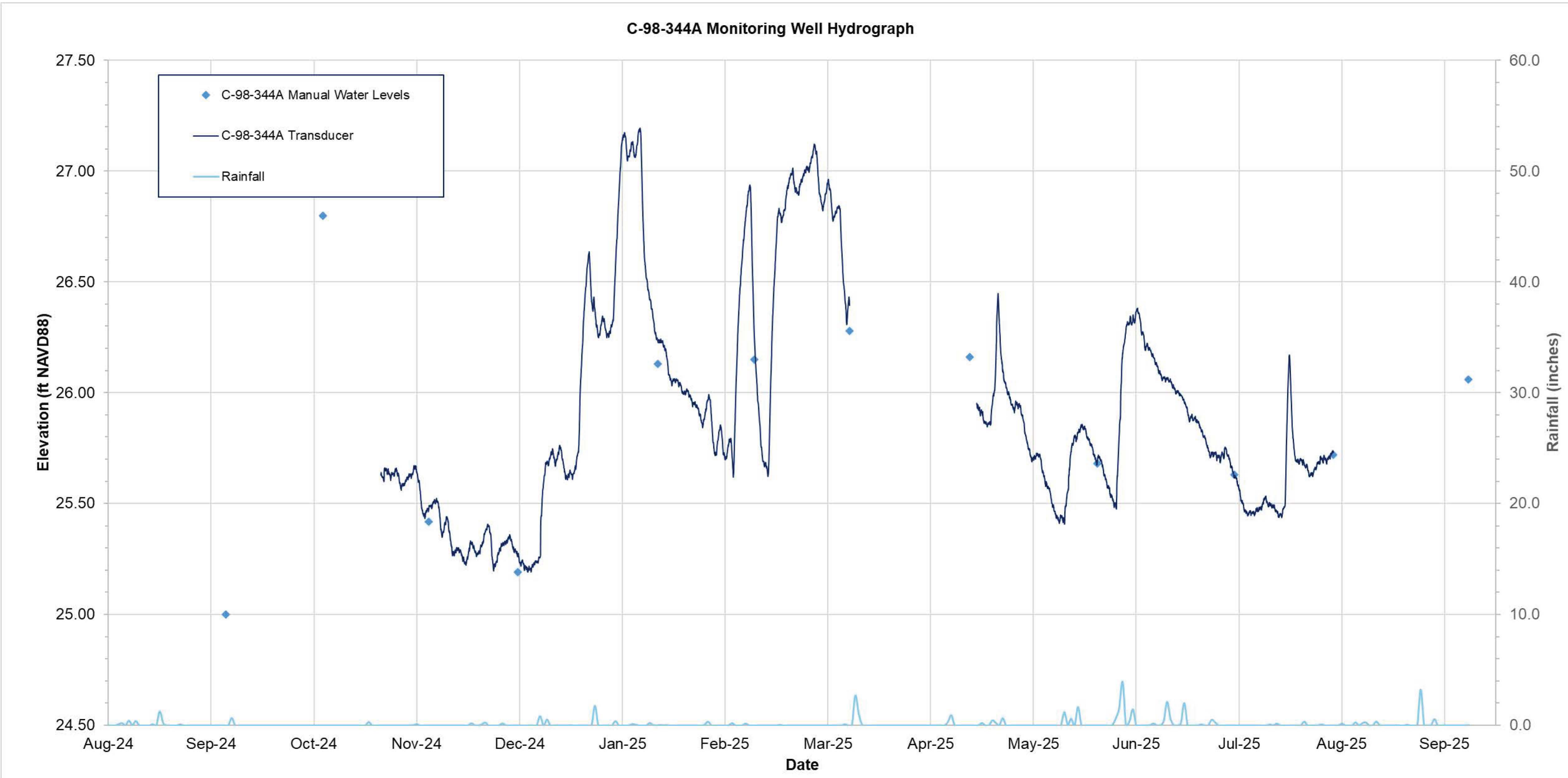


Figure 2.4.12-21
Hydrographs for LMGS Monitoring Wells
(Sheet 25 of 31)

