

Surface Water Investigation Technical Memorandum

NERT Remedial Investigation – Downgradient Study Area
Nevada Environmental Response Trust Site
Henderson, Nevada

Final Draft



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Responsible Certified Environmental Manager (CEM) for this project

I hereby certify that I am responsible for the services described in this document and for the preparation of this document. The services described in this document have been provided in a manner consistent with the current standards of the profession and, to the best of my knowledge, comply with all applicable federal, state and local statutes, regulations and ordinances.

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List of Abbreviations

cfs	cubic feet per second
CSM	Conceptual Site Model
DL	detection limit
DOI	Department of the Interior
DTS	Distributed temperature sensing
DVSR	Data Validation Summary Report
EB	equipment blank
EPA	United States Environmental Protection Agency
FB	field blank
FD	field duplicate
GLW	Designation for new sampling locations within the LVW
GLWC	Designation for new sampling locations from tributaries and side streams
KM	seep sample stations sampled by Kerr McGee
lb/day	pounds per day
LVW	Las Vegas Wash
LW	Designation for pre-existing sampling locations in the LVW
LWC	Designation for pre-existing sampling locations from tributaries and side streams
mg/L	milligrams per liter
MS	matrix spike
MSD	matrix spike duplicate
NDEP	Nevada Division of Environmental Protection
NERT	Nevada Environmental Response Trust
NTU	Nephelometric Turbidity Units
PST	Pacific Standard Time
QAPP	Quality Assurance Project Plan
RI	Remedial Investigation

RM	River Mile
RPD	Relative Percent Difference
SNWA	Southern Nevada Water Authority
SWIP	Surface Water Investigation Plan
t/ss	tributary/side stream
µg/L	micrograms per liter
µS/cm	micro-Siemens per centimeter
USGS	United States Geological Survey

Definition of Key Terms

Groundwater discharge: approximate location where groundwater is entering the surface, either on land or under water. The groundwater may or may not contain perchlorate.

Groundwater flux: measurement of the amount of groundwater discharging per unit of time (for example gallons per minute or cubic feet per second).

Perchlorate discharge: approximate location where groundwater containing perchlorate is discharging to the surface, either on land or under water.

Perchlorate flux: estimate of the amount of perchlorate present in a stream per unit of time (e.g. pounds per day).

Potential discharge: a location where discharge may be occurring, but where there is still uncertainty.

Seep: an area of slow discharge of groundwater on land or into a body of water.

Spring: a discrete place where groundwater actively discharges on land or into a body of water. Springs often create small rivulets on the ground surface, and may be visible underwater as sand boils or areas of reduced cloudiness.

Sump: a manmade collection structure used to manage surface runoff.

Time: all time presented as HHMM Pacific Standard or Daylight Saving Time (e.g., 0823 or 1741 for 8:23 a.m. and 5:41 p.m.)

1.0 Introduction

This technical memorandum (memo) describes the surface water investigation conducted for the Nevada Environmental Response Trust (NERT) Remedial Investigation (RI) - Downgradient Study Area in Henderson, Nevada (**Figure 1**). The surface water investigation consisted of water level gaging and surface water sampling along various reaches of the Las Vegas Wash (LVW) within the Downgradient Study Area. The main purpose of the surface water investigation described in this memo is to identify reaches along the LVW where perchlorate-impacted groundwater discharges to the LVW, which would subsequently reach Lake Mead and the Colorado River, a source of potable water for portions of Arizona, California and Nevada. Determination of the seasonal patterns of perchlorate concentrations is not the intent of the sampling events described in this memo. Although the concentrations in the LVW may vary significantly with time, both diurnally (from wastewater reclamation discharge) and seasonally (due to sporadic rain events, evapotranspiration, etc.), the sampling design described in this memo is intended to provide indication as to which reaches in the LVW are currently receiving significant perchlorate from groundwater or seep discharges. This in turn will assist in focusing additional investigations of perchlorate pathways in groundwater within the Downgradient Study Area. This memo has been prepared as an interim deliverable in advance of the forthcoming NERT RI Report. Except as noted in this memo, the work was conducted per the procedures and methods described in the Surface Water Investigation Plan (SWIP; AECOM 2016a) approved by the Nevada Division of Environmental Protection (NDEP) in December, 2016.

While quarterly sampling has been conducted at a limited number of surface water locations in the past few years, a coordinated effort to quantify perchlorate concentrations relative to flow and location in the LVW has not been undertaken. As part of the planning phase for the surface water investigation in the Downgradient Study Area, sampling of these historical surface water sample locations was conducted in May 2016 to assess surface water conditions in the LVW. The surface water and seep sampling locations sampled in May 2016 were reported in a Surface Water Technical Memorandum (AECOM 2016b) and are shown on **Figure 2**. In addition, the United States Geological Survey (USGS) is currently working under a contract with NDEP to conduct a long-term study of flows and seeps in the LVW, which will provide more insights on the potential inputs of perchlorate in the LVW in the future. This long-term study includes installation of flow gages on the LVW, periodic surveys of seeps along the shoreline, and flow-controlled stream gaging. These data will be incorporated in NERT's RI Report.

The objective of the Downgradient Study Area Investigation is to identify downgradient and cross-gradient subsurface pathways through which perchlorate-impacted groundwater is entering the LVW (**Figure 1**). The surface water sampling program is being conducted to aid in meeting that objective. This surface water investigation consisted of several tiers of sampling to characterize surface water concentrations of key constituents under a variety of flow conditions.

The reaches where perchlorate is entering the LVW can be grossly defined, but additional data are required to direct a subsurface investigation that will identify more specific loci of perchlorate discharge. The gaps include:

- Is there residual perchlorate discharge not being captured by the seep well field that is entering the LVW?
- If so, what are the approximate locations and fluxes of those inputs and the contribution of each location to the perchlorate flux discharging to Lake Mead?
- Of the almost 20 seeps sampled by Kerr McGee in 2000 that were investigated by AECOM in May 2016, only three were located. Where might the other seeps, if still active, be discharging?
- Are seeps, including those known and potentially unknown, contributing perchlorate to the LVW?

- To what extent do the daily fluctuations in the flow in the LVW, due to waste water discharges, impact the concentrations of perchlorate?
- What is the variability in perchlorate concentrations across each cross-section? Are potential points of groundwater discharge located near the south bank, mid-channel, or near the north bank of the LVW?
- Are there other, unknown, sources of perchlorate to the LVW?

The gaging, sampling and analytical results of the samples collected during this investigation are summarized in this technical memorandum. The data collected during this field effort have been used to estimate perchlorate flux in the LVW and update the Conceptual Site Model (CSM), previously presented in the SWIP. As an interim deliverable, this document presents the sampling and analytical results of the samples collected per the SWIP. All surface water data will be further evaluated by NERT during the preparation of the RI report.

2.0 Field Procedures

Surface water sampling for this investigation was conducted consistent with the SWIP in two field mobilizations: sampling was conducted during the USGS seepage study in December 2016 and the gage installation, transect and discrete sampling was performed in February 2017. Daily field reports are provided in **Appendix A**. Daily Health and Safety sheets are provided in **Appendix B**. **Appendix C** contains the calibration logs for the field equipment used for recording water quality readings.

AECOM's field teams for each of the efforts consisted of two environmental scientists per team who performed the field work in the Downgradient Study Area. The December 2016 sampling consisted of two teams (four staff total) collecting surface water samples over a one-day period in coordination with USGS, who was conducting a seepage study on behalf of NDEP. In February 2017, one team (two staff total) was deployed for a week to install nine staff gages. During the second week, two teams (four staff total) collected 48 surface water samples from locations along the 11 transects ("transect sampling") that were established during the first week, including the eight transects at newly installed staff gages and three transects at established USGS gages. The third week of sampling in February 2017 consisted of five teams plus one coordinator (11 staff total) who collected 180 discrete surface water samples from locations in the LVW and the tributary/ side streams (t/ss), including Wastewater Channel, locations over four days ("discrete sampling"). Details of the field efforts are provided in the following subsections.

The location names for the sampling event coordinated with USGS flow controlled stream gaging in December 2016 and the discrete sampling in February 2017 are generally consistent with historic sampling conducted on the LVW and tributaries. Some of the "LWC" t/ss¹ samples were located in t/ss under current post-weir construction conditions. Others were in the LVW proper, although usually along a bank indicating the coordinates could have historically been in the side stream. New locations (those not previously sampled by Southern Nevada Water Authority [SNWA] or others) are prefaced with "G". The digits following "LW", "GLW", or "T" (for transects) indicate the estimated river mile (RM), which is measured from the high pool elevation of Lake Mead (i.e., the elevation of the water [1,221 feet above mean sea level] when the water reaches the top of the spillway crest of Hoover Dam) (Shanahan and Zhou 2013). Samples collected near each other are designated with "_1", "_2", etc. to distinguish them from main stations. As part of this investigation, a base map of detailed (i.e., to 0.05 mile) RM with locations of samples collected in 2016 and 2017 was created. The identification and estimated RM for every location sampled was evaluated on this base map of RMs. Since many of the locations are historic, the identification of the locations (e.g., LW7.2, etc.) was not changed. However it was noted that several of the sample and location identifications did not match the RM; for example LW7.2 is closer to RM 6.95 than 7.2. Plotting the data by RM was complicated by this. Therefore, a cross-reference table (**Table 1**) of sample point, weirs, and other features has been developed to assist in the presentation of the data.

2.1 Sampling Event during USGS Seepage Study, December 2016

The USGS plans to conduct two seepage studies in the LVW involving measurements of temperature and specific conductance at approximately 12 sites in the Downgradient Study Area. One seepage study has been completed (December 2016), and one was planned for the summer of 2017. The overall goal of the USGS study is to identify reaches where groundwater is discharging to the LVW (or vice versa) and the design of the studies is to conduct them, to the degree practical, while wastewater is maintained at a low discharge and constant flow. In

¹ "LWC" is the designation for pre-existing sampling locations from tributaries and side streams (t/ss).

December 2016, the treatment plants did not hold flows steady, but provided detailed flow data from their facilities for the date.

The first USGS seepage study event took place on December 8, 2016. Since one goal of the SWIP is to limit the influence of flow/discharge on perchlorate concentrations measured throughout the Downgradient Study Area, AECOM mobilized a four-person field team to the Site in order to conduct a one-day surface water sampling effort simultaneous with the first USGS seepage study event field effort.

On December 7, 2016, the field team arrived at the Downgradient Study Area. The team performed a site reconnaissance determining vehicle access and parking locations; possible canoe launch, and safe wading entrances into the LVW. Once on site the field team was made aware that Clark County Water Reclamation District no longer intended to control wastewater discharges at a constant rate the following day. However, the USGS decided to perform their seepage study the following day regardless of the wastewater discharges and AECOM planned to concurrently conduct the grab surface water sampling fieldwork as well.

2.1.1 Sampling Procedures

During the first AECOM field mobilization on December 8, 2016, 19 surface water locations were sampled between the hours of 0823 and 1545 Pacific Standard Time (PST). Two teams conducted the field work both on foot and by canoe, as conditions required. Water quality parameters using a YSI multi-parameter sonde, which measures temperature, specific conductivity, turbidity, dissolved oxygen, and pH (**Table 2**), were recorded prior to sample collection at each location. Coordinates were collected in Arc Pad using a handheld Trimble each time a sample location was accessed (**Table 3**). At sample locations with less than 3 feet of water or where practical, surface water samples were collected by direct immersion of unpreserved dedicated sample bottles. Bottles were filled at mid-depth in order to capture the mixed system. For sample locations with 3 feet of water or deeper, a peristaltic pump with dedicated tubing was used to collect samples at one third and two thirds of the total water depth. A total of 20 samples, not including quality control, were collected during the program (**Table 4**). Locations of the samples are presented in **Figure 3**. Quality control samples (including field duplicates) were collected in compliance with the SWIP (AECOM, 2016a), which incorporates by reference the requirements of the Quality Assurance Project Plan (QAPP) (AECOM, 2016c). After collection, samples were stored on ice, and transported that day to the local Test America facility for shipment to their Irvine, California, laboratory for analyses of perchlorate, chlorate, chloride, bromide and total dissolved solids.

2.1.2 Deviations from SWIP

Due to circumstances beyond control and conditions encountered in the field, the following deviations from the SWIP were noted for the USGS coordination sampling:

- The intention of the first mobilization was to collect surface water samples on a day absent of or with minimal discharge of wastewater to the LVW. This mobilization, which was performed in coordination with the USGS seepage study, was intended to characterize perchlorate concentrations within reaches of the LVW without the influence of discharges from the four treatment plants that discharge to the LVW including the Clark County Water Reclamation District, City of Las Vegas, City of North Las Vegas, and City of Henderson facilities. Despite previous arrangements between USGS and the wastewater treatment facilities, on the day before the scheduled sampling, USGS was informed that the facilities could not hold flows the following day. However, AECOM and USGS conducted their fieldwork as scheduled. Since the wastewater flow rates and fluctuations are the predominant contributors of water flow through the LVW and contain insignificant concentrations of perchlorate, they heavily influence the perchlorate concentrations in the LVW. Timing of the samples collected was therefore plotted with flows from the nearest USGS gage for reference (**Appendix D**).
- The objective of sample GLW3.78 was to sample a location upstream of the seep KM67 that may have evidence of groundwater input. The southern bank along the Three Kids Weir was examined visually

and using the conductivity meter for possible groundwater seeps. The weir and southern bank are heavily rip-rapped and access to surface water was extremely limited. Due to the presence of rip-rap, only the temperature and dissolved oxygen probes could be submerged to sufficient depths for recording the water quality. The temperature and dissolved oxygen readings of the surface water accessed along the southern bank did not indicate evidence of groundwater influx (i.e., areas of groundwater influx tend to have higher temperature and low dissolved oxygen). Therefore, the location for sample GLW3.78 was selected midway up the weir on a rip-rap slope.

2.2 Staff Gage Installation

Daily water flow in the LVW varies due to discharge of treated water from several wastewater facilities located upstream of the Downgradient Study Area. The wastewater in these daily discharges is assumed to be virtually free of perchlorate and, therefore, will dilute perchlorate concentrations, particularly during periods of higher flow. While existing USGS water level gages are used to calculate flow in various section of the LVW, there is a substantial distance and time lag between them. Additional gages were necessary to further define areas where perchlorate discharge may be entering the LVW and to fill some gaps in the knowledge of flows in the LVW (i.e., fill spatial gaps between USGS stations). The USGS gages are located at:

- USGS Gage 09419698 Below Duck Creek Confluence (RM6.84)
- USGS Gage 09419700 Pabco Road (RM6.08)
- USGS Gage 09419747 Above Bostick Weir (RM5.16)
- USGS Gage 01419749 Above Homestead Weir (RM4.59)
- USGS Gage 09419753 Above Three Kids Wash (RM3.3)

At eight pre-selected locations, a staff gage was installed. At these eight locations plus three locations at USGS gages, a cross-sectional diagram of water depth and bottom contour was developed by recording water depth at intervals across each transect (**Appendix G**). These locations and the rationale for their selection are summarized in **Table 5**. Appendix G also presents example gage heights at the USGS gages and installed staff gages, as an example, from February 1 and 2, 2017. These data indicate flows lag approximately by 1.25 hours between the gages at Duck Creek and Pabco Road, 1 hour from Pabco Road to the gage at Homestead Weir, and 0.75 hour from the gage at Homestead Weir to the gage at Three Kids.

2.2.1 Installation Procedures

Staff gage and transducer assemblies were similar in design to those used by USGS, but modified as appropriate given the temporary nature of the installations. The assemblies were installed at eight locations shown on **Figure 4**. Specific installation points were identified to be reachable from the shore-side access road but generally away from areas frequented by foot traffic.

Except as noted below, each assembly consists of a recording pressure transducer mounted inside an L-shaped length of PVC pipe. The transducer head is mounted inside a perforated PVC protective casing. The transducer cable runs back to shore through the PVC pipe into a short standpipe. The standpipe has a secure, lockable cap to allow access to the data retrieval port.

The staff gage assembly was anchored to the southern bank of the LVW (except as noted below) using fence posts. The standpipe is located at the water's edge or near-shore, depending on the condition of the LVW bottom. The transducer head extends into the channel approximately 10 feet north and is secured with fence posts. Where conditions permit, the horizontal pipes were laid in a shallow trench to both protect and secure the pipe, and to minimize their profile in the LVW.

The staff gages, marked in 0.01-foot increments, were secured to the posts at the channel-end of the pipe assemblies. The gages are located near enough to shore to allow accurate readings from the stream banks and deep enough to cover the range of streamflow variation.

On-shore pressure transducers (barometers) were placed at three locations along the study area to provide reference atmospheric pressure data. These transducers are presented in **Figure 4** and are located near:

- Pabco Weir (B6.0), west of the main parking area;
- Lower Narrows Weir (B4.65), at the end of the access road; and
- Three Kids Weir (B3.8), adjacent to the parking area.

2.2.2 Deviations from SWIP

Due to conditions encountered in the field, the following modifications, which deviated from the SWIP, were made to staff gage installation:

- S3.75 (Immediately downstream of Three Kids Weir): Rocky conditions on the shore banks and stream bed precluded anchoring the gage assembly on shore and extending it into the wash. Instead, the pressure transducer was located approximately one third of the way across the wash from the south bank, mounted inside a PVC pipe driven into the sediment. The pipe has a locked cap to allow for access to the data port. The staff gage was secured directly to this pipe. This location is accessible by foot directly downstream from the Three Kids Weir.
- S6.35 (Downstream of Proposed Sunrise Mountain Weir): Extensive vegetation up to and along the shore of the wash precluded anchoring the gage assembly on the southern bank. The assembly was anchored to the opposite bank and extended into the LVW from the north. On-shore access to this gage is made by crossing the LVW at the Pabco Road Weir and following the LVW upstream approximately one-third mile to the west.

2.3 Transect Sampling

The main objectives of the Transect Sampling were to: 1) assess the variability in perchlorate concentrations across each cross-section and thereby determine any potential points of groundwater discharge within the southern bank, northern bank or within the channel of the LVW; and (2) provide an average perchlorate concentration within each transect.

2.3.1 Sampling Procedures

A total of 11 transects were staked and sampled between January 30, and February 3, 2017 within the Downgradient Study Area (**Figure 5**). Two teams conducted the field work both on foot and by canoe, as conditions required. Two to three transects were sampled each day during the reach specific predicted low-flow period. Flow periods were forecasted using available USGS data and transducer/staff gage data collected during the staff gage installation program. Each targeted transect was field established. From the south bank, a target was identified and staked on the north bank, perpendicular to the LVW. The teams placed stakes along the transect, and proceeded across the channel on foot or by canoe to each staked location. Approximately every 5 to 10 feet along each transect, depending on the channel width, a depth to streambed from water surface was measured and recorded. Transects or cross sections are provided in **Table 6** and shown on **Figure 5**.

Surface water grab samples were subsequently collected near the north and south banks, as well as within the channel within the alignment of each transect. Water quality parameters (temperature, specific conductivity, turbidity, dissolved oxygen, and pH) were measured using a YSI multi-parameter sonde (**Table 7**) prior to sample collection at each location. A minimum of three locations along each transect were sampled and a total of 45

locations were sampled during the transect sampling (**Figure 5**). Coordinates of each sample location were collected in Arc Pad using a hand-held Trimble (**Table 8**). At sample locations with less than 3 feet of water, surface water samples were collected by direct immersion of unpreserved dedicated sample bottles. Bottles were filled from near bottom depth in order to capture any potential seep inputs. For sample locations with 3 feet of water or deeper, a peristaltic pump with dedicated tubing was used to collect samples at one third the total water depth in addition to near bottom. A total of 48 samples, not including quality control, were collected during the program (**Table 9**). Quality control samples (including field duplicates) were collected in compliance with the Quality Assurance Project Plan (QAPP) (AECOM 2016c). After collection, samples were stored on ice, and transported that day to the local Test America facility for shipment to their Irvine, California, laboratory for analyses of perchlorate, chlorate, chloride, bromide and total dissolved solids.

2.3.2 Deviations from SWIP

Due to conditions encountered in the field, the following deviations from the SWIP were noted in transect sampling:

- T3.6 (Mid-way between Three Kids Weir and Rainbow Gardens Weir): The SWIP indicates a transect "T3.6". Pre-made chain-of-custody records and labels listed this transect as T3.5. The samples will remain indicated as T3.5, which is a minor modification from the SWIP. This does not affect the data quality objective of the placement of this transect, which was to evaluate water quality downgradient of Three Kids Weir, but before Rainbow Gardens Weir.
- At sample location 3.5A along transect T3.5, the YSI conductivity reading would not stabilize and therefore a range of observed conductivities was recorded.
- The depth profile across T3.5 was moved approximately 5 feet downstream of Transect sample 3.5D because strong current and wind conditions, combined with water depth, prohibited the field team from safely and accurately maintaining a position closer to the station.
- The specific conductivity across T6.8 was low near the north and south banks (2,304 and 2,614 $\mu\text{S}/\text{cm}$, respectively) but was 3,539 $\mu\text{S}/\text{cm}$ (or approximately 50% higher) in the middle of LVW. Due to notable changes in specific conductivity across T6.8, it was decided in the field to collect samples at five locations to help capture any potential inputs of perchlorate that may be indicated by the higher specific conductivity.

2.4 Discrete Sampling

The objectives of the discrete sampling program were to 1) obtain a current snapshot assessment of perchlorate concentrations in the LVW; 2) assess whether the loci of groundwater discharge can be delineated and used to determine loci perchlorate discharge; and 3) determine to what extent daily fluctuations in the flow in the LVW, due to waste water discharges, impact the concentrations of perchlorate.

2.4.1 Sampling Procedures

During the discrete sampling, 19 surface water locations were sampled daily for four consecutive days during daily minimum flow and daily high-end flow within the Downgradient Study Area (**Figure 6**). A sub-set of five locations were also sampled during an estimated mid-flow period. Flow charts with sample times are provided in **Appendix D**. Sampling was conducted from February 6 through February 9, 2017. Five teams conducted the field work both on foot and by canoe, as conditions required. Each team was tasked with accessing and sampling three to five sample locations, depending on accessibility and proximity. Due to the geographical spread of sample locations and intensity of sampling, an additional field person served as the on-shore point person and was responsible for coordinating between teams, collecting and putting samples on ice, preparing samples for laboratory delivery, and ensuring daily field records were complete and correct.

Daily flows were monitored in real time from the office and communicated to the field teams to ensure flow requirements described in the SWIP were met. The flow requirements were:

- Daily low flow was the lower 10th percentile of flow at each location, based on measurements from the nearest USGS gage.
- Daily high-flow target was above the 50th percentile of flow. Since high flows last for eight to ten hours, this percentile encompasses the highest daily flows.
- Daily mid flows were defined as the mid-point on the hydrograph, between the low point and the peak high flow.

Water quality parameters (temperature, specific conductivity, turbidity, dissolved oxygen, and pH) were measured using a YSI multi-parameter sonde (**Table 10**) prior to sample collection at each location. Except as noted in the deviations, below, coordinates were collected in Arc Pad using a hand-held Trimble each time a sample location was accessed (**Table 11**). At sample locations with less than 3 feet of water, surface water samples were collected by direct immersion of unpreserved dedicated sample bottles. Bottles were filled at mid-depth in order to capture the mixed system. For sample locations with 3 feet of water or deeper, a peristaltic pump with dedicated tubing was used to collect samples at one third and two thirds of the total water depth. A total of 180 samples, not including quality control, were collected during the program (**Table 12**). Quality control samples (including field duplicates) were collected in compliance with the QAPP (AECOM 2016c). After collection, samples were stored on ice, and transported that day to the local Test America facility for shipment to their Irvine, California, laboratory for analyses of perchlorate, chlorate, chloride, bromide and total dissolved solids.

2.4.2 Deviations from SWIP

The following deviation from the SWIP was noted during discrete sampling:

- The AECOM field team was notified that three of the five ordered GPS units would not arrive until the afternoon of the first sampling day of the discrete sampling program. To keep the program on schedule, the field team leader decided to pre-locate and stake several of the sampling locations with the two available GPS units. On February 5, one day before the start (“Day 1”) of the discrete sampling, the AECOM field team accessed 11 sample locations using the available GPS units for the three teams that did not have GPS units on Day 1. Reliable marking devices such as stakes, flagging and rebar (depending on location conditions) were used to pre-mark the sample stations and all materials were removed from the LVW upon the completion of the discrete sampling program. On Day 1 the three teams without GPS units, navigated to the sampling locations and collected their samples at the pre-marked locations. Details on collection of coordinates are provided in **Table 11**. The missing GPS units were received by the field teams in the evening of Day 1. For the remainder of the discrete sampling program (“Day 2” through “Day 4”) each time a sample was collected the coordinates were collected in Arc Pad on the GPS device, with the following exceptions:
 - One team continued to navigate to the pre-staked locations for stations LW6.05, LW6.7 and LW7.2 and, because samples were collected at the stake every time, there was no need to collect coordinates on the GPS.
 - Coordinates were not collected at stations GLW4.4, GLW4.8 and LW.41 on Day 4. However, station markers were still in place and, as with previous days, the samples were collected consistently at these markers.

3.0 Analytical Program

The analytical program was focused on Downgradient Study Area groundwater constituents that may affect water quality in the LVW (**Table 13**), with refinements made based on the results of the May 2016 Surface Water Sampling Program. Surface water samples were analyzed for the following constituents:

- Perchlorate (United States Environmental Protection Agency [EPA] Method 314.0);
- Chlorate (EPA Method 300.1);
- Chloride (EPA Method 300.0);
- Bromide (EPA Method 300.0); and
- Total Dissolved Solids (Standard Method 2540C).

Total dissolved and hexavalent chromium have been analyzed previously, including in the May 2016 surface water sampling program. Based on a review of the data conducted in the SWIP (AECOM, 2016a), AECOM determined that analyzing for dissolved and hexavalent chromium was not necessary to achieve the objectives of the surface water sampling program (i.e., locate areas of contaminated groundwater input). Perchlorate and chlorate concentrations in the seep samples collected in May 2016 were elevated by one to two orders of magnitude compared to adjacent samples in the LVW. Therefore, both perchlorate and chlorate can be used as tracers for this seep water. The SWIP, therefore, did not include additional analyses of dissolved chromium and hexavalent chromium.

As directed by NDEP, field-filtering of water samples for perchlorate analysis was not required. Copies of the analytical results and chain-of-custody records are provided in **Appendix E**.

4.0 Data Validation

Consistent with the recently revised NDEP requirements, all samples were validated according to Stage 2A data validation procedures. The overall project requirements and completeness levels were met. As presented in the Data Validation Summary Report (DVSR; **Appendix F**), there were:

- 22 surface water samples coordinated with the USGS seepage study (including two field duplicates), one field blank and one equipment blank;
- 55 transect surface water samples (including seven field duplicates), six equipment blanks and three field blanks; and
- 199 discrete surface water samples (including 17 field duplicates), nine equipment blanks and nine field blanks;

Each primary sample, duplicate, equipment blank, and field blank was analyzed for five constituents (perchlorate, chlorate, total dissolved solids, chloride, and bromide) for a total of 1,525 results. A total of 150 results, or 9.8 percent of the total, were qualified by either the laboratory or during data validation. No results were rejected. Based upon the Stage 2A data validation all other results are considered valid and usable for all purposes.

The frequency of qualified results for each component of the surface water investigation was as follows:

- Of the 120 results from the samples coordinated with the USGS seepage study, 17 results (14.2 percent) were qualified.
- Of the 320 results from the transect surface water samples, 36 results (11.3 percent) were qualified.
- Of the 1,085 results from the discrete surface water samples, 97 results (8.9 percent) were qualified.

Qualified results consisted of three categories: results below the practical quantification limit but above the MDL (95 qualified results), results whose corresponding matrix spike percent recoveries exceeded criteria provided in the QAPP (49 results) and results whose field duplicate RPD exceeded criteria provided in the QAPP (6 results). Results in all three categories were qualified with a J-flag indicating that the quantity provided is an estimate.

Due to a lapse in laboratory certification for perchlorate in non-potable water, all perchlorate analyses related to this investigation were collected in deviation from the QAPP. This deviation has been investigated and it was concluded that there was no negative impact on data quality. Corrective actions from both AECOM and the laboratory are being implemented. Details of the deviation, investigation, and corrective action are provided in **Appendix F**.

5.0 Summary of Surface Water Data: Sampling Event during USGS Seepage Study

Surface water samples were collected from 14 locations in the LVW channel (LW3.4, LW3.75, GLW3.78, LW3.85, LW4.1, GLW4.4, GLW4.85, GLW4.9, LW4.95, LW5.3, LW5.9, LW6.05, LW6.7, and LW7.2), one location outside the channel (t/ss location LWC3.7) and 4 locations in Wastewater Channel (LWC6.1_1, LWC6.1_2, GLWC6.1_3, and GLWC6.1_4) (**Figure 3**). **Table 14** presents the analytical results of surface water sampling conducted in coordination with USGS efforts.

5.1 Field Water Quality Parameters

At each location, a YSI multi-parameter sonde was used to measure pH, specific conductivity, dissolved oxygen, turbidity and temperature in the field (**Table 2**). Temperature ranged from 15.87 to 25.29 degrees Celsius. The water temperature was generally coolest in the samples collected in the morning. Samples in the LVW collected later in the day tended to be warmer. Specific conductivity ranged from 1,012 to 4,342 micro-Siemens per centimeter ($\mu\text{S}/\text{cm}$). The highest conductivity of 4,342 $\mu\text{S}/\text{cm}$ was measured at LWC3.7 (near the KM67 seep), which is almost two times higher than the next highest reading (2,404 $\mu\text{S}/\text{cm}$ at GLW4.85). The pH measurements were generally near neutral to slightly alkaline, ranging from 7.18 (LWC3.7) to 8.48 (LW6.05). Dissolved oxygen in the surface water ranged from 0.65 to 12.19 milligrams per liter (mg/L), and most locations were near or exceeded 100 percent saturation (saturation is the dissolved oxygen concentration corrected for water temperature and daily atmospheric pressure [entered during daily calibration of YSI multi-parameter sondes]). Dissolved oxygen was lowest in LWC3.7, near the KM67 seep (0.65 mg/L; 7.8 percent saturation); all other stations had dissolved oxygen at or greater than 80 percent saturation. The turbidity meter was not functional for all locations. Turbidity that was measured ranged from 3.1 to 8.9 Nephelometric Turbidity Units (NTUs). The high specific conductivity and low dissolved oxygen at LWC3.7 indicates it was likely sampled very close to seep KM67.

5.2 Laboratory Analyses Results

As discussed in Section 3, surface water samples were analyzed for perchlorate, chlorate, chloride, bromide, and Total Dissolved Solids. Concentrations for each analyte are included in **Table 14** and presented on a map of the Downgradient Study Area, plotted on a semi-logarithmic scale by RM and in comparison to May 2016 data, respectively. Figures of the sampling results during the December 2016 USGS Seepage Study are presented for perchlorate (**Figure 7** through **Figure 9**), chlorate (**Figure 10** through **Figure 12**), total dissolved solids (**Figure 13** through **Figure 15**), chloride (**Figure 16** through **Figure 18**), bromide (**Figure 19** through **Figure 21**), and chloride/bromide ratios (**Figure 22** through **Figure 24**). The analytical results are discussed below.

5.2.1 Perchlorate

Perchlorate concentrations generally increase with distance downstream (i.e., declining RM) (**Figure 7** and **Figure 8**). Following is a summary of the perchlorate analytical results from samples collected from upstream to downstream locations in the LVW during the December 2016 USGS Seepage Study:

Upper Reach (LW7.2 to Proposed Location of Sunrise Mountain Weir)

Two samples were collected from the Upper Reach of the Study Area (LW7.2 to the proposed location of Sunrise Mountain Weir). Perchlorate was not detected in either sample (detection limit [DL] of 0.95 $\mu\text{g}/\text{L}$).

Pabco Road Reach (Proposed Location of Sunrise Mountain Weir to LW5.9)

In the Pabco Road Reach, concentrations of perchlorate in the t/ss of the Wastewater Channel were low (1.5 J µg/L [GLWC6.1_4] and 1.7 J µg/L [GLWC6.1_3]) and non-detect [< 0.95 µg/L]). Perchlorate in the LVW increased, but remained below 10 µg/L in the two samples from this reach.

Main Reach (LW5.9 to Homestead Weir)

Perchlorate was detected in all samples in this reach (> 0.95 µg/L). The concentrations of perchlorate in the Main Reach of the LVW increased slightly from the Pabco Road Reach, and a markedly higher concentration (270 µg/L at the new location GLW4.85) downstream of Calico Ridge Weir at RM 4.65. Immediately upstream of Homestead Weir (at RM 4.1), the concentration of perchlorate was 23 µg/L, which was slightly higher than the perchlorate concentration measured upstream of Calico Ridge Weir at RM 4.7 (14 µg/L). This indicates that the high perchlorate concentration noted at GLW4.85 may be attributable to a nearby seep that disperses into the overall flow through the LVW. No seep has been documented in the immediate vicinity of Calico Ridge Weir near GLW4.85. However, seep KM-91, sampled by Kerr McGee in 2000 (AECOM, 2016b) is located approximately 500 feet downstream. When sampled in 2000, KM-91 had a perchlorate concentration of 2,100 µg/L.

Three Kids Reach (Homestead Weir to Rainbow Gardens Weir)

Perchlorate was detected in all samples in this reach (> 0.95 µg/L). The concentrations in the samples from the Three Kids Reach are higher, on average, than in the reaches upstream, ranging in concentration from 20 to 47 µg/L. In addition, LWC3.7 had a high concentration (1,600 µg/L), which likely reflects a seep near the Three Kids Weir.

Downstream Reach (Rainbow Gardens Weir to LW3.1)

Perchlorate was detected in all samples in this reach (> 0.95 µg/L). The Downstream of Rainbow Gardens Weir, the estimated concentration of perchlorate, which was below the reporting limit, was 33 J µg/L, similar to the reach immediately upstream.

Comparison to May 2016 Grab Samples

The samples collected in May 2016 were targeted at a low flow; the samples collected simultaneously with the USGS Seepage Study in December 2016 were all collected in one day, regardless of flow. While these two data sets are not fully comparable due to differences in flows and locations (different samples were collected in May and December with some overlap), they reflect similar patterns (**Figure 9**). Concentrations of perchlorate trend higher with distance downstream. The unaccounted increase in the Main Reach appears to be from a previously unsampled source at GLW4.85 (RM 4.65 immediately downstream of Calico Ridge Weir). Previous concentrations of perchlorate at LWC3.7 were not elevated (61 µg/L in May 2016), but the sample collected in December 2016 may reflect influence from the seep KM67, which was sampled in May but not in December 2016.

5.2.2 Chlorate

Chlorate was detected (> 10 µg/L) in all samples and ranged from 20 µg/L (LWC6.1_2 in the Wastewater Channel) to 4,300 µg/L (LWC3.7). The concentrations of chlorate are similar to perchlorate concentrations in the reach from Historic Lateral Weir to Three Kids Weir, including a high concentration (980 µg/L) at GLW4.85 downstream of Calico Ridge Weir (**Figure 10** and **Figure 11**). However, chlorate increased in the t/ss location LWC3.7, which had a perchlorate concentration (4,300 µg/L) that was higher than surrounding locations. In addition, while perchlorate was non-detect in the Upper Reach, chlorate was detected at concentrations similar to those downstream. This is consistent with previous observations and may indicate that reclaimed water (i.e., non-

NERT outfalls and discharges to the LVW located upstream of the Downgradient Study Area) may be a significant source of chlorate (but not perchlorate) to the LVW.

Compared to May 2016 results, chlorate concentration show greater variability in December, with higher concentrations noted near Calico Ridge Weir and Three Kids Weir (**Figure 12**). The location at Calico Ridge represents a new location not sampled in May 2016. The location at Three Kids Weir (LWC3.7) shows higher concentrations of chlorate in December 2016 (4,300 µg/L) than in May 2016 (260 µg/L). LWC3.7 was likely sampled closer to the seep (KM67) in December 2016 since the concentration is similar to the chlorate concentration of 4,400 µg/L in KM67 when it was sampled in May 2016. KM67 was not sampled in December.

5.2.3 Total Dissolved Solids

Total dissolved solids were detected (> 5.0 mg/L) in all samples (**Figure 13** and **Figure 14**). Total dissolved solids concentrations ranged from 620 to 3,300 mg/L, with the lowest concentration in the Wastewater Channel (LWC6.1_2) and the highest concentration at LWC3.7 near Three Kids Weir, where high concentrations of perchlorate and chlorate were noted. Other surface water samples ranged from 1,000 to 1,600 mg/L.

In May 2016, the sample collected at LWC6.3_1 had a total dissolved solids concentration of 5,000 mg/L; this location was not resampled in December 2016. Compared to May 2016 results, total dissolved solids concentrations were similar in December to locations sampled in May 2016, with lower concentrations noted in the other Wastewater Channel t/ss samples (**Figure 15**). The location at Three Kids Weir (LWC3.7) shows higher concentrations of total dissolved solids than in May, and was likely sampled closer to the seep (KM67) which was not sampled in December.

5.2.4 Chloride and Bromide

Chloride (**Figure 16** and **Figure 17**) was detected (> 0.25 mg/L) in all surface water locations. Chloride concentrations followed the pattern of total dissolved solids, and were generally similar, ranging from 200 to 250 mg/L in most samples. Noted exceptions are a low concentration (84 mg/L) at LWC6.1_2, located in the Wastewater Channel, 350 mg/L at GLWC6.1_4 in the Wastewater Channel downstream of the confluence of the outfalls, and 490 mg/L at LWC3.7. Compared to sampling conducted in May 2016 (**Figure 18**), chloride concentrations were consistent, with high and low concentrations in the Wastewater Channel samples. Similar to the other constituents measured in the surface water samples, the high concentration of chloride at LWC3.7 noted in December was not noted in May.

Bromide (**Figure 19** and **Figure 20**) was detected (>0.25 mg/L) in all surface water samples, although several samples were "J" flagged during validation. Concentrations were highest at LWC3.7 (2.4 J mg/L) and lowest at LWC6.1_2 (0.31 J mg/L). Similar to sampling conducted in May 2016 (**Figure 21**), bromide concentrations varied in December 2016, with high (1.2 mg/L at LWC6.1_1) and low (0.31 J mg/L at LWC6.1_2) concentrations in the Wastewater Channel samples. During the May 2016 event, bromide concentrations in the Wastewater Channel samples also varied, but were generally higher, ranging from undetected (< 0.5 mg/L at LWC6.1_2) to 3.5 mg/L (LWC6.1_1). Similar to the other constituents measured in the surface water samples, the high concentration of bromide at LWC3.7 reported in December (2.4 J mg/L) was not encountered in May (0.93 mg/L).

The ratios of chloride to bromide (**Figure 22** and **Figure 23**) vary considerably between sample locations with no clear discernable patterns. Higher ratios were noted upstream of Three Kids Weir and Calico Ridge Weir. Compared to sampling conducted in May 2016 (**Figure 24**), chloride to bromide ratios reported for December were highly varied.

5.2.5 Quality Control Samples

Quality control samples collected with the water samples coordinated with the USGS seepage study included two field duplicates (FD), a field blank (FB), and an equipment blank (EB). As required, the laboratory ran quality

control procedures including matrix spike and matrix spike duplicate (MS/MSD) analysis. A detailed discussion of quality control and data validation is included in the DVSR (**Appendix F**).

FD samples were collected for two primary samples (LW3.85-20161208-0.3 and LWC3.7-20160208-0.6) (DVSR Table 5). Acceptable relative percent difference (RPD) between the primary and duplicate sample was specified as 30 percent in the QAPP (AECOM 2016c). Acceptable field and analytical precision was demonstrated for all field duplicate pairs for samples coordinated with the USGS seepage study.

An EB sample and a FB sample were collected and analyzed with this group of samples. Target analytes were not detected in either the EB or the FB; therefore, no data from samples coordinated with the USGS seepage study were qualified based on the EB or FB.

MS/MSD samples were run as required by the laboratory. One perchlorate MS/MSD recovery exceeded control criteria. Perchlorate results for 9 primary samples (GLWC6.1_3-20161208-0.5, GLWC6.1_4-20161208-0.5, LW3.4-20161208-0.5, LW3.85-20161208-0.3, LW3.85-20161208-0.3-FD, LW4.1-20161208-0.2, LW5.3-20161208-1.0, LW5.3-20161208-2.5, LW6.05-20161208-0.5) were qualified on the basis of this exceedance. While the results from these samples would be expected to be biased high, the bias is not expected to impact the discussion provided in this section. Details of these qualifications are provided in the DVSR (**Appendix F**).

6.0 Summary of Staff Gage Installation and Cross Sections

Staff gages were installed at eight locations along the LVW (**Figure 4** and **Table 5**). These staff gages were used to fill gaps in flow record from the five USGS stations present in the Downgradient Study Area.

6.1 Gage Readings

The recording pressure transducers (Solinst Leveloggers) installed at the staff gage locations were programmed to record water pressure every 5 minutes (288 times per day). The Levelogger is not a vented unit, so pressure data collected on the datalogger required compensation for changes in barometric pressure. Three recording barometers (Solinst Barologgers) were installed at various locations throughout the study area and programmed to collect barometric pressure readings on a 5-minute frequency. Corrected water pressure readings were then correlated to readings on the attached staff gage through comparison to the manual readings of the staff gage throughout the study period.

The pressure transducers were downloaded several times during the sampling period to help evaluate the timing of transect sampling relative to the nearby flow regime in the LVW, and to help predict that timing during the discrete sampling week. An example of the staff gage readings from S3.8, the staff gage located at transect T3.8 is presented in **Appendix G**. These readings are representative of staff gage readings from January/February 2017. Readings at the eight stations installed by AECOM (collected on a 5-minute frequency) are plotted as calibrated to the readings on the staff gage. Chart blank includes both the automated data collected by the datalogger (after barometric compensation and correlation to staff gage readings) and the manual readings of the staff gage during the study period.

At the end of the study period, all units (Solinst Leveloggers and Solinst Barologgers) were reprogrammed to record pressure on an hourly frequency. The units are still in the field recording data and will be retrieved during a future sampling event.

The temporary stream gages installed in January 2017 have not been calibrated for direct reading of flow and record only the height of the staff gage; however, these gages were used to estimate flows based on the flow data from the nearest USGS gages. The cross-sections of the transects were taken at large intervals that do not lend themselves for the generation of calibrated flow curves. The cross sections provided depth information across the LVW that was used in the transect sample design and can be used in the future to select additional sampling locations and depths.

Readings at the USGS stations (collected on a 15-minute frequency) were adjusted to plot on a similar scale as the AECOM stations. The adjusted USGS data correctly show the timing and magnitude of stream stage change at the respective stations. Most stations show the observed downstream delay in daily low and daily peak streamflow. The gage at Bostick Weir reflects a somewhat different timing. The stream channel in that area was strongly impacted by the storms prior to the sampling period, and conditions may have still been adjusting during the time period represented on the chart.

6.2 Cross Sections

Water depths along the transects were measured at regular intervals (**Table 6**). These data were plotted with sample location and are presented in **Appendix G**.

7.0 Summary of Surface Water Data: Transect Sampling

Surface water samples were collected from 45 locations along 11 transects (**Figure 5**). Three locations were sampled for two depths. **Table 15** presents the analytical results of surface water sampling from transects.

7.1 Field Water Quality Parameters

At each location, a meter was used to measure pH, specific conductivity, dissolved oxygen, turbidity and temperature in the field (**Table 7**). Temperature ranged from 16.50 to 20.09 degrees Celsius. The water temperature was generally coolest in the samples collected in the morning. Samples in the LVW collected later in the day tended to be warmer. Specific conductivity ranged from 2,031 to 7,162 $\mu\text{S}/\text{cm}$. The highest conductivity was measured at T5.3 along the south bank. The pH measurements were generally near neutral to slightly alkaline, ranging from 7.49 (T4.75_D) to 8.30 (T3.5_F). Dissolved oxygen in the surface water ranged from 6.26 to 14.28 mg/L, and most locations were near or exceeded 100 percent saturation. Dissolved oxygen was lowest in samples along T4.75. The turbidity meter was not functional for all locations. Turbidity that was measured ranged from 0.1 to 135.5 NTUs. High turbidity was noted along the south bank of T4.2 and T4.6.

7.2 Laboratory Analyses Results

Surface water samples were collected generally from near-bottom depth. Samples were collected near the south bank, near the north bank and at locations along the transects determined during the field event to represent the flow and channelization of the LVW. **Appendix G** shows the sampling locations along the transects with cross sections of streambed depth. Figures are presented for perchlorate (**Figure 25**), chlorate (**Figure 26**), total dissolved solids (**Figure 27**), chloride (**Figure 28**), bromide (**Figure 29**), and chloride/bromide ratios (**Figure 30**). The results of the laboratory analysis of surface water samples from transect samples are presented in **Table 15** and discussed below. The discussion focuses on the pattern within each transect, with some consideration given to between transect discussion.

7.2.1 Perchlorate

Figure 25 presents the perchlorate data along the transects. Following is a summary of the perchlorate analytical results from samples collected from upstream to downstream transects in the LVW during the February 2017 transect sampling event:

Transect T6.8 (Upstream of Duck Creek Confluence): Perchlorate was not detected ($<0.95 \mu\text{g}/\text{L}$) in four of five samples across this transect. The mid-channel sample was detected at a low concentration ($1.6 \mu\text{g}/\text{L}$).

Transect T6.35 (Downstream of Proposed Sunrise Mountain Weir): Perchlorate was detected ($>0.95 \mu\text{g}/\text{L}$) in all samples. Concentrations on the north and south bank were identical ($18 \mu\text{g}/\text{L}$) and the concentration in the mid-channel was similar ($17 \mu\text{g}/\text{L}$) in shallow and deep samples. This increase in concentration from Transect T6.8 was consistent with findings from the May 2016, December 2016 and February 2017 grab sampling where increases were noted downstream of Proposed Sunrise Mountain Weir, close to Pabco Road Weir. No sampling had been conducted by AECOM near the Proposed Sunrise Mountain Weir prior to this transect sampling. This demonstrates that the increase in perchlorate is closer to the Proposed Sunrise Mountain Weir than Pabco Road Weir.

Transect T6.0 (Upstream of Pabco Road Weir): Perchlorate was detected ($>0.95 \mu\text{g}/\text{L}$) in all samples. Concentrations from the south bank to the middle of the channel were identical ($16 \mu\text{g}/\text{L}$) and the concentration near the north bank was similar ($15 \mu\text{g}/\text{L}$). This increase in concentration from Transect T6.8 was consistent with

findings from grab sampling conducted by AECOM in 2016 and 2017. During grab sampling events, no marked increase in perchlorate was noted between this Transect and upstream T6.35, so the results of the transect sampling were consistent with other events.

Transect T5.3 (Downstream of Proposed Historic Lateral Weir Expansion): Perchlorate was detected ($>0.95 \mu\text{g/L}$) in all samples. Concentrations from mid-channel and the north bank were similar (17 and $18 \mu\text{g/L}$, respectively) to each other and upstream transects T6.0 and T6.35. The shallow and deep samples from near the south bank were almost two times the concentration (32 and $33 \mu\text{g/L}$, respectively) which accounts for the slight increase that has been noted during AECOM grab sampling events from sample LW5.3 near the proposed location of the Historic Lateral Weir Expansion.

Transect T4.75 (Downstream of Calico Ridge Weir): Perchlorate was detected ($>0.95 \mu\text{g/L}$) in all samples. Concentrations from mid-channel were similar (22 J and $23 \text{ J } \mu\text{g/L}$) to each other and reflect the mixed concentrations from T5.3. Near both the north bank ($420 \text{ J } \mu\text{g/L}$) and south bank ($820 \text{ J } \mu\text{g/L}$), concentrations were markedly higher. These samples may reflect a slow (i.e., low flow) perchlorate “seep” or may be from incomplete mixing at an upstream location. This data gap should be addressed.

Transect T4.65 (Upstream of Lower Narrows Weir): Perchlorate was detected ($>0.95 \mu\text{g/L}$) in all samples. Concentrations from northerly mid-channel and north bank samples were similar (31 and $30 \mu\text{g/L}$) to each other and reflect mixed concentrations from the mid-channel and north bank locations of T4.75. They indicate that the north bank perchlorate concentration at T4.75 is not contributing a large flux of perchlorate to the LVW. The concentrations from the south bank sample ($57 \text{ J } \mu\text{g/L}$) and first mid-channel sample from the south bank ($51 \mu\text{g/L}$) were markedly higher than the other locations at T4.65. These samples likely reflect the mixing of the higher perchlorate detected along the south bank at T4.75 into the channel of the LVW.

Transect T4.6 (Downstream of Lower Narrows Weir): Perchlorate was detected ($>0.95 \mu\text{g/L}$) in all samples. Concentrations of perchlorate in T4.6, located downstream of Lower Narrows Weir, are similar to those in T4.65 which is on the immediate upstream side of Lower Narrows Weir. Concentrations from northerly, mid-channel and north bank samples were similar (30 J and $32 \text{ J } \mu\text{g/L}$) to each other and to T4.65. The concentrations from the south bank sample ($64 \text{ J } \mu\text{g/L}$) and first mid-channel sample from the south bank ($57 \text{ J } \mu\text{g/L}$) were markedly higher than the other locations at T4.6 and slightly higher than the concentrations immediately upstream in the same locations from T4.65.

Transect T4.2 (Upstream of Homestead Weir): Perchlorate was detected ($>0.95 \mu\text{g/L}$) in all samples. Concentrations of perchlorate in T4.2, located immediately upstream of Homestead Weir, are similar to those in T4.65 and T4.6 in that concentrations from northerly mid channel and north bank samples were similar (27 and $25 \mu\text{g/L}$) to each other and lower than in the other samples along the transect. The concentrations at T4.2 were lower than those immediately upstream, but the difference is insignificant. The concentrations from the south bank sample ($66 \mu\text{g/L}$) and first mid-channel sample from the south bank ($40 \mu\text{g/L}$) were markedly higher than the other locations at T4.2. The mid-channel location is lower than upstream, indicating there may be cross sectional mixing near the Homestead Weir.

Transect T3.8 (Upstream of Three Kids Weir): Perchlorate was detected ($>0.95 \mu\text{g/L}$) in all samples. The perchlorate concentration from northerly mid channel sample ($32 \text{ J } \mu\text{g/L}$) was lower than other samples along T3.8. At the north bank, the concentration was $46 \text{ J } \mu\text{g/L}$, indicating there may be a perchlorate influx just upstream of Three Kids Weir. The concentrations from the south bank sample ($57 \text{ J } \mu\text{g/L}$) and first mid-channel sample from the south bank ($45 \text{ J } \mu\text{g/L}$) were similar to the concentrations immediately upstream at T4.2.

Transect T3.75 (Downstream of Three Kids Weir): Perchlorate was detected ($>0.95 \mu\text{g/L}$) in all samples. Transect T3.75 is located immediately downstream of Three Kids Weir. The perchlorate concentration from northerly mid channel sample ($31 \mu\text{g/L}$) was lower than other samples along T3.75, similar to the transect T3.8 upstream of Three Kids Weir. At the north bank, the concentration was $85 \mu\text{g/L}$, much higher than the locations upstream on

the north bank (i.e., T3.8 [46 J µg/L], T4.2 [25 µg/L], etc.). There may be a perchlorate influx just downstream of Three Kids Weir. The concentrations from the south bank sample (63 J µg/L) and first mid-channel sample from the south bank (51 J µg/L) were similar to the concentrations immediately upstream at T3.8, but slightly higher.

Transect T3.5 (Mid-way between Three Kids Weir and Rainbow Gardens Weir): Perchlorate was detected (>0.95 µg/L) in all samples. Transect T3.5 is located approximately midway between Three Kids Weir and Rainbow Gardens Weir. The perchlorate concentrations increased from the north bank (38 µg/L) toward the south (47 µg/L to 66 µg/L to 98 µg/L to a maximum of 140 µg/L) in the sample collected just towards mid-channel from the south bank. The south bank sample contained 73 µg/L of perchlorate. This pattern indicates that there may be an input of perchlorate to the south of the mid-channel line.

7.2.2 Chlorate

Figure 26 presents the chlorate data along the transects. Following is a summary of the chlorate analytical results from samples collected from upstream to downstream transects in the LVW during the February 2017 transect sampling event:

Transect T6.8 (Upstream of Duck Creek Confluence): Chlorate was detected (>0.25 µg/L) in all five samples across this transect. Concentrations ranged from 48 to 73 µg/L, with the highest chlorate detected mid-channel, consistent with the perchlorate pattern along this transect mid-channel

Transect T6.35 (Downstream of Proposed Sunrise Mountain Weir): Chlorate was detected (>0.25 µg/L) in all samples. Concentrations in all samples were similar, ranging from 53 to 57 µg/L. This increase in concentration from Transect T6.8 is consistent with findings from grab sampling and consistent with the perchlorate data from the transect sampling.

Transect T6.0 (Upstream of Pabco Road Weir): Chlorate was detected (>0.25 µg/L) in all samples. Concentrations from the south bank to the north were similar (49 to 50 µg/L). Unlike perchlorate, concentrations of chlorate decrease slightly from Transect T6.8.

Transect T5.3 (Downstream of Proposed Historic Lateral Weir Expansion): Chlorate was detected (>0.25 µg/L) in all samples. Concentrations from mid-channel and the north bank were similar (54 and 51 µg/L, respectively) to each other and upstream transects T6.0 and T6.35. The shallow and deep samples from near the south bank were almost three times the concentration (140 and 130 µg/L, respectively). This is consistent with the pattern of perchlorate in transect samples.

Transect T4.75 (Downstream of Calico Ridge Weir): Chlorate was detected (>0.25 µg/L) in all samples. Concentrations from mid-channel were similar (83 and 94 µg/L) to each other and reflect the mixed concentrations from T5.3. Near both the north bank (35 J µg/L) and south bank (3,100 µg/L), concentrations were markedly different. The increase on the south bank is similar to but greater in magnitude than the perchlorate increase noted at this transect. On the north bank, perchlorate increased, but chlorate was lower.

Transect T4.65 (Upstream of Lower Narrows Weir): Chlorate was detected (>0.25 µg/L) in all samples. Concentrations increased from north to south (78 µg/L, 100 µg/L, 210 µg/L and 250 µg/L) and were higher than T4.75, but the southern samples may reflect mixing from the high chlorate in the south bank sample at T4.75.

Transect T4.6 (Downstream of Lower Narrows Weir): Chlorate was detected (>0.25 µg/L) in all samples. Similar to T4.65 upstream of Lower Narrows Weir, concentrations of chlorate in T4.6, located immediately downstream of Lower Narrows Weir, increased from north to south (83 µg/L, 100 µg/L, 210 µg/L and 260 µg/L).

Transect T4.2 (Upstream of Homestead Weir): Chlorate was detected (>0.25 µg/L) in all samples. The pattern of chlorate in T4.2, upstream of Homestead Weir, followed that of T4.6 and T7.65. Concentrations increased from

north to south (78 µg/L, 88 µg/L, 170 µg/L and 260 µg/L), and were slightly lower than the immediate upstream transects.

Transect T3.8 (Upstream of Three Kids Weir): Chlorate was detected (>0.25 µg/L) in all samples. The chlorate concentration mimics that of perchlorate from this transect, with the northerly mid-channel sample (110 µg/L) lower than other samples along T3.8. At the north bank, the concentration was 130 µg/L. The concentrations from the south bank sample (270 µg/L) and first mid-channel sample from the south bank (210 µg/L) were similar to the concentrations immediately upstream at T4.2 and those in T4.6 and T4.65, further upstream.

Transect T3.75 (Downstream of Three Kids Weir): Chlorate was detected (>0.25 µg/L) in all samples. Transect T3.75 is located immediately downstream of Three Kids Weir. The perchlorate concentration from the northerly mid-channel sample (110 µg/L) was lower than other samples along T3.75, similar to the transect T3.8 upstream of Three Kids Weir. At the north bank, the concentration was 260 µg/L, which is much higher than upstream locations on the north bank. This pattern is consistent with perchlorate concentrations. The concentrations from the south bank sample (270 µg/L) and first mid-channel sample from the south bank (210 µg/L) were identical to the concentrations immediately upstream at T3.8.

Transect T3.5 (Mid-way between Three Kids Weir and Rainbow Gardens Weir): Chlorate was detected (>0.25 µg/L) in all samples. Transect T3.5 is located approximately midway between Three Kids Weir and Rainbow Gardens Weir. The chlorate concentrations increase from the north bank (140 µg/L) toward the south (190 µg/L to 270 µg/L to 420 µg/L to a maximum of 430 µg/L) in the sample collected just towards mid-channel from the south bank. This is the same pattern observed in the perchlorate data. The south bank sample contained 310 µg/L of perchlorate. This pattern indicates that there may be an input of chlorate mid-channel close to the south bank.

7.2.3 Total Dissolved Solids

Figure 27 presents the total dissolved solids data along the transects. Following is a summary of the total dissolved solids analytical results from samples collected from upstream to downstream transects in the LVW during the February 2017 transect sampling event:

Transect T6.8 (Upstream of Duck Creek Confluence): Total dissolved solids were detected (>5 mg/L) in all five samples across this transect. Concentrations ranged from 1,200 to 1,900 mg/L, with the highest concentration detected mid-channel, consistent with the perchlorate and chlorate.

Transect T6.35 (Downstream of Proposed Sunrise Mountain Weir): Total dissolved solids were detected (>5 mg/L) in all samples. Concentrations in all samples were similar, ranging from 1,500 to 1,600 mg/L. This reflects a well-mixed channel.

Transect T6.0 (Upstream of Pabco Road Weir): Total dissolved solids were detected (>5 mg/L) in all samples. Concentrations from the south bank to the north were identical (1,500 mg/L). This reflects a well-mixed channel.

Transect T5.3 (Downstream of Proposed Historic Lateral Weir Expansion): Total dissolved solids were detected (>5 mg/L) in all samples. Concentrations from the south bank to the north were identical (1,500 mg/L). This reflects a well-mixed channel.

Transect T4.75 (Downstream of Calico Ridge Weir): Total dissolved solids were detected (>5 mg/L) in all samples. Concentrations from mid-channel were identical (1,600 mg/L) to each other and upstream at T5.3 and T6.0. Near both the north bank (2,100 mg/L) and south bank (2,200 mg/L), concentrations were markedly higher. The increase is similar to the perchlorate increase noted on the north bank and the chlorate and perchlorate increase noted at the south bank at this transect.

Transect T4.65 (Upstream of Lower Narrows Weir): Total dissolved solids were detected (>5 mg/L) in all samples. Concentrations from the south bank to the north were identical (1,500 mg/L). The observed higher concentrations at upstream T4.75 were not apparent. This reflects a well-mixed channel.

Transect T4.6 (Downstream of Lower Narrows Weir): Total dissolved solids were detected (>5 mg/L) in all samples. Concentrations from the south bank to the north were similar (1,500 to 1,600 mg/L). This reflects a well-mixed channel.

Transect T4.2 (Upstream of Homestead Weir): Total dissolved solids were detected (>5 mg/L) in all samples. Concentrations from the south bank to the north were identical (1,400 mg/L). Concentrations were slightly lower than the immediate upstream transects, similar to perchlorate and chlorate levels in this area. This reflects a well-mixed channel.

Transect T3.8 (Upstream of Three Kids Weir): Total dissolved solids were detected (>5 mg/L) in all samples. Concentrations from the south bank to the north were similar (1,400 to 1,500 mg/L). This reflects a well-mixed channel.

Transect T3.75 (Downstream of Three Kids Weir): Total dissolved solids were detected (>5 mg/L) in all samples. Concentrations from the south bank to the north were similar (1,400 to 1,500 mg/L) and identical to the T3.8, located immediately upstream. This reflects a well-mixed channel.

Transect T3.5 (Mid-way between Three Kids Weir and Rainbow Gardens Weir): Total dissolved solids were detected (>5 mg/L) all samples. Transect T3.5 is located approximately midway between Three Kids Weir and Rainbow Gardens Weir. The total dissolved solids concentrations were generally consistent from the north bank toward the south, ranging from 1,500 to 1,600 mg/L. The south bank sample contained 2,700 mg/L total dissolved solids.

7.2.4 Chloride and Bromide

7.2.4.1 Chloride

Figure 28 presents the chloride data along the transects. Following is a summary of the chloride analytical results from samples collected from upstream to downstream transects in the LVW during the February 2017 transect sampling event:

Transect T6.8 (Upstream of Duck Creek Confluence): Chloride was detected (>0.25 mg/L) in all five samples across this transect. Concentrations ranged from 230 to 290 mg/L, with the highest chloride detected mid-channel, consistent with the pattern observed for other constituents.

Transect T6.35 (Downstream of Proposed Sunrise Mountain Weir): Chloride was detected (>0.25 mg/L) in all samples. Concentrations in all samples were similar, ranging from 260 to 270 mg/L.

Transect T6.0 (Upstream of Pabco Road Weir): Chloride was detected (>0.25 mg/L) in all samples. Concentrations from the south bank to the north were similar (280 to 290 mg/L). Chloride was slightly higher in T6.0 than upstream at T6.35.

Transect T5.3 (Downstream of Proposed Historic Lateral Weir Expansion): Chloride was detected (>0.25 mg/L) in all samples. Concentrations from the south bank to the north were similar (290 to 300 mg/L), and were slightly higher in T5.3 than upstream at T6.0.

Transect T4.75 (Downstream of Calico Ridge Weir): Chloride was detected (>0.25 mg/L) in all samples. Concentrations from mid-channel were similar (260 and 270 mg/L) to each other. Near both the north bank (350

mg/L) and south bank (360 mg/L), concentrations were markedly higher. A similar pattern was noted for perchlorate and total dissolved solids.

Transect T4.65 (Upstream of Lower Narrows Weir): Chloride was detected (>0.25 mg/L) in all samples. Concentrations were similar from north (260 mg/L) to the south bank (280 mg/L). Similar to total dissolved solids, the observed higher concentrations at upstream T4.75 were not apparent.

Transect T4.6 (Downstream of Lower Narrows Weir): Chloride was detected (>0.25 mg/L) in all samples. Concentrations in all samples were 280 mg/L.

Transect T4.2 (Upstream of Homestead Weir): Chloride was detected (>0.25 mg/L) in all samples. Concentrations were similar in all samples (260 to 270 mg/L).

Transect T3.8 (Upstream of Three Kids Weir): Chloride was detected (>0.25 mg/L) in all samples. Concentrations were similar in all samples (250 to 260 mg/L) and slightly lower than upstream at T4.2.

Transect T3.75 (Downstream of Three Kids Weir): Chloride was detected (>0.25 mg/L) in all samples. Concentrations in all samples were 280 mg/L.

Transect T3.5 (Mid-way between Three Kids Weir and Rainbow Gardens Weir): Chloride was detected (>0.25 µg/L) in all samples. Transect T3.5 is located approximately midway between Three Kids Weir and Rainbow Gardens Weir. The chlorate concentrations increase from the north bank (260 mg/L) toward the south, increasing to 280 mg/L in the sample collected just towards mid-channel from the south bank. This is the same pattern observed in the perchlorate data. The south bank sample contained 420 mg/L of chloride. This pattern indicates that there may be an input of chloride mid-channel close to the south bank.

7.2.4.2 Bromide

Figure 29 presents the bromide data along the transects. Following is a summary of the bromide analytical results from samples collected from upstream to downstream transects in the LVW during the February 2017 transect sampling event:

Transect T6.8 (Upstream of Duck Creek Confluence): Bromide was detected (>0.25 – 0.50 mg/L) in all five samples across this transect. Concentrations ranged from 0.64 to 1.8 mg/L, with the highest bromide detected mid-channel, consistent with the pattern observed for other constituents. The concentrations of bromide at Transect T6.8 were generally higher than other LVW transect samples. Downstream at Transect T4.65 and Transect T4.6, bromide concentrations are of similar magnitude (see below). Overall, bromide is variable and a trend is not discernible.

Transect T6.35 (Downstream of Proposed Sunrise Mountain Weir): Bromide was detected (>0.25 – 0.50 mg/L) in most samples. Bromide was not detected (< 0.25 mg/L) near the north bank. Concentrations in other samples were similar, ranging from 0.31 J to 0.57 mg/L, with a higher concentration noted mid-channel.

Transect T6.0 (Upstream of Pabco Road Weir): Bromide was not detected (<0.50 mg/L) in all samples.

Transect T5.3 (Downstream of Proposed Historic Lateral Weir Expansion): Bromide was detected (>0.25 – 0.50 mg/L) in one sample on the south bank (0.30 J mg/L). Bromide was not detected (< 0.50 mg/L) in the other samples.

Transect T4.75 (Downstream of Calico Ridge Weir): Bromide was detected (>0.25 – 0.50 mg/L) in most samples. Bromide was not detected (< 0.50 mg/L) near the north bank. Concentrations in other samples were similar, ranging from 0.57 to 0.69 J mg/L, with a higher concentration noted near the south bank.

Transect T4.65 (Upstream of Lower Narrows Weir): Bromide was detected (>0.25 – 0.50 mg/L) in all samples. The concentration in the sample collected towards mid-channel from the north bank (0.74 J mg/L) was lower than the north bank (1.7 mg/L) and the two southern samples (1.8 and 1.4 mg/L).

Transect T4.6 (Downstream of Lower Narrows Weir): Bromide was detected (>0.25 – 0.50 mg/L) in most samples. Bromide was not detected (< 0.25 mg/L) towards mid-channel from the north bank. Concentrations in other samples were similar, ranging from 1.6 to 1.7 mg/L.

Transect T4.2 (Upstream of Homestead Weir): Bromide was detected (>0.25 – 0.50 mg/L) in all samples. Concentrations were similar, ranging from 0.58 to 0.67 J mg/L.

Transect T3.8 (Upstream of Three Kids Weir): Bromide was detected (>0.25 – 0.50 mg/L) in most samples. Bromide was not detected (< 0.50 mg/L) near the north bank. Concentrations in other samples were similar, ranging from 0.53 J to 0.60 J mg/L.

Transect T3.75 (Downstream of Three Kids Weir): Bromide was detected (>0.25 – 0.50 mg/L) in the samples near the south bank and mid-channel. Bromide was not detected (< 0.50 mg/L) in the sample collected near the north bank. Bromide was detected at similar concentration in the mid-channel and south bank samples (0.33 J – 0.34 J mg/L).

Transect T3.5 (Mid-way between Three Kids Weir and Rainbow Gardens Weir): Bromide was detected (>0.25 – 0.50 mg/L) in the samples near the north and south banks. Bromide was not detected (< 0.50 mg/L) in three samples collected mid-channel. Bromide was detected (0.64 J mg/L) in the sample collected towards mid-channel of the south bank. At the north bank, the concentrations (0.70 to 0.84 J mg/L) were slightly lower than the south bank (1.1 mg/L).

7.2.4.3 Ratio of Chloride to Bromide

Figure 30 presents the chloride/bromide ratio along the transects. Following is a summary of the chloride-to-bromide ratios based on samples collected from upstream to downstream transects in the LVW during the February 2017 transect sampling event:

Transect T6.8 (Upstream of Duck Creek Confluence): The chloride/bromide ratio was higher near the north bank (312 and 359) than mid-channel and south, where the ratio ranged from 161 to 192.

Transect T6.35 (Downstream of Proposed Sunrise Mountain Weir): The ratio at the north bank (1,080) was higher than other locations. Mid-channel was 474 to 844 and the ratio at the south bank was 839.

Transect T6.0 (Upstream of Pabco Road Weir): At transect T6.0, the chloride/bromide ratio was similar across the transect (560 to 580).

Transect T5.3 (Downstream of Proposed Historic Lateral Weir Expansion): At transect T5.3, the chloride/bromide ratio was similar to transect T6.0 (580) with the exception of the south bank (ratio of 1,000).

Transect T4.75 (Downstream of Calico Ridge Weir): The chloride/bromide ratio was higher on the north bank (700) and south bank (522) than mid-channel (441 to 474).

Transect T4.65 (Upstream of Lower Narrows Weir): The chloride/bromide ratio was highest just towards mid-channel of the north bank (351). The other samples ranged from 144 to 200.

Transect T4.6 (Downstream of Lower Narrows Weir): Similar to T4.65, the chloride/bromide ratio was highest just towards mid-channel of the north bank (1120). The other samples ranged from 165 to 175.

Transect T4.2 (Upstream of Homestead Weir): The chloride/bromide ratio along T4.2 was relatively even, ranging from 388 to 466.

Transect T3.8 (Upstream of Three Kids Weir): The chloride/bromide ratio along T3.8 was relatively even, ranging from 433 to 500.

Transect T3.75 (Downstream of Three Kids Weir): At transect T3.75, located immediately downstream of Three Kids Weir, the chloride/bromide ratio is lower on the north bank (560) than the other three locations which ranged from 824 to 848.

Transect T3.5 (Mid-way between Three Kids Weir and Rainbow Gardens Weir): The chloride/bromide ratio downstream at T3.5 was higher in mid-channel locations than north (310 to 357) or south bank (382). The mid-channel ratios ranged from 438 to 540, lower than those upstream at T3.75.

7.3 Quality Control Samples

Quality control samples collected with the Transect samples included seven FD, three FB, and six EB. As required, the laboratory ran quality control procedures including MS/MSD analysis. A detailed discussion of quality control and data validation is included in the DVSR (**Appendix F**).

FD samples were collected for seven primary samples (DVSR Table 5). Acceptable RPD between the primary and duplicate sample was specified as 30 percent in the QAPP (AECOM 2016c). Acceptable field and analytical precision was demonstrated for all FD pairs except for the bromide analysis of sample T3.8C-20170130-0.4 and its duplicate.

EB samples (six) and FB samples (three) were collected and analyzed. Target analytes were either not detected in EBs and FBs or did not require data qualification. Sample concentrations were compared to concentrations detected in the EB and FB as required by the QAPP (AECOM 2016c). No sample data were qualified based on the EB or FB results because no analytes were detected in those samples.

MS/MSD samples were run as required by the laboratory. Four of the perchlorate MS/MSD recoveries exceeded control criteria. Perchlorate results for 18 samples were qualified on this basis. These qualified results would be expected to be biased high and include several samples with relatively high concentrations of perchlorate (T4.75A-20170201-1.3 [820 µg/L], T4.75A-20170201-1.3-FD [830 µg/L], and T4.75D-2017-201-1.5 [420 µg/L]). Despite the high bias, the conclusion that these locations likely represent a nearby seep is still considered valid. Details of these qualifications are provided in Section 2.1.2 of the DVSR (**Appendix F**).

8.0 Summary of Surface Water Data: Discrete Sampling

Surface water samples were collected from 14 locations in the LVW channel (LW3.4, LW3.75, GLW3.78, LW3.85, LW4.1, GLW4.4, GLW4.85, GLW4.9, LW4.95, LW5.3, LW5.9, LW6.05, LW6.7, and LW7.2), one location outside the channel (t/ss location LWC3.7) and four locations in Wastewater Channel (LWC6.1_1, LWC6.1_2, GLWC6.1_3, and GLWC6.1_4) (**Figure 6**). Samples were collected from each location at least twice a day during the sample period, targeting both the typical low-flow and high-flow periods. In addition, several locations were sampled a third time each day targeting moderate flow conditions. For purposes of this program, the daily low flow (“daily minimum flow”) was defined as the lower 10th percentile of daily flows. For high flows, the 90th percentile of daily flow had been proposed as the sampling target but was relaxed to the 50th percentile to allow the field teams to work in safe conditions during daylight hours (the 90th percentile of daily flow occurs from approximately 0000 to 0400). Mid flows are those flows occurring approximately half way between the daily minimum and daily maximum flow on the hydrograph. **Table 16** presents the analytical results of discrete surface water sampling.

8.1 Field Water Quality Parameters

At each location, a meter was used to measure pH, specific conductivity, dissolved oxygen, turbidity and temperature in the field (**Table 10**). During low flows, temperature ranged from 14.77 to 22.89 degrees Celsius. The water temperature was generally coolest in the samples collected in the morning. Temperature ranges increased at high flows (16.30 to 23.64 degrees Celsius).

The highest conductivity of 4,342 $\mu\text{S}/\text{cm}$ was measured at LWC3.7 (near the KM67 seep). The pH measurements were generally near neutral to slightly alkaline, ranging from 7.32 (GLWC6.1_3) to 8.41 (LW3.4) at low flows and 7.30 (GLWC6.1_3) to 8.46 (LW3.85) at high flows.

Dissolved oxygen in the surface water ranged from 5.2 to 11.63 mg/L at low flow and 2.1 to 10.30 mg/L at high flow, and most locations were near or exceeded 100 percent saturation (saturation was corrected for temperature and atmospheric pressure). Dissolved oxygen was lowest in LWC3.7, near the KM67 seep, during low and high flows.

The turbidity meter was not functional for all locations. Turbidity that was measured ranged from 0.0 to 14.2 NTUs at low flow and 0.0 to 13.5 NTU at high flow. The water quality data at LWC3.7 (low dissolved oxygen, low turbidity) indicates it was likely sampled very close to seep KM67.

8.2 Laboratory Analyses Results

In February 2017, the concentrations of target contaminants in the LVW and t/ss confirmed other recent findings (May 2016) of an overall reduction at most locations sampled than in previous sampling events. The results of the 2017 sampling are presented in **Figure 31** through **Figure 48**, and discussed below.

8.2.1 Perchlorate

Perchlorate data from the discrete sampling are provided in **Table 16** and presented in **Figure 31** (low-flow sampling results), **Figure 32** (high-flow sampling results) and **Figure 33** (mid-flow sampling results). The results are discussed by reach, below.

Upper Reach (LW7.2 to Proposed Location of Sunrise Mountain Weir)

Concentrations of perchlorate in surface water were not detected in the upper portions of the LVW (<0.95 µg/L at LW7.2 and at LW6.7] during any of the low-flow, high-flow, or mid-flow samples over four days of sampling.

Pabco Road Reach (Proposed Location of Sunrise Mountain Weir to LW5.9)

By the time water in the LVW reaches the Pabco Road Weir, perchlorate concentrations under low-flow conditions increase to 18 to 19 µg/L at LW6.05, and 15 to 21 µg/L at LW5.9. As would be expected, concentrations are highly flow dependent, with concentrations under high-flow conditions of 6.0 to 8.9 µg/L at LW6.05, and 6.7 to 10 µg/L at LW5.9. During periods of moderate flow (mid-flow), concentrations ranged from 8.0 J to 17 µg/L at LW6.05.

It is not known how much the increase in this reach is attributable to the addition of perchlorate that may be transported via groundwater discharge from the Kerr-McGee sump area and how much may be attributable to other, more diffused groundwater inputs from uncharted paleochannels, underground sources, or other discharges such as uncaptured groundwater from the American Pacific Corporation (AMPAC; Endeavor) perchlorate plume. Please refer to Endeavor (2017) for additional information on groundwater impacts and perchlorate mass entering the LVW from this plume. During the February 2017 sampling period, samples collected in the Wastewater Channel that enters the LVW near the Pabco Road Weir indicated that channel contributed relatively minor amounts of perchlorate. Of the 33 samples collected in that channel, only four contained perchlorate above method detection limits: one of nine samples from LWC6.1_1 at 1.3 J µg/L; two of eight samples from GLWC6.1_3 at 1.1J µg/L and 1.5J µg/L; and one of eight samples from GLWC6.1_4 at 1.3J µg/L. All of the eight samples at LWC6.1_2 were <0.95 µg/L.

Main Reach (LW5.9 to Homestead Weir)

In the region of the Proposed Historic Lateral Weir Expansion, sampling results from LW5.3 indicate similar results to upstream samples near Pabco Road. Water depths at LW5.3 were greater than 3 feet, so samples were collected from both a shallow depth (1.0 to 1.2 feet below water surface) and a deeper interval (2.0 to 2.4 feet below surface). Results for samples collected from different depths under the same flow conditions did not vary significantly. During low-flow conditions, the shallow sample ranged from 17 to 22 µg/L with a median of 18 µg/L, and the deep samples ranged from 16 to 30 µg/L with a median of 19 µg/L. During high-flow conditions, the shallow sample ranged from 8.9 to 11 µg/L with a median of 10 µg/L, and the deep samples ranged from 8.8 to 12 µg/L with a median of 9.3 µg/L.

Near the eastern edge of the Henderson Landfill Site (LW4.95), perchlorate results indicated an increase in perchlorate concentration, with 19 to 24 µg/L during low flows, 12 to 22 µg/L during moderate flows, and 10 to 13 µg/L during high flows. LW4.95 is located downstream of the Bostick Weir. Between the Bostick and Calico Ridge Weirs, the LVW channel is split into two subchannels by a large island, with LW4.95 located in the northern channel. Because most of the perchlorate increase is located along the southern shore, the sampling location may be isolated to a degree from the mixing in of any upstream inputs. GLW4.9 is located a short distance downstream in the southern channel, and sample results were higher. Perchlorate concentrations at GLW4.9 were 22 to 28 J µg/L during low flows, and 14 to 21 µg/L during high flows.

Below the Calico Ridge Weir (GLW4.85), samples collected near the south bank contained variable and high concentrations of perchlorate. The velocity of water is very low in that area so any water disturbance near the time of sampling (either from entering the water to sample, or spooking of resident fish) may have a significant impact upon results. Perchlorate concentrations at GLW4.85 were 290 to 1,100 µg/L during low flows, and 180 to 750 µg/L during high flows.

Concentrations of perchlorate in surface water were higher at the Homestead Weir. At station GLW4.4, immediately upstream of the Weir, perchlorate results were 25 to 28 µg/L during low flows, 25 to 33 µg/L during moderate flows, and 15 to 23 µg/L during high flows. Much of that increase may be attributable to the high

concentrations found near the Calico Ridge Weir (GLW4.85), which indicate groundwater may be contributing a significant amount of perchlorate in that area.

Three Kids Reach (Homestead Weir to Rainbow Gardens Weir)

Sampling results indicate significantly higher perchlorate concentrations below the Homestead Weir; however, the location of LW4.1 was near the southern quarter of the channel. Downstream results indicate that surface water sampled at LW4.1 was either not sufficiently mixed from upstream groundwater seepage, or was near a location of seepage. Perchlorate results from LW4.1 were 40 to 53 µg/L during low flows, and 35 to 38 µg/L for three of the four high-flow samples. The fourth high-flow sample from LW4.1 (LW4.1-20170208-16:33-0.4) returned a result of <0.95 µg/L. Other analytes for that sample (bromide, chlorate, chloride, and total dissolved solids) were within the range of other high-flow samples, so the perchlorate result is considered to be anomalous.

Sample results for stations located mid-channel near the Three Kids Weir indicate concentrations similar to those found above the Homestead Weir (at GLW4.4). Above the Three Kids Weir, perchlorate concentrations in samples from LW3.85 were 28 to 36 µg/L during low flows, and 24 to 32 µg/L during high flows. Below the weir, perchlorate concentrations in samples from LW3.75 were 26 to 35 µg/L during low flows, and 23 to 31 µg/L during high flows. Two other stations were sampled near the southern shore at the Three Kids Weir. At station GLW3.78, water sampled from below the surface of the boulder structure of the weir indicated perchlorate concentrations of 40 to 54 µg/L during low flows, and 40 to 48 µg/L during high flows. During the sampling period, the fluctuation in flows in the LVW did not proportionally impact the perchlorate concentrations. Near the toe of the weir, samples collected at LWC3.7 had concentrations of 550 to 670 µg/L during low flows, and 770 to 1,100 µg/L during high flows. LWC3.7 is located in a very low velocity section of the channel a short distance upstream of spring KM-67. That spring was sampled in May 2016 and found to have a perchlorate concentration of 1,500 µg/L. Groundwater discharging from the spring is significantly clearer. Under the often cloudy conditions of surface water in the LVW, that clearer water could be seen backing up into the vicinity of LWC3.7, particularly during higher flow periods.

Downstream Reach (Rainbow Gardens Weir to LW3.1)

Samples collected at the Rainbow Gardens Weir indicate a rise in perchlorate concentrations of surface water within the LVW. The results from LW3.4 ranged from 42 to 53 µg/L during low flows, 42 to 57 µg/L during moderate flows, and 32 to 39 µg/L during high flows. Most of that increase is attributed to the discharge of groundwater at KM-67. Some additional contaminated groundwater may be entering the LVW from the south in the vicinity of KM-67; however, the nearby topography and geology suggests a groundwater divide a short distance downstream. In this portion of the LVW, the valley floor crosses the volcanic rocks of the Horse Spring Formation (Rainbow Garden and Frenchman Mountain). Those rocks represent a topographic high to the north. A short cliff consisting of lithified alluvial deposits is located approximately 100 feet downstream of KM-67, representing a topographic high extending to the south. With the water table typically reflecting topography, these features suggest the presence of groundwater divides in the vicinity of the Three Kids Weir. Faulting is also present in this area. The groundwater flow in this area is complex and not well characterized. There may be groundwater upwelling and/or a groundwater divide in the vicinity of the Three Kids Weir.

8.2.2 Chlorate

Chlorate data from the discrete sampling are provided in **Table 16** and presented in **Figure 34** (low-flow sampling results), **Figure 35** (high-flow sampling results) and **Figure 36** (mid-flow sampling results). The results are discussed, below.

Chlorate was detected above the detection limit (> 20 µg/L) in all samples from the LVW channel and t/ss. Chlorate concentrations fluctuated with streamflow magnitude in a fashion similar to observations for perchlorate. Several of the results represented outliers including an anomalously low value during high flow sampling at

LWC3.7 on Day 3 (80 µg/L compared to other results of 2,500 (Day 1), 2,600 (Day 2) and 3,100 (Day 4) µg/L for other high-flow samples at this location), and an anomalously high value at LW4.95 (2,000 µg/L on Day 3 compared to other results of 57 to 78 µg/L for high-flow samples).

Within those stations thought to represent conditions in the main channel of the LVW, chlorate concentrations increased in the downstream direction. Between LW7.2 and LW5.3, chlorate results are relatively stable at 50 to 120 µg/L during low-flow conditions and 43 to 69 µg/L during high-flow conditions. Samples collected between the Bostick and Calico Ridge Weirs demonstrate an increase in chlorate concentration. In the northern channel of the LVW (LW4.95), chlorate results were 79 to 86 µg/L during low flow, 70 to 91 µg/L during moderate flow, and 57 to 78 µg/L during high flows, with an anomalous peak of 2,000 µg/L measured in a sample on Day 3 high-flow. Downstream results in the southern channel (GLW4.9) indicate chlorate is about 10 µg/L higher, with 87 to 100 µg/L during low flow, and 71 to 91 µg/L during high flow.

Above the Homestead Weir, chlorate results indicate another increase in concentration. Results from GLW4.4 were 99 to 120 µg/L during low flows, 93 to 140 µg/L during moderate flows, and 79 to 110 µg/L during high flows. Similar concentrations were observed at the two mid-channel sampling stations near the Three Kids Weir (LW3.85 and LW3.75). Those concentrations ranged from 100 to 140 µg/L during low flows, and 100 to 130 µg/L during low flows.

By the time the LVW reached the Rainbow Gardens Weir (LW3.4), concentrations of chlorate had risen to 170 to 190 µg/L during low flows, 160 to 200 µg/L during moderate flows, and 130 to 160 µg/L during high flows.

The highest chlorate concentrations were found in samples collected near regions of suspected groundwater discharge. Below the Calico Ridge Weir (GLW4.85), chlorate concentrations were 1,200 to 4,300 µg/L during low flow, and 900 to 3,000 µg/L during high flow. Two other stations in the LVW whose results were impacted by the nearby discharge of groundwater (LW4.1 and GLW3.78) had chlorate concentrations that were elevated relative to concentrations at other nearby stations (160 to 230 µg/L).

Samples collected in the wastewater channel entering the LVW near the Pabco Road Weir had moderately low concentrations of chlorate (81 to 110 µg/L at LW6.1_1, 47 to 91 µg/L at LW6.1_2, 76 to 110 µg/L at GLWC6.1_3, and 71 to 100 µg/L at GLWC6.1_4).

8.2.3 Total Dissolved Solids

Total dissolved solids data from the discrete sampling are provided in **Table 16** and presented in **Figure 37** (low flow sampling results), **Figure 38** (high-flow sampling results) and **Figure 39** (mid-flow sampling results). The results are discussed below.

Total dissolved solids were detected above the detection limit (> 5 mg/L) in all samples from the LVW channel and t/ss. Total dissolved solids concentrations in the samples other than the Wastewater Channel ranged from 1,200 to 2,200 mg/L during low flow, 1,300 to 1,600 mg/L at mid flow and 1,100 to 2,500 mg/L at high flow, indicating little difference in total dissolved solids. The highest concentrations were detected at LWC3.7 and GLW4.85, both in samples that contained high concentrations of perchlorate. In the Wastewater Channel, concentrations ranged from 610 to 1,400 mg/L at low flow and 590 to 1,400 mg/L at high flow. The lowest total dissolved solids concentrations were collected at LWC6.1_2.