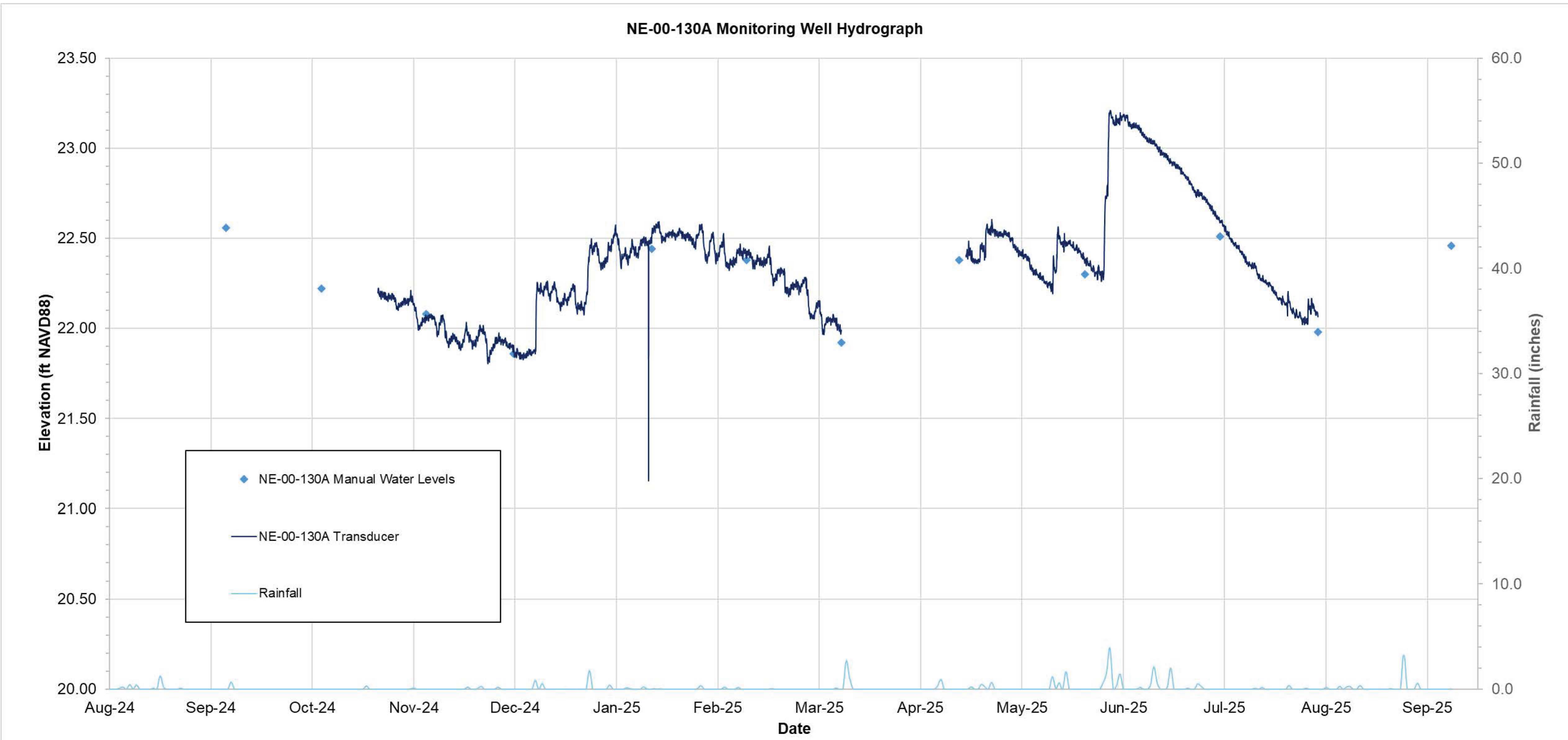


Figure 2.4.12-21
Hydrographs for LMGS Monitoring Wells
(Sheet 26 of 31)

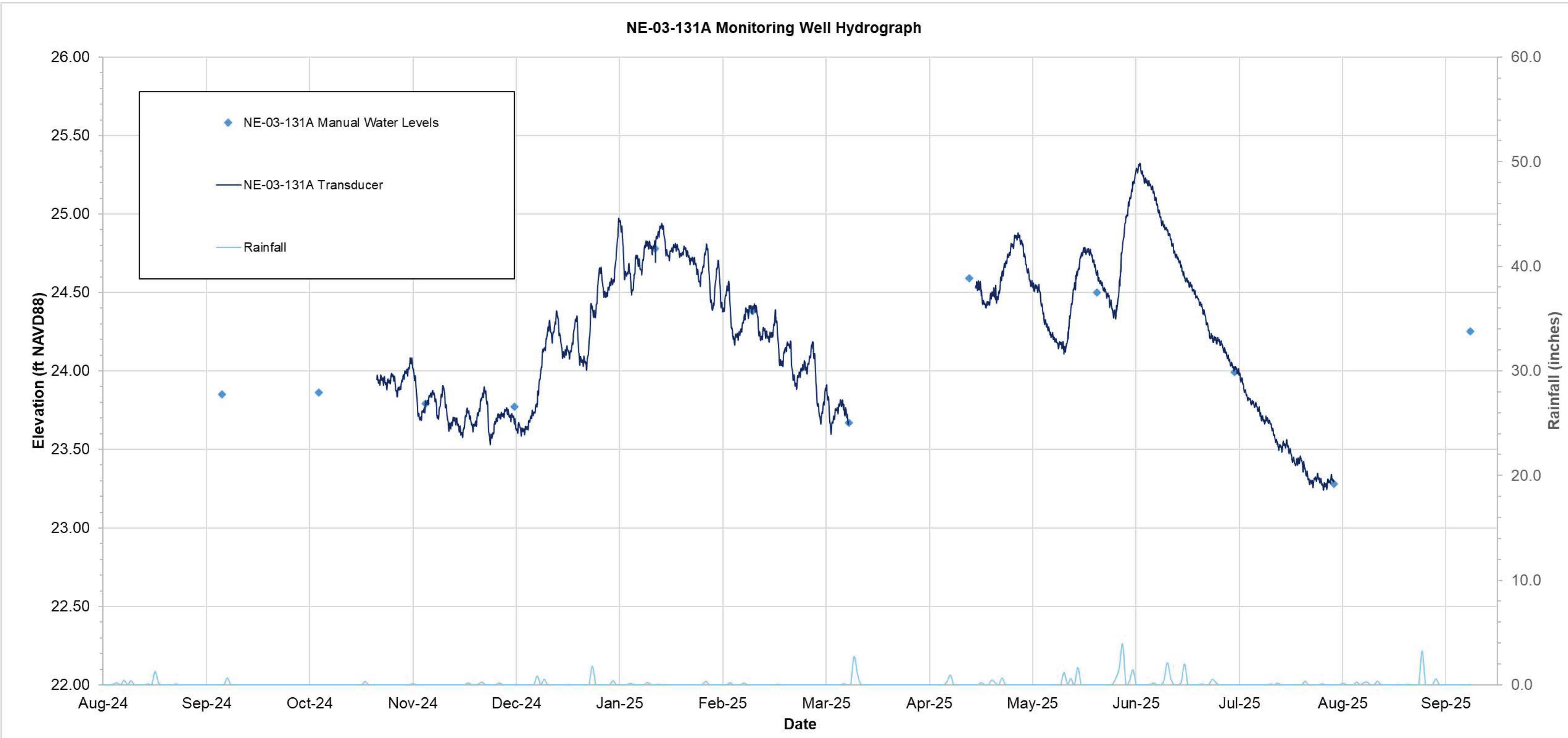


Figure 2.4.12-21
Hydrographs for LMGS Monitoring Wells
(Sheet 27 of 31)