8.2.4 Chloride and Bromide

Chloride and bromide data from the discrete sampling are provided in **Table 16**. Chloride concentrations are presented in **Figure 40** (low-flow sampling results), **Figure 41** (high-flow sampling results) and **Figure 42** (mid-flow sampling results). Bromide concentrations are presented in **Figure 43** (low-flow sampling results), **Figure 44** (high-flow sampling results) and **Figure 45** (mid-flow sampling results). The results of the ratio of chloride to

bromide concentrations are presented in **Figure 46** (low-flow sampling results), **Figure 47** (high-flow sampling results) and **Figure 48** (mid-flow sampling results). The results are discussed below.

Chloride was detected above the detection limit (> 0.25 mg/L) in all surface water locations. Chloride concentrations followed the pattern of total dissolved solids, and were generally similar, ranging from 200 to 460 mg/L in most samples. Noted exceptions were low concentrations (96 to 140 mg/L) at LWC6.1_2, located in the Wastewater Channel. Chloride did not vary substantially with depth or flow.

Bromide was detected above the detection limit (> 0.25 to 1.25 mg/L) in most surface water samples, and several samples were “J” flagged during validation. Including locations where either the sample or field duplicate was non-detect, 55 samples were non-detects, split relatively evenly among low flow (28 of 80) and high flow (24 of 80). Three locations out of 20 collected during mid flow were non-detect. Overall, concentrations were higher during low flow than high flow indicating influx into the LVW. During low flow, concentrations ranged up to 2.3 mg/L compared to 1.6 mg/L during high flow. The highest concentrations at low flow were noted at LW5.3 and GLW4.9, near proposed Historic Lateral Weir Expansion and Calico Ridge Weir. The highest concentration during high flow was at LWC3.7. During mid flow, concentrations were generally higher upstream at LW6.7 and LW7.2, but LWC3.7, LW5.3 and GLW4.9 were not sampled for comparison to low and high flow.

The ratios of chloride to bromide were varied. Higher ratios were noted during high flow samples compared to low or mid flow samples. This reflects the higher bromide concentrations during low flows, which may be indicative of a higher flow contribution from groundwater.

8.2.5 Quality Control Samples

Quality control samples collected for discrete samples included FD, FB, and EB. As required, the laboratory ran quality control procedures including MS/MSD analysis. A detailed discussion of quality control and data validation is included in the DVSR (**Appendix F**).

FD samples were collected for 17 primary samples (DVSR Table 5). Acceptable RPD between the primary and duplicate sample was specified as 30 percent in the QAPP (AECOM 2016c). Acceptable field and analytical precision was demonstrated for all FD pairs with the exception of bromide analysis in the following pairs:

1. LW3.85-20170207-15:50-0.6 and its FD which had a RPD of 33 percent,
2. GLWC6.1_4-20170208-10:35-1.3 and its FD which had an RPD of 59.15 percent, and
3. GLW4.9-20170208-16:35-1.4 and its FD which had an RPD of 33 percent.

Bromide results in these three pairs of samples were qualified as estimates with a “J” flag.

EB samples (nine) and FB samples (eight) were collected and analyzed. Target analytes were either not detected in EBs and FBs or did not require data qualification. Sample concentrations were compared to concentrations detected in the EB and FB as required by the QAPP (AECOM 2016c). No sample data were qualified based on the EB or FB results because no analytes were detected in those samples.

MS/MSD samples were run as required by the laboratory. Some of the bromide (one) and perchlorate (nine) MS/MSD recoveries exceeded control criteria. No bromide samples required qualification, but perchlorate results for 25 samples were qualified on this basis. Details of these qualifications are provided in Section 2.1.2 of the DVSR (**Appendix F**).

9.0 Perchlorate Mass Flux Estimates

The perchlorate results were converted from concentrations (in $\mu\text{g/L}$) to estimates of perchlorate mass flux (in pound per day [lb/day]) using estimates of streamflow in the LVW at the time of sampling.

9.1 Screening of Samples

The transect and discrete sampling data both had a wide range of perchlorate concentrations and did not show a consistent curve of increase with distance downstream. The transect sampling was designed to identify loci across the LVW that may be contributing to perchlorate inputs. During the discrete sampling, samples collected near suspected or previously unknown perchlorate inputs show up as “anomalous” high concentrations that would cause a mass flux estimate to be biased high. The sample data were evaluated and sub-sets of transect and discrete data were selected to minimize bias in the perchlorate mass flux estimates. The treatment of the sample data is described in Sections 9.3 and 9.4.

9.2 Provisional Flow Estimates for Flux Calculations

AECOM estimated streamflow at the transects and the discrete locations using the five permanent USGS gaging stations and several AECOM temporary stream gaging stations along the study reach of the LVW. All those stations demonstrate the daily pattern of highs and lows related to the release of wastewater from upstream wastewater treatment plants. The timing of those highs and lows vary from station to station, arriving later in the day with distance downstream. Between the stations at the Duck Creek Confluence and Rainbow Gardens Weirs (essentially representing the study reach), the daily highs and lows are separated by approximately three hours. Stream stage and estimated streamflow are reported by the USGS on a 15-minute frequency. Those data are available from the USGS on their “WaterWatch” webpage (USGS 2017). The temporary stream gages installed by AECOM (see Section 6.0) could not be used to estimate flow as they have not been calibrated for direct reading of flow and record only the height of the staff gage; however, these gages were used to estimate flows based on the flow data from the USGS gages.

Stream channels are highly dynamic environments, and the relationship between stream stage and streamflow (rating equation) often changes. Through periodic direct measurements of streamflow at the stations, the USGS evaluates that relationship and makes changes to the rating equation (and streamflow estimates) as needed. Until data are officially approved by the USGS, reported streamflow data are considered provisional in nature and may be subject to later revision. Several large storms reached the Las Vegas area during the weeks prior to transect sampling. While the stormwater runoff from such events is quickly passed through the LVW, the peak flows caused alterations to portions of the stream channel and significantly changed the rating equation at several of the USGS stations (USGS 2017), including the stations at Bostick and Three Kids. There have been several adjustments to data reported for the LVW during the period of transect sampling; however, some of the data will likely require further modification prior to USGS approval. The provisional data used in this analysis were downloaded on May 3, 2017.

In comparison to historic streamflow patterns in the LVW, data reported at the time of downloading for the LVW above Three Kids Wash (USGS station 09419753) were lower than anticipated by AECOM throughout the sampling period. During portions of the sampling period, data reported for the stations above the Bostick and Homestead Weirs (USGS stations 09419747 and 09419749, respectively) were also different from what was expected, with some of the data reported for the Bostick Weir lower than expected and flow at the Homestead Weir higher than expected based on AECOM review of historic data. AECOM contacted USGS who confirmed the data are provisional and, because of high flows in January, some erosion occurred and the flow calibration curves for the gages would need to be reviewed. With these three stations representing flow conditions for the

lower half of the study area, AECOM also utilized flow data from the downstream station below Lake Las Vegas (USGS station 09419800) to help characterize flow at the time of sampling. With nearly 70 percent of the length of the channel between the Three Kids station (immediately upstream of the Rainbow Gardens Weir) and the Lake Las Vegas station being conveyed through a pipeline at relatively high velocities, the timing and magnitude of daily peaks and lows are very similar at the two stations. A review of high and low flow peaks at the two gages indicates a 15 to 30 minute delay from Three Kids to Lake Las Vegas.

Streamflows at sampling locations above Pabco Road were estimated using data from the station below Duck Creek confluence (USGS station 09419698). Depending upon the location of stations below Pabco Road, where the LVW picks up a significant flow from a series of treatment outfalls, streamflows were mostly estimated using a combination of data from the Pabco Road and Lake Las Vegas stations (USGS stations 09419700 and 09419800, respectively). Given the uncertainty associated with some of the available data, USGS were consulted and agreed that the approach was appropriate for preliminary estimates of perchlorate flux (USGS 2017b). Some of the streamflow data reported for the Bostick and Homestead stations were used for streamflow estimates when that data reflected the observed flow regime elsewhere in the LVW.

To help derive flow estimates at transects located some distance from the USGS streamflow stations, stage data collected at AECOM's eight temporary stations were used to determine when the samples were collected relative to the daily streamflow cycle. For instance, if a sample was collected at a transect when stream stage there indicated the height of water was 5 percent above the daily low, the similarly timed low stage at the closest USGS gaging station was adjusted upward by 5 percent and flow at the transect was estimated based upon that stage.

The USGS characterizes the accuracy of approved daily average streamflow data as excellent (95% of daily data within 5% of actual streamflow), good (95% of daily flows within 10% of actual flow), fair (95% of daily data within 15% of actual flow), and poor, or having a less than "fair" accuracy (USGS 2009). For the two long-term stations at Pabco Road and below the Three Kids Weirs, annual data summaries characterize the data quality as fair, i.e., 95% of daily data falls within 15% of actual flow. Most of the data used in this study were provisional, i.e., data of "unverified accuracy and subject to revision" (USGS 2016). The high frequency provisional data used to evaluate flow conditions throughout the study area should be considered to be accurate to no less than 15% of true streamflow (30 to 60 cubic feet per second [cfs] over the typical daily range of flows of 200 to 400 cfs). Uncertainty also comes from the stage/flow estimates for ungaged (i.e., no flows calibrated for the gage) transect locations. Additionally there may be real differences in streamflow between stations (groundwater inflow and outflow, evaporation, etc.); however, those differences are likely to be small relative to the 30 to 60 cfs uncertainty associated with the use of preliminary USGS data and the correlation of that flow to AECOM's temporary stations.

9.3 Flux Estimates: Transect Samples

Where sampling results along the individual transect indicated the potential for the inflow of contaminated groundwater, a "representative" concentration was selected in an attempt to characterize the average level of perchlorate concentration entering the transect (**Table 17**). It was assumed that any inputs observed along the transect, which generally are observed as higher concentrations near the banks, would be the representative concentration at downstream transects. In the case of the transect below the Calico Ridge Weir (T4.75) for example, the perchlorate results for the sample collected near the south bank was almost 40 times higher than samples collected near the middle of the channel. Without knowing the perchlorate concentration and flow rate of that groundwater inflow, higher concentrations from one or more samples along the transect could not be integrated into a representative concentration without introducing significant error to the subsequent flux calculations. Instead, an average concentration from samples collected near the middle of the transect was chosen (as the median).

The perchlorate flux estimates at the transect sections are shown in **Table 17** and **Figure 49**. Several transects (i.e., T6 and T4.2) indicated a downstream drop in perchlorate flux. Those apparent losses are thought to be related to data issues (primarily the estimation of flows) and the complex way in which water in an open stream

channel mixes. The differences in perchlorate flux between those two stations and their neighboring stations can be explained by the potential 10 percent error in accuracy for preliminary streamflow data.

Near the Duck Creek Confluence Weir (Transect T6.8), samples were mostly below the 0.95 µg/L detection limit. One sample near the middle (T6.8C) had an estimated concentration of 1.6 µg/L. Assuming the average concentration at T6.8 was 0.95 µg/L, the resulting mass flux would have been < 1.0 lb/day. By the time it reached Transect T6.35, the perchlorate concentration in the LVW had increased to 18 µg/L, corresponding to 18 lb/day of perchlorate flux. That station is near a formerly sampled seep (KM71) that contained 3,400 µg/L of perchlorate during a 2000 sampling event conducted by Kerr McGee. Attempts to find KM71 have been unsuccessful since the original sampling of the seep.

Near Pabco Road, the apparent perchlorate flux dropped to 15 lb/day. A significant volume (approximately 40 cfs) of surface flow comes in immediately downstream of that transect (T6) from the Wastewater Channel. This is approximately 15 percent of the total flow in the LVW. Samples for perchlorate collected from the Wastewater Channel are generally below the detection limit, so if there is mixing of that water at T6 it would result in a lower concentration and resulting flux estimate (flow at T6 is estimated from the Duck Creek station near T6.8). This apparent drop is thought to be related to the increase in flow and not reflective of an actual loss of perchlorate in the system.

Near the proposed Historic Lateral Weir Expansion (Transect T5.3), the estimated perchlorate flux representative of the main channel was 17 lb/day, which is similar to the 18 lb/day estimated at T6.35. The potential influence from contaminated groundwater can be seen near the south bank where sample T5.3A contained 32 µg/L (vs. 18 µg/L in the main channel). By the time it passed through the Calico Ridge Weir (Transect T4.75), the perchlorate flux near the center of the LVW had risen to 25 lb/day with a significant increase observed coming in from the south and north banks (T4.75A at 820 J µg/L and T4.75D at 420 J µg/L, respectively).

Transects above and below the Lower Narrows Weir (T4.65 and T4.6, respectively) both had estimated perchlorate flux of 35 lb/day. Samples collected near the south bank continue to show some additional perchlorate entering the system (results of 40 to 66 µg/L from T4.65 to T3.8); however, the estimated flux changed only a little by the time the flow reaches the Three Kids Weir. Above the Three Kids Weir, Transect T3.8 had an estimated flux of 37 lb/day. Below the weir, the flux was a similar 35 lb/day at T3.75. While the concentration of perchlorate near the banks between the Lower Narrows and Three Kids Weirs may be almost twice as high as in the main channel, the rate of groundwater inflow must be low enough to not appreciably alter the total perchlorate flux in the LVW.

The data for Transect 4.2 near the Homestead Weir indicates an apparent 5 lb/day drop in perchlorate flux. Similar to the apparent loss near Pabco Road, the reduction near the Homestead Weir is thought to be related to the data, not a true loss of perchlorate to the system. Estimates of flux using the discrete data collected near that location (sample GLW4.4; **Table 18**) indicated perchlorate flux of 30 to 45 lb/day.

Near the Three Kids Weir, the influence of groundwater can be seen again near the north bank (samples T3.8D at 46 µg/L and T3.75D at 85 µg/L). The flux estimate is 37 lb/day. Immediately downstream of T3.75, a large spring enters the LVW. During a May 2016 sampling event, that spring (KM67) was found to contain 1,500 µg/L of perchlorate.

Flow from the spring KM67 enters the LVW below the Three Kids Weir in a somewhat braided area of the stream. Most of the discharge from KM67 is likely to enter several smaller channels along the south bank, while the majority of flow passes to the north. The final transect crosses this braided area, with concentrations of up to 140 µg/L in stations to the south (T3.5A to T3.5D) and lower concentrations to the north (37 to 47 µg/L at T3.5E and T3.5F). A concentration of 43 µg/L was selected as being representative of the main flow through the transect, for an estimated flux of 43 lb/day. The actual perchlorate flux in the LVW at Transect T3.5 would likely be higher

after the mixing of all the subchannels. Estimates of flux using discrete data downstream of T3.5 indicated flux may be as high as 57 to 75 lb/day (sample LW3.4; **Table 18**).

9.4 Flux Estimates: Discrete Samples

Flux calculations were made to demonstrate both how the total estimated perchlorate flux along the LVW changes, and how changes in the flow regime over the daily cycle may impact that flux. Most stations were sampled twice a day over the four-day period during a time of low and high streamflow. Several of the stations were also sampled a third time each day with the goal of capturing mid-cycle flows (LW6.05, LW4.95, LW4.4, and LW3.4). In contrast, samples collected from the transects were collected once during periods of low streamflow.

Samples were collected at the discrete sampling locations on four consecutive days. That resulted in a range of concentrations and calculated perchlorate flux; however, perchlorate flux calculated at each station under the same flow regime (low, mid, and high) were generally in good agreement with each other. Some of the variation in flux and concentration at the sampling points may be attributed to the streamflow estimation process critical in the calculation of flux from perchlorate concentration, and some may be attributed to variations in perchlorate influx into the LVW and how that influx mixes with the surface water in the LVW. The perchlorate flux estimates provided in this report use the median values from each location and flow regime from the discrete sampling.

Several stations were not included in the estimation and discussion of perchlorate flux. Four stations were excluded from the estimation and discussion of perchlorate flux as they represented flow from the Wastewater Channel that enters the LVW at the Pabco Road Weir (LWC6.1_1, LWC6.1_2, GLWC6.1_3, and GLWC6.1_4). Of the 33 total samples collected from those four locations, 29 samples were below the method detection limit of 0.95 µg/L, and four were estimated to contain up to 1.5 µg/L of perchlorate. That water enters the LVW upstream of the Pabco Road Weir. In contrast, samples of water in the LVW at discrete sampling locations near Pabco Road averaged 13 µg/L, approximately an order of magnitude higher than the concentrations in the Wastewater Channel.

In addition to the locations in the Wastewater Channel, four other discrete stations were not included as their sample results clearly indicate they were outliers impacted by the nearby discharge of contaminated groundwater (LWC3.7, GLW3.78, LW4.1, and GLW4.85). Those elevated results are not representative of average concentrations passing through LVW. Attributing those concentrations to the entire flow passing through the vicinity of the sampling location would greatly overestimate the total flux of perchlorate in that region of the LVW. Those perchlorate contributions detected at these four stations would show up at downstream stations as the groundwater influx mixes with surface water in the LVW:

- LWC3.7 – This location is near the south bank immediately upstream of a spring that discharges below the toe of the Three Kids Weir. A sample collected from spring KM67 in May 2016 was found to contain 1,500 µg/L of perchlorate (AECOM, 2016). During the discrete sampling event, water velocity in the LVW in the vicinity of LWC3.7 and KM67 is very low, and discharge from the spring was visibly observed to back up into the region of the sampling location (groundwater discharge from KM67 is significantly clearer than surface water in the LVW). The median concentration of perchlorate from samples collected at LWC3.7 (730 µg/L) was 24 times higher than samples collected in the main channel of the LVW near the Three Kids Weir (30 µg/L at LW3.85 and LW3.75). The perchlorate contribution from KM67 (and any other nearby contributions from the aquifer feeding it) becomes mixed with the waters of the LVW as it travels to the lowest discrete sampling point at the Rainbow Gardens Weir (LW3.4). Samples from LW3.4 were collected mid-stream within the weir outlet and may be representative of the total, well-mixed load of the LVW at that point. As discussed later in this section, the flux of perchlorate increases from approximately 36 lb/day near the Homestead and Three Kids Weirs to between 60 and 70 lb/day at the Rainbow Gardens Weir. This flux is slightly higher than that provided by EPA for the Northshore Road measurements (52-67 lb/day) (NDEP Northshore sampling results, 1998-current pending provided via email October 2, 2017) but is in general good agreement considering the

uncertainties in the provisional flow data provided by USGS, the one-time sampling and estimation, the flow estimates based on the water levels measured at the staff gages and the variability in concentrations along and across the LVW. Assuming that the 24 to 34 lb/day gain of perchlorate flux originates from KM67, the spring would need to be flowing at a rate of 3.0 to 4.2 cfs (1,300 to 1,900 gallons per minute) to provide this mass flux gain at a concentration of 1,500 µg/L.

- GLW3.78 – Some of the higher concentration observed at LWC3.7 may be attributed to additional groundwater discharge through springs and seepage along the southern bank of the Three Kids Weir. Station GLW3.78 was selected to evaluate for that potential, with samples targeted to represent a mix of surface water flowing through the rock structure of the weir and potential groundwater inflow from the south. Samples collected at GLW3.78 had a median concentration of 47 µg/L, 56 percent higher than the 30 µg/L median for samples collected nearby in the main channel. The results for GLW3.78 are somewhat lower than results for samples collected near the southern shore during the Transect sampling discussed in Section 9.3. From the Lower Narrows Weir down to the Three Kids Weir, those near shore samples ranged from 57 to 64 µg/L. It is not known if the elevated results at GLW3.78 are attributable to groundwater discharge along the bank of the Three Kids Weir or if it is the result of incomplete mixing of upstream groundwater discharge with the surface water of the main channel. Due to the potential for influence or incomplete mixing, GLW3.78 was not included in the flux calculations.
- LW4.1 – Samples collected during the discrete sampling below the Homestead Weir (LW4.1) averaged 43 µg/L, 70 percent higher than samples collected upstream near the weir (25 µg/L at GLW4.4). Given the higher concentration of perchlorate observed near the south shore sampling locations along this reach of stream during the transect sampling week, some increase in concentration and total perchlorate flux would be anticipated in the area. However, by the time the LVW enters the Three Kids Weir, samples collected near the middle of the channel (LW3.85 and LW3.75) averaged 30 µg/L, or 26 percent lower than the average at LW4.1. That downstream decrease in concentration would represent an average loss in perchlorate flux of 20 lb/day. With samples at LW4.1 being collected approximately one-quarter of the stream width away from the south bank, the anomalously high levels observed there are attributed to an incomplete mixture of groundwater along that bank.
- LW4.85 – Other than results related to the spring near the Three Kids Weir (KM67 near LWC3.7), the highest levels of perchlorate along that southern bank were encountered at GLW4.85. Samples from that station, which was located immediately downstream of the Calico Ridge Weir, had a median perchlorate concentration of 310 µg/L, with one sample as high as 1,100 µg/L. That average concentration (310 µg/L) is 13 times higher than concentrations found near the middle of that channel cross section during the transect sampling (23 µg/L). During the transect sampling, elevated perchlorate concentrations were found at both the south and north banks (820 and 420 µg/L, respectively). Together, those observations clearly indicate an influx of groundwater near the Calico Ridge Weir.

The results from several of the discrete sampling locations (LW5.9 and LW3.75) indicated a small drop in perchlorate flux from the upstream location (LW6.05 and LW3.85, respectively). Rather than representing an actual reduction of perchlorate flux, that observed drop is likely related to data uncertainties (primarily the estimation of flows) and the complex way in which water in an open stream channel mixes. Similar to some of the results from the transect sampling, the differences in flux could largely be explained by the potential 10 percent error in accuracy for preliminary streamflow data (Section 9.2). It should also be noted here that at one station (LW5.3), water depth was over 3 feet, so samples were collected from both a deep location near the streambed and from a shallower location. Results from samples collected at different depths were not significantly different, so shallow and deep concentrations were combined for calculating median perchlorate flux values.

The perchlorate flux estimates at all other discrete sampling locations are shown in **Table 18**. The table includes perchlorate results (median concentration, median flow, and median perchlorate flux) for low-flow, mid-flow (where applicable), and high-flow sampling regimes. The flux estimates are presented by RM for low-flow estimates (**Figure 50**), high-flow estimates (**Figure 51**) and mid-flow estimates (**Figure 52**).

The maximum potential perchlorate flux at upstream stations where perchlorate results were below detection limits (LW7.2 and LW6.7) were calculated by assuming the perchlorate concentration was near the method detection limit of 0.95 µg/L. That assumption resulted in a maximum potential flux of 0.9 lb/day under low-flow conditions (<1 lb/day in **Table 18**) and 1.7 lb/day under high-flow conditions (<2 lb/day). The maximum potential flux rates at these stations were calculated to represent a potential starting point for changes in perchlorate flux across downstream reaches of the LVW. The actual flux of perchlorate near the Duck Creek Confluence Weir and Upper Narrows Weir is likely to be substantially lower than that maximum potential.

Perchlorate flux estimates at different flow regimes generally remained in good agreement from Pabco Road down to station GLW4.9 (upstream of the Calico Ridge Weir). At the next station downstream of Pabco Road (LW5.9), the perchlorate flux was essentially the same under low- and high-flow conditions (16 and 15 lb/day, respectively). Perchlorate flux estimates at the next two stations are complicated by flow dynamics below the Bostick Weir. Between the Bostick and Calico Ridge Weirs, the LVW is split into two channels by a large island. Station LW4.95 is located in the northern channel near the Bostick Weir. Station GLW 4.9 is located in the southern channel near the downstream Calico Ridge Weir. Between those stations, sampling results indicate there is a gain in perchlorate along the southern bank. Under low- and mid-flow regimes, the perchlorate flux at LW4.95 remained steady at 25 to 26 lb/day, respectively, but dropped to 22 lb/day under the high-flow regime. That decrease under the high-flow regime may be related to variations in streamflow routing between the two channels under different flow regimes. The average perchlorate flux estimate at GLW4.9 under both the low-flow and high-flow regimes was 29 lb/day. Where that northern and southern channel merge back together (above the Calico Ridge Weir), the actual perchlorate flux of the LVW would reflect a combination of the flux in the northern channel (approximately 25 lb/day at LW4.95) and in the southern channel (approximately 29 lb/day at GLW4.9). The flux of perchlorate immediately above the Calico Ridge Weir is estimated from this at 25 to 29 lb/day.

Beginning near GLW4.4 (upstream of the Homestead Weir), estimated perchlorate fluxes become consistently higher under high-flow conditions. While the estimated flux at GLW4.4 under the low-flow regime (median value of 30 lb/day) was similar to the estimated flux under the high-flow regime (33 lb/day), higher flux was estimated under the mid-flow regime (45 lb/day). Near the Three Kids Weir, the estimated perchlorate flux under the low-flow regime (37 and 31 lb/day, respectively, at stations LW3.85 and LW3.75) was approximately 20 lb/day lower than under the high-flow regime (56 to 50 lb/day, respectively). It should be noted that the indicated perchlorate flux decrease from the upstream station (LW3.85) to the downstream station (LW3.75) is thought to reflect differences in the mixing of surface water through the weir. The actual range of results at the two stations under the two different regimes is very similar; however, lower values in the respective ranges were more common at the downstream station.

At the Rainbow Gardens Weir, the most downstream station in the discrete sampling investigation, the difference between estimated perchlorate fluxes under the low-flow regime (median value of 57 lb/day at LW3.4) was approximately 15 lb/day lower than under the high-flow regime (71 lb/day). The magnitude of that difference is lower than at the Three Kids Weir (20 lb/day). That may be due to the significant influx of perchlorate from the spring near the toe of that weir (KM-67), which may serve to moderate background fluctuations in upstream perchlorate concentration. That impact may also be reflected in the agreement between estimated perchlorate fluxes under the mid-flow regime (median value of 75 lb/day) and high-flow regime (71 lb/day).

The perchlorate concentration at any given time and location throughout the NERT RI Downgradient Study Area is dependent upon the perchlorate concentration in surface water entering the location from upstream, additional perchlorate entering the LVW from groundwater discharge near the location, the timing of observation within the daily cycle of streamflow peaks and lows, and the delay between that cycle and the arrival of diluted wastewater driving daily peak flows. All of those variables may change significantly from one sample location to another, leading to variations in perchlorate flux estimates throughout the flow regime. At stations above the Calico Ridge Weir, the perchlorate flux under different flow regimes appears to be similar on average, although significant differences may still arise between individual measurements. Near the Lower Narrows Weir, perchlorate

estimates under different flow regimes become more significant, with higher estimates of flux under mid-to-high-flow regimes.

9.5 Influence of Wastewater Discharge and Flow

One of the goals of the SWIP was to observe how concentrations of perchlorate fluctuate with respect to the daily cycle of wastewater discharge. During periods of low flow, streamflow in the LVW was generally on the order of 200 cfs. The rate of wastewater discharge from upstream treatment plants increases in the late morning, and streamflow in the LVW increases to approximately 350 cfs. Similar to the perchlorate concentrations observed in the Wastewater Channel entering the LVW near Pabco Road (LWC6.1_1, LWC6.1_2, GLWC6.1_3, and GLWC6.1_4), wastewater from those sources is assumed to contain low concentrations of perchlorate (<0.95 µg/l). That assumption is confirmed to a degree for the period of this study by the results for the two upstream stations. When the streamflow increased by approximately 75 percent between low-flow and high-flow conditions, the concentration of perchlorate remained under the method detection limit.

That dilution is complicated by the travel time of water particles in the LVW, which lags significantly behind the propagation of the streamflow peak from upstream wastewater release. The arrival of daily low and daily high streamflow at the USGS station above the Three Kids Wash (near the Rainbow Gardens Weir) generally occurs 3 hours after the arrival at the upstream station at the Duck Creek Confluence Weir. In contrast, the peak concentration of particles in a recent dye tracing study (Department of the Interior [DOI] 2016) lagged by approximately 6 hours over a similar reach of the LVW (between the Upper Narrows Weir and Fire Station Weir). As that water moves downstream, it mixes in with streamflow that is gaining perchlorate from a series of springs and groundwater seepage locations along the way.

Along portions of the study area, the timing of additional perchlorate and additional wastewater discharge may be balanced to a degree, with increased flow being compensated by the dilution of perchlorate concentration. The result of dilution can be seen near Pabco Road, where perchlorate flux at station LW6.05 did not change under low- and mid-flow regimes. The average streamflow during sampling collection increased by 30 percent; however, the average flux remained 18 lb/day (**Table 18**) due to a lower concentration resulting from the wastewater discharges. At high-flow conditions, the flux dropped to 12 lb/day (**Table 18**). That drop may be due to the arrival of increasingly diluted water, and may also be related to mixing of water with low perchlorate concentrations from the Wastewater Channel that enters the LVW at Pabco Road.

10.0 Revised Conceptual Site Model for Las Vegas Wash

A CSM of the LVW and potential inputs of perchlorate was developed for the SWIP (AECOM 2016a). This section updates the CSM based on the data collected to implement the SWIP in December 2016 and January and February 2017. A diagram of the updated CSM is provided in **Figure 53**. NERT will incorporate this information with all other data collected during the RI and present a comprehensive CSM in the RI Report.

10.1 Anthropogenic Sources of Discharge to the LVW

Discharges from the four major wastewater treatment plants in the valley represent the vast majority of anthropogenic flow in the LVW (Clark County Water Reclamation District, City of Las Vegas Water Pollution and Control Facility, City of Henderson Water Reclamation Facilities, and City of North Las Vegas Water Reclamation Facility). Outfalls from groundwater treatment plants (NERT, American Pacific Corporation, and TIMET) join the channel conveying treated wastewater from the City of Henderson, entering LVW above Pabco Weir (indicated as combined treated wastewater inflow on **Figure 53**). The remaining flow in the LVW comes from other sources such as Duck Creek and the C-1 channel, as well as non-point sources including urban and stormwater runoff and shallow groundwater discharge. It is expected that some reaches of the LVW are below the groundwater table and, therefore, receive groundwater discharge. Other reaches of the LVW are above the groundwater, which cause infiltration (loss) of the surface water. This condition is dynamic and changes depending on a wide variety of variables including, but not limited to, increases in flow rates from the wastewater treatment plants due to increased land development, diurnal fluctuations in wastewater flows, seasonal fluctuations of the groundwater table and occasional episodes of precipitation in the LVW drainage area.

The treatment plants contribute a relatively steady daily supply of water to the LVW throughout the year. The outfalls discharge continuously but at a predictably cyclic rate. That cycling causes a diurnal flow pattern similar to a tidal pattern, with daily high and daily low flows. Unless disrupted by rain storm events, daily high flows are on the order of 100 percent higher than the daily low. However, the constant daily discharge represents the vast majority of flow in LVW, and the natural, seasonal variability in streamflow has largely been eliminated. On average, streamflow tends to be somewhat higher from October through March (290 to 340 cfs) and lower from April through September (260 to 310 cfs) (USGS 2017).

Along with the general increase in background flow in LVW through the years, there has also been an increase in the magnitude of stormwater runoff draining into the LVW. Fifty years ago, the annual peak flow at Pabco Road was on the order of 300 cfs (median value of 280 cfs from 1957 to 1967), or similar to the current average annual flow (298 cfs). More recently, annual peak flows are on the order of 4,500 cfs (median value of 4,350 cfs from 2005 to 2015) (USGS 2016).

In an effort to protect the channel from the erosive forces of higher flows, a series of erosion control structures (weirs) have been constructed to slow the water velocities in the LVW. Where erosional forces have been allowed to run their course, the stream channel within the Downgradient Study Area is generally 40 feet or less in width. Near some of the weirs, the width increases to 300 feet or more.

The channel materials consist of loose, unconsolidated sediments that have been shifted and sorted by the energy of the flowing water. Most of the underlying material is alluvium that consists of both fine-grained materials (silts and clays) and courser materials (sands and gravels). As the water carries those deposits downstream, sand and gravel are deposited in areas with higher velocity, providing a more solid streambed. Where streamflow slows down in natural pools and behind some of the weir structures, silts and clays are deposited, creating a soft bottom. The Horse Springs Formation is present in the southern streambank east of Calico Ridge Weir, and the

Thumb Formation is present on the northern and southern streambanks between the Lower Narrows and Three Kids Weirs.

10.2 Known Sources of Perchlorate

During the May 2016 sampling program (AECOM 2016), an attempt was made to locate the seeps that were sampled by Kerr McGee in 2000. Seeps that were successfully located, accessible, and flowing were subsequently sampled. It is surmised that weir construction, onshore riparian zone restoration, flooding and vegetative growth during intervening years, and the ongoing regional drought conditions may have affected the occurrence and, if present, the flow from the previously identified seeps. Because the installation of the weirs likely changed the seep locations, attempts were made to relocate the seeps and, if possible, sample them. Of the 18 historic seep locations, only three (KM-45, KM-67 and KM-71) could be located in the field. All other historic seeps may have been buried by weir and bank construction, submerged by the expanded stream channel and associated sediments, temporarily dried up under the ongoing drought conditions, or obscured by dense vegetation. Two seeps (KM-67 and KM-71) were sampled. The concentrations of perchlorate in the seeps were lower in 2016 than in 2000. At KM-71, the concentration in 2016 (1.4 J $\mu\text{g/L}$) was substantially lower than in 2000 (3,400 $\mu\text{g/L}$). In 2000, KM-71 was located downgradient of the proposed location of the Sunrise Mountain Weir. The seep was located in 2016 immediately upstream of this location in a backwater channel. While unknown from existing information, the seep that was sampled in May 2016 could be a different seep than that sampled in 2000. At KM-67, located near the Three Kids Weir, the concentration (1,500 $\mu\text{g/L}$) in 2016 was slightly lower than in 2000 (2,100 $\mu\text{g/L}$). Construction of Three Kids Weir was completed in July 2015. A riprap weir referred to as "Demonstration Weir" was constructed near this location in 1999. The Demonstration Weir was relocated and rebuilt in 2007 and was eventually dismantled in 2013 and replaced by the Three Kids Weir (Las Vegas Wash Coordination Committee 2016). Although a weir was in place in this location during both the 2000 and 2016 sampling events, it is not clear to what extent, if any, each weir affected the stream flow and sample results during the 2000 and 2016 sampling events.

In the SWIP (AECOM, 2016a), sampling locations and methodology were designed to further refine the understanding of where perchlorate enters the LVW, and what impact the varying flow regime has on perchlorate concentrations in surface water samples. Known and suspected regions of perchlorate discharge were selected to help pinpoint loci of discharge and where, along transects, that discharge may be occurring. During the January/February 2017 sampling event, samples were collected from sampling points across 11 transects. Perchlorate concentrations from the transect sampling are provided in **Figure 25**. During December 2016 and February 2017, samples were collected from 14 discrete sampling locations on the LVW, one backchannel location, and four locations along the Wastewater Channel entering the LVW near Pabco Road. The LVW locations ranged from the upstream portion of the Downgradient Study Area (LW7.2) downstream to LW3.4, located downstream of the Downgradient Study Area. The perchlorate concentrations from these grab and discrete samples are provided in **Figure 7 and Figure 8** (December 2016 sampling), and **Figure 31 through Figure 33** (February 2017 sampling; low flow, high flow and mid flow, respectively).

The results of the seep sampling conducted by Kerr McGee in 2000 and by AECOM in May 2016, December 2016 and January/February 2017 indicate that there is perchlorate discharge to the LVW. The data indicate perchlorate is entering the LVW in the areas near the proposed Sunrise Mountain Weir, the Bostick Weir, the Calico Ridge Weir, and the Three Kids Weir. Sampling results also indicate the potential for small gains of perchlorate along the southern bank of the LVW from the region near the proposed Historic Lateral Weir Expansion down to the Three Kids Weir, where perchlorate was generally found to be approximately twice as high as samples collected from mid-channel locations. Along much of that bank, the slow, relatively minor seepage of groundwater may not be significant enough to appreciably increase the detected concentrations in the main flow of the LVW. Larger, observable gains observed in sample results are more likely to be attributed to more focused discharge of groundwater with higher concentrations of perchlorate, such as the 1,500 $\mu\text{g/L}$ results for the spring at KM67, near the toe of the Three Kids Weir.

By characterizing the flow regime during sample collection, estimates of actual perchlorate flux were calculated to represent flow-weighted sampling results (**Section 9**). **Figure 53** is the revised conceptual site model that shows the range (minimum and maximum) fluxes of perchlorate calculated from the discrete sampling (**Table 18**). The following discussion of perchlorate flux is based on the data presented in the conceptual site model (**Figure 53**).

The daily fluctuations in flows in the LVW have a significant impact upon perchlorate concentrations in samples. At stations upstream of the Calico Ridge Weir, the dilution of perchlorate concentration (in $\mu\text{g/L}$) at higher flows shows a tendency to balance with the flow rate such that the perchlorate flux (in lb/day) is generally in good agreement across the range of observed flow conditions. Downstream of the Lower Narrows Weir, differences in perchlorate flux become more pronounced, with higher flux under mid-to-high-flow conditions. Those differences complicate the general estimates of perchlorate fluxes at those downstream stations.

Above the Upper Narrows Weir, perchlorate levels were nearly all below the method detection limit of $0.95 \mu\text{g/L}$ (one of the five samples collected along transect T6.8 was found to have an estimated concentration of $1.6 \mu\text{g/L}$). The first increase in perchlorate concentrations moving downstream appears near the proposed Sunrise Mountain Weir, where samples collected at transect T6.35 indicate a perchlorate flux of 12 to 18 lb/day (**Figure 53**). Estimated perchlorate flux remained near that level downstream to the proposed Historic Lateral Weir Expansion (perchlorate flux of 17 to 21 lb/day). The results from samples collected between the Bostick Weir and Calico Ridge Weir indicate the LVW may gain approximately 5 lb/day between the proposed Historic Lateral Weir Expansion and the Bostick Weir, for a perchlorate flux of 22 to 26 lb/day . An additional 8 to 19 lb/day may be gained by the time the LVW passes through the Lower Narrows Weir, for a perchlorate flux of 30 to 45 lb/day . Most of that additional flux is suspected to come from groundwater discharge near the toe of the Calico Ridge Weir. Samples collected near the south bank of that weir contained up to $1,100 \mu\text{g/L}$ of perchlorate, 50 times higher than samples collected near the middle of the channel. Samples collected near the north bank were also elevated (almost 20 times higher). By the Three Kids Weir, the LVW may gain more perchlorate; however, perchlorate flux estimates from the lower portions of the study area were increasingly impacted by the varying flow regime. Some gain would be expected along this section of the channel given the somewhat higher concentrations observed along the south bank. At the Three Kids Weir, estimated perchlorate fluxes were generally on the order of 37 to 56 lb/day , for a potential gain of 7 to 11 lb/day . Below the Three Kids Weir, discharge from spring KM-67 enters on the south bank and begins to mix in with the waters of the LVW (**Figure 53**). That mixing occurs over a long distance due in part to the splitting of the channel by several small islands. At the lowest transect (T3.5), higher concentrations attributable to that spring remained in the southern half of the cross section. The sub channels all merge below that transect and are thought to be well mixed by the time the LVW passed through the lowest discrete sampling location (LW3.4 below at the Rainbow Gardens Weir). The estimated perchlorate flux at the Rainbow Gardens Weir was generally 57 to 75 lb/day , for a gain of approximately 19 to 20 lb/day . Most of that gain is attributed to KM-67 ($1,500 \mu\text{g/L}$); however, perchlorate concentrations near the northern bank ($60 \mu\text{g/L}$) were also elevated relative to mid-channel samples ($30 \mu\text{g/L}$). There is uncertainty associated with these flux data, including a potential overestimation of gain, as these results are based on limited data. Confirmation of these data during additional sampling is recommended (**Section 12**).

11.0 Conclusions

The SWIP was designed, in part, to address the following study questions developed based on the CSM.

Study Question 1. *Is there residual perchlorate discharge not being captured by the seep well field that is entering the LVW?*

Concentrations of perchlorate appear to increase based on transect sampling (**Figure 49**) in the area of the seep well field, downgradient of the proposed Sunrise Mountain Weir. This area had not previously been sampled. The concentrations at T6.35 near proposed Sunrise Mountain Weir are higher (17 to 18 µg/L) than at T6.8 (upstream of Duck Creek Confluence Weir [<0.95 to 1.6 J µg/L; **Figure 25**]), indicating there is some input to the system between these transects on the order of approximately 18 lb/day. Given this, the potential for uncaptured or residual perchlorate to be discharging to the LVW from the AMPAC/Endeavor plume and/or the NERT plume cannot be ruled out. Additional information on groundwater impacts and perchlorate mass entering LVW is provided in the Semi-Annual Monitoring and Performance Report, July 1 to December 31, 2016, Perchlorate Bioremediation System (Endeavor 2017).

Study Question 2. *If so, what are the approximate locations and fluxes of those inputs and the contribution of each location to the perchlorate flux discharging to Lake Mead?*

As described in Section 9.0, perchlorate flux increases at certain key points along the LVW. Between proposed Sunrise Mountain Weir (RM 6.35) and proposed Historic Lateral Weir (RM 5.25), the flux is relatively constant at 16 to 19 lb/day. Near Calico Ridge Weir (RM 4.68), there is an increase of approximately 45 percent above the upstream flux to 24 to 29 lb/day. Perchlorate flux increases again at Lower Narrows Weir (RM 4.4) to 35 lb/day. Some increase downstream near Three Kids Weir (RM 3.63) to 37 to 47 lb/day is noted. At RM 3.27 downstream of Rainbow Gardens Weir, perchlorate flux increases notably again to 68 lb/day. Based on this, inputs appear to be near proposed Sunrise Mountain Weir, Bostick Weir, Calico Ridge Weir, Three Kids Weir and Rainbow Gardens Weir (**Figure 54**).

Study Question 3. *Of the almost 20 seeps sampled by Kerr McGee in 2000 that were investigated in May 2016, only three were located. Where might the other seeps, if still active, be discharging?*

Other seeps may be actively discharging. USGS is currently investigating the presence of additional seeps. As discussed under Study Question 2, inputs appear to be near proposed Sunrise Mountain Weir, Bostick Weir, Calico Ridge Weir, Three Kids Weir and Rainbow Gardens Weir (**Figure 54**).

Study Question 4. *Are these seeps contributing perchlorate to the LVW?*

Based on the data collected during this investigation, both documented and undocumented sources of perchlorate-impacted groundwater discharging to LVW are present. Documented sources including seep KM71 may be contributing to the perchlorate increases near proposed Sunrise Mountain Weir and KM67 is discharging near Three Kids Weir. Additional unaccounted seeps likely are present near Calico Ridge Weir.

Study Question 5. *To what extent do the daily fluctuations in the flow in the LVW, due to waste water discharges, impact the concentrations of perchlorate?*

Daily fluctuation of flow in the LVW impact perchlorate concentrations, but the measured flows are not directly accountable for increases or decreases (i.e., increases to 1.5 times low flow does not cause a directly

proportionate decrease in perchlorate concentrations). The dilution of perchlorate by increased flows from wastewater discharge is complicated by the travel time of water particles in the LVW, which lags significantly behind the propagation of the streamflow peak from upstream wastewater release. As that water moves downstream, it mixes in with streamflow that is gaining perchlorate from a series of springs and groundwater seepage locations along way. There is a lag in mixing, based on the difference in the time it takes for flows to increase across the Downgradient Study Area (approximately 3 hours) and the mixing time based on the Bureau of Land Management (2016) dye tracer study (6 hours).

Study Question 6. *What is the variability in perchlorate concentrations across each cross-section? Are potential points of groundwater discharge located near the south bank, mid-channel, or near the north bank of the LVW?*

As described in Section 7, perchlorate concentrations are relatively even across transects in the upstream reaches of the Downgradient Study Area. High variability is noted across transect T4.75 downstream of Calico Ridge Weir, with concentrations 20 to 40 times higher in the north and south banks, respectively, than the mid-channel samples. The concentrations on the south bank remain two to three times higher than other samples in the transects downstream near Lower Narrows Weir (T4.65 and T4.6) and above Homestead Weir (T4.2). At T3.75, downstream of Three Kids Weir, the concentrations on the banks are elevated compared to mid-channel, with the north bank showing the highest concentration. The furthest downstream transect (T3.5) located halfway between Three Kids Weir and Rainbow Gardens Weir also has highly varied concentrations of perchlorate across the transect, with the highest concentrations just towards mid-channel from the south bank. Overall, these data indicate the potential for inputs on the north bank near Calico Ridge Weir and Three Kids Weir, and potential inputs from the south bank from Calico Ridge Weir and downstream to the end of the transects.

Study Question 7. *Are there other, unknown, sources of perchlorate to the LVW?*

There may be sources of perchlorate to the LVW other than the NERT and AMPAC plumes near Calico Ridge Weir and downstream of Three Kids Weir that have not been documented. No surface features have been identified that may be contributing perchlorate, so it is assumed these sources would be groundwater discharging to the LVW.

12.0 Recommendations

Based on the SWIP sampling effort, several locations of potential perchlorate input have been identified. At several locations along the LVW in the study area, perchlorate concentrations increase, as noted in the following bullets:

- An increase in perchlorate is noted near Calico Ridge Weir. This increase is approximately 45 percent or 5 to 10 lb/day.
- An increase of approximately 6 lb/day is noted at Lower Narrows Weir.
- Up to 10 lb/day of perchlorate is added to the LVW near Three Kids Weir.
- Downstream of Rainbow Gardens Weir, the flux of perchlorate almost doubles to an estimated 68 lb/day (from 37 to 47 lb/day at Three Kids Weir).

While these flux measurements are estimates based on a one-time sampling event, they do indicate reaches where perchlorate may be entering the LVW. To help focus the investigation, additional sampling should be considered to confirm the observations described in this technical memorandum. The additional sampling should include two phases: additional surface water perchlorate sampling to fill data gaps in the perchlorate flux in the LVW and identifying areas of groundwater inflow (which may or may not contain perchlorate).

Between discrete/grab sampling and transect sampling, identification of loci of perchlorate inputs appears to be better determined using transects and near bottom sampling. Resampling the existing transects and adding transects and locations along existing transects could help reduce the uncertainty in the loci of perchlorate discharge:

- Transect data currently being collected monthly by NERT can be reviewed to reduce the uncertainty.
- Transects should be added near the Upper Narrows Weir and above the proposed Sunrise Mountain Weir to determine where from Duck Creek to Pabco Road the increases in perchlorate are obvious.
- Further downstream, an additional transect above Calico Ridge Weir and additional samples along the transect below Calico Ridge Weir would support identifying loci of the high concentrations noted on the north and south bank samples below Calico Ridge Weir.
- A transect below Homestead Weir would help identify the location of the perchlorate inputs in this area.
- No transect was located near Rainbow Gardens Weir, where the discrete data indicted a large flux of perchlorate. A transect upstream of this weir could help identify the loci.

In addition to surface water sampling for perchlorate, groundwater inputs can be identified (independent of perchlorate concentration) using temperature sensors. Tools such as distributed temperature sensing (DTS) can be used to monitor groundwater flux using temperature differences between the groundwater and surface water. These tools can be deployed for several days over a reach of approximately 0.25 miles in the areas of suspected perchlorate inputs. The current understanding of the perchlorate patterns in the LVW indicate that groundwater may be contributing to the perchlorate load near Pabco Road (likely due to uncaptured perchlorate from AMPAC and NERT plumes), and downstream near Calico Ridge Weir and Three Kids Weir (potential sources unknown). By monitoring temperature in the LVW surface water near these two unknown perchlorate sources using DTS, the loci of groundwater inputs can be identified. Paired with the perchlorate sampling data, the locations of potential sources of groundwater containing perchlorate can be refined.

13.0 References

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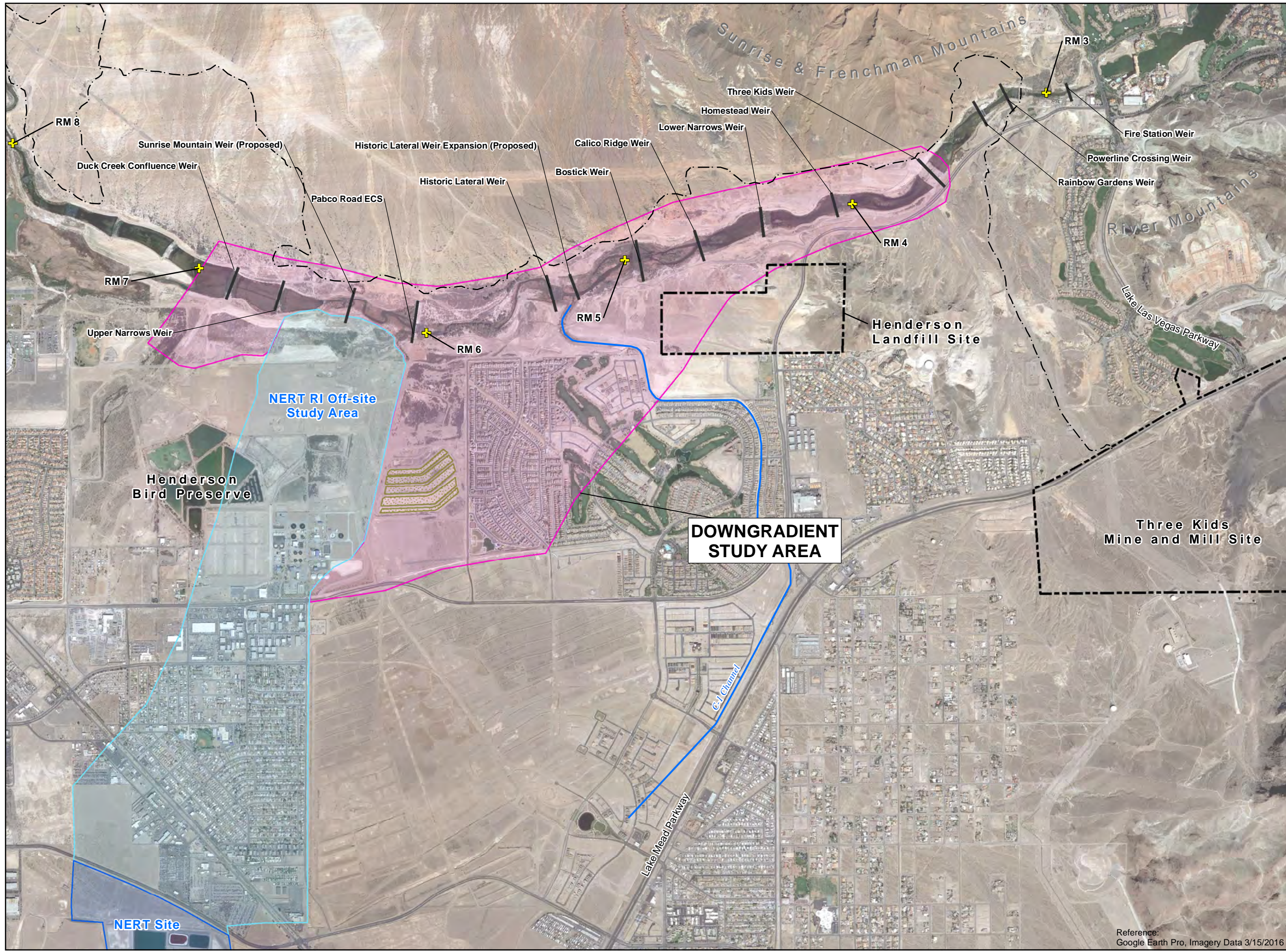
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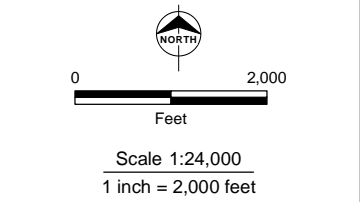
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Figures



- Legend**
- Wetlands Trail
 - Channels
 - Northern Rapid Infiltration Basins
 - River Mile (RM)
 - NERT RI Downgradient Study Area
 - NERT RI Off-site Study Area
 - NERT Site



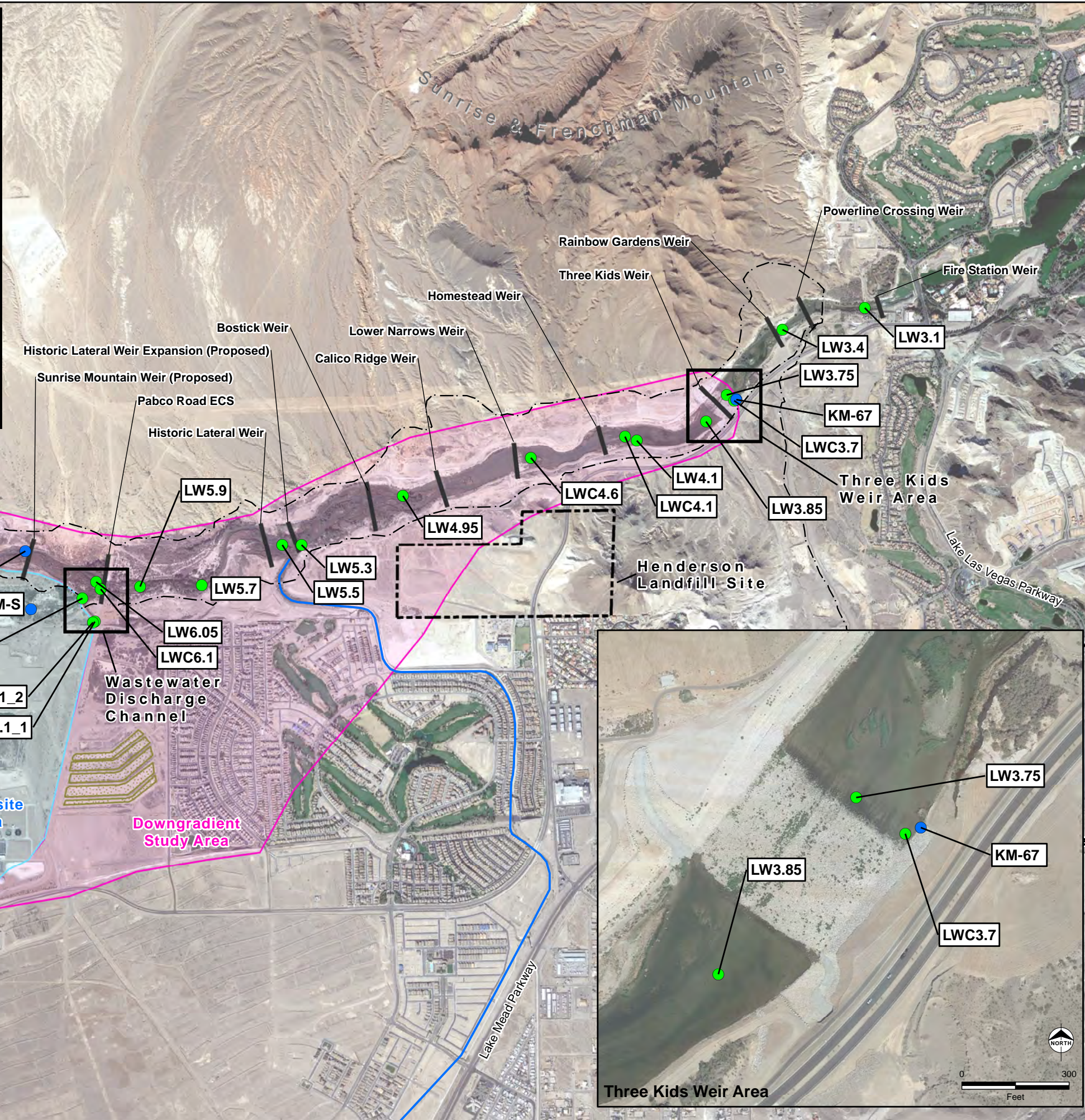
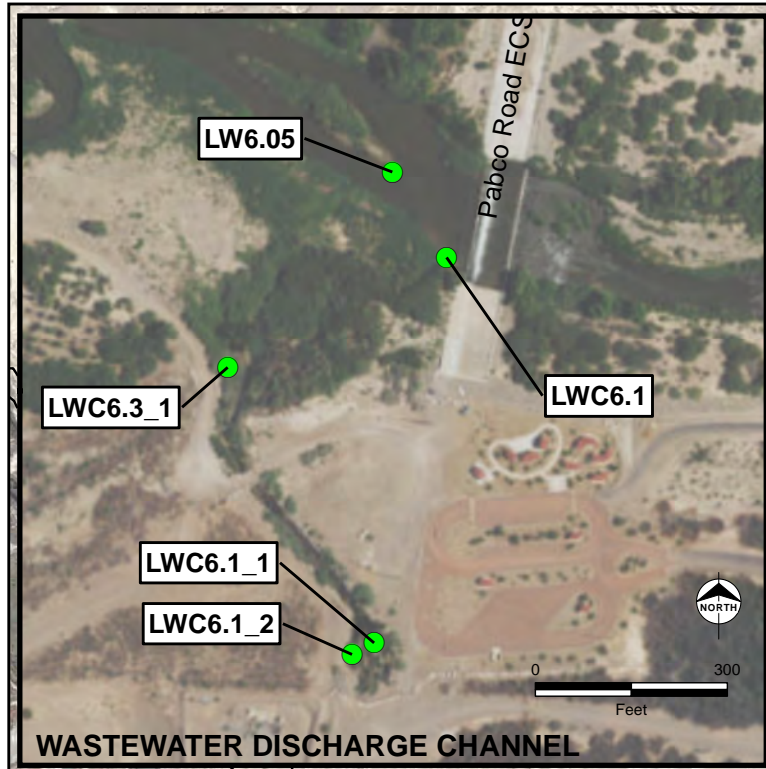
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NERT RI
Downgradient Study Area

**DOWNGRADIENT
STUDY AREA
LOCATION MAP**

Date: 5/11/2017 Project: 60477365

AECOM **Figure 1**



Legend

- Surface Water Sample Location - Seeps
- Surface Water Sample Location - LVW/Tributaries
- Weir
- Northern Rapid Infiltration Basins
- - - Wetlands Trail
- Channels
- NERT RI Downgradient Study Area
- NERT RI Off-site Study Area

GLW Designation for new sampling locations within the LVW
 GLWC Designation for new sampling locations from tributaries and side streams
 LW Designation for pre-existing sampling locations in the LVW
 LWC Designation for pre-existing sampling locations from tributaries and side streams

0 2,000
Feet
Scale 1:24,000
1 inch = 2,000 feet

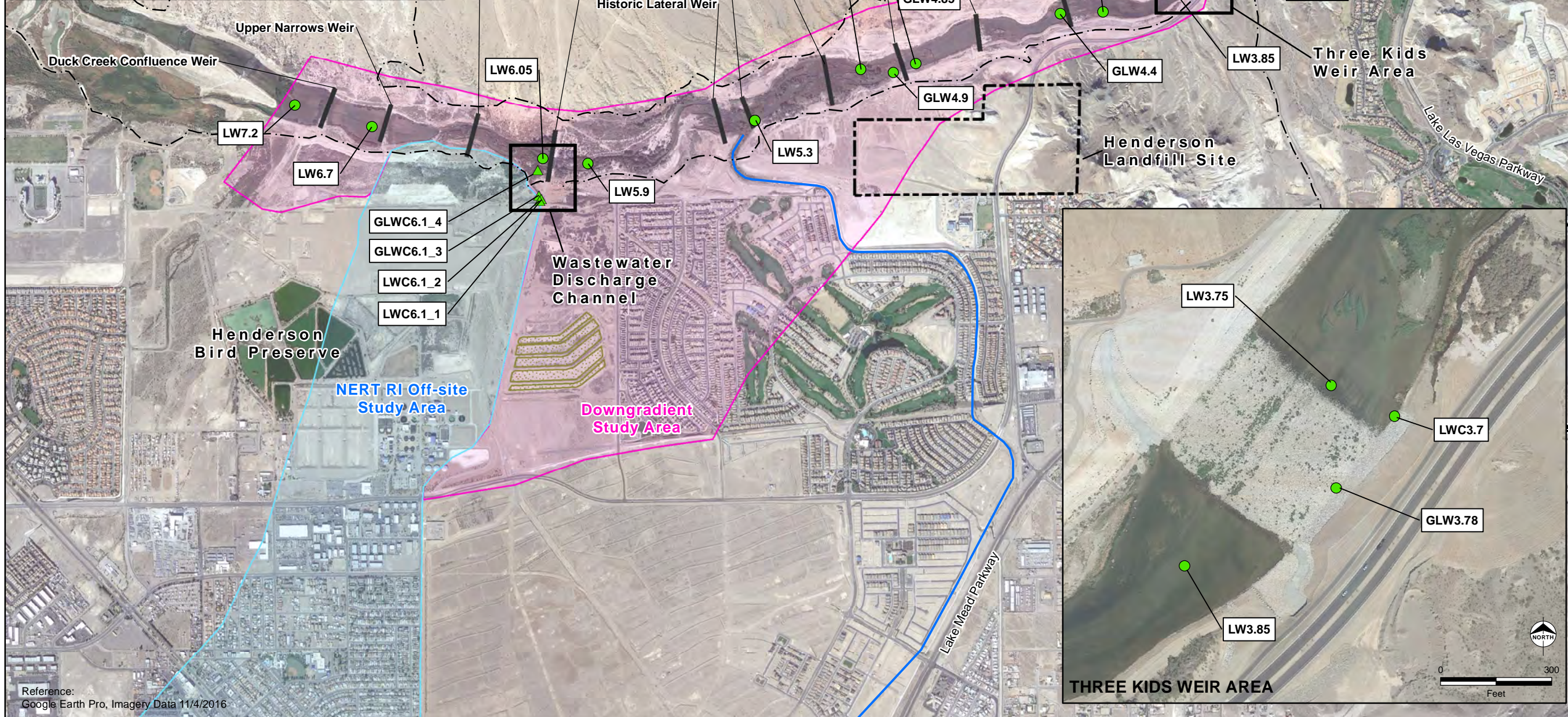
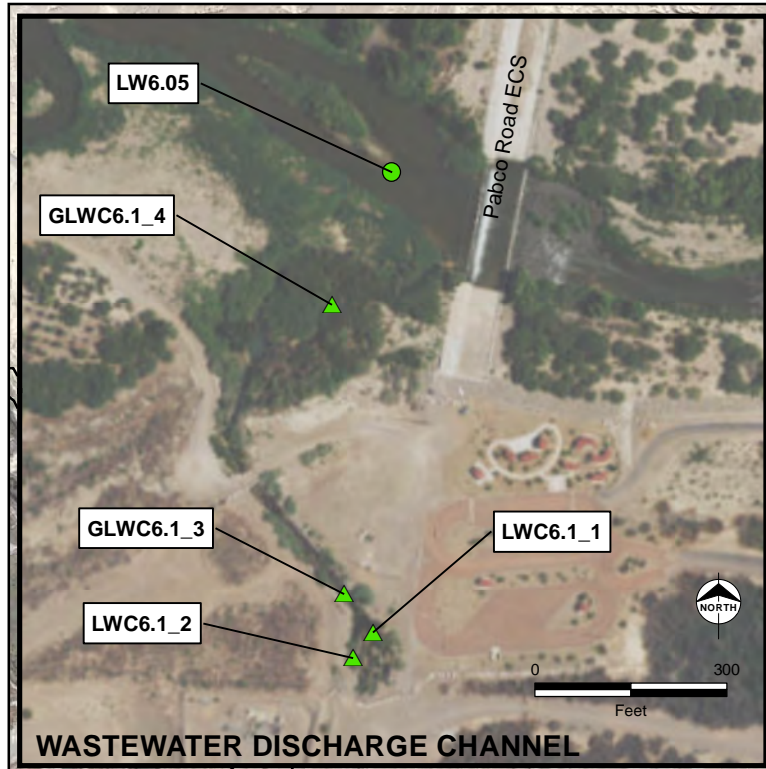
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NERT RI
Downgradient Study Area

**LOCATIONS OF
SURFACE WATER AND
SEEP SAMPLES
MAY 2016**

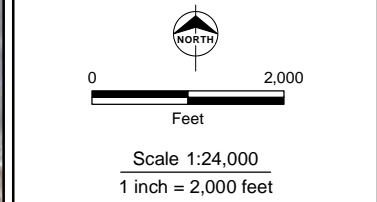
Date: 10/24/2016 Project: 60477365

AECOM Figure 2



- Legend**
- Surface Water Sample Location - Las Vegas Wash
 - ▲ Surface Water Sample Location - Tributaries
 - Weir
 - Northern Rapid Infiltration Basins
 - Wetlands Trail
 - Channels
 - NERT RI Downgradient Study Area
 - NERT RI Off-site Study Area

- GLW Designation for new sampling locations within the LVW
- GLWC Designation for new sampling locations from tributaries and side streams
- LW Designation for pre-existing sampling locations in the LVW
- LWC Designation for pre-existing sampling locations from tributaries and side streams



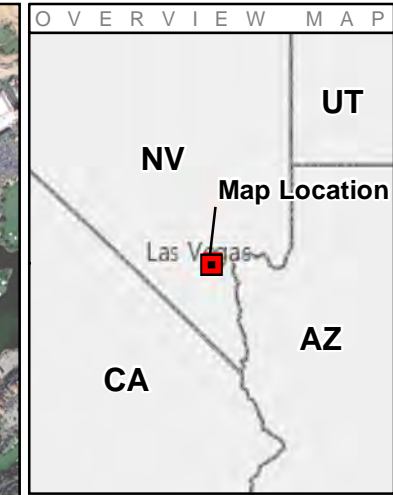
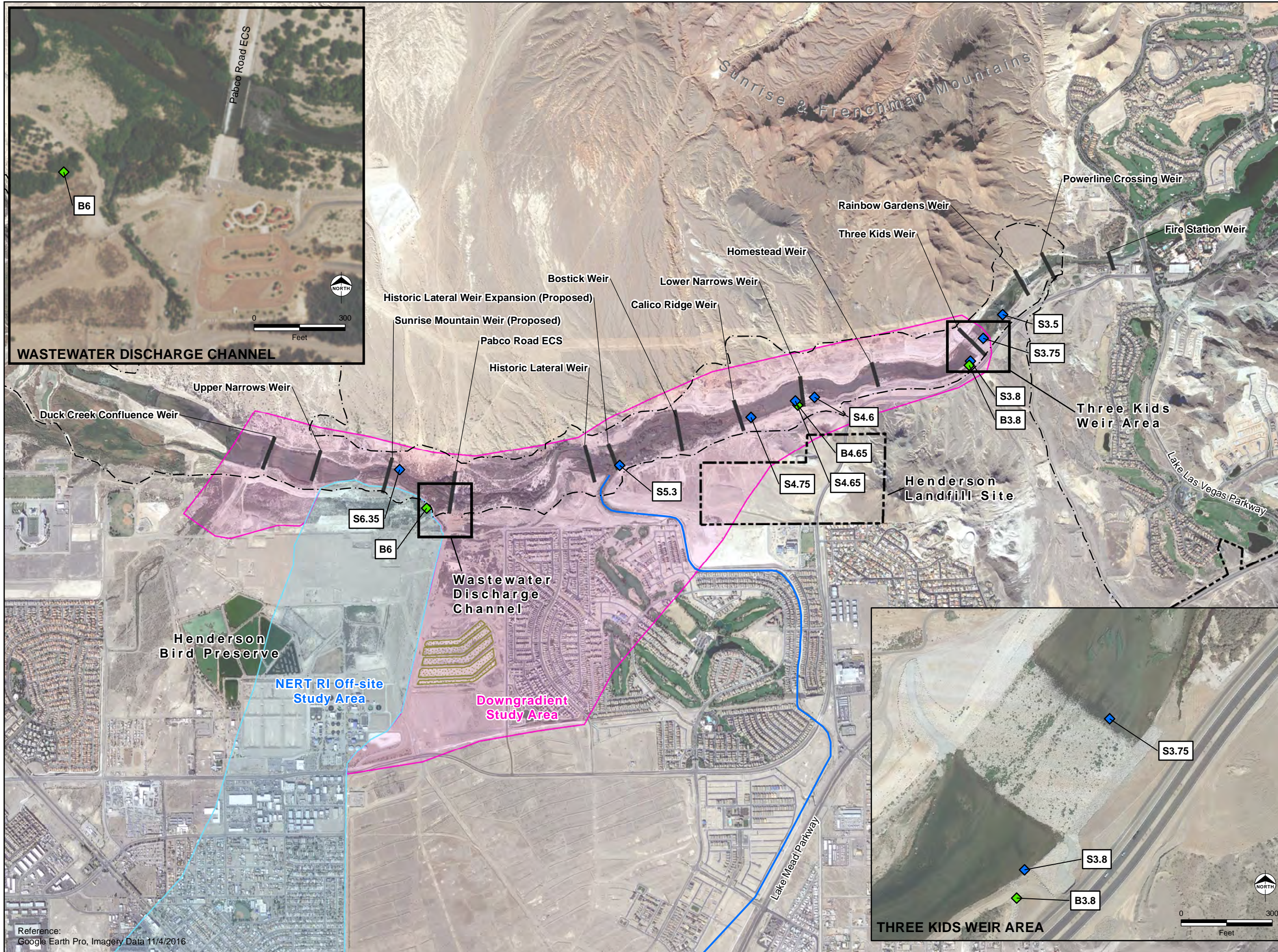
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NERT RI
Downgradient Study Area

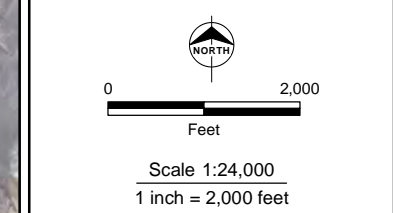
**LOCATIONS OF SURFACE
WATER SAMPLES:
SAMPLING EVENT DURING
USGS SEEPAGE STUDY**

Date: 6/14/2017 Project: 60477365

AECOM **Figure 3**



- Legend**
- ◆ Barometer Location
 - ◆ Staff Gage Location
 - Weir
 - Northern Rapid Infiltration Basins
 - Wetlands Trail
 - Channels
 - NERT RI Downgradient Study Area
 - NERT RI Off-site Study Area



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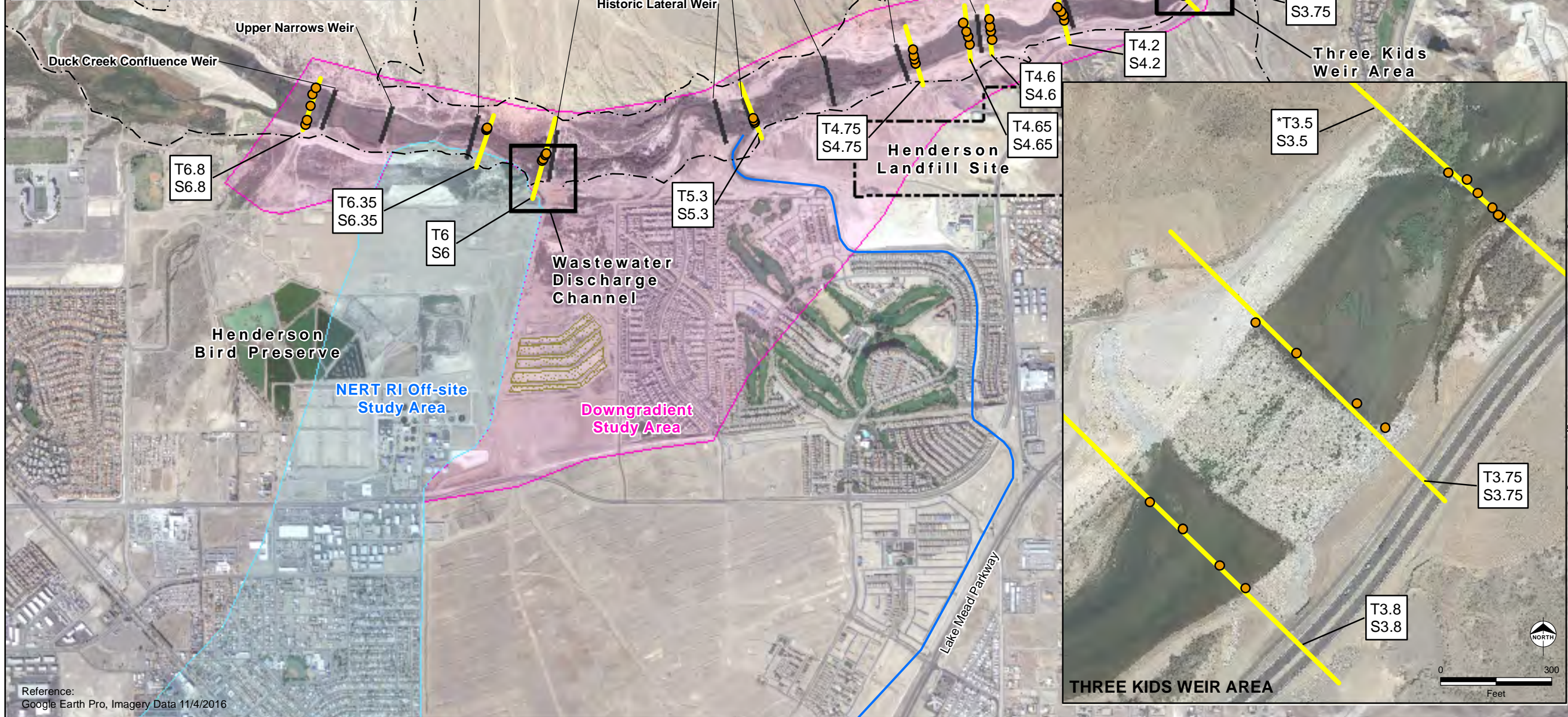
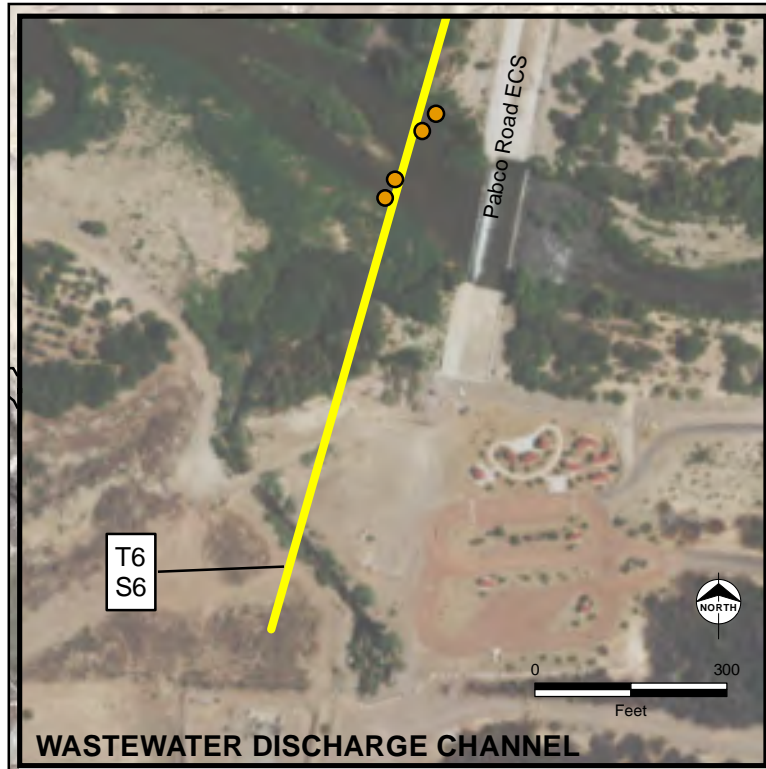
NERT RI
Downgradient Study Area

**LOCATIONS OF
USGS GAGES,
AECOM GAGES
AND BAROMETERS**

Date: 5/17/2017 Project: 60477365

AECOM **Figure 4**

Reference:
Google Earth Pro, Imagery Data 11/4/2016



- Legend**
- Transect Sample Location
 - Transects_2017
 - Weir
 - Northern Rapid Infiltration Basins
 - Wetlands Trail
 - Channels
 - NERT RI Downgradient Study Area
 - NERT RI Off-site Study Area

Note

* This transect was originally labeled T3.6 but the identification was changed to T3.5 during the field program.

0 2,000
Feet

Scale 1:24,000
1 inch = 2,000 feet

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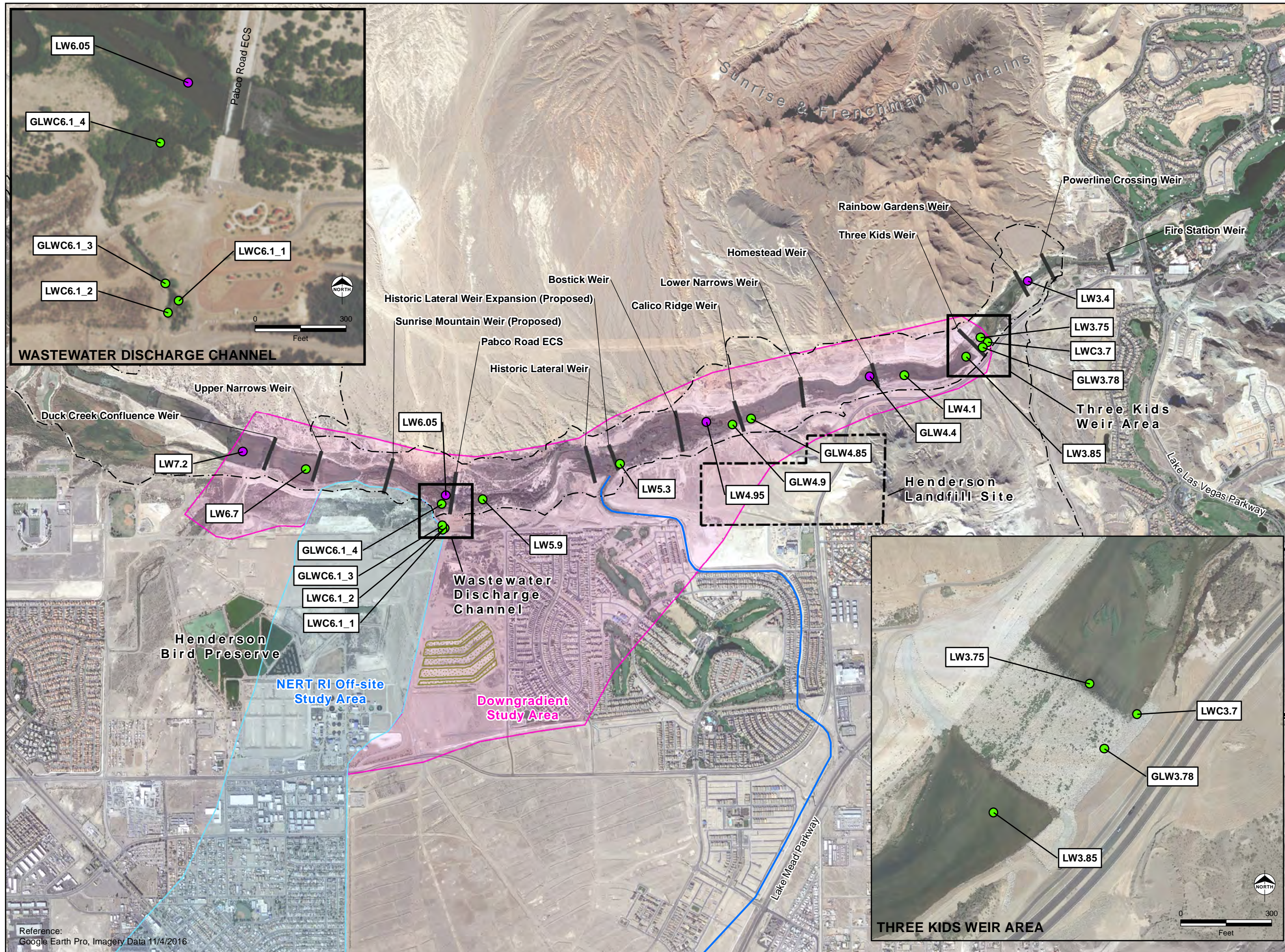
NERT RI
Downgradient Study Area

**TRANSECTS AND
SAMPLE LOCATIONS**

Date: 5/17/2017 Project: 60477365

AECOM Figure 5

Reference:
Google Earth Pro, Imagery Data 11/4/2016

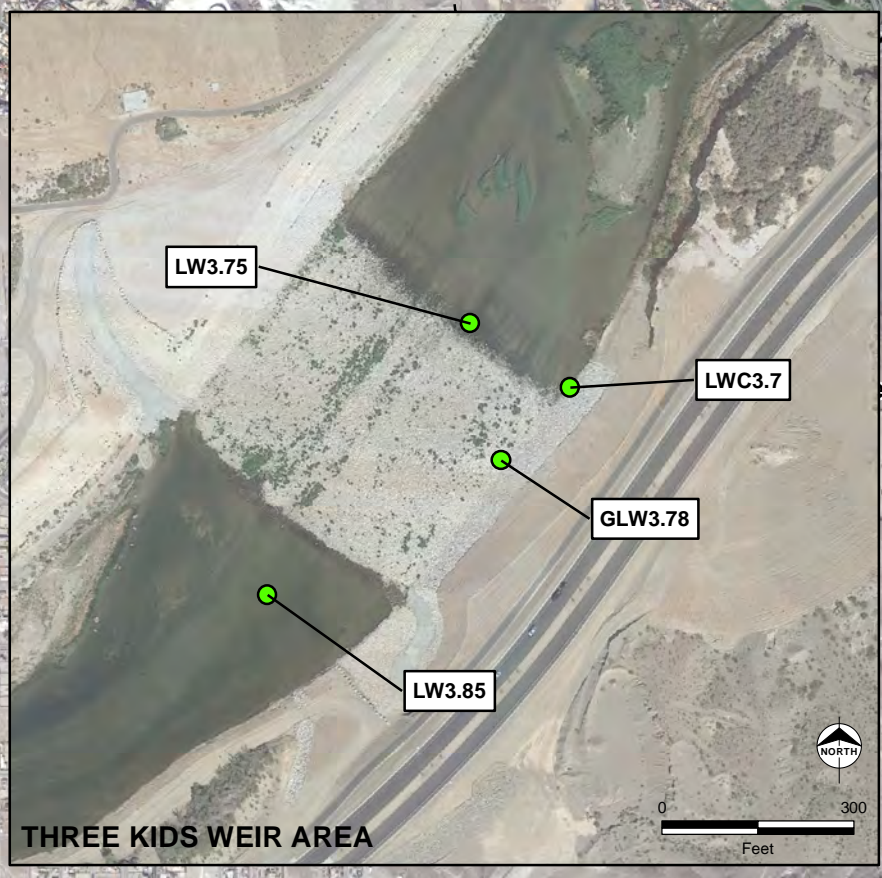


Legend

- Surface Water Sample Location - Sampled during low and high flow conditions
- Surface Water Sample Location - Sampled during low, mid and high flow
- Weir
- Northern Rapid Infiltration Basins
- Wetlands Trail
- Channels
- NERT RI Downgradient Study Area
- NERT RI Off-site Study Area

GLW Designation for new sampling locations within the LVW
 GLWC Designation for new sampling locations from tributaries and side streams
 LW Designation for pre-existing sampling locations in the LVW
 LWC Designation for pre-existing sampling locations from tributaries and side streams

0 2,000
 Feet
 Scale 1:24,000
 1 inch = 2,000 feet



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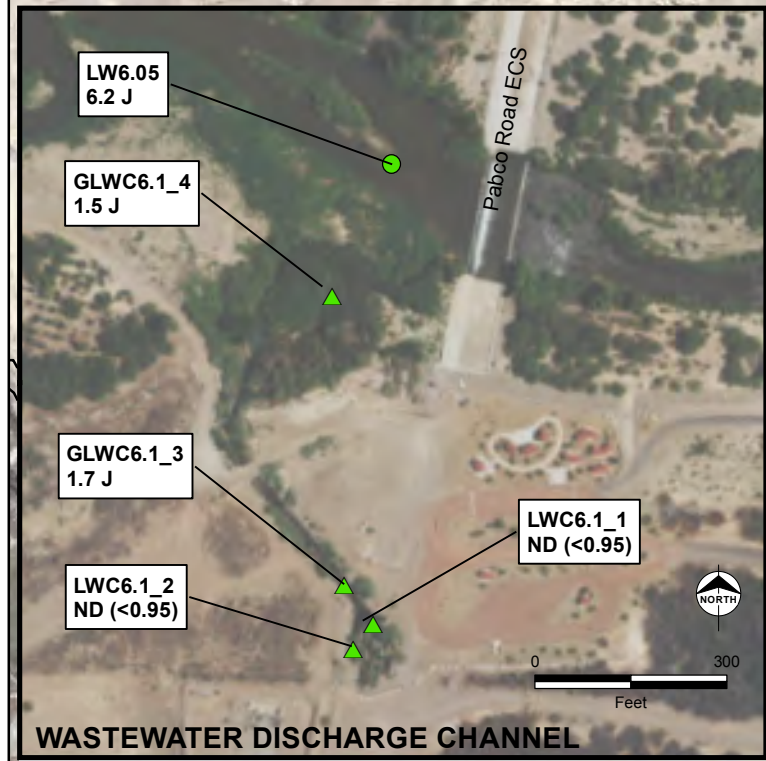
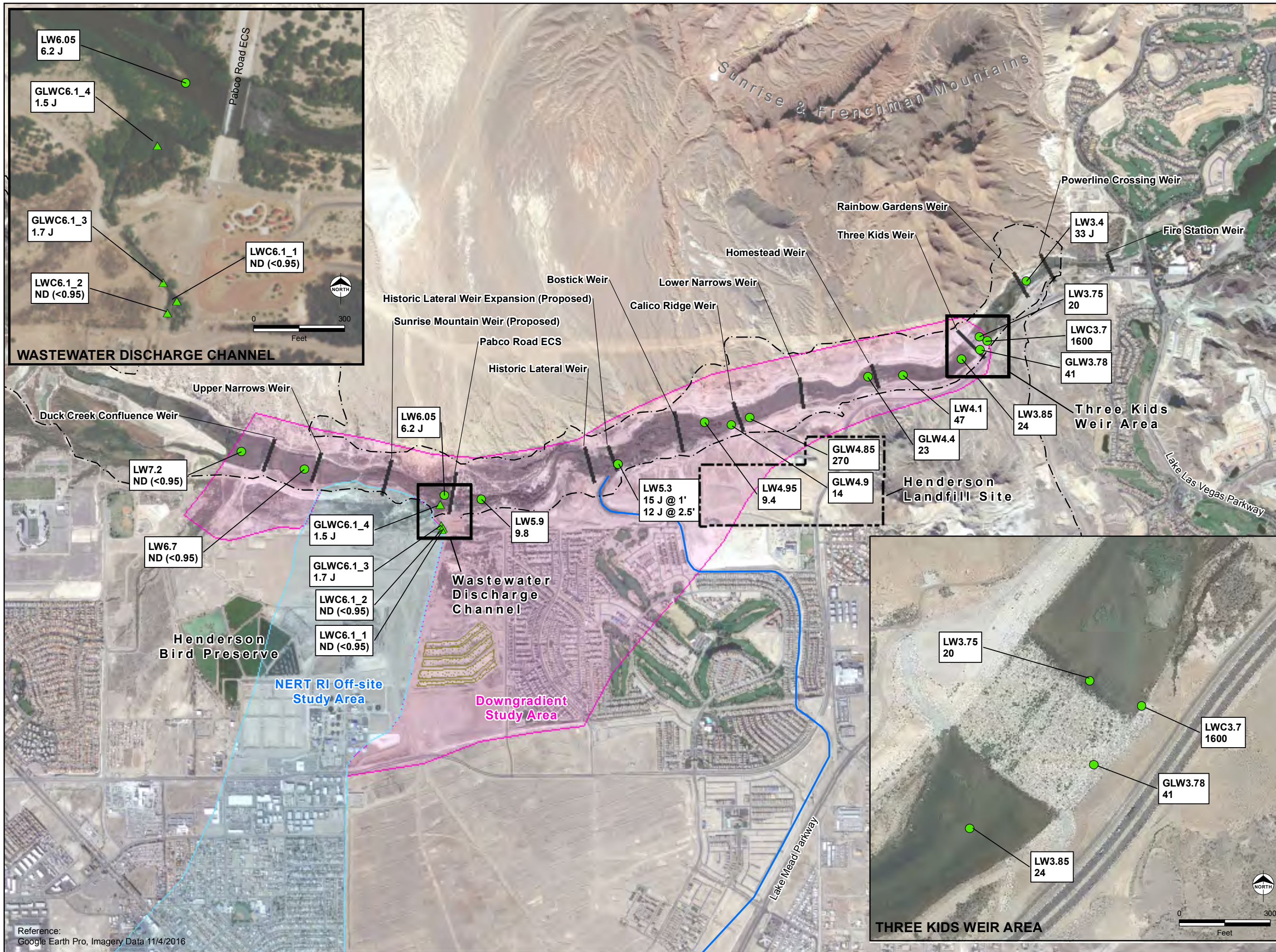
NERT RI
Downgradient Study Area

**LOCATIONS OF SURFACE
WATER SAMPLES
DISCRETE SAMPLING**

Date: 5/9/2017 Project: 60477365

AECOM **Figure 6**

Reference:
Google Earth Pro, Imagery Data 11/4/2016



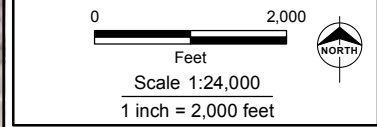
- Legend**
- Surface Water Sample Location - Las Vegas Wash
 - ▲ Surface Water Sample Location - Tributaries
 - Weir
 - Northern Rapid Infiltration Basins
 - Wetlands Trail
 - Channels
 - NERT RI Downgradient Study Area
 - NERT RI Off-site Study Area

Perchlorate Concentration in µg/L

- ND - Not Detected above method detection limit
- J - Estimated concentration between method detection limit and method reporting limit
- µg/L - Micrograms per liter

Note:
At LW5.3, samples were collected at two depths (indicated in feet below the water surface).

- GLW Designation for new sampling locations within the LVW
- GLWC Designation for new sampling locations from tributaries and side streams
- LW Designation for pre-existing sampling locations in the LVW
- LWC Designation for pre-existing sampling locations from tributaries and side streams



NERT RI
Downgradient Study Area

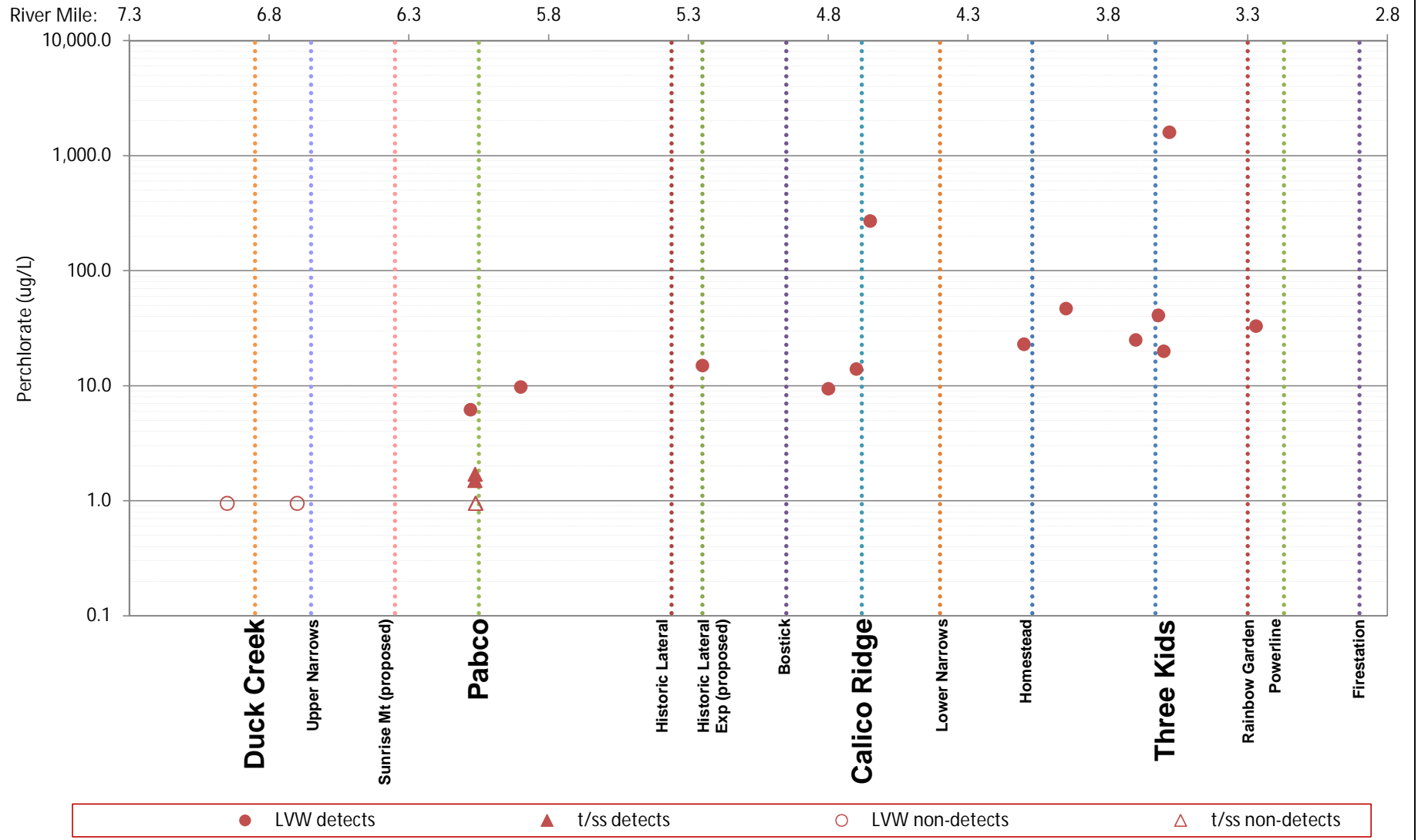
**PERCHLORATE
CONCENTRATIONS IN
SURFACE WATER
SAMPLING EVENT DURING
USGS SEEPAGE STUDY**

Date: 6/14/2017 Project: 60477365

AECOM Figure 7

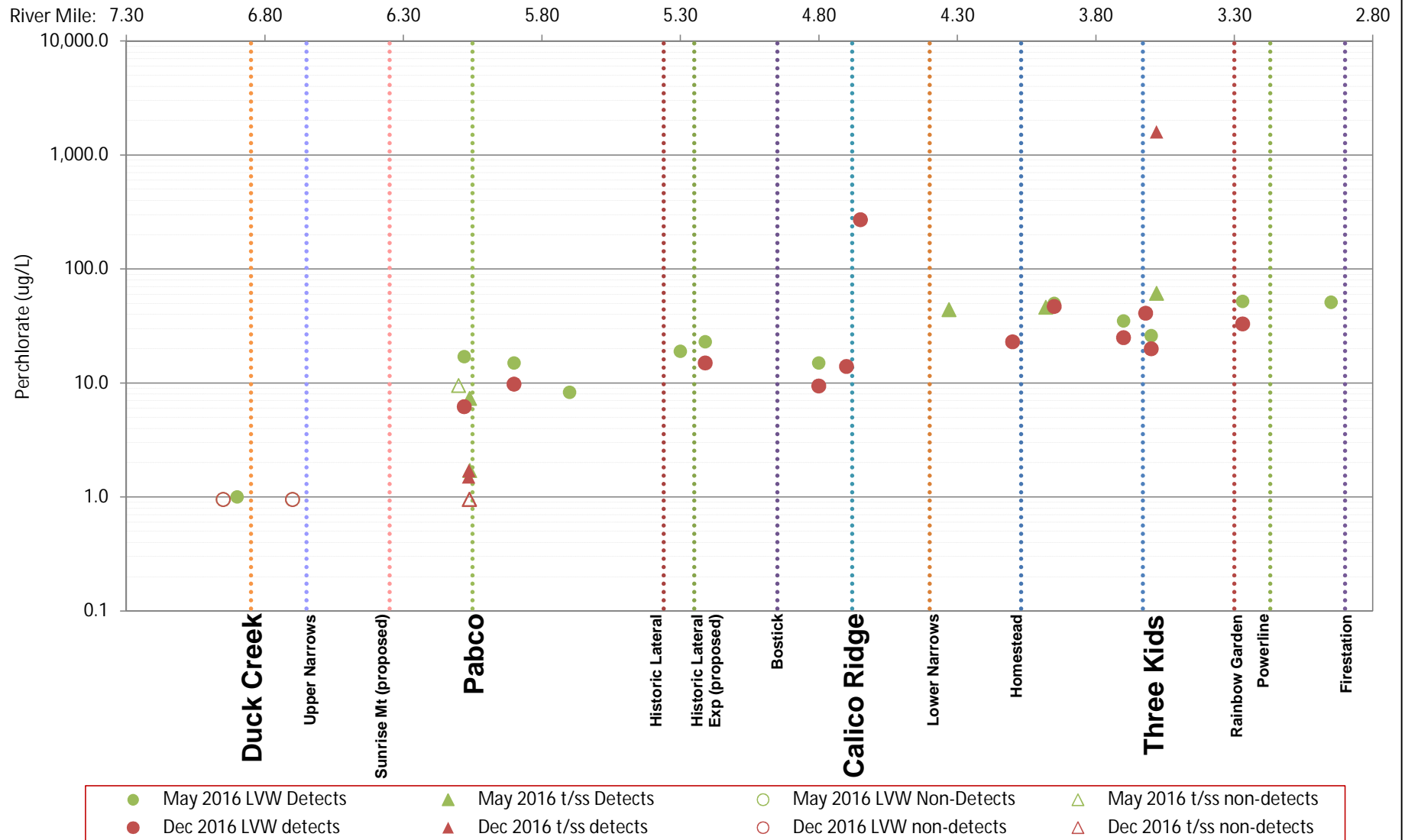
Reference:
Google Earth Pro, Imagery Data 11/4/2016

Figure 8. Concentrations of Perchlorate by River Mile: Sampling Event during USGS Seepage Study
December 8, 2016

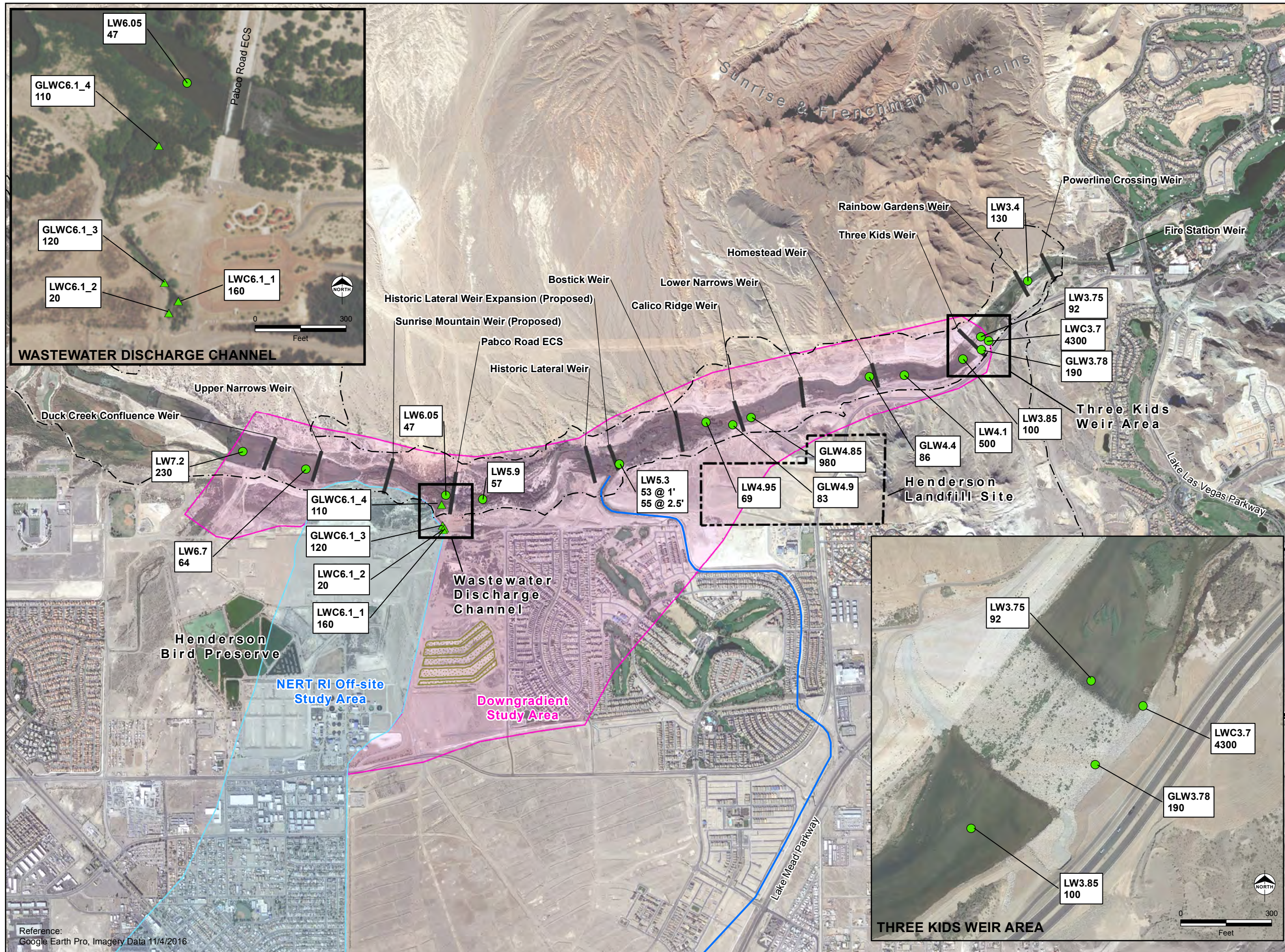


Notes: (1) Non-detects shown at detection limit. (2) Field duplicates not shown. LVW = Las Vegas Wash
t/ss = tributary/sidestream including Wastewater Channel [LWC3.7, LWC6.1_1, LWC6.1_2, GLWC6.1_3, GLWC6.1_4]

Figure 9. Concentrations of Perchlorate by River Mile:
 Sampling Event during USGS Seepage Study December 8, 2016 and Grab Sampling May 2016



Notes: (1) Non-detects shown at detection limit. (2) Field duplicates not shown. LVW = Las Vegas Wash
 t/ss = tributary/sidestream including Wastewater Channel [LWC3.7, LWC6.1_1, LWC6.1_2, LWC4.1, LWC4.6, LWC 6.1, LWC6.3_1, GLWC6.1_3, GLWC6.1_4]



- Legend**
- Surface Water Sample Location - Las Vegas Wash
 - ▲ Surface Water Sample Location - Tributaries
 - Weir
 - Northern Rapid Infiltration Basins
 - Wetlands Trail
 - Channels
 - NERT RI Downgradient Study Area
 - NERT RI Off-site Study Area

Chlorate Concentration in µg/L
 µg/L - Micrograms per liter

Note:
 At LW5.3, samples were collected at two depths (indicated in feet below the water surface).

GLW Designation for new sampling locations within the LWV
 GLWC Designation for new sampling locations from tributaries and side streams
 LW Designation for pre-existing sampling locations in the LWV
 LWC Designation for pre-existing sampling locations from tributaries and side streams

0 2,000
 Feet
 Scale 1:24,000
 1 inch = 2,000 feet

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NERT RI
 Downgradient Study Area

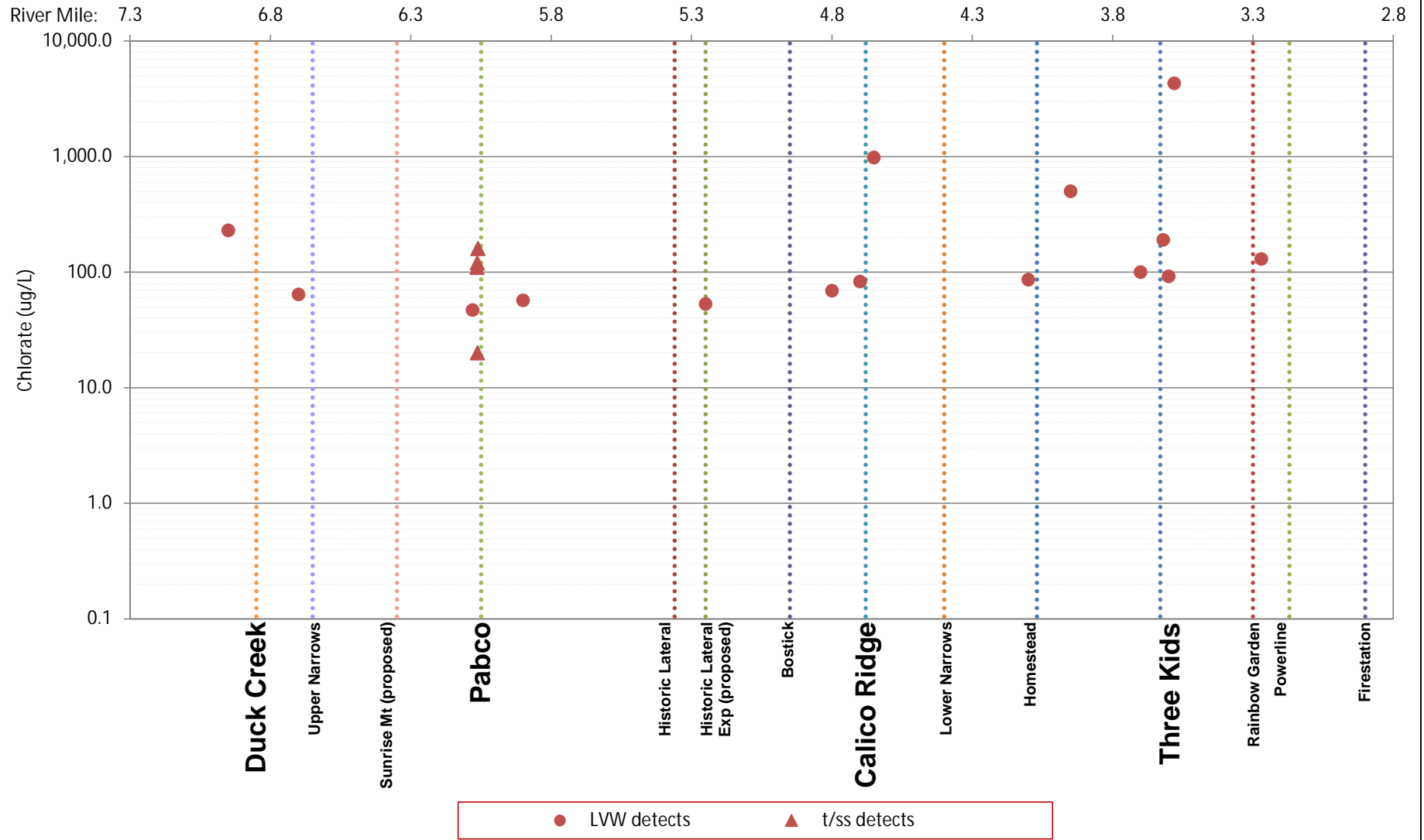
CHLORATE CONCENTRATIONS IN SURFACE WATER SAMPLING EVENT DURING USGS SEEPAGE STUDY

Date: 6/14/2017 Project: 60477365

AECOM Figure 10

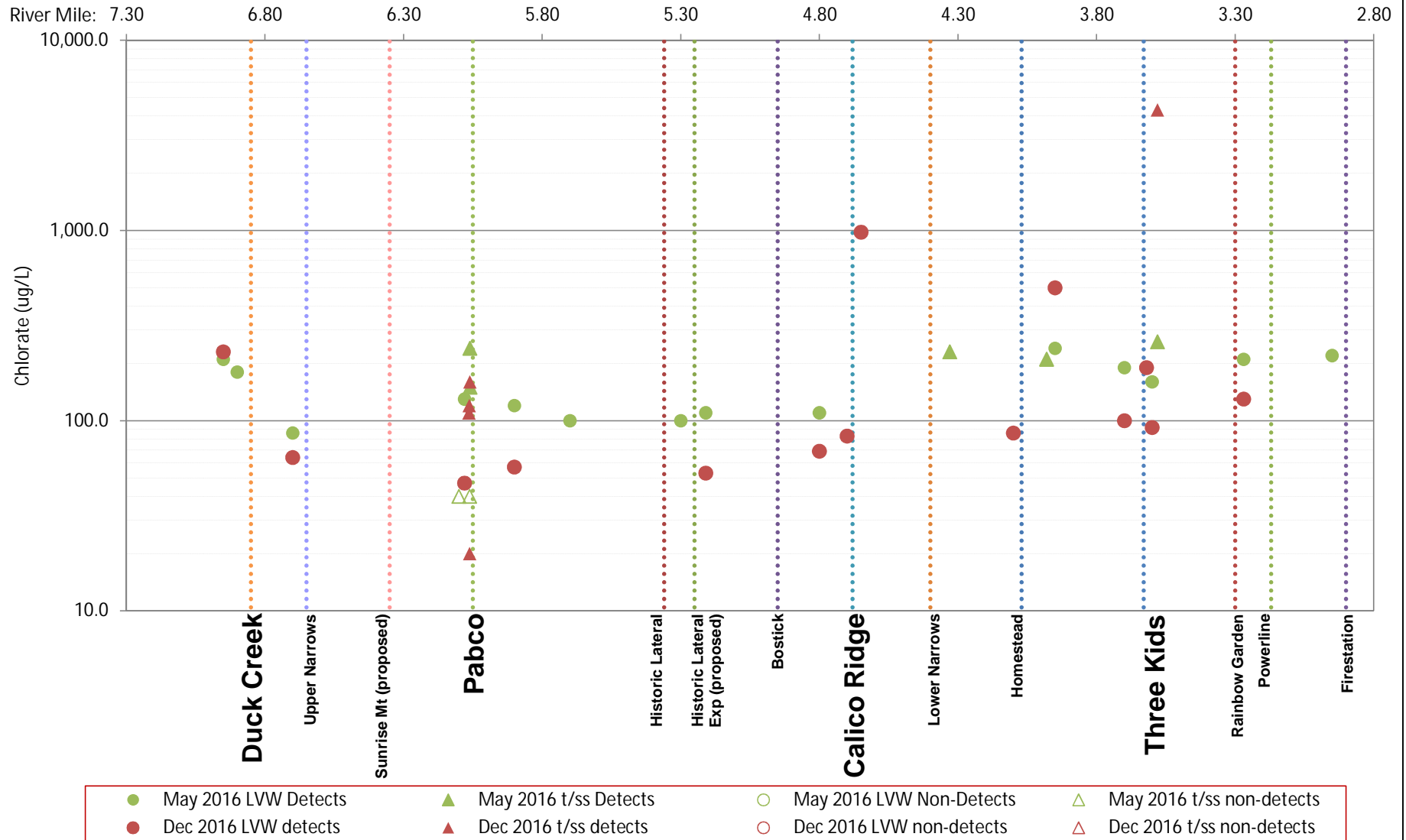
Reference:
 Google Earth Pro, Imagery Data 11/4/2016

Figure 11. Concentrations of Chlorate by River Mile: Sampling Event during USGS Seepage Study
December 8, 2016

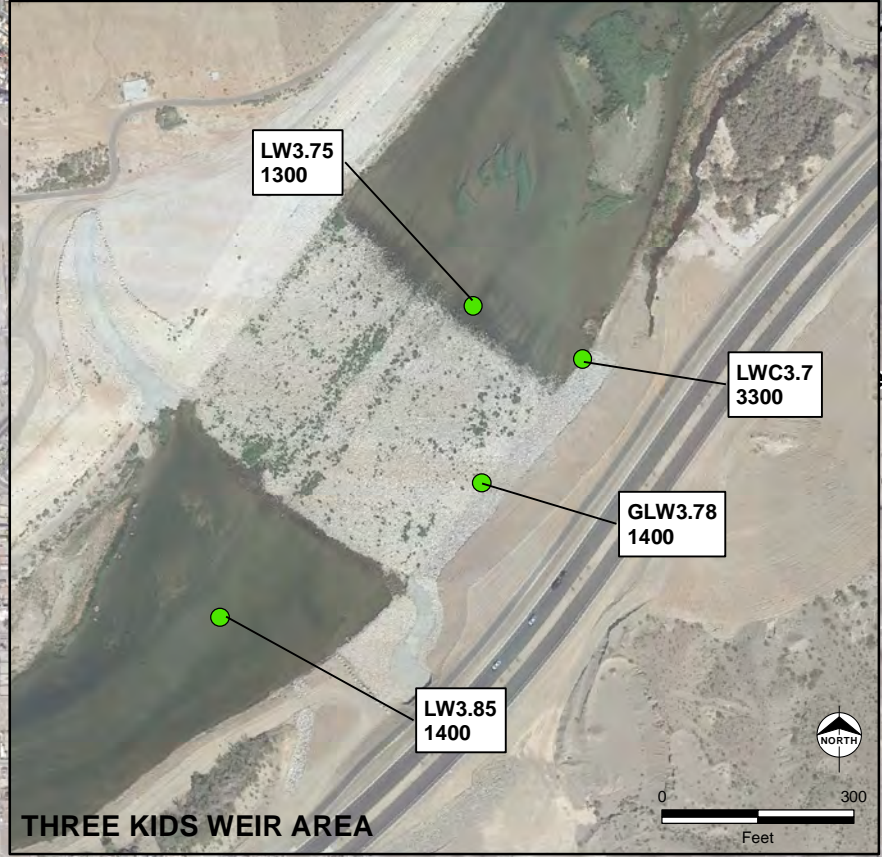
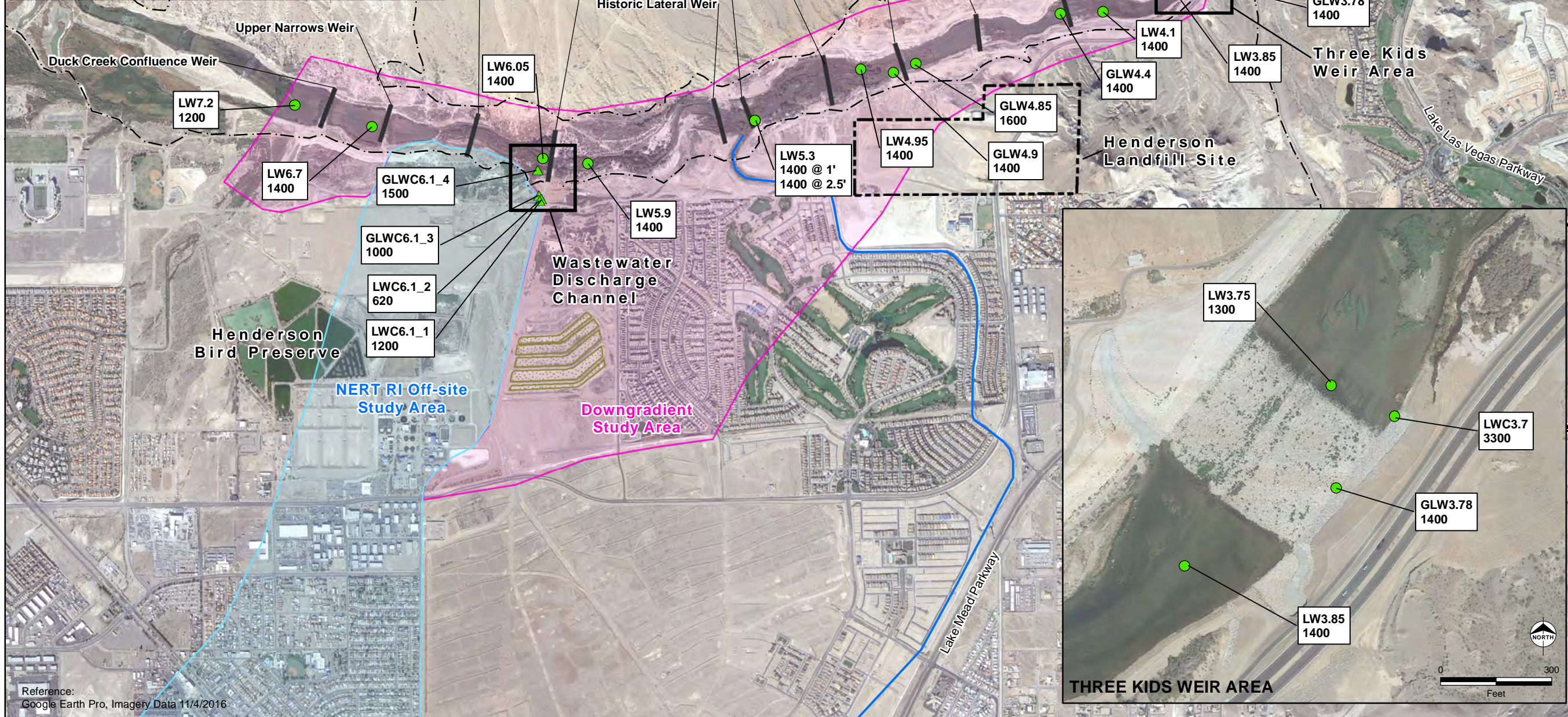
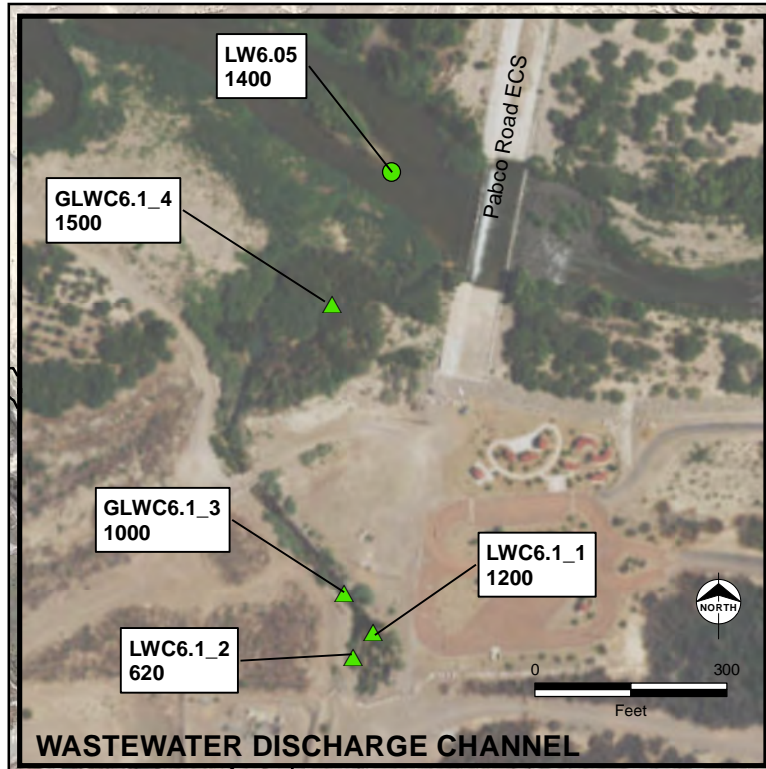


Notes: (1) Field duplicates not shown. LVW = Las Vegas Wash
t/ss = tributary/sidestream including Wastewater Channel [LWC3.7, LWC6.1_1, LWC6.1_2, GLWC6.1_3, GLWC6.1_4]

Figure 12. Concentrations of Chlorate by River Mile:
 Sampling Event during USGS Seepage Study December 8, 2016 and Grab Sampling May 2016



Notes: (1) Non-detects shown at detection limit. (2) Field duplicates not shown. LVW = Las Vegas Wash
 t/ss = tributary/sidestream including Wastewater Channel [LWC3.7, LWC6.1_1, LWC6.1_2, LWC4.1, LWC4.6, LWC 6.1, LWC6.3_1, GLWC6.1_3, GLWC6.1_4]

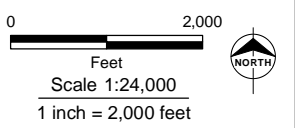


- Legend**
- Surface Water Sample Location - Las Vegas Wash
 - ▲ Surface Water Sample Location - Tributaries
 - Weir
 - Northern Rapid Infiltration Basins
 - Wetlands Trail
 - Channels
 - NERT RI Downgradient Study Area
 - NERT RI Off-site Study Area

Total Dissolved Solids Concentration in mg/L
mg/L - Milligrams per liter

Note:
At LW5.3, samples were collected at two depths (indicated in feet below the water surface).

- GLW Designation for new sampling locations within the LWV
- GLWC Designation for new sampling locations from tributaries and side streams
- LW Designation for pre-existing sampling locations in the LWV
- LWC Designation for pre-existing sampling locations from tributaries and side streams



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NERT RI
Downgradient Study Area

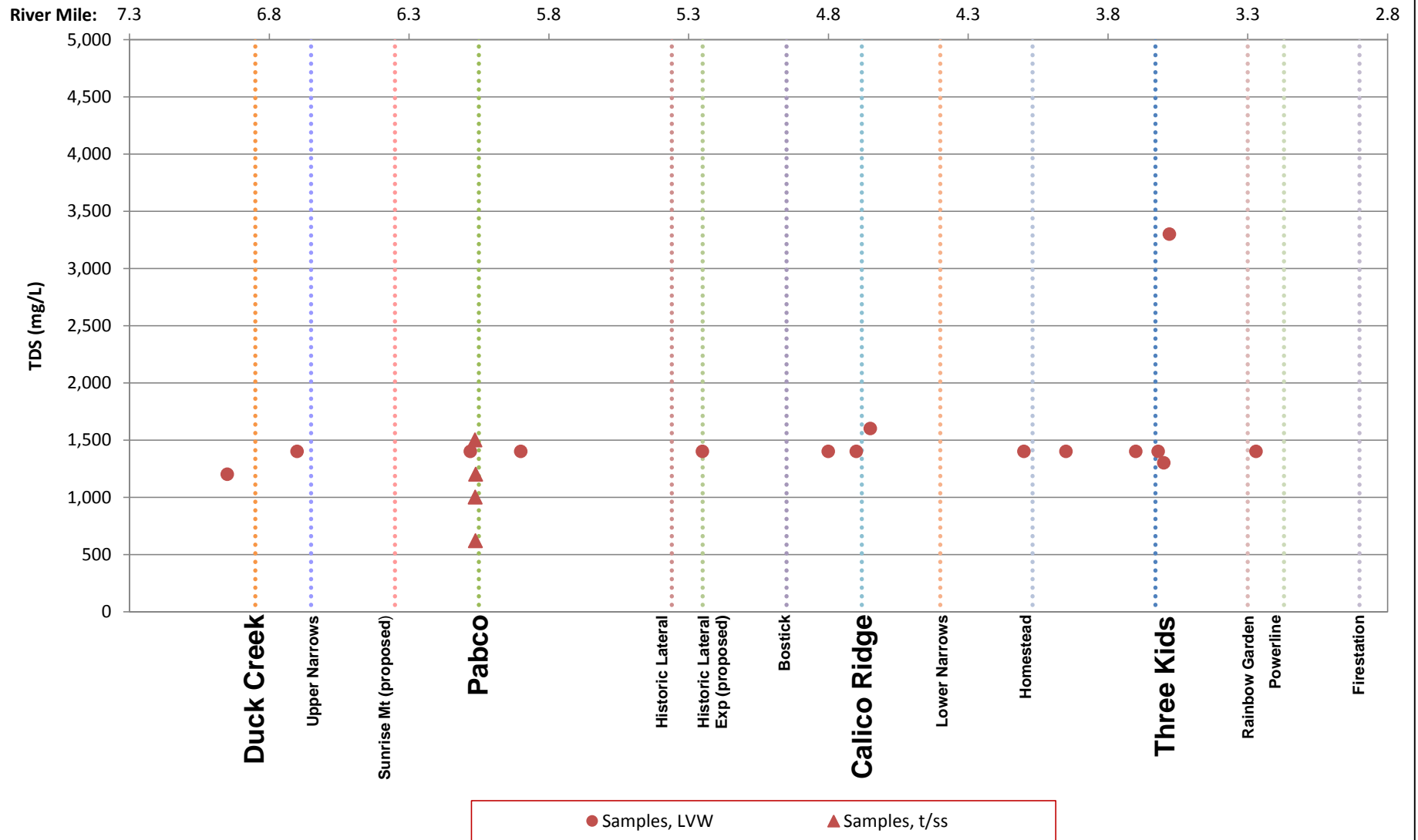
TOTAL DISSOLVED SOLIDS IN SURFACE WATER SAMPLING EVENT DURING USGS SEEPAGE STUDY

Date: 6/14/2017 Project: 60477365

AECOM Figure 13

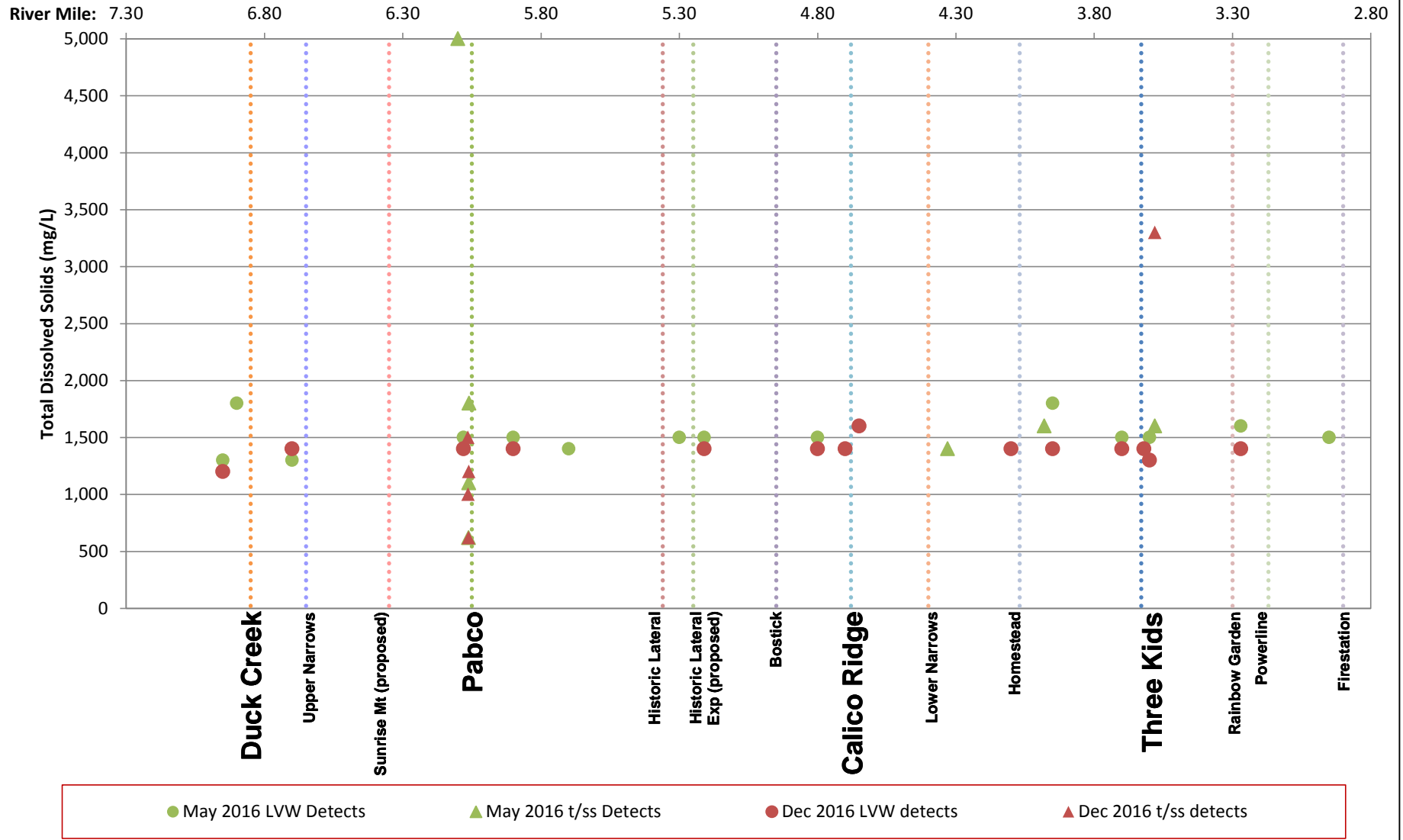
Reference:
Google Earth Pro, Imagery Data 11/4/2016

Figure 14. Concentrations of Total Dissolved Solids by River Mile: Sampling Event during USGS Seepage Study
December 8, 2016

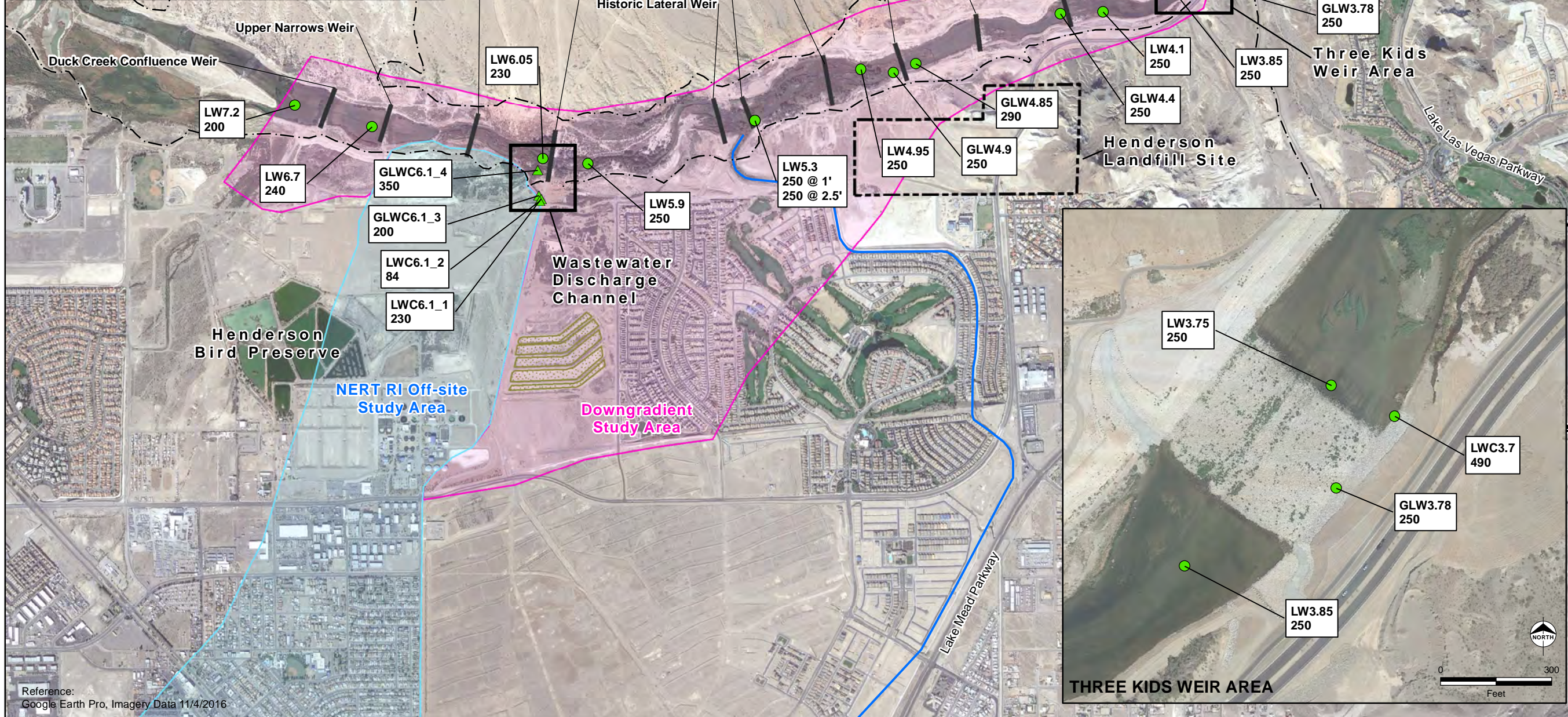
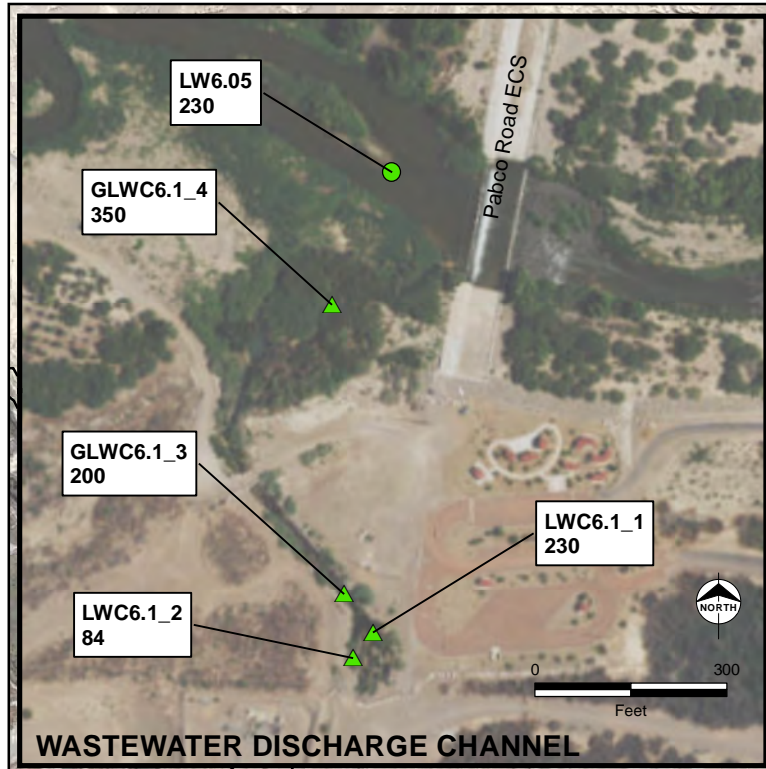


Notes: (1) Field duplicates not shown. LVW = Las Vegas Wash
t/ss = tributary/sidestream including Wastewater Channel [LWC3.7, LWC6.1_1, LWC6.1_2, GLWC6.1_3, GLWC6.1_4]

Figure 15. Concentrations of Total Dissolved Solids by River Mile:
 Sampling Event during USGS Seepage Study December 8, 2016 and Grab Sampling May 2016



Notes: (1) Field duplicates not shown. LVW = Las Vegas Wash
 t/ss = tributary/sidestream including Wastewater Channel [LWC3.7, LWC6.1_1, LWC6.1_2, LWC4.1, LWC4.6, LWC 6.1, LWC6.3_1, GLWC6.1_3, GLWC6.1_4]

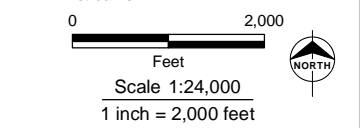


- Legend**
- Surface Water Sample Location - Las Vegas Wash
 - ▲ Surface Water Sample Location - Tributaries
 - Weir
 - Northern Rapid Infiltration Basins
 - Wetlands Trail
 - Channels
 - NERT RI Downgradient Study Area
 - NERT RI Off-site Study Area

Chloride Concentration in mg/L
mg/L - Milligrams per liter

Note:
At LW5.3, samples were collected at two depths (indicated in feet below the water surface).

- GLW Designation for new sampling locations within the LVW
- GLWC Designation for new sampling locations from tributaries and side streams
- LW Designation for pre-existing sampling locations in the LVW
- LWC Designation for pre-existing sampling locations from tributaries and side streams



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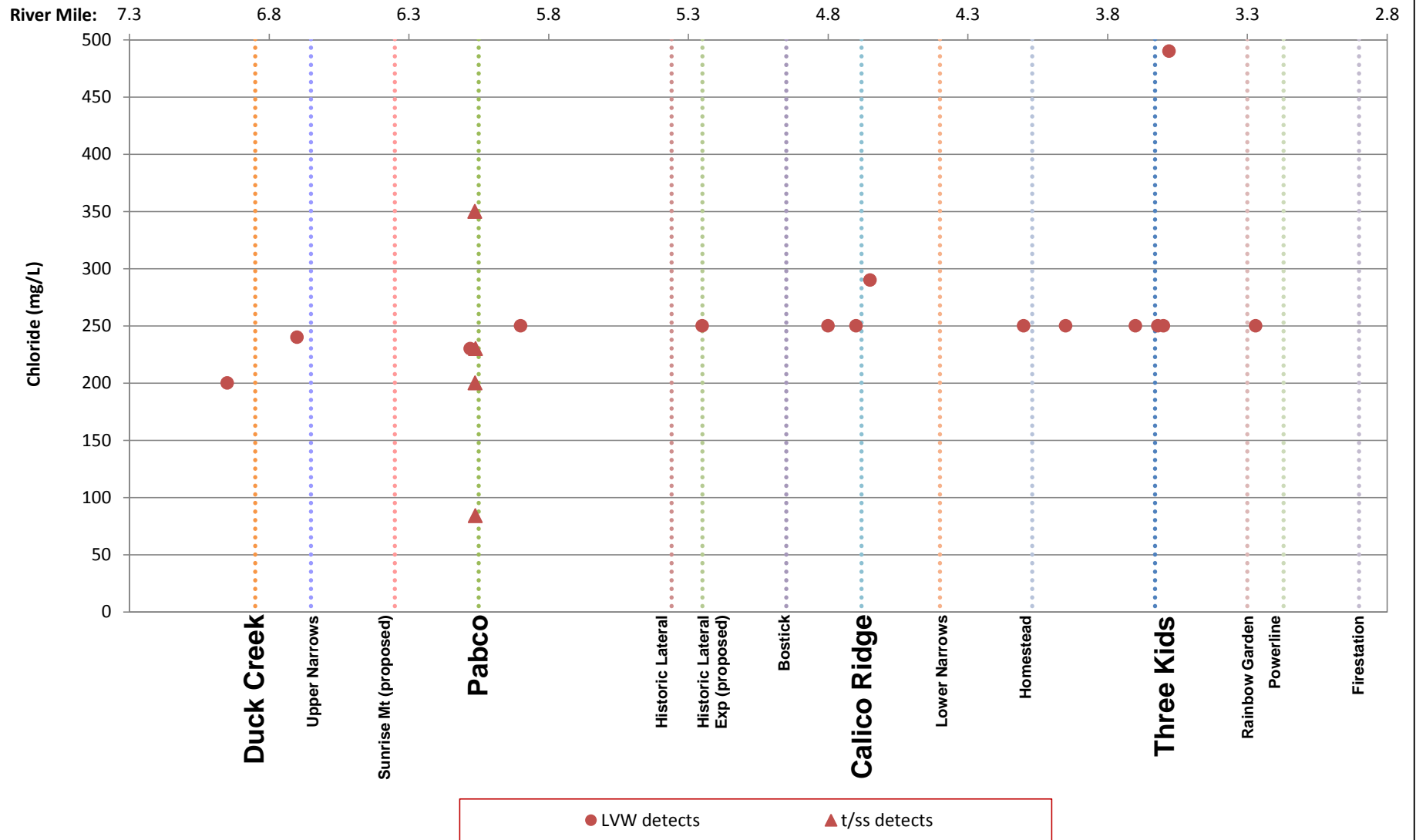
NERT RI
Downgradient Study Area

CHLORIDE CONCENTRATIONS IN SURFACE WATER SAMPLING EVENT DURING USGS SEEPAGE STUDY

Date: 6/14/2017 Project: 60477365

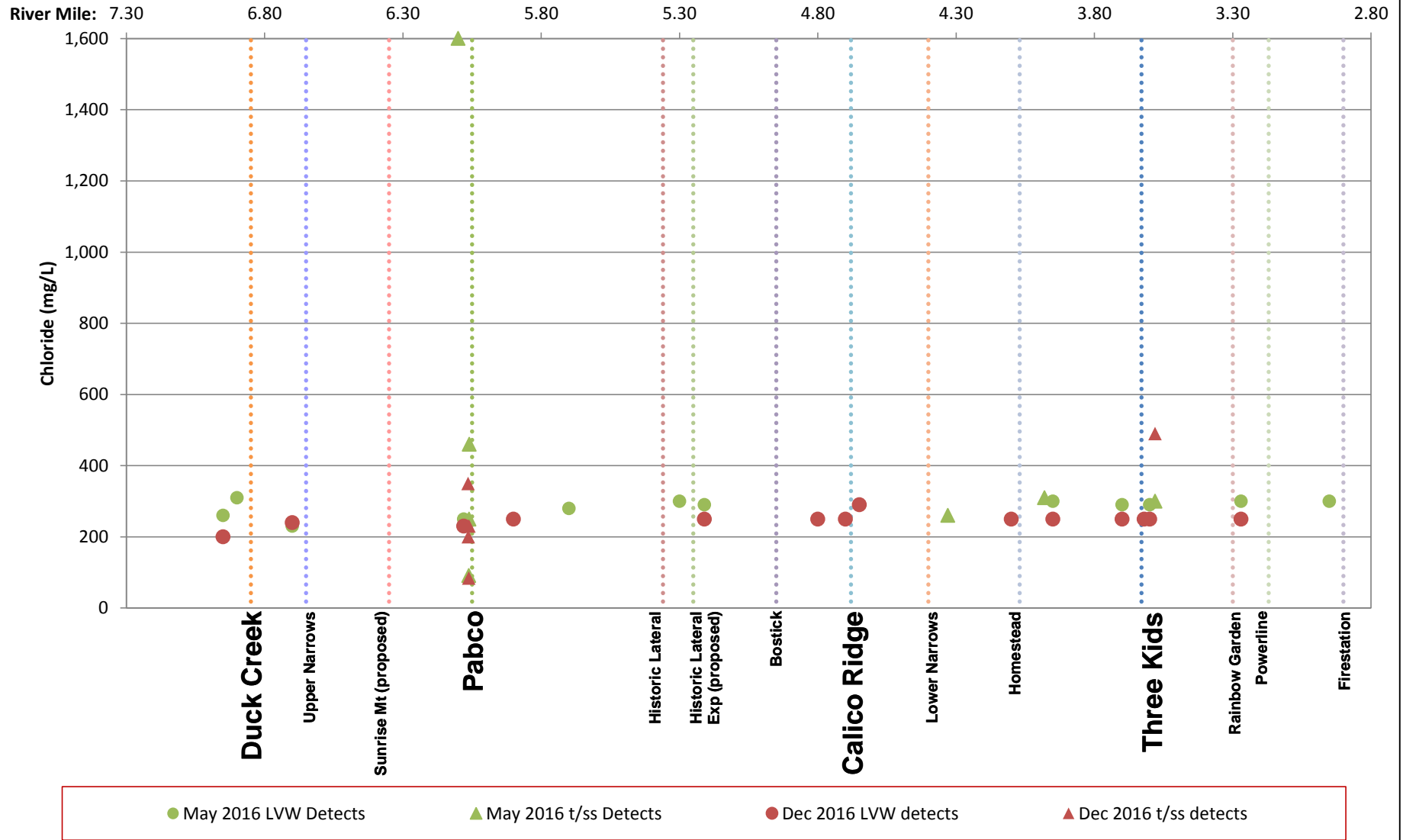
Reference: Google Earth Pro, Imagery Data 11/4/2016

Figure 17. Concentrations of Chloride by River Mile: Sampling Event during USGS Seepage Study
December 8, 2016

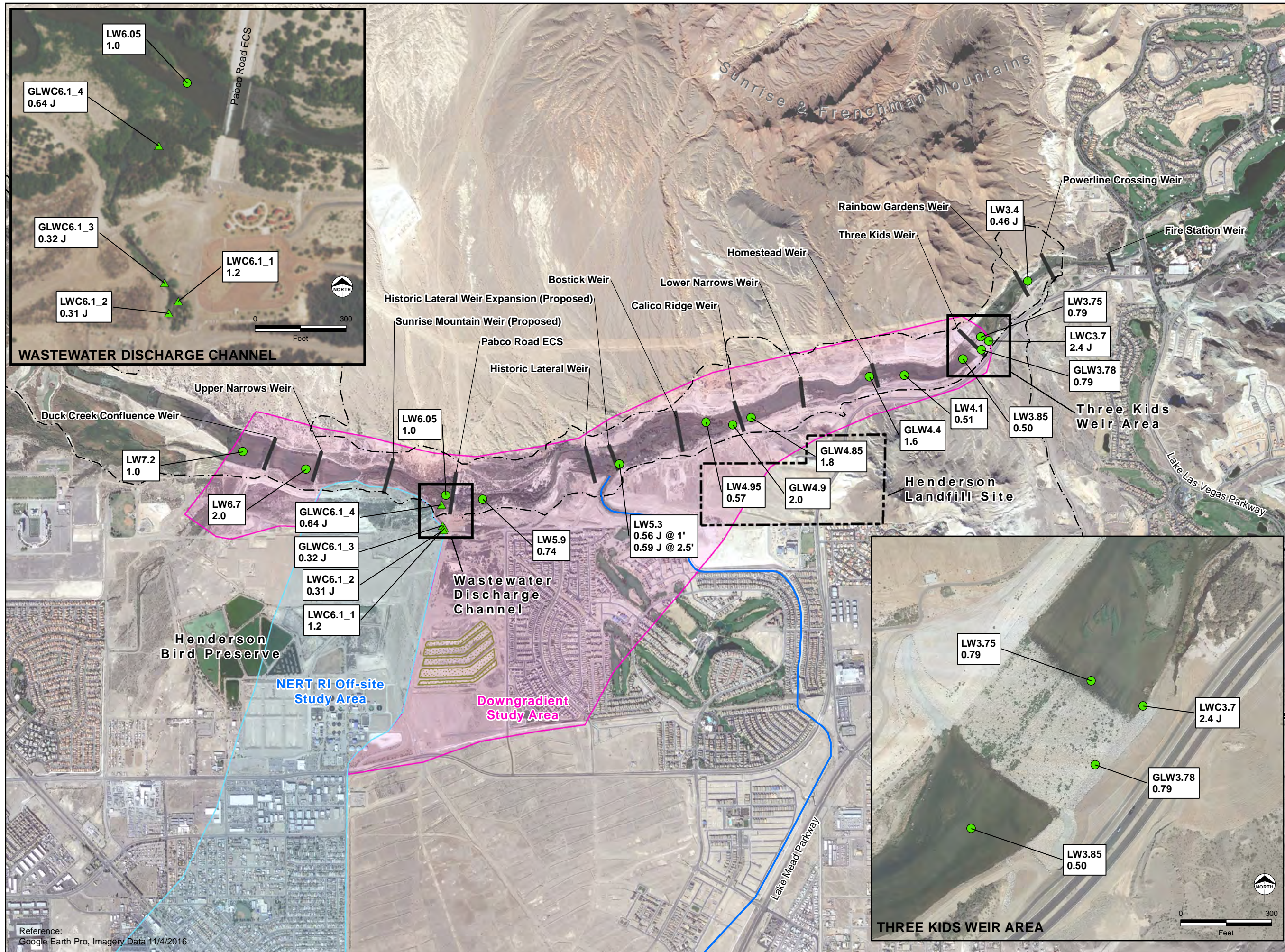


Notes: (1) Field duplicates not shown. LVW = Las Vegas Wash
t/ss = tributary/sidestream including Wastewater Channel [LWC3.7, LWC6.1_1, LWC6.1_2, GLWC6.1_3, GLWC6.1_4]

Figure 18. Concentrations of Chloride by River Mile:
 Sampling Event during USGS Seepage Study December 8, 2016 and Grab Sampling May 2016



Notes: (1) Field duplicates not shown. LVW = Las Vegas Wash
 t/ss = tributary/sidestream including Wastewater Channel [LWC3.7, LWC6.1_1, LWC6.1_2, LWC4.1, LWC4.6, LWC 6.1, LWC6.3_1, GLWC6.1_3, GLWC6.1_4]



Legend

- Surface Water Sample Location - Las Vegas Wash
- ▲ Surface Water Sample Location - Tributaries
- Weir
- Northern Rapid Infiltration Basins
- - - Wetlands Trail
- Channels
- NERT RI Downgradient Study Area
- NERT RI Off-site Study Area

Bromide Concentration in mg/L

J - Estimated concentration between method detection limit and method reporting limit

mg/L - Milligrams per liter

Note:
At LW5.3, samples were collected at two depths (indicated in feet below the water surface).

GLW Designation for new sampling locations within the LWV
GLWC Designation for new sampling locations from tributaries and side streams
LW Designation for pre-existing sampling locations in the LWV
LWC Designation for pre-existing sampling locations from tributaries and side streams

0 2,000
Feet
Scale 1:24,000
1 inch = 2,000 feet

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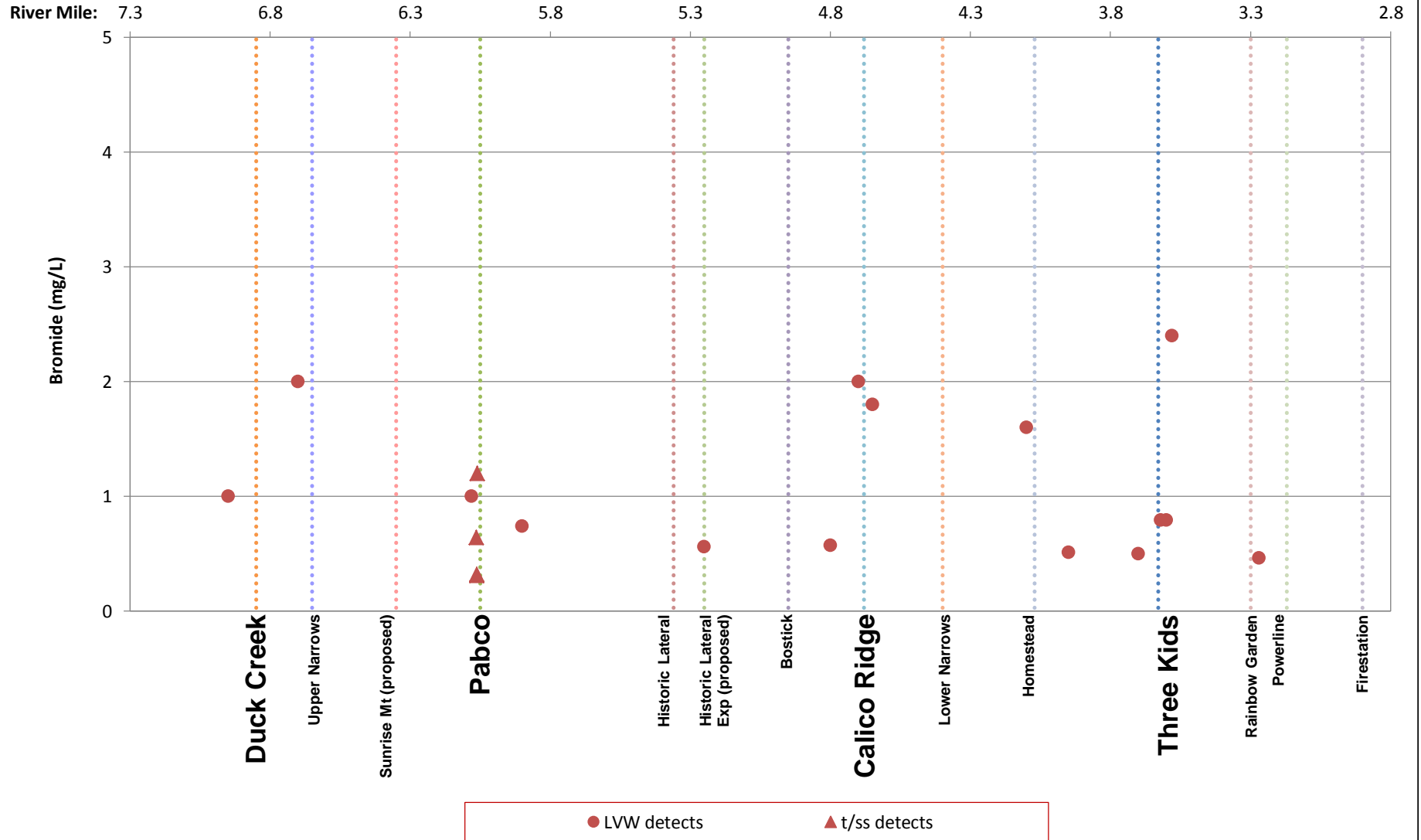
NERT RI
Downgradient Study Area

BROMIDE CONCENTRATIONS IN SURFACE WATER SAMPLING EVENT DURING USGS SEEPAGE STUDY

Date: 6/14/2017 Project: 60477365

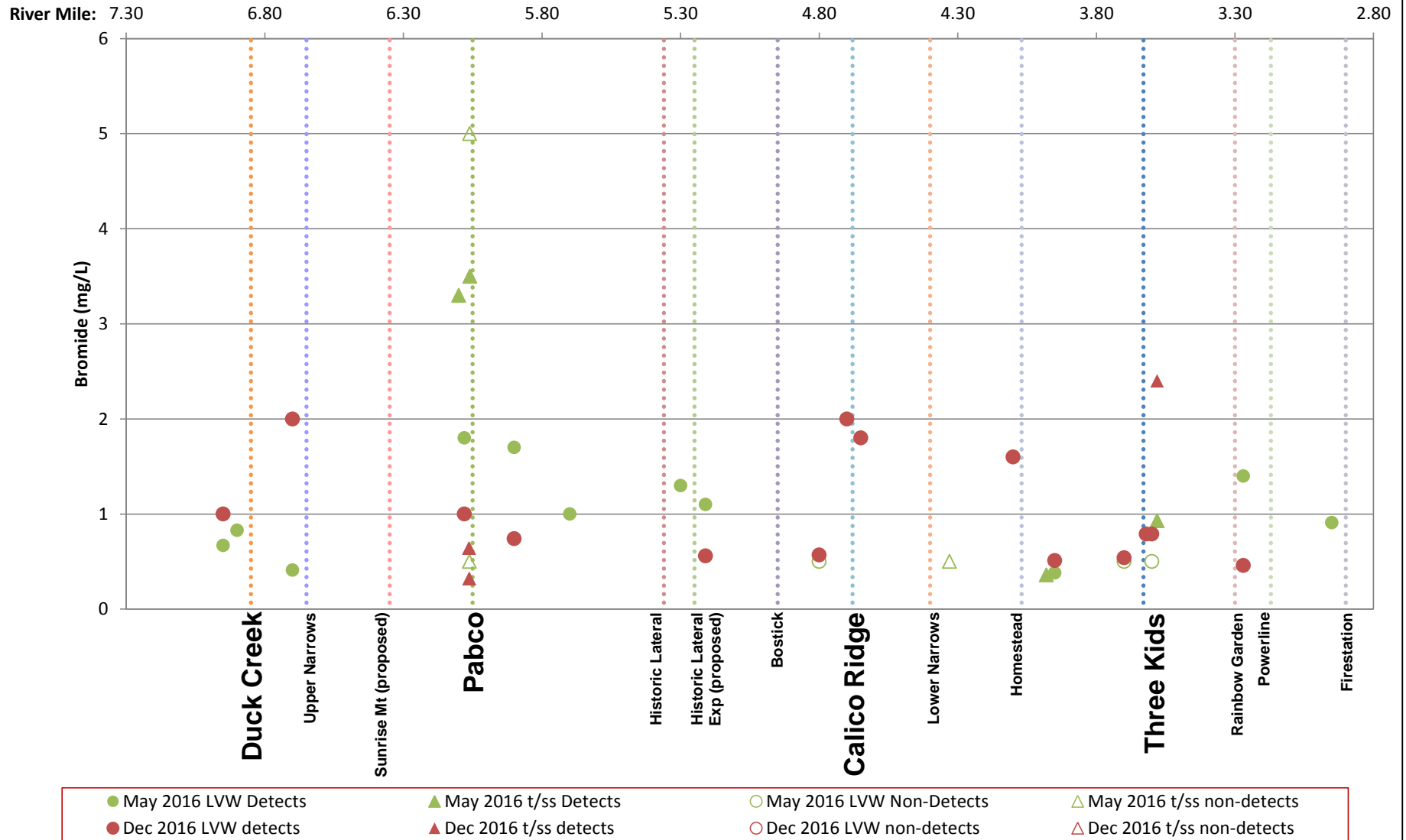
AECOM Figure 19

Figure 20. Concentrations of Bromide by River Mile: Sampling Event during USGS Seepage Study
December 8, 2016

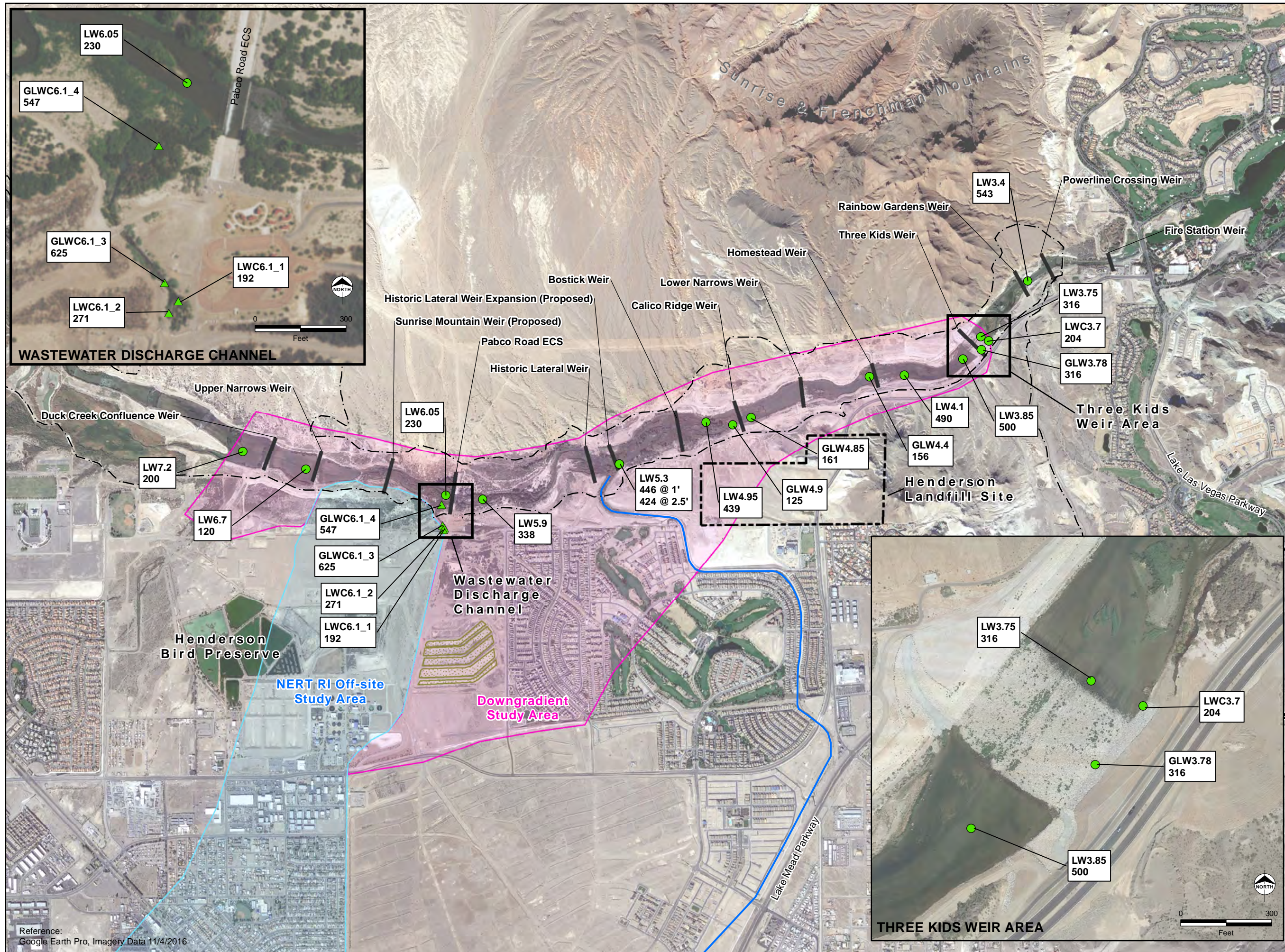


Notes: (1) Field duplicates not shown. LVW = Las Vegas Wash
t/ss = tributary/sidestream including Wastewater Channel [LWC3.7, LWC6.1_1, LWC6.1_2, GLWC6.1_3, GLWC6.1_4]

**Figure 21. Concentrations of Bromide by River Mile:
Sampling Event during USGS Seepage Study December 8, 2016 and Grab Sampling May 2016**



Notes: (1) Non-detects shown at detection limit. (2) Field duplicates not shown. LVW = Las Vegas Wash
t/ss = tributary/sidestream including Wastewater Channel [LWC3.7, LWC6.1_1, LWC6.1_2, LWC4.1, LWC4.6, LWC 6.1, LWC6.3_1, GLWC6.1_3, GLWC6.1_4]

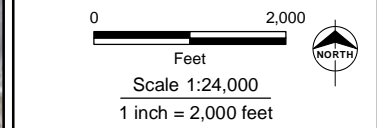


- Legend**
- Surface Water Sample Location - Las Vegas Wash
 - ▲ Surface Water Sample Location - Tributaries
 - Weir
 - Northern Rapid Infiltration Basins
 - Wetlands Trail
 - Channels
 - NERT RI Downgradient Study Area
 - NERT RI Off-site Study Area

Chloride/Bromide Concentrations Ratios

Note:
At LW5.3, samples were collected at two depths (indicated in feet below the water surface).