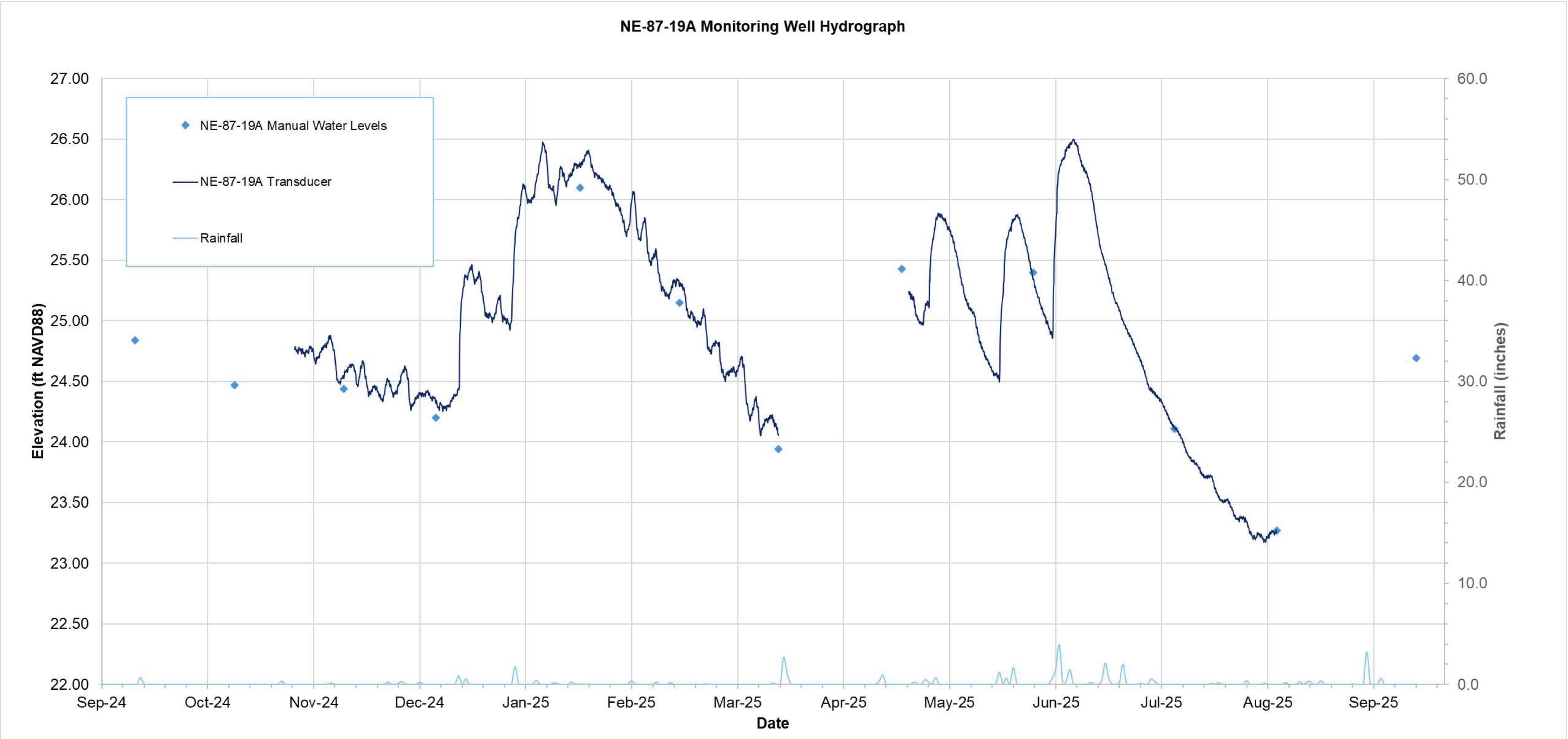


Figure 2.4.12-21
Hydrographs for LMGS Monitoring Wells
(Sheet 28 of 31)

Figure 2.4.12-21
Hydrographs for LMGS Monitoring Wells
(Sheet 29 of 31)

Figure 2.4.12-21
Hydrographs for LMGS Monitoring Wells
(Sheet 30 of 31)

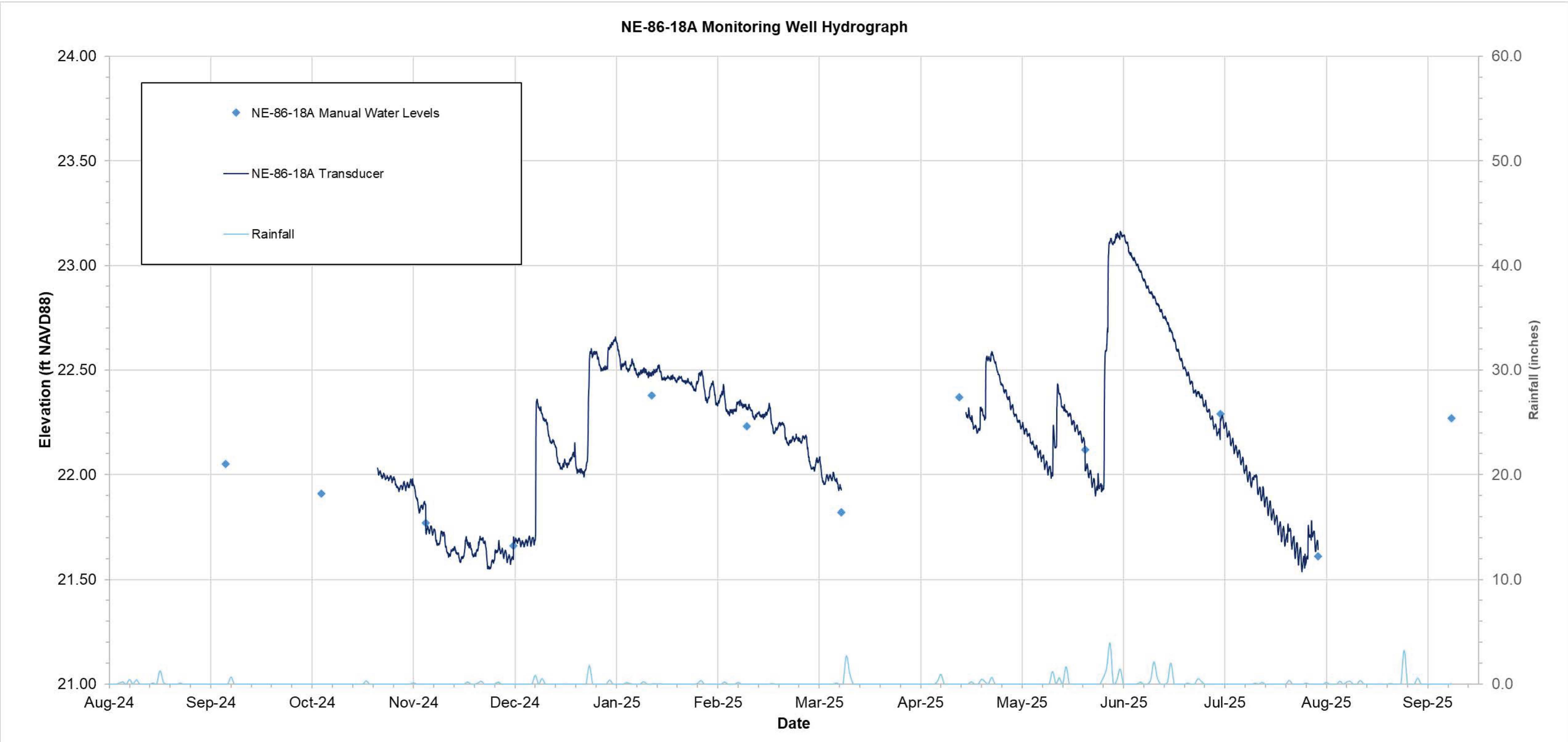


Figure 2.4.12-21
Hydrographs for LMGS Monitoring Wells
(Sheet 31 of 31)