- GLW Designation for new sampling locations within the LVW
- GLWC Designation for new sampling locations from tributaries and side streams
- LW Designation for pre-existing sampling locations in the LVW
- LWC Designation for pre-existing sampling locations from tributaries and side streams



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NERT RI
Downgradient Study Area

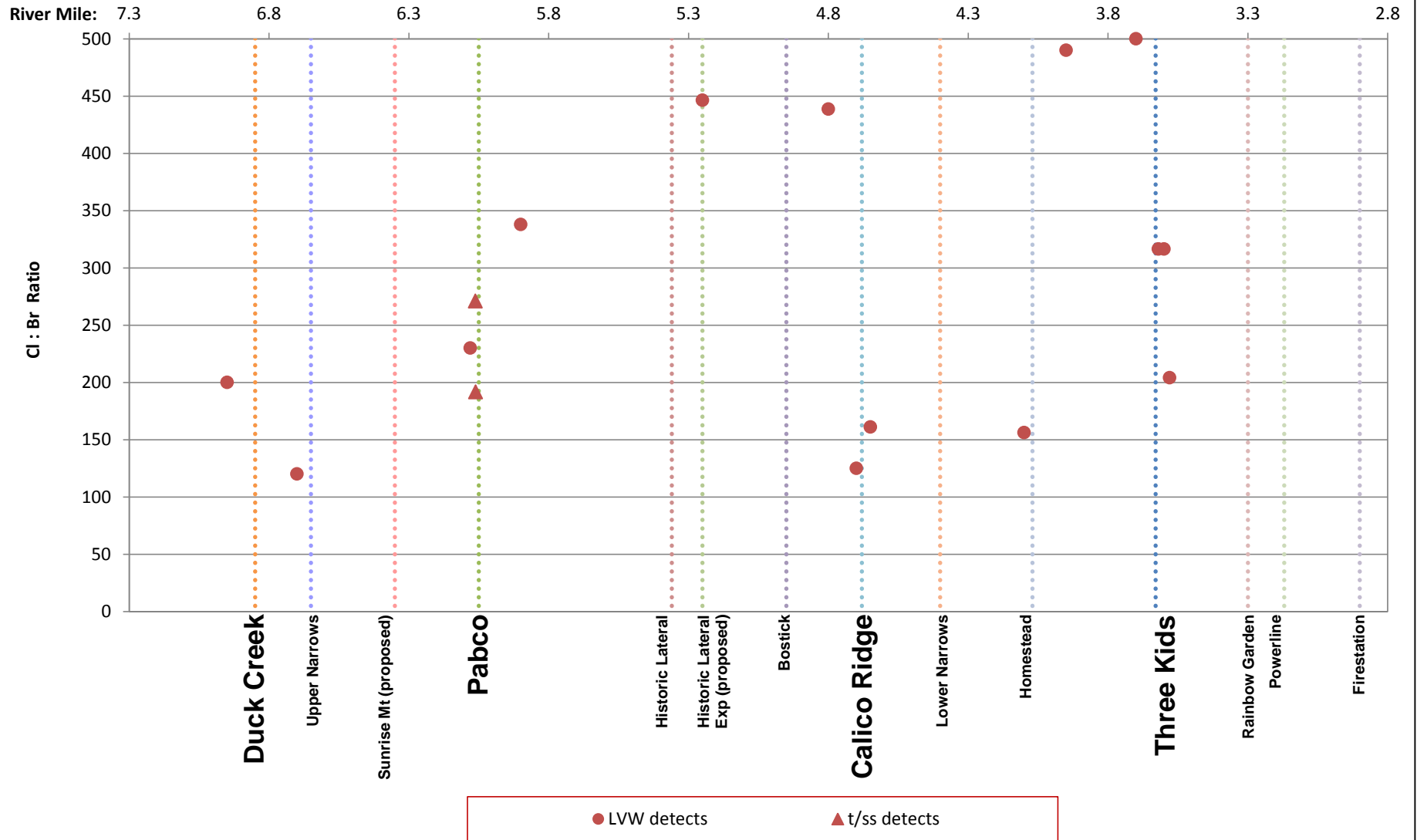
CHLORIDE/BROMIDE RATIOS IN SURFACE WATER SAMPLING EVENT DURING USGS SEEPAGE STUDY

Date: 6/14/2017 Project: 60477365

AECOM Figure 22

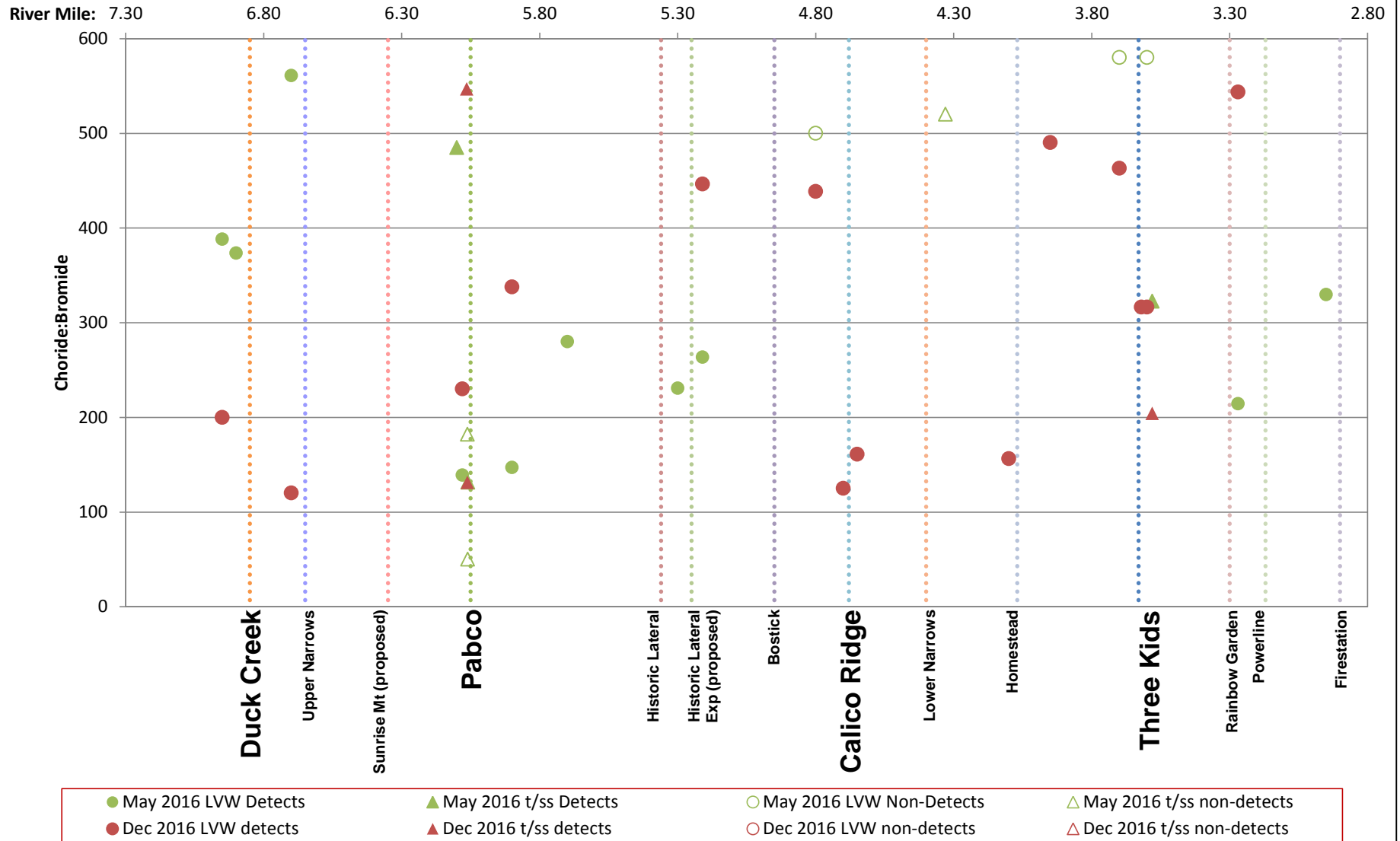
Reference: Google Earth Pro, Imagery Data 11/4/2016

Figure 23. Ratio of Chloride/Bromide by River Mile: Sampling Event during USGS Seepage Study
December 8, 2016

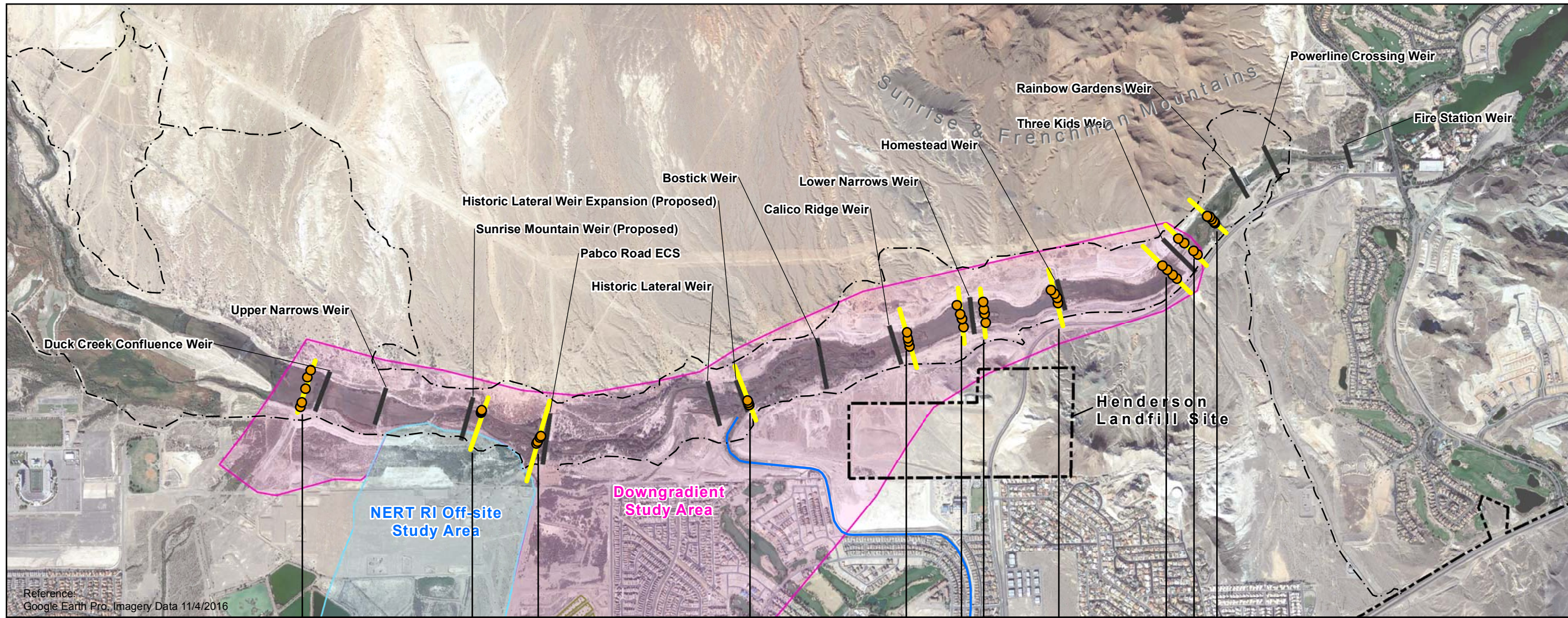


Notes: (1) Field duplicates not shown. LVW = Las Vegas Wash
t/ss = tributary/sidestream including Wastewater Channel [LWC3.7, LWC6.1_1, LWC6.1_2, GLWC6.1_3, GLWC6.1_4]

Figure 24. Ratio of Chloride/Bromide by River Mile:
 Sampling Event during USGS Seepage Study December 8, 2016 and Grab Sampling May 2016



Notes: (1) Ratios with non-detects shown at detection limit. (2) Field duplicates not shown. LVW = Las Vegas Wash
 t/ss = tributary/sidestream including Wastewater Channel [LWC3.7, LWC6.1_1, LWC6.1_2, LWC4.1, LWC4.6, LWC 6.1, LWC6.3_1, GLWC6.1_3, GLWC6.1_4]



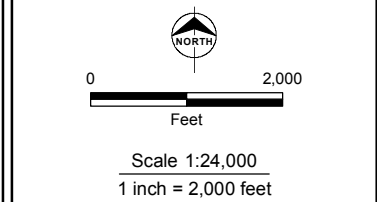
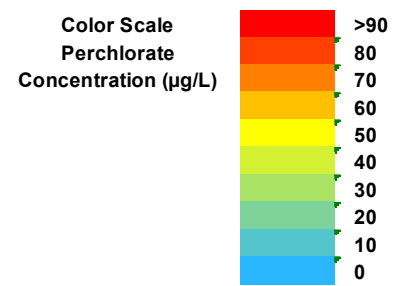
Legend

- Transect Sample Location
- Transects
- Weir
- Northern Rapid Infiltration Basins
- Wetlands Trail
- Channels
- NERT RI Downgradient Study Area
- NERT RI Off-site Study Area

Perchlorate Concentration in µg/L

J - Associated concentration is estimate µg/L - Micrograms per liter

Transect ID	T6.8 S6.8	T6.35 S6.35	T6.0 S6.0	T5.3 S5.3	T4.75 S4.75	T4.65 S4.65	T4.6 S4.6	T4.2 S4.2	T3.8 S3.8	T3.75 S3.75	T3.5 S3.5
North Bank	<0.95										38
	<0.95	18			420 J	30	32 J	25	46 J	85	47
	1.6 J	17	17	17	22 J	31	30 J	27	32 J	31	66
	<0.95	18		18	23 J	51	57 J	40	45 J	51 J	98
	<0.95			32	33	820 J	57 J	64 J	66	57 J	63 J
South Bank			15								73
			16								
			16								
			16								



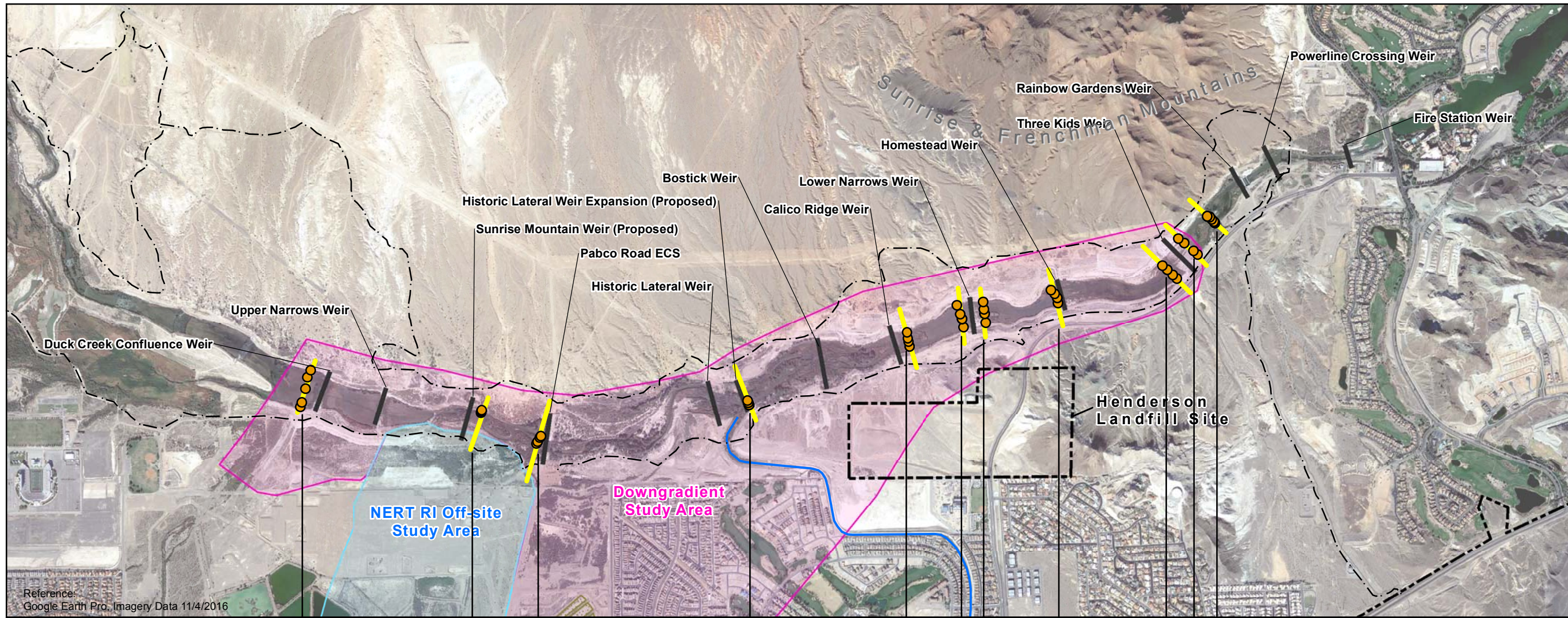
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NERT RI
Downgradient Study Area

TRANSECTS SAMPLING PERCHLORATE CONCENTRATIONS (February 2017)

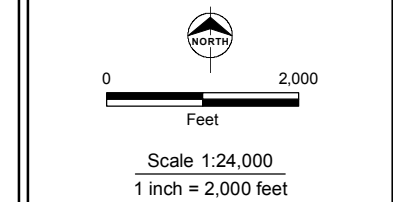
Date: 6/14/2017 Project: 60477365

AECOM Figure 25



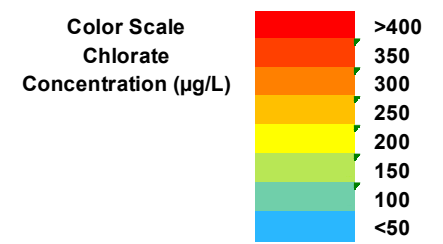
- Legend**
- Transect Sample Location
 - Transects
 - Weir
 - Northern Rapid Infiltration Basins
 - - - Wetlands Trail
 - Channels
 - NERT RI Downgradient Study Area
 - NERT RI Off-site Study Area

Chlorate Concentration in µg/L
 J - Associated concentration is estimate
 µg/L - Micrograms per liter



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Transect ID	T6.8 S6.8	T6.35 S6.35	T6.0 S6.0	T5.3 S5.3	T4.75 S4.75	T4.65 S4.65	T4.6 S4.6	T4.2 S4.2	T3.8 S3.8	T3.75 S3.75	T3.5 S3.5
North Bank	48	57	50	51	35 J	78	83	78	130	260	140
	52	53	50	54	83	100	100	88	110	110	190
	73	56	49	140	94	210	210	170	210	210	420
	59	55	49	130	3100	250	260	260	270	270	430
South Bank	51										310

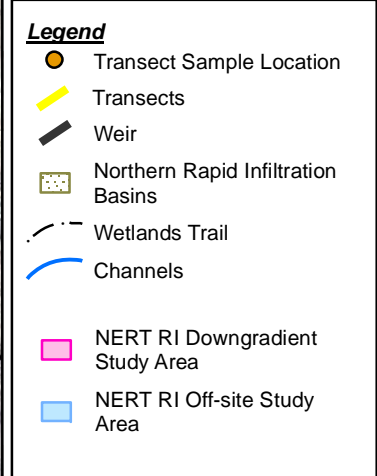
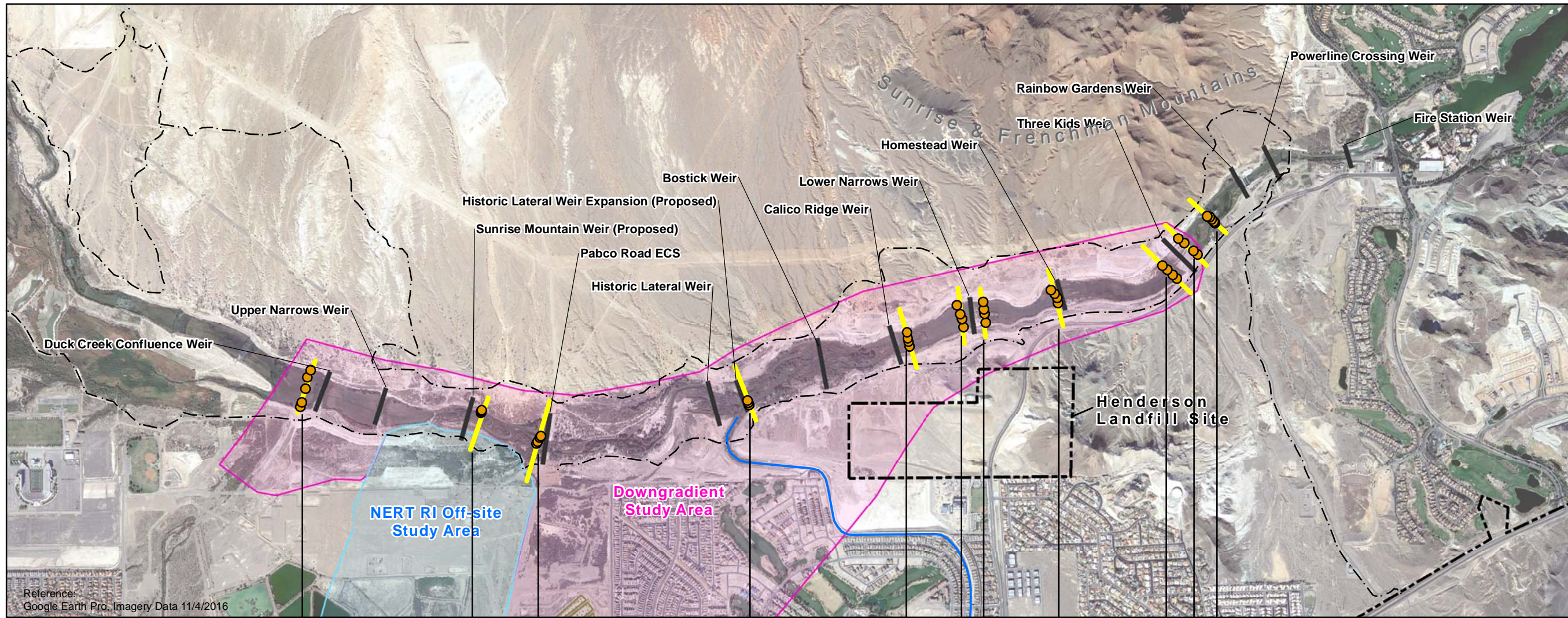


NERT RI
Downgradient Study Area

TRANSECTS SAMPLING CHLORATE CONCENTRATIONS (February 2017)

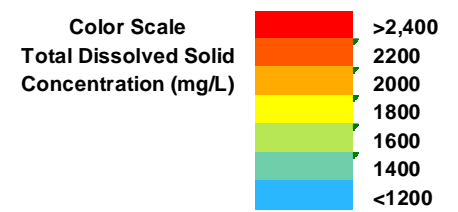
Date: 6/14/2017 Project: 60477365

AECOM Figure 26

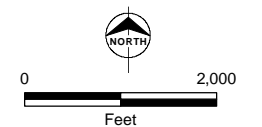


Reference:
Google Earth Pro, Imagery Data 11/4/2016

Transect ID	T6.8 S6.8	T6.35 S6.35	T6.0 S6.0	T5.3 S5.3	T4.75 S4.75	T4.65 S4.65	T4.6 S4.6	T4.2 S4.2	T3.8 S3.8	T3.75 S3.75	T3.5 S3.5
North Bank	1200 1300 1900 1700 1500	1600 1600 1500	1500 1500 1500	1500 1500 1500	2100 1600 1600 2200	1500 1500 1500	1500 1500 1600	1400 1400 1400	1500 1400 1400 1400	1500 1500 1500 1500	1500 1500
South Bank											2700



Total Dissolved Solids Concentration in mg/L
mg/L - Milligrams per liter



Scale 1:24,000
1 inch = 2,000 feet

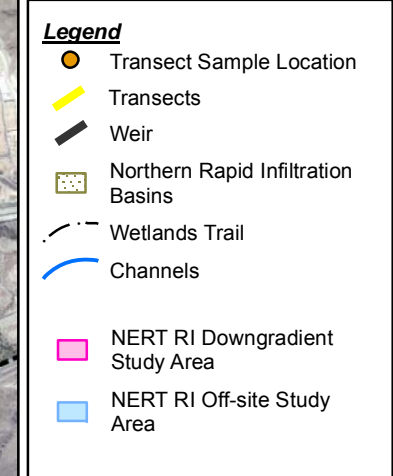
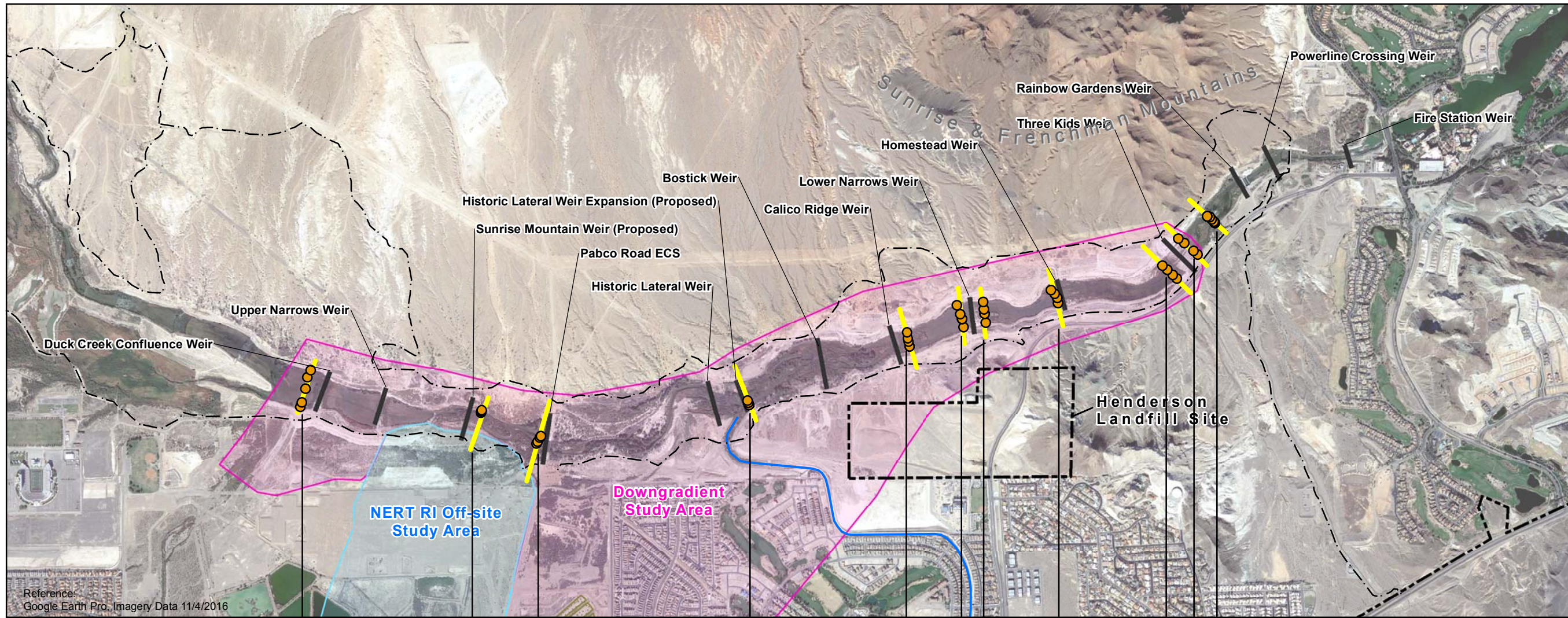
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NERT RI
Downgradient Study Area

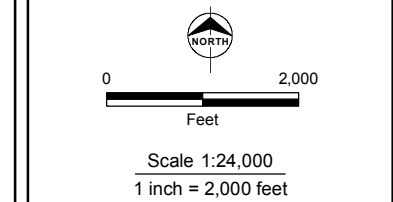
**TRANSECTS SAMPLING
TOTAL DISSOLVED
SOLIDS
CONCENTRATIONS
(February 2017)**

Date: 6/14/2017 Project: 60477365

AECOM Figure 27

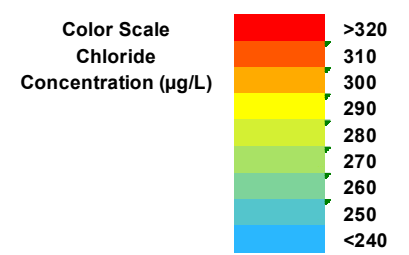


Chloride Concentration in µg/L
µg/L - Micrograms per liter



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Transect ID	T6.8 S6.8	T6.35 S6.35	T6.0 S6.0	T5.3 S5.3	T4.75 S4.75	T4.65 S4.65	T4.6 S4.6	T4.2 S4.2	T3.8 S3.8	T3.75 S3.75	T3.5 S3.5
North Bank	240	270	280	290	350	260	280	270	250	280	260
	230	270	280	290	270	260	280	260	250	280	260
	290	270	280	290	260	260	280	260	260	280	270
	270	270	290	300	280	280	260	260	260	280	280
South Bank	250	260	290	290	360	280	280	260	260	280	420

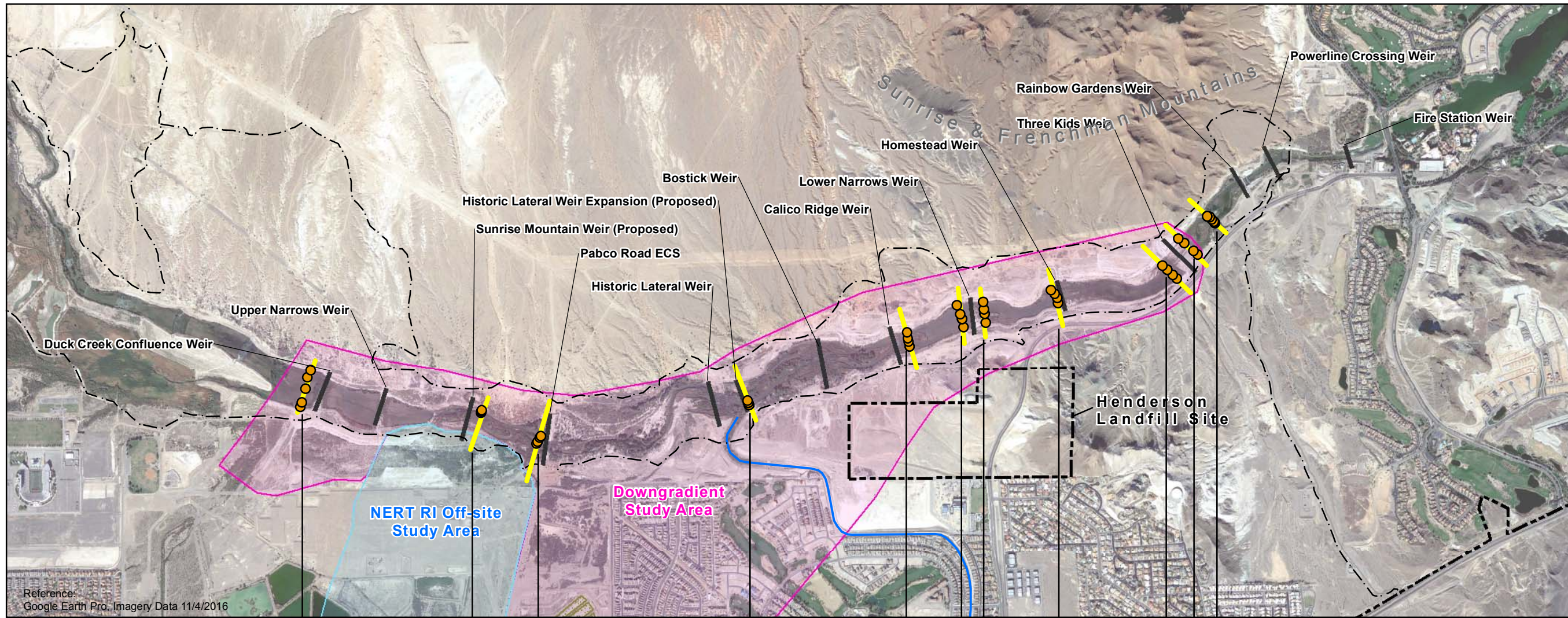


NERT RI Downgradient Study Area

TRANSECTS SAMPLING CHLORIDE CONCENTRATIONS (February 2017)

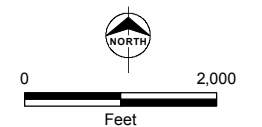
Date: 6/14/2017 Project: 60477365

AECOM Figure 28



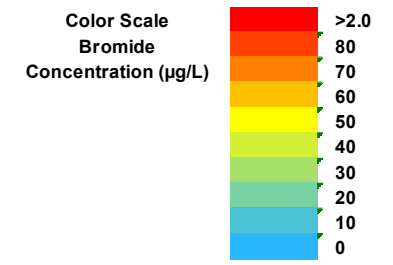
- Legend**
- Transect Sample Location
 - Transects
 - Weir
 - Northern Rapid Infiltration Basins
 - Wetlands Trail
 - Channels
 - NERT RI Downgradient Study Area
 - NERT RI Off-site Study Area

Bromide Concentration in µg/L
 J - Associated concentration is estimate
 µg/L - Micrograms per liter



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Transect ID	T6.8 S6.8	T6.35 S6.35	T6.0 S6.0	T5.3 S5.3	T4.75 S4.75	T4.65 S4.65	T4.6 S4.6	T4.2 S4.2	T3.8 S3.8	T3.75 S3.75	T3.5 S3.5
North Bank	0.77 0.64 1.8 1.6 1.3	<0.25 0.57 0.31 J	<0.50 <0.50 <0.50 <0.50	<0.50 <0.50 0.30 J	<0.50 0.57 0.59 0.69 J	1.7 0.74 J 1.8 1.4	1.6 <0.25 1.6 1.7	0.58 0.58 0.67 J 0.60	<0.50 0.53 J 0.59 J 0.60 J	<0.50 0.34 J 0.33 J 0.34 J	0.84 J <0.50 <0.50 <0.50 0.64 J 1.1
South Bank											

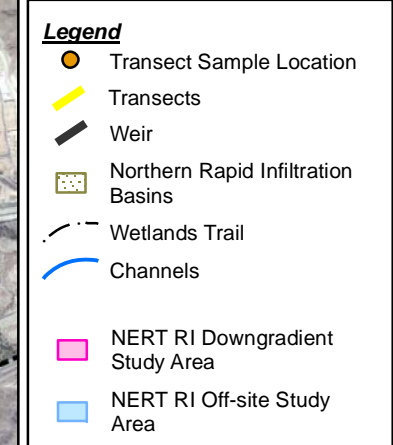
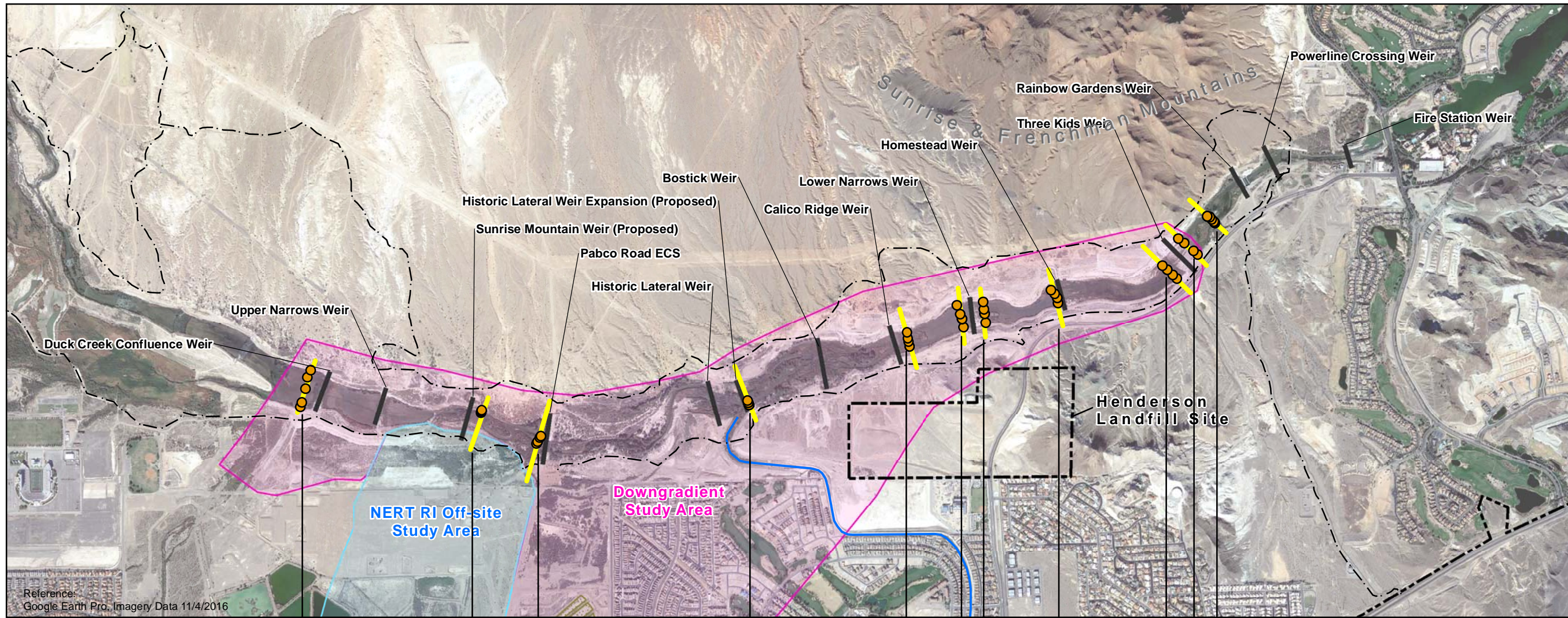


NERT RI
Downgradient Study Area

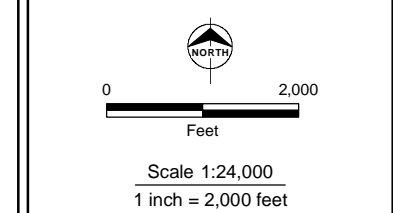
**TRANSECTS SAMPLING
BROMIDE
CONCENTRATIONS
(February 2017)**

Date: 6/14/2017 Project: 60477365

AECOM Figure 29



Chloride/Bromide Concentrations Ratios



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Transect ID	T6.8 S6.8	T6.35 S6.35	T6.0 S6.0	T5.3 S5.3	T4.75 S4.75	T4.65 S4.65	T4.6 S4.6	T4.2 S4.2	T3.8 S3.8	T3.75 S3.75	T3.5 S3.5
North Bank	312	1080	560	580	700	153	175	466	500	560	310
	359	474	560	580	474	351	1120	448	472	824	520
	161	844	580	1000	441	144	175	388	441	848	540
	169	839	580	580	522	200	165	433	433	824	438
South Bank	192		580								382



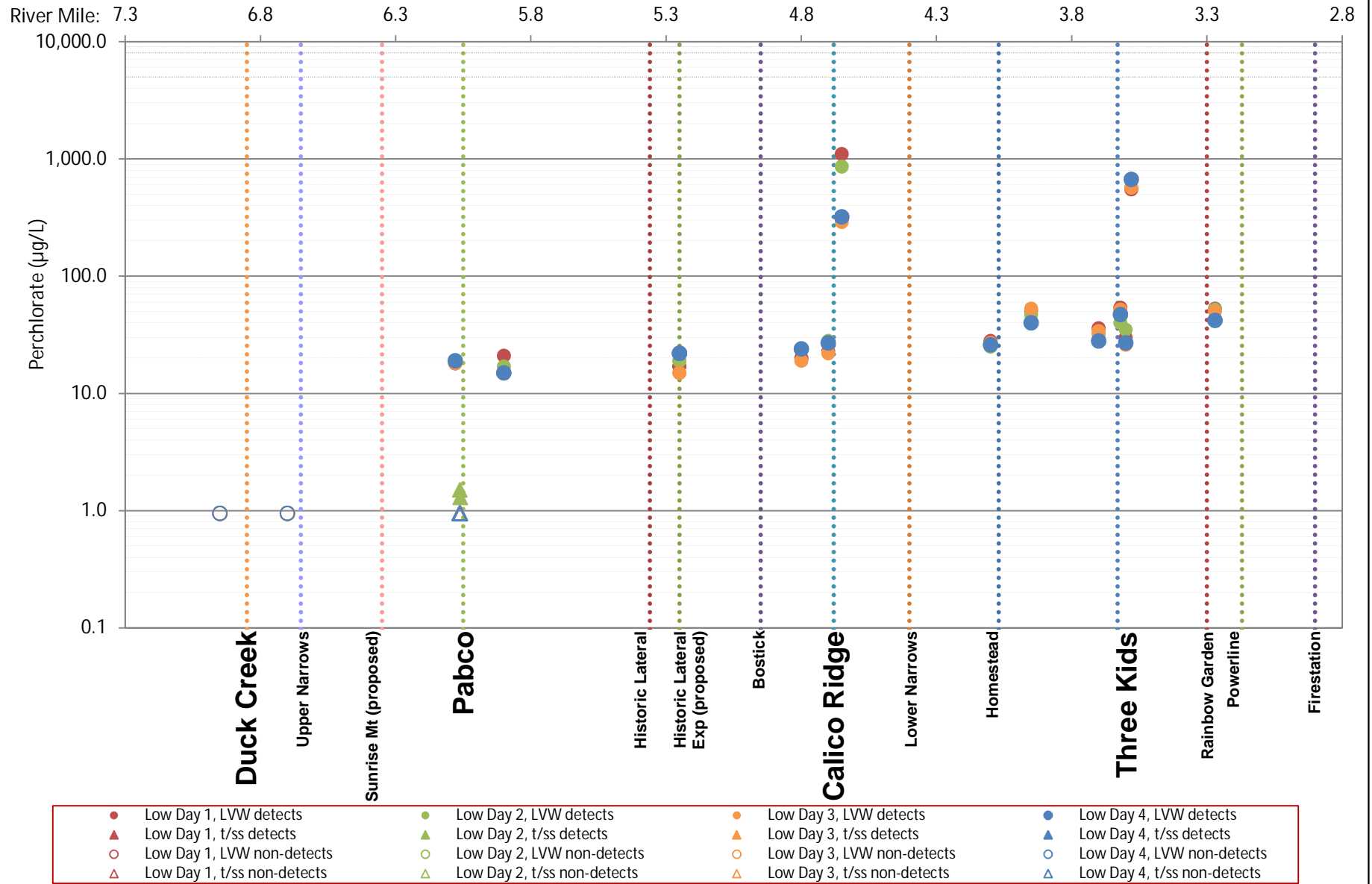
NERT RI Downgradient Study Area

TRANSECTS SAMPLING CHLORIDE/BROMIDE RATIOS (February 2017)

Date: 6/14/2017 Project: 60477365

AECOM Figure 30

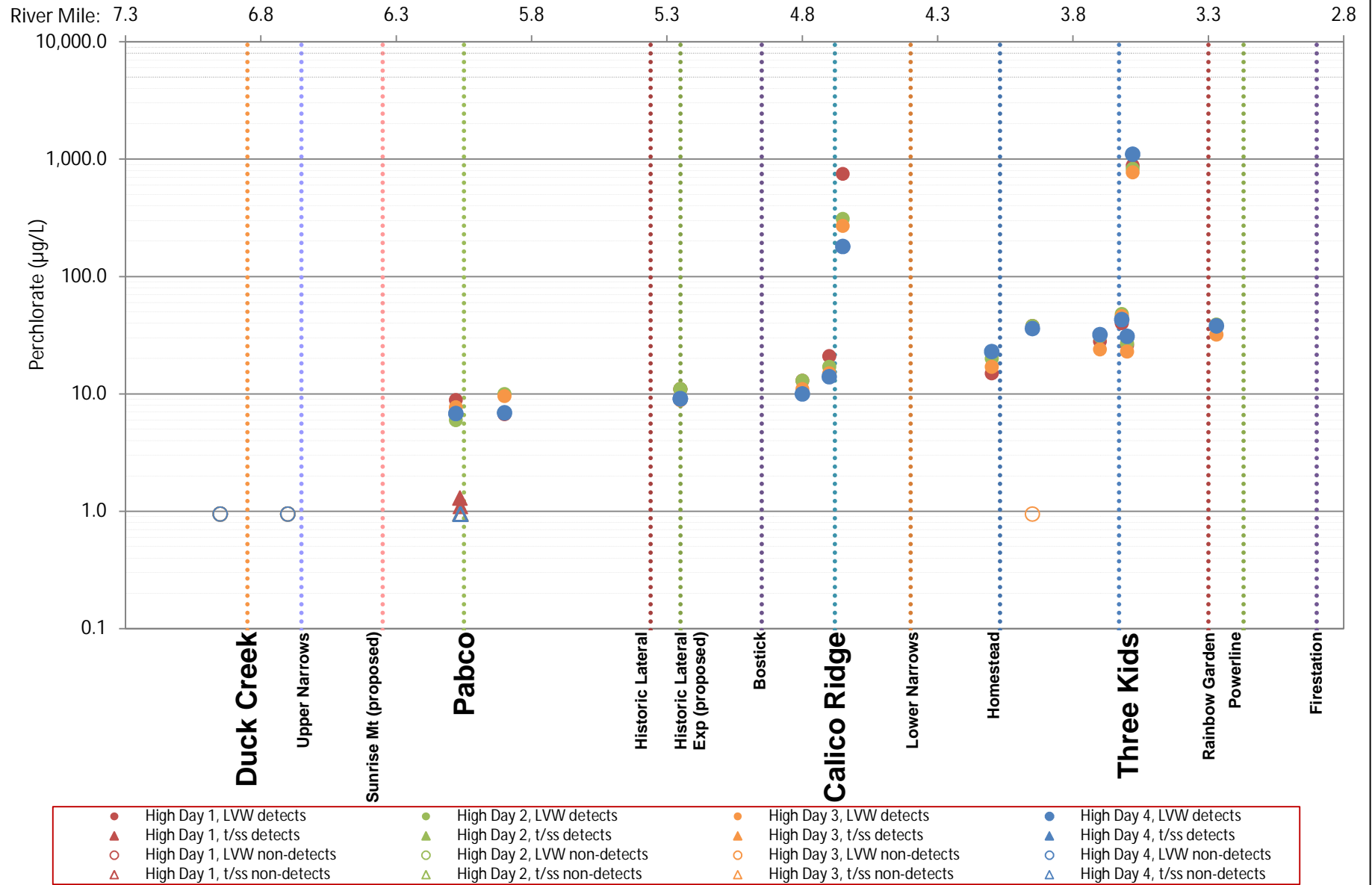
Figure 31. Perchlorate in Surface Water Samples by River Mile: Discrete Sampling Low Flow
February 6 - 9, 2017



Notes: (1) Non-detects shown at detection limit.
(2) Field duplicates not shown.

LVW = Las Vegas Wash
t/ss = tributary/sidestream including Wastewater Channel

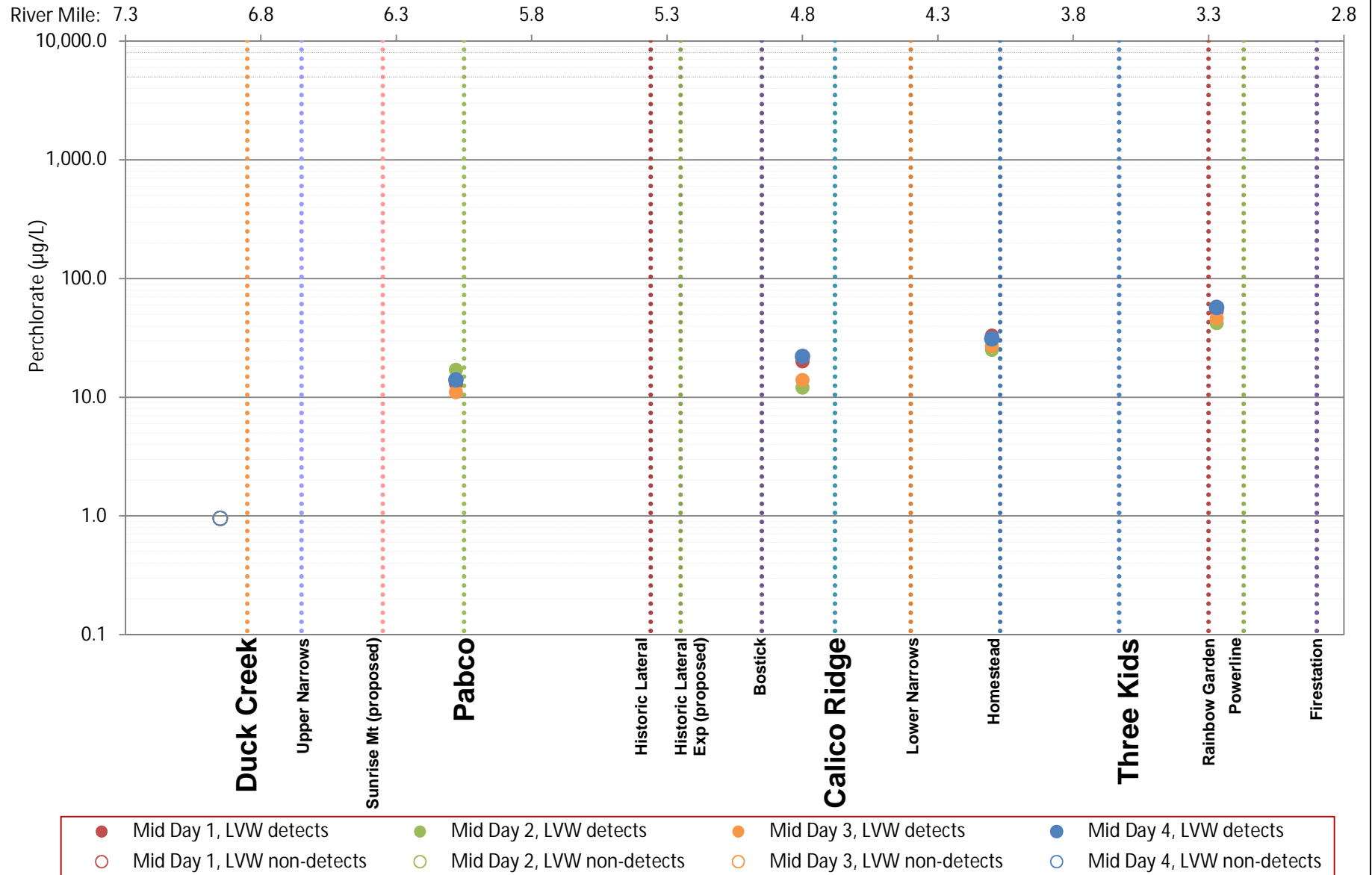
Figure 32. Perchlorate in Surface Water Samples by River Mile: Discrete Sampling High Flow
February 6 - 9, 2017



Notes: (1) Non-detects shown at detection limit.
(2) Field duplicates not shown.

LVW = Las Vegas Wash
t/ss = tributary/sidestream including Wastewater Channel

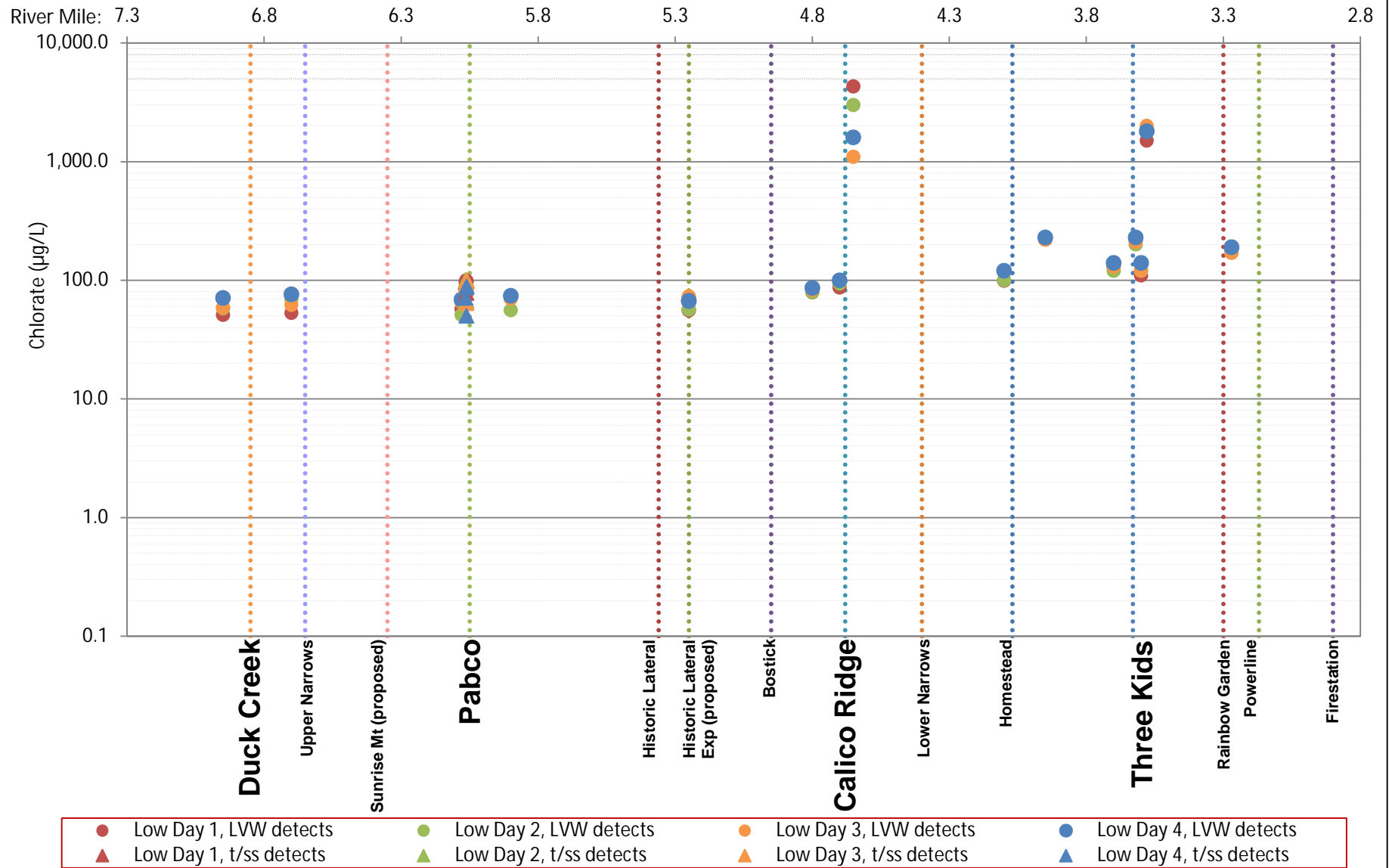
Figure 33. Perchlorate in Surface Water Samples by River Mile: Discrete Sampling Mid Flow
February 6 - 9, 2017



Notes: (1) Non-detects shown at detection limit.
(2) Field duplicates not shown.

LVW = Las Vegas Wash
t/ss = tributary/sidestream including Wastewater Channel

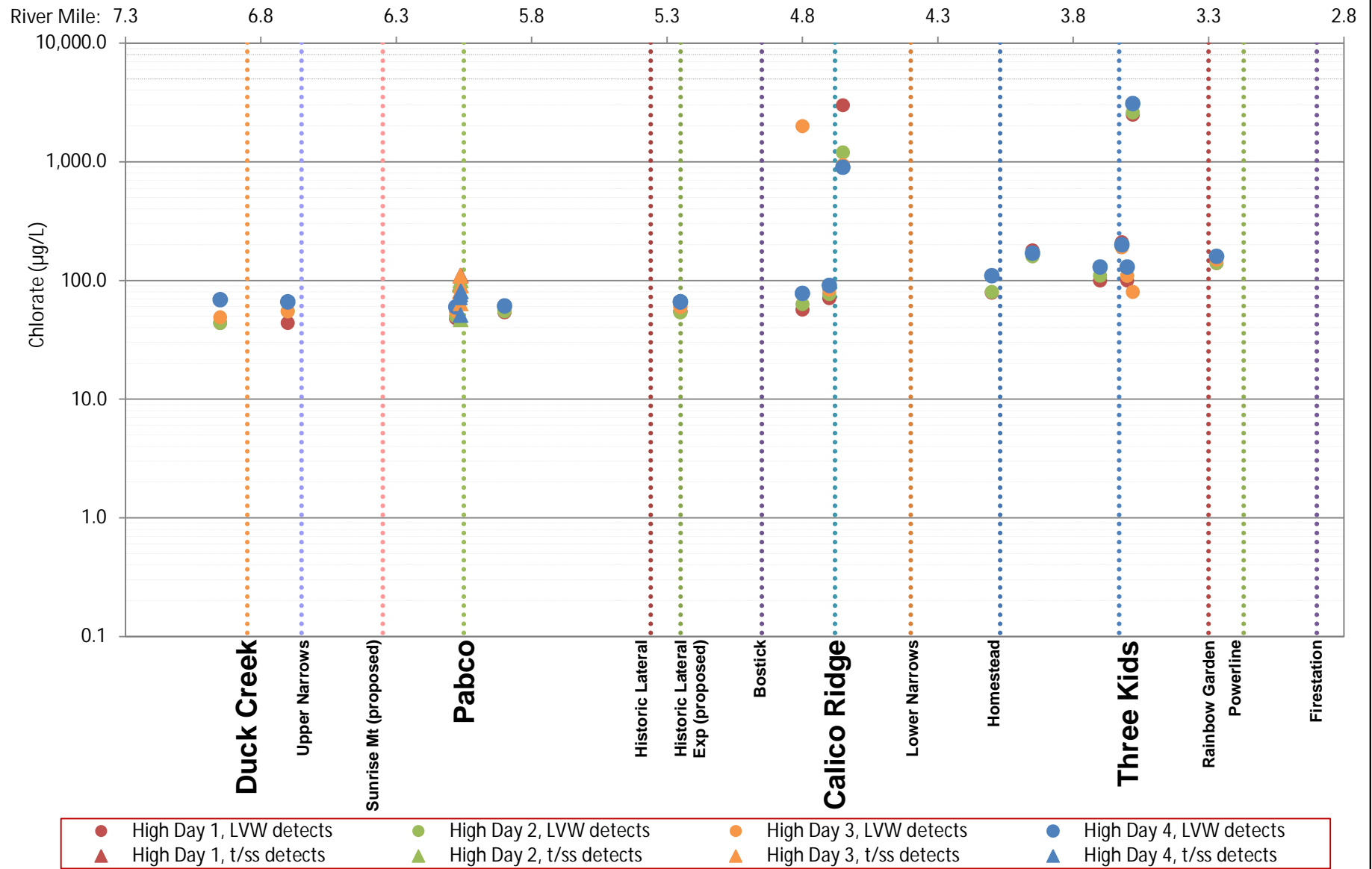
Figure 34. Chlorate in Surface Water Samples by River Mile: Discrete Sampling Low Flow
February 6 - 9, 2017



Notes: (1) Field duplicates not shown.

LVW = Las Vegas Wash
t/ss = tributary/sidestream including Wastewater Channel

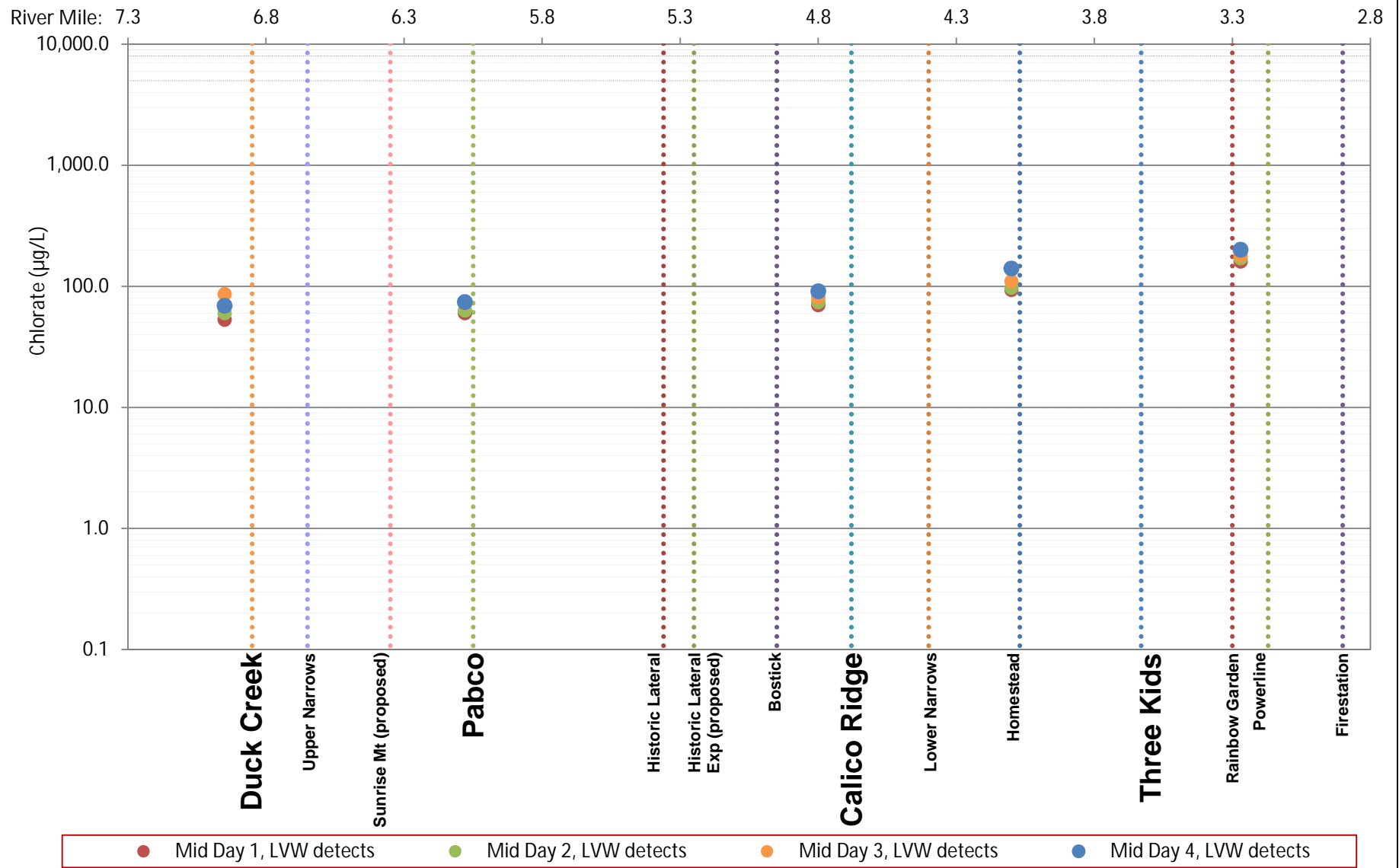
Figure 35. Chlorate in Surface Water Samples by River Mile: Discrete Sampling High Flow
February 6 - 9, 2017



Notes: (1) Field duplicates not shown.

LVW = Las Vegas Wash
t/ss = tributary/sidestream including Wastewater Channel

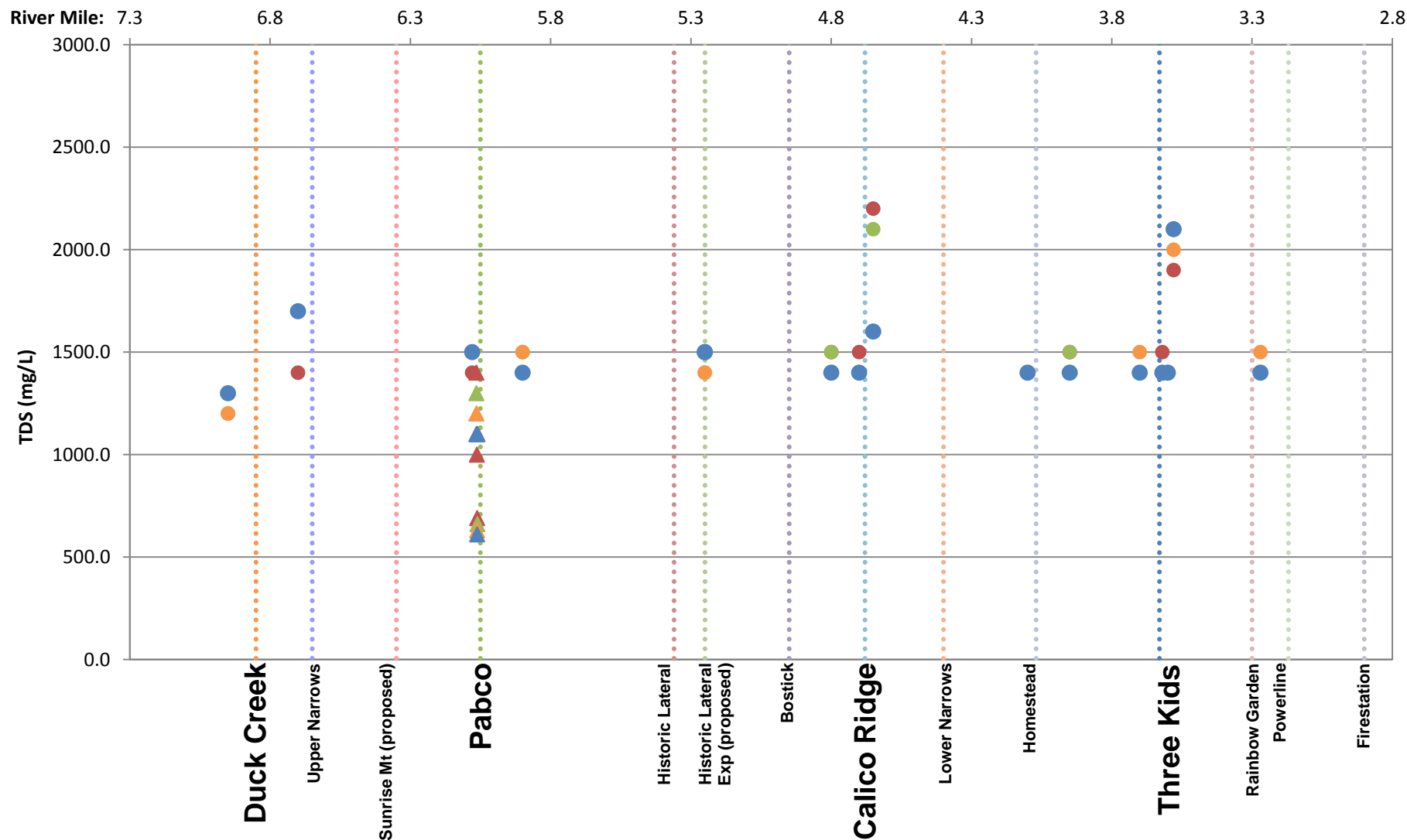
Figure 36. Chlorate in Surface Water Samples by River Mile: Discrete Sampling Mid Flow
February 6 - 9, 2017



Notes: (1)Field duplicates not shown.

LVW = Las Vegas Wash
t/ss = tributary/sidestream including Wastewater Channel

Figure 37. Total Dissolved Solids in Surface Water Samples by River Mile: Discrete Sampling Low Flow
February 6 - 9, 2017

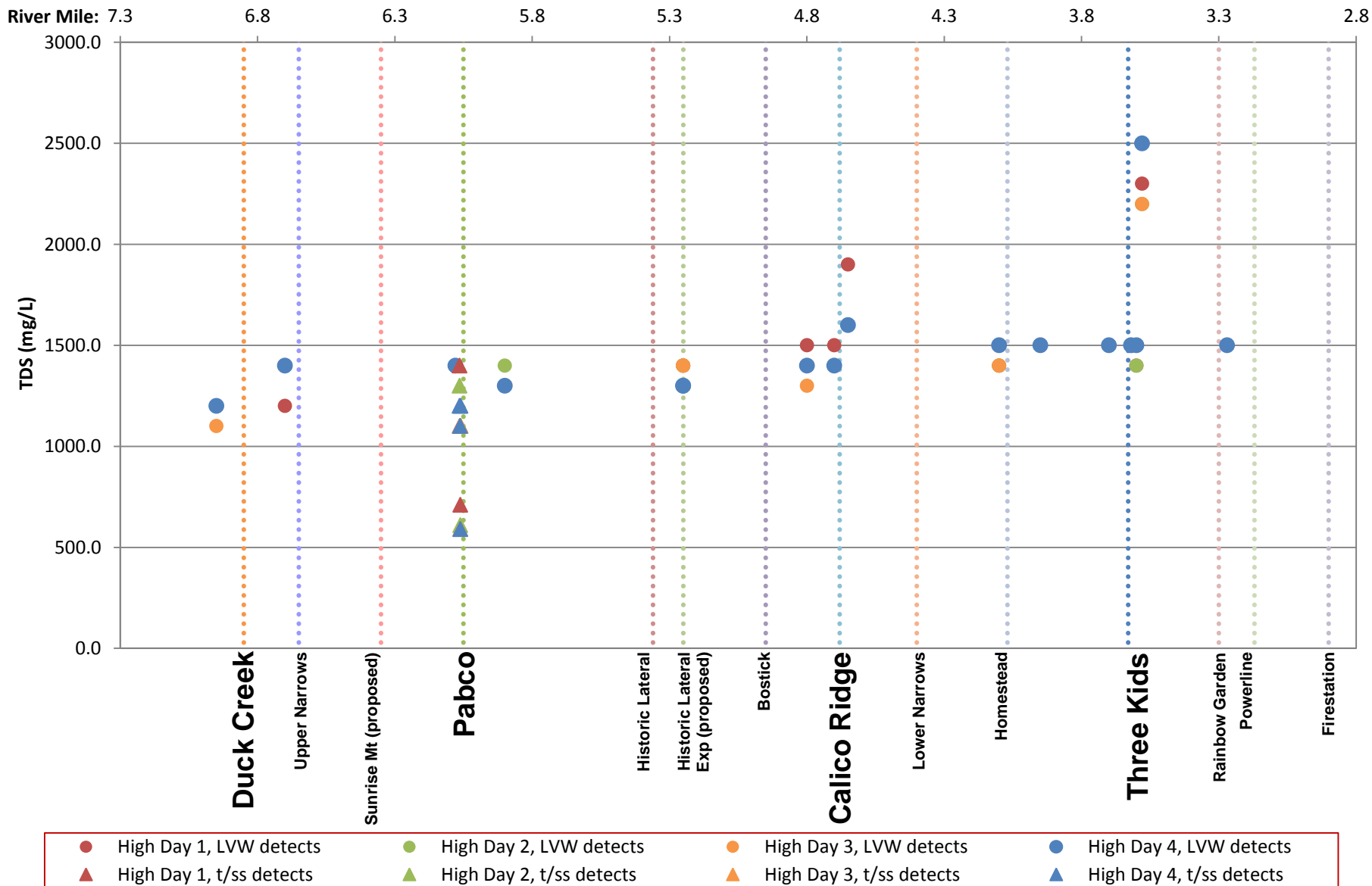


- Low Day 1, LVW detects
- Low Day 2, LVW detects
- Low Day 3, LVW detects
- Low Day 4, LVW detects
- ▲ Low Day 1, t/ss detects
- ▲ Low Day 2, t/ss detects
- ▲ Low Day 3, t/ss detects
- ▲ Low Day 4, t/ss detects

Notes: (1) Field duplicates not shown.

LVW = Las Vegas Wash
t/ss = tributary/sidestream including Wastewater Channel

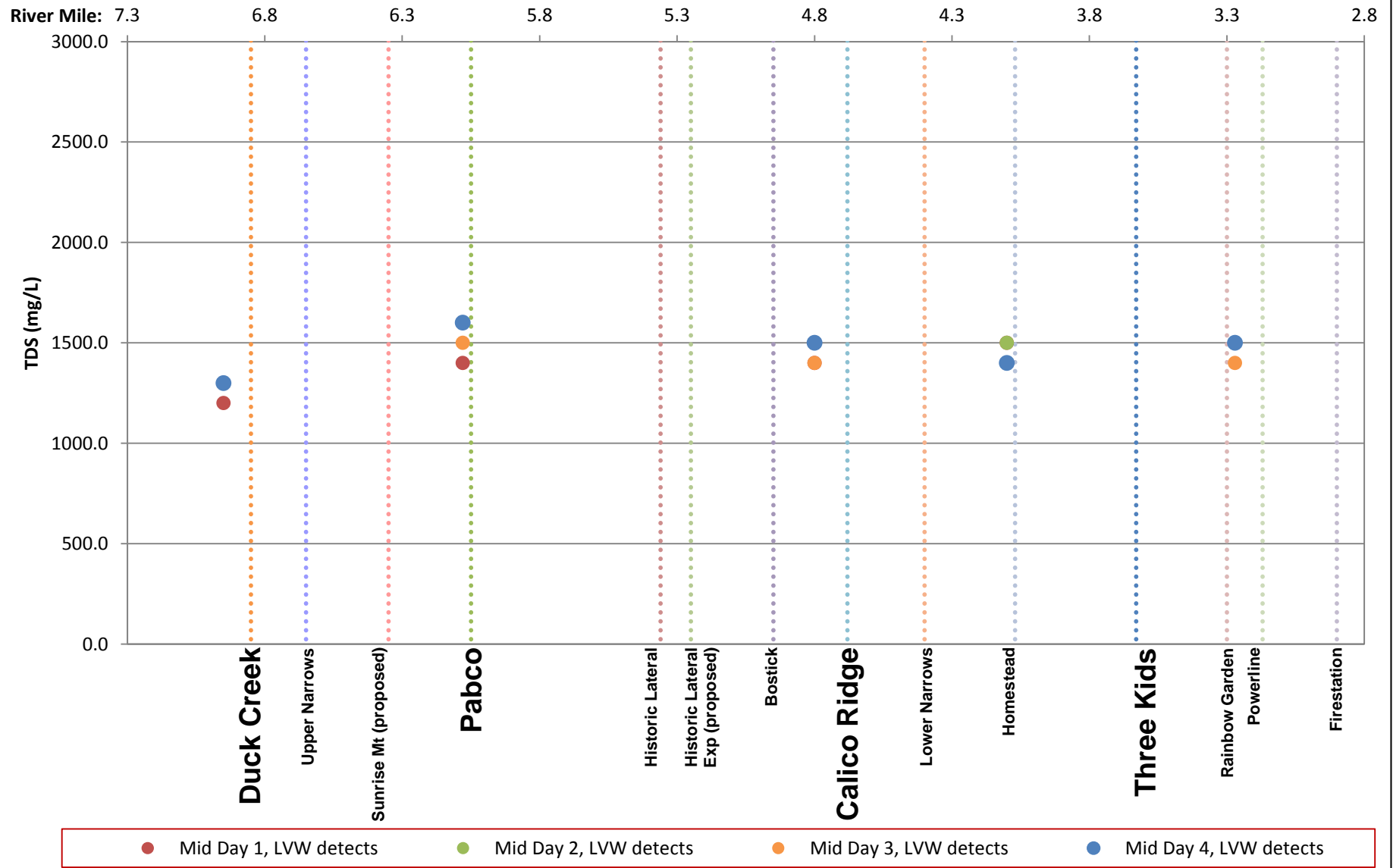
Figure 38. Total Dissolved Solids in Surface Water Samples by River Mile: Discrete Sampling High Flow
February 6 - 9, 2017



Notes: (1) Field duplicates not shown.

LVW = Las Vegas Wash
t/ss = tributary/sidestream including Wastewater Channel

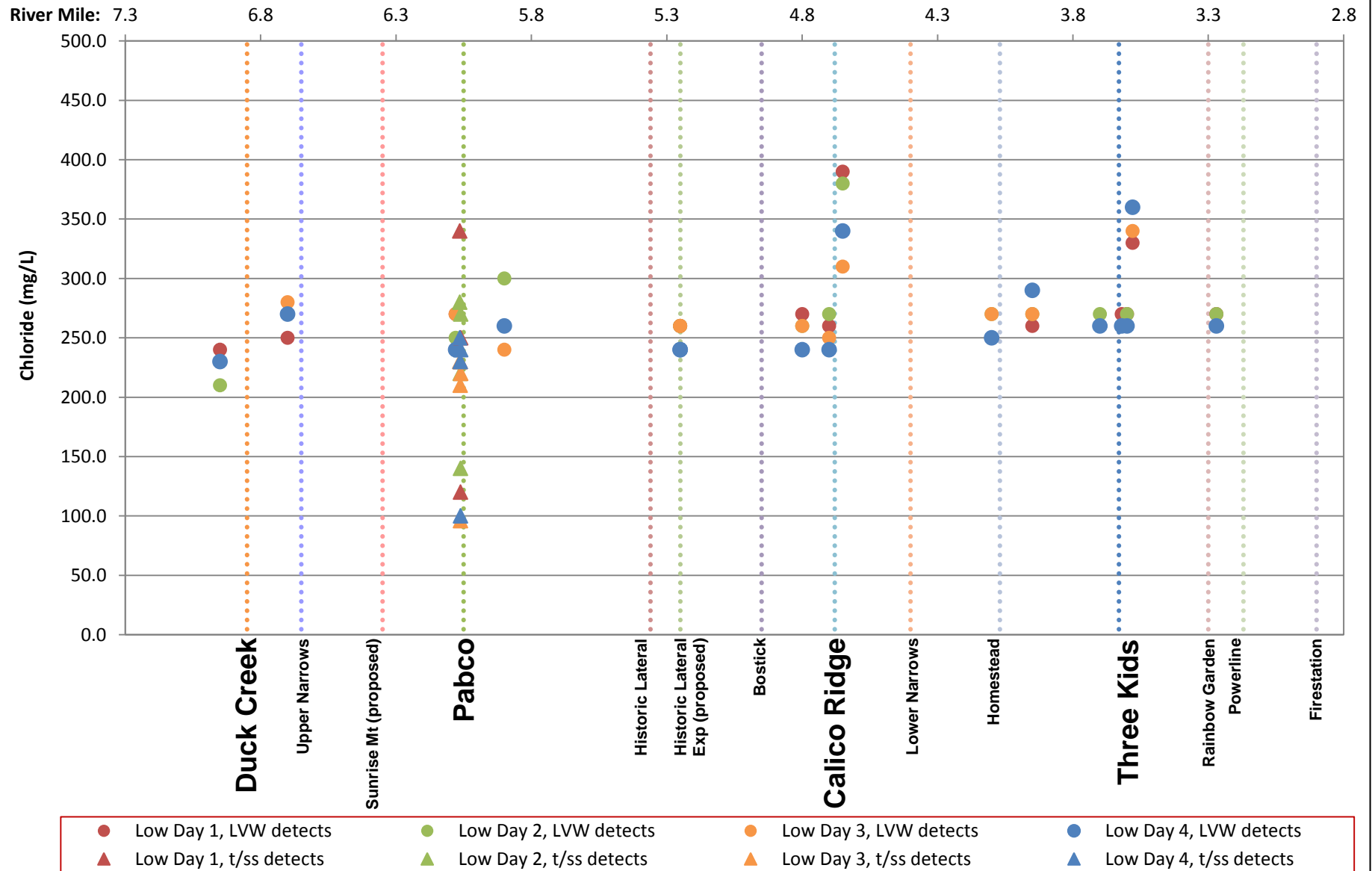
Figure 39. Total Dissolved Solids in Surface Water Samples by River Mile: Discrete Sampling Mid Flow
February 6 - 9, 2017



Notes: (1) Field duplicates not shown.

LVW = Las Vegas Wash
t/ss = tributary/sidestream including Wastewater Channel

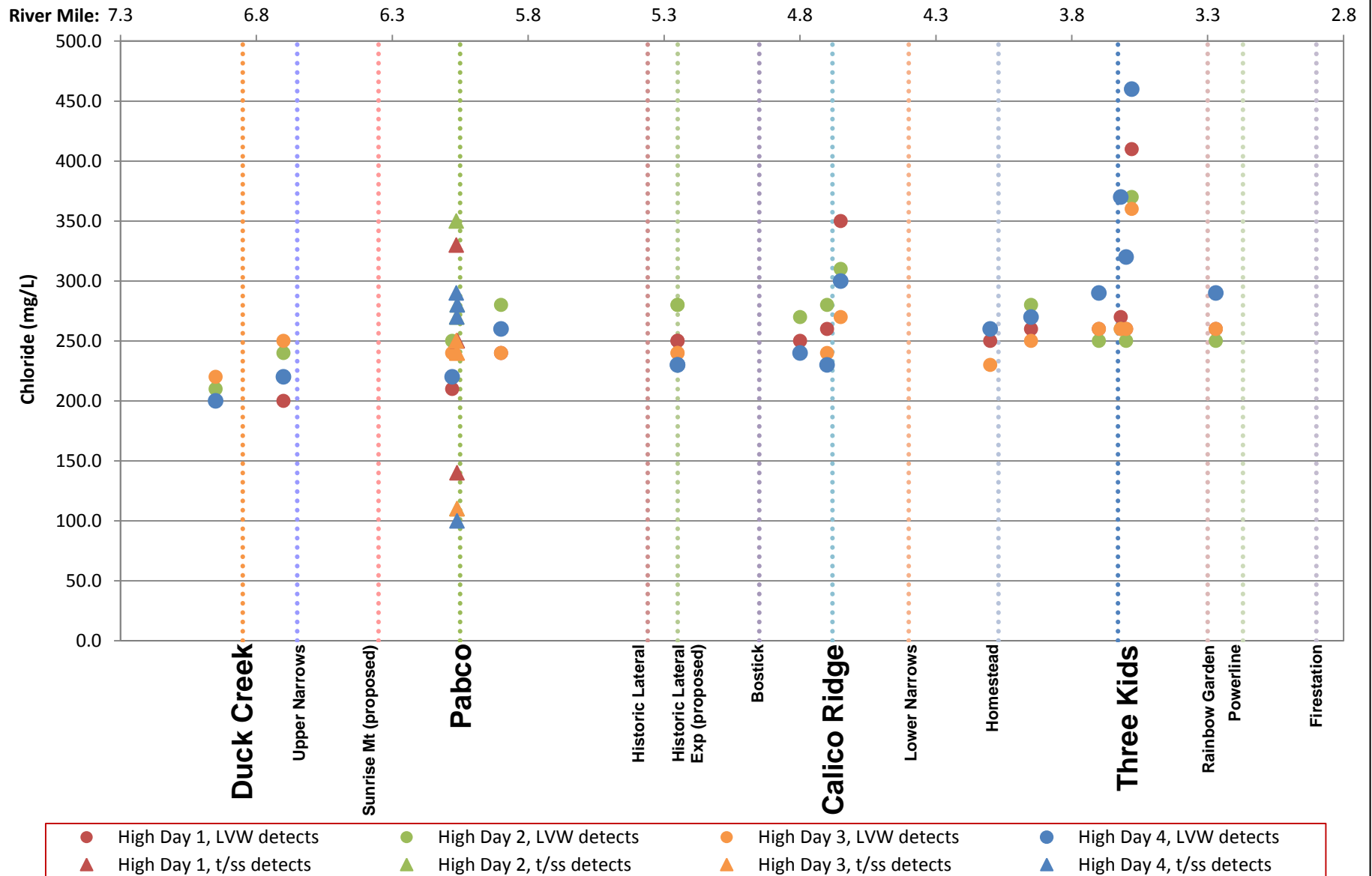
Figure 40. Chloride in Surface Water Samples by River Mile: Discrete Sampling Low Flow
February 6 - 9, 2017



Notes: (1) Field duplicates not shown.

LVW = Las Vegas Wash
t/ss = tributary/sidestream including Wastewater Channel

Figure 41. Chloride in Surface Water Samples by River Mile: Discrete Sampling High Flow
February 6 - 9, 2017

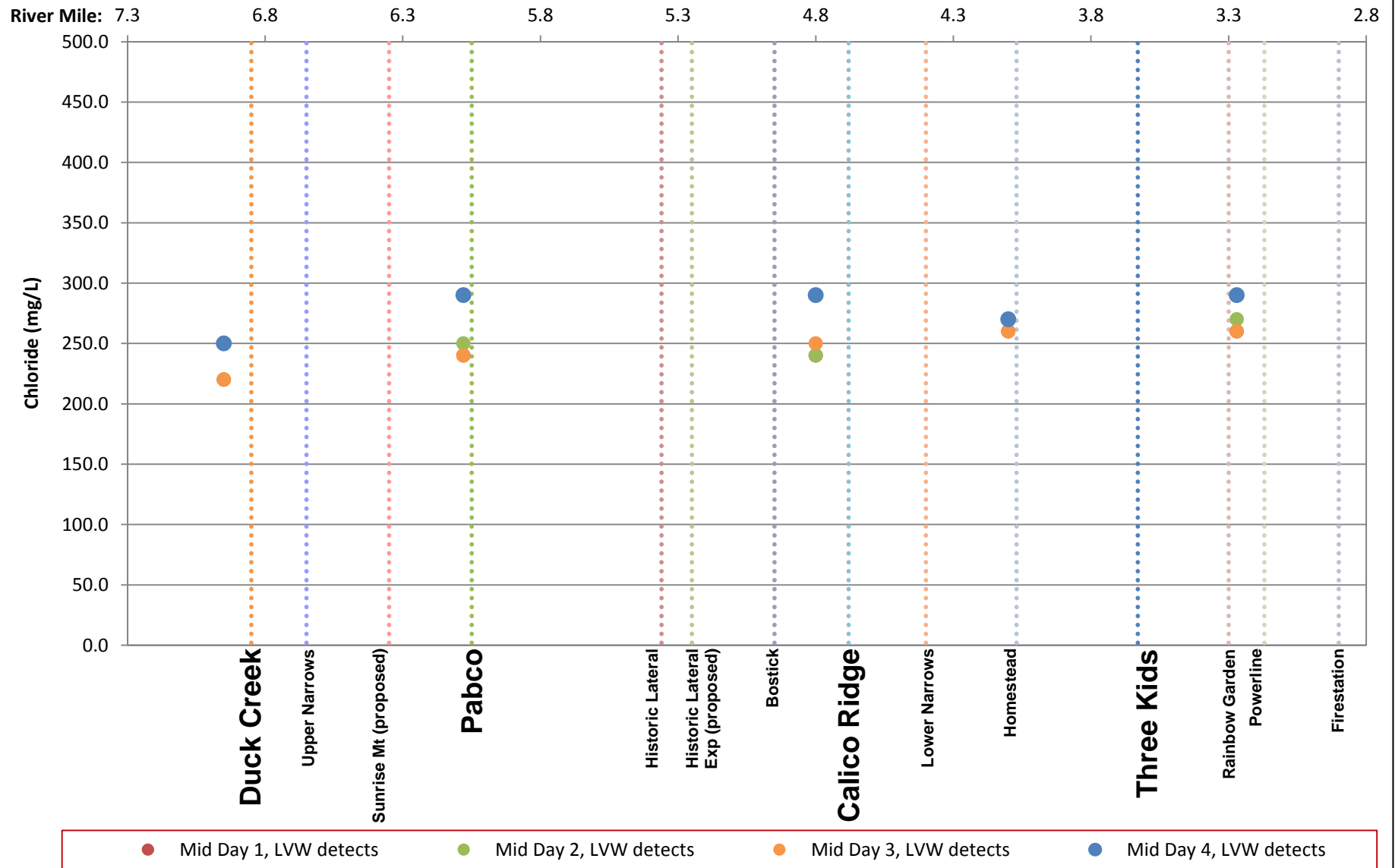


Notes: (1) Field duplicates not shown.

LVW = Las Vegas Wash

t/ss = tributary/sidestream including Wastewater Channel

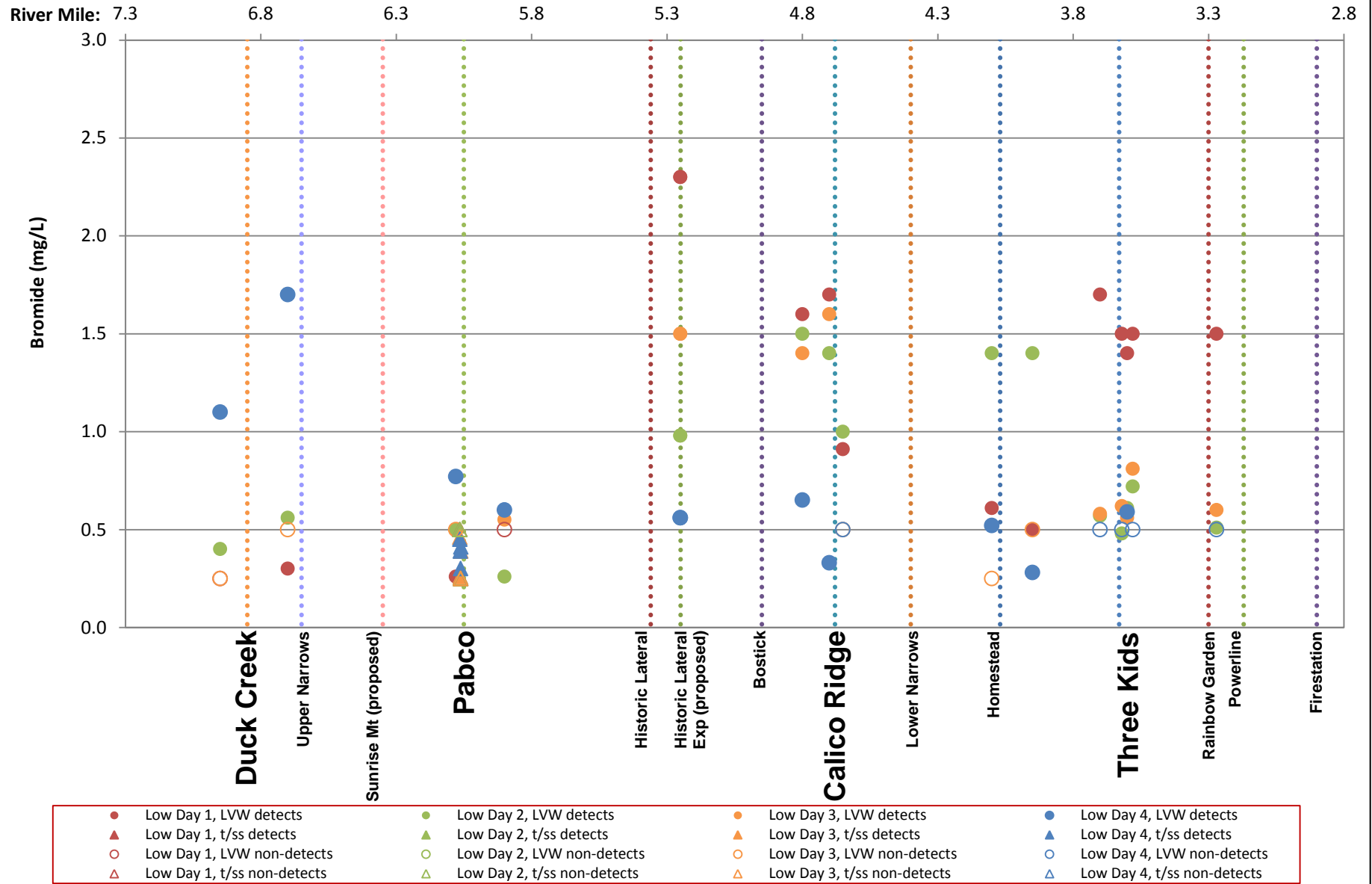
**Figure 42. Chloride in Surface Water Samples by River Mile: Discrete Sampling Mid Flow
February 6 - 9, 2017**



Notes: (1) Field duplicates not shown.

LVW = Las Vegas Wash
t/ss = tributary/sidestream including Wastewater Channel

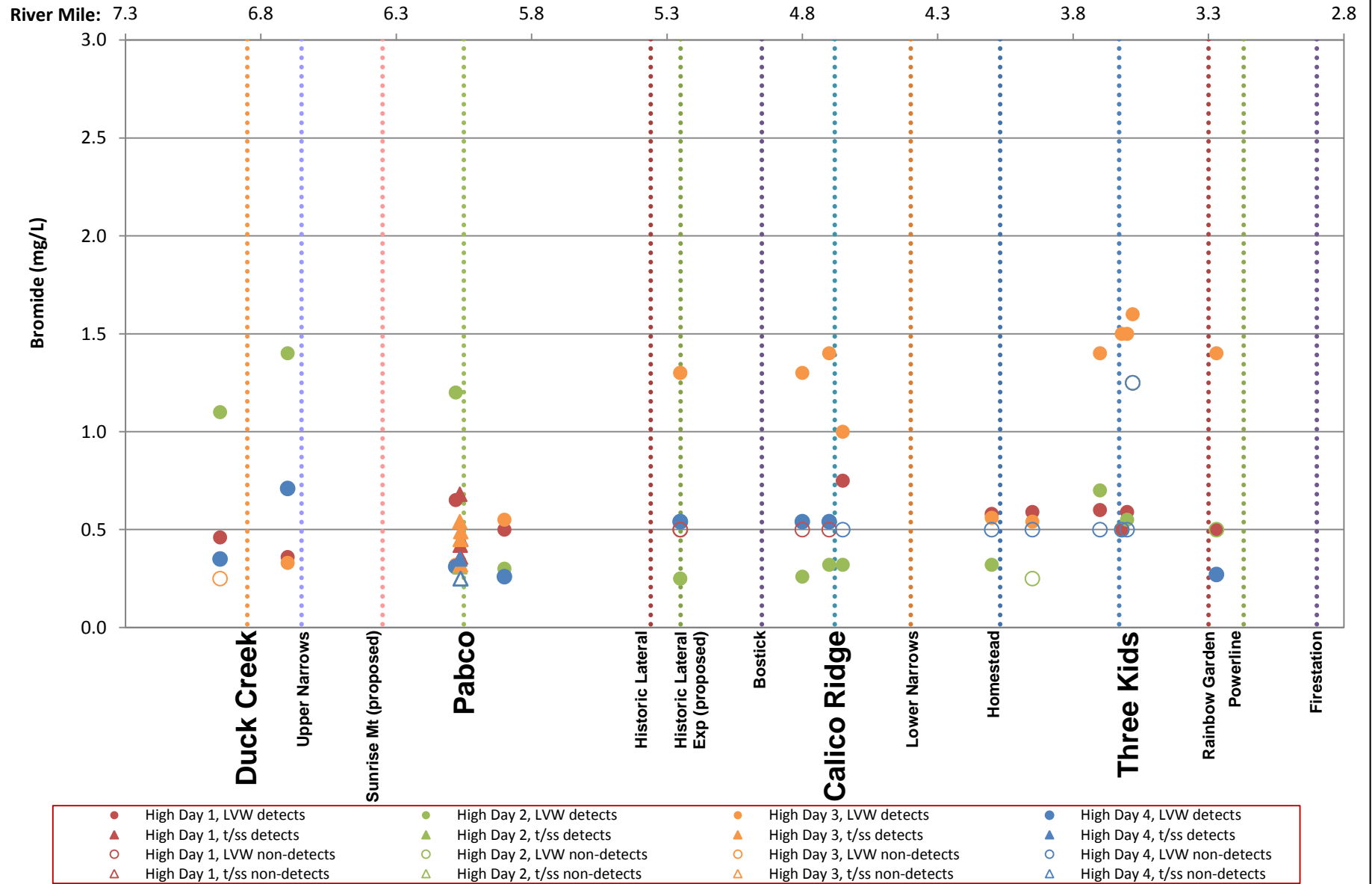
Figure 43. Bromide in Surface Water Samples by River Mile: Discrete Sampling Low Flow
February 6 - 9, 2017



Notes: (1) Non-detects shown at detection limit.
(2) Field duplicates not shown.

LVW = Las Vegas Wash
t/ss = tributary/sidestream including Wastewater Channel

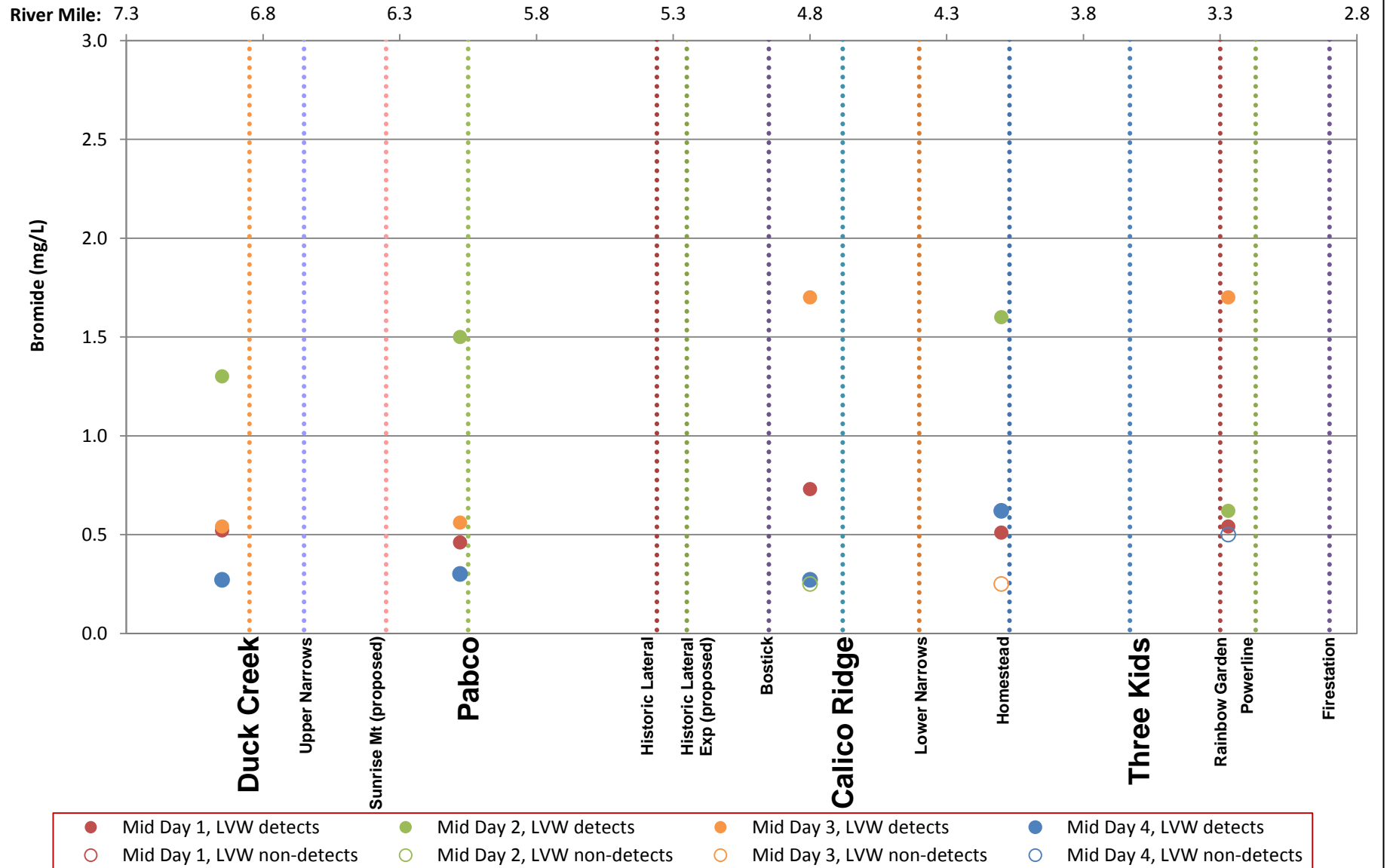
Figure 44. Bromide in Surface Water Samples by River Mile: Discrete Sampling High Flow
February 6 - 9, 2017



Notes: (1) Non-detects shown at detection limit.
(2) Field duplicates not shown.

LVW = Las Vegas Wash
t/ss = tributary/sidestream including Wastewater Channel

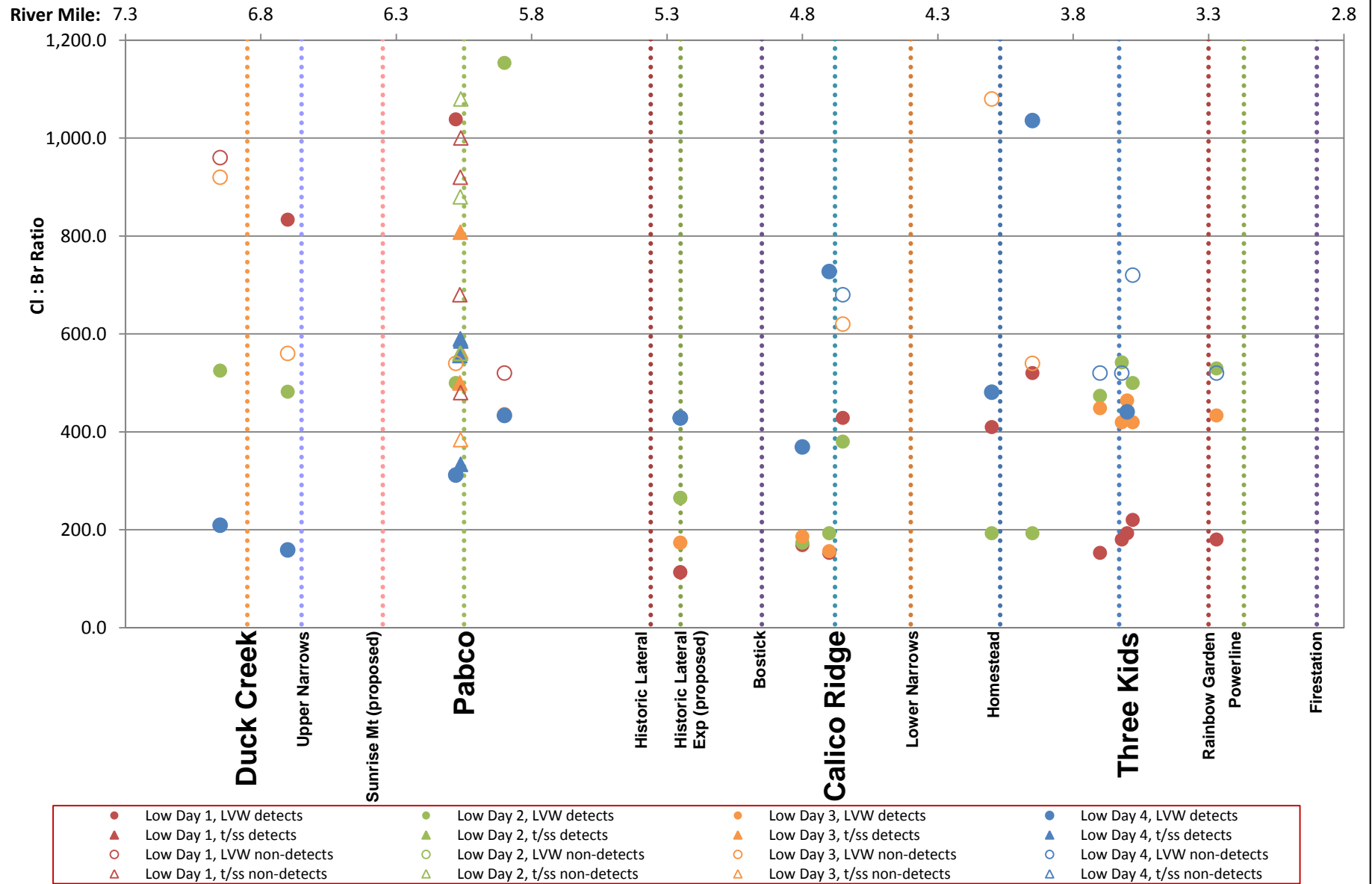
Figure 45. Bromide in Surface Water Samples by River Mile: Discrete Sampling Mid Flow
February 6 - 9, 2017



Notes: (1) Non-detects shown at detection limit.
(2) Field duplicates not shown.

LVW = Las Vegas Wash
t/ss = tributary/sidestream including Wastewater Channel

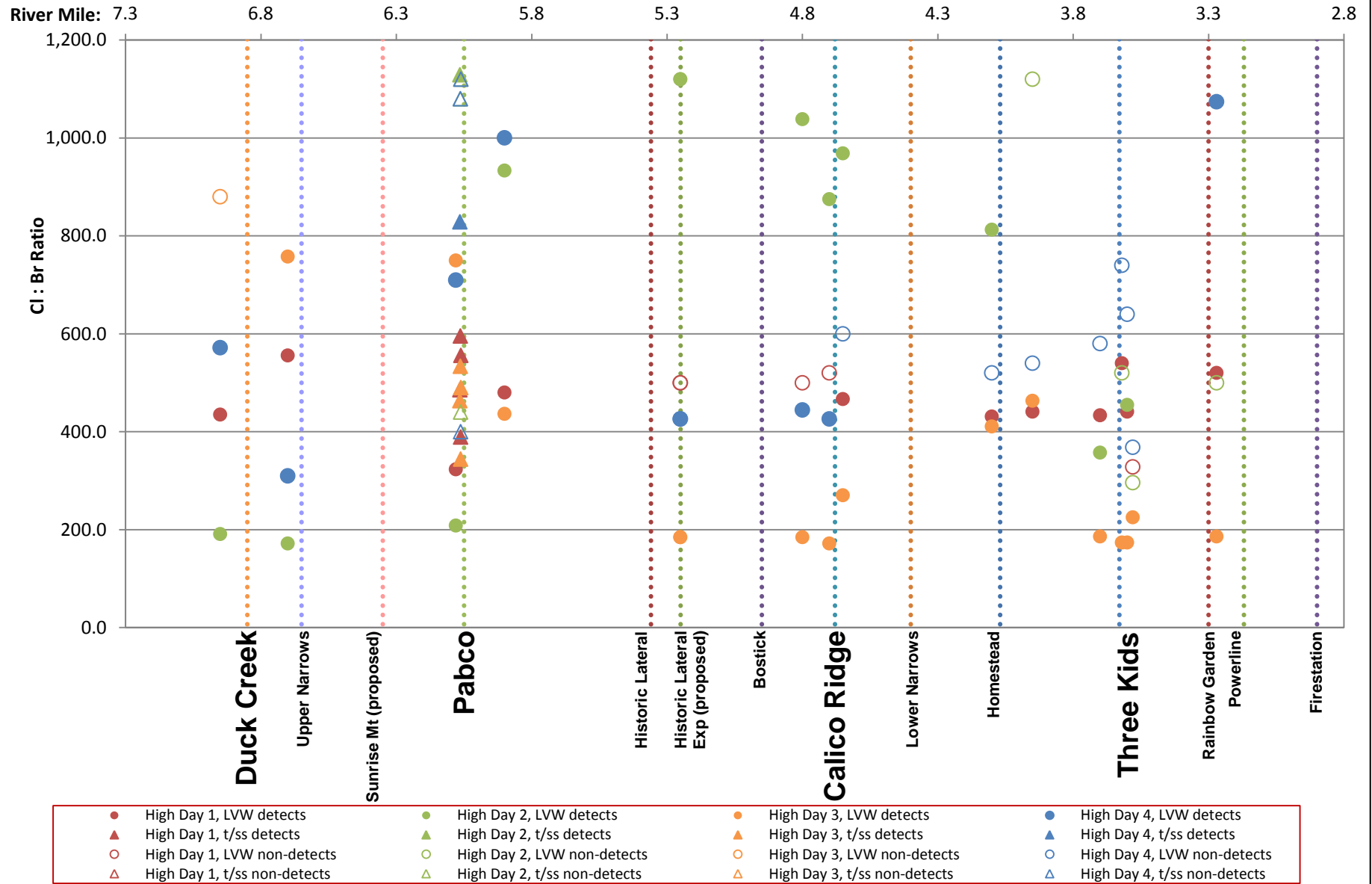
Figure 46. Chloride/Bromide Ratio in Surface Water Samples by River Mile: Discrete Sampling Low Flow
February 6 - 9, 2017



Notes: (1) Ratios with non-detects calculated using detection limit.
(2) Field duplicates not shown.

LVW = Las Vegas Wash
t/ss = tributary/sidestream including Wastewater Channel

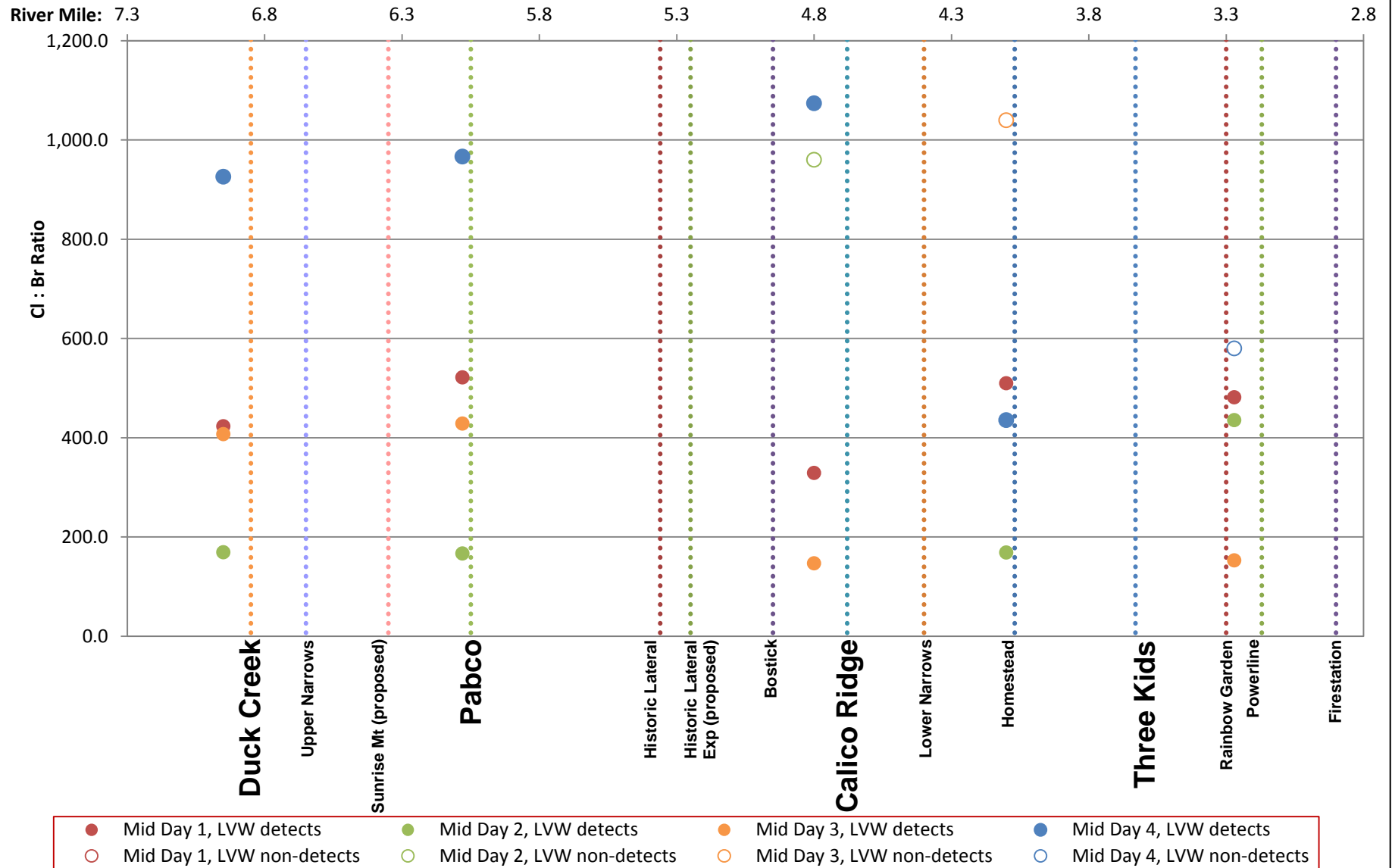
Figure 47. Chloride/Bromide Ratio in Surface Water Samples by River Mile: Discrete Sampling High Flow
February 6 - 9, 2017



Notes: (1) Ratios with non-detects calculated using detection limit.
(2) Field duplicates not shown.

LVW = Las Vegas Wash
t/ss = tributary/sidestream including Wastewater Channel

Figure 48. Chloride/Bromide Ratio in Surface Water Samples by River Mile: Discrete Sampling Mid Flow
February 6 - 9, 2017



Notes: (1) Ratios with non-detects calculated using detection limit.
(2) Field duplicates not shown.

LVW = Las Vegas Wash
t/ss = tributary/sidestream including Wastewater Channel

Figure 49. Perchlorate Flux Estimates (lb/day): Transect Samples

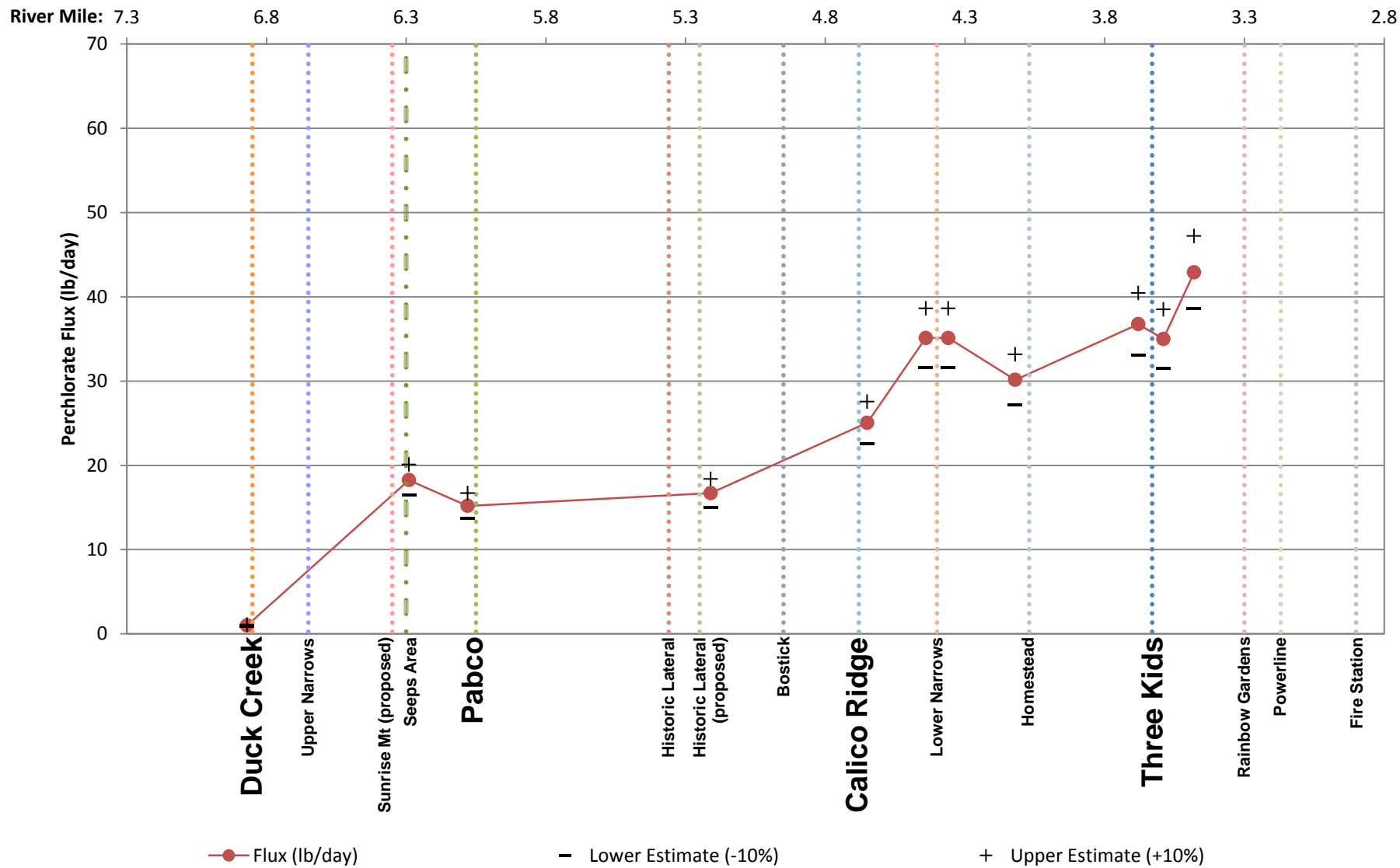


Figure 50. Perchlorate Flux Estimates (lb/day): Discrete Low Flow Samples

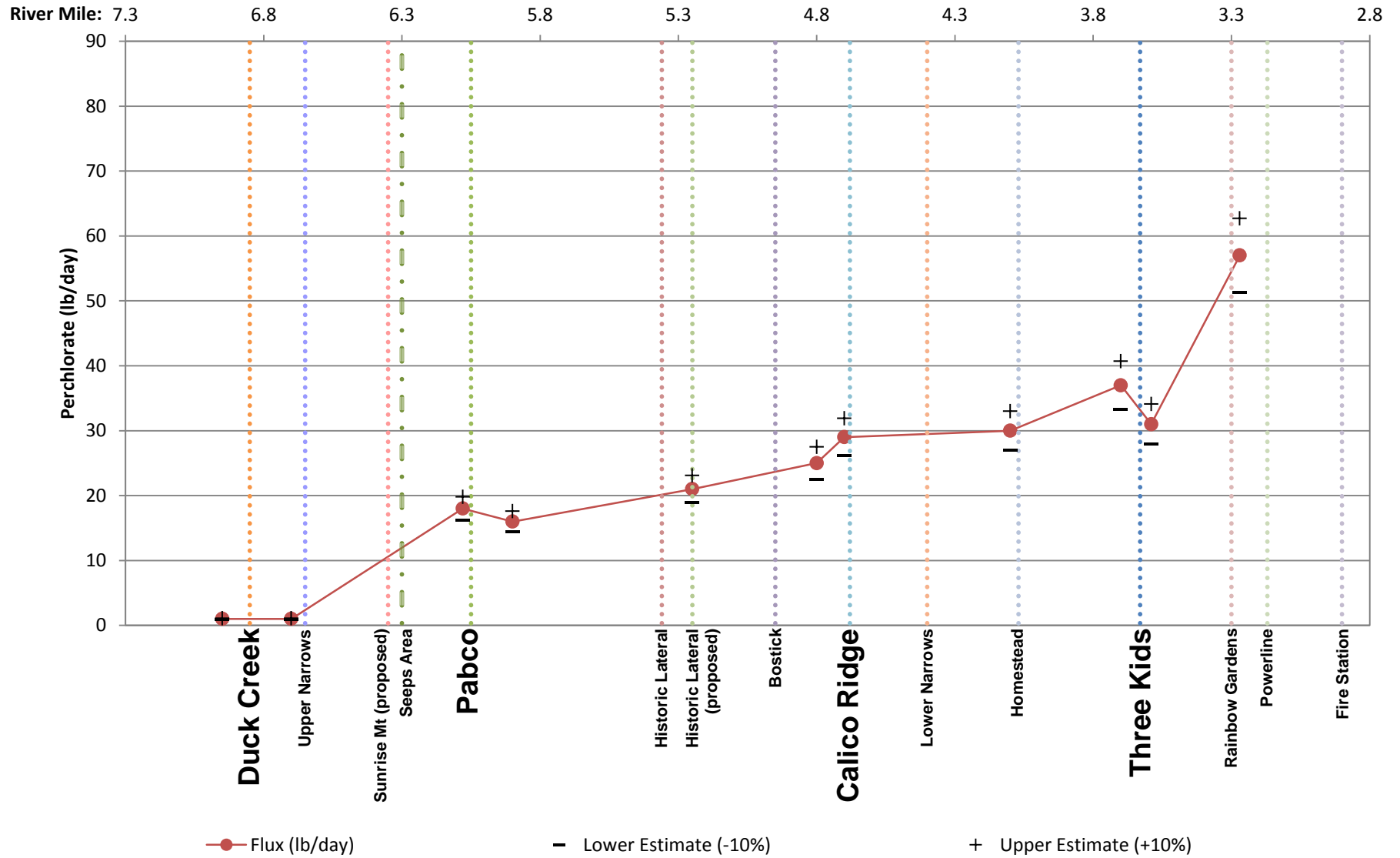


Figure 51. Perchlorate Flux Estimates (lb/day): Discrete High Flow Samples

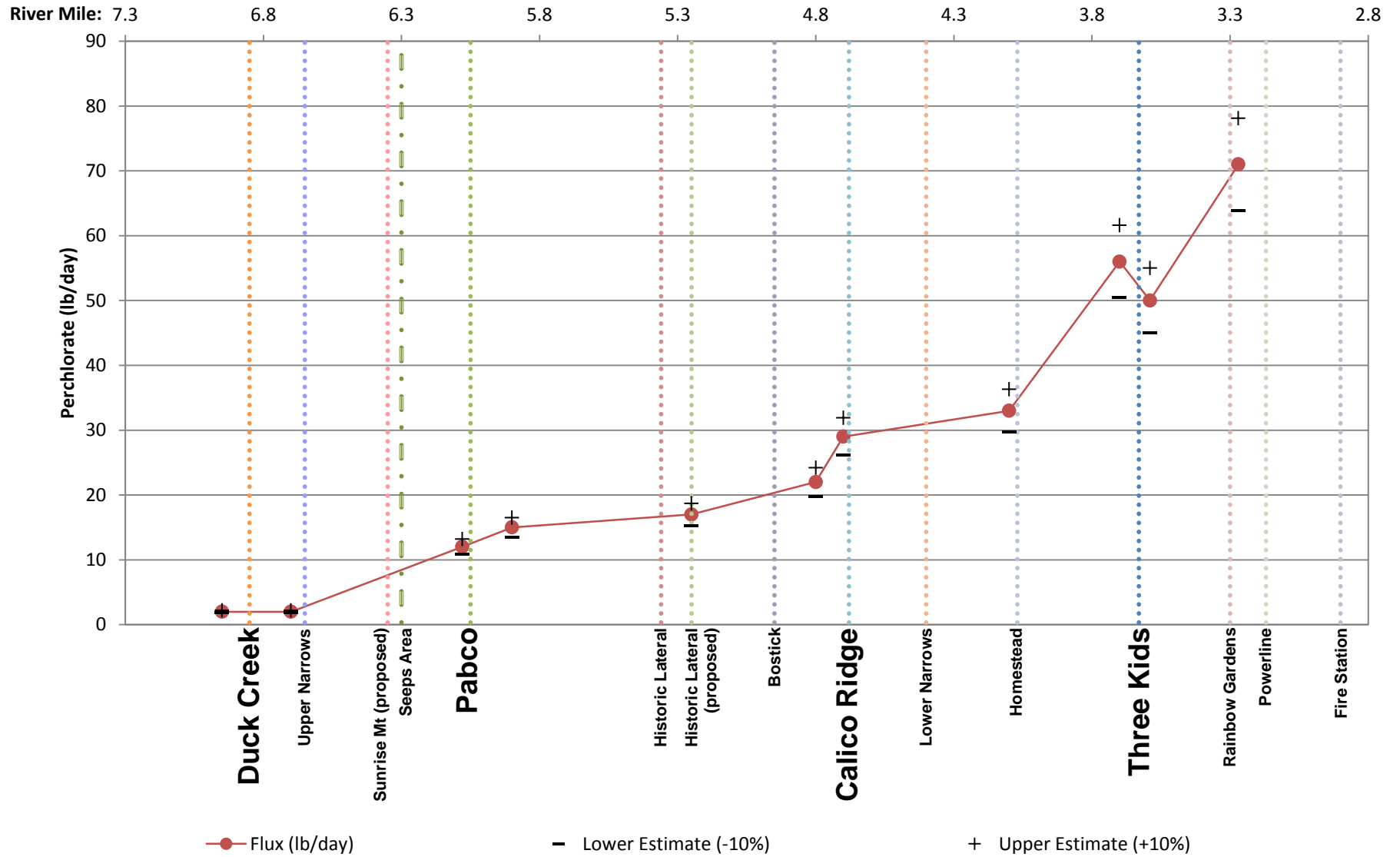
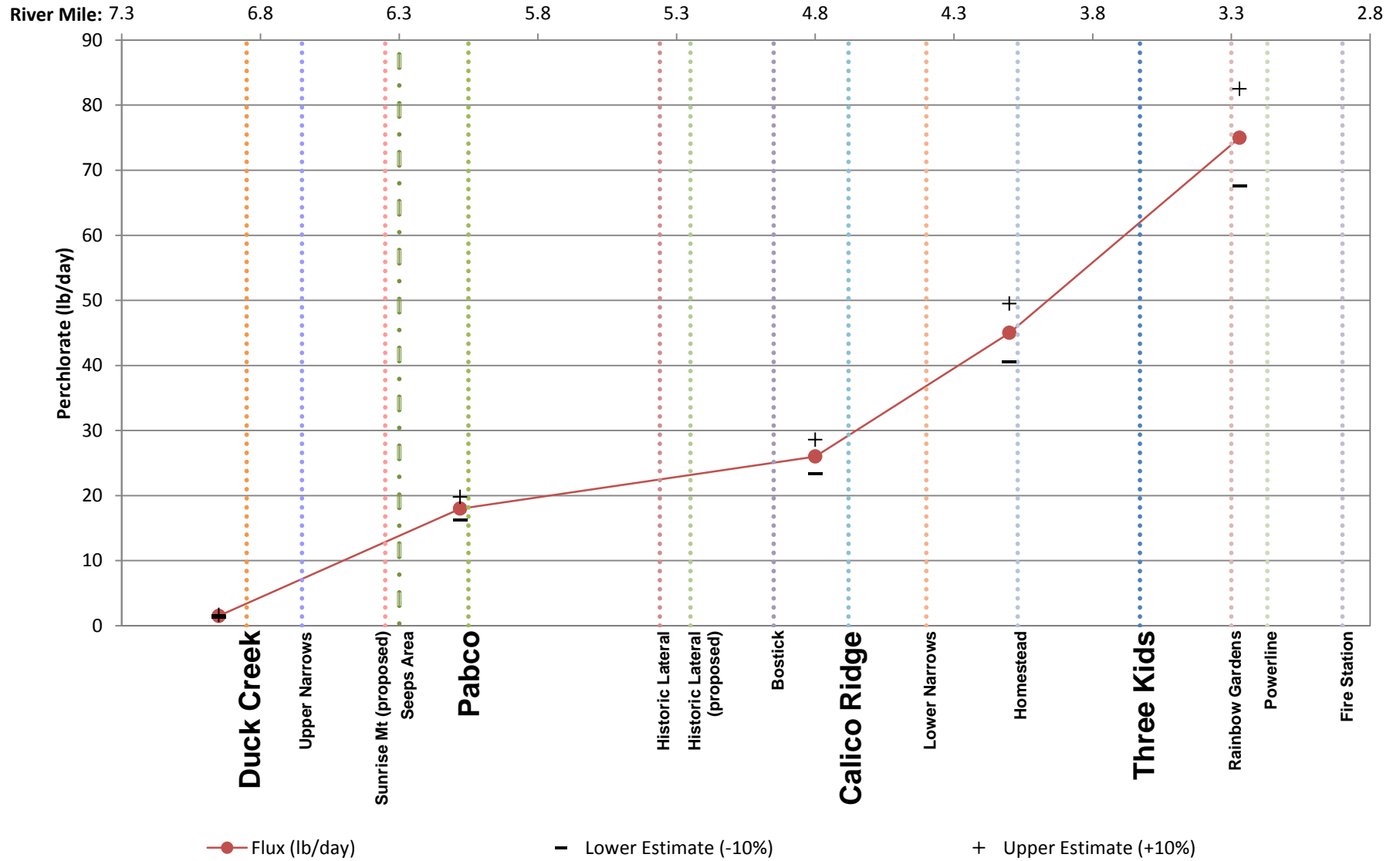
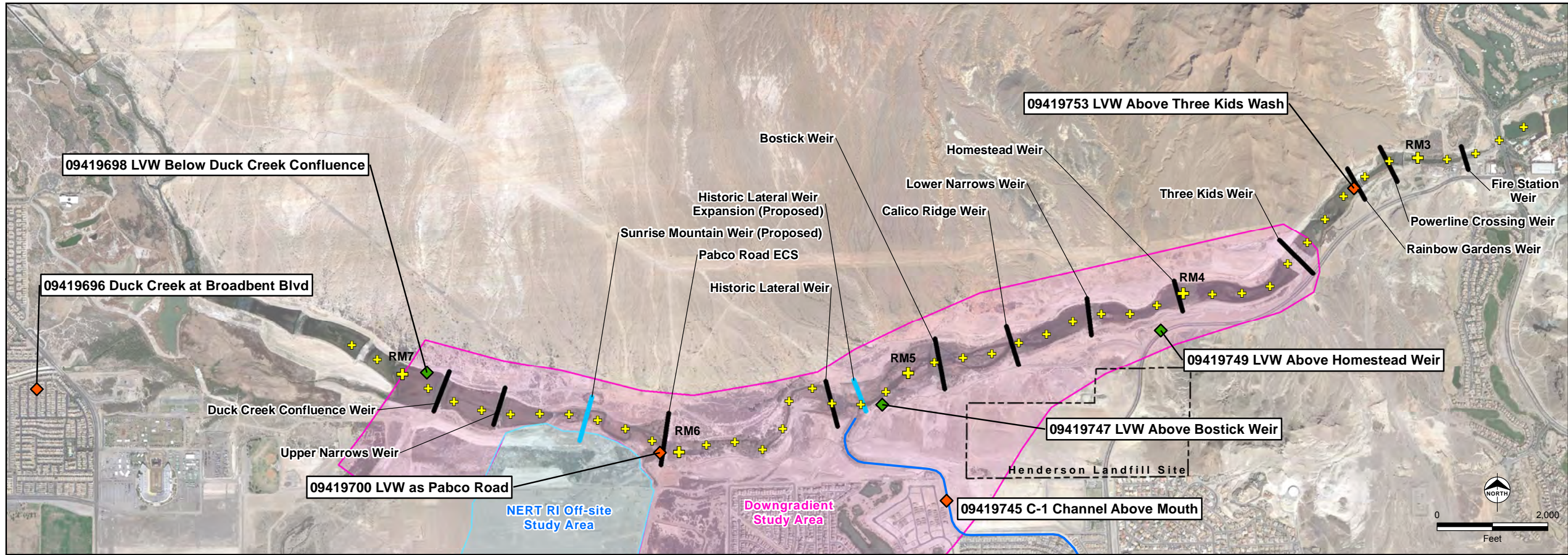


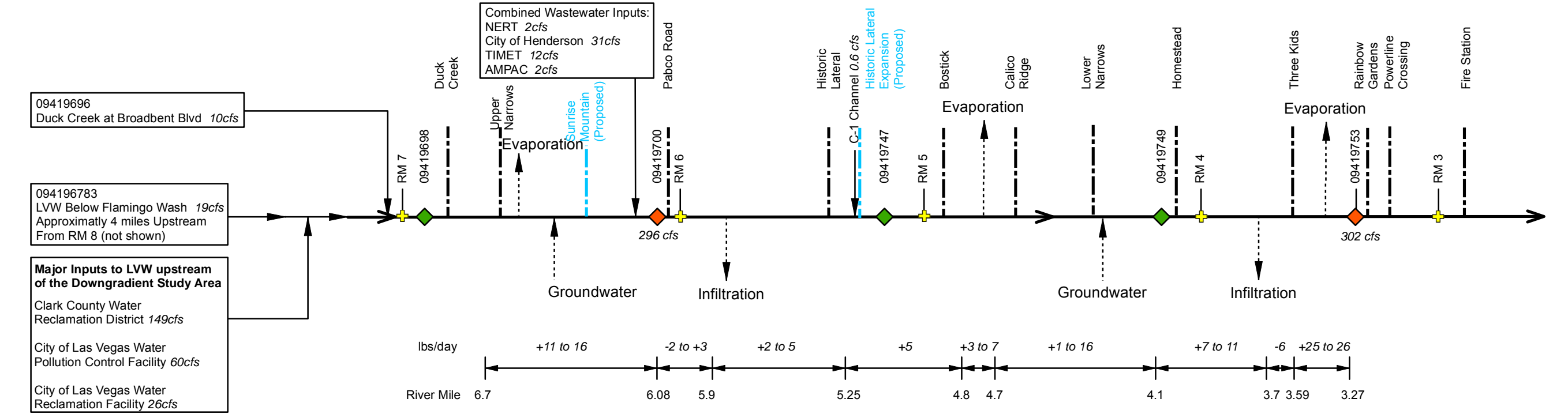
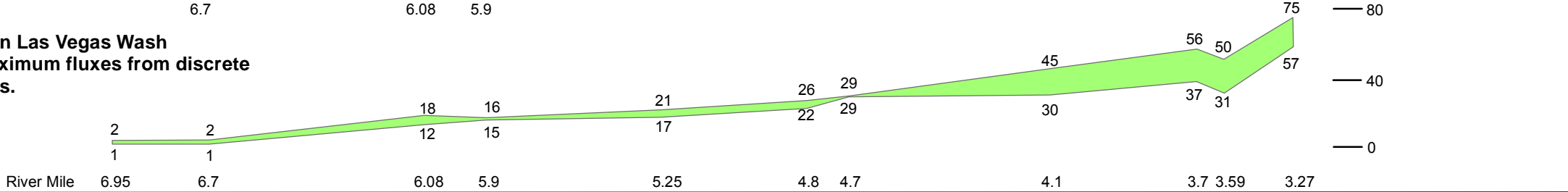
Figure 52. Perchlorate Flux Estimates (lb/day): Discrete Mid Flow Samples





- Legend**
- ◆ Approximate Location of Temporary USGS Stream Gage (Installed September 2016)
 - ◆ Approximate Location of Permanent USGS Stream Gage
 - + River Mile (RM)
 - Channels
 - Weir
 - Weir (Proposed)
 - NERT RI Downgradient Study Area
 - NERT RI Off-site Study Area
 - ⋮ Non Point Source / Influence
- LVW = Las Vegas Wash
 cfs = Cubic Feet per Second
 µg/L = Micrograms per Liter

February 2017 Perchlorate Flux in lbs/day in Las Vegas Wash
 Fluxes presented are the minimum and maximum fluxes from discrete sampling, including low, mid and high flows.



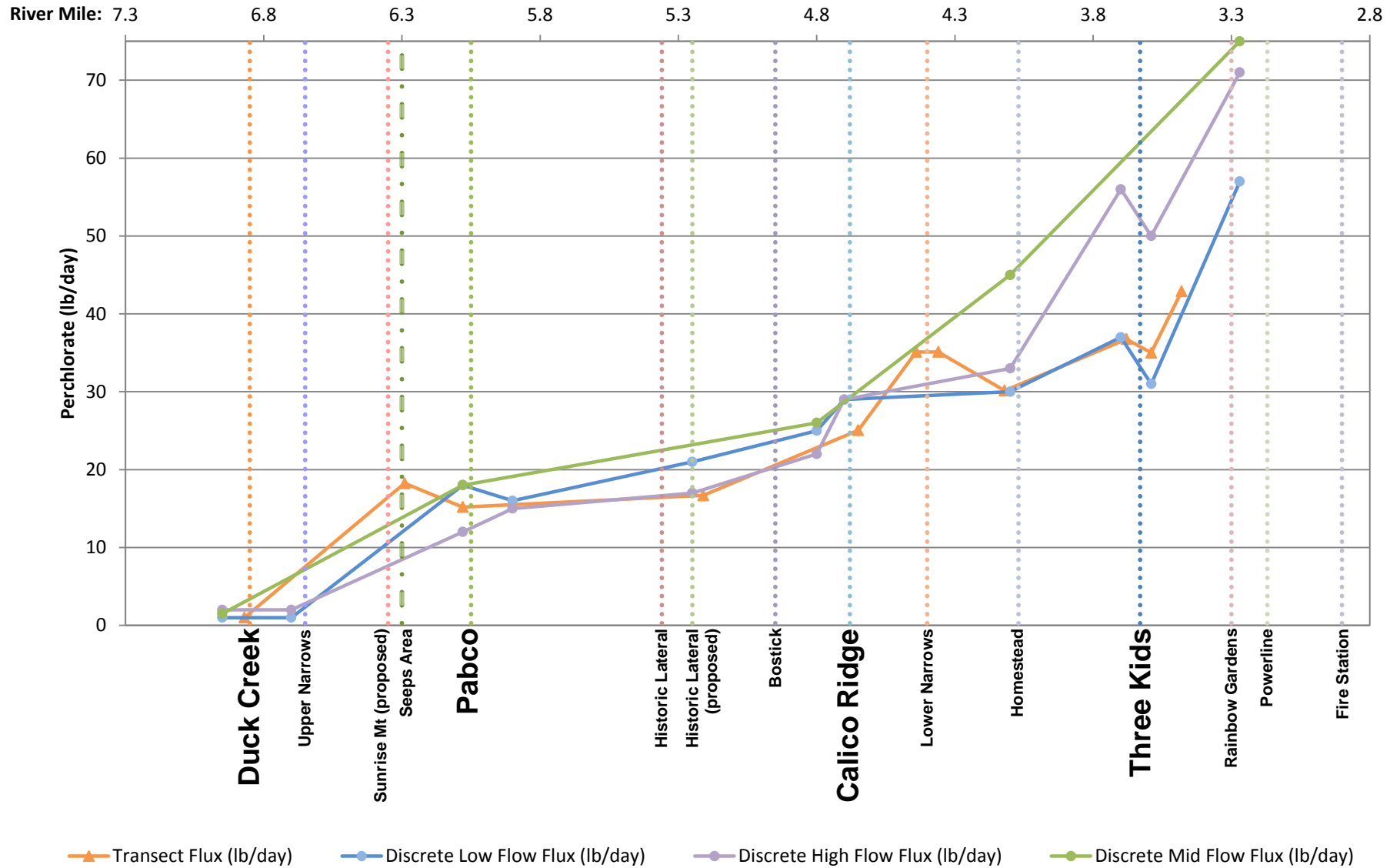
NERT RI Downgradient Study Area

Conceptual Site Model Las Vegas Wash

Date: 6/14/2017 Project: 60477365

AECOM Figure 53

Figure 54. Perchlorate Flux Estimates (lb/day): Transect and Discrete Samples



Tables

Table 1 Cross Reference of Historical Sample Locations, Sample IDs, Features, and River Miles
 NERT Remedial Investigation, Downgradient Study Area
 Henderson, Nevada

Location ID / Feature	Former River Mile	Revised River Mile
LW7.2	7.20	6.95
LW6.85	6.85	6.90
T6.8	6.80	6.87
Duck Creek Weir	6.80	6.85
LW6.7	6.70	6.70
Upper Narrows Weir	6.60	6.65
KM-71 [seep]	6.40	6.36
Sunrise Mountain Weir (Proposed)	6.36	6.35
Seep Area	6.30	6.30
T6.35	6.35	6.29
LW6.05	6.05	6.08
T6.0	6.00	6.08
GLWC6.1_4 [t/ss]	6.14	6.06
GLWC6.1_3 [t/ss]	6.13	6.06
LWC6.1_2 [t/ss]	6.12	6.06
LWC6.1_1 [t/ss]	6.11	6.06
LWC6.1 [t/ss]	6.00	6.06
Pabco Road Weir	5.95	6.05
LW5.9	5.90	5.90
LW5.7	5.70	5.70
Historic Lateral Weir	5.55	5.36
LW5.5	5.50	5.30
LW5.3	5.30	5.25
Historic Lateral Weir Expansion (Proposed)	5.31	5.25
T5.3	5.30	5.21
Bostick Weir	5.10	4.95
LW4.95	4.95	4.80
GLW4.9	4.90	4.70
Calico Ridge Weir	4.80	4.68
GLW4.85	4.85	4.65
T4.75	4.75	4.65
T4.65	4.65	4.44
Lower Narrows Weir	4.50	4.40
T4.6	4.60	4.36
LWC4.6 [t/ss]	4.60	4.33
T4.2	4.20	4.12
GLW4.4	4.40	4.10
Homestead Weir	4.00	4.07
LWC4.1 [t/ss]	4.15	3.98
LW4.1	4.10	3.95
LW3.85	3.85	3.70
T3.8	3.80	3.68
Three Kids Weir	3.80	3.63
GLW3.78	3.78	3.62
LW3.75	3.75	3.60
T3.75	3.75	3.59
LWC3.7 [t/ss]	3.70	3.58
KM-67 [seep]	3.72	3.57
T3.5	3.50	3.48
Rainbow Gardens Weir	3.45	3.30
LW3.4	3.40	3.27
Powerline Crossing Weir	3.30	3.17
LW3.1	3.10	2.95
Fire Station Weir	3.05	2.90

Notes:

"Former River Mile" refers to location used in development of figures and tables through the SWIP.

"Revised River Mile" reflects a more accurate representation of location along the LVW.

t/ss - tributary/side stream; added for clarity and not part of actual Location ID

ID: identification

Table 2 Field Collected Water Quality Data: Sampling Event during USGS Seepage Study
 NERT Remedial Investigation - Downgradient Study Area
 Henderson, Nevada

Location ID	Date and Time of Measurement	Total Depth (ft)	Sample Depth (ft)	Temperature (°C)	Spec. Cond. (µS/cm)	pH	Turbidity (NTU)	Dissolved Oxygen	
								mg/L	% saturation
LW7.2	12/8/2016 15:40	2.00	NR	21.78	1740	8.23	Error ¹	9.56	109.5
LW6.7	12/8/2016 15:00	1.00	NR	20.43	2163	8.31	NR	10.67	119.3
LW6.05	12/8/2016 13:45	1.00	NR	20.21	2041	8.48	Error ¹	11.10	123.3
GLWC6.1_3 [t/ss]	12/8/2016 12:15	1.50	0.80	23.40	1602	7.63	NR	8.44	99.7
GLWC6.1_4 [t/ss]	12/8/2016 13:25	1.00	NR	23.25	2343	7.34	NR	7.40	87.2
LWC6.1_1 [t/ss]	12/8/2016 11:45	NR	NR	22.62	1779	7.84	Error ¹	8.51	99.4
LWC6.1_2 [t/ss]	12/8/2016 12:05	1.00	NR	25.29	1012	8.46	Error ¹	8.33	101.7
LW5.9	12/8/2016 10:00	1.00	NR	18.36	2115	8.24	Error ¹	10.31	110.2
LW5.3	12/8/2016 9:25	3.50	1.75 ³	17.79	2131	8.16	Error ¹	9.96	105.6
LW4.95	12/8/2016 13:58	1.40	0.70	18.90	2193	8.36	3.8	9.24	100.2
GLW4.9	12/8/2016 14:18	2.20	1.10	18.69	2204	8.31	4.9	8.87	95.8
GLW4.85	12/8/2016 14:45	1.60	0.80	18.92	2404	8.07	3.1	7.36	80.0
GLW4.4	12/8/2016 12:06	2.20	1.10	17.48	2186	8.20	4.0	9.83	103.5
LW4.1	12/8/2016 11:28	0.40	0.20	17.09	2175	8.15	5.6	9.56	98.9
LW3.85	12/8/2016 10:36	0.60	0.30	17.15	2128	8.46	4.2	12.19	127.4
GLW3.78	12/8/2016 10:05	0.25	0.10	16.04	NR ²	8.22	5.1	10.05	101.7
LW3.75	12/8/2016 9:07	0.50	0.30	16.19	2112	8.29	6.2	10.57	108.0
LWC3.7 [t/ss]	12/8/2016 9:24	1.20	0.60	23.12	4342	7.18	NR	0.65	7.8
LW3.4	12/8/2016 8:17	1.00	0.50	15.87	2151	8.14	8.9	9.63	89.0

Notes:

- 1) Field notes indicate turbidity sensor was not working properly; reading "Error".
- 2) Sample location was too shallow to submerge the specific conductivity sensor in the water.
- 3) Due to total depth, two samples were collected for laboratory analysis (from 1.5 feet and 2.5 feet) at LW5.3; however, only one set of water quality parameters were recorded (measured from 1.75 feet).

NR - Not Recorded

Spec. Cond. - Specific Conductivity

LW - Prefix indicates historical locations that were sampled in May 2016

GLW - Prefix indicates new grab locations

ft - feet

ID - identification

t/ss - tributary/side stream; added for clarity and not part of actual Location ID

% saturation for dissolved oxygen is based on sample temperature and daily atmospheric barometric pressure (input during calibration)

°C - degrees Celsius

µS/cm - micro-Siemens per centimeter

NTU - Nephelometric Turbidity Unit

mg/L - milligrams per Liter

% - Percent

Table 3 GPS Coordinates: Sampling Event during USGS Seepage Study
 NERT Remedial Investigation - Downgradient Study Area
 Henderson, Nevada

Surface Water Location Sample ID	Date and Time of Sample Collection		GPS Coordinates	
			Northing	Easting
LW7.2	12/8/2016	15:45	26735154.1764	828169.516523
LW6.7	12/8/2016	15:10	26734766.8596	829555.863160
LW6.05	12/8/2016	13:50	26734195.7184	832631.194936
GLWC6.1_3 [t/ss]	12/8/2016	12:20	26733537.9448	832556.136687
GLWC6.1_4 [t/ss]	12/8/2016	13:25	26733989.3753	832537.314546
LWC6.1_1 [t/ss]	12/8/2016	11:48	26733476.4360	832600.633974
LWC6.1_2 [t/ss]	12/8/2016	12:10	26733438.3482	832570.092368
LW5.9	12/8/2016	10:25	26734111.4991	833447.419025
LW5.3	12/8/2016	9:29	26734883.9414 ^[1]	836445.363817 ^[1]
LW5.3	12/8/2016	9:34	26734883.9414 ^[1]	836445.363817 ^[1]
LW4.95	12/8/2016	14:02	26735800.8645	838354.591954
GLW4.9	12/8/2016	14:20	26735744.7130	838936.950697
GLW4.85	12/8/2016	14:50	26735901.5496	839338.536180
GLW4.4	12/8/2016	12:10	26736802.1895	841941.137930
LW4.1	12/8/2016	11:32	26736833.1567	842708.315530
LW3.85	12/8/2016	10:40	26737186.6278	843989.553781
GLW3.78	12/8/2016	10:12	26737396.7569	844398.532622
LW3.75	12/8/2016	9:12	26737672.9440	844386.046426
LWC3.7 [t/ss]	12/8/2016	9:30	26737590.0758	844557.400742
LW3.4	12/8/2016	8:23	26738900.7254	845419.303874

Notes:

ID - Identification

t/ss - tributary/side stream; added for clarity and not part of actual Location ID

GPS - global positioning system

(1) Coordinates are the same for shallow and deep samples.

Table 4 Samples Collected: Sampling Event during USGS Seepage Study
 NERT Remedial Investigation - Downgradient Study Area
 Henderson, Nevada

Sample ID	Date	Time	QC Type
LW7.2-20161208-1.0	12/8/2016	15:45	
LW6.7-20161208-0.5	12/8/2016	15:10	
LW6.05-20161208-0.5	12/8/2016	13:50	MS/MSD
GLWC6.1_3-20161208-0.5	12/8/2016	12:20	
GLWC6.1_4-20161208-0.5	12/8/2016	13:25	
LWC6.1_1-20161208-0.5	12/8/2016	11:48	
LWC6.1_2-20161208-0.5	12/8/2016	12:10	
LW5.9-20161208-0.5	12/8/2016	10:25	
LW5.3-20161208-1.0	12/8/2016	9:34	
LW5.3-20161208-1.0-EB	12/8/2016	14:20	EB
LW5.3-20161208-2.5	12/8/2016	9:29	
LW4.95-20161208-0.7	12/8/2016	14:02	
GLW4.9-20161208-1.1	12/8/2016	14:20	
GLW4.85-20161208-0.8	12/8/2016	14:50	
GLW4.4-20161208-1.1	12/8/2016	12:10	
LW4.1-20161208-0.2	12/8/2016	11:32	
LW3.85-20161208-0.3	12/8/2016	10:40	
LW3.85-20161208-0.3-FD	12/8/2016	10:40	FD
GLW3.78-20161208-0.1	12/8/2016	10:12	
LW3.75-20161208-0.3	12/8/2016	9:12	
LWC3.7-20161208-0.6	12/8/2016	9:30	
LWC3.7-20161208-0.6-FD	12/8/2016	9:30	FD
LW3.4-20161208-0.5	12/8/2016	8:23	
LW3.4-20161208-0.5-FB	12/8/2016	14:25	FB

Notes:

ID - Identification

FD - field duplicate

FB - field blank

EB - equipment blank

MS - matrix spike

MSD - matrix spike duplicate

QC - quality control

Sample ID comprised of "Location"-"YYYYMMDD"-"Depth"-"QC type if applicable"

YYMMDD - YearMonthDay (example 20161208 is December 8, 2016)

Table 5 Surface Water Investigation Staff Gage and Transect Locations
 NERT Remedial Investigation, Downgradient Study Area
 Henderson, Nevada

Transect ID	Gage ID	Location	Rationale for Location
T3.5 ^[1]	AECOM Gage S3.5	Mid-way between Three Kids Weir and Rainbow Gardens Weir	Evaluate water quality downstream of groundwater inputs near Three Kids Weir
T3.75	AECOM Gage S3.75	Immediately downstream of Three Kids Weir	Check for potential groundwater inputs along Three Kids Weir upstream of KM67 (2,100 µg/L perchlorate)
T3.8	AECOM Gage S3.8	Immediately upstream of Three Kids Weir	Evaluate water quality entering Three Kids Weir
T4.2	USGS Gage 01419749 [Above Homestead Weir]	Upstream of Homestead Weir	Downgradient of western edge of Henderson Landfill Site near new USGS staff gage/seepage study
T4.6	AECOM Gage S4.6	Downstream of Lower Narrows Weir	Downgradient of middle portions of Henderson Landfill Site in region of observed perchlorate gain
T4.65	AECOM Gage S4.65	Upstream of Lower Narrows Weirs	Downgradient of middle portions of Henderson Landfill Site in region of observed perchlorate gain
T4.75	AECOM Gage S4.75	Downstream of Calico Ridge Weir	Downgradient of western edge of Henderson Landfill Site in region of potential perchlorate gain
T5.3	AECOM Gage S5.3	Downstream of Proposed Historic Lateral Weir Expansion	Mid-point between Pabco Road and Calico Ridge Weir
T6	USGS Gage 09419700 [Pabco Road]	Upstream of Pabco Road Weir	Downstream of Groundwater inputs from NERT Off-Site Study Area and Henderson WWTP
T6.35	AECOM Gage S6.35	Downstream of Proposed Sunrise Mountain Weir	Downgradient of NERT Off-Site Study area near mapped location of KM71 seep (3,400 µg/L perchlorate)
T6.8	USGS Gage 09419698 [Below Duck Creek Confluence]	Upstream of Duck Creek Confluence	Downgradient of NERT Off-Site Study area near mapped location of KM71 seep (3,400 µg/L perchlorate)

Notes:

1) This transect was originally T3.6 but the identification was changed to T3.5 during the field program.

ID - identification

USGS - United States Geological Survey

µg/L - micrograms per liter

WWTP - wastewater treatment plant

NERT - Nevada Environmental Response Trust

Table 6 Transect Depth Measurements
 NERT Remedial Investigation - Downgradient Study Area
 Henderson, Nevada

Measurement Number	Distance from South Bank (feet)	Depth to Bottom (feet)	Notes
Transect: T6.8		Measurements Collected: 2/3/2017 10:04 to 10:42	
1	0	0.00	"A" sample collection point
2	5	1.50	
3	10	1.75	
4	20	1.58	
5	30	1.58	
6	40	1.58	
7	50	1.58	
8	60	1.83	
9	70	1.92	
10	80	1.67	
11	90	1.42	"B" sample collection point
12	100	1.33	
13	110	1.42	
14	125	1.08	
15	140	1.08	
16	155	1.33	
17	170	1.33	
18	185	1.17	
19	200	1.00	
20	215	1.17	
21	230	1.08	
22	245	1.42	
23	260	1.33	
24	275	1.00	
25	290	0.83	
26	305	0.67	
27	320	0.58	"C" sample collection point
28	335	0.58	
29	350	0.50	
30	365	0.42	
31	380	0.38	
32	395	0.42	
33	410	0.42	
34	425	0.58	
35	440	0.58	
36	455	0.67	
37	470	0.83	
38	485	0.92	
39	500	0.92	
40	515	1.08	"D" sample collection point
41	530	1.25	
42	545	1.00	
43	560	0.79	
44	575	1.00	
45	590	1.17	
46	605	1.13	
47	620	1.00	
48	635	0.92	
49	640	1.00	
50	645	1.00	
51	650	1.00	
52	655	0.96	
53	660	0.83	"E" sample collection point
54	665	0.00	
Transect: T6.35		Measurements Collected: 2/3/2017 9:19 to 9:32	
1	0	2.22	"A" sample collection point
1.4	12	2.63	
1.5	8	2.95	
2	15	2.87	
2.5	15	3.31	
2.6	21	3.58	
3	26	4.05	"B" sample collection point
4	34	5.6	
4.5	40	3	
5	47	1.62	"C" sample collection point

Table 6 Transect Depth Measurements
 NERT Remedial Investigation - Downgradient Study Area
 Henderson, Nevada

Measurement Number	Distance from South Bank (feet)	Depth to Bottom (feet)	Notes
Transect: T6			
Measurements Collected: 2/2/2017 11:08 to 11:25			
1	0	0.94	"A" sample collection point
2	12	2.14	
3	25	2.36	
4	37	1.77	"B" sample collection point
5	50	1.46	
6	61	0.77	
7	66	0	Island
8	89	0	Island
9	102	0.46	
10	112	1.15	
11	124	1.79	"C" sample collection point
12	137	2.45	
13	147	1.64	
14	159	2.23	
15	172	0.37	"D" sample collection point
Transect: T5.3			
Measurements Collected: 2/2/2017 9:00 to 10:15			
1	0	0.95	North Bank
2	6	4.34	"A" sample collection point
3	14	5.67	
4	30	4.1	
5	36	3	
6	42	2.77	"B" sample collection point
7	54	1.94	
8	62	1.67	
9	72	1.85	
10	85	1.74	"C" South Bank
Transect: T4.75			
Measurements Collected: 2/1/2017 10:42 to 11:35			
1	0	0.00	
2	10	1.50	
3	20	2.08	
4	30	1.58	
5	40	0.67	
6	50	2.25	
7	60	4.25	
8	70	5.42	
9	80	5.75	
10	90	5.67	
11	100	3.75	
12	105	0.00	island start
13	117	0.00	island end
14	127	0.25	
15	137	3.25	
16	147	2.50	
17	157	2.33	
18	167	2.67	
19	177	>6.5	
20	187	>6.5	
21	197	5.92	
22	207	3.92	
23	217	3.08	
24	227	2.58	
25	237	2.67	
26	247	1.25	
27	257	1.92	
28	267	2.17	
29	277	1.92	
30	287	1.83	
31	288	0.00	

Table 6 Transect Depth Measurements
 NERT Remedial Investigation - Downgradient Study Area
 Henderson, Nevada

Measurement Number	Distance from South Bank (feet)	Depth to Bottom (feet)	Notes
Transect: T4.65		Measurements Collected: 1/31/2017 11:33 to 12:04	
1	0	0.00	
2	10	2.00	
3	20	2.00	
4	30	2.13	
5	40	2.08	
6	50	2.25	
7	60	2.00	
8	70	2.17	
9	80	1.92	
10	90	2.08	
11	100	1.83	
12	110	1.92	
13	120	1.92	
14	130	1.92	
15	140	1.83	
16	150	1.83	"B" sample collection point
17	160	2.00	
18	170	1.83	
19	180	1.92	
20	190	2.00	
21	200	1.83	
22	210	1.83	
23	220	1.75	
24	230	1.50	"C" sample collection point
25	240	1.42	
26	250	1.25	
27	260	1.17	
28	270	1.08	
29	280	1.42	
30	290	1.50	
31	300	1.67	
32	310	1.83	
33	320	1.83	
34	330	1.92	
35	340	1.83	
36	350	2.00	
37	360	1.92	
38	370	1.75	
39	380	1.25	
40	390	0.92	
41	400	0.67	
42	410	0.00	Shoreline

Table 6 Transect Depth Measurements
 NERT Remedial Investigation - Downgradient Study Area
 Henderson, Nevada

Measurement Number	Distance from South Bank (feet)	Depth to Bottom (feet)	Notes
Transect: T4.6		Measurements Collected: 1/31/2017 11:50 to 13:00	
0	377	1.13	"D" sample collection point
1	370	1.13	
2	358	1.02	
3	347	0.83	
4	336	0.87	
5	327	0.6	
6	315	0.81	
7	307	1.12	
8	300	1.4	
9	290	1.77	
10	279	1.43	
11	271	1.49	
12	262	1.91	
13	252	2.18	
14	243	1.92	
15	231	1.22	"C" sample collection point
16	224	1.7	
17	214	1.72	
18	201	1.35	
19	193	0.62	
20	182	0.74	
21	172	0.78	
22	157	1.17	
23	146	1.26	"B" sample collection point
24	136	0.95	
25	127	0.59	
26	116	0.46	
27	104	0.95	
28	97	2.04	
29	85	2.2	
30	74	1.25	
31	64	0.58	
32	54	1.43	
33	42	0.87	
34	34	1.01	
35	19	0.73	
36	0	1.06	"A" sample collection point
Transect: T4.2		Measurements Collected: 2/1/2017 10:00 to 11:00	
1	0	0.79	"A" sample collection point
2	9	1.59	
3	21	2.1	
4	33	2	
5	42	2.43	
6	59	2.55	
7	68	2.19	
8	84	2.06	
9	96	2.14	"B" sample collection point
10	105	1.54	
11	114	2.04	
12	124	1.54	
13	135	1.93	
14	146	2.2	
15	157	1.81	
16	168	1.73	
17	178	1.42	
18	187	1.09	"C" sample collection point
19	197	0.76	
20	207	0.71	
21	218	0.74	
22	229	0.7	
23	240	0.98	
24	251	1.34	
25	260	1.74	
26	270	1.68	"D" sample collection point

Table 6 Transect Depth Measurements
 NERT Remedial Investigation - Downgradient Study Area
 Henderson, Nevada

Measurement Number	Distance from South Bank (feet)	Depth to Bottom (feet)	Notes
Transect: T3.8		Measurements Collected: 1/30/2017 12:15 to 13:00	
1	0	0.62	"A" sample collection point
2	10	1.38	
3	24	0.96	
4	36	0.85	
5	48	0.83	
6	59	0.9	
7	69	0.98	
8	79	0.8	
9	93	1.05	"B" sample collection point
10	102	0.92	
11	112	1.15	
12	124	1.33	
13	135	0.5	
14	144	0.89	
15	156	1.1	
16	168	0.78	
17	176	0.69	
18	189	0.58	
19	199	0.68	
20	209	0.87	
21	220	0.63	
22	231	0.51	
22.5	234	0.5	"C" sample collection point
23	243	0.82	
24	255	0.97	
25	265	0.87	
26	275	0.8	
27	287	0.89	
28	296	0.95	
29	306	0.88	
30	316	0.79	
31	328	0.8	
32	338	0.86	
33	349	0.66	"D" sample collection point
34	359	0.61	
35	370	0.6	

Table 6 Transect Depth Measurements
 NERT Remedial Investigation - Downgradient Study Area
 Henderson, Nevada

Measurement Number	Distance from South Bank (feet)	Depth to Bottom (feet)	Notes
Transect: T3.75			
Measurements Collected: 1/30/2017 12:34 to 13:34			
0	2	0	South Bank
1	6	1	"A" sample collection point
2	10	0.25	
3	15	0.1	
4	20	0.2	
5	25	0	Rock
6	30	0.1	
7	35	0.4	
8	40	0.4	
9	45	0.7	
10	50	0.625	
11	55	0.92	
12	60	0.92	
13	65	0.92	
14	70	0.75	
15	75	0.96	
16	80	1.04	
17	85	0.88	
18	90	0.83	
19	95	0.83	
20	100	0.63	
21	105	0.88	
22	108	4.48	"B" sample collection point
23	110	0.79	
24	115	0.42	
25	120	0.71	
26	125	0.88	
27	130	0.67	
28	135	0.50	
29	137	1.08	
30	140	1.33	
31	145	1.25	
32	150	1.58	
33	155	0.83	
34	160	1.04	
35	165	1.08	
36	170	1.33	
37	175	0.58	
38	180	1.00	
39	185	1.17	
40	190	1.08	
41	192	2.33	
42	194	0.50	
43	198	1.83	
44	200	1.83	
45	205	1.50	
46	210	1.67	
47	215	1.42	
48	220	1.08	
49	225	0.58	
50	230	0.42	
51	235	0.25	
52	240	0.33	
53	245	0.67	
54	250	0.58	
55	255	0.00	Island start
56	257.5	0.00	Island end
57	260	0.75	
58	270	0.67	
59	280	0.96	
60	290	0.67	
61	300	1.13	
62	310	1.08	"C" sample collection point
63	320	1.00	
64	330	1.08	
65	340	1.42	
66	350	0.58	
67	360	0.83	
68	370	1.25	
69	380	1.67	
70	390	0.92	
71	400	0.92	
72	410	1.00	
73	420	0.83	
74	430	0.58	
75	435	0.00	"D" sample collection point

Table 6 Transect Depth Measurements
 NERT Remedial Investigation - Downgradient Study Area
 Henderson, Nevada

Measurement Number	Distance from South Bank (feet)	Depth to Bottom (feet)	Notes
Transect: T3.5		Measurements Collected: 2/2/2017 12:58 to 13:41	
1	0	0.00	"A" sample collection point
2	1.5	0.25	
3	2	0.00	
4	2.5	0.00	
5	3	0.17	
6	8	0.33	
7	13	0.58	"B" sample collection point
8	15	0.75	
9	16	0.50	
10	17	0.00	start island
11	24	0.00	end island
12	26	0.50	
13	30	1.08	
14	35	0.75	"C" sample collection point
15	40	0.33	
16	45	0.42	
17	50	0.25	
18	53	0.00	island start
19	63	0.00	island end
20	68	0.33	
21	70	0.92	
22	80	1.08	
23	85	1.50	
24	90	2.42	"D" sample collection point
25	100	3.25	
26	110	4.58	
27	120	3.17	
28	130	1.42	
29	140	1.58	"E" sample collection point
30	150	4.42	
31	160	6.33	
32	170	>6.5	
33	180	>6.6	
34	190	4.75	"F" sample collection point
35	198	0.00	

Notes:

Sample collection points are noted as "A" for near the southern bank and progress B, C, etc. moving north.

Table 7 Field Collected Water Quality Data: Transect Sampling
 NERT Remedial Investigation - Downgradient Study Area
 Henderson, Nevada

Location ID	Date and Time of Measurement		Total Depth (ft)	Sample Depth (ft)	Temperature (°C)	Spec. Cond. (µS/cm)	pH	Turbidity (NTU)	Dissolved Oxygen	
									mg/L	% saturation
T6.8_A	2/3/2017	9:09	1.10	1.00	17.40	2614	7.64	8.8	7.32	77.1
T6.8_B	2/3/2017	9:19	1.40	1.30	18.52	3048	7.83	2.7	9.36	100.7
T6.8_C	2/3/2017	9:27	0.50	0.40	17.80	3539	7.93	0.1	10.16	107.7
T6.8_D	2/3/2017	9:38	1.00	0.90	20.09	2366	8.03	1.1	9.63	106.7
T6.8_E	2/3/2017	9:47	0.80	0.70	18.21	2304	7.86	4.4	7.36	78.9
T6.35_A	2/3/2017	9:32	2.20	1.50	17.95	2385	7.85	2.3	8.74	92.8
T6.35_B ⁵	2/3/2017	9:44	4.05	3.00	18.05	2407	7.93	2.4	9.07	96.7
T6.35_B ⁵	2/3/2017	9:55	4.05	1.00	18.05	2410	7.93	3.0	9.04	96.2
T6.35_C	2/3/2017	9:19	1.62	1.00	17.92	2380	7.50	9.7	9.67	102.6
T6_A	2/2/2017	8:57	1.00	0.90	17.80	2723	7.83	2.9	8.55	90.8
T6_B	2/2/2017	9:03	1.80	1.70	17.87	2719	7.83	2.9	8.79	93.3
T6_C	2/2/2017	9:09	1.80	1.70	17.90	2721	7.82	3.4	8.75	93.0
T6_D	2/2/2017	9:14	0.50	0.40	17.27	2685	7.80	14.1	8.90	93.2
T5.3_A ⁵	2/2/2017	9:22	4.34	1.40	17.85	2357	7.51	4.4	8.95	95.9
T5.3_A ⁵	2/2/2017	9:32	4.34	2.80	17.86	2356	7.61	4.3	8.93	94.7
T5.3_B	2/2/2017	10:13	2.77	2.00	18.10	2367	7.91	6.4	9.34	99.5
T5.3_C	2/2/2017	9:59	1.74	1.20	18.10	2340	7.86	8.4	9.34	99.4
T4.75_A	2/1/2017	10:00	1.40	1.30	19.56	3416	7.60	40.9 ¹	6.80	69.2
T4.75_B	2/1/2017	10:10	1.00	0.90	18.08	2660	8.01	3.5	9.69	103.3
T4.75_C	2/1/2017	10:21	2.30	2.20	18.08	2672	8.04	3.7	9.79	104.5
T4.75_D	2/1/2017	10:30	1.65	1.50	19.63	3031	7.49	12.8	6.26	69.4
T4.65_A	1/31/2017	10:38	0.80	0.70	17.53	2558	7.68	7.4	9.61	96.7
T4.65_B	1/31/2017	10:50	2.00	1.90	18.21	2581	7.98	4.2	10.00	106.9
T4.65_C	1/31/2017	10:55	1.40	1.30	18.16	2560	8.01	4.6	10.15	108.5
T4.65_D	1/31/2017	11:06	0.70	0.60	17.25	2525	7.92	8.5	9.70	101.9
T4.6_A	1/31/2017	10:40	NR	0.30	16.92	2348	7.66	135.5	8.77	91.4
T4.6_B	1/31/2017	10:47	0.95	0.60	17.50	2358	7.83	5.1	9.35	98.9
T4.6_C	1/31/2017	10:56	1.27	0.80	17.50	2329	7.93	8.3	9.48	99.9
T4.6_D	1/31/2017	11:13	1.13	0.80	17.49	2337	7.96	6.8	9.29	97.5
T4.2_A	2/1/2017	9:55	0.79	0.40	16.50	2308	8.24	126.3	8.94	138.5
T4.2_B	2/1/2017	10:19	NR	1.00	17.38	2316	8.08	7.5	9.98	104.9
T4.2_C	2/1/2017	10:35	NR	0.80	17.46	2311	8.00	52.0	10.50	105.8

Table 7 Field Collected Water Quality Data: Transect Sampling
 NERT Remedial Investigation - Downgradient Study Area
 Henderson, Nevada

Location ID	Date and Time of Measurement		Total Depth (ft)	Sample Depth (ft)	Temperature (°C)	Spec. Cond. (µS/cm)	pH	Turbidity (NTU)	Dissolved Oxygen	
									mg/L	% saturation
T4.2_D	2/1/2017	10:47	NR	1.00	17.53	2307	7.98	10.8	9.98	105.2
T3.8_A	1/30/2016	11:30	0.50	0.40	17.84	2061	8.01	4.1	10.66	113.0
T3.8_B	1/30/2016	11:37	0.50	0.40	18.44	2060	8.19	4.4	11.50	123.1
T3.8_C	1/30/2016	11:46	0.50	0.40	18.44	2054	8.15	6.0	10.99	117.9
T3.8_D	1/30/2016	11:55	0.50	0.40	18.58	2031	8.13	9.5	10.90	117.1
T3.75_A	1/30/2016	11:40	1.00	0.90	17.07	2063	7.95	6.2	9.71	101.3
T3.75_B	1/30/2016	11:53	0.80	NR	17.62	2053	8.12	7.5	10.47	110.3
T3.75_C	1/30/2016	12:10	0.80	0.70	17.56	2196	7.98	24.0	9.52	100.3
T3.75_D	1/30/2016	12:09	0.60	0.50	17.56	2035	8.11	10.8	10.50	110.8
T3.5_A ³	2/2/2017	11:06	0.20	0.20	16.60	7162	7.55	41 ²	9.52	99.3
T3.5_A ³	2/2/2017	12:44	0.20	0.20	NR	6752-5478 ⁴	7.68	11.5	14.28	156.3
T3.5_B	2/2/2017	11:13	0.60	0.50	19.03	2794	8.08	3.3	9.80	106.6
T3.5_C	2/2/2017	11:22	0.70	0.60	19.09	2787	8.05	4.0	9.78	106.6
T3.5_D	2/2/2017	12:00	1.50	1.40	19.30	2727	8.21	4.7	10.40	113.6
T3.5_E	2/2/2017	12:03	1.60	1.50	19.30	2685	8.26	5.9	10.45	114.2
T3.5_F ⁵	2/2/2017	12:13	4.80	4.00	19.22	2673	8.24	6.2	10.25	111.8
T3.5_F ⁵	2/2/2017	12:34	4.80	1.50	19.40	2681	8.30	6.3	10.36	113.6

Notes:

- 1) Field notes indicate high turbidity due to stirred silt by canoe and fish.
- 2) High turbidity reading due to disturbed silty streambed.
- 3) Due to disturbed streambed during initial water quality readings, sample location T3.5 was revisited and water quality readings were collected a second time.
- 4) A range of readings were provided because the specific conductivity reading did not stabilize within 10 minutes.
- 5) Due to total depths greater than or equal to 3.0 feet, two samples were collected at sample locations T5.3_A, T6.35B and T3.5_F.

NR - Not Recorded

Spec. Cond. - Specific Conductivity

Transect sample location A is located near the southern Bank and continue B, C, D,.. to the northern bank.

ft - feet

ID - identification

% saturation for dissolved oxygen is based on sample temperature and daily atmospheric barometric pressure (input during calibration)

°C - degrees Celsius

µS/cm - micro-Siemens per centimeter

NTU - Nephelometric Turbidity Unit

mg/L - milligrams per Liter

% - Percent

Table 8 GPS Coordinates: Barometers, Staff Gages and Transect Samples
NERT Remedial Investigation - Downgradient Study Area
Henderson, Nevada

Identification	Date and Time of Sample Collection		GPS Coordinates	
			Northing	Easting
Barometers				
B6 [Pabco Road]	1/26/2017	NR	26733899.2259	832227.942134
B4.65 [Lower Narrows]	1/26/2017	NR	26736165.1918	840367.414372
B3.8 [Three Kids]	1/29/2017	NR	26737037.8180	844126.017419
Staff Gages				
S6.35	1/26/2017	NR	26734748.9312	831632.177249
S5.3	1/27/2017	NR	26734845.4172	836460.371661
S4.75	1/27/2017	NR	26735892.7891	839339.429879
S4.65	1/26/2017	NR	26736254.1460	840312.179246
S4.6	1/29/2017	NR	26736334.7978	840729.157415
S3.8	1/24/2017	NR	26737131.2306	844152.302143
S3.75	1/25/2017	NR	26737628.2817	844432.358013
S3.5	1/29/2017	NR	26738151.8899	844861.616669
Transect Samples				
6.8_A	02/03/17	9:13	26734811.1046	828367.800248
6.8_B	02/02/17	9:25	26734889.3525	828394.004592
6.8_C	02/02/17	9:32	26735139.9297	828459.376836
6.8_D	02/02/17	9:41	26735346.2889	828495.414166
6.8_E	02/02/17	9:50	26735470.0613	828552.953421
6.35_A	02/03/17	09:32	26734706.9779	831617.787186
6.35_B	02/03/17	9:55	26734731.2961 ^[1]	831625.536514 ^[1]
6.35_B	02/03/17	9:44	26734731.2961 ^[1]	831625.536514 ^[1]
6.35_C	02/03/17	9:19	26734752.2048	831632.855725
6_A	02/03/17	9:00	26734155.8543	832621.087345
6_B	02/03/17	9:05	26734184.6239	832636.455096
6_C	02/03/17	9:13	26734261.1051	832679.418921
6_D	02/03/17	9:18	26734287.1516	832699.987449
5.3_A	02/02/17	9:32	26734848.4841 ^[1]	836445.655811 ^[1]
5.3_A	02/02/17	9:37	26734848.4841 ^[1]	836445.655811 ^[1]
5.3_B	02/02/17	10:13	26734884.4362	836430.697508
5.3_C	02/02/17	9:59	26734922.5578	836416.284807
4.75_A	02/01/17	10:04	26735899.6749	839337.203834
4.75_B	02/01/17	10:13	26735984.4090	839320.559182
4.75_C	02/01/17	10:23	26736047.9857	839307.906320
4.75_D	02/01/17	10:35	26736154.7591	839291.202613
4.65_A	01/31/17	10:40	26736249.0850	840315.123794
4.65_B	01/31/17	10:50	26736391.3000	840285.154694
4.65_C	01/31/17	10:58	26736476.2673	840250.798135
4.65_D	01/31/17	11:06	26736637.3405	840195.513141
4.6_A	01/31/17	10:40	26736327.6751	840715.072469
4.6_B	01/31/17	10:47	26736483.5626	840694.370411
4.6_C	01/31/17	10:56	26736568.0991	840677.425891
4.6_D	01/31/17	11:13	26736700.1930	840664.234644
4.2_A	02/01/17	09:55	26736677.4641	842013.435030
4.2_B	02/01/17	10:19	26736772.8156	842001.178165
4.2_C	02/01/17	10:35	26736844.5868	841951.608710
4.2_D	02/01/17	10:47	26736915.5325	841884.369671
3.8_A	01/30/17	11:30	26737122.1541	844150.764417
3.8_B	01/30/17	11:37	26737182.7390	844080.294085
3.8_C	01/30/17	11:46	26737281.9566	843981.791985
3.8_D	01/30/17	11:55	26737353.5211	843892.955221
3.75_A	01/30/17	11:48	26737555.3518	844527.832232

Table 8 GPS Coordinates: Barometers, Staff Gages and Transect Samples
 NERT Remedial Investigation - Downgradient Study Area
 Henderson, Nevada

Identification	Date and Time of Sample Collection		GPS Coordinates	
			Northing	Easting
3.75_B	01/30/17	11:53	26737620.3129	844450.440983
3.75_C	01/30/17	12:00	26737756.1968	844287.791045
3.75_D	01/30/17	12:09	26737837.9326	844177.711541
3.5_A	02/02/17	11:08	26738121.7460	844839.008447
3.5_B	02/02/17	11:13	26738127.5849	844831.662333
3.5_C	02/02/17	11:22	26738148.1540	844817.137428
3.5_D	02/02/17	12:00	26738187.2888	844776.408178
3.5_E	02/02/17	12:07	26738224.3245	844747.628380
3.5_F	02/02/17	12:34	26738242.0948 ^[1]	844698.140400 ^[1]
3.5_F	02/02/17	12:25	26738242.0948 ^[1]	844698.140400 ^[1]

Notes:

NR - Not Recorded

GPS - global positioning system

(1) Coordinates are the same for shallow and deep samples.