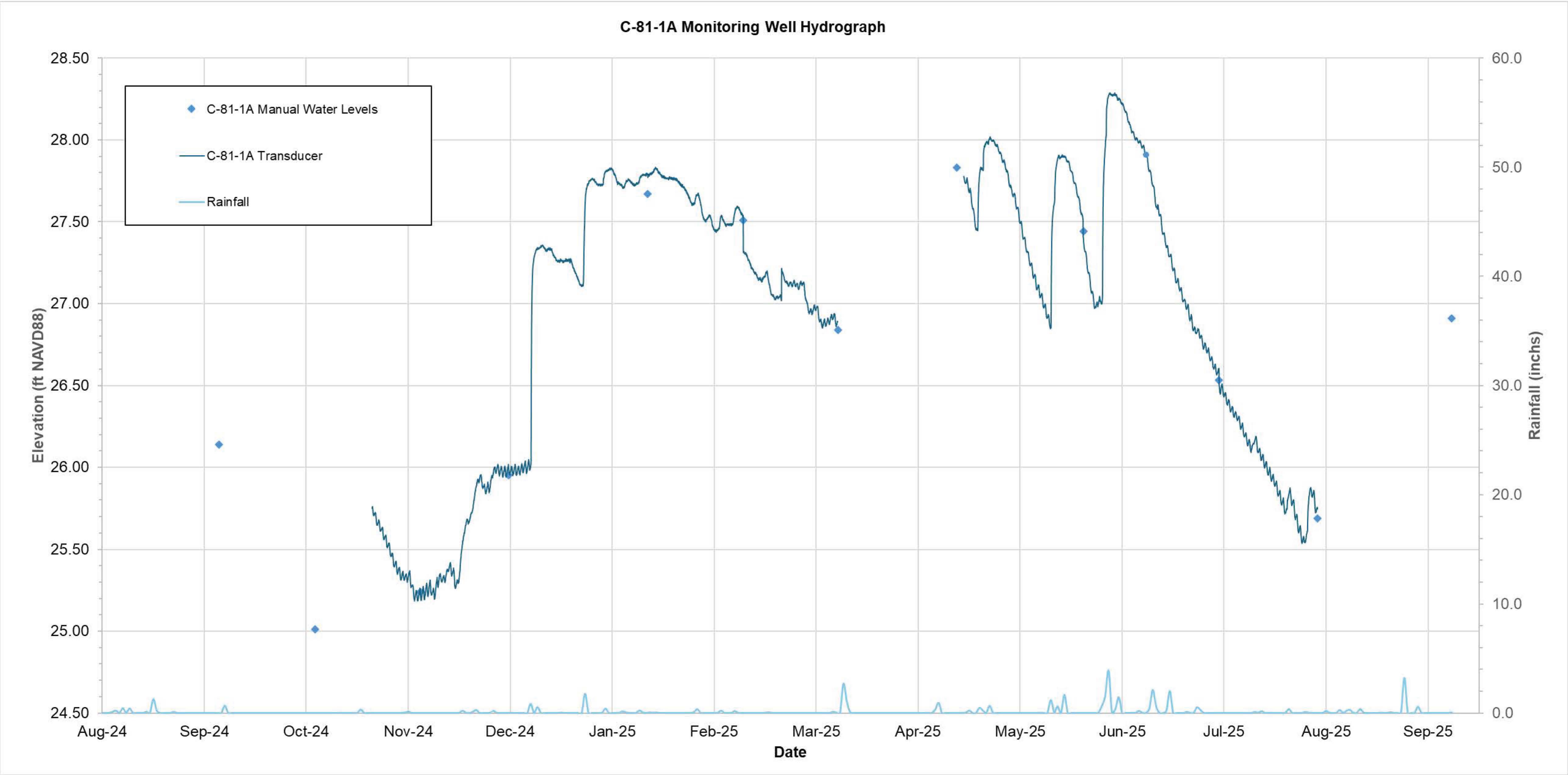
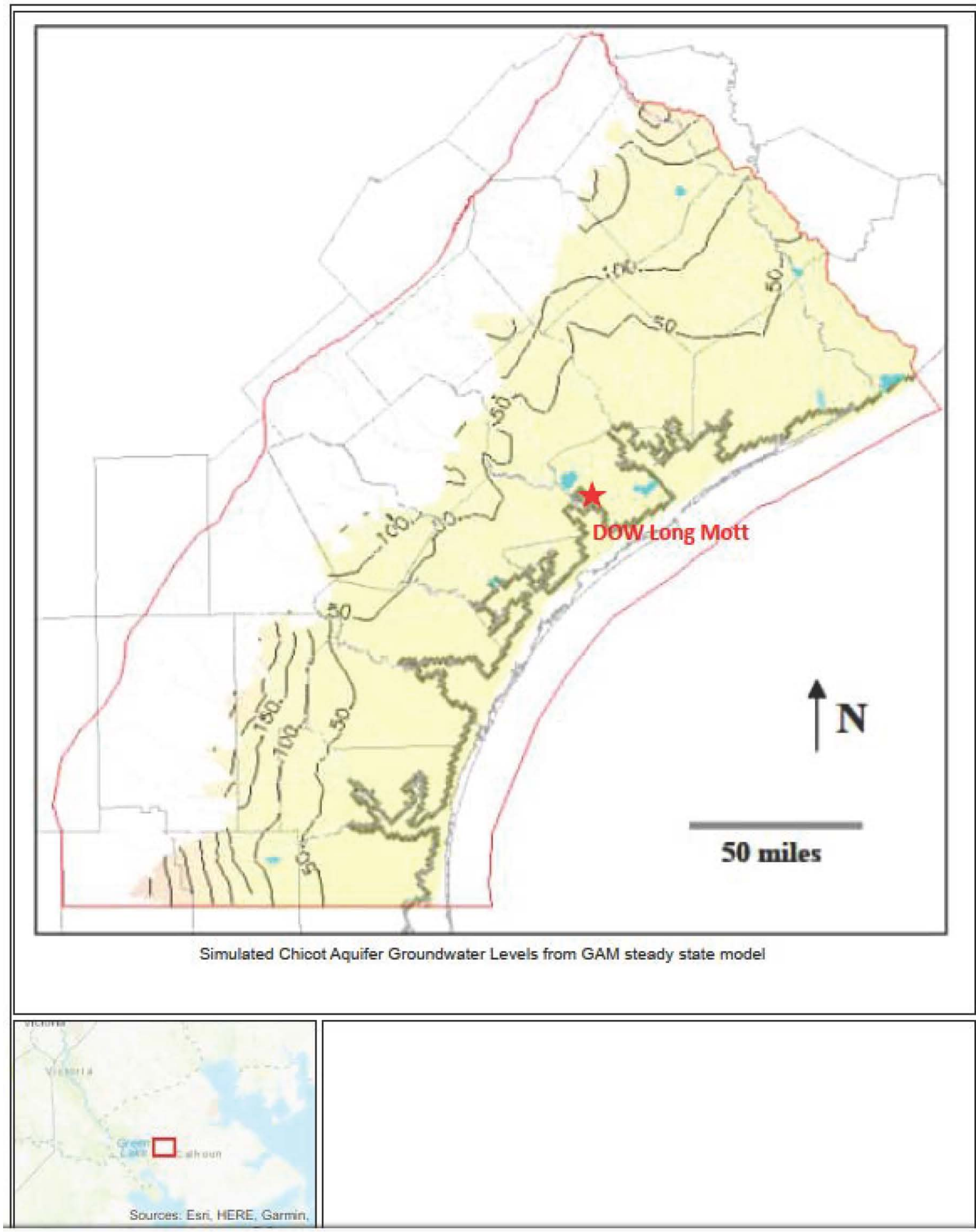