Table 9 Samples Collected: Transect Sampling
 NERT Remedial Investigation - Downgradient Study Area
 Henderson, Nevada

Sample ID	Location on Transect	Depth	QC Type	Date Sampled	Time Sampled
Transect 6.8					
T6.8A-20170203-1.0	Near south bank	Near bottom		2/3/2017	9:13
T6.8B-20170203-1.3	Second from south bank	Near bottom		2/3/2017	9:25
T6.8C-20170203-0.4	Third from south bank	Near bottom		2/3/2017	9:32
T6.8D-20170203-0.9	Fourth from south bank	Near bottom		2/3/2017	9:41
T6.8E-20170203-0.7	Fifth from south bank	Near bottom		2/3/2017	9:50
Transect 6.35					
T6.35A-20170203-1.5	Near south bank	Near bottom		2/3/2017	9:32
T6.35B-20170203-1.0	Second from south bank	Near bottom		2/3/2017	9:55
T6.35C-20170203-3.0	Third from south bank	Near bottom		2/3/2017	9:44
T6.35B-20170203-1.0	Second from south bank	1/3 depth		2/3/2017	9:19
Transect 6					
T6A-20170202-0.9	Near south bank	Near bottom		2/2/2017	9:00
T6A-20170202-FB	Near south bank	Near bottom	FB	2/2/2017	15:35
T6B-20170202-1.7	Second from south bank	Near bottom		2/2/2017	9:05
T6C-20170202-1.7	Third from south bank	Near bottom		2/2/2017	9:13
T6D-20170202-0.4	Fourth from south bank	Near bottom		2/2/2017	9:18
Transect 5.3					
T5.3A-20170202-2.8	Near south bank	Near bottom		2/2/2017	9:37
T5.3B-20170202-2.0	Second from south bank	Near bottom		2/2/2017	0:13
T5.3B-20170202-2.0-FD	Second from south bank	Near bottom	FD	2/2/2017	10:13
T5.3C-20170202-1.2	Third from south bank	Near bottom		2/2/2017	9:59
T5.3A-20170202-1.4	Near south bank	1/3 depth		2/2/2017	9:37
T5.3A-20170202-1.4-EB	Near south bank	1/3 depth	EB	2/2/2017	15:30
Transect 4.75					
T4.75A-20170101-1.3	Near south bank	Near bottom		2/1/2017	10:04
T4.75A-20170201-1.3-FD	Near south bank	Near bottom	FD	2/1/2017	10:04
T4.75B-20170201-0.9	Second from south bank	Near bottom		2/1/2017	10:13
T4.75C-20170201-2.2	Third from south bank	Near bottom		2/1/2017	10:23
T4.75D-20170201-1.5	Fourth from south bank	Near bottom		2/1/2017	10:35
T4.75B-20170201-EB	Second from south bank	Near bottom	EB	2/1/2017	10:00
Transect 4.65					
T4.65A-20170131-0.7	Near south bank	Near bottom		1/31/2017	10:40
T4.65A-20170131-0.7-MS	Near south bank	Near bottom	MS	1/31/2017	10:40
T4.65A-20170131-0.7-MSD	Near south bank	Near bottom	MSD	1/31/2017	10:40
T4.65B-20170131-0.9	Second from south bank	Near bottom		1/31/2017	10:50
T4.65B-20170131-0.9-FD	Second from south bank	Near bottom	FD	1/31/2017	10:50
T4.65C-20170131-1.3	Third from south bank	Near bottom		1/31/2017	10:58
T4.65D-20170131-0.6	Fourth from south bank	Near bottom		1/31/2017	11:06
Transect 4.6					
T4.6A-20170131-EB	Near south bank	Near bottom	EB	1/31/2017	10:00
T4.6A-20170131-0.3	Near south bank	Near bottom		1/31/2017	10:40
T4.6B-20170131-0.6	Second from south bank	Near bottom		1/31/2017	10:47
T4.6B-20170131-0.6-FD	Second from south bank	Near bottom	FD	1/31/2017	10:47
T4.6C-20170131-0.8	Third from south bank	Near bottom		1/31/2017	10:56
T4.6D-20170131-0.8	Fourth from south bank	Near bottom		1/31/2017	11:13
Transect 4.2					
T4.2A-20170201-0.4	Near south bank	Near bottom		2/1/2017	9:55
T4.2A-20170201-0.4-EB	Near south bank	Near bottom	EB	2/1/2017	10:00
T4.2A-20170201-0.4-MS	Near south bank	Near bottom	MS	2/1/2017	9:55
T4.2A-20170201-0.4-MSD	Near south bank	Near bottom	MSD	2/1/2017	9:55
T4.2B-20170201-1.0	Second from south bank	Near bottom		2/1/2017	10:19
T4.2B-20170201-1.0-FD	Second from south bank	Near bottom	FD	2/1/2017	10:19
T4.2C-20170201-0.8	Third from south bank	Near bottom		2/1/2017	10:35
T4.2D-20170201-1.0	Fourth from south bank	Near bottom		2/1/2017	10:47

Table 9 Samples Collected: Transect Sampling
 NERT Remedial Investigation - Downgradient Study Area
 Henderson, Nevada

Sample ID	Location on Transect	Depth	QC Type	Date Sampled	Time Sampled
Transect 3.8					
T3.8A-20170130-0.4	Near south bank	Near bottom		1/30/2017	11:30
T3.8A-20170130-FB	Near south bank	Near bottom	FB	1/30/2017	11:05
T3.8B-2017130-0.4	Second from south bank	Near bottom		1/30/2017	11:37
T3.8B-2017130-0.4-MS	Second from south bank	Near bottom	MS	1/30/2017	11:37
T3.8B-2017130-0.4-MSD	Second from south bank	Near bottom	MSD	1/30/2017	11:37
T3.8C-20170130-0.4	Third from south bank	Near bottom		1/30/2017	11:46
T3.8C-20170130-0.4-FD	Third from south bank	Near bottom	FD	1/30/2017	11:46
T3.8D-20170130-0.4	Fourth from south bank	Near bottom		1/30/2017	11:55
Transect 3.75					
T3.75A-20170130-0.9	Near south bank	Near bottom		1/30/2017	11:48
T3.75A-20170130-EB	Near south bank	Near bottom	EB	1/30/2017	11:05
T3.75B-20170130-0.7	Second from south bank	Near bottom		1/30/2017	11:53
T3.75C-20170130-0.6	Third from south bank	Near bottom		1/30/2017	12:00
T3.75D-20170130-0.4	Fourth from south bank	Near bottom		1/30/2017	12:09
Transect 3.5					
T3.5A-20170202-0.2	Near south bank	Near bottom		2/2/2017	11:08
T3.5A-20170202-FB	Near south bank	Near bottom	FB	2/2/2017	15:40
T3.5B-20170202-0.5	Second from south bank	Near bottom		2/2/2017	11:13
T3.5B-20170202-0.5-FD	Second from south bank	Near bottom	FD	2/2/2017	11:13
T3.5C-20170202-0.6	Third from south bank	Near bottom		2/2/2017	11:22
T3.5C-20170202-0.6-EB	Third from south bank	Near bottom	EB	2/2/2017	15:45
T3.5D-20170202-1.4	Fourth from south bank	Near bottom		2/2/2017	12:00
T3.5E-20170202-1.5	Fifth from south bank	Near bottom		2/2/2017	12:07
T3.5F-20170202-4.0	Sixth from south bank	Near bottom		2/2/2017	12:25
T3.5F-20170202-1.5	Sixth from south bank	1/3 depth		2/2/2017	12:34

Notes:

- ID - Identification
- FD - field duplicate
- FB - field blank
- EB - equipment blank
- MS - matrix spike
- MSD - matrix spike duplicate
- QC - quality control
- Sample ID comprised of "Location"- "YYYYMMDD"- "Depth"- "QC type if applicable"
- YYMMDD - YearMonthDay (example 20170202 is February 2, 2017)

Table 10 Field Collected Water Quality Data: Discrete Sampling
NERT Remedial Investigation - Downgradient Study Area
Henderson, Nevada

Location ID	Targeted Flow	Date and Time of Measurement	Total Depth (ft)	Sample Depth (ft)	Temperature (°C)	Spec. Cond. (µS/cm)	pH	Turbidity (NTU)	Dissolved Oxygen		
									mg/L	% saturation	
Day 1											
LW7.2	Low	2/6/2017 9:45	1.52	0.80	18.14	1881	7.99	4.8	9.27	100.7	
LW6.7	Low	2/6/2017 10:15	0.75	0.40	18.36	2061	8.04	5.4	9.58	102.7	
LW6.05	Low	2/6/2017 11:20	1.22	0.60	17.95	2151	8.09	2.8	9.96	105.5	
LWC6.1_1 [t/ss]	Low	2/6/2017 9:30	1.17	0.58	18.28	1798	7.68	1.2	8.19	87.5	
LWC6.1_2 [t/ss]	Low	2/6/2017 9:57	1.75	0.83	21.97	1082	8.10	1.5	7.95	91.2	
GLWC6.1_3 [t/ss]	Low	2/6/2017 10:05	2.08	1.04	18.87	1692	7.61	1.3	8.25	89.1	
GLWC6.1_4 [t/ss]	Low	2/6/2017 10:30	2.25	1.08	18.85	2214	7.70	7.7	8.80	95.2	
LW5.9	Low	2/6/2017 11:06	1.00	0.50	14.77	2225	8.02	7.0	9.92	94.9	
LW5.3	Low	2/6/2017 10:00	3.40	1.20	17.80	2156	7.92	3.0	9.27	98.3	
LW5.3	Low	2/6/2017 10:30	3.40	2.35	17.82	2154	7.91	3.3	9.21	97.6	
LW4.95	Low	2/6/2017 11:00	2.19	1.10	17.80	2158	8.06	3.1	9.44	99.9	
GLW4.9	Low	2/6/2017 11:15	2.91	1.45	17.94	2137	7.97	3.7	8.95	95.2	
GLW4.85	Low	2/6/2017 10:18	13.00	0.60	19.50	3105	7.50	11.5	5.97	66.0	
GLW4.4	Low	2/6/2017 11:01	2.20	1.10	17.80	2277	8.06	2.2	10.30	109.0	
LW4.1	Low	2/6/2017 11:17	0.60	0.30	18.00	2306	8.00	12.7	9.95	106.0	
LW3.85	Low	2/6/2017 9:50	1.00	0.50	18.31	2602	8.28	0.8	10.55	113.1	
GLW3.78	Low	2/6/2017 10:32	0.83	0.42	18.42	2621	8.07	5.6	8.93	96.0	
LW3.75	Low	2/6/2017 10:23	1.67	0.83	18.31	2604	8.19	2.8	9.43	101.0	
LWC3.7 [t/ss]	Low	2/6/2017 10:12	0.67	0.33	20.12	3467	7.52	3.6	5.97	66.1	
LW3.4	Low	2/6/2017 11:06	0.83	0.42	18.39	2638	8.25	3.8	9.33	100.2	
LW7.2	Mid	2/6/2017 12:10	1.71	0.80	20.28	1868	8.26	3.1	10.03	111.7	
LW6.05	Mid	2/6/2017 12:36	1.33	0.70	18.60	2125	8.27	4.5	9.83	105.8	
LW4.95	Mid	2/6/2017 13:20	2.15	1.08	18.26	2113	8.19	4.9	9.39	100.4	
GLW4.4	Mid	2/6/2017 14:15	2.40	1.20	18.26	2322	8.25	2.7	10.80	115.0	
LW3.4	Mid	2/6/2017 14:43	1.25	0.63	18.74	2733	8.38	7.3	9.26	100.2	
LW7.2	High	2/6/2017 14:30	1.80	1.00	20.63	1780	8.18	4.5	9.47	106.1	
LW6.7	High	2/6/2017 15:02	1.25	0.60	20.24	1813	8.27	7.7	9.47	105.3	
LW6.05	High	2/6/2017 15:26	1.40	0.70	19.52	2000	8.31	10.7	9.46	103.8	
GLWC6.1_4 [t/ss]	High	2/6/2017 15:17	1.21	0.58	16.30	2079	8.20	13.5	9.31	95.5	
LWC6.1_2 [t/ss]	High	2/6/2017 14:53	1.17	0.58	21.44	1197	8.26	2.3	7.99	90.8	
LWC6.1_1 [t/ss]	High	2/6/2017 14:35	1.67	0.83	18.33	1838	7.63	1.0	8.23	88.0	

Table 10 Field Collected Water Quality Data: Discrete Sampling
 NERT Remedial Investigation - Downgradient Study Area
 Henderson, Nevada

Location ID	Targeted Flow	Date and Time of Measurement	Total Depth (ft)	Sample Depth (ft)	Temperature (°C)	Spec. Cond. (µS/cm)	pH	Turbidity (NTU)	Dissolved Oxygen	
									mg/L	% saturation
GLWC6.1_3 [t/ss]	High	2/6/2017 14:58	1.83	0.92	18.51	1803	7.80	1.8	8.32	89.6
LW5.9	High	2/6/2017 15:42	2.63	1.25	18.64	2248	7.61	10.5	7.70	82.9
LW5.3	High	2/6/2017 16:00	3.40	1.20	19.05	1973	8.18	0.2	8.28	89.9
LW5.3	High	2/6/2017 16:10	3.40	2.30	19.05	1973	8.19	5.4	9.06	98.4
LW4.95	High	2/6/2017 15:15	2.20	1.10	18.72	2052	8.22	6.4	9.03	97.4
GLW4.9	High	2/6/2017 15:00	2.95	1.50	18.52	2090	8.20	4.4	9.02	97.0
GLW4.85	High	2/6/2017 15:55	1.30	0.60	19.40	2732	7.97	1.2	8.08	88.8
GLW4.4	High	2/6/2017 16:17	2.60	1.30	18.30	2263	8.27	3.0	9.98	106.0
LW4.1	High	2/6/2017 16:39	0.70	0.30	18.10	2302	8.23	5.6	9.55	101.8
LW3.85	High	2/6/2017 16:00	1.17	0.58	18.47	2657	8.38	3.8	9.68	104.2
GLW3.78	High	2/6/2017 16:37	1.92	0.96	18.45	2707	8.20	5.5	8.67	93.5
LW3.75	High	2/6/2017 16:28	1.33	0.67	18.34	2642	8.36	3.4	9.07	97.7
LWC3.7 [t/ss]	High	2/6/2017 16:16	1.67	0.58	21.41	3757	7.48	0.6	4.07	43.7
LW3.4	High	2/6/2017 17:01	1.42	0.71	18.29	2668	8.27	5.9	8.93	95.7

Table 10 Field Collected Water Quality Data: Discrete Sampling
 NERT Remedial Investigation - Downgradient Study Area
 Henderson, Nevada

Location ID	Targeted Flow	Date and Time of Measurement	Total Depth (ft)	Sample Depth (ft)	Temperature (°C)	Spec. Cond. (µS/cm)	pH	Turbidity (NTU)	Dissolved Oxygen		
									mg/L	% saturation	
Day 2											
LW7.2	Low	2/7/2017 8:55	1.45	0.70	19.57	1816	7.33	Error ¹	8.96	98.5	
LW6.7	Low	2/7/2017 9:13	0.73	0.40	18.25	2422	7.87	Error ¹	9.06	96.9	
LW6.05	Low	2/7/2017 9:30	1.21	0.60	18.50	2115	8.00	Error ¹	9.18	98.8	
LWC6.1_2 [t/ss]	Low	2/7/2017 9:18	1.38	0.69	20.82	1131	8.24	3.5	8.22	92.2	
LWC6.1_1 [t/ss]	Low	2/7/2017 8:45	1.75	0.88	18.21	1845	7.70	0.1	8.19	87.5	
GLWC6.1_3 [t/ss]	Low	2/7/2017 9:25	1.94	0.96	18.47	1790	7.60	0.0	8.33	89.3	
GLWC6.1_4 [t/ss]	Low	2/7/2017 10:30	2.60	1.30	18.67	2157	7.60	4.5	8.00	86.3	
LW5.9	Low	2/7/2017 9:50	0.80	0.40	15.42	2293	8.00	4.8	9.43	95.0	
LW5.3	Low	2/7/2017 9:45	3.00	1.00	18.31	2275	7.96	2.1	9.02	96.6	
LW5.3	Low	2/7/2017 9:50	3.00	2.90	18.32	2274	7.94	2.9	8.96	96.0	
LW4.95	Low	2/7/2017 10:45	1.95	1.00	18.67	2276	8.22	2.1	9.76	105.3	
GLW4.9	Low	2/7/2017 10:50	2.30	1.20	18.46	2267	8.06	1.8	9.09	97.6	
GLW4.85	Low	2/7/2017 9:42	1.40	0.70	19.68	2804	7.88	4.1	5.20	62.0	
GLW4.4	Low	2/7/2017 10:06	4.40	2.30	18.50	2341	7.93	1.1	9.00	96.0	
LW4.1	Low	2/7/2017 10:32	0.60	0.30	18.59	2372	7.98	0.6	8.90	96.0	
LW3.85	Low	2/7/2017 10:07	1.00	0.50	19.35	2446	8.35	0.0	10.92	119.1	
GLW3.78	Low	2/7/2017 9:30	1.33	0.67	18.48	2470	8.07	4.2	9.10	98.1	
LW3.75	Low	2/7/2017 10:38	1.75	0.88	19.34	2450	8.29	1.0	10.30	112.3	
LWC3.7 [t/ss]	Low	2/7/2017 10:26	0.83	0.42	20.81	3494	7.94	2.1	5.34	60.5	
LW3.4	Low	2/7/2017 11:09	1.08	0.54	19.43	2486	8.39	0.2	9.40	103.0	
LW7.2	Mid	2/7/2017 10:55	1.64	0.80	18.66	1866	8.01	Error ¹	10.37	115.7	
LW6.05	Mid	2/7/2017 11:20	1.25	0.60	19.08	2168	8.12	Error ¹	10.41	113.0	
LW4.95	Mid	2/7/2017 13:25	2.30	1.20	19.40	2270	8.30	4.0	9.17	100.2	
GLW4.4	Mid	2/7/2017 14:11	2.50	1.30	19.35	2446	8.20	0.6	9.40	103.0	
LW3.4	Mid	2/7/2017 14:35	1.30	0.60	19.30	2439	8.32	4.4	9.20	101.0	
LW7.2	High	2/7/2017 14:02	1.80	0.90	21.75	1761	7.92	2.4	10.05	115.0	
LW6.7	High	2/7/2017 14:25	1.28	0.60	21.26	1998	8.24	2.2	10.17	115.3	
LW6.05	High	2/7/2017 14:48	1.44	0.70	20.93	2015	8.35	3.4	10.24	115.5	
LWC6.1_2 [t/ss]	High	2/7/2017 14:55	1.40	0.70	21.93	1098	8.20	1.1	8.07	92.5	
LWC6.1_1 [t/ss]	High	2/7/2017 14:41	1.50	0.80	18.46	1886	7.47	0.0	8.21	88.1	
GLWC6.1_3 [t/ss]	High	2/7/2017 14:58	1.75	0.90	18.70	1839	7.50	0.0	8.22	88.5	

Table 10 Field Collected Water Quality Data: Discrete Sampling
 NERT Remedial Investigation - Downgradient Study Area
 Henderson, Nevada

Location ID	Targeted Flow	Date and Time of Measurement	Total Depth (ft)	Sample Depth (ft)	Temperature (°C)	Spec. Cond. (µS/cm)	pH	Turbidity (NTU)	Dissolved Oxygen	
									mg/L	% saturation
GLWC6.1_4 [t/ss]	High	2/7/2017 16:07	2.70	1.30	18.94	2185	7.66	3.4	7.80	84.6
LW5.9	High	2/7/2017 15:27	1.13	0.60	17.62	2196	8.19	9.8	9.36	98.7
LW5.3	High	2/7/2017 15:45	3.51	1.20	20.40	2190	8.25	3.7	8.84	98.6
LW5.3	High	2/7/2017 15:50	3.51	2.40	20.40	2188	8.25	3.8	8.82	98.4
LW4.95	High	2/7/2017 16:30	2.46	1.20	20.24	2201	8.27	4.5	8.71	97.0
GLW4.9	High	2/7/2017 16:45	2.80	1.40	20.16	2198	8.25	3.6	8.66	99.7
GLW4.85	High	2/7/2017 15:42	1.60	0.80	20.13	2649	8.06	2.4	2.10	29.0
GLW4.4	High	2/7/2017 16:06	2.40	1.20	19.78	2364	8.25	1.2	8.80	97.0
LW4.1	High	2/7/2017 16:20	0.90	0.40	19.49	2405	8.22	1.3	8.50	93.0
LW3.85	High	2/7/2017 15:47	1.17	0.58	20.03	2532	8.45	2.3	9.77	108.1
GLW3.78	High	2/7/2017 16:30	2.42	1.21	19.78	2572	8.26	1.3	8.92	98.8
LW3.75	High	2/7/2017 16:17	2.00	1.00	20.02	2520	8.38	2.6	9.10	100.9
LWC3.7 [t/ss]	High	2/7/2017 16:05	1.25	0.63	21.85	3880	7.34	0.1	4.13	47.7
LW3.4	High	2/7/2017 16:58	1.33	0.67	19.88	2539	8.34	2.5	9.02	99.8

Table 10 Field Collected Water Quality Data: Discrete Sampling
 NERT Remedial Investigation - Downgradient Study Area
 Henderson, Nevada

Location ID	Targeted Flow	Date and Time of Measurement	Total Depth (ft)	Sample Depth (ft)	Temperature (°C)	Spec. Cond. (µS/cm)	pH	Turbidity (NTU)	Dissolved Oxygen		
									mg/L	% saturation	
Day 3											
LW7.2	Low	2/8/2017 8:45	1.46	0.70	20.41	1798	7.64	0.5	8.80	98.1	
LW6.7	Low	2/8/2017 9:03	0.63	0.30	19.12	2295	7.79	1.7	9.28	101.1	
LW6.05	Low	2/8/2017 9:35	1.17	0.50	19.46	2112	7.92	0.5	9.79	107.2	
LWC6.1_2 [t/ss]	Low	2/8/2017 9:54	1.20	0.60	20.61	1053	8.13	1.1	8.19	97.9	
LWC6.1_1 [t/ss]	Low	2/8/2017 9:45	1.70	0.90	18.62	1857	7.74	0.7	8.58	98.3	
GLWC6.1_3 [t/ss]	Low	2/8/2017 10:05	2.30	1.20	18.82	1793	7.32	1.6	8.04	93.1	
GLWC6.1_4 [t/ss]	Low	2/8/2017 11:15	2.50	1.30	18.98	1879	7.51	1.9	Error ²	Error ²	
LW5.9	Low	2/8/2017 10:33	0.80	0.40	16.66	2275	7.75	4.3	9.43	104.9	
LW5.3	Low	2/8/2017 10:00	3.05	1.00	19.21	2432	7.91	1.8	9.44	103.0	
LW5.3	Low	2/8/2017 10:03	3.05	2.00	19.22	2432	7.92	1.9	9.45	103.1	
LW4.95	Low	2/8/2017 10:30	2.28	1.10	19.32	2426	8.09	2.0	9.76	106.6	
GLW4.9	Low	2/8/2017 10:50	2.49	1.20	19.05	2409	8.00	4.8-6.0	9.01	98.0	
GLW4.85	Low	2/8/2017 9:45	1.30	0.60	19.40	2619	7.69	1.4	7.00	76.0	
GLW4.4	Low	2/8/2017 10:07	2.30	1.10	19.29	2354	7.98	1.4	9.22	100.7	
LW4.1	Low	2/8/2017 10:22	0.70	0.40	19.21	2383	7.95	1.2	8.87	96.2	
LW3.85	Low	2/8/2017 9:23	1.00	0.50	19.93	2210	8.27	2.4	10.59	117.0	
GLW3.78	Low	2/8/2017 10:03	1.00	0.50	19.59	2239	8.11	8.3	8.81	96.7	
LW3.75	Low	2/8/2017 9:53	1.17	0.80	19.86	2213	8.24	0.4	9.59	105.7	
LWC3.7 [t/ss]	Low	2/8/2017 9:42	0.92	0.46	20.97	3144	7.42	1.3	5.35	60.8	
LW3.4	Low	2/8/2017 10:27	1.00	0.50	19.93	2247	8.30	0.7	8.75	96.8	
LW7.2	Mid	2/8/2017 11:07	1.65	0.80	21.67	1858	8.34	1.6	10.69	122.3	
LW6.05	Mid	2/8/2017 12:35	1.51	0.80	21.18	2121	8.30	1.7	11.15	126.5	
LW4.95	Mid	2/8/2017 13:05	2.39	1.20	20.35	2472	8.22	3.5	9.58	106.8	
GLW4.4	Mid	2/8/2017 13:47	2.40	1.30	20.58	2428	8.17	1.1	9.68	108.0	
LW3.4	Mid	2/8/2017 14:15	1.17	0.58	20.99	2798	8.43	3.5	8.81	99.6	
LW7.2	High	2/8/2017 14:40	1.80	0.90	23.11	1742	8.28	3.0	9.92	116.4	
LW6.7	High	2/8/2017 15:02	1.24	0.60	22.26	2079	8.21	4.8	9.98	115.4	
LW6.05	High	2/8/2017 15:36	1.42	0.70	22.46	1988	8.29	1.7	9.78	113.4	
LWC6.1_1 [t/ss]	High	2/8/2017 14:39	1.40	0.70	18.94	1611	6.86 ³	Error ²	Error ²	Error ²	
LWC6.1_2 [t/ss]	High	2/8/2017 14:50	1.30	0.70	20.63	1085	7.77	Error ²	Error ²	Error ²	
GLWC6.1_3 [t/ss]	High	2/8/2017 15:00	1.95	1.00	19.29	1515	7.30	Error ²	Error ²	Error ²	

Table 10 Field Collected Water Quality Data: Discrete Sampling
 NERT Remedial Investigation - Downgradient Study Area
 Henderson, Nevada

Location ID	Targeted Flow	Date and Time of Measurement	Total Depth (ft)	Sample Depth (ft)	Temperature (°C)	Spec. Cond. (µS/cm)	pH	Turbidity (NTU)	Dissolved Oxygen	
									mg/L	% saturation
GLWC6.1_4 [t/ss]	High	2/8/2017 16:05	1.90	1.00	19.30	1639	7.49	Error ²	Error ²	Error ²
LW5.9	High	2/8/2017 15:37	1.20	0.60	18.86	1834	7.87	Error ²	Error ²	Error ²
LW5.3	High	2/8/2017 15:45	3.64	1.20	21.63	2352	8.21	3.6	9.00	102.9
LW5.3	High	2/8/2017 15:50	3.64	2.40	21.65	2347	8.21	3.7	8.99	102.9
LW4.95	High	2/8/2017 16:20	2.65	1.30	21.45	2355	8.21	3.6	8.81	100.5
GLW4.9	High	2/8/2017 16:35	2.85	1.40	21.28	2371	8.20	2.3	8.70	98.9
GLW4.85	High	2/8/2017 16:00	1.60	0.80	20.96	2540	7.92	2.1	7.40	79.0
GLW4.4	High	2/8/2017 16:21	2.50	1.30	20.91	2414	8.31	1.2	8.80	99.0
LW4.1	High	2/8/2017 16:33	0.85	0.40	20.59	2451	8.28	0.7	8.50	95.3
LW3.85	High	2/8/2017 16:01	1.08	0.54	21.30	2311	8.44	1.8	9.33	106.0
GLW3.78	High	2/8/2017 16:37	2.75	1.38	20.73	2331	8.21	0.5	8.03	90.6
LW3.75	High	2/8/2017 16:28	2.00	1.00	21.19	2311	8.37	0.9	8.42	95.5
LWC3.7 [t/ss]	High	2/8/2017 16:17	1.17	0.54	22.31	3658	7.45	2.9	3.93	46.4
LW3.4	High	2/8/2017 17:00	1.25	0.63	20.90	2329	8.32	3.4	8.42	95.0

Table 10 Field Collected Water Quality Data: Discrete Sampling
 NERT Remedial Investigation - Downgradient Study Area
 Henderson, Nevada

Location ID	Targeted Flow	Date and Time of Measurement	Total Depth (ft)	Sample Depth (ft)	Temperature (°C)	Spec. Cond. (µS/cm)	pH	Turbidity (NTU)	Dissolved Oxygen		
									mg/L	% saturation	
Day 4											
LW7.2	Low	2/9/2017 8:56	1.46	0.70	20.68	1782	7.43	0.5	9.55	107.1	
LW6.7	Low	2/9/2017 9:11	0.71	0.30	19.46	2270	7.82	5.5	9.67	106.0	
LW6.05	Low	2/9/2017 9:31	1.18	0.50	19.63	2055	7.93	0.4	9.85	108.5	
LWC6.1_2 [t/ss]	Low	2/9/2017 9:20	1.10	0.55	22.89	1007	8.21	Error ²	Error ²	Error ²	
LWC6.1_1 [t/ss]	Low	2/9/2017 9:15	2.00	1.00	18.87	1821	8.25	Error ²	Error ²	Error ²	
GLWC6.1_3 [t/ss]	Low	2/9/2017 9:25	2.38	1.19	19.02	1793	7.62	Error ²	Error ²	Error ²	
GLWC6.1_4 [t/ss]	Low	2/9/2017 10:19	2.63	1.31	19.47	1844	7.41	Error ²	Error ²	Error ²	
LW5.9	Low	2/9/2017 9:49	0.83	0.42	16.58	2205	7.83	Error ²	Error ²	Error ²	
LW5.3	Low	2/9/2017 10:00	3.08	1.00	19.34	2262	7.94	1.7	9.27	101.1	
LW5.3	Low	2/9/2017 10:03	3.08	2.00	19.34	2260	7.95	2.5	9.29	101.4	
LW4.95	Low	2/9/2017 10:35	2.09	1.00	19.55	2259	8.13	2.1	9.71	106.5	
GLW4.9	Low	2/9/2017 10:50	2.35	1.20	19.31	2250	8.01	1.9	9.10	99.3	
GLW4.85	Low	2/9/2017 9:58	1.40	0.70	19.40	2727	7.47	14.2	6.40	70.0	
GLW4.4	Low	2/9/2017 10:22	2.25	1.10	19.60	2388	8.05	1.2	9.40	103.0	
LW4.1	Low	2/9/2017 10:36	0.65	0.30	19.50	2408	8.04	0.6	9.20	100.0	
LW3.85	Low	2/9/2017 10:25	1.00	0.50	20.80	2256	8.40	1.9	11.52	129.6	
GLW3.78	Low	2/9/2017 11:03	0.58	0.29	21.24	2293	8.35	1.6	9.05	103.4	
LW3.75	Low	2/9/2017 10:53	0.92	0.46	20.70	2260	8.36	0.1	10.21	114.6	
LWC3.7 [t/ss]	Low	2/9/2017 10:49	0.80	0.40	21.41	3212	7.47	1.1	5.45	62.4	
LW3.4	Low	2/9/2017 11:50	1.00	0.50	21.06	2304	8.41	1.5	8.74	98.9	
LW7.2	Mid	2/9/2017 10:52	1.61	0.80	22.04	1771	8.34	3.4	11.15	128.2	
LW6.05	Mid	2/9/2017 12:00	1.32	0.60	21.44	2117	8.21	0.3	9.93	113.1	
LW4.95	Mid	2/9/2017 12:30	2.19	1.10	20.58	2309	8.22	2.7	9.36	105.5	
GLW4.4	Mid	2/9/2017 13:10	2.40	1.20	20.60	2449	8.28	0.8	10.00	112.0	
LW3.4	Mid	2/9/2017 13:25	1.00	0.50	21.58	2328	8.47	2.8	8.68	99.1	
LW7.2	High	2/9/2017 14:41	1.80	0.90	23.64	1665	8.33	6.0	9.89	117.2	
LW6.7	High	2/9/2017 15:04	1.22	0.60	22.97	1924	8.30	5.7	10.30	117.5	
LW6.05	High	2/9/2017 15:23	1.42	0.70	23.00	1879	8.35	6.0	9.91	116.2	
LWC6.1_2 [t/ss]	High	2/9/2017 14:50	1.58	0.79	21.31	1001	8.24	Error ²	Error ²	Error ²	
LWC6.1_1 [t/ss]	High	2/9/2017 14:34	2.13	1.06	19.27	1856	7.62	Error ²	Error ²	Error ²	
GLWC6.1_3 [t/ss]	High	2/9/2017 14:54	2.27	1.14	19.34	1826	7.68	Error ²	Error ²	Error ²	

Table 10 Field Collected Water Quality Data: Discrete Sampling
 NERT Remedial Investigation - Downgradient Study Area
 Henderson, Nevada

Location ID	Targeted Flow	Date and Time of Measurement	Total Depth (ft)	Sample Depth (ft)	Temperature (°C)	Spec. Cond. (µS/cm)	pH	Turbidity (NTU)	Dissolved Oxygen	
									mg/L	% saturation
GLWC6.1_4 [t/ss]	High	2/9/2017 15:50	3.25	1.63	19.45	1897	7.58	Error ²	Error ²	Error ²
LW5.9	High	2/9/2017 15:23	1.48	0.74	19.43	1994	8.15	Error ²	Error ²	Error ²
LW5.3	High	2/9/2017 15:15	3.35	1.10	22.25	2159	8.25	3.7	8.86	102.5
LW5.3	High	2/9/2017 15:18	3.35	2.20	22.25	2157	8.25	4.1	8.87	102.5
LW4.95	High	2/9/2017 15:40	2.45	1.20	22.09	2168	8.28	4.2	8.75	100.9
GLW4.9	High	2/9/2017 15:49	2.89	1.40	21.88	2196	8.25	4.0	8.57	98.4
GLW4.85	High	2/9/2017 15:15	1.60	0.80	21.43	2558	8.11	5.1	7.70	87.0
GLW4.4	High	2/9/2017 15:42	2.50	1.30	21.40	2451	8.38	1.3	8.90	102.0
LW4.1	High	2/9/2017 16:00	0.90	0.40	21.10	2487	8.36	2.3	8.60	98.0
LW3.85	High	2/9/2017 15:39	1.17	0.58	21.69	2394	8.46	1.1	9.57	109.7
GLW3.78	High	2/9/2017 16:30	2.58	1.29	21.21	2397	8.28	2.7	8.51	96.6
LW3.75	High	2/9/2017 16:05	1.67	0.83	21.63	2356	8.42	0.8	8.83	101.0
LWC3.7 [t/ss]	High	2/9/2017 15:54	1.17	0.58	22.03	3270	7.46	0.6	5.31	61.7
LW3.4	High	2/9/2017 16:48	1.25	0.63	21.45	2379	8.36	9.3	8.15	92.9

Notes:

- 1) Measurement disqualified: Field team noted that turbidity probe is malfunctioning and was therefore not recorded.
- 2) Dissolved Oxygen and Turbidity probes sensors failed and therefore were not recorded.
- 3) Field team noted that pH reading seemed low at LWC6.1_1 on 2/8/2016.

Spec. Cond. - Specific Conductivity

LW - Prefix indicates historical locations that were also sampled in May 2016

GLW - Prefix indicates new grab locations

ft - feet

ID - identification

t/ss - tributary/side stream; added for clarity and not part of actual Location ID

% saturation for dissolved oxygen is based on sample temperature and daily atmospheric barometric pressure (input during calibration)

°C - degrees Celsius

µS/cm - micro-Siemens per centimeter

NTU - Nephelometric Turbidity Unit

mg/L - milligrams per Liter

% - Percent

Table 11 GPS Coordinates: Discrete Sampling
 NERT Remedial Investigation - Downgradient Study Area
 Henderson, Nevada

Sample Day	Targeted Flow	Location ID	Date and Time of Sample Collection		GPS Coordinates		Additional Information
					Northing	Easting	
Day 1	Low	LW7.2	2/6/2017	9:45	26735154.1764	828169.516523	Team without GPS (Stations Staked). Coordinates from December 2016.
Day 1	Low	LW6.7	2/6/2017	10:15	26734766.8596	829555.863160	Team without GPS (Stations Staked). Coordinates from December 2016.
Day 1	Low	LW6.05	2/6/2017	11:20	26734195.7184	832631.194936	Team without GPS (Stations Staked). Coordinates from December 2016.
Day 1	Low	LWC6.1_1 [t/ss]	2/6/2017	9:45	36° 05' 09.7118" N	114° 59' 10.2496" W	Converted coordinates: 26733478.5980 UTM Northing, 832602.959035 UTM Easting
Day 1	Low	LWC6.1_2 [t/ss]	2/6/2017	10:00	36° 05' 09.3302" N	114° 59' 10.6786" W	Converted coordinates: 26733439.7965 UTM Northing, 832567.986184 UTM Easting
Day 1	Low	GLWC6.1_3 [t/ss]	2/6/2017	10:07	36° 05' 10.2830" N	114° 59' 10.7778" W	t/ss. Converted coordinates: 26733536.0886 UTM Northing, 832559.253154 UTM Easting
Day 1	Low	GLWC6.1_4 [t/ss]	2/6/2017	10:35	36° 05' 14.8717" N	114° 59' 10.9452" W	t/ss. Converted coordinates: 26733999.9893 UTM Northing, 832542.666511 UTM Easting
Day 1	Low	LW5.9	2/6/2017	11:08	36° 05' 15.8894" N	114° 58' 59.9004" W	Converted coordinates: 26734108.4713 UTM Northing, 833448.50446 UTM Easting
Day 1	Low	LW5.3	2/6/2017	10:00	26734884.8696	836443.594463	Coordinates duplicated (shallow sample)
Day 1	Low	LW5.3	2/6/2017	10:35	26734884.8696	836443.594463	Coordinates duplicated (deep sample)
Day 1	Low	LW4.95	2/6/2017	11:30	26735811.1617	838356.807172	
Day 1	Low	GLW4.9	2/6/2017	11:15	26735748.9325	838930.751235	
Day 1	Low	GLW4.85	2/6/2017	10:22	26735901.5496	839338.536180	Team without GPS (Stations Staked). Coordinates from December 2016.
Day 1	Low	GLW4.4	2/6/2017	11:04	26736802.1895	841941.137930	Team without GPS (Stations Staked). Coordinates from December 2016.
Day 1	Low	LW4.1	2/6/2017	11:20	26736833.1567	842708.315530	Team without GPS (Stations Staked). Coordinates from December 2016.
Day 1	Low	LW3.85	2/6/2017	9:53	26737186.6278	843989.553781	Team without GPS (Stations Staked). Coordinates from December 2016.
Day 1	Low	GLW3.78	2/6/2017	10:45	26737396.7569	844398.532622	Team without GPS (Stations Staked). Coordinates from December 2016.
Day 1	Low	LW3.75	02/06/17	10:25	26737672.9440	844386.046426	Team without GPS (Stations Staked). Coordinates from December 2016.
Day 1	Low	LWC3.7 [t/ss]	02/06/17	10:16	26737590.0758	844557.400742	Team without GPS (Stations Staked). Coordinates from December 2016.
Day 1	Low	LW3.4	02/06/17	11:10	26738900.7254	845419.303874	Team without GPS (Stations Staked). Coordinates from December 2016.
Day 1	Mid	LW7.2	2/6/2017	12:10	26735154.1764	828169.516523	Team without GPS (Stations Staked). Coordinates from December 2016.
Day 1	Mid	LW6.05	2/6/2017	12:36	26734195.7184	832631.194936	Team without GPS (Stations Staked). Coordinates from December 2016.
Day 1	Mid	LW4.95	2/6/2017	13:20	26735811.1617	838356.807172	Coordinates not collected during high flow sampling. (Low flow coordinates duplicated).
Day 1	Mid	GLW4.4	2/6/2017	14:15	26736802.1895	841941.137930	Team without GPS (Stations Staked). Coordinates from December 2016.
Day 1	Mid	LW3.4	02/06/17	14:46	26738900.7254	845419.303874	Team without GPS (Stations Staked). Coordinates from December 2016.
Day 1	High	LW7.2	2/6/2017	14:30	26735154.1764	828169.516523	Team without GPS (Stations Staked). Coordinates from December 2016.
Day 1	High	LW6.7	2/6/2017	15:00	26734766.8596	829555.863160	Team without GPS (Stations Staked). Coordinates from December 2016.
Day 1	High	LW6.05	2/6/2017	15:26	26734195.7184	832631.194936	Team without GPS (Stations Staked). Coordinates from December 2016.
Day 1	High	LWC6.1_1 [t/ss]	2/6/2017	14:43	36° 05' 09.6713" N	114° 59' 10.2112" W	Converted coordinates: 26733474.5222 UTM Northing, 832606.13581 UTM Easting
Day 1	High	LWC6.1_2 [t/ss]	2/6/2017	14:55	36° 05' 09.3230" N	114° 59' 10.6850" W	Converted coordinates: 26733439.0652 UTM Northing, 832567.465379 UTM Easting
Day 1	High	GLWC6.1_3 [t/ss]	2/6/2017	15:00	36° 05' 10.3201" N	114° 59' 10.7984" W	t/ss. Converted coordinates: 26733539.8296 UTM Northing, 832557.539413 UTM Easting
Day 1	High	GLWC6.1_4 [t/ss]	2/6/2017	15:45	36° 05' 14.8717" N	114° 59' 10.9452" W	t/ss. Converted coordinates: 26733999.9893 UTM Northing, 832542.666511 UTM Easting
Day 1	High	LW5.9	2/6/2017	15:18	36° 05' 15.8729" N	114° 58' 59.9037" W	Converted coordinates: 26734106.8012 UTM Northing, 833448.243914 UTM Easting
Day 1	High	LW5.3	2/6/2017	16:00	26734891.4440	836452.228633	Coordinates duplicated (shallow sample)
Day 1	High	LW5.3	2/6/2017	16:10	26734891.4440	836452.228633	Coordinates duplicated (deep sample)
Day 1	High	LW4.95	2/6/2017	15:15	26735811.1617	838356.807172	Coordinates not collected during high flow sampling. (Low flow coordinates duplicated).
Day 1	High	GLW4.9	2/6/2017	15:00	26735748.9325	838930.751235	Coordinates not collected during high flow sampling. (Low flow coordinates duplicated).
Day 1	High	GLW4.85	2/6/2017	15:58	26735901.5496	839338.536180	Team without GPS (Stations Staked). Coordinates from December 2016.
Day 1	High	GLW4.4	2/6/2017	16:19	26736802.1895	841941.137930	Team without GPS (Stations Staked). Coordinates from December 2016.
Day 1	High	LW4.1	2/6/2017	16:42	26736833.1567	842708.315530	Team without GPS (Stations Staked). Coordinates from December 2016.
Day 1	High	LW3.85	2/6/2017	16:03	26737186.6278	843989.553781	Team without GPS (Stations Staked). Coordinates from December 2016.
Day 1	High	GLW3.78	2/6/2017	16:40	26737396.7569	844398.532622	Team without GPS (Stations Staked). Coordinates from December 2016.
Day 1	High	LW3.75	02/06/17	16:30	26737672.9440	844386.046426	Team without GPS (Stations Staked). Coordinates from December 2016.
Day 1	High	LWC3.7 [t/ss]	02/06/17	16:20	26737590.0758	844557.400742	Team without GPS (Stations Staked). Coordinates from December 2016.
Day 1	High	LW3.4	02/06/17	17:01	26738900.7254	845419.303874	Team without GPS (Stations Staked). Coordinates from December 2016.
Day 2	Low	LW7.2	2/7/2017	8:55	26735154.1764	828169.516523	Did not collect coordinates (Stations Staked). Coordinates from December 2016.

Table 11 GPS Coordinates: Discrete Sampling
 NERT Remedial Investigation - Downgradient Study Area
 Henderson, Nevada

Sample Day	Targeted Flow	Location ID	Date and Time of Sample Collection		GPS Coordinates		Additional Information
					Northing	Easting	
Day 2	Low	LW6.7	2/7/2017	9:13	26734766.8596	829555.863160	Did not collect coordinates (Stations Staked). Coordinates from December 2016.
Day 2	Low	LW6.05	2/7/2017	9:30	26734195.7184	832631.194936	Did not collect coordinates (Stations Staked). Coordinates from December 2016.
Day 2	Low	LWC6.1_1 [t/ss]	2/7/2017	9:03	36° 05' 09.6804" N	114° 59' 10.2501" W	Converted coordinates: 26733475.4227 UTM Northing, 832602.937489 UTM Easting
Day 2	Low	LWC6.1_2 [t/ss]	2/7/2017	9:20	36° 05' 09.2779" N	114° 59' 10.6500" W	Converted coordinates: 26733434.5226 UTM Northing, 832570.365957 UTM Easting
Day 2	Low	GLWC6.1_3 [t/ss]	2/7/2017	9:30	36° 05' 10.3068" N	114° 59' 10.7887" W	t/ss. Converted coordinates: 26733538.4896 UTM Northing, 832558.343782 UTM Easting
Day 2	Low	GLWC6.1_4 [t/ss]	2/7/2017	10:35	36° 05' 14.8862" N	114° 59' 10.9549" W	t/ss. Converted coordinates: 26734001.4506 UTM Northing, 832541.861412 UTM Easting
Day 2	Low	LW5.9	2/7/2017	10:00	36° 05' 15.8602" N	114° 58' 59.9034" W	Converted coordinates: 26734105.5172 UTM Northing, 833448.276457 UTM Easting
Day 2	Low	LW5.3	2/7/2017	9:45	26734888.1166	836458.754538	Coordinates duplicated (shallow sample)
Day 2	Low	LW5.3	2/7/2017	9:50	26734888.1166	836458.754538	Coordinates duplicated (deep sample)
Day 2	Low	LW4.95	2/7/2017	10:45	26735807.7765	838355.131651	
Day 2	Low	GLW4.9	2/7/2017	10:55	26735746.4400	838931.121641	
Day 2	Low	GLW4.85	2/7/2017	9:42	36° 05' 33.05" N	114° 57' 48.074" W	Converted coordinates: 26735880.6328 UTM Northing, 839332.388411 UTM Easting
Day 2	Low	GLW4.4	2/7/2017	10:18	36° 05' 41.922" N	114° 57' 16.016" W	Converted coordinates: 26736794.6167 UTM Northing, 841957.49863 UTM Easting
Day 2	Low	LW4.1	2/7/2017	10:39	36° 05' 42.272" N	114° 57' 06.950" W	Converted coordinates: 26736834.8277 UTM Northing, 842701.267355 UTM Easting
Day 2	Low	LW3.85	2/7/2017	10:12	26737239.7881	844063.690444	Waypoint recorded twice on GPS
Day 2	Low	LW3.85	2/7/2017	10:12	26737238.3288	844063.588410	Waypoint recorded twice on GPS
Day 2	Low	GLW3.78	2/7/2017	9:35	26737449.1036	844428.592273	
Day 2	Low	LW3.75	2/7/2017	10:45	26737663.5481	844381.142565	
Day 2	Low	LWC3.7 [t/ss]	2/7/2017	10:32	26737563.6343	844536.652300	Missing GPS Waypoint Data. Coordinates recorded in Field Notes
Day 2	Low	LW3.4	2/7/2017	11:11	26738904.2979	845421.736284	
Day 2	Mid	LW7.2	2/7/2017	10:55	26735154.1764	828169.516523	Did not collect coordinates (Stations Staked). Coordinates from December 2016.
Day 2	Mid	LW6.05	2/7/2017	11:20	26734195.7184	832631.194936	Did not collect coordinates (Stations Staked). Coordinates from December 2016.
Day 2	Mid	LW4.95	2/7/2017	13:25	26735808.4507	838354.240905	
Day 2	Mid	GLW4.4	2/7/2017	14:11	36° 05' 42.060" N	114° 57' 16.206" W	Converted coordinates: 26736808.4698 UTM Northing, 841941.816113 UTM Easting
Day 2	Mid	LW3.4	2/7/2017	14:35	36° 06' 02.536" N	114° 56' 33.507" W	Converted coordinates: 26738901.7749 UTM Northing, 845432.254704 UTM Easting
Day 2	High	LW7.2	2/7/2017	14:02	26735154.1764	828169.516523	Did not collect coordinates (Stations Staked). Coordinates from December 2016.
Day 2	High	LW6.7	2/7/2017	14:25	26734766.8596	829555.863160	Did not collect coordinates (Stations Staked). Coordinates from December 2016.
Day 2	High	LW6.05	2/7/2017	14:48	26734195.7184	832631.194936	Did not collect coordinates (Stations Staked). Coordinates from December 2016.
Day 2	High	LWC6.1_1 [t/ss]	2/7/2017	14:45	36° 05' 09.6760" N	114° 59' 10.2142" W	Converted coordinates: 26733474.9959 UTM Northing, 832605.886671 UTM Easting
Day 2	High	LWC6.1_2 [t/ss]	2/7/2017	14:58	36° 05' 09.2632" N	114° 59' 10.4620" W	Converted coordinates: 26733433.1309 UTM Northing, 832585.804986 UTM Easting
Day 2	High	GLWC6.1_3 [t/ss]	2/7/2017	15:06	36° 05' 10.2877" N	114° 59' 10.7966" W	t/ss. Converted coordinates: 26733536.5543 UTM Northing, 832557.707253 UTM Easting
Day 2	High	GLWC6.1_4 [t/ss]	2/7/2017	16:10	36° 05' 14.9068" N	114° 59' 11.0212" W	t/ss. Converted coordinates: 26734003.5002 UTM Northing, 832536.407232 UTM Easting
Day 2	High	LW5.9	2/7/2017	15:27	36° 05' 15.9842" N	114° 59' 00.0598" W	Converted coordinates: 26734117.9763 UTM Northing, 833435.363045 UTM Easting
Day 2	High	LW5.3	2/7/2017	15:45	26734888.1251	836462.868375	Coordinates duplicated (shallow sample)
Day 2	High	LW5.3	2/7/2017	15:50	26734888.1251	836462.868375	Coordinates duplicated (deep sample)
Day 2	High	LW4.95	2/7/2017	16:30	26735809.7788	838354.715313	
Day 2	High	GLW4.9	2/7/2017	16:45	26735747.9453	838930.335881	
Day 2	High	GLW4.85	2/7/2017	15:42	26735882.3118	839339.757962	
Day 2	High	GLW4.4	2/7/2017	16:06	26736807.6416	841942.960761	
Day 2	High	LW4.1	2/7/2017	16:20	26736837.0435	842706.112122	
Day 2	High	LW3.85	2/7/2017	15:50	26737240.1667	844062.261969	
Day 2	High	GLW3.78	2/7/2017	16:35	26737449.1000	844425.674956	
Day 2	High	LW3.75	2/7/2017	16:25	26737665.6337	844381.800700	
Day 2	High	LWC3.7 [t/ss]	2/7/2017	16:10	26737564.7743	844533.517260	
Day 2	High	LW3.4	2/7/2017	17:00	26738904.4659	845421.394093	
Day 3	Low	LW7.2	2/8/2017	8:45	26735154.1764	828169.516523	Did not collect coordinates (Stations Staked). Coordinates from December 2016.

Table 11 GPS Coordinates: Discrete Sampling
 NERT Remedial Investigation - Downgradient Study Area
 Henderson, Nevada

Sample Day	Targeted Flow	Location ID	Date and Time of Sample Collection		GPS Coordinates		Additional Information
					Northing	Easting	
Day 3	Low	LW6.7	2/8/2017	9:03	26734766.8596	829555.863160	Did not collect coordinates (Stations Staked). Coordinates from December 2016.
Day 3	Low	LW6.05	2/8/2017	9:35	26734195.7184	832631.194936	Did not collect coordinates (Stations Staked). Coordinates from December 2016.
Day 3	Low	LWC6.1_1 [t/ss]	2/8/2017	9:45	36° 05' 09.6816" N	114° 59' 10.3146" W	Converted coordinates: 26733475.5115 UTM Northing, 832597.642981 UTM Easting
Day 3	Low	LWC6.1_2 [t/ss]	2/8/2017	10:00	36° 05' 09.2809" N	114° 59' 10.6487" W	Converted coordinates: 26733434.8266 UTM Northing, 832570.470791 UTM Easting
Day 3	Low	GLWC6.1_3 [t/ss]	2/8/2017	10:05	36° 05' 10.3140" N	114° 59' 10.7670" W	t/ss. Converted coordinates: 26733539.2286 UTM Northing, 832560.120312 UTM Easting
Day 3	Low	GLWC6.1_4 [t/ss]	2/8/2017	11:20	36° 05' 14.8944" N	114° 59' 10.9785" W	t/ss. Converted coordinates: 26734002.2679 UTM Northing, 832539.919416 UTM Easting
Day 3	Low	LW5.9	2/8/2017	10:35	36° 05' 15.9718" N	114° 58' 59.9401" W	Converted coordinates: 26734116.783 UTM Northing, 833445.194803 UTM Easting
Day 3	Low	LW5.3	2/8/2017	10:00	26734887.8450	836462.156762	Coordinates duplicated (shallow sample)
Day 3	Low	LW5.3	2/8/2017	10:03	26734887.8450	836462.156762	Coordinates duplicated (deep sample)
Day 3	Low	LW4.95	2/8/2017	10:30	26735810.1853	838356.295691	
Day 3	Low	GLW4.9	2/8/2017	10:50	26735747.2766	838930.895591	
Day 3	Low	GLW4.85	2/8/2017	9:45	26735881.1461	839340.944968	
Day 3	Low	GLW4.4	2/8/2017	10:07	26736803.9428	841944.462727	
Day 3	Low	LW4.1	2/8/2017	10:22	26736832.0458	842707.967105	
Day 3	Low	LW3.85	2/8/2017	9:27	26737238.3288	844063.588500	Missing GPS Waypoint Data. Coordinates recorded in Field Notes
Day 3	Low	GLW3.78	2/8/2017	10:10	26737448.1991	844428.807824	
Day 3	Low	LW3.75	2/8/2017	9:57	26737667.1754	Error	GPS malfunction
Day 3	Low	LWC3.7 [t/ss]	2/8/2017	9:48	26737565.9731	844536.993959	
Day 3	Low	LW3.4	2/8/2017	10:30	26738904.5820	845421.363600	
Day 3	Mid	LW7.2	2/8/2017	11:07	26735154.1764	828169.516523	Did not collect coordinates (Stations Staked). Coordinates from December 2016.
Day 3	Mid	LW6.05	2/8/2017	12:35	26734195.7184	832631.194936	Did not collect coordinates (Stations Staked). Coordinates from December 2016.
Day 3	Mid	LW4.95	2/8/2017	13:05	26735809.4675	838354.471875	
Day 3	Mid	GLW4.4	2/8/2017	13:47	26736803.1138	841944.901046	
Day 3	Mid	LW3.4	2/8/2017	14:18	26738907.3651	845419.535829	
Day 3	High	LW7.2	2/8/2017	14:40	26735154.1764	828169.516523	Did not collect coordinates (Stations Staked). Coordinates from December 2016.
Day 3	High	LW6.7	2/8/2017	15:02	26734766.8596	829555.863160	Did not collect coordinates (Stations Staked). Coordinates from December 2016.
Day 3	High	LW6.05	2/8/2017	15:36	26734195.7184	832631.194936	Did not collect coordinates (Stations Staked). Coordinates from December 2016.
Day 3	High	LWC6.1_1 [t/ss]	2/8/2017	14:43	36° 05' 09.6956" N	114° 59' 10.2516" W	Converted coordinates: 26733476.9589 UTM Northing, 832602.804943 UTM Easting
Day 3	High	LWC6.1_2 [t/ss]	2/8/2017	14:53	36° 05' 09.2634" N	114° 59' 10.6608" W	Converted coordinates: 26733433.051 UTM Northing, 832569.488557 UTM Easting
Day 3	High	GLWC6.1_3 [t/ss]	2/8/2017	15:00	36° 05' 10.3593" N	114° 59' 10.7542" W	t/ss. Converted coordinates: 26733543.8155 UTM Northing, 832561.142742 UTM Easting
Day 3	High	GLWC6.1_4 [t/ss]	2/8/2017	16:07	36° 05' 14.9361" N	114° 59' 10.7070" W	t/ss. Converted coordinates: 26734006.6211 UTM Northing, 832562.176176 UTM Easting
Day 3	High	LW5.9	2/8/2017	15:41	36° 05' 15.9590" N	114° 58' 59.9295" W	Converted coordinates: 26734115.4941 UTM Northing, 833446.07275 UTM Easting
Day 3	High	LW5.3	2/8/2017	15:45	26734889.1159	836461.533404	Coordinates duplicated (shallow sample)
Day 3	High	LW5.3	2/8/2017	15:50	26734889.1159	836461.533404	Coordinates duplicated (deep sample)
Day 3	High	LW4.95	2/8/2017	16:20	26735807.7306	838354.144120	
Day 3	High	GLW4.9	2/8/2017	16:35	26735747.8042	838931.327021	
Day 3	High	GLW4.85	2/8/2017	16:00	26735887.0946	839339.005339	
Day 3	High	GLW4.4	2/8/2017	16:21	26736805.6256	841942.107088	
Day 3	High	LW4.1	2/8/2017	16:33	26736834.8368	842707.586857	
Day 3	High	LW3.85	2/8/2017	16:05	26737240.4931	844061.666498	
Day 3	High	GLW3.78	2/8/2017	16:42	26737448.4917	844427.161173	
Day 3	High	LW3.75	2/8/2017	16:30	26737664.6701	844380.716056	
Day 3	High	LWC3.7 [t/ss]	2/8/2017	16:20	26737565.3143	844533.514635	
Day 3	High	LW3.4	2/8/2017	17:05	26738901.5134	845417.720544	
Day 4	Low	LW7.2	2/9/2017	8:56	26735154.1764	828169.516523	Did not collect coordinates (Stations Staked). Coordinates from December 2016.
Day 4	Low	LW6.7	2/9/2017	9:11	26734766.8596	829555.863160	Did not collect coordinates (Stations Staked). Coordinates from December 2016.

Table 11 GPS Coordinates: Discrete Sampling
 NERT Remedial Investigation - Downgradient Study Area
 Henderson, Nevada

Sample Day	Targeted Flow	Location ID	Date and Time of Sample Collection		GPS Coordinates		Additional Information
					Northing	Easting	
Day 4	Low	LW6.05	2/9/2017	9:31	26734195.7184	832631.194936	Did not collect coordinates (Stations Staked). Coordinates from December 2016.
Day 4	Low	LWC6.1_1 [t/ss]	2/9/2017	9:10	36° 05' 09.6459" N	114° 59' 10.2078" W	Converted coordinates: 26733471.9556 UTM Northing, 832606.430628 UTM Easting
Day 4	Low	LWC6.1_2 [t/ss]	2/9/2017	9:25	36° 05' 09.3077" N	114° 59' 10.6846" W	Converted coordinates: 26733437.5184 UTM Northing, 832567.507704 UTM Easting
Day 4	Low	GLWC6.1_3 [t/ss]	2/9/2017	9:32	36° 05' 10.2657" N	114° 59' 10.7493" W	t/ss. Converted coordinates: 26733534.3536 UTM Northing, 832561.60299 UTM Easting
Day 4	Low	GLWC6.1_4 [t/ss]	2/9/2017	10:33	36° 05' 14.7784" N	114° 59' 10.9370" W	t/ss. Converted coordinates: 26733990.5595 UTM Northing, 832543.397403 UTM Easting
Day 4	Low	LW5.9	2/9/2017	10:01	36° 05' 15.8657" N	114° 58' 59.8537" W	Converted coordinates: 26734106.0985 UTM Northing, 833452.352009 UTM Easting
Day 4	Low	LW5.3	2/9/2017	10:00	26734889.0690	836463.610500	Coordinates duplicated (shallow sample)
Day 4	Low	LW5.3	2/9/2017	10:03	26734889.0690	836463.610500	Coordinates duplicated (deep sample)
Day 4	Low	LW4.95	2/9/2017	10:35	26735806.7716	838356.088342	
Day 4	Low	GLW4.9	2/9/2017	10:50	26735747.4928	838932.849656	
Day 4	Low	GLW4.85	2/9/2017	9:58	26735901.5496	839338.536180	Did not collect coordinates (Stations Staked). Coordinates from December 2016.
Day 4	Low	GLW4.4	2/9/2017	10:22	26736802.1895	841941.137930	Did not collect coordinates (Stations Staked). Coordinates from December 2016.
Day 4	Low	LW4.1	2/9/2017	10:38	26736833.1567	842708.315530	Did not collect coordinates (Stations Staked). Coordinates from December 2016.
Day 4	Low	LW3.85	2/9/2017	10:30	26737240.8553	844063.666822	
Day 4	Low	GLW3.78	2/9/2017	11:28	26737449.2575	844429.193650	
Day 4	Low	LW3.75	2/9/2017	10:58	26737664.0159	844381.547420	
Day 4	Low	LWC3.7 [t/ss]	2/9/2017	10:48	26737565.0282	844536.931295	
Day 4	Low	LW3.4	2/9/2017	12:00	26738904.2733	845419.821918	
Day 4	Mid	LW7.2	2/9/2017	10:52	26735154.1764	828169.516523	Did not collect coordinates (Stations Staked). Coordinates from December 2016.
Day 4	Mid	LW6.05	2/9/2017	12:00	26734195.7184	832631.194936	Did not collect coordinates (Stations Staked). Coordinates from December 2016.
Day 4	Mid	LW4.95	2/9/2017	12:30	26735808.4219	838354.430209	
Day 4	Mid	GLW4.4	2/9/2017	13:11	26736802.1895	841941.137930	Did not collect coordinates (Stations Staked). Coordinates from December 2016.
Day 4	Mid	LW3.4	2/9/2017	13:33	26738904.3412	845419.812700	
Day 4	High	LW7.2	2/9/2017	14:41	26735154.1764	828169.516523	Did not collect coordinates (Stations Staked). Coordinates from December 2016.
Day 4	High	LW6.7	2/9/2017	15:04	26734766.8596	829555.863160	Did not collect coordinates (Stations Staked). Coordinates from December 2016.
Day 4	High	LW6.05	2/9/2017	15:23	26734195.7184	832631.194936	Did not collect coordinates (Stations Staked). Coordinates from December 2016.
Day 4	High	LWC6.1_1 [t/ss]	2/9/2017	14:39	36° 05' 09.7005" N	114° 59' 10.2909" W	Converted coordinates: 26733477.4345 UTM Northing, 832599.576399 UTM Easting
Day 4	High	LWC6.1_2 [t/ss]	2/9/2017	14:52	36° 05' 09.3136" N	114° 59' 10.6776" W	Converted coordinates: 26733438.1185 UTM Northing, 832568.07856 UTM Easting
Day 4	High	GLWC6.1_3 [t/ss]	2/9/2017	14:57	36° 05' 10.2903" N	114° 59' 10.7594" W	t/ss. Converted coordinates: 26733536.836 UTM Northing, 832560.75878 UTM Easting
Day 4	High	GLWC6.1_4 [t/ss]	2/9/2017	15:51	36° 05' 14.8989" N	114° 59' 11.1918" W	t/ss. Converted coordinates: 26734002.6155 UTM Northing, 832522.410593 UTM Easting
Day 4	High	LW5.9	2/9/2017	15:27	36° 05' 15.8877" N	114° 58' 59.9175" W	Converted coordinates: 26734108.2907 UTM Northing, 833447.102088 UTM Easting
Day 4	High	LW5.3	2/9/2017	15:15	26734890.5677	836465.120667	Coordinates duplicated (shallow sample)
Day 4	High	LW5.3	2/9/2017	15:18	26734890.5677	836465.120667	Coordinates duplicated (deep sample)
Day 4	High	LW4.95	2/9/2017	15:40	26735807.5360	838353.319647	
Day 4	High	GLW4.9	2/9/2017	15:53	26735747.9321	838931.861140	
Day 4	High	GLW4.85	2/9/2017	15:18	26735901.5496	839338.536180	Did not collect coordinates (Stations Staked). Coordinates from December 2016.
Day 4	High	GLW4.4	2/9/2017	15:44	26736802.1895	841941.137930	Did not collect coordinates (Stations Staked). Coordinates from December 2016.
Day 4	High	LW4.1	2/9/2017	16:02	26736833.1567	842708.315530	Did not collect coordinates (Stations Staked). Coordinates from December 2016.
Day 4	High	LW3.85	2/9/2017	15:45	26737236.7156	844062.678307	
Day 4	High	GLW3.78	2/9/2017	16:30	26737445.4478	844427.814387	
Day 4	High	LW3.75	2/9/2017	16:11	26737662.7206	844379.987383	
Day 4	High	LWC3.7 [t/ss]	2/9/2017	16:00	26737562.6181	844536.418173	
Day 4	High	LW3.4	2/9/2017	16:55	26738902.1695	845423.273700	

Notes:

ID - Identification

t/ss - tributary/side stream; added for clarity and not part of actual Location ID

Table 12 Samples Collected: Discrete Sampling
 NERT Remedial Investigation - Downgradient Study Area
 Henderson, Nevada

Sample ID (Append HH:MM-Interval)	Timing	QC Type	Date Sampled	Time
DAY 1				
TEAM 1				
LW3.85-20170206-09:53-0.6	low flow		2/6/2017	9:53
GLW3.78-20170206-10:45-0.42	low flow		2/6/2017	10:45
LW3.75-20170206-10:25-0.83	low flow		2/6/2017	10:25
LWC3.7-20170206-10:16-0.33	low flow		2/6/2017	10:16
LW3.4-20170206-11:10-0.42	low flow		2/6/2017	11:10
LW3.4-20170206-14:46-0.63	mid flow		2/6/2017	14:46
LW3.85-20170206-16:03-0.58	high flow		2/6/2017	16:03
GLW3.78-20170206-16:40-0.96	high flow		2/6/2017	16:40
LW3.75-20170206-16:30-0.67	high flow		2/6/2017	16:30
LWC3.7-20170206-16:20-0.58	high flow		2/6/2017	16:20
LW3.4-20170206-17:01-0.7	high flow		2/6/2017	17:01
LW3.4-20170206-17:01-0.7-FD	high flow	FD	2/6/2017	17:01
LW3.85-20170206-1300-FB		FB	2/6/2017	
LW3.85-201702061300-EB		EB	2/6/2017	
TEAM 2				
GLW4.85-20170206-10:22-0.6	low flow		2/6/2017	10:22
GLW4.4-20170206-11:04-1.1	low flow		2/6/2017	11:04
LW4.1-20170206-11:20-0.3	low flow		2/6/2017	11:20
GLW4.4-20170206-14:15-1.2	mid flow		2/6/2017	14:15
GLW4.85-20170206-15:58-0.6	high flow		2/6/2017	15:58
GLW4.4-20170206-16:19-1.3	high flow		2/6/2017	16:19
LW4.1-20170206-16:42-0.6	high flow		2/6/2017	16:42
GLW4.4-20170206-14:55-FB		FB	2/6/2017	
GLW4.4-20170206-14:58-EB		EB	2/6/2017	
TEAM 3				
LW5.3-20170206-10:00-1.2	low flow shallow		2/6/2017	10:00
LW5.3-20170206-10:35-2.35	low flow deep		2/6/2017	10:35
LW4.95-20170206-11:30-1.1	low flow		2/6/2017	11:30
GLW4.9-20170206-11:15-1.45	low flow		2/6/2017	11:15
LW4.95-20170206-13:20-1.08	mid flow		2/6/2017	13:20
LW5.3-20170206-16:00-1.2	high flow shallow		2/6/2017	16:00
LW5.3-20170206-16:10-2.3	high flow deep		2/6/2017	16:10
LW4.95-20170206-15:15-1.1	high flow		2/6/2017	15:15
GLW4.9-20170206-15:00-1.5	high flow		2/6/2017	15:00
LW5.3-20170206-14:26-FB		FB	2/6/2017	
LW5.3-20170206-14:24-EB		EB w/pump	2/6/2017	
TEAM 4				
LWC6.1_1-20170206-09:45-0.58	low flow		2/6/2017	9:45
LWC6.1_2-20170206-10:00-0.8	low flow		2/6/2017	10:00
GLWC6.1_3-20170206-10:07-1.0	low flow		2/6/2017	10:07
GLWC6.1_4-20170206-10:35-1.1	low flow		2/6/2017	10:35
LW5.9-20170206-11:08-0.5	low flow		2/6/2017	11:08
LWC6.1_1-20170206-14:43-0.8	high flow		2/6/2017	14:43
LWC6.1_2-20170206-15:55-0.6	high flow		2/6/2017	15:55
GLWC6.1_3-20170206-15:00-0.9	high flow		2/6/2017	15:00
GLWC6.1_4-20170206-15:45-1.3	high flow		2/6/2017	15:45
GLWC6.1_4-20170206-15:45-1.3-FD	high flow	FD	2/6/2017	15:45
LW5.9-20170206-15:18-0.6	high flow		2/6/2017	15:18
LW5.9-20170206-14:23-EB		EB	2/6/2017	14:23

Table 12 Samples Collected: Discrete Sampling
 NERT Remedial Investigation - Downgradient Study Area
 Henderson, Nevada

Sample ID (Append HH:MM-Interval)	Timing	QC Type	Date Sampled	Time
TEAM 5				
LW7.2-20170206-09:45-0.8	low flow		2/6/2017	9:45
LW6.7-20170206-10:15-0.4	low flow		2/6/2017	10:15
LW6.05-20170206-11:20-0.6	low flow		2/6/2017	11:20
LW7.2-20170206-12:10-0.8	mid flow		2/6/2017	12:10
LW6.05-20170206-12:36-0.7	mid flow		2/6/2017	12:36
LW7.2-20170206-14:30-1.0	high flow		2/6/2017	14:30
LW7.2-20170206-14:30-1.0-FD	high flow	FD	2/6/2017	14:30
LW6.7-20170206-15:00-0.6	high flow		2/6/2017	15:00
LW6.05-20170206-15:26-0.7	high flow		2/6/2017	15:26
LW7.2-20170206-15:50-EB		EB	2/6/2017	15:50
DAY 2				
TEAM 1				
LW3.85-20170207-10:12-0.5	low flow		2/7/2017	10:12
GLW3.78-20170207-09:35-0.7	low flow		2/7/2017	9:35
LW3.75-20170207-10:45-0.9	low flow		2/7/2017	10:45
LWC3.7-20170207-10:32-0.4	low flow		2/7/2017	10:32
LW3.4-20170207-11:11-0.5-MS	low flow	MS	2/7/2017	11:11
LW3.4-20170207-11:11-0.5-MSD	low flow	MSD	2/7/2017	11:11
LW3.4-20170207-11:11-0.5	low flow		2/7/2017	11:11
LW3.4-20170207-14:35-0.6	mid flow		2/7/2017	14:35
LW3.85-20170207-15:50-0.6	high flow		2/7/2017	15:50
LW3.85-20170207-15:50-0.6-FD	high flow	FD	2/7/2017	15:50
GLW3.78-20170207-16:35-1.2	high flow		2/7/2017	16:35
LW3.75-20170207-16:25-1.0	high flow		2/7/2017	16:25
LWC3.7-20170207-16:10-0.6	high flow		2/7/2017	16:10
LW3.4-20170207-17:00-0.7	high flow		2/7/2017	17:00
TEAM 2				
GLW4.85-20170207-09:42-0.7	low flow		2/7/2017	9:42
GLW4.4-20170207-10:18-1.1	low flow		2/7/2017	10:18
LW4.1-20170207-10:39-0.3-MS	low flow	MS	2/7/2017	10:39
LW4.1-20170207-10:39-0.3-MSD	low flow	MSD	2/7/2017	10:39
LW4.1-20170207-10:39-0.3	low flow		2/7/2017	10:39
GLW4.4-20170207-14:11-1.3	mid flow		2/7/2017	14:11
GLW4.4-20170207-14:11-1.3-FD	mid flow	FD	2/7/2017	14:11
GLW4.85-20170207-15:42-0.8	high flow		2/7/2017	15:42
GLW4.85-20170207-15:42-0.8-FD	high flow	FD	2/7/2017	15:42
GLW4.4-20170207-16:06-1.2	high flow		2/7/2017	16:06
LW4.1-20170207-16:20-0.4	high flow		2/7/2017	16:20
TEAM 3				
LW5.3-20170207-09:45-1.0	low flow shallow		2/7/2017	9:45
LW5.3-20170207-09:50-2.0	low flow deep		2/7/2017	9:50
LW4.95-20170207-10:45-1.0	low flow		2/7/2017	10:45
GLW4.9-20170207-10:55-1.2-MS	low flow	MS	2/7/2017	10:55
GLW4.9-20170207-10:55-1.2-MSD	low flow	MSD	2/7/2017	10:55
GLW4.9-20170207-10:55-1.2	low flow		2/7/2017	10:55
LW4.95-20170207-13:25-1.2	mid flow		2/7/2017	13:25
LW5.3-20170207-15:45-1.2	high flow shallow		2/7/2017	15:45
LW5.3-20170207-15:50-2.4	high flow deep		2/7/2017	15:50
LW4.95-20170207-16:30-1.2	high flow		2/7/2017	16:30
LW4.95-20170207-16:30-1.2-FD	high flow	FD	2/7/2017	16:30
GLW4.9-20170207-16:45-1.4	high flow		2/7/2017	16:45

Table 12 Samples Collected: Discrete Sampling
 NERT Remedial Investigation - Downgradient Study Area
 Henderson, Nevada

Sample ID (Append HH:MM-Interval)	Timing	QC Type	Date Sampled	Time
TEAM 4				
LWC6.1_1-20170207-09:03-0.9	low flow		2/7/2017	9:09
LWC6.1_2-20170207-09:20-0.7	low flow		2/7/2017	9:20
GLWC6.1_3-20170207-09:30-1.0	low flow		2/7/2017	9:30
GLWC6.1_4-20170207-10:35-1.3	low flow		2/7/2017	10:35
LW5.9-20170207-10:00-0.4-MS	low flow	MS	2/7/2017	10:00
LW5.9-20170207-10:00-0.4-MSD	low flow	MSD	2/7/2017	10:00
LW5.9-20170207-10:00-0.4	low flow		2/7/2017	10:00
LWC6.1_1-20170207-14:45-0.8	high flow		2/7/2017	14:45
LWC6.1_2-20170207-14:58-0.7	high flow		2/7/2017	14:58
GLWC6.1_3-20170207-15:06-0.9	high flow		2/7/2017	15:06
GLWC6.1_3-20170207-15:06-0.9-FD	high flow	FD	2/7/2017	15:06
GLWC6.1_4-20170207-16:10-1.3	high flow		2/7/2017	16:10
LW5.9-20170207-15:27-0.6	high flow		2/7/2017	15:27
TEAM 5				
LW7.2-20170207-08:55-0.7	low flow		2/7/2017	8:55
LW6.7-20170207-09:13-0.4	low flow		2/7/2017	9:13
LW6.05-20170207-09:30-0.6-MS	low flow	MS	2/7/2017	9:30
LW6.05-20170207-09:30-0.6-MSD	low flow	MSD	2/7/2017	9:30
LW6.05-20170207-09:30-0.6	low flow		2/7/2017	9:30
LW7.2-20170207-10:55-0.8	mid flow		2/7/2017	10:55
LW6.05-20170207-11:20-0.6	mid flow		2/7/2017	11:20
LW7.2-20170207-14:02-0.9	high flow		2/7/2017	14:02
LW6.7-20170207-14:25-0.6	high flow		2/7/2017	14:25
LW6.7-20170207-14:25-0.6-FD	high flow	FD	2/7/2017	14:25
LW6.05-20170207-14:48-0.7	high flow		2/7/2017	14:48
DAY 3				
TEAM 1				
LW3.85-20170208-09:27-0.5	low flow		2/8/2017	9:27
LW3.85-20170208-09:27-0.5-FD	low flow	FD	2/8/2017	9:27
GLW3.78-20170208-10:10-0.58	low flow		2/8/2017	10:10
LW3.75-20170208-09:57-0.8	low flow		2/8/2017	9:57
LWC3.7-20170208-09:48-0.5	low flow		2/8/2017	9:48
LW3.4-20170208-10:55-FB	low flow	FB	2/8/2017	10:55
LW3.4-20170208-10:30-0.5	low flow		2/8/2017	10:30
LW3.4-20170208-14:18-0.6	mid flow		2/8/2017	14:18
LW3.85-20170208-16:05-0.5	high flow		2/8/2017	16:05
GLW3.78-20170208-16:42-1.4	high flow		2/8/2017	16:42
LW3.75-20170208-16:30-1.0	high flow		2/8/2017	16:30
LWC3.7-20170208-16:20-0.5	high flow		2/8/2017	16:20
LW3.4-20170208-17:05-0.6	high flow		2/8/2017	17:05
TEAM 2				
GLW4.85-20170208-09:45-0.6	low flow		2/8/2017	9:45
GLW4.4-20170208-11:02-EB	low flow	EB	2/8/2017	11:02
GLW4.4-20170208-10:07-1.1	low flow		2/8/2017	10:07
LW4.1-20170208-11:12-FB	low flow	FB	2/8/2017	11:12
LW4.1-20170208-10:22-0.4	low flow		2/8/2017	10:22
LW4.1-20170208-10:22-0.4-FD	low flow	FD	2/8/2017	10:22
GLW4.4-20170208-13:47-1.2	mid flow		2/8/2017	13:47
GLW4.85-20170208-16:00-0.8	high flow		2/8/2017	16:00
GLW4.4-20170208-16:21-1.3	high flow		2/8/2017	16:21
LW4.1-20170208-16:33-0.4	high flow		2/8/2017	16:33

Table 12 Samples Collected: Discrete Sampling
 NERT Remedial Investigation - Downgradient Study Area
 Henderson, Nevada

Sample ID (Append HH:MM-Interval)	Timing	QC Type	Date Sampled	Time
TEAM 3				
LW5.3-20170208-10:00-1.0	low flow shallow		2/8/2017	10:00
LW5.3-20170208-10:03-2.0	low flow deep		2/8/2017	10:03
LW4.95-20170208-11:06-EB	low flow	EB	2/8/2017	11:06
LW4.95-20170208-10:30-1.1	low flow		2/8/2017	10:30
GLW4.9-20170208-11:09-FB	low flow	FB	2/8/2017	11:00
GLW4.9-20170208-10:50-1.2	low flow		2/8/2017	10:50
LW4.95-20170208-13:05-1.2	mid flow		2/8/2017	13:05
LW5.3-20170208-15:45-1.2	high flow shallow		2/8/2017	15:45
LW5.3-20170208-15:50-2.4	high flow deep		2/8/2017	15:50
LW4.95-20170208-16:20-1.3	high flow		2/8/2017	16:20
GLW4.9-20170208-16:35-1.4	high flow		2/8/2017	16:35
GLW4.9-20170208-16:35-1.4-FD	high flow	FD	2/8/2017	16:35
TEAM 4				
LWC6.1_1-20170208-11:40-EB	low flow	EB	2/8/2017	11:40
LWC6.1_1-20170208-09:45-0.9	low flow		2/8/2017	9:45
LWC6.1_2-20170208-10:00-0.6	low flow		2/8/2017	10:00
GLWC6.1_3-20170208-10:05-1.2	low flow		2/8/2017	10:05
GLWC6.1_4-20170208-10:35-1.3	low flow		2/8/2017	10:35
GLWC6.1_4-20170208-10:35-1.3-FD	low flow	FD	2/8/2017	10:35
LW5.9-20170208-11:45-FB	low flow	FB	2/8/2017	11:45
LW5.9-20170208-10:35-0.4	low flow		2/8/2017	10:35
LWC6.1_1-20170208-14:43-0.7	high flow		2/8/2017	14:43
LWC6.1_2-20170208-14:53-0.7	high flow		2/8/2017	14:53
GLWC6.1_3-20170208-15:00-1.0	high flow		2/8/2017	15:00
GLWC6.1_4-20170208-16:07-1.0	high flow		2/8/2017	16:07
LW5.9-20170208-15:41-0.6	high flow		2/8/2017	15:41
TEAM 5				
LW7.2-20170208-08:45-0.7	low flow		2/8/2017	8:45
LW6.7-20170208-10:35-EB	low flow	EB	2/8/2017	10:35
LW6.7-20170208-09:03-0.3	low flow		2/8/2017	9:03
LW6.05-20170208-10:30-FB	low flow	FB	2/8/2017	10:30
LW6.05-20170208-09:35-0.5	low flow		2/8/2017	9:35
LW7.2-20170208-11:07-0.8	mid flow		2/8/2017	11:07
LW6.05-20170208-12:35-0.8	mid flow		2/8/2017	12:35
LW6.05-20170208-12:35-0.8-FD	mid flow	FD	2/8/2017	12:35
LW7.2-20170208-14:40-0.9	high flow		2/8/2017	14:40
LW6.7-20170208-15:02-0.6	high flow		2/8/2017	15:02
LW6.05-20170208-15:36-0.7	high flow		2/8/2017	15:36
DAY 4				
TEAM 1				
LW3.85-20170209-10:30-0.5	low flow		2/9/2017	10:30
GLW3.78-20170209-11:28-0.3	low flow		2/9/2017	11:28
LW3.75-20170209-10:58-0.5	low flow		2/9/2017	10:58
LWC3.7-20170209-10:48-0.4	low flow		2/9/2017	10:48
LW3.4-20170209-12:00-0.5	low flow		2/9/2017	12:00
LW3.4-20170209-13:33-0.5	mid flow		2/9/2017	13:33
LW3.4-20170209-13:33-0.5-FD	mid flow	FD	2/9/2017	13:33
LW3.85-20170209-15:45-0.6	high flow		2/9/2017	15:45
GLW3.78-20170209-16:30-1.4	high flow		2/9/2017	16:30
LW3.75-20170209-16:11-0.8	high flow		2/9/2017	16:11
LWC3.7-20170209-16:00-0.6	high flow		2/9/2017	16:00
LW3.4-20170209-16:55-0.6	high flow		2/9/2017	16:55

Table 12 Samples Collected: Discrete Sampling
 NERT Remedial Investigation - Downgradient Study Area
 Henderson, Nevada

Sample ID (Append HH:MM-Interval)	Timing	QC Type	Date Sampled	Time
TEAM 2				
GLW4.85-20170209-09:58-0.7	low flow		2/9/2017	9:58
GLW4.4-20170209-10:22-1.1	low flow		2/9/2017	10:22
LW4.1-20170209-10:38-0.3	low flow		2/9/2017	10:38
GLW4.4-20170209-13:11-1.2	mid flow		2/9/2017	13:11
GLW4.4-20170209-13:11-1.2-MS	mid flow	MS	2/9/2017	13:11
GLW4.4-20170209-13:11-1.2-MSD	mid flow	MSD	2/9/2017	13:11
GLW4.85-20170209-15:18-0.8	high flow		2/9/2017	15:18
GLW4.4-20170209-15:44-1.3	high flow		2/9/2017	15:44
LW4.1-20170209-16:02-0.4	high flow		2/9/2017	16:02
LW4.1-20170209-16:02-0.4-FD	high flow	FD	2/9/2017	16:02
TEAM 3				
LW5.3-20170209-10:00-1.0	low flow shallow		2/9/2017	10:00
LW5.3-20170209-10:03-2.0	low flow deep		2/9/2017	10:03
LW4.95-20170209-10:35-1.0	low flow		2/9/2017	10:35
LW4.95-20170209-10:35-1.0-FD	low flow	FD	2/9/2017	10:35
GLW4.9-20170209-10:50-1.2	low flow		2/9/2017	10:50
LW4.95-20170209-12:30-1.1	mid flow		2/9/2017	12:30
LW4.95-20170209-12:30-1.1-MS	mid flow	MS	2/9/2017	12:30
LW4.95-20170209-12:30-1.1-MSD	mid flow	MSD	2/9/2017	12:30
LW5.3-20170209-15:15-1.1	high flow shallow		2/9/2017	15:15
LW5.3-20170209-15:18-1.2	high flow deep		2/9/2017	15:18
LW4.95-20170209-15:40-1.2	high flow		2/9/2017	15:40
GLW4.9-20170209-15:53-1.4	high flow		2/9/2017	15:53
TEAM 4				
LWC6.1_1-20170209-09:10-1.0	low flow		2/9/2017	9:10
LWC6.1_2-20170209-09:25-0.6	low flow		2/9/2017	9:25
GLWC6.1_3-20170209-09:32-1.2	low flow		2/9/2017	9:32
GLWC6.1_4-20170209-10:33-1.3	low flow		2/9/2017	10:33
GLWC6.1_4-20170209-10:33-1.3-MS	low flow	MS	2/9/2017	10:33
GLWC6.1_4-20170209-10:33-1.3-MSD	low flow	MSD	2/9/2017	10:33
LW5.9-20170209-10:01-0.4	low flow		2/9/2017	10:01
LWC6.1_1-20170209-14:39-1.1	high flow		2/9/2017	14:39
LWC6.1_1-20170209-14:39-1.1-FD	high flow	FD	2/9/2017	14:39
LWC6.1_2-20170209-14:52-0.8	high flow		2/9/2017	14:52
GLWC6.1_3-20170209-14:57-1.1	high flow		2/9/2017	14:57
GLWC6.1_4-20170209-15:51-1.6	high flow		2/9/2017	15:51
LW5.9-20170209-15:27-0.7	high flow		2/9/2017	15:27
TEAM 5				
LW7.2-20170209-08:56-0.7	low flow		2/9/2017	8:56
LW6.7-20170209-09:11-0.3	low flow		2/9/2017	9:11
LW6.05-20170209-09:31-0.5	low flow		2/9/2017	9:31
LW6.05-20170209-10:40-FB	low flow	FB	2/9/2017	10:40
LW7.2-20170209-10:52-0.8	mid flow		2/9/2017	10:52
LW7.2-20170209-10:52-0.8-MS	mid flow	MS	2/9/2017	10:52
LW7.2-20170209-10:52-0.8-MSD	mid flow	MSD	2/9/2017	10:52
LW6.05-20170209-12:00-0.6	mid flow		2/9/2017	12:00
LW7.2-20170209-14:41-0.9	high flow		2/9/2017	14:41
LW7.2-20170209-14:41-0.9-FD	high flow	FD	2/9/2017	14:41
LW6.7-20170209-15:04-0.6	high flow		2/9/2017	15:04
LW6.05-20170209-15:23-0.7	high flow		2/9/2017	15:23

Notes:

FD - field duplicate

FB - field blank

EB - equipment blank

MS - matrix spike

MSD - matrix spike duplicate

QC - quality control

Sample ID comprised of "Location"-"YYYYMMDD"-"Depth"-"QC type if applicable"

YYMMDD - YearMonthDay (example 20170209 is February 9, 2017)

Table 13 Analytical Program for Surface Water Samples
 NERT Remedial Investigation, Downgradient Study Area, Henderson, Nevada

Analytes	Matrix	Analytical Method	Analytical Laboratory
Perchlorate	Water	EPA Method 314.0 ⁽¹⁾	TestAmerica (Irvine, CA)
Chlorate	Water	EPA Method 300.1	TestAmerica (Irvine, CA)
Chloride ⁽²⁾	Water	EPA Method 300.0	TestAmerica (Irvine, CA)
Bromide ⁽²⁾	Water	EPA Method 300.0	TestAmerica (Irvine, CA)
Total Dissolved Solids	Water	SM 2540C	TestAmerica (Irvine, CA)

Notes:

EPA = United States Environmental Protection Agency

SM = Standard Method

MDL = Method Detection Limit

All groundwater and surface water samples will be analyzed for the constituents listed above.

1) For this NERT RI Downgradient Study Area, field-filtering of surface water samples for perchlorate analysis is not required (NDEP 2015).

2) Although included in the analytical suite, consideration was given to removal of chloride and bromide from the sampling suite. The chloride and bromide results from the May 2016 grab sampling event did not provide usable information pertaining to potential groundwater discharge to the LVW.

Sources:

NDEP. 2015. Email from James Dotchkin, Chief Bureau of Industrial Site Cleanup, Nevada Division of Environmental Protection, re: Sterile Filtration Not Required for NERT Regional Groundwater RI Perchlorate Samples, November 18.

Table 14 Analytical Results: Sampling Event during USGS Seepage Study
 NERT Remedial Investigation - Downgradient Study Area
 Henderson, Nevada

Location	Sample ID	Sample Date	Sample Time	Bromide (mg/L)	Chlorate (µg/L)	Chloride (mg/L)	Perchlorate (µg/L)	Total Dissolved Solids (mg/L)
LW7.2	LW7.2-20161208-1.0	12/8/2016	15:45	1.0	230	200	ND (<0.95)	1200
LW6.7	LW6.7-20161208-0.5	12/8/2016	15:10	2.0	64	240	ND (<0.95)	1400
LW6.05	LW6.05-20161208-0.5	12/8/2016	13:50	1.0	47	230	6.2 J	1400
GLWC6.1_3 [t/ss]	GLWC6.1_3-20161208-0.5	12/8/2016	12:20	0.32 J	120	200	1.7 J	1000
GLWC6.1_4 [t/ss]	GLWC6.1_4-20161208-0.5	12/8/2016	13:25	0.64 J	110	350	1.5 J	1500
LWC6.1_2 [t/ss]	LW6.1_2-20161208-0.5	12/8/2016	12:10	0.31 J	20	84	ND (<0.95)	620
LWC6.1_1 [t/ss]	LWC6.1_1-20161208-0.5	12/8/2016	11:48	1.2	160	230	ND (<0.95)	1200
LW5.9	LW5.9-20161208-0.5	12/8/2016	10:25	0.74	57	250	9.8	1400
LW5.3	LW5.3-20161208-1.0	12/8/2016	9:29	0.56 J	53	250	15 J	1400
LW5.3	LW5.3-20161208-2.5	12/8/2016	9:34	0.59 J	55	250	12 J	1400
LW4.95	LW4.95-20161208-0.7	12/8/2016	14:02	0.57	69	250	9.4	1400
GLW4.9	GLW4.9-20161208-1.1	12/8/2016	14:20	2.0	83	250	14	1400
GLW4.85	GLW4.85-20161208-0.8	12/8/2016	14:50	1.8	980	290	270	1600
GLW4.4	GLW4.4-20161208-1.1	12/8/2016	12:10	1.6	86	250	23	1400
LW4.1	LW4.1-20161208-0.2	12/8/2016	11:32	0.51	500	250	47 J	1400
LW3.85	LW3.85-20161208-0.3	12/8/2016	10:40	0.50	100	250	24 J	1400
LW3.85	LW3.85-20161208-0.3-FD	12/8/2016	10:40	0.54 J	96	250	25 J	1400
GLW3.78	GLW3.78-20161208-0.1	12/8/2016	10:12	0.79	190	250	41	1400
LW3.75	LW3.75-20161208-0.3	12/8/2016	9:12	0.79	92	250	20	1300
LWC3.7 [t/ss]	LWC3.7-20161208-0.6	12/8/2016	9:30	2.4 J	4300	490	1600	3300
LWC3.7 [t/ss]	LWC3.7-20161208-0.6-FD	12/8/2016	9:30	2.9	4300	490	1600	3200
LW3.4	LW3.4-20161208-0.5	12/8/2016	8:23	0.46 J	130	250	33 J	1400

ND - Not Detected above associated method detection limit

J - Estimated concentration between method detection limit and method reporting limit

µg/L - Micrograms per liter

mg/L - Milligrams per liter

t/ss - tributary/side stream; added for clarity and not part of actual Location ID

ID - identification

Table 15 Analytical Results: Transect Sampling
 NERT Remedial Investigation - Downgradient Study Area
 Henderson, Nevada

Location	Sample ID	Sample Date	Sample Time	Bromide (mg/L)	Chlorate (µg/L)	Chloride (mg/L)	Perchlorate (µg/L)	Total Dissolved Solids (mg/L)
Transect T6.8								
T6.8_A	T6.8A-20170203-1.0	2/3/2017	9:13	1.3	51	250	ND (<0.95)	1500
T6.8_B	T6.8B-20170203-1.3	2/3/2017	9:25	1.6	59	270	ND (<0.95)	1700
T6.8_C	T6.8C-20170203-0.4	2/3/2017	9:32	1.8	73	290	1.6 J	1900
T6.8_D	T6.8D-20170203-0.9	2/3/2017	9:41	0.64	52	230	ND (<0.95)	1300
T6.8_E	T6.8E-20170203-0.7	2/3/2017	9:50	0.77	48	240	ND (<0.95)	1200
Transect T6.35								
T6.35_A	T6.35A-20170203-1.5	2/3/2017	09:32	0.31 J	55	260	18	1500
T6.35_B	T6.35B-20170203-1.0	2/3/2017	9:55	0.57	53	270	17	1600
T6.35_B	T6.35B-20170203-3.0	2/3/2017	9:44	0.32 J	56	270	18	1500
T6.35_C	T6.35C-20170203-1.0	2/3/2017	9:19	ND (<0.25)	57	270	18	1600
Transect T6								
T6_A	T6A-20170202-0.9	2/2/2017	9:00	ND (<0.50)	49	290	16	1500
T6_B	T6B-20170202-1.7	2/2/2017	9:05	ND (<0.50)	49	290	16	1500
T6_C	T6C-20170202-1.7	2/2/2017	9:13	ND (<0.50)	50	280	16	1500
T6_D	T6D-20170202-0.4	2/2/2017	9:18	ND (<0.50)	50	280	15	1500
Transect T5.3								
T5.3_A	T5.3A-20170202-1.4	2/2/2017	9:32	0.30 J	140	300	32	1500
T5.3_A	T5.3A-20170202-2.8	2/2/2017	9:37	ND (<0.50)	130	290	33	1500
T5.3_B	T5.3B-20170202-2.0	2/2/2017	10:13	ND (<0.50)	54	290	18	1500
T5.3_B	T5.3B-20170202-2.0-FD	2/2/2017	10:13	ND (<0.50)	55	290	18	1500
T5.3_C	T5.3C-2010202-1.2	2/2/2017	9:59	ND (<0.50)	51	290	17	1500
Transect T4.75								
T4.75_A	T4.75A-20170201-1.3	2/1/2017	10:04	0.69 J	3100	360	820 J	2200
T4.75_A	T4.75A-20170201-1.3-FD	2/1/2017	10:04	0.71 J	3100	360	830 J	2200
T4.75_B	T4.75B-20170201-0.9	2/1/2017	10:13	0.59	94	260	23 J	1600
T4.75_C	T4.75C-20170201-2.2	2/1/2017	10:23	0.57	83	270	22 J	1600
T4.75_D	T4.75D-2017-201-1.5	2/1/2017	10:35	ND (<0.50)	35 J	350	420 J	2100
Transect T4.65								
T4.65_A	T4.65A-20170131-0.7	1/31/2017	10:40	1.4	250	280	57 J	1500
T4.65_B	T4.65B-20170131-0.9	1/31/2017	10:50	1.8	210	260	51	1500
T4.65_B	T4.65B-20170131-0.9-FD	1/31/2017	10:50	1.7	210	270	51	1500
T4.65_C	T4.65C-20170131-1.3	1/31/2017	10:58	0.74 J	100	260	31	1500
T4.65_D	T4.65D-20170131-0.6	1/31/2017	11:06	1.7	78	260	30	1500
Transect T4.6								
T4.6_A	T4.6A-20170131-0.3	1/31/2017	10:40	1.7	260	280	64 J	1600
T4.6_B	T4.6B-20170131-0.6	1/31/2017	10:47	1.6	210	280	57 J	1600
T4.6_B	T4.6B-20170131-0.6-FD	1/31/2017	10:47	1.6	220	280	56 J	1600
T4.6_C	T4.6C-20170131-0.8	1/31/2017	10:56	ND (<0.25)	100	280	30 J	1500
T4.6_D	T4.6D-20170131-0.8	1/31/2017	11:13	1.6	83	280	32 J	1500

Table 15 Analytical Results: Transect Sampling
 NERT Remedial Investigation - Downgradient Study Area
 Henderson, Nevada

Location	Sample ID	Sample Date	Sample Time	Bromide (mg/L)	Chlorate (µg/L)	Chloride (mg/L)	Perchlorate (µg/L)	Total Dissolved Solids (mg/L)
Transect T4.2								
T4.2_A	T4.2A-20170201-0.4	2/1/2017	09:55	0.60	260	260	66	1400
T4.2_B	T4.2B-20170201-1.0	2/1/2017	10:19	0.67 J	170	260	40	1400
T4.2_B	T4.2B-20170201-1.0-FD	2/1/2017	10:19	0.60	170	260	40	1400
T4.2_C	T4.2C-20170201-0.8	2/1/2017	10:35	0.58	88	260	27	1400
T4.2_D	T4.2D-20170201-1.0	2/1/2017	10:47	0.58	78	270	25	1400
Transect T3.8								
T3.8_A	T3.8A-20170130-0.4	1/30/2017	11:30	0.60 J	270	260	57 J	1400
T3.8_B	T3.8B-20170130-0.4	1/30/2017	11:37	0.59 J	210	260	45 J	1400
T3.8_C	T3.8C-20170130-0.4	1/30/2017	11:46	0.53 J	110	250	32 J	1400
T3.8_C	T3.8C-20170130-0.4-FD	1/30/2017	11:46	0.90 J	110	250	32 J	1400
T3.8_D	T3.8D-20170130-0.4	1/30/2017	11:55	ND (<0.50)	130	250	46 J	1500
Transect T3.75								
T3.75_A	T3.75A-20170130-0.9	1/30/2017	11:48	0.34 J	270	280	63 J	1400
T3.75_B	T3.75B-20170130-0.7	1/30/2017	11:53	0.33 J	210	280	51 J	1400
T3.75_C	T3.75C-20170130-0.6	1/30/2017	12:00	0.34 J	110	280	31	1400
T3.75_D	T3.75D-20170130-0.4	1/30/2017	12:09	ND (<0.50)	260	280	85	1500
Transect T3.5								
T3.5_A	T3.5A-20170202-0.2	2/2/2017	11:08	1.1	310	420	73	2700
T3.5_B	T3.5B-20170202-0.5	2/2/2017	11:13	0.64 J	430	280	140	1500
T3.5_B	T3.5B-20170202-0.5-FD	2/2/2017	11:13	ND (<0.50)	440	270	140	1500
T3.5_C	T3.5C-20170202-0.6	2/2/2017	11:22	ND (<0.50)	420	270	98	1600
T3.5_D	T3.5D-20170202-1.4	2/2/2017	12:00	ND (<0.50)	270	260	66	1500
T3.5_E	T3.5E-20170202-1.5	2/2/2017	12:07	ND (<0.50)	190	260	47	1500
T3.5_F	T3.5F-20170202-1.5	2/2/2017	12:34	0.84 J	140	260	38	1500
T3.5_F	T3.5F-20170202-4.0	2/2/2017	12:25	0.70	130	250	37	1500

ND - Not Detected above associated method detection limit

J - Estimated concentration between method detection limit and method reporting limit

µg/L - Micrograms per liter

mg/L - Milligrams per liter

ID - identification

Table 16 Analytical Results: Discrete Sampling
 NERT Remedial Investigation - Downgradient Study Area
 Henderson, Nevada

Location	Sample ID	Sample Date	Sample Time	Bromide (mg/L)	Chlorate (µg/L)	Chloride (mg/L)	Perchlorate (µg/L)	Total Dissolved Solids (mg/L)
Day 1								
Low Flow								
LW7.2	LW7.2-20170206-09:45-0.8	2/6/2017	9:45	ND (<0.25)	51	240	ND (<0.95)	1300
LW6.7	LW6.7-20170206-10:15-0.4	2/6/2017	10:15	0.30 J	53	250	ND (<0.95)	1400
LW6.05	LW6.05-20170206-11:20-0.6	2/6/2017	11:20	0.26 J	57	270	18	1400
GLWC6.1_3 [t/ss]	GLWC6.1_3-20170206-10:07-1.0	2/6/2017	10:07	ND (<0.50)	100	230	ND (<0.95)	1000
GLWC6.1_4 [t/ss]	GLWC6.1_4-20170206-10:35-1.1	2/6/2017	10:35	ND (<0.50)	96	340	ND (<0.95)	1400
LWC6.1_1 [t/ss]	LWC6.1_1-20170206-09:45-0.58	2/6/2017	9:45	ND (<0.50)	98	250	ND (<0.95)	1100
LWC6.1_2 [t/ss]	LWC6.1_2-20170206-10:00-0.8	2/6/2017	10:00	ND (<0.50)	78	120	ND (<0.95)	690
LW5.9	LW5.9-20170206-11:08-0.5	2/6/2017	11:08	ND (<0.50)	71	260	21	1400
LW5.3	LW5.3-20170206-10:00-1.2	2/6/2017	10:00	2.3	56	260	17	1500
LW5.3	LW5.3-20170206-10:35-2.35	2/6/2017	10:35	1.9	56	260	16	1500
LW4.95	LW4.95-20170206-11:30-1.1	2/6/2017	11:30	1.6	79	270	20	1500
GLW4.9	GLW4.9-20170206-11:15-1.45	2/6/2017	11:15	1.7	87	260	23	1500
GLW4.85	GLW4.85-20170206-10:22-0.6	2/6/2017	10:22	0.91 J	4300	390	1100	2200
GLW4.4	GLW4.4-20170206-11:04-1.1	2/6/2017	11:04	0.61	99	250	28	1400
LW4.1	LW4.1-20170206-11:20-0.3	2/6/2017	11:20	0.50	220	260	51	1500
LW3.85	LW3.85-20170206-09:53-0.6	2/6/2017	9:53	1.7	130	260	36	1400
GLW3.78	GLW3.78-20170206-10:45-0.42	2/6/2017	10:45	1.5	220	270	54	1500
LW3.75	LW3.75-20170206-10:25-0.83	2/6/2017	10:25	1.4	110	270	30	1400
LWC3.7 [t/ss]	LWC3.7-20170206-10:16-0.33	2/6/2017	10:16	1.5	1500	330	550	1900
LW3.4	LW3.4-20170206-11:10-0.42	2/6/2017	11:10	1.5	180	270	53	1400
Mid Flow								
LW7.2	LW7.2-20170206-12:10-0.8	2/6/2017	12:10	0.52	53	220	ND (<0.95)	1200
LW6.05	LW6.05-20170206-12:36-0.7	2/6/2017	12:36	0.46 J	60	240	13	1400
LW4.95	LW4.95-20170206-13:20-1.08	2/6/2017	13:20	0.73	70	240	20	1400
GLW4.4	GLW4.4-20170206-14:15-1.2	2/6/2017	14:15	0.51	93	260	33	1500
LW3.4	LW3.4-20170206-14:46-0.63	2/6/2017	14:46	0.54	160	260	53	1500
High Flow								
LW7.2	LW7.2-20170206-14:30-1.0	2/6/2017	14:30	0.44 J	43	200	ND (<0.95)	1200
LW7.2	LW7.2-20170206-14:30-1.0-FD	2/6/2017	14:30	0.46 J	44	200	ND (<0.95)	1200
LW6.7	LW6.7-20170206-15:00-0.6	2/6/2017	15:00	0.36 J	44	200	ND (<0.95)	1200
LW6.05	LW6.05-20170206-15:26-0.7	2/6/2017	15:26	0.65	48	210	8.9	1400
GLWC6.1_3 [t/ss]	GLWC6.1_3-20170206-15:00-0.9	2/6/2017	15:00	0.42 J	110	250	1.1 J	1100
GLWC6.1_4 [t/ss]	GLWC6.1_4-20170206-15:45-1.3	2/6/2017	15:45	0.68 J	93	330	1.3 J	1400 J
GLWC6.1_4 [t/ss]	GLWC6.1_4-20170206-15:45-1.3-FD	2/6/2017	15:45	0.67 J	91	330	1.2 J	1400
LWC6.1_1 [t/ss]	LWC6.1_1-20170206-14:43-0.8	2/6/2017	14:43	0.45 J	110	250	ND (<0.95)	1100
LWC6.1_2 [t/ss]	LWC6.1_2-20170206-14:55-0.6	2/6/2017	14:55	0.36 J	91	140	ND (<0.95)	710
LW5.9	LW5.9-20170206-15:18-0.6	2/6/2017	15:18	0.50	54	240	6.7	1300
LW5.3	LW5.3-20170206-16:00-1.2	2/6/2017	16:00	ND (<0.50)	55	250	11	1400
LW5.3	LW5.3-20170206-16:10-2.3	2/6/2017	16:10	ND (<0.50)	61	250	12	1400
LW4.95	LW4.95-20170206-15:15-1.1	2/6/2017	15:15	ND (<0.50)	57	250	13	1500
GLW4.9	GLW4.9-20170206-15:00-1.5	2/6/2017	15:00	ND (<0.50)	71	260	21	1500
GLW4.85	GLW4.85-20170206-15:58-0.6	2/6/2017	15:58	0.75 J	3000	350	750	1900
GLW4.4	GLW4.4-20170206-16:19-1.3	2/6/2017	16:19	0.58	79	250	15	1400

Table 16 Analytical Results: Discrete Sampling
 NERT Remedial Investigation - Downgradient Study Area
 Henderson, Nevada

Location	Sample ID	Sample Date	Sample Time	Bromide (mg/L)	Chlorate (µg/L)	Chloride (mg/L)	Perchlorate (µg/L)	Total Dissolved Solids (mg/L)
LW4.1	LW4.1-20170206-16:42-0.3	2/6/2017	16:42	0.59	180	260	38	1500
LW3.85	LW3.85-20170206-16:03-0.58	2/6/2017	16:03	0.60	100	260	28 J	1500
GLW3.78	GLW3.78-20170206-16:40-0.96	2/6/2017	16:40	0.50	210	270	40	1500
LW3.75	LW3.75-20170206-16:30-0.67	2/6/2017	16:30	0.59	100	260	26 J	1400
LWC3.7 [t/ss]	LWC3.7-20170206-16:20-0.58	2/6/2017	16:20	ND (<1.25)	2500	410	880	2300
LW3.4	LW3.4-20170206-17:01-0.7	2/6/2017	17:01	0.50	130	260	38 J	1500
LW3.4	LW3.4-20170206-17:01-0.7-FD	2/6/2017	17:01	0.48 J	140	260	38 J	1500
Day 2								
Low Flow								
LW7.2	LW7.2-20170207-08:55-0.7	2/7/2017	8:55	0.40 J	58	210	ND (<0.95)	1200
LW6.7	LW6.7-20170207-09:13-0.4	2/7/2017	9:13	0.56 J	69	270	ND (<0.95)	1700
LW6.05	LW6.05-20170207-09:30-0.6	2/7/2017	9:30	0.50 J	51	250	18 J	1500
GLWC6.1_3 [t/ss]	GLWC6.1_3-20170207-09:30-1.0	2/7/2017	9:30	ND (<0.25)	100	220	1.5 J	1100
GLWC6.1_4 [t/ss]	GLWC6.1_4-20170207-10:35-1.3	2/7/2017	10:35	ND (<0.50)	100	280	ND (<0.95)	1300
LWC6.1_1 [t/ss]	LWC6.1_1-20170207-09:03-0.9	2/7/2017	9:03	ND (<0.25)	98	270	1.3 J	660
LWC6.1_2 [t/ss]	LWC6.1_2-20170207-09:20-0.7	2/7/2017	9:20	ND (<0.25)	67	140	ND (<0.95)	1100
LW5.9	LW5.9-20170207-10:00-0.4	2/7/2017	10:00	0.26 J	56	300	17 J	1500
LW5.3	LW5.3-20170207-09:45-1.0	2/7/2017	9:45	0.98 J	57	260	19 J	1500
LW5.3	LW5.3-20170207-09:50-2.0	2/7/2017	9:50	1.7	59	260	20 J	1500
LW4.95	LW4.95-20170207-10:45-1.0	2/7/2017	10:45	1.5	79	260	24 J	1500
GLW4.9	GLW4.9-20170207-10:55-1.2	2/7/2017	10:55	1.4	94	270	28 J	1400
GLW4.85	GLW4.85-20170207-09:42-0.7	2/7/2017	9:42	1.0	3000	380	860 J	2100
GLW4.4	GLW4.4-20170207-10:18-1.1	2/7/2017	10:18	1.4	100	270	25 J	1400
LW4.1	LW4.1-20170207-10:39-0.3	2/7/2017	10:39	1.4	230	270	47 J	1500
LW3.85	LW3.85-20170207-10:12-0.5	2/7/2017	10:12	0.57 J	120	270	32 J	1400
GLW3.78	GLW3.78-20170207-09:35-0.7	2/7/2017	9:35	0.48 J	200	260	40	1400
LW3.75	LW3.75-20170207-10:45-0.9	2/7/2017	10:45	0.61 J	120	270	35 J	1400
LWC3.7 [t/ss]	LWC3.7-20170207-10:32-0.4	2/7/2017	10:32	0.72 J	1800	360	670 J	2100
LW3.4	LW3.4-20170207-11:11-0.5	2/7/2017	11:11	0.51 J	180	270	52 J	1400
Mid Flow								
LW7.2	LW7.2-20170207-10:55-0.8	2/7/2017	10:55	1.3	60	220	ND (<0.95)	1300
LW6.05	LW6.05-20170207-11:20-0.6	2/7/2017	11:20	1.5	63	250	17	1600
LW4.95	LW4.95-20170207-13:25-1.2	2/7/2017	13:25	ND (<0.25)	74	240	12	1500
GLW4.4	GLW4.4-20170207-14:11-1.3	2/7/2017	14:11	1.6	97	270	25	1500
GLW4.4	GLW4.4-20170207-14:11-1.3-FD	2/7/2017	14:11	1.2	96	270	25	1500
LW3.4	LW3.4-20170207-14:35-0.6	2/7/2017	14:35	0.62	170	270	42	1500
High Flow								
LW7.2	LW7.2-20170207-14:02-0.9	2/7/2017	14:02	1.1	44	210	ND (<0.95)	1200
LW6.7	LW6.7-20170207-14:25-0.6	2/7/2017	14:25	1.4	55	240	ND (<0.95)	1400
LW6.7	LW6.7-20170207-14:25-0.6-FD	2/7/2017	14:25	1.4	55	240	ND (<0.95)	1400
LW6.05	LW6.05-20170207-14:48-0.7	2/7/2017	14:48	1.2	50	250	6.0	1400
GLWC6.1_3 [t/ss]	GLWC6.1_3-20170207-15:06-0.9	2/7/2017	15:06	ND (<0.25)	100	260	ND (<0.95)	1100
GLWC6.1_3 [t/ss]	GLWC6.1_3-20170207-15:06-0.9-FD	2/7/2017	15:06	ND (<0.25)	100	270	ND (<0.95)	1100
GLWC6.1_4 [t/ss]	GLWC6.1_4-20170207-16:10-1.3	2/7/2017	16:10	0.31 J	92	350	ND (<0.95)	1300
LWC6.1_1 [t/ss]	LWC6.1_1-20170207-14:45-0.8	2/7/2017	14:45	ND (<0.25)	100	280	ND (<0.95)	1100

Table 16 Analytical Results: Discrete Sampling
 NERT Remedial Investigation - Downgradient Study Area
 Henderson, Nevada

Location	Sample ID	Sample Date	Sample Time	Bromide (mg/L)	Chlorate (µg/L)	Chloride (mg/L)	Perchlorate (µg/L)	Total Dissolved Solids (mg/L)
LWC6.1_2 [t/ss]	LWC6.1_2-20170207-14:58-0.7	2/7/2017	14:58	ND (<0.25)	47	110	ND (<0.95)	610
LW5.9	LW5.9-20170207-15:27-0.6	2/7/2017	15:27	0.30 J	55	280	10	1400
LW5.3	LW5.3-20170207-15:45-1.2	2/7/2017	15:45	0.25 J	54	280	11	1400
LW5.3	LW5.3-20170207-15:50-2.4	2/7/2017	15:50	0.25 J	52	280	9.6	1400
LW4.95	LW4.95-20170207-16:30-1.2	2/7/2017	16:30	0.26 J	63	270	13	1400
LW4.95	LW4.95-20170207-16:30-1.2-FD	2/7/2017	16:30	ND (<0.25)	59	270	12	1400
GLW4.9	GLW4.9-20170207-16:45-1.4	2/7/2017	16:45	0.32 J	77	280	17	1400
GLW4.85	GLW4.85-20170207-15:42-0.8	2/7/2017	15:42	0.29 J	1200	300	290	1600
GLW4.85	GLW4.85-20170207-15:42-0.8-FD	2/7/2017	15:42	0.32 J	1200	310	310	1600
GLW4.4	GLW4.4-20170207-16:06-1.2	2/7/2017	16:06	0.32 J	80	260	20 J	1400
LW4.1	LW4.1-20170207-16:20-0.4	2/7/2017	16:20	ND (<0.25)	160	280	38 J	1500
LW3.85	LW3.85-20170207-15:50-0.6	2/7/2017	15:50	0.70 J	110	250	31	1500
LW3.85	LW3.85-20170207-15:50-0.6-FD	2/7/2017	15:50	0.50 J	110	250	30	1500
GLW3.78	GLW3.78-20170207-16:35-1.2	2/7/2017	16:35	ND (<0.50)	200	260	48	1500
LW3.75	LW3.75-20170207-16:25-1.0	2/7/2017	16:25	0.55 J	110	250	27	1400
LWC3.7 [t/ss]	LWC3.7-20170207-16:10-0.6	2/7/2017	16:10	ND (<1.25)	2600	370	830	2200
LW3.4	LW3.4-20170207-17:00-0.7	2/7/2017	17:00	ND (<0.50)	140	250	39	1500
Day 3								
Low Flow								
LW7.2	LW7.2-20170208-08:45-0.7	2/8/2017	8:45	ND (<0.25)	59	230	ND (<0.95)	1200
LW6.7	LW6.7-20170208-09:03-0.3	2/8/2017	9:03	ND (<0.50)	62	280	ND (<0.95)	1700
LW6.05	LW6.05-20170208-09:35-0.5	2/8/2017	9:35	ND (<0.50)	65	270	18	1500
GLWC6.1_3 [t/ss]	GLWC6.1_3-20170208-10:05-1.2	2/8/2017	10:05	0.26 J	93	210	ND (<0.95)	1100
GLWC6.1_4 [t/ss]	GLWC6.1_4-20170208-10:35-1.3	2/8/2017	10:35	0.46 J	88	220	ND (<0.95)	1200
GLWC6.1_4 [t/ss]	GLWC6.1_4-20170208-10:35-1.3-FD	2/8/2017	10:35	0.25 J	89	230	ND (<0.95)	1100
LWC6.1_1 [t/ss]	LWC6.1_1-20170208-09:45-0.9	2/8/2017	9:45	0.39 J	100	220	ND (<0.95)	1100
LWC6.1_2 [t/ss]	LWC6.1_2-20170208-10:00-0.6	2/8/2017	10:00	ND (<0.25)	64	96	ND (<0.95)	630
LW5.9	LW5.9-20170208-10:35-0.4	2/8/2017	10:35	0.55	70	240	15	1500
LW5.3	LW5.3-20170208-10:00-1.0	2/8/2017	10:00	1.5	73	260	15	1400
LW5.3	LW5.3-20170208-10:03-2.0	2/8/2017	10:03	1.5	81	250	17	1400
LW4.95	LW4.95-20170208-10:30-1.1	2/8/2017	10:30	1.4	83	260	19	1400
GLW4.9	GLW4.9-20170208-10:50-1.2	2/8/2017	10:50	1.6	100	250	22	1400
GLW4.85	GLW4.85-20170208-09:45-0.6	2/8/2017	9:45	ND (<0.50)	1100	310	290	1600
GLW4.4	GLW4.4-20170208-10:07-1.1	2/8/2017	10:07	ND (<0.25)	120	270	27	1400
LW4.1	LW4.1-20170208-10:22-0.4	2/8/2017	10:22	ND (<0.25)	210	270	53	1400
LW4.1	LW4.1-20170208-10:22-0.4-FD	2/8/2017	10:22	ND (<0.50)	220	260	52	1400
LW3.85	LW3.85-20170208-09:27-0.5	2/8/2017	9:27	0.58 J	130	260	34	1400
LW3.85	LW3.85-20170208-09:27-0.5-FD	2/8/2017	9:27	0.52 J	130	260	34	1500
GLW3.78	GLW3.78-20170208-10:10-0.5	2/8/2017	10:10	0.62 J	210	260	52	1400
LW3.75	LW3.75-20170208-09:57-0.8	2/8/2017	9:57	0.56 J	120	260	26	1400
LWC3.7 [t/ss]	LWC3.7-20170208-09:48-0.5	2/8/2017	9:48	0.81 J	2000	340	570	2000
LW3.4	LW3.4-20170208-10:30-0.5	2/8/2017	10:30	0.60 J	170	260	50	1500
Mid Flow								
LW7.2	LW7.2-20170208-11:07-0.8	2/8/2017	11:07	0.54	86	220	ND (<0.95)	1300
LW6.05	LW6.05-20170208-12:35-0.8	2/8/2017	12:35	0.56	72	240	11 J	1500

Table 16 Analytical Results: Discrete Sampling
 NERT Remedial Investigation - Downgradient Study Area
 Henderson, Nevada

Location	Sample ID	Sample Date	Sample Time	Bromide (mg/L)	Chlorate (µg/L)	Chloride (mg/L)	Perchlorate (µg/L)	Total Dissolved Solids (mg/L)
LW6.05	LW6.05-20170208-12:35-0.8-FD	2/8/2017	12:35	0.70 J	70	250	8.0 J	1500
LW4.95	LW4.95-20170208-13:05-1.2	2/8/2017	13:05	1.7	81	250	14	1400
GLW4.4	GLW4.4-20170208-13:47-1.2	2/8/2017	13:47	ND (<0.25)	110	260	27	1400
LW3.4	LW3.4-20170208-14:18-0.6	2/8/2017	14:18	1.7	180	260	46	1400
High Flow								
LW7.2	LW7.2-20170208-14:40-0.9	2/8/2017	14:40	ND (<0.25)	49	220	ND (<0.95)	1100
LW6.7	LW6.7-20170208-15:02-0.6	2/8/2017	15:02	0.33 J	55	250	ND (<0.95)	1400
LW6.05	LW6.05-20170208-15:36-0.7	2/8/2017	15:36	0.32 J	55	240	7.7	1400
GLWC6.1_3 [t/ss]	GLWC6.1_3-20170208-15:00-1.0	2/8/2017	15:00	0.45 J	110	240	ND (<0.95)	1100
GLWC6.1_4 [t/ss]	GLWC6.1_4-20170208-16:07-1.0	2/8/2017	16:07	0.54	81	250	ND (<0.95)	1100
LWC6.1_1 [t/ss]	LWC6.1_1-20170208-14:43-0.7	2/8/2017	14:43	0.49 J	90	240	ND (<0.95)	1100
LWC6.1_2 [t/ss]	LWC6.1_2-20170208-14:53-0.7	2/8/2017	14:53	0.32 J	64	110	ND (<0.95)	590
LW5.9	LW5.9-20170208-15:41-0.6	2/8/2017	15:41	0.55	61	240	9.6	1300
LW5.3	LW5.3-20170208-15:45-1.2	2/8/2017	15:45	1.3	60	240	8.9	1400
LW5.3	LW5.3-20170208-15:50-2.4	2/8/2017	15:50	1.4	64	240	9.0	1400
LW4.95	LW4.95-20170208-16:20-1.3	2/8/2017	16:20	1.3	2000	240	11	1300
GLW4.9	GLW4.9-20170208-16:35-1.4	2/8/2017	16:35	1.4 J	84	240	15	1400
GLW4.9	GLW4.9-20170208-16:35-1.4-FD	2/8/2017	16:35	1.0 J	84	240	14	1400
GLW4.85	GLW4.85-20170208-16:00-0.8	2/8/2017	16:00	1.0	940	270	270	1600
GLW4.4	GLW4.4-20170208-16:21-1.3	2/8/2017	16:21	0.56	110	230	17	1400
LW4.1	LW4.1-20170208-16:33-0.4	2/8/2017	16:33	0.54	170	250	ND (<0.95)	1500
LW3.85	LW3.85-20170208-16:05-0.5	2/8/2017	16:05	1.4	130	260	24	1500
GLW3.78	GLW3.78-20170208-16:42-1.4	2/8/2017	16:42	1.5	190	260	46	1500
LW3.75	LW3.75-20170208-16:30-1.0	2/8/2017	16:30	1.5	110	260	23	1500
LWC3.7 [t/ss]	LWC3.7-20170208-16:20-0.5	2/8/2017	16:20	1.6 J	80	360	770	2200
LW3.4	LW3.4-20170208-17:05-0.6	2/8/2017	17:05	1.4	150	260	32	1500
Day 4								
Low Flow								
LW7.2	LW7.2-20170209-08:56-0.7	2/9/2017	8:56	1.1	71	230	ND (<0.95)	1300
LW6.7	LW6.7-20170209-09:11-0.3	2/9/2017	9:11	1.7	76	270	ND (<0.95)	1700
LW6.05	LW6.05-20170209-09:31-0.5	2/9/2017	9:31	0.77	69	240	19	1500
GLWC6.1_3 [t/ss]	GLWC6.1_3-20170209-09:32-1.2	2/9/2017	9:32	0.39 J	87	230	ND (<0.95)	1100
GLWC6.1_4 [t/ss]	GLWC6.1_4-20170209-10:33-1.3	2/9/2017	10:33	0.45 J	71	250	ND (<0.95)	1100
LWC6.1_1 [t/ss]	LWC6.1_1-20170209-09:10-1.0	2/9/2017	9:10	0.41 J	88	240	ND (<0.95)	1100
LWC6.1_2 [t/ss]	LWC6.1_2-20170209-09:25-0.6	2/9/2017	9:25	0.30 J	50	100	ND (<0.95)	610
LW5.9	LW5.9-20170209-10:01-0.4	2/9/2017	10:01	0.60 J	74	260	15	1400
LW5.3	LW5.3-20170209-10:00-1.0	2/9/2017	10:00	0.56	67	240	22	1500
LW5.3	LW5.3-20170209-10:03-2.0	2/9/2017	10:03	ND (<0.50)	120	280	30	1400
LW4.95	LW4.95-20170209-10:35-1.0	2/9/2017	10:35	0.65	82	240	24	1400
LW4.95	LW4.95-20170209-10:35-1.0-FD	2/9/2017	10:35	0.54	86	240	23	1400
GLW4.9	GLW4.9-20170209-10:50-1.2	2/9/2017	10:50	0.33	100	240	27	1400
GLW4.85	GLW4.85-20170209-09:58-0.7	2/9/2017	9:58	ND (<0.50)	1600	340	320	1600
GLW4.4	GLW4.4-20170209-10:22-1.1	2/9/2017	10:22	0.52	120	250	26	1400
LW4.1	LW4.1-20170209-10:38-0.3	2/9/2017	10:38	0.28 J	230	290	40	1400
LW3.85	LW3.85-20170209-10:30-0.5	2/9/2017	10:30	ND (<0.50)	140	260	28	1400

Table 16 Analytical Results: Discrete Sampling
 NERT Remedial Investigation - Downgradient Study Area
 Henderson, Nevada

Location	Sample ID	Sample Date	Sample Time	Bromide (mg/L)	Chlorate (µg/L)	Chloride (mg/L)	Perchlorate (µg/L)	Total Dissolved Solids (mg/L)
GLW3.78	GLW3.78-20170209-11:28-0.3	2/9/2017	11:28	ND (<0.50)	230	260	47	1400
LW3.75	LW3.75-20170209-10:58-0.5	2/9/2017	10:58	0.59	140	260	27	1400
LWC3.7 [t/ss]	LWC3.7-20170209-10:48-0.4	2/9/2017	10:48	ND (<0.50)	1800	360	670	2100
LW3.4	LW3.4-20170209-12:00-0.5	2/9/2017	12:00	ND (<0.50)	190	260	42	1400
Mid Flow								
LW7.2	LW7.2-20170209-10:52-0.8	2/9/2017	10:52	0.27 J	69	250	ND (<0.95)	1300
LW6.05	LW6.05-20170209-12:00-0.6	2/9/2017	12:00	0.30 J	74	290	14	1600
LW4.95	LW4.95-20170209-12:30-1.1	2/9/2017	12:30	0.27 J	91	290	22 J	1500
GLW4.4	GLW4.4-20170209-13:11-1.2	2/9/2017	13:11	0.62 J	140	270	31 J	1400
LW3.4	LW3.4-20170209-13:33-0.5	2/9/2017	13:33	ND (<0.50)	200	290	52	1500
LW3.4	LW3.4-20170209-13:33-0.5-FD	2/9/2017	13:33	ND (<0.50)	200	290	57	1500
High Flow								
LW7.2	LW7.2-20170209-14:41-0.9	2/9/2017	14:41	0.35 J	67	200	ND (<0.95)	1200
LW7.2	LW7.2-20170209-14:41-0.9-FD	2/9/2017	14:41	0.33 J	69	200	ND (<0.95)	1200
LW6.7	LW6.7-20170209-15:04-0.6	2/9/2017	15:04	0.71	66	220	ND (<0.95)	1400
LW6.05	LW6.05-20170209-15:23-0.7	2/9/2017	15:23	0.31 J	60	220	6.8	1400
GLWC6.1_3 [t/ss]	GLWC6.1_3-20170209-14:57-1.1	2/9/2017	14:57	ND (<0.25)	76	270	ND (<0.95)	1100
GLWC6.1_4 [t/ss]	GLWC6.1_4-20170209-15:51-1.6	2/9/2017	15:51	0.35 J	72	290	ND (<0.95)	1200
LWC6.1_1 [t/ss]	LWC6.1_1-20170209-14:39-1.1	2/9/2017	14:39	ND (<0.25)	79	280	ND (<0.95)	1200
LWC6.1_1 [t/ss]	LWC6.1_1-20170209-14:39-1.1-FD	2/9/2017	14:39	ND (<0.25)	81	280	ND (<0.95)	1100
LWC6.1_2 [t/ss]	LWC6.1_2-20170209-14:52-0.8	2/9/2017	14:52	ND (<0.25)	51	100	ND (<0.95)	590
LW5.9	LW5.9-20170209-15:27-0.7	2/9/2017	15:27	0.26 J	61	260	6.9	1300
LW5.3	LW5.3-20170209-15:15-1.1	2/9/2017	15:15	0.54	66	230	9.1	1300
LW5.3	LW5.3-20170209-15:18-2.2	2/9/2017	15:18	0.51	69	240	8.8	1400
LW4.95	LW4.95-20170209-15:40-1.2	2/9/2017	15:40	0.54	78	240	10	1400
GLW4.9	GLW4.9-20170209-15:53-1.4	2/9/2017	15:53	0.54	91	230	14	1400
GLW4.85	GLW4.85-20170209-15:18-0.8	2/9/2017	15:18	ND (<0.50)	900	300	180	1600
GLW4.4	GLW4.4-20170209-15:44-1.3	2/9/2017	15:44	ND (<0.50)	110	260	23	1500
LW4.1	LW4.1-20170209-16:02-0.4	2/9/2017	16:02	ND (<0.50)	160	270	36	1500
LW4.1	LW4.1-20170209-16:02-0.4-FD	2/9/2017	16:02	ND (<0.50)	170	260	35	1500
LW3.85	LW3.85-20170209-15:45-0.6	2/9/2017	15:45	ND (<0.50)	130	290	32	1500
GLW3.78	GLW3.78-20170209-16:30-1.4	2/9/2017	16:30	ND (<0.50)	200	370	43	1500
LW3.75	LW3.75-20170209-16:11-0.8	2/9/2017	16:11	ND (<0.50)	130	320	31	1500
LWC3.7 [t/ss]	LWC3.7-20170209-16:00-0.6	2/9/2017	16:00	ND (<1.25)	3100	460	1100	2500
LW3.4	LW3.4-20170209-16:55-0.6	2/9/2017	16:55	0.27 J	160	290	38	1500

ND - Not Detected above associated method detection limit
 J - Estimated concentration between method detection limit and method reporting limit
 µg/L - Micrograms per liter
 mg/L - Milligrams per liter
 t/ss - tributary/side stream; added for clarity and not part of actual Location ID

Table 17 Flux Estimates: Transect Sampling
 NERT Remedial Investigation, Downgradient Study Area
 Henderson, Nevada

Transect	Date/Time	Perchlorate Concentration (µg/l) ^[1]	Representative Samples ^[2]	Non-representative Samples (perchlorate µg/L) ^[3]	Flow (cfs) ^[4]	Perchlorate Load (Flux) (lb/day)
T6.8	2/3/17 9:30	ND (<0.95) ^[5]	A, B, D, E	C(1.6J)	194	<1
T6.35	2/3/17 9:30	18	A,B,C,D	-	188	18
T6	2/2/17 9:15	15	A,B,C,D	-	174	15
T5.3	2/2/17 10:00	18	B,C	A(32 µg/l)	172	17
T4.75	2/1/17 10:15	23	B,C	A(820), D(420)	202	25
T4.65	1/31/17 11:00	31	C,D	A(57),B(51)	210	35
T4.6	1/31/17 11:00	31	C,D	A(64),B(57)	210	35
T4.2	2/1/17 10:30	26	C,D	A(66),B(40)	215	30
T3.8	1/30/17 11:45	32	C	A(57),B(45), D(46)	213	37
T3.75	1/30/17 12:00	31	C	A(63),B(51), D(85)	209	35
T3.5 ^[6]	2/2/17 12:15	43	E,F	A(73),B(140), C(98),D(66)	185	43

Notes:

µg/L - micrograms per liter

cfs - cubic feet per second

lb/day - pounds per day

ND - Not Detected above associated method detection limit

J - Estimated concentration between method detection limit and method reporting limit

< - less than

1) Sample concentration representative of the mixed waters near the center of the channel and is median of representative samples

2) Three to seven samples were collected across each transect, with sample "A" collected near the southern bank

3) Samples not included in representative concentration due to influence of nearby groundwater input

4) See text for explanation of flow used in flux estimates.

5) Perchlorate not detected. Detection limit shown and used in flux estimates.

6) This transect was originally T3.6 but the identification was changed to T3.5 during the field program.

Table 18 Flux Estimates: Discrete Sampling
 NERT Remedial Investigation, Downgradient Study Area
 Henderson, Nevada

Station	Low Flow Sampling			Mid Flow Sampling			High Flow Sampling		
	Perchlorate Concentration µg/L ^[1]	Flow (cfs) ^[2]	Perchlorate Load (Flux) (lb/day)	Perchlorate Concentration µg/L ^[1]	Flow (cfs) ^[2]	Perchlorate Load (Flux) (lb/day)	Perchlorate Concentration µg/L ^[1]	Flow (cfs) ^[2]	Perchlorate Load (Flux) (lb/day)
LW7.2	ND (<0.95) ^[3]	178	<1	ND (<0.95) ^[3]	262	<1.5	ND (<0.95) ^[3]	325	<2
LW6.7	ND (<0.95) ^[3]	180	<1				ND (<0.95) ^[3]	317	<2
LW6.05	18	184	18	14	239	18	7.3	319	12
LW5.9	16	191	16				8.3	346	15
LW5.3 ^[4]	18	214	21				9.4	346	17
LW4.95	23	209	25	17	293	26	12	341	22
GLW4.9	25	213	29				15	341	29
GLW4.4	27	207	30	27	315	45	19	344	33
LW3.85	34	205	37				30	347	56
LW3.75	28	205	31				27	350	50
LW3.4	51	203	57	52	309	75	38	347	71

Notes:

µg/L - micrograms per liter

cfs - cubic feet per second

lb/day - pounds per day

< - less than

- 1) Concentration of perchlorate is median concentrations from four days' of samples.
- 2) See text for explanation of flow used in flux estimates.
- 3) Perchlorate not detected. Detection limit shown and used in flux estimates.
- 4) Water depths at LW5.3 were greater than 3 feet; samples were collected near bottom and near top.
 The concentration presented is the median of all concentrations from four days' of samples.

Appendix A
Daily Field Reports

DAILY ACTIVITY REPORT

DATE:	December 9, 2016	Day:	S	M	T	W	Th	F	S
PROJECT NAME:	NERT Regional Groundwater RI Surface Water Sampling	Weather:	Sunny	Partly Sunny	Cloudy	Rain	Snow		
SITES / LOCATIONS:	Las Vegas Wash	Temp °F:	32 to 52						
		Wind:	Still	Moderate	High	Direction:	NNE		
		Humidity:	Dry	Moderate	Humid	Rain			

PERSONNEL ON-SITE	Employer	Job Title
Ryan McCarthy	AECOM	Field Team Leader
C. Steve Howe	AECOM	Hydrologist
Rick Purdy	AECOM	Field
Clare Murphy-Hagan	AECOM	Field

VISITORS ON-SITE	Employer	Purpose of Visit	Time In	Time Out
Carlton Parker	NDEP	oversight		
Jon Wilson	USGS	Seepage sampling		

WORK COMPLETED																					
<p>The field teams completed the one-day sampling event for the coordinated day with the USGS seepage study. Teams from AECOM were onsite at 07:30 and teams were off the water at 16:00.</p> <p>Twenty samples were collected from 19 locations. The list of locations presented below.</p> <p>Field duplicates were collected at two locations (LWC3.7 and LW3.85). A field blank was collected at LW3.4. An MS/MSD was collected at LW6.05. An equipment blank was collected at LW5.3 (where pump and tubing was needed).</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 33%;">LW3.4</td> <td style="width: 33%;">GLW4.85</td> <td style="width: 33%;">LWC6.1_2</td> </tr> <tr> <td>LWC3.7</td> <td>GLW4.9</td> <td>GLW6.1_3</td> </tr> <tr> <td>LW3.75</td> <td>LW4.95</td> <td>GLW6.1_4</td> </tr> <tr> <td>GLW3.78</td> <td>LW5.3</td> <td>LW6.7</td> </tr> <tr> <td>LW3.85</td> <td>LW5.9</td> <td>LW7.2</td> </tr> <tr> <td>LW4.1</td> <td>LW6.05</td> <td></td> </tr> <tr> <td>GLW4.4</td> <td>LWC6.1_1</td> <td></td> </tr> </table> <p>Carlton Parker from NDEP was at the LVW throughout the day, monitoring progress by both AECOM and the USGS who were on the LVW conducting their first seepage study. USGS was seen at a distance a few times. Steve Howe and Clare Murphy-Hagan talked with Jon Wilson of USGS when they met near Calico Ridge Weir.</p>	LW3.4	GLW4.85	LWC6.1_2	LWC3.7	GLW4.9	GLW6.1_3	LW3.75	LW4.95	GLW6.1_4	GLW3.78	LW5.3	LW6.7	LW3.85	LW5.9	LW7.2	LW4.1	LW6.05		GLW4.4	LWC6.1_1	
LW3.4	GLW4.85	LWC6.1_2																			
LWC3.7	GLW4.9	GLW6.1_3																			
LW3.75	LW4.95	GLW6.1_4																			
GLW3.78	LW5.3	LW6.7																			
LW3.85	LW5.9	LW7.2																			
LW4.1	LW6.05																				
GLW4.4	LWC6.1_1																				

<p>LIST SAFETY ACTIONS TAKEN TODAY/SAFETY INSPECTIONS CONDUCTED:</p> <p>Daily boat safety inspection completed. Daily health and safety briefing conducted.</p>	<p>SAFETY REQUIREMENTS HAVE BEEN MET</p> <p style="text-align: center;">Yes No</p>
--	---

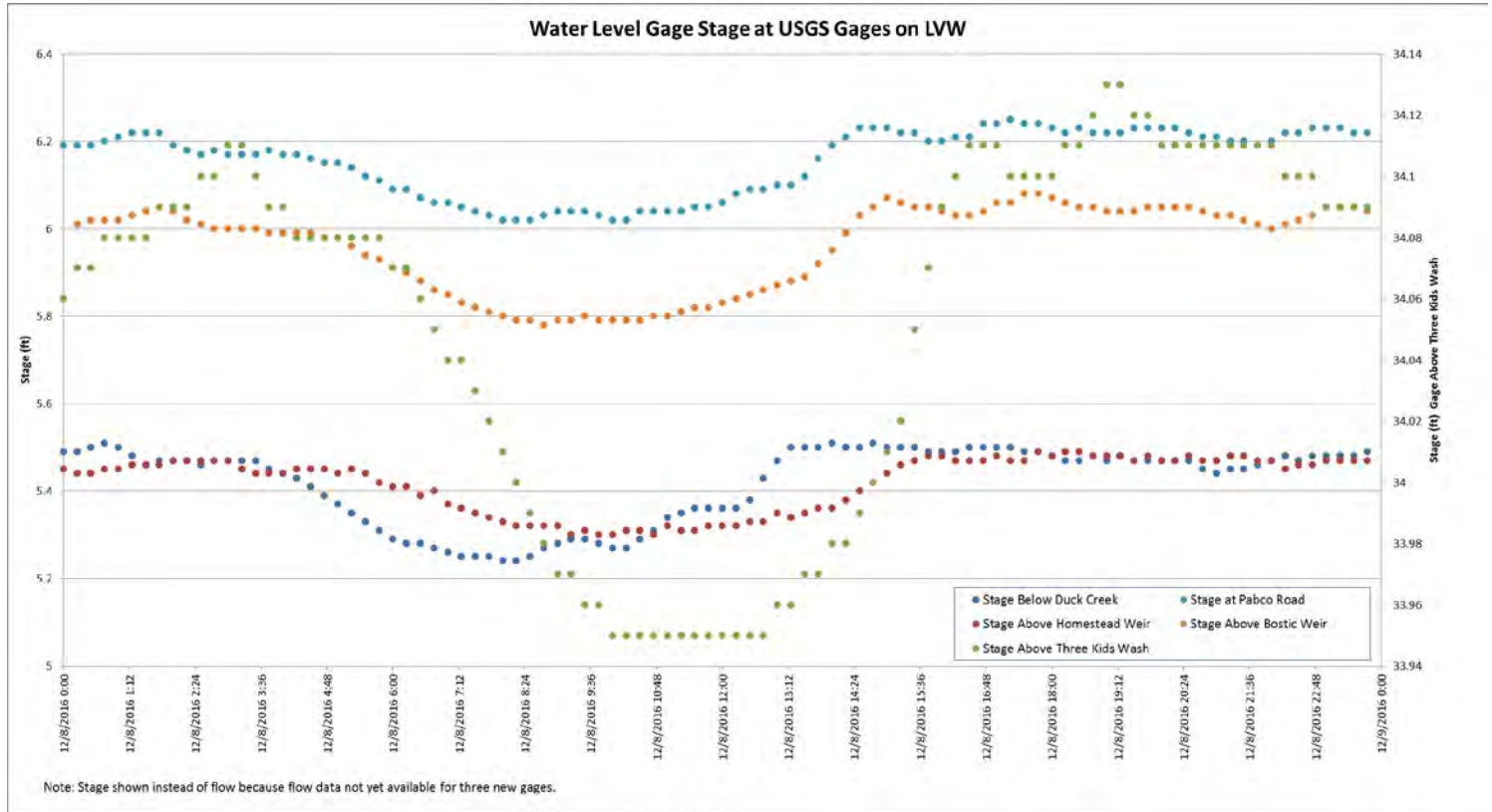
Equipment at the Site (includes Subcontractor supplied equipment):	Date Arrived	Date Removed
Canoe and sampling equipment (pump, YSI, etc)	12/08/2016	12/09/2016

Material/Supplies Received at the Site:

None

Field Activities and Remarks Not Presented Above:

Flows were not held as was the original intent. The flows at all five gages on the LVW in the Study Area showed the diurnal fluctuation consistent with normal waste water operations and discharges.



Name: Ryan McCarthy

Date: 12/08/2016

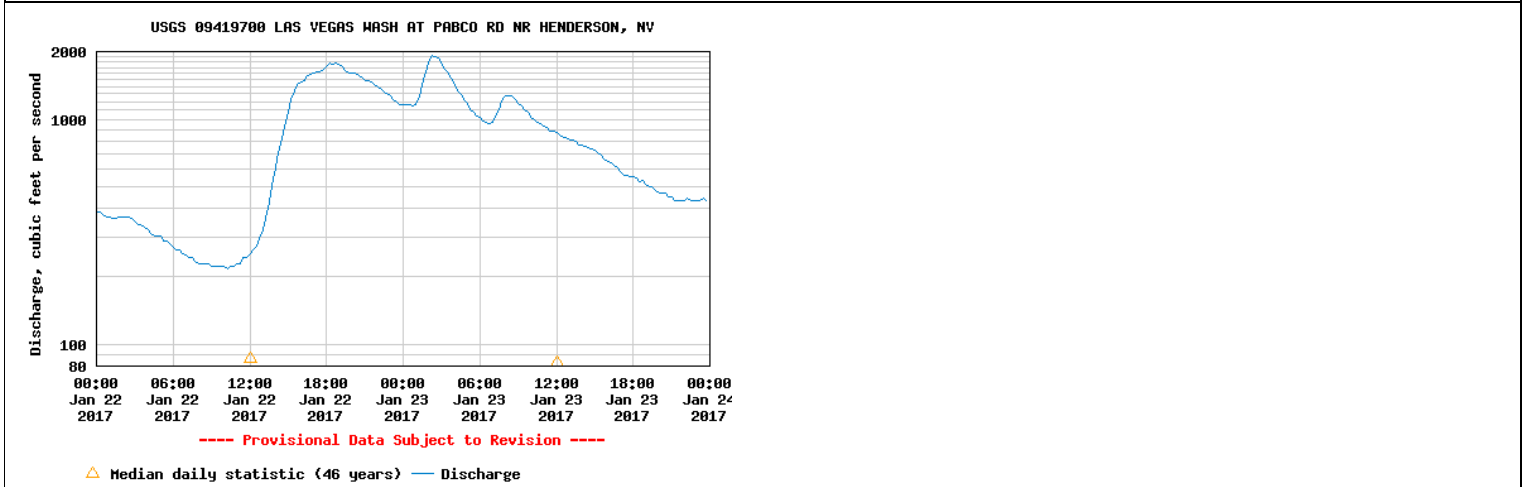
DAILY ACTIVITY REPORT

DATE:	January 23, 2017	Day:	S	M	T	W	Th	F	S
PROJECT NAME:	NERT Regional Groundwater RI	Weather:	Sunny	Partly Sunny	Cloudy	Rain	Snow		
SITES / LOCATIONS:	LVW	Temp °F:							
		Wind:	Still	Moderate	High	Direction:			
		Humidity:	Dry	Moderate	Humid	Rain			

PERSONNEL ON-SITE	Employer	Job Title
Rick Purdy	AECOM	Field Team
C. Steve Howe	AECOM	Hydrologist/ Field Team Leader

VISITORS ON-SITE	Employer	Purpose of Visit	Time In	Time Out

WORK COMPLETED
 Due to the rain and rising flows in the Las Vegas Wash, the team did not install any gages. The locations for the staff gages and transects were scouted from land. In the hotel, the team began construction of the transducer stilling wells.



LIST SAFETY ACTIONS TAKEN TODAY/SAFETY INSPECTIONS CONDUCTED: Kristen Durocher monitored the weather and the flows in the LVW and the team did not go into the LVW due to the high and variable flows. The flows increased and subsided three times (triple peak on the hydrograph as indicated above).	SAFETY REQUIREMENTS HAVE BEEN MET <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
---	---

Equipment at the Site (includes Subcontractor supplied equipment):	Date Arrived	Date Removed

Material/Supplies Received at the Site:
Field Activities and Remarks Not Presented Above:

Name: Kristen Durocher

Date: 01/23/2017

DAILY ACTIVITY REPORT

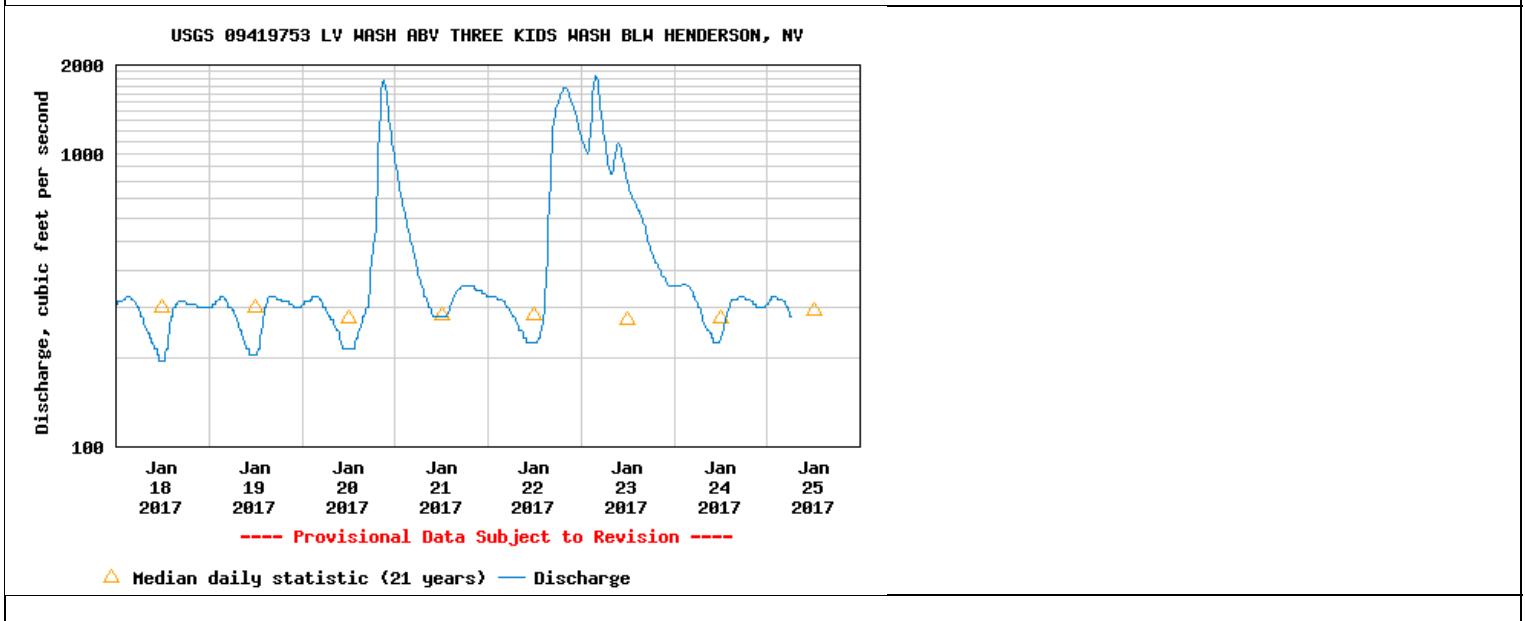
DATE:	January 24, 2017	Day:	S	M	T	W	Th	F	S
PROJECT NAME:	NERT Regional Groundwater RI	Weather:	Sunny	Partly Sunny	Cloudy	Rain	Snow		
SITES / LOCATIONS:	LVW at RM3.8	Temp °F:							
		Wind:	Still	Moderate	High	Direction:	NNW 10-15 mph		
		Humidity:	Dry	Moderate	Humid	Rain			

PERSONNEL ON-SITE	Employer	Job Title
Rick Purdy	AECOM	Field Team
C. Steve Howe	AECOM	Hydrologist/ Field Team Leader

VISITORS ON-SITE	Employer	Purpose of Visit	Time In	Time Out

WORK COMPLETED

The field team installed the stilling well and transducer at T3.8 and collected initial data.



LIST SAFETY ACTIONS TAKEN TODAY/SAFETY INSPECTIONS CONDUCTED: Flows returned to a normal pattern and were running at approximately the median statistic at Three Kids. No rain in the immediate forecast.	SAFETY REQUIREMENTS HAVE BEEN MET <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
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Equipment at the Site (includes Subcontractor supplied equipment):	Date Arrived	Date Removed

Material/Supplies Received at the Site:

Field Activities and Remarks Not Presented Above:

Name: Kristen Durocher

Date: 01/23/2017

DAILY ACTIVITY REPORT

DATE:	January 25, 2017	Day:	S	M	T	W	Th	F	S
PROJECT NAME:	NERT Regional Groundwater RI	Weather:	Sunny	Partly Sunny	Cloudy	Rain	Snow		
SITES / LOCATIONS:	LVW at RM3.6 – 4.6	Temp °F:							
		Wind:	Still	Moderate	High	Direction:	NNW 10-15 mph		
		Humidity:	Dry	Moderate	Humid	Rain			

PERSONNEL ON-SITE	Employer	Job Title
Rick Purdy	AECOM	Field Team
C. Steve Howe	AECOM	Hydrologist/ Field Team Leader

VISITORS ON-SITE	Employer	Purpose of Visit	Time In	Time Out
Harry van den Berg and Mike Kelly	AECOM	Management site visit	10:40	11:15

WORK COMPLETED
The field team installed the stilling wells and transducers and collected initial data at T3.6 and T375. The stilling well and transducer were installed at T4.6 but not activated.

LIST SAFETY ACTIONS TAKEN TODAY/SAFETY INSPECTIONS CONDUCTED:	SAFETY REQUIREMENTS HAVE BEEN MET <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
--	---

Equipment at the Site (includes Subcontractor supplied equipment):	Date Arrived	Date Removed

Material/Supplies Received at the Site:
Field Activities and Remarks Not Presented Above:

Name: Kristen Durocher

Date: 01/25/2017

DAILY ACTIVITY REPORT

DATE:	January 26, 2017	Day:	S	M	T	W	Th	F	S
PROJECT NAME:	NERT Regional Groundwater RI	Weather:	Sunny	Partly Sunny	Cloudy	Rain	Snow		
SITES / LOCATIONS:	LVW at RM4.6 – 6.35	Temp °F:							
		Wind:	Still	Moderate	High	Direction:	NNW 10-15 mph		
		Humidity:	Dry	Moderate	Humid	Rain			

PERSONNEL ON-SITE	Employer	Job Title
Rick Purdy	AECOM	Field Team
C. Steve Howe	AECOM	Hydrologist/ Field Team Leader

VISITORS ON-SITE	Employer	Purpose of Visit	Time In	Time Out
Carmen Caceres-Schnell	AECOM	Management site visit		

WORK COMPLETED
The field team installed the stilling wells and transducers and collected initial data at T4.65 and T6.35. The transducer at T4.6 was activated.

LIST SAFETY ACTIONS TAKEN TODAY/SAFETY INSPECTIONS CONDUCTED:	SAFETY REQUIREMENTS HAVE BEEN MET <input type="checkbox"/> Yes <input type="checkbox"/> No
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Equipment at the Site (includes Subcontractor supplied equipment):	Date Arrived	Date Removed

Material/Supplies Received at the Site:
Field Activities and Remarks Not Presented Above:

Name: Kristen Durocher

Date: 01/26/2017

DAILY ACTIVITY REPORT

DATE:	January 27, 2017	Day:	S	M	T	W	Th	F	S
PROJECT NAME:	NERT Regional Groundwater RI	Weather:	Sunny	Partly Sunny	Cloudy	Rain	Snow		
SITES / LOCATIONS:	LVW at RM4.75 – 6.3	Temp °F:							
		Wind:	Still	Moderate	High	Direction:	NNW 10-15 mph		
		Humidity:	Dry	Moderate	Humid	Rain			

PERSONNEL ON-SITE	Employer	Job Title
Rick Purdy	AECOM	Field Team
C. Steve Howe	AECOM	Hydrologist/ Field Team Leader

VISITORS ON-SITE	Employer	Purpose of Visit	Time In	Time Out

WORK COMPLETED
The field team installed the stilling wells and transducers and collected initial data at T4.75 and T5.3. This completes the installation of stilling wells and transducers.

LIST SAFETY ACTIONS TAKEN TODAY/SAFETY INSPECTIONS CONDUCTED:	SAFETY REQUIREMENTS HAVE BEEN MET <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
--	---

Equipment at the Site (includes Subcontractor supplied equipment):	Date Arrived	Date Removed

Material/Supplies Received at the Site:
Field Activities and Remarks Not Presented Above:

Name: Kristen Durocher

Date: 01/27/2017

DAILY ACTIVITY REPORT

DATE:	January 30, 2017	Day:	S	M	T	W	Th	F	S
PROJECT NAME:	NERT Regional Groundwater RI	Weather:	Sunny	Partly Sunny	Cloudy	Rain	Snow		
SITES / LOCATIONS:	LVW at RM3.75 – 3.8	Temp °F:							
		Wind:	Still	Moderate	High	Direction:			
		Humidity:	Dry	Moderate	Humid	Rain			

PERSONNEL ON-SITE	Employer	Job Title
Rick Purdy	AECOM	Field Team
C. Steve Howe	AECOM	Hydrologist/ Field Team Leader
Rachel MacPhee	AECOM	Field Team
Clare Murphy-Hagan	AECOM	Field Team

VISITORS ON-SITE	Employer	Purpose of Visit	Time In	Time Out
Carlton Parker	NDEP	Site visit	11:00	11:20

WORK COMPLETED
Two field teams worked together to complete sampling and cross-section measurements at two transects (T3.75 and T3.8). The water was shallow and only one depth was collected at each of the four locations across the transects.
QC samples were unintentionally not collected at T3.75 and will be collected today.
Plans for January 31, 2017 include sampling and cross-sections measurements at T4.6 and T4.65.

LIST SAFETY ACTIONS TAKEN TODAY/SAFETY INSPECTIONS CONDUCTED:	SAFETY REQUIREMENTS HAVE BEEN MET <input type="checkbox"/> Yes <input type="checkbox"/> No
--	--

Equipment at the Site (includes Subcontractor supplied equipment):	Date Arrived	Date Removed

Material/Supplies Received at the Site:
Field Activities and Remarks Not Presented Above:

Name: Kristen Durocher

Date: 01/30/2017

DAILY ACTIVITY REPORT

DATE:	January 31, 2017	Day:	S	M	T	W	Th	F	S
PROJECT NAME:	NERT Regional Groundwater RI	Weather:	Sunny	Partly Sunny	Cloudy	Rain	Snow		
SITES / LOCATIONS:	LVW at RM4.6 – 4.65	Temp °F:							
		Wind:	Still	Moderate	High	Direction:			
		Humidity:	Dry	Moderate	Humid	Rain			

PERSONNEL ON-SITE	Employer	Job Title
Rick Purdy	AECOM	Field Team
C. Steve Howe	AECOM	Hydrologist/ Field Team Leader
Rachel MacPhee	AECOM	Field Team
Clare Murphy-Hagan	AECOM	Field Team

VISITORS ON-SITE	Employer	Purpose of Visit	Time In	Time Out
Carlton Parker	NDEP	Site visit	10:00	10:30

WORK COMPLETED
The field teams sampled and collected cross-section measurements at two transects (T4.6 and T4.65). The water was shallow and only one depth was collected at each of the four locations across the transects.
QC samples were collected as follows:
FD and EB at T4.6
MS/MSD and FD at T4.65
Plans for February 1, 2017 include sampling and cross-sections measurements at T3.5 and T4.2.

LIST SAFETY ACTIONS TAKEN TODAY/SAFETY INSPECTIONS CONDUCTED:	SAFETY REQUIREMENTS HAVE BEEN MET <input type="checkbox"/> Yes <input type="checkbox"/> No
--	--

Equipment at the Site (includes Subcontractor supplied equipment):	Date Arrived	Date Removed

Material/Supplies Received at the Site:
Field Activities and Remarks Not Presented Above:

Name: Kristen Durocher

Date: 01/31/2017

DAILY ACTIVITY REPORT

DATE:	February 1, 2017	Day:	S	M	T	W	Th	F	S
PROJECT NAME:	NERT Regional Groundwater RI	Weather:	Sunny	Partly Sunny	Cloudy	Rain	Snow		
SITES / LOCATIONS:	LVW at RM4.2 – 4.75	Temp °F:							
		Wind:	Still	Moderate	High	Direction:			
		Humidity:	Dry	Moderate	Humid	Rain			

PERSONNEL ON-SITE	Employer	Job Title
Rick Purdy	AECOM	Field Team
C. Steve Howe	AECOM	Hydrologist/ Field Team Leader
Rachel MacPhee	AECOM	Field Team
Clare Murphy-Hagan	AECOM	Field Team

VISITORS ON-SITE	Employer	Purpose of Visit	Time In	Time Out

WORK COMPLETED
The field teams sampled and collected cross-section measurements at two transects (T4.2 and T4.75). The water was shallow and only one depth was collected at each of the four locations across the transects. QC samples were collected as follows: EB at T4.2 and T4.75 MS/MSD at T4.6 sample A FDs at T4.2B and T4.65A Plans for February 2, 2017 include sampling and cross-sections measurements at T3.5, T5.3 and T6.

LIST SAFETY ACTIONS TAKEN TODAY/SAFETY INSPECTIONS CONDUCTED:	SAFETY REQUIREMENTS HAVE BEEN MET <input type="checkbox"/> Yes <input type="checkbox"/> No
--	--

Equipment at the Site (includes Subcontractor supplied equipment):	Date Arrived	Date Removed

Material/Supplies Received at the Site: Field Activities and Remarks Not Presented Above:

Name: Kristen Durocher

Date: 02/01/2017

DAILY ACTIVITY REPORT

DATE:	February 2, 2017	Day:	S	M	T	W	Th	F	S
PROJECT NAME:	NERT Regional Groundwater RI	Weather:	Sunny	Partly Sunny	Cloudy	Rain	Snow		
SITES / LOCATIONS:	LVW at RM3.5 – 6	Temp °F:							
		Wind:	Still	Moderate	High	Direction:			
		Humidity:	Dry	Moderate	Humid	Rain			

PERSONNEL ON-SITE	Employer	Job Title
Rick Purdy	AECOM	Field Team
C. Steve Howe	AECOM	Hydrologist/ Field Team Leader
Rachel MacPhee	AECOM	Field Team
Clare Murphy-Hagan	AECOM	Field Team

VISITORS ON-SITE	Employer	Purpose of Visit	Time In	Time Out

WORK COMPLETED
<p>The field teams sampled and collected cross-section measurements at three transects (T3.5, T5.3 and T6). The water was shallow at T6 only one depth was collected at each of the four locations across the transect. At T5.3, two depths were collected at T5.3A; only three samples were collected across the LVW. At T3.5, two depths were collected at T3.5F and six samples were collected across the LVW due to braiding.</p> <p>QC samples were collected as follows: EBs at T3.5C and T5.3A (these were collected with peristaltic pump) FBs at T3.5A and T6A FDs at T3.5B and T5.3B</p> <p>Note that the SWIP indicates a transect T3.6. COCs and labels indicated T3.5. The samples will remain indicated as T3.5, which is a minor modification from the SWIP. This does not affect the DQO of the program. The transect was measured where required by the DQOs laid out in the SWIP. The transects were named for the approximate river mile location of the transect.</p> <p>Plans for February 3, 2017 include sampling and cross-sections measurements the two remaining transects at T6.35 and T8.</p>

<p>LIST SAFETY ACTIONS TAKEN TODAY/SAFETY INSPECTIONS CONDUCTED: Rick Purdy (designated SSO) conducted a management site visit. Loading canoes safely onto vehicles was noted as a potential back strain hazard. Ricky Purdy (SSO) and Steve Howe (field team leader) are working on a JHA to address this.</p>	<p>SAFETY REQUIREMENTS HAVE BEEN MET</p> <p>Yes No</p>
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Equipment at the Site (includes Subcontractor supplied equipment):	Date Arrived	Date Removed

<p>Material/Supplies Received at the Site:</p> <p>Field Activities and Remarks Not Presented Above:</p>

Name: Kristen Durocher

Date: 02/02/2017

DAILY ACTIVITY REPORT

DATE:	February 3, 2017	Day:	S	M	T	W	Th	F	S
PROJECT NAME:	NERT Regional Groundwater RI	Weather:	Sunny	Partly Sunny	Cloudy	Rain	Snow		
SITES / LOCATIONS:	LVW at RM6.35 – 6.8	Temp °F:							
		Wind:	Still	Moderate	High	Direction:			
		Humidity:	Dry	Moderate	Humid	Rain			

PERSONNEL ON-SITE	Employer	Job Title
Rick Purdy	AECOM	Field Team
C. Steve Howe	AECOM	Hydrologist/ Field Team Leader
Rachel MacPhee	AECOM	Field Team
Clare Murphy-Hagan	AECOM	Field Team

VISITORS ON-SITE	Employer	Purpose of Visit	Time In	Time Out

WORK COMPLETED
The field teams sampled and collected cross-section measurements at two transects (T6.35 and T6.8). The water was shallow at T6.8 and only one depth was collected at each of the five locations across the transect. At T6.35, two depths were collected at T6.35B; and only three samples were collected across the LVW. No QC samples were collected.
This completed the transect sampling portion of the SWIP program.