Figure 2.4.12-22
Simulated Chicot Aquifer Groundwater from GAM Steady-State Model



Simulated Chicot Aquifer Groundwater Levels from GAM steady state model

Source: Black & Veatch, 2020.

~~**Figure 2.4.12-23**~~
~~**Hydraulic Conductivity (K) Contour Map, A Sand**~~
~~**(Sheet 1 of 3)**~~

Legend

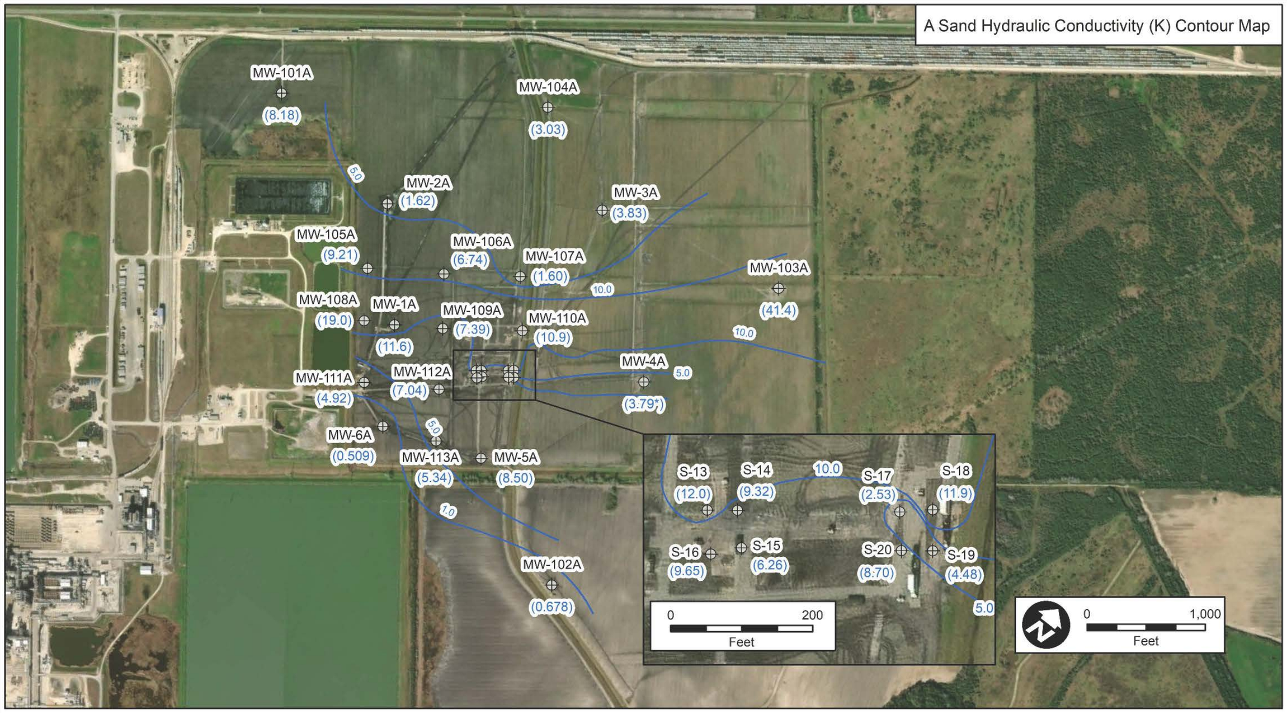
Monitoring Well - A Sand

Hydraulic Conductivity (K) Contour Line - K values reported in feet per day

K values represent average of rising and falling head test results using Hvorslev method. Results with asterisk (*) represent partially penetrating wells which were analyzed using Bouwer-Rice method

Coordinates are Texas State Plane South Central Zone (North American Datum [NAD] 83); groundwater elevations are feet North American Vertical Datum [NAVD] 88

Figure 2.4.12-23
Hydraulic Conductivity (K) Contour Map, A Sand
(Sheet 1 of 3)



Legend

Monitoring Well - A Sand

Hydraulic Conductivity (K) Contour Line - K values reported in feet per day

K values represent average of rising and falling head test results using Hvorslev method. Results with asterisk (*) represent partially penetrating wells which were analyzed using Bouwer-Rice method

Coordinates are Texas State Plane South Central Zone (North American Datum [NAD] 83); groundwater elevations are feet North American Vertical Datum [NAVD] 88

~~Figure 2.4.12-23~~
~~Hydraulic Conductivity (K) Contour Map, C Sand~~
~~(Sheet 2 of 3)~~

Legend

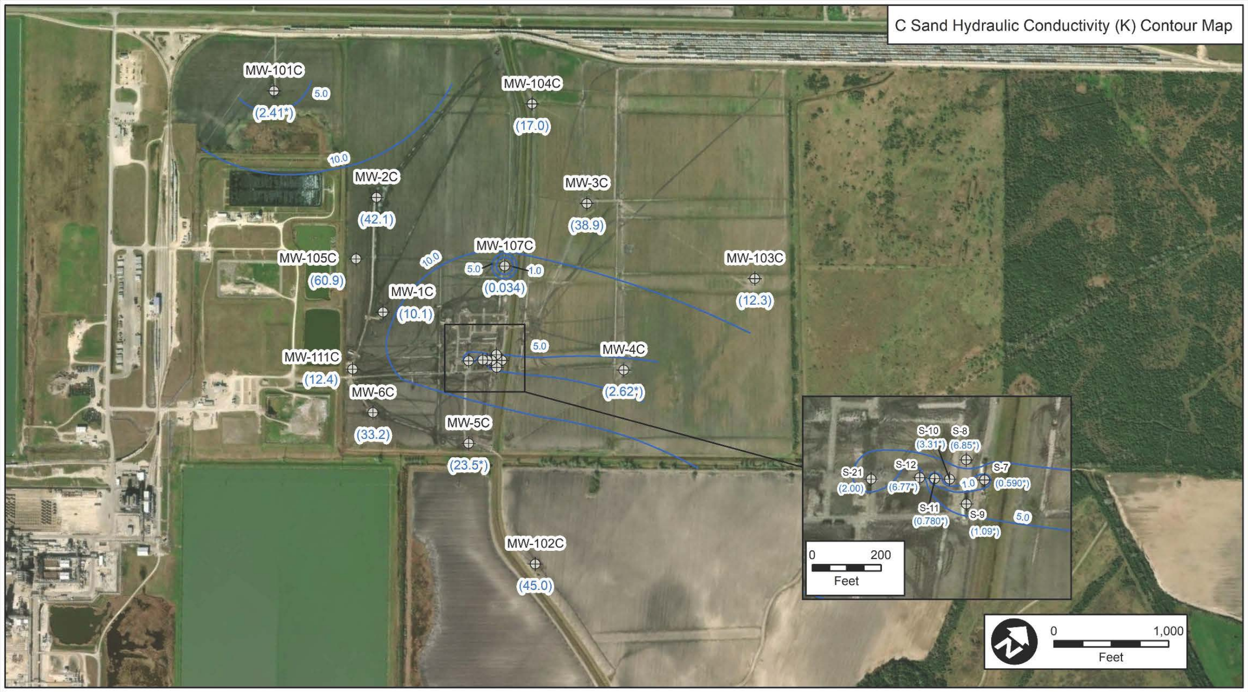
Monitoring Well - C Sand

Hydraulic Conductivity (K) Contour Line - K values reported in feet per day

K values represent average of rising and falling head test results using Hvorslev method. Results with asterisk (*) represent partially penetrating wells which were analyzed using Bouwer-Rice method

Coordinates are Texas State Plane South Central Zone (North American Datum [NAD] 83); groundwater elevations are feet North American Vertical Datum [NAVD] 88

Figure 2.4.12-23
Hydraulic Conductivity (K) Contour Map, C Sand
(Sheet 2 of 3)



Legend

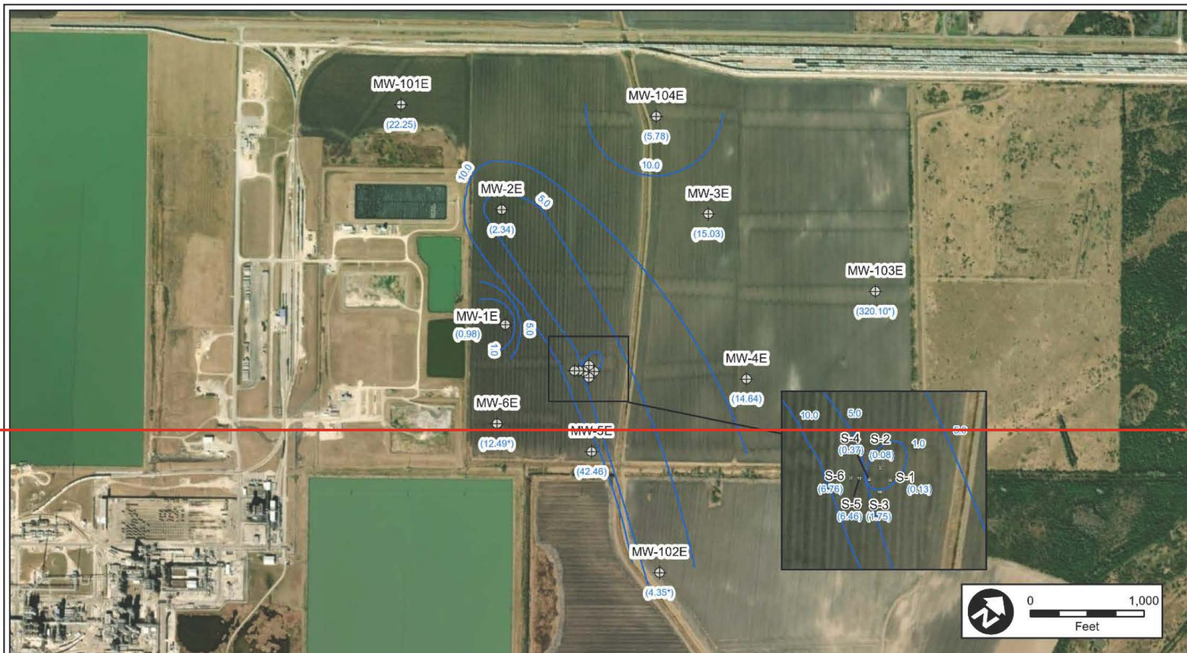
Monitoring Well - C Sand

Hydraulic Conductivity (K) Contour Line - K values reported in feet per day

K values represent average of rising and falling head test results using Hvorslev method. Results with asterisk (*) represent partially penetrating wells which were analyzed using Bouwer-Rice method

Coordinates are Texas State Plane South Central Zone (North American Datum [NAD] 83); groundwater elevations are feet North American Vertical Datum [NAVD] 88

~~Figure 2.4.12-23~~
~~Hydraulic Conductivity (K) Contour Map, E Sand~~
~~(Sheet 3 of 3)~~