LIST SAFETY ACTIONS TAKEN TODAY/SAFETY INSPECTIONS CONDUCTED:	SAFETY REQUIREMENTS HAVE BEEN MET <input type="checkbox"/> Yes <input type="checkbox"/> No
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Equipment at the Site (includes Subcontractor supplied equipment):	Date Arrived	Date Removed

Material/Supplies Received at the Site:
Field Activities and Remarks Not Presented Above:

Name: Kristen Durocher

Date: 02/03/2017

DAILY ACTIVITY REPORT

DATE:	February 6, 2017	Day:	S	M	T	W	Th	F	S
PROJECT NAME:	NERT Regional Groundwater RI	Weather:	Sunny	Partly Sunny	Cloudy	Rain	Snow		
SITES / LOCATIONS:	LVW at RM3.4 – 7.2	Temp °F:							
		Wind:	Still	Moderate	High	Direction:	SW/SSW 25mph		
		Humidity:	Dry	Moderate	Humid	Rain			

PERSONNEL ON-SITE	Employer	Job Title
Rick Purdy	AECOM	Field Team/SSO
C. Steve Howe	AECOM	Hydrologist/ Field Team Leader
Rachel MacPhee	AECOM	Field Team
Clare Murphy-Hagan	AECOM	Field Team
Ryan McCarthy	AECOM	Field Team
Nicholas Pryor	AECOM	Field Team
Andrea Christian	AECOM	Field Team
Tate Yulga	AECOM	Field Team
Petros Paulos	AECOM	Field Team
James McCoy	AECOM	Field Team
Connor Gildea	AECOM	Field Team

VISITORS ON-SITE	Employer	Purpose of Visit	Time In	Time Out
Carlton Parker	NDEP	Site visit	10:20	10:30

WORK COMPLETED
<p>Five field teams worked to complete the first day of discreet sampling. QC samples were collected as follows: EBs were collected by each team associated with sampling at LW3.85, GLW4.4, LW5.3, LW5.9 and LW7.2. Three FBs were collected associated with sampling at LW3.85, GLW4.4 and LW5.3. Three FDs were collected: LW3.4-20170206-17:01-0.7-FD, GLWC6.1_4-20170206-15:45-1.3-FD and LW7.2-20170206-14:30-1.0-FD.</p> <p>Flow requirements were met for all locations with minor deviation at LW6.05 and LW6.7 low flow samples. The field teams are adjusting the sampling time to earlier to meet the lower 10th percentile of the flows. H&S briefings in the morning delayed the team (team leader is SSO).</p>

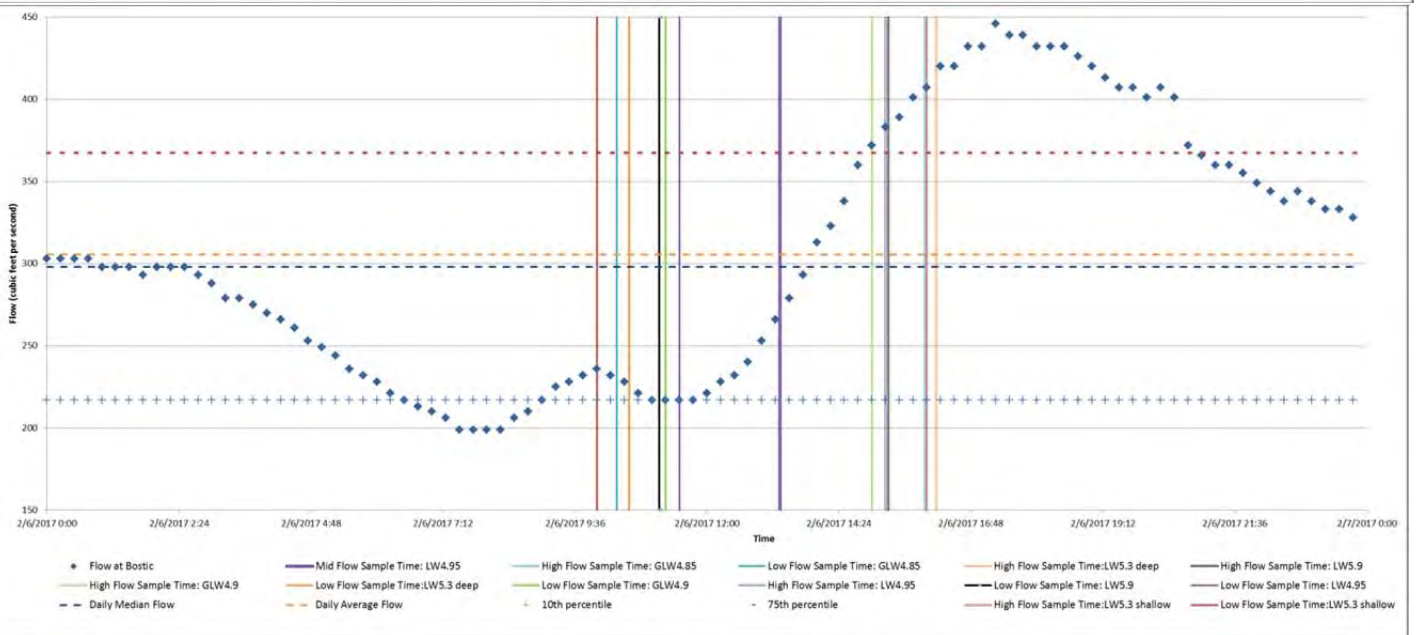
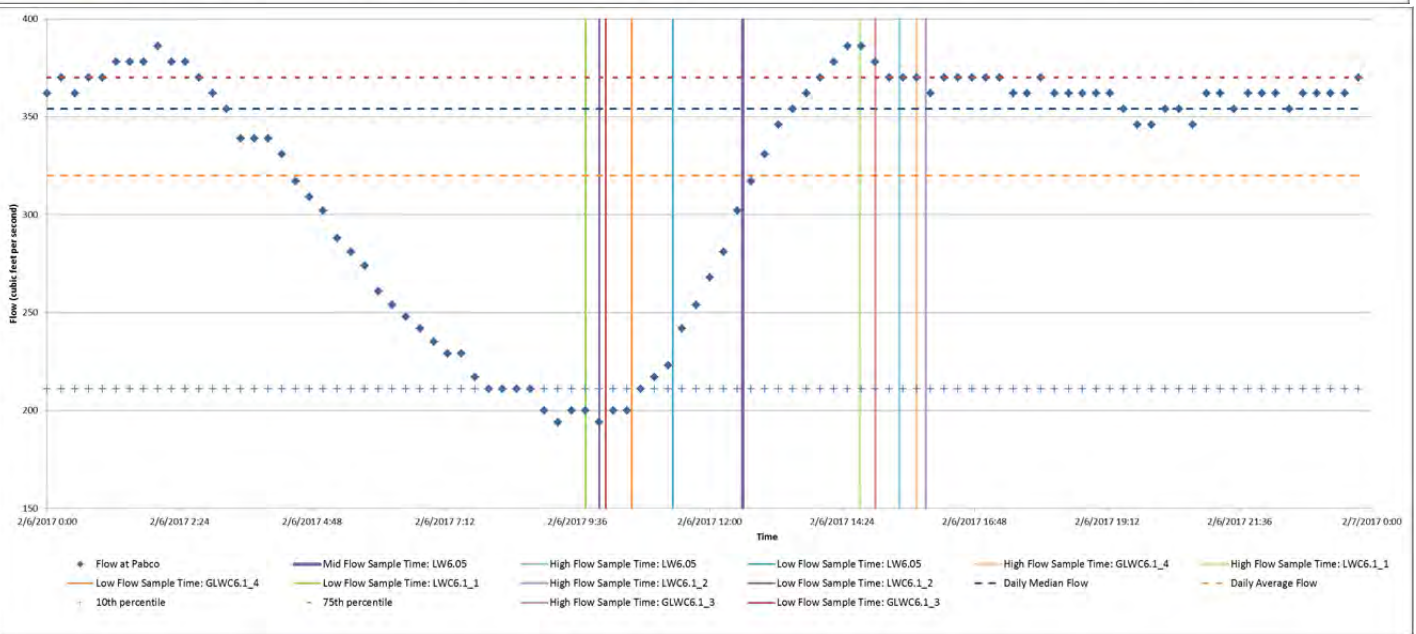
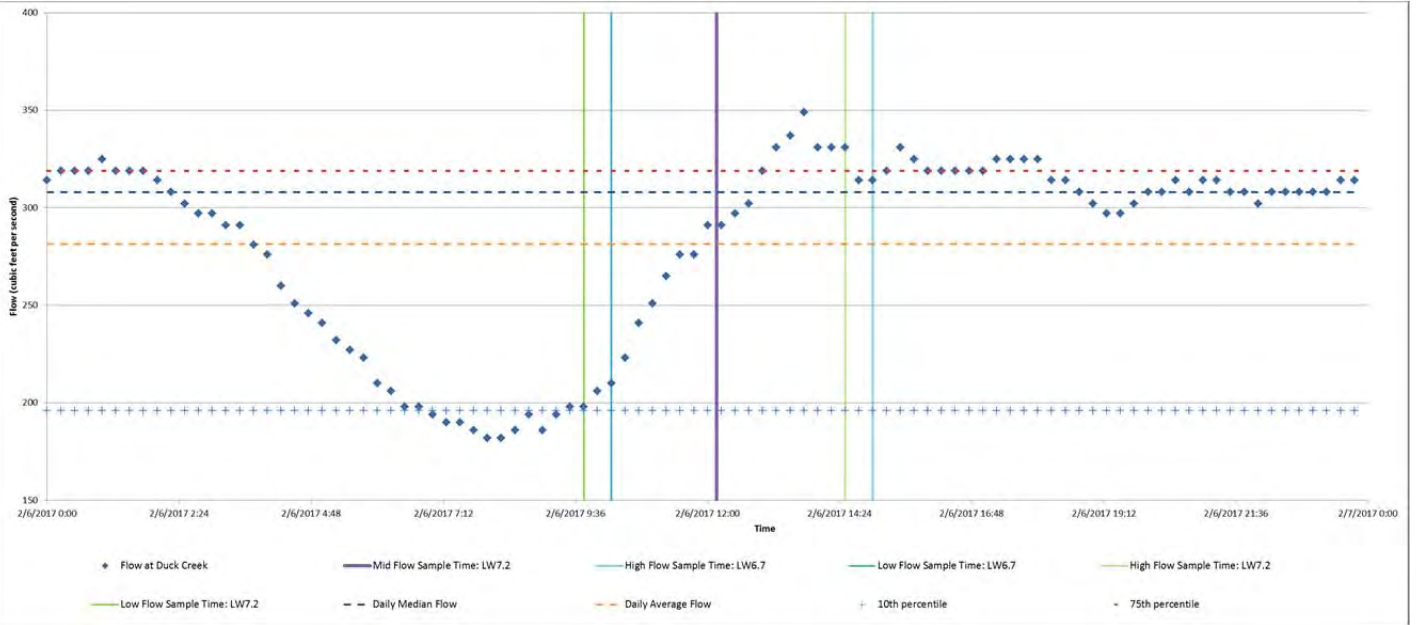
LIST SAFETY ACTIONS TAKEN TODAY/SAFETY INSPECTIONS CONDUCTED:	SAFETY REQUIREMENTS HAVE BEEN MET <input type="checkbox"/> Yes <input type="checkbox"/> No
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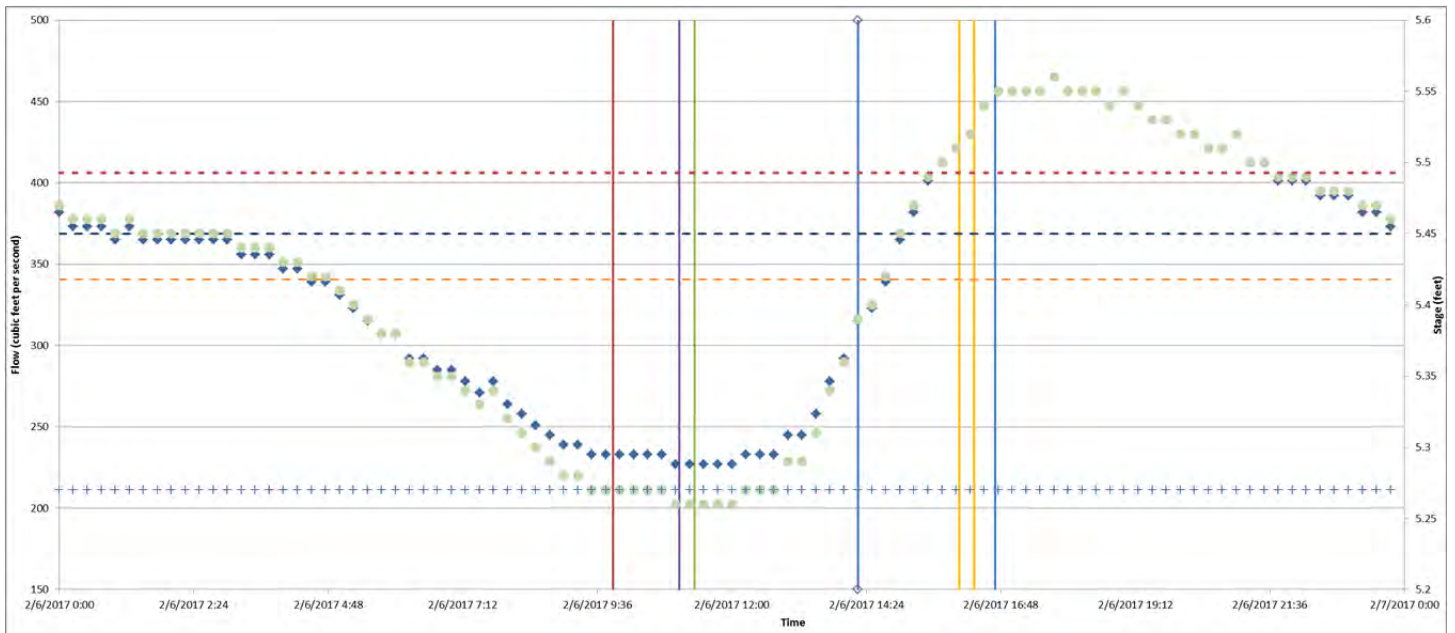
Equipment at the Site (includes Subcontractor supplied equipment):	Date Arrived	Date Removed

Material/Supplies Received at the Site:
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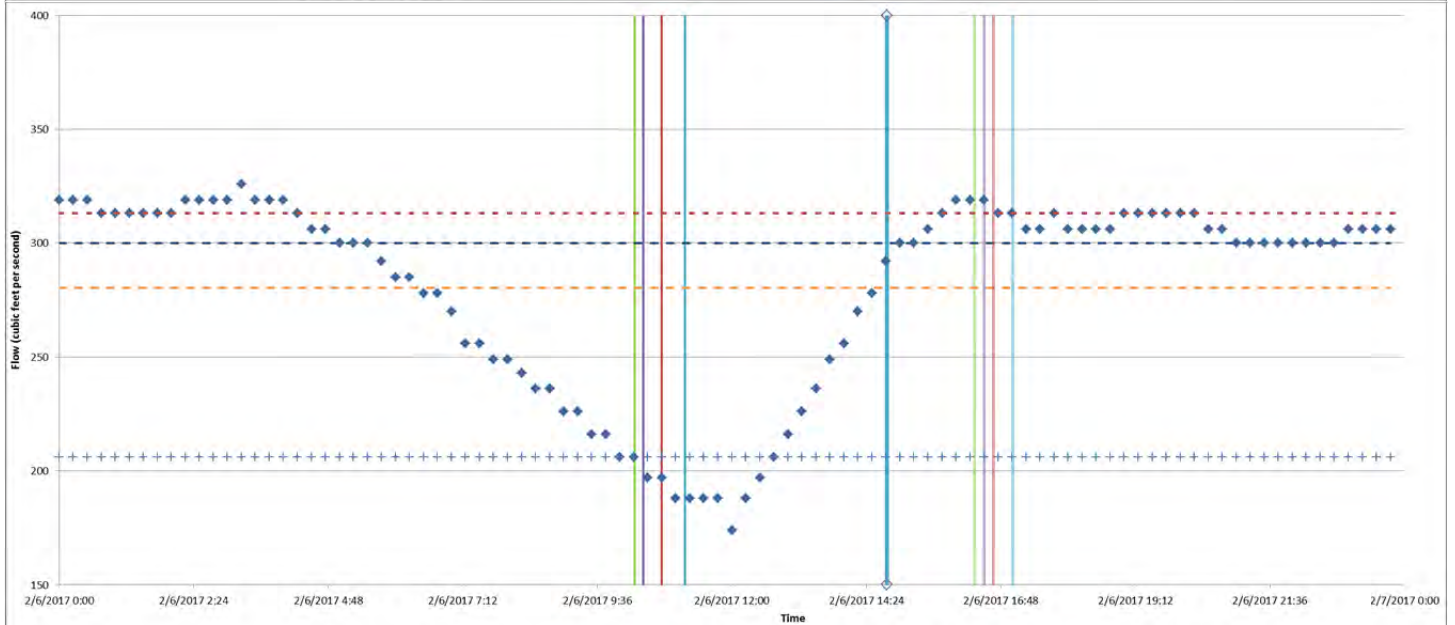
Field Activities and Remarks Not Presented Above:

Timing of samples in relation to flows at the closest gage to each sample presented below





- ◆ Flow at Homestead
- ◆ High Flow Sample Time: LW4.1
- ◆ Stage at Homestead
- ◆ 75th percentile of Stage
- Mid Flow Sample Time: GLW4.4
- Low Flow Sample Time: LW4.1
- Daily Median Stage
- High Flow Sample Time: LW3.85
- High Flow Sample Time: GLW4.4
- Daily Average Stage
- Low Flow Sample Time: LW3.85
- Low Flow Sample Time: GLW4.4
- 10th percentile of Stage



- ◆ Flow at Three Kids Wash
- ◆ High Flow Sample Time: LWC3.7
- ◆ Daily Median Flow
- ◆ High Flow Sample Time: GLW3.78
- ◆ Mid Flow Sample Time: LW3.4
- ◆ Low Flow Sample Time: LWC3.7
- ◆ Daily Average Flow
- ◆ Low Flow Sample Time: GLW3.78
- ◆ High Flow Sample Time: LW3.4
- ◆ Low Flow Sample Time: LWC3.7
- ◆ High Flow Sample Time: LW3.75
- ◆ Low Flow Sample Time: LW3.4
- ◆ Low Flow Sample Time: LW3.75
- ◆ 10th percentile
- ◆ 75th percentile

Name: Kristen Durocher

Date: 02/06/2017

DAILY ACTIVITY REPORT

DATE:	February 7, 2017	Day:	S	M	T	W	Th	F	S
PROJECT NAME:	NERT Regional Groundwater RI	Weather:	Sunny	Partly Sunny	Cloudy	Rain	Snow		
SITES / LOCATIONS:	LVW at RM3.4 – 7.2	Temp °F:							
		Wind:	Still	Moderate	High	Direction:	SW/SSW 15-20mph		
		Humidity:	Dry	Moderate	Humid	Rain			

PERSONNEL ON-SITE	Employer	Job Title
Rick Purdy	AECOM	Field Team/SSO
C. Steve Howe	AECOM	Hydrologist/ Field Team Leader
Rachel MacPhee	AECOM	Field Team
Clare Murphy-Hagan	AECOM	Field Team
Ryan McCarthy	AECOM	Field Team
Nicholas Pryor	AECOM	Field Team
Andrea Christian	AECOM	Field Team
Tate Yulga	AECOM	Field Team
Petros Paulos	AECOM	Field Team
James McCoy	AECOM	Field Team
Connor Gildea	AECOM	Field Team

VISITORS ON-SITE	Employer	Purpose of Visit	Time In	Time Out

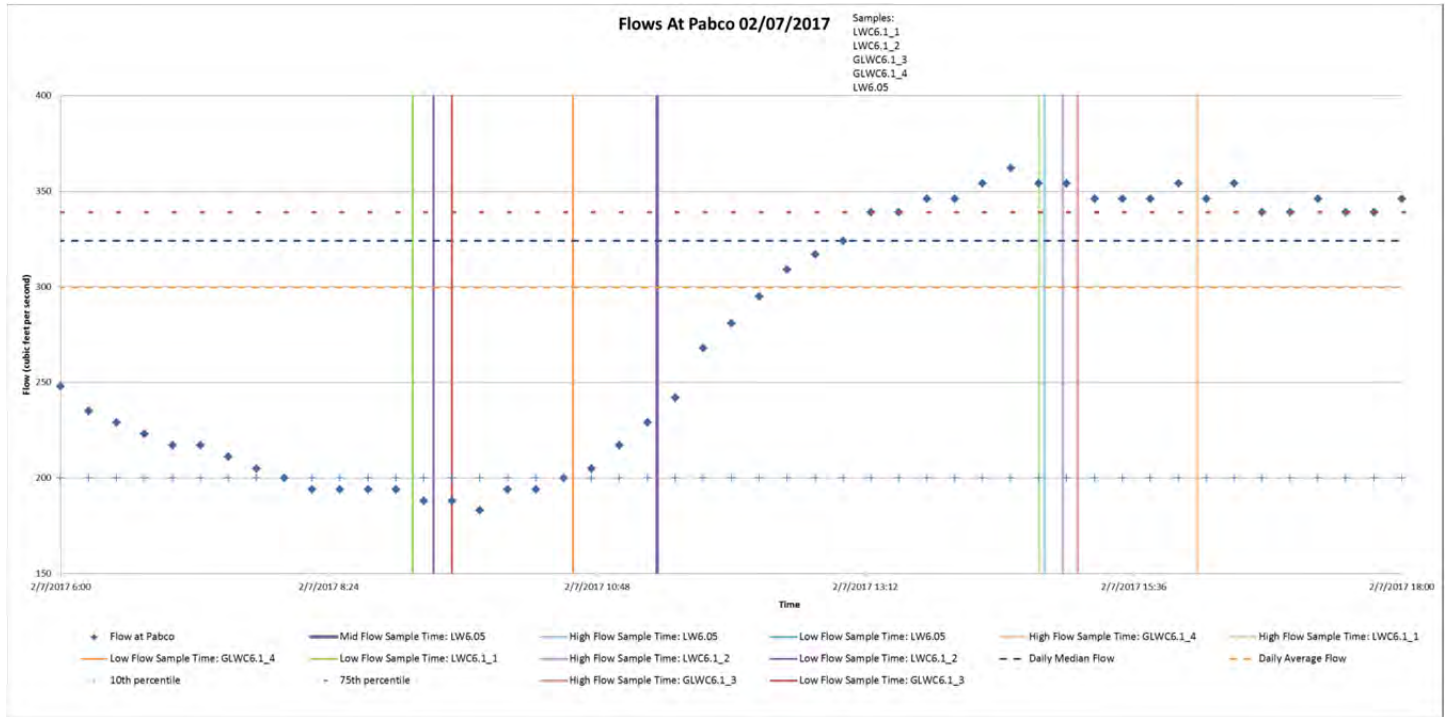
WORK COMPLETED
<p>Five field teams worked to complete the second day of discreet sampling. QC samples were collected as follows: Five FDs were collected: LW3.85-20170207-15:50-0.6-FD, GLW4.4-20170207-14:11-1.3-FD, GLW4.85-20170207-15:42-0.8-FD, GLWC6.7_3-20170207-15:06-0.9-FD and LW6.7-20170207-14:25-0.6-FD.</p> <p>MS and MSD samples were collected at five locations associated with samples: LW3.4-20170207-11:11-0.5, LW4.1-20170207-10:39-0.3. GLW4.9-20170207-10:55-1.2, LW5.9-20170207-10:00-0.4 and LW6.05-20170207-09:30-0.6</p> <p>Flow requirements were met for all locations with minor deviations in the timing of mid-flow samples (note that the samples were collected at the same approximate time as 2/6/17) at the following: Slightly late at LW4.95, GLW4.4, LW3.4 Slightly early at LW6.05</p> <p>The gages are being monitored both in the office and in the field (new staff gages). The teams will work to sample mid-flow at specific gage targets.</p>

LIST SAFETY ACTIONS TAKEN TODAY/SAFETY INSPECTIONS CONDUCTED:	SAFETY REQUIREMENTS HAVE BEEN MET Yes No
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Equipment at the Site (includes Subcontractor supplied equipment):	Date Arrived	Date Removed
Material/Supplies Received at the Site:		

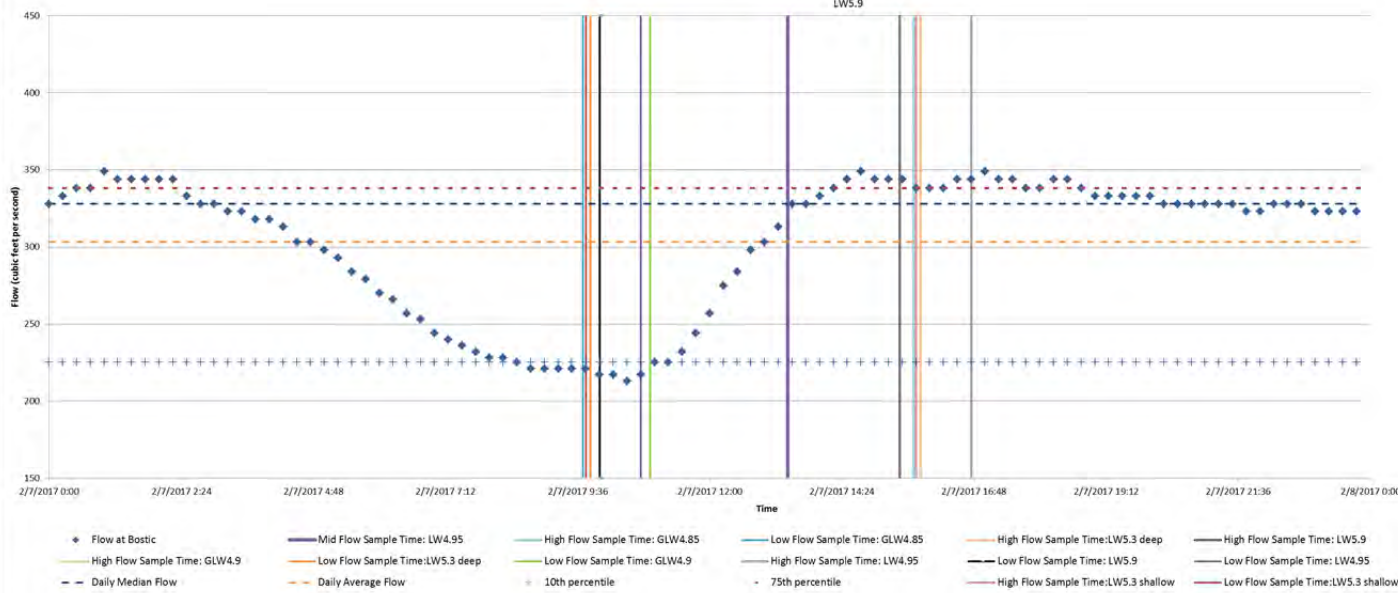
Field Activities and Remarks Not Presented Above:

Timing of samples in relation to flows at the closest gage to each sample presented below



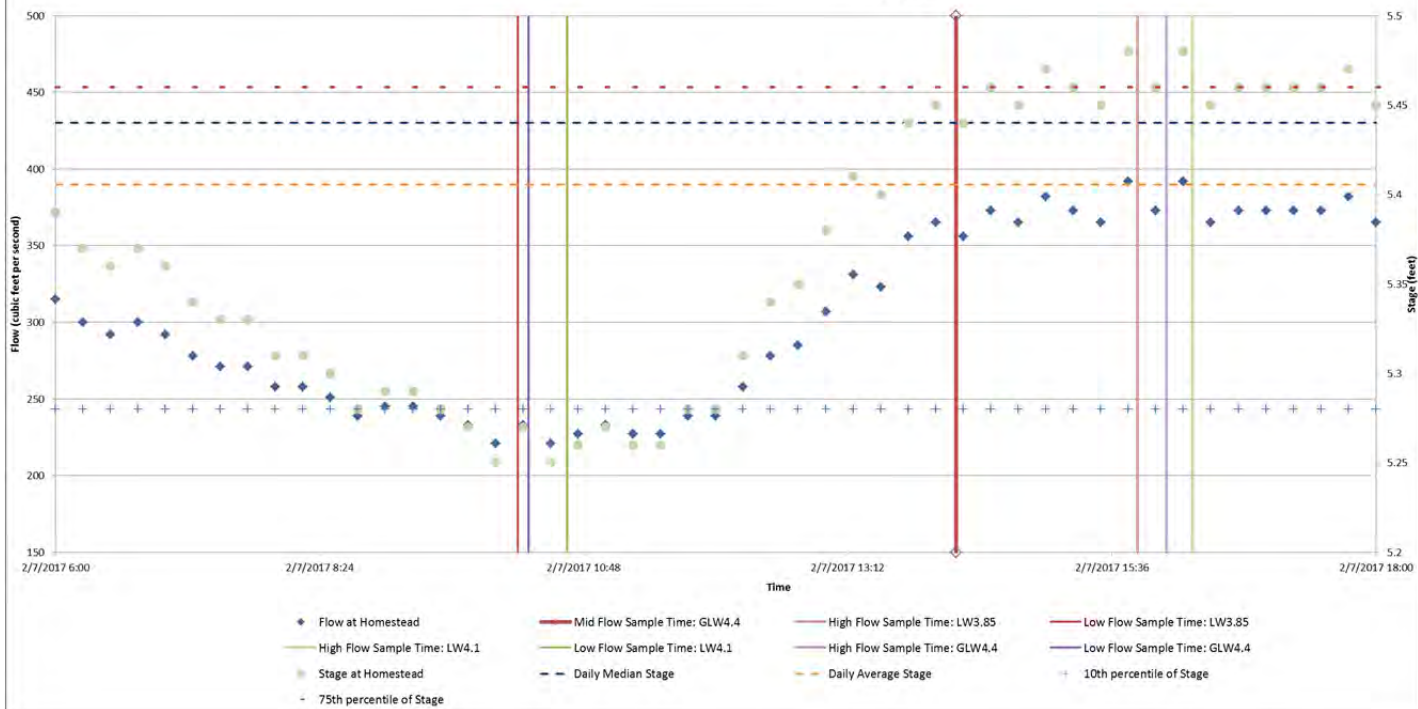
Flows at Bostic 02/07/2017

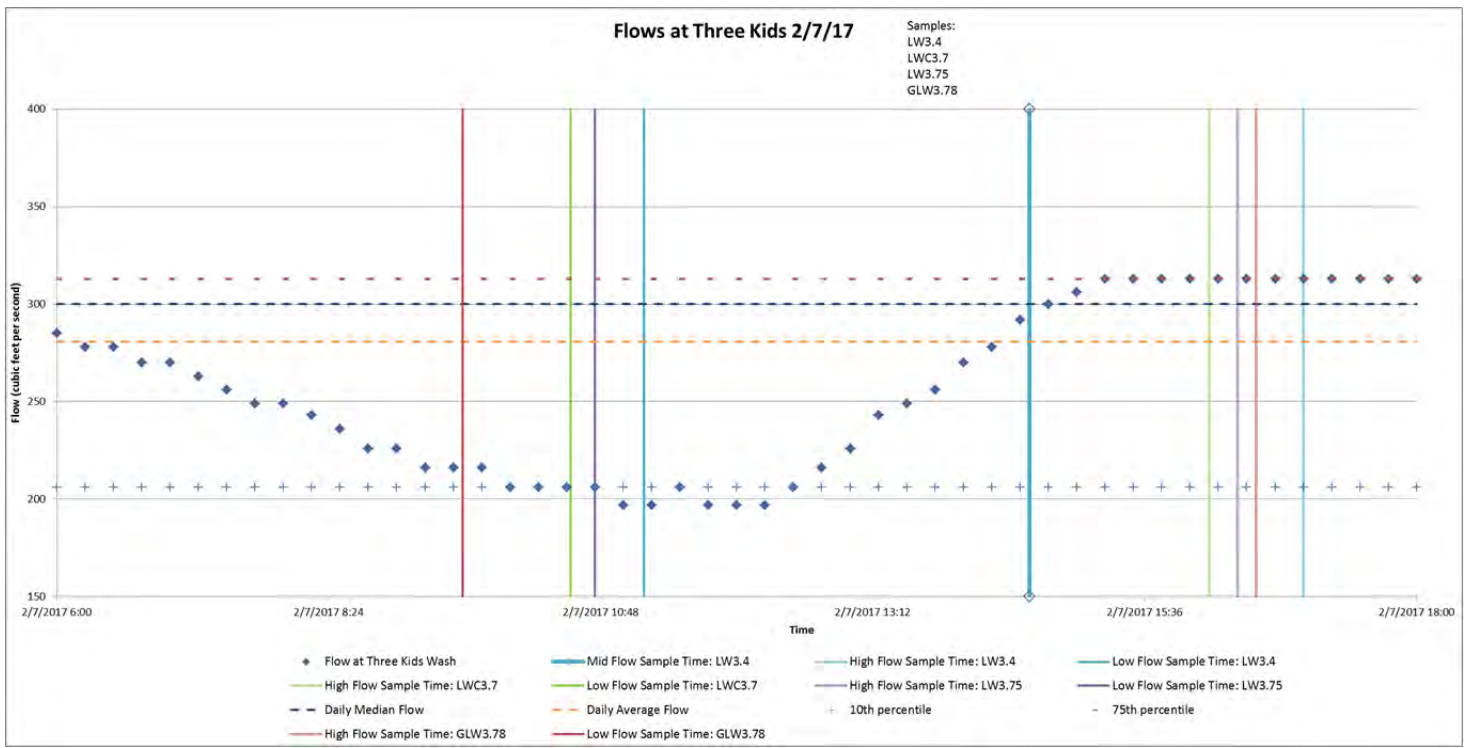
Samples:
GLW4.85
GLW4.9
LW4.95
LW5.3
LW5.9



Flows at Homestead 02/07/2017

Samples:
LW3.85
LW4.1
GLW4.4





Name: Kristen Durocher

Date: 02/07/2017

DAILY ACTIVITY REPORT

DATE:	February 8, 2017	Day:	S	M	T	W	Th	F	S
PROJECT NAME:	NERT Regional Groundwater RI	Weather:	Sunny	Partly Sunny	Cloudy	Rain	Snow		
SITES / LOCATIONS:	LVW at RM3.4 – 7.2	Temp °F:							
		Wind:	Still	Moderate	High	Direction:	ENE 0-10 mph		
		Humidity:	Dry	Moderate	Humid	Rain			

PERSONNEL ON-SITE	Employer	Job Title
Rick Purdy	AECOM	Field Team/SSO
C. Steve Howe	AECOM	Hydrologist/ Field Team Leader
Rachel MacPhee	AECOM	Field Team
Clare Murphy-Hagan	AECOM	Field Team
Ryan McCarthy	AECOM	Field Team
Nicholas Pryor	AECOM	Field Team
Andrea Christian	AECOM	Field Team
Tate Yulga	AECOM	Field Team
Petros Paulos	AECOM	Field Team
James McCoy	AECOM	Field Team
Connor Gildea	AECOM	Field Team

VISITORS ON-SITE	Employer	Purpose of Visit	Time In	Time Out

WORK COMPLETED
<p>Five field teams worked to complete the third day of discreet sampling. QC samples were collected as follows:</p> <p>Four EBs were collected associated with GLW4.4, LW4.95, LWC6.1_1 and LW6.7.</p> <p>Five FDs were collected: LW3.85-20170208-09:27-0.5-FD, LW4.1-20170208-10:22-0.4-FD, GLW4.9-20170208-16:35-1.4-FD, GLWC4.1_4-20170208-10:35-1.3-FD, and LW6.05-20170208-12:35-0.8-FD.</p> <p>Five FBs were collected associated with LW3.4-20170208-10:55, LW4.1-20170208-11:12, GLW4.9-20170208-11:09, LW5.9-20170208-11:45 and LW6.05-20170208-10:30.</p> <p>Flow requirements were met for all locations with minor deviations in the timing of mid-flow samples. Flows were being monitored but the rise in flow followed a very steep curve and samples were collected within 30 minutes generally of actual mid flows at the following: Slightly late at LW6.05, LW4.95, GLW4.4, LW3.4</p> <p>The low flow was slightly early at LWC3.7 and the field team will sample this location 30 minutes or so later today.</p> <p>LW5.9 low flow was sampled a little late and this will adjusted.</p> <p>The gages are being monitored both in the office and in the field (new staff gages). The teams will work to sample low and mid-flow at specific gage targets.</p>

LIST SAFETY ACTIONS TAKEN TODAY/SAFETY INSPECTIONS CONDUCTED:	SAFETY REQUIREMENTS HAVE BEEN MET <input type="checkbox"/> Yes <input type="checkbox"/> No
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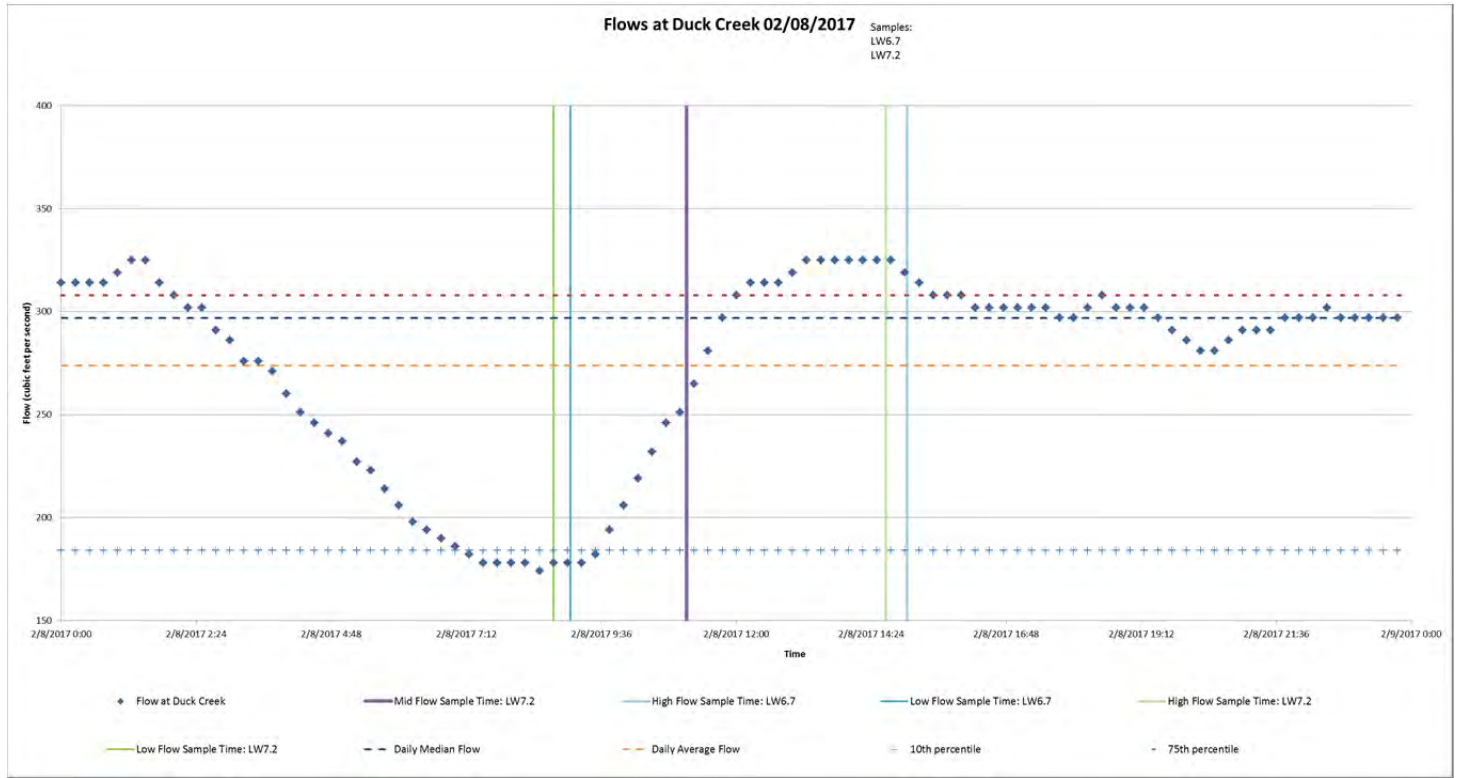
Equipment at the Site (includes Subcontractor supplied equipment):	Date Arrived	Date Removed
Material/Supplies Received at the Site:		

Field Activities and Remarks Not Presented Above:

It was noted that the NERT outfall was not flowing. During sampling teams noticed a group of men examining the outfall area. Since the teams were occupied with sampling, no one was able to provide an introduction. The men left soon after arriving.

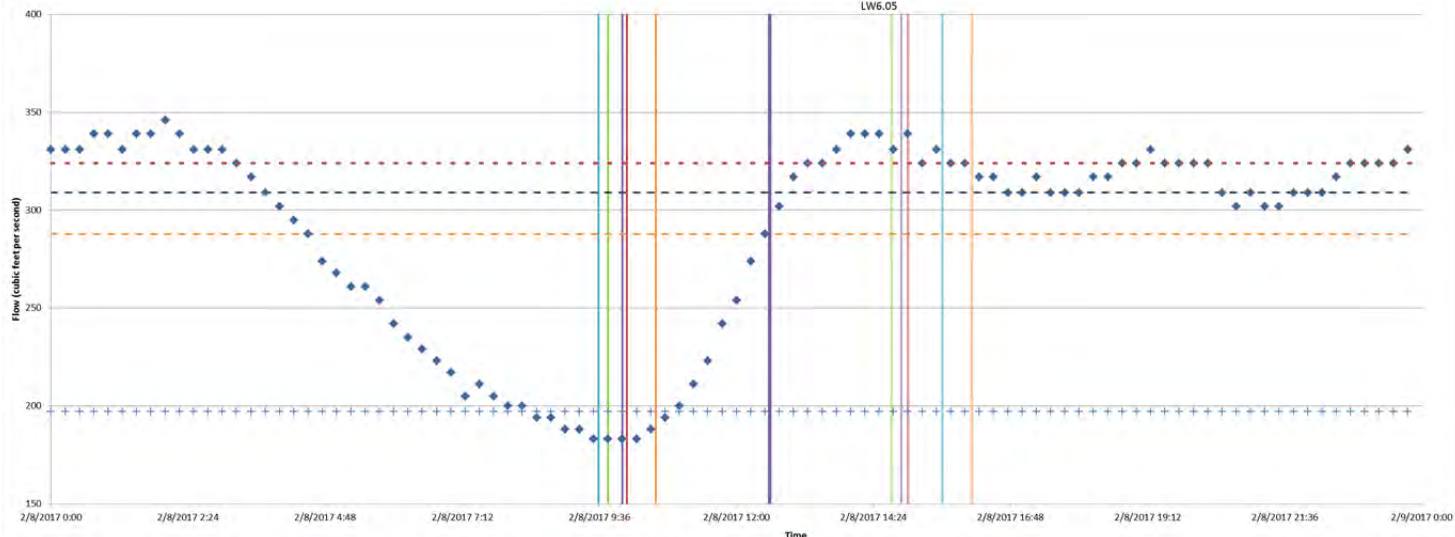


Timing of samples in relation to flows at the closest gage to each sample presented below



Flows At Pabco 02/08/2017

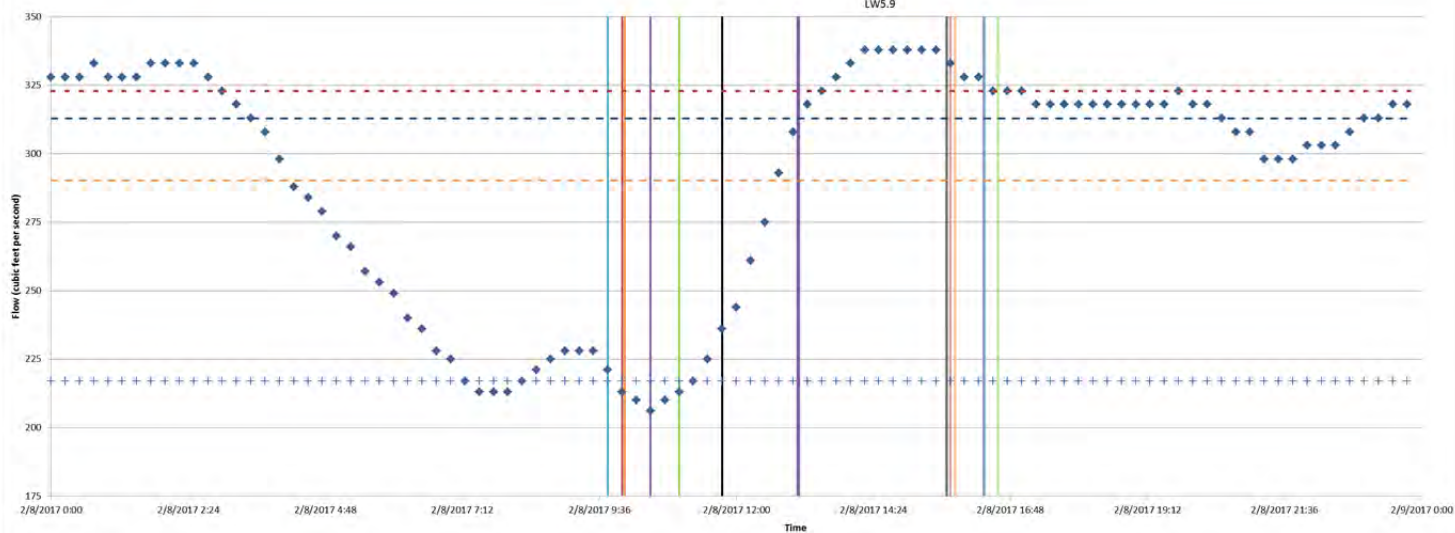
Samples:
LWC6.1_1
LWC6.1_2
GLWC6.1_3
GLWC6.1_4
LW6.05



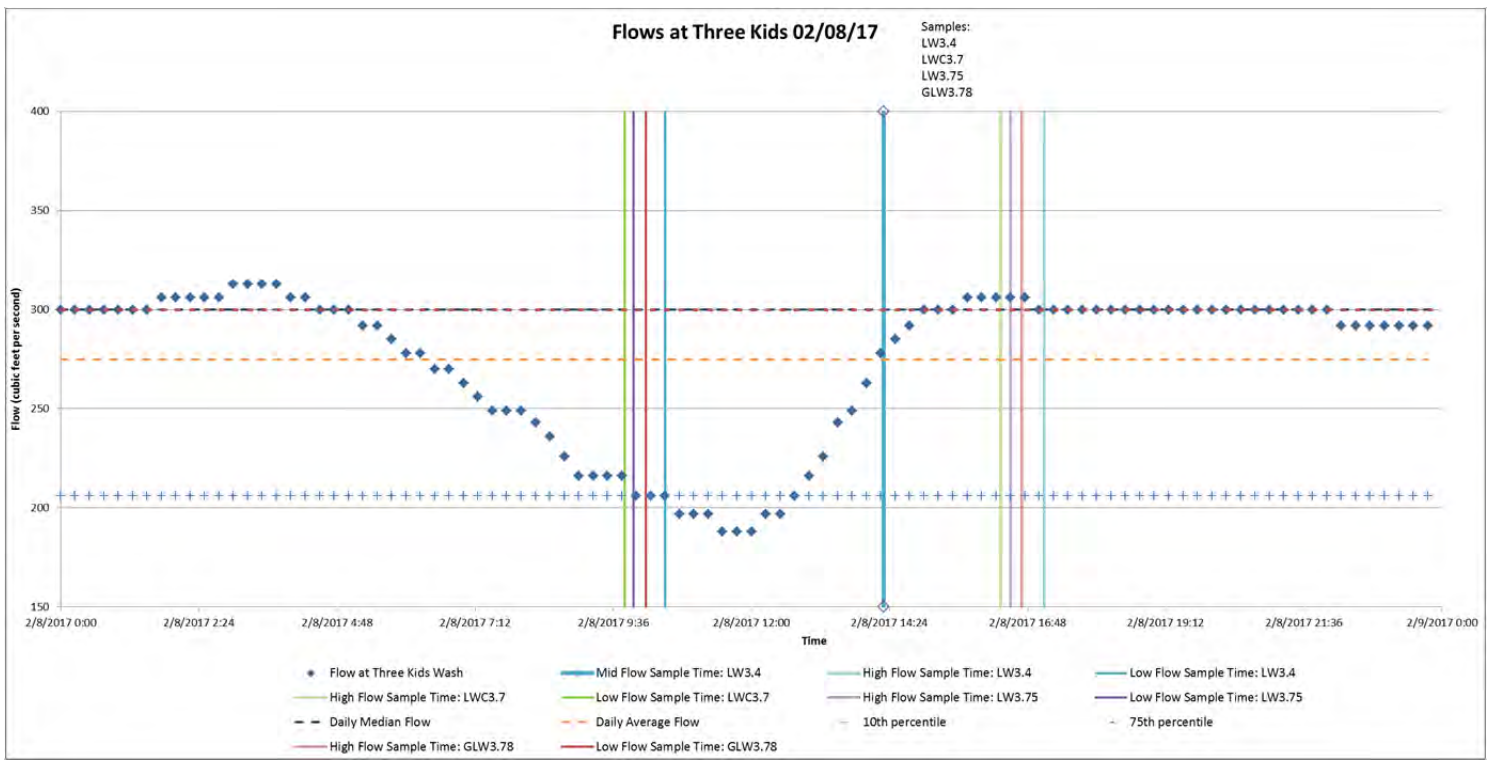
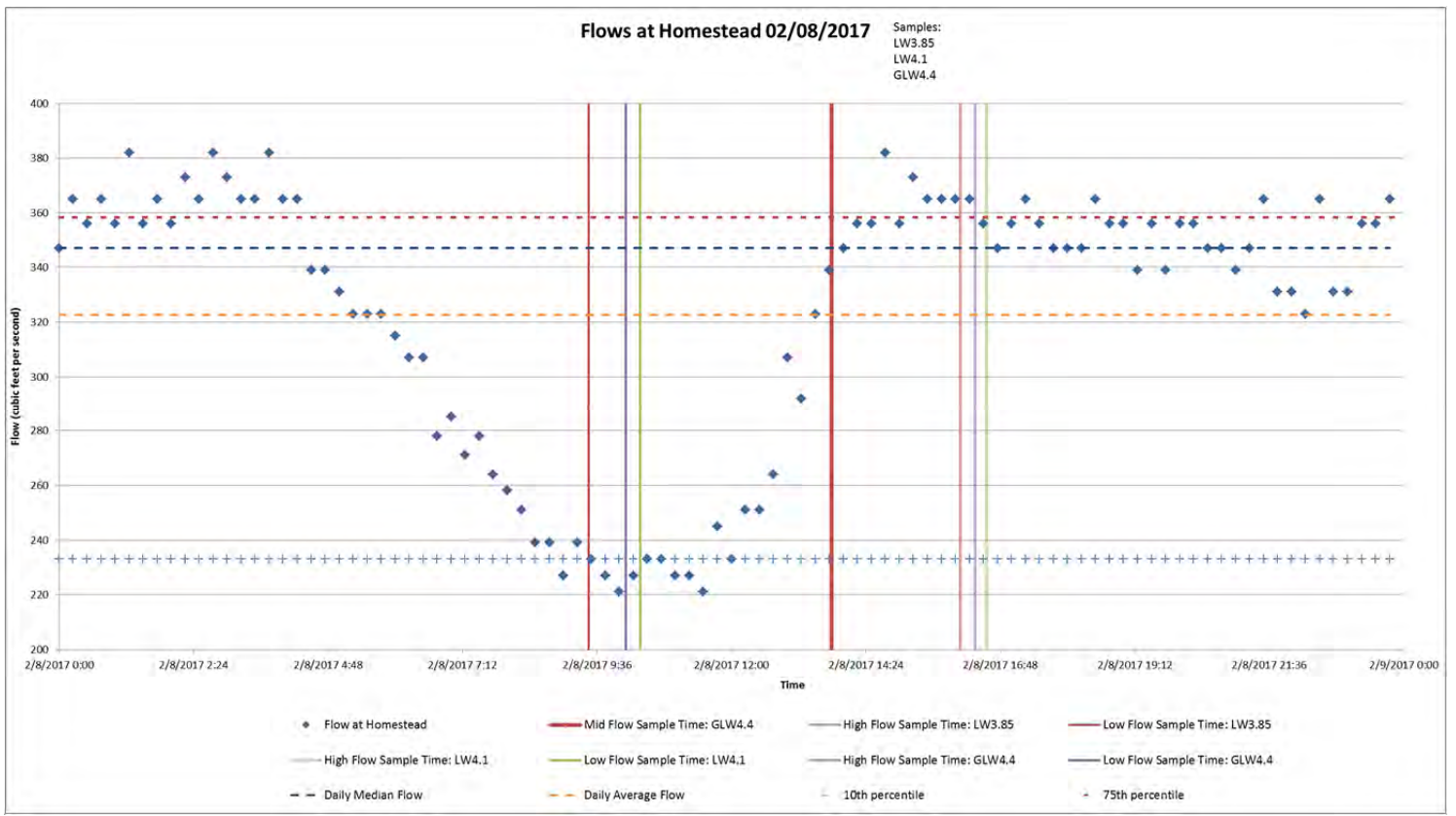
- ◆ Flow at Pabco
- ◆ Mid Flow Sample Time: LW6.05
- ◆ High Flow Sample Time: LW6.05
- ◆ Low Flow Sample Time: LW6.05
- ◆ High Flow Sample Time: GLWC6.1_4
- ◆ High Flow Sample Time: LWC6.1_1
- ◆ Low Flow Sample Time: GLWC6.1_4
- ◆ Low Flow Sample Time: LWC6.1_1
- ◆ High Flow Sample Time: LWC6.1_2
- ◆ Low Flow Sample Time: LWC6.1_2
- ◆ High Flow Sample Time: GLWC6.1_3
- ◆ Low Flow Sample Time: GLWC6.1_3
- ◆ Daily Median Flow
- ◆ Daily Average Flow
- ◆ 10th percentile
- ◆ 75th percentile

Flows at Bostic 02/08/2017

Samples:
GLW4.85
GLW4.9
LW4.95
LW5.3
LW5.9



- ◆ Flow at Bostic
- ◆ Mid Flow Sample Time: LW4.95
- ◆ High Flow Sample Time: GLW4.85
- ◆ Low Flow Sample Time: GLW4.85
- ◆ High Flow Sample Time: LW5.3 deep
- ◆ High Flow Sample Time: LW5.9
- ◆ High Flow Sample Time: GLW4.9
- ◆ Low Flow Sample Time: LW5.3 deep
- ◆ Low Flow Sample Time: GLW4.9
- ◆ High Flow Sample Time: LW4.95
- ◆ Low Flow Sample Time: LW5.9
- ◆ Low Flow Sample Time: LW4.95
- ◆ Daily Median Flow
- ◆ Daily Average Flow
- ◆ 10th percentile
- ◆ 75th percentile
- ◆ High Flow Sample Time: LW5.3 shallow
- ◆ Low Flow Sample Time: LW5.3 shallow



Name: Kristen Durocher

Date: 02/08/2017

DAILY ACTIVITY REPORT

DATE:	February 9, 2017	Day:	S	M	T	W	Th	F	S
PROJECT NAME:	NERT Regional Groundwater RI	Weather:	Sunny	Partly Sunny	Cloudy	Rain	Snow		
SITES / LOCATIONS:	LVW at RM3.4 – 7.2	Temp °F:							
		Wind:	Still	Moderate	High	Direction:	ENE 0-10 mph		
		Humidity:	Dry	Moderate	Humid	Rain			

PERSONNEL ON-SITE	Employer	Job Title
Rick Purdy	AECOM	Field Team/SSO
C. Steve Howe	AECOM	Hydrologist/ Field Team Leader
Rachel MacPhee	AECOM	Field Team
Clare Murphy-Hagan	AECOM	Field Team
Nicholas Pryor	AECOM	Field Team
Andrea Christian	AECOM	Field Team
Tate Yulga	AECOM	Field Team
Petros Paulos	AECOM	Field Team
James McCoy	AECOM	Field Team
Connor Gildea	AECOM	Field Team

VISITORS ON-SITE	Employer	Purpose of Visit	Time In	Time Out
Carlton Parker and JD Dotchin	NDEP	observations		

WORK COMPLETED
<p>Five field teams worked to complete the fourth and final day of discreet sampling. QC samples were collected as follows:</p> <p>Five FDs were collected: LW3.4-20170209-13:33-0.5-FD, LW4.1-20170209-16:02-0.4-FD, LW4.95-20170209-10:35-1.0-FD, LWC6.1_1-20170209-14:39-1.1-FD, and LW7.2-20170209-14:41-0.9-FD.</p> <p>Four MS and MSDs were collected: GLW4.4-20170209-13:11-1.2-MS & GLW4.4-20170209-13:11-1.2-MSD, LW4.95-20170209-12:30-1.1-MS & LW4.95-20170209-12:30-1.1-MSD, GLWC6.1_4-20170209-10:33-1.3-MSD & GLWC6.1_4-20170209-10:33-1.3-MSD, and LW7.2-20170209-10:52-0.8-MS & LW7.2-20170209-10:52-0.8-MSD.</p> <p>One FB was collected associated with LW6.05-20170209-10:40.</p> <p>The QC requirements for the program were met. 180 samples were collected 9 (5%) EBs were collected 9 (5%) FBs were collected 9 (5%) MS and MSDs were collected 19 (10.6%) FDs were collected</p> <p>Flow requirements were met for all locations.</p> <p>The teams are demobilizing on the 2/10/17 and will return all equipment including 5 canoes, 5 YSI instruments, 5 GPS units. The remaining equipment will be sent to appropriate offices.</p> <p>Carlton Parker and JD Dotchin were seen at several locations along the LVW. Rick Purdy talked with Carlton Parker about the lack of flow in the NERT outfall. The outfall was dry on Wednesday morning due to operations being temporarily suspended at the treatment facility due to lack of ethanol.</p> <p>Two employees of the Bureau of Reclamation were at the LVW but no formal conversation was exchanged between them and AECOM staff.</p>

LIST SAFETY ACTIONS TAKEN TODAY/SAFETY INSPECTIONS CONDUCTED:	SAFETY REQUIREMENTS HAVE BEEN MET Yes No
--	--

Equipment at the Site (includes Subcontractor supplied equipment):	Date Arrived	Date Removed
Material/Supplies Received at the Site:		

Field Activities and Remarks Not Presented Above:

The NERT outfall not flowing at 09:15.

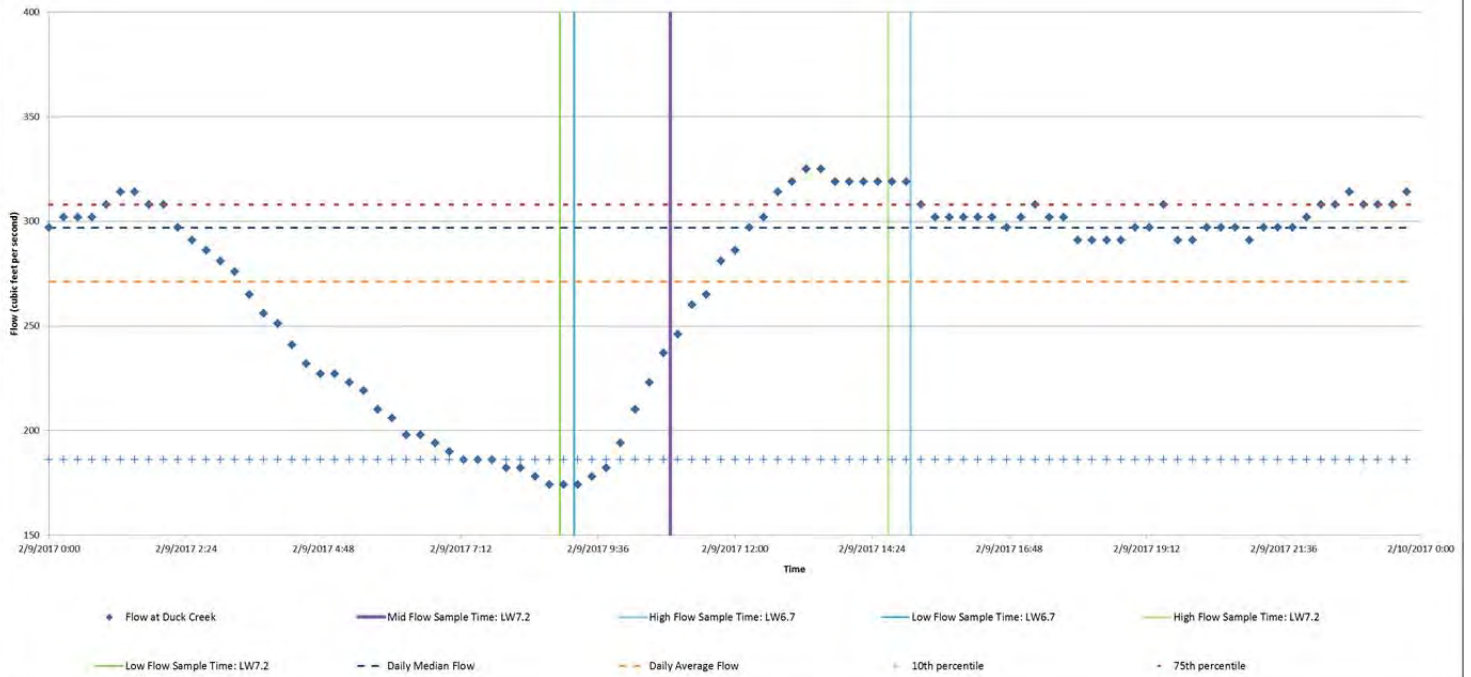
NERT outfall flowing at 15:05

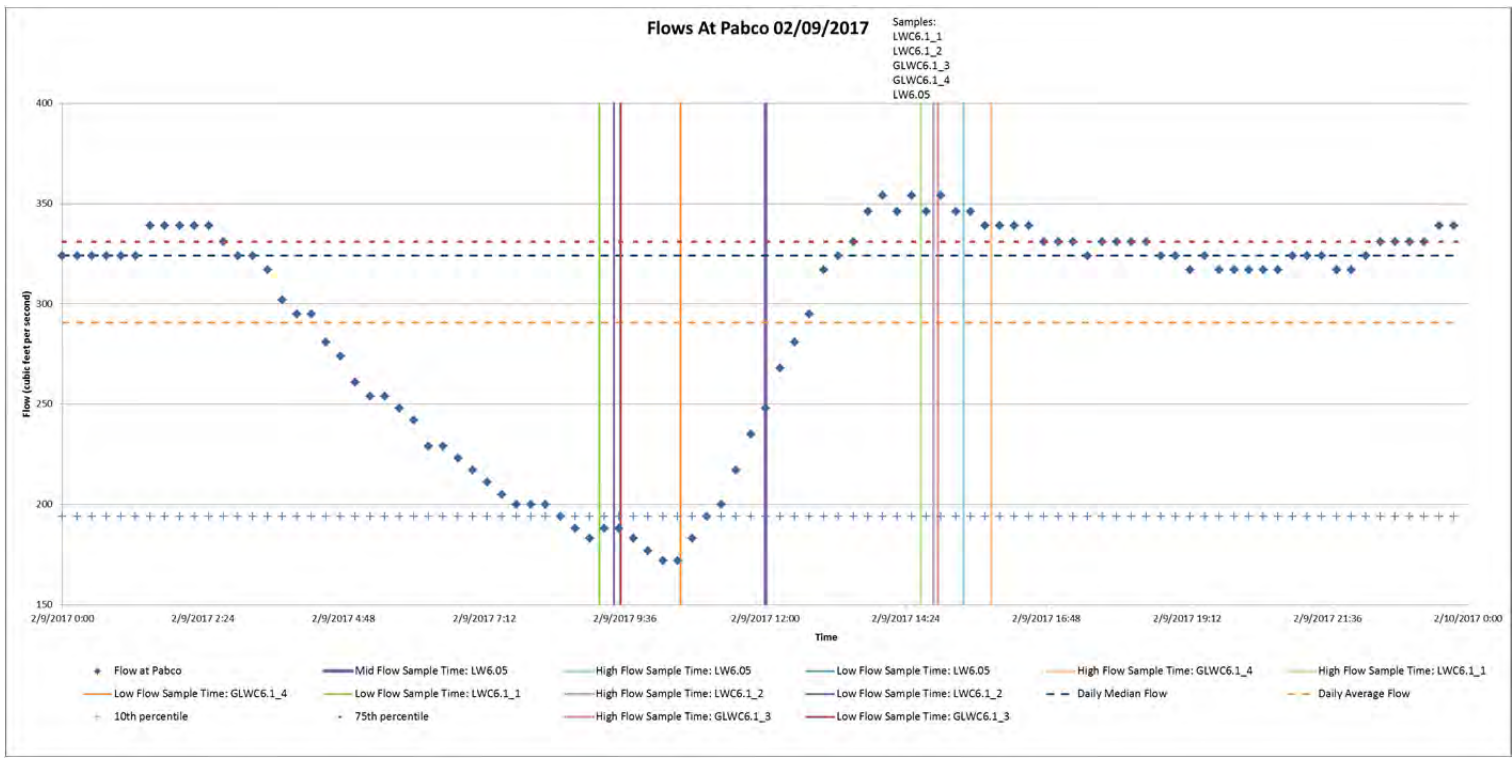


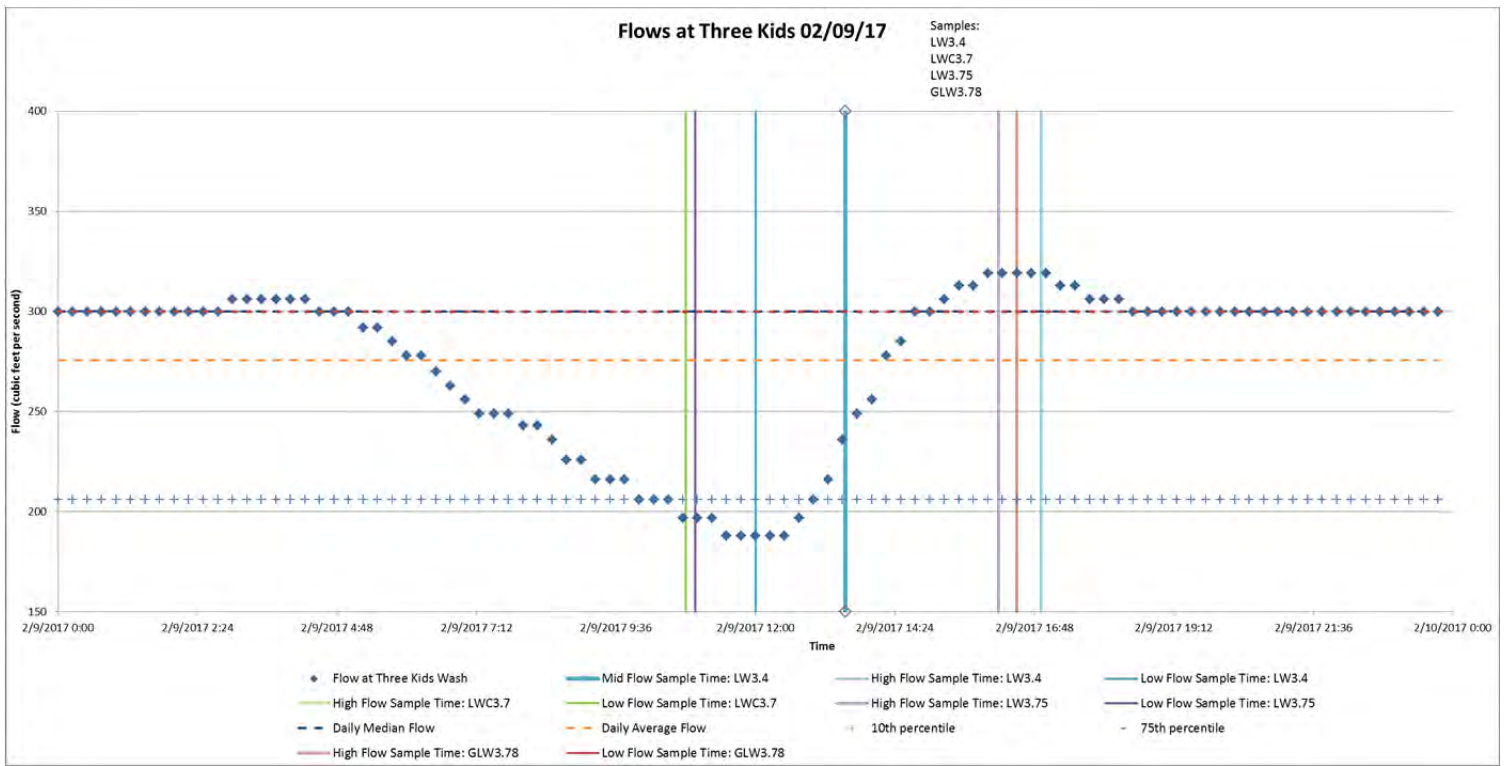
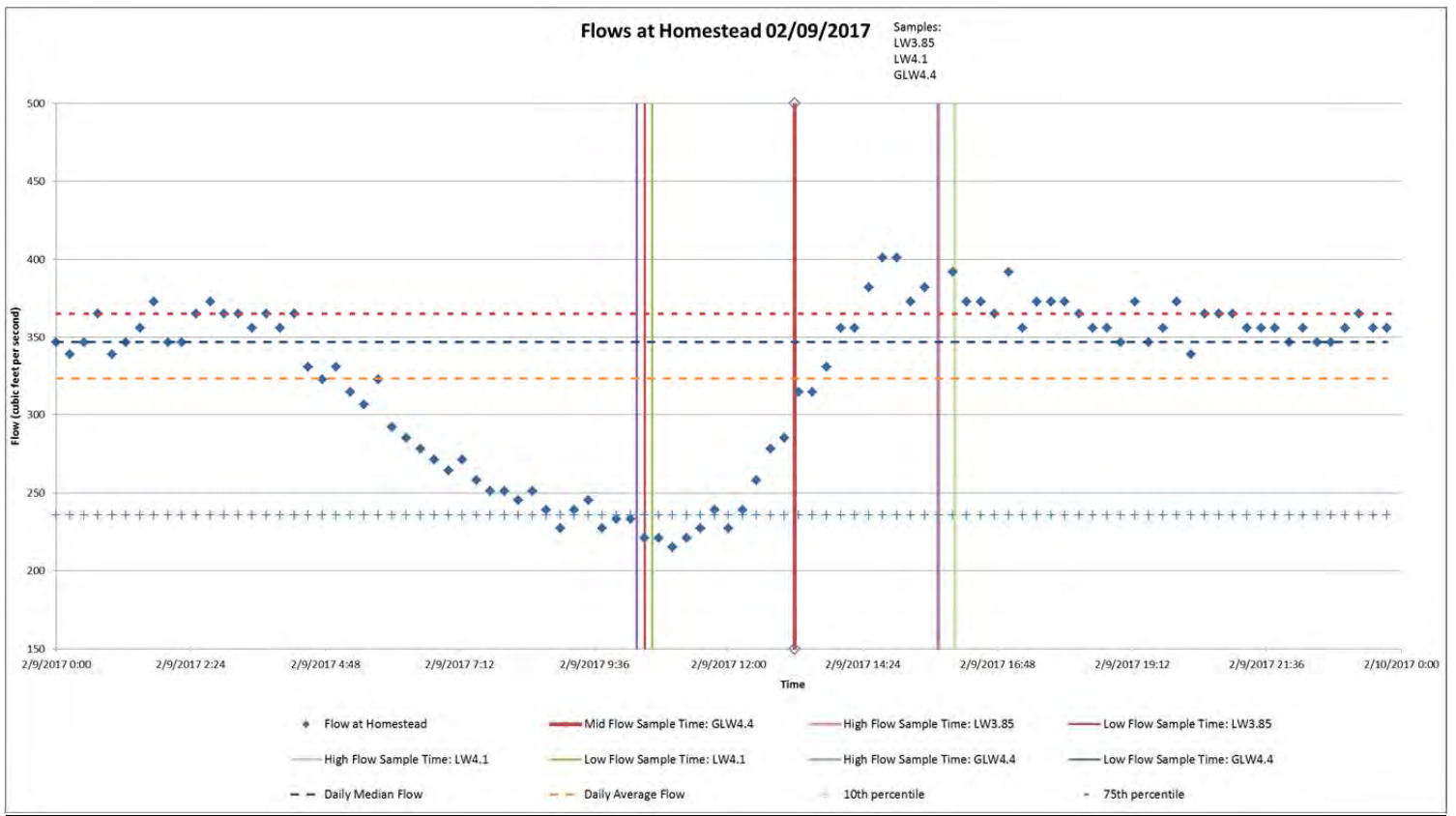
Timing of samples in relation to flows at the closest gage to each sample presented below

Flows at Duck Creek 02/09/2017

Samples:
LW6.7
LW7.2







Name: Kristen Durocher

Date: 02/09/2017

Appendix B
Daily Health and Safety Sheets

Americas

Daily Tailgate Meeting

S3NA-209-FM5

Job Location:	LV WASH	Date:	12 8 16 12-8-16
AECOM Site Supervisor:	STEVE HOWE	Person Conducting Tailgate Meeting:	R Puzos
AECOM Site Supervisor Phone:	603 520 0169	AECOM Safety Officer Name & Phone:	Puzos, 721-335-6425

List activities to be performed today: SW SAMPLING, OP-WATER

Muster Point:	PABCO PAVILION	Spill Kit Location:	-
First Aid Kit Location:	EACH TRUCK	Fire Extinguisher Location:	-

Have all personnel reviewed and understand the site-specific safety plan?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No*
Are current Pre-Job Hazard Assessments in place for each of the tasks to be performed today and understood by all?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No*
Does each subcontractor have hazard assessments (e.g., THA, JSA, JHA) for their activities?	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input checked="" type="checkbox"/> N/A
Are any required permits in place for the applicable tasks to be performed today and understood by all? Identify required permits and permit #s:	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input checked="" type="checkbox"/> N/A
Have all members of the work team confirmed understanding of the work, hazards, and controls/mitigation?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No*
Have work areas been properly cordoned-off to protect workers, site staff, and the public?	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input checked="" type="checkbox"/> N/A
Have equipment checks been completed, documented, and reviewed?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No* <input type="checkbox"/> N/A
Do all site workers understand injury/ intervention reporting requirements including immediately notifying the AECOM Site Supervisor of any injury near miss, unsafe condition or hazard observation?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No*

* if No, then work cannot be performed until corrective action is completed and documented.

Topics covered in today's tailgate meeting:	<ul style="list-style-type: none"> - COLD - FOOTING - WATER - PROCEDURES - SAMPLING LOCATIONS
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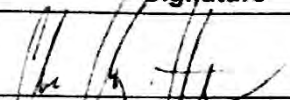
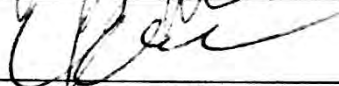


Other Items Discussed Today:	Stop Work Authority & Obligation
<p>TURTLES UNDER CARS</p> <p>LOTS OF OVERHEAD POTENTIAL</p>	<ul style="list-style-type: none"> * All employees will stop the job any time anyone is concerned or uncertain about safety. * All employees will stop the job if anyone identifies a hazard or additional mitigation not recorded on the THA * All employees will be alerted to any changes in personnel or conditions at the worksite. * All employees will stop the job and reassess a task, hazards, and mitigations, and then amend the THA as needed.

SITE WORKERS (including AECOM Contractors and Subcontractors): By signing here, you are stating the following:

- * You have been involved in reviewing the THAs and understand the hazards and control measures associated with each task you are about to perform.
- * You understand the permit to work requirements applicable to the work you are about to perform (if it includes permitted activities).
- * You are aware that no tasks or work (that is not risk-assessed) is to be performed.
- * You are aware of your authority and obligation to 'Stop Work'.

I arrived and departed fit for duty:

- * You are physically and mentally fit for duty.
- * You are not under the influence of any type of medication, drugs, or alcohol that could affect your ability to work safely.
- * You are aware of your responsibility to immediately report any illness, injury (regardless of where or when it occurred), or fatigue issue you may have to the AECOM Supervisor.
- * You signed-out uninjured unless you have otherwise informed the AECOM Supervisor.

Print Name & Company	Signature	Initials & Sign In Time	Initials & Sign Out Time
Clare Murphy Hogan		In & Fit	Out & Fit
C. Steve Howe		In & Fit	Out & Fit
Tim Minkley		In & Fit	Out & Fit
Rick Puzny AECOM		In & Fit E-0730	Out & Fit
		In & Fit	Out & Fit
		In & Fit	Out & Fit

(Attach additional Site Worker sign-in/out sheets if needed)

SITE VISITOR / SITE REPRESENTATIVE

Name	Company Name	Arrival Time	Departure Time	Signature

To be completed once activities for the day have been concluded:

Were there any Incidents, Near Misses or Observations?	<input type="checkbox"/> Yes <input type="checkbox"/> No	If yes, details:
Were there any 'Stop Work' interventions?	<input type="checkbox"/> Yes <input type="checkbox"/> No	If yes, details:
Were there any areas for improvement noted?	<input type="checkbox"/> Yes <input type="checkbox"/> No	If yes, details:
At the conclusion of the day, the job site is being left in a safe condition and there were no reports of injury or first aid	<input type="checkbox"/> Yes <input type="checkbox"/> No	AECOM Supervisor Signature:

Telephone Number:		Charles Howe	
Name of Vessel:		Big Red	
Registration No.:			
Description of Vessel: Type: Make: Color of Hull/Trim: Most distinguishing identifiable feature:		Red Canoe	
Rafts/Dinghies: Number: _____ Size: _____ Color: _____		NA	
Radio: Type: _____ Frequencies Monitored: _____		NA	
Number of persons onboard: 2			
Name:	Age:	Address & Telephone:	
C. Steve Howe	53	603-520-0169	
Clare Murphy-Hayes	26	503-318-5970	
Engine Type: _____ H.P.: _____ Normal Fuel Supply (days): _____			
Survival equipment on board: (check as appropriate)			
<input checked="" type="checkbox"/> Life Jackets	<input type="checkbox"/> Flares	<input type="checkbox"/> Smoke Signals	
<input checked="" type="checkbox"/> Medical Kit	<input type="checkbox"/> EPIRB	<input checked="" type="checkbox"/> Paddles	
<input checked="" type="checkbox"/> Anchor	<input checked="" type="checkbox"/> Loran/Gps	<input type="checkbox"/> _____	
Trip: In and out of the Las Vegas Wash as needed			
Date & Time of Departure:		12/8/16 0800	
Departure From:		Shore	
Departure To:		Shore	
Expected to arrive by: 1600 In no case later than: 1630			

Telephone Number:	Ryan McCarthy	
Name of Vessel:	Mellow Yellow	
Registration No.:		
Description of Vessel: Type: Make: Color of Hull/Trim: Most distinguishing identifiable feature:	Yellow Canoe	
Rafts/Dinghies: Number: _____ Size: _____ Color: _____	NA	
Radio: Type: _____ Frequencies Monitored: _____	NA	
Number of persons onboard:	2	
Name:	Age:	Address & Telephone:
Ryan McCarthy	37	603-770-4945
Rick Rudy	53	781-883-6425
Engine Type: _____ H.P.: _____ Normal Fuel Supply (days): _____		
Survival equipment on board: (check as appropriate)		
<input checked="" type="checkbox"/> Life Jackets	<input type="checkbox"/> Flares	<input type="checkbox"/> Smoke Signals
<input checked="" type="checkbox"/> Medical Kit	<input type="checkbox"/> EPIRB	<input checked="" type="checkbox"/> Paddles
<input checked="" type="checkbox"/> Anchor	<input checked="" type="checkbox"/> Loran/Gps	<input type="checkbox"/> _____
Trip:	In and out of the Las Vegas Wash as needed	
Date & Time of Departure:	12/8/16 0800	
Departure From:	Shore	
Departure To:	Shore	
Expected to arrive by:	1600 In no case later than: 1630	

Americas

Daily Tailgate Meeting

S3AM-209-FM5

Job Location:	Las Vegas Wash, Henderson, NV	Date:	1/23/12 — 1/27/12
AECOM Site Supervisor:	Steve Howe	Person Conducting Tailgate Meeting:	Richard Purdy
AECOM Site Supervisor Phone:	603-520-0169	AECOM Safety Officer Name & Phone:	R. Purdy 781-883-6425

List activities to be performed today:	___ Transect SW Sampling in LVW ___ Discreet Location SW Sampling in LVW
--	--

Mustar Point:	PABCO Pavilion area	Spill Kit Location:	N/A
First Aid Kit Location:	In vehicles	Fire Extinguisher Location:	N/A

Have all personnel reviewed and understand the site-specific safety plan?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No*
Are current Pre-Job Hazard Assessments in place for each of the tasks to be performed today and understood by all?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No*
Does each subcontractor have hazard assessments (e.g., THA, JSA, JHA) for their activities?	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input checked="" type="checkbox"/> N/A
Are any required permits in place for the applicable tasks to be performed today and understood by all? Identify required permits and permit #s:	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input checked="" type="checkbox"/> N/A
Have all members of the work team confirmed understanding of the work, hazards, and controls/mitigation?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No*
Have work areas been properly cordoned-off to protect workers, site staff, and the public?	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input checked="" type="checkbox"/> N/A
Have equipment checks been completed, documented, and reviewed?	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input checked="" type="checkbox"/> N/A
Do all site workers understand injury/ intervention reporting requirements including immediately notifying the AECOM Site Supervisor of any injury near miss, unsafe condition or hazard observation?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No*

* If No, then work cannot be performed until corrective action is completed and documented.

Topics covered in today's tailgate meeting:	<ul style="list-style-type: none"> - Slip, trip, fall hazards - Working in/around water - Heat/Cold exposure - Working in low light
---	---

Other Items Discussed Today:	Stop Work Authority & Obligation
<ul style="list-style-type: none"> 1 POC 2 SEOWMGT 4 UNSTABLE SHORLINES 	<ul style="list-style-type: none"> * All employees will stop the job any time anyone is concerned or uncertain about safety. * All employees will stop the job if anyone identifies a hazard or additional mitigation not recorded on the THA. * All employees will be alerted to any changes in personnel or conditions at the worksite. * All employees will stop the job and reassess a task, hazards, and mitigations, and then amend the THA as needed.

Americas

Daily Tailgate Meeting

S3AM-209-FM5

Job Location:	Las Vegas Wash, Henderson, NV	Date:	1-30-17
AECOM Site Supervisor:	Steve Howe	Person Conducting Tailgate Meeting:	Richard Purdy
AECOM Site Supervisor Phone:	603-520-0169	AECOM Safety Officer Name & Phone:	R. Purdy 781-883-6425

List activities to be performed today: Transect SW Sampling in LVW Discreet Location SW Sampling in LVW

Muster Point:	PABCO Pavilion area	Spill Kit Location:	N/A
First Aid Kit Location:	In vehicles	Fire Extinguisher Location:	N/A

Have all personnel reviewed and understand the site-specific safety plan?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No*
Are current Pre-Job Hazard Assessments in place for each of the tasks to be performed today and understood by all?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No*
Does each subcontractor have hazard assessments (e.g. THA, JSA, JHA) for their activities?	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input checked="" type="checkbox"/> N/A
Are any required permits in place for the applicable tasks to be performed today and understood by all? Identify required permits and permit #s:	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input checked="" type="checkbox"/> N/A
Have all members of the work team confirmed understanding of the work, hazards, and controls/mitigation?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No*
Have work areas been properly cordoned-off to protect workers, site staff, and the public?	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input checked="" type="checkbox"/> N/A
Have equipment checks been completed, documented, and reviewed?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No* <input type="checkbox"/> N/A
Do all site workers understand injury/intervention reporting requirements including immediately notifying the AECOM Site Supervisor of any injury near miss, unsafe condition or hazard observation?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No*

* If No, then work cannot be performed until corrective action is completed and documented.

Topics covered in today's tailgate meeting:	<ul style="list-style-type: none"> -Slip, trip, fall hazards -Working in/around water -Heat/Cold exposure -Working in low light o Sechnert o PPE
---	---

Other Items Discussed Today:	Stop Work Authority & Obligation
	<ul style="list-style-type: none"> * All employees will stop the job any time anyone is concerned or uncertain about safety. * All employees will stop the job if anyone identifies a hazard or additional mitigation not recorded on the THA. * All employees will be alerted to any changes in personnel or conditions at the worksite. * All employees will stop the job and reassess a task, hazards, and mitigations, and then amend the THA as needed.

AECOM

Environment

Telephone Number:	603 520 0169	
Name of Vessel:	Big Red	
Registration No.:	NA	
Description of Vessel: Type: Make: Color of Hull/Trim: Most distinguishing identifiable feature:	Canoe Red Old Town Discovery 169	
Rafts/Dinghies: Number: _____ Size: _____ Color: _____	NA	
Radio: Type: <u>NA</u> Frequencies Monitored: _____		
Number of persons onboard:		
Name:	Age:	Address & Telephone:
Rachel Madhee	27	978 - 877-9436
C. Stenhouse	54	603 520-0169
Engine Type: _____ H.P.: _____ Normal Fuel Supply (days): _____		
Survival equipment on board: (check as appropriate)		
<input checked="" type="checkbox"/> Life Jackets	<input type="checkbox"/> Flares	<input type="checkbox"/> Smoke Signals
<input checked="" type="checkbox"/> Medical Kit	<input type="checkbox"/> EPIRB	<input checked="" type="checkbox"/> Paddles
<input checked="" type="checkbox"/> Anchor	<input type="checkbox"/> Loran/Gps	<input type="checkbox"/> _____
Trip:	Across transect at	
Date & Time of Departure:	1/31/17	10:30
Departure From:	1/31/17	11:30
Departure To:	T4.6S to T4.6S	
Expected to arrive by: _____	In no case later than: _____	

Americas

Daily Tailgate Meeting

S3AM-209-FM5

Job Location:	Las Vegas Wash, Henderson, NV	Date:	1-31-17
AECOM Site Supervisor:	Steve Howe	Person Conducting Tailgate Meeting:	Richard Purdy
AECOM Site Supervisor Phone:	603-520-0169	AECOM Safety Officer Name & Phone:	R. Purdy 781-883-6425

List activities to be performed today: Transect SW Sampling in LVW Discreet Location SW Sampling in LVW

Muster Point:	PABCO Pavilion area	Spill Kit Location:	N/A
First Aid Kit Location:	In vehicles	Fire Extinguisher Location:	N/A

Have all personnel reviewed and understand the site-specific safety plan?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No*
Are current Pre-Job Hazard Assessments in place for each of the tasks to be performed today and understood by all?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No*
Does each subcontractor have hazard assessments (e.g. THA, JSA, JHA) for their activities?	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input checked="" type="checkbox"/> N/A
Are any required permits in place for the applicable tasks to be performed today and understood by all? Identify required permits and permit #s.	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input checked="" type="checkbox"/> N/A
Have all members of the work team confirmed understanding of the work, hazards, and controls/mitigation?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No*
Have work areas been properly cordoned-off to protect workers, site staff, and the public?	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input checked="" type="checkbox"/> N/A
Have equipment checks been completed, documented, and reviewed?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No* <input type="checkbox"/> N/A
Do all site workers understand injury/ intervention reporting requirements including immediately notifying the AECOM Site Supervisor of any injury near miss, unsafe condition or hazard observation?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No*

* If No, then work cannot be performed until corrective action is completed and documented.

Topics covered in today's tailgate meeting	<ul style="list-style-type: none"> -Slip, trip, fall hazards -Working in/around water -Heat/Cold exposure -Working in low light
--	---

Other Items Discussed Today:	Stop Work Authority & Obligation
<ul style="list-style-type: none"> • WALKING POLES • TOOL BELTS / ROCK PACK 	<ul style="list-style-type: none"> * All employees will stop the job any time anyone is concerned or uncertain about safety. * All employees will stop the job if anyone identifies a hazard or additional mitigation not recorded on the THA. * All employees will be alerted to any changes in personnel or conditions at the worksite. * All employees will stop the job and reassess a task, hazards, and mitigations, and then amend the THA as needed.

Telephone Number: (781) 883-6425
 Name of Vessel: Mellow Yellow
 Registration No.: NA AIS 14-R 031189
 Description of Vessel:
 Type: Yellow canoe
 Make: We-No-Nah
 Color of Hull/Trim: North Fork
 Most distinguishing identifiable feature:

Rafts/Dinghies: Number: NA Size: Color:

Radio: Type: NA Frequencies Monitored:

Number of persons onboard:

Name:	Age:	Address & Telephone:
Rick Rudy	53	781 883-6425
Clare Muddy-Hayes	26	503 318 5970

Engine Type: NA H.P.: Normal Fuel Supply (days):

- Survival equipment on board: (check as appropriate)
- Life Jackets
 - Flares
 - Smoke Signals
 - Medical Kit
 - EPIRB
 - Paddles
 - Anchor
 - Loran/Gps
 - throw rope

Trip: Transect T4.2 on Las Vegas Marsh

Date & Time of Departure: 2/1/17 9:30

Departure From: South Bank

Departure To: North Bank

Expected to arrive by: 12:00 In no case later than: 13:00

Telephone Number:	603 520 0169	
Name of Vessel:	Big Red	
Registration No.:	AIS17 R013391	
Description of Vessel: Type: Make: Color of Hull/Trim: Most distinguishing identifiable feature:	Old Town Discovery 169 red	
Rafts/Dinghies: Number: <u>NA</u> Size: _____ Color: _____		
Radio: Type: <u>NA</u> Frequencies Monitored: _____		
Number of persons onboard:		
Name:	Age:	Address & Telephone:
Reidel Madhoo 27		978-877-9436
Cster Hove 54		603-520-0169
Engine Type: <u>NA</u> H.P.: _____ Normal Fuel Supply (days): _____		
Survival equipment on board: (check as appropriate)		
<input checked="" type="checkbox"/> Life Jackets	<input type="checkbox"/> Flares	<input type="checkbox"/> Smoke Signals
<input checked="" type="checkbox"/> Medical Kit	<input type="checkbox"/> EPIRB	<input checked="" type="checkbox"/> Paddles
<input checked="" type="checkbox"/> Anchor	<input type="checkbox"/> Loran/Gps	<input checked="" type="checkbox"/> throw rope
Trip: <u>Transect 4.75</u>		
Date & Time of Departure:	2/1/17 9:30	
Departure From:	south bank	
Departure To:	north bank	
Expected to arrive by: <u>12:00</u> In no case later than: <u>13:00</u>		

Americas

Daily Tailgate Meeting

S3AM-209-FM5

Job Location:	Las Vegas Wash, Henderson, NV	Date:	2-1-17
AECOM Site Supervisor:	Steve Howe	Person Conducting Tailgate Meeting:	Richard Purdy
AECOM Site Supervisor Phone:	603-520-0169	AECOM Safety Officer Name & Phone:	R. Purdy 781-883-6425

List activities to be performed today: Transect SW Sampling in LVW Discreet Location SW Sampling in LVW

Muster Point:	PABCO Pavilion area	Spill Kit Location:	N/A
First Aid Kit Location:	In vehicles	Fire Extinguisher Location:	N/A

Have all personnel reviewed and understand the site-specific safety plan?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No*
Are current Pre-Job Hazard Assessments in place for each of the tasks to be performed today and understood by all?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No*
Does each subcontractor have hazard assessments (e.g., THA, JSA, JHA) for their activities?	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input checked="" type="checkbox"/> N/A
Are any required permits in place for the applicable tasks to be performed today and understood by all? Identify required permits and permit #s:	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input checked="" type="checkbox"/> N/A
Have all members of the work team confirmed understanding of the work, hazards, and controls/mitigation?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No*
Have work areas been properly cordoned-off to protect workers, site staff, and the public?	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input checked="" type="checkbox"/> N/A
Have equipment checks been completed, documented, and reviewed?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No* <input type="checkbox"/> N/A
Do all site workers understand injury/ intervention reporting requirements including immediately notifying the AECOM Site Supervisor of any injury near miss, unsafe condition or hazard observation?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No*

* If No, then work cannot be performed until corrective action is completed and documented.

Topics covered in today's tailgate meeting:	<p>- Slip, trip, fall hazards</p> <p>- Working in/around water</p> <p>- Heat/Cold exposure ; <i>HYDRATE</i></p> <p>- Working in low light</p> <p>- SEDIMENT ; WALKING STICK</p>
---	---

Other Items Discussed Today:	Stop Work Authority & Obligation
	<p>* All employees will stop the job any time anyone is concerned or uncertain about safety.</p> <p>* All employees will stop the job if anyone identifies a hazard or additional mitigation not recorded on the THA.</p> <p>* All employees will be alerted to any changes in personnel or conditions at the worksite.</p> <p>* All employees will stop the job and reassess a task, hazards, and mitigations, and then amend the THA as needed.</p>

Telephone Number:		781 883 6425	
Name of Vessel:		Mellow Yellow	
Registration No.:		AIS14 - R031189	
Description of Vessel: Type: Make: Color of Hull/Trim: Most distinguishing identifiable feature:		We-No-Nah Northfork Yellow Canoe	
Rafts/Dinghies: Number: <u>NA</u> Size: _____ Color: _____			
Radio: Type: <u>NA</u> Frequencies Monitored: _____			
Number of persons onboard:			
Name:	Age:	Address & Telephone:	
Rick Rudy	53	781 883 6425	
Corey Murphy Hagen	26	503 318 5970	
Engine Type: <u>NA</u> H.P.: _____ Normal Fuel Supply (days): _____			
Survival equipment on board: (check as appropriate)			
<input checked="" type="checkbox"/> Life Jackets	<input type="checkbox"/> Flares	<input type="checkbox"/> Smoke Signals	
<input checked="" type="checkbox"/> Medical Kit	<input type="checkbox"/> EPIRB	<input checked="" type="checkbox"/> Paddles	
<input checked="" type="checkbox"/> Anchor	<input type="checkbox"/> Loran/Gps	<input checked="" type="checkbox"/> <u>throw rope</u>	
Trip: <u>Transects T5.3 & T6.0</u>			
Date & Time of Departure:		<u>2/2/17 0845</u>	
Departure From:		<u>T5.3 0845-0930</u>	
Departure To:		<u>T6.0 0945-1100</u>	
Expected to arrive by: <u>1100</u> In no case later than: <u>13</u>			

Telephone Number:	603 520 0169	
Name of Vessel:	Big Red	
Registration No.:	AIS17 R013391	
Description of Vessel: Type: Make: Color of Hull/Trim: Most distinguishing identifiable feature:	old Town Discovery 169 red canoe	
Rafts/Dinghies: Number:	NA	Size: _____ Color: _____
Radio: Type:	NA	Frequencies Monitored: _____
Number of persons onboard:		
Name:	Age:	Address & Telephone:
Rachel Machee	27	978-877-9436
K. Steve Howe	54	603-520-0169
Engine Type: NA H.P.: _____ Normal Fuel Supply (days): _____		
Survival equipment on board: (check as appropriate)		
<input checked="" type="checkbox"/> Life Jackets	<input type="checkbox"/> Flares	<input type="checkbox"/> Smoke Signals
<input checked="" type="checkbox"/> Medical Kit	<input type="checkbox"/> EPIRB	<input checked="" type="checkbox"/> Paddles
<input checked="" type="checkbox"/> Anchor	<input type="checkbox"/> Loran/Gps	<input checked="" type="checkbox"/> <u>throw rope</u>
Trip: Las Vegas Wash Transects 6.0 and 3.6		
Date & Time of Departure:	2/2/17 0845	
Departure From:	T6.0 0845-0930	
Departure To:	T3.6 0945-1100	
Expected to arrive by:	1100 In no case later than: 1300	

Daily Tailgate Meeting

S3AM-209-FM5

Job Location:	Las Vegas Wash, Henderson, NV	Date:	2-2-17
AECOM Site Supervisor:	Steve Howe	Person Conducting Tailgate Meeting:	Richard Purdy
AECOM Site Supervisor Phone:	603-520-0169	AECOM Safety Officer Name & Phone:	R. Purdy 781-883-6425

List activities to be performed today:	<input checked="" type="checkbox"/> Transect SW Sampling in LVW <input type="checkbox"/> Discreet Location SW Sampling in LVW
--	---

Muster Point:	PABCO Pavilion area	Spill Kit