Legend

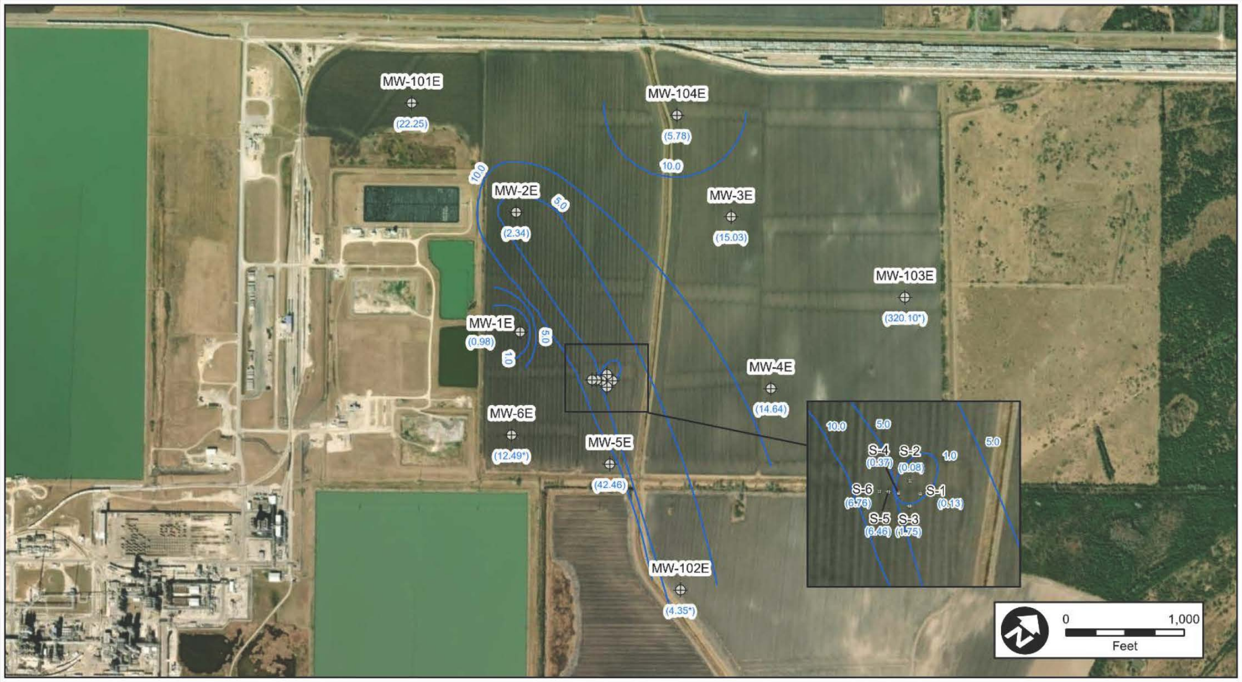
Monitoring Well - E Sand

Hydraulic Conductivity (K) Contour Line - K values reported in feet per day

K values represent average of rising and falling head test results using Hvorslev method. Results with asterisk (*) represent partially penetrating wells which were analyzed using Bouwer-Rice method

Coordinates are Texas State Plane South Central Zone (North American Datum [NAD] 83); groundwater elevations are feet North American Vertical Datum [NAVD] 88

Figure 2.4.12-23
Hydraulic Conductivity (K) Contour Map, E Sand
(Sheet 3 of 3)



Legend

Monitoring Well - E Sand

Hydraulic Conductivity (K) Contour Line - K values reported in feet per day

K values represent average of rising and falling head test results using Hvorslev method. Results with asterisk (*) represent partially penetrating wells which were analyzed using Bouwer-Rice method

Coordinates are Texas State Plane South Central Zone (North American Datum [NAD] 83); groundwater elevations are feet North American Vertical Datum [NAVD] 88

~~Figure 2.4.12-24~~
~~LMGS Pumping Test Well Cluster Layouts~~

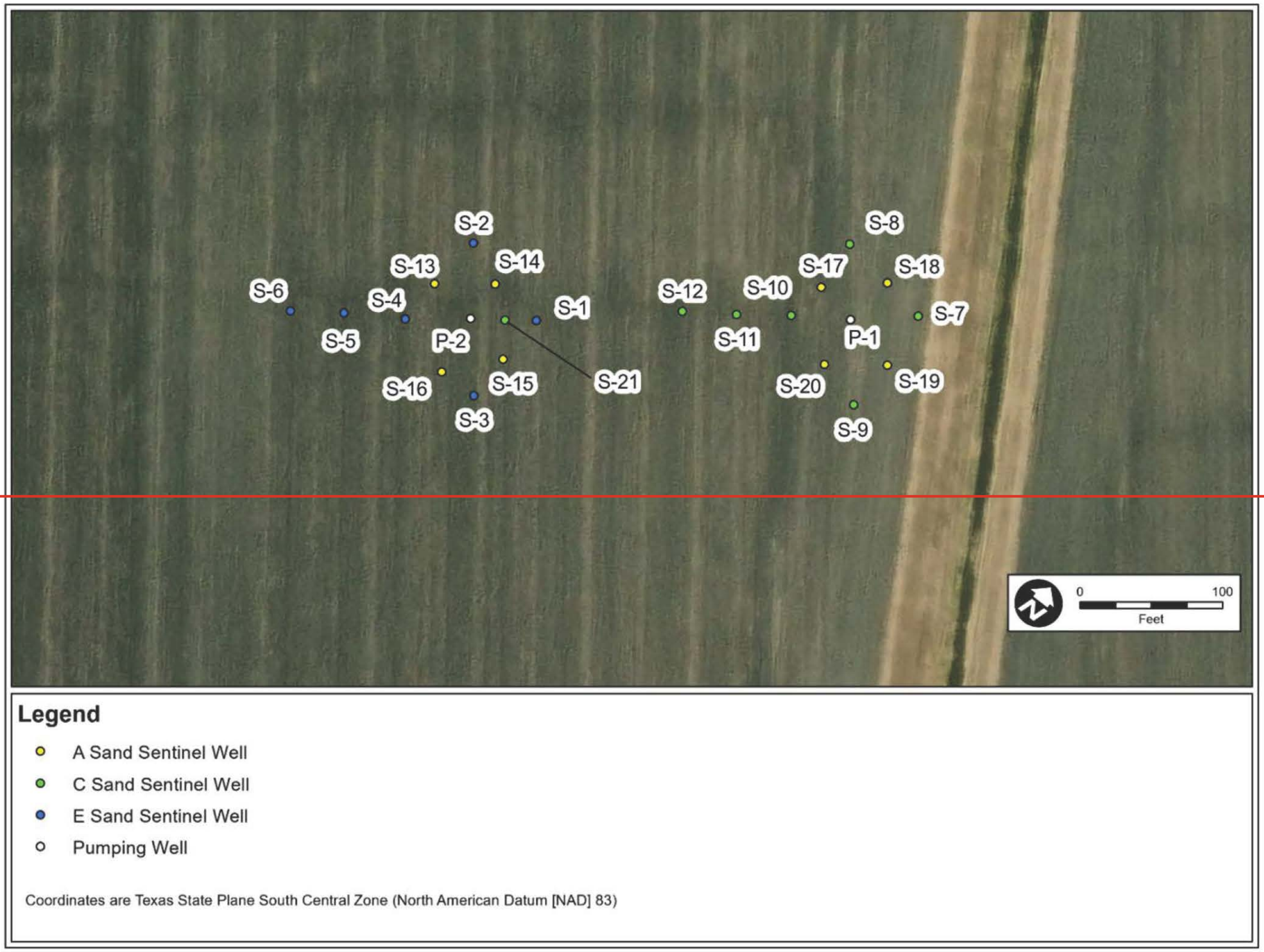
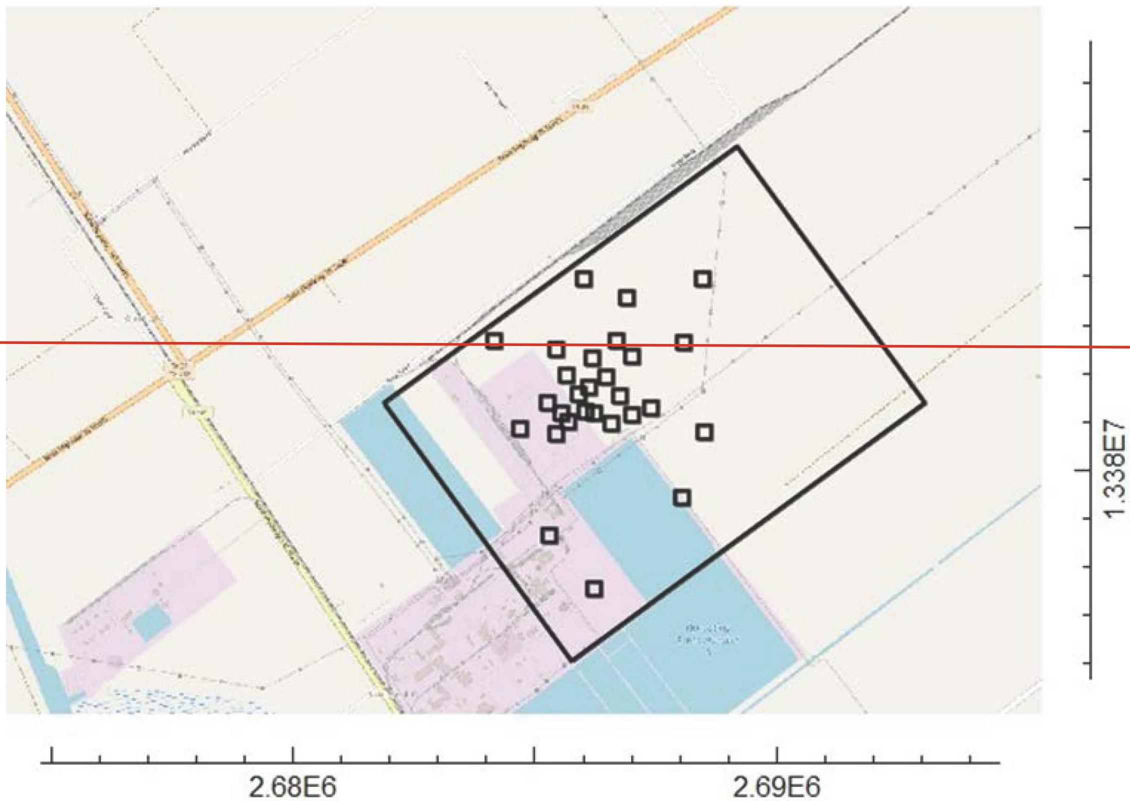


Figure 2.4.12-25
Numerical Groundwater Model Domain, Grid, and Calibration Wells

Numerical Groundwater Model Domain, Grid, and Calibration Wells

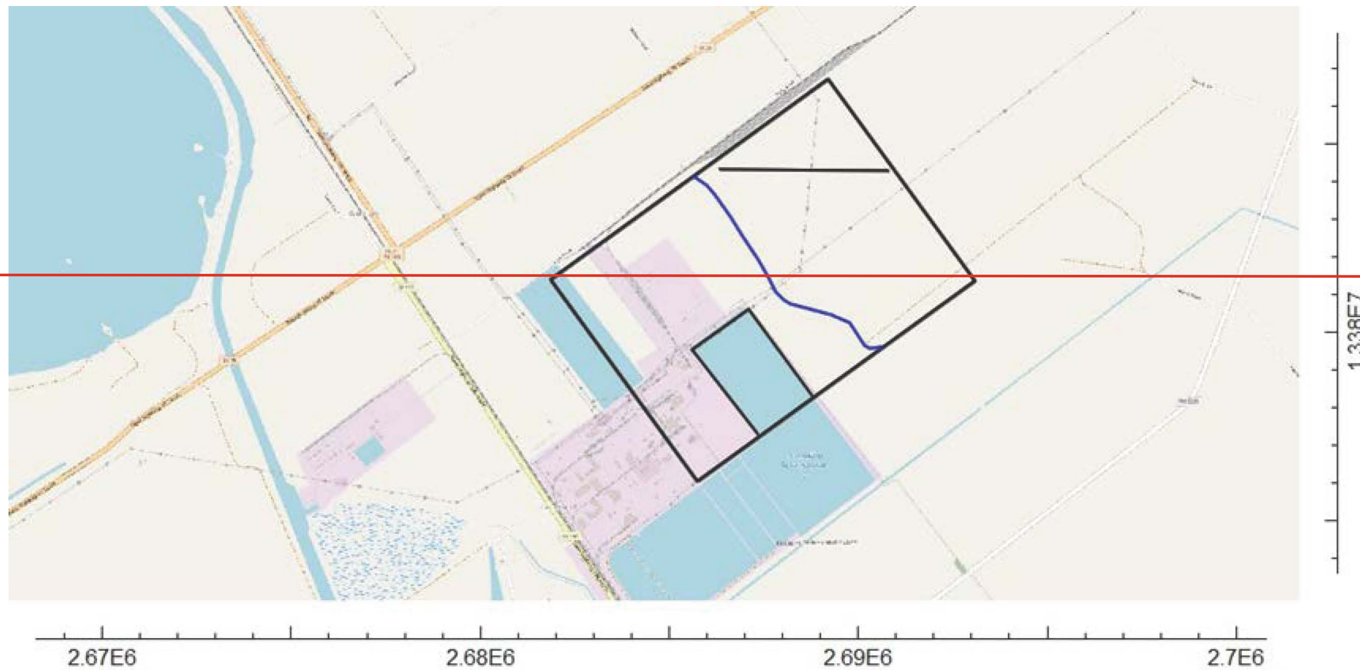


(Axes are Easting and Northing coordinates in NAD 1983 State Plane Texas South Central grid, US Feet)

Figure 2.4.12-24~~25~~
Numerical Groundwater Model Domain, Grid, and Calibration Wells

(Axes are Easting and Northing coordinates in NAD 1983 State Plane Texas South Central grid, US Feet)

~~Figure 2.4.12-26~~
~~Numerical Groundwater Model Domain with Constant Head Boundaries and Drains~~



~~(Axes are Easting and Northing coordinates in NAD 1983 State Plane Texas South Central grid, US Feet)~~

Figure 2.4.12-25~~26~~
Numerical Groundwater Model Domain with Constant Head Boundaries and Drains

(Axes are Easting and Northing coordinates in NAD 1983 State Plane Texas South Central grid, US Feet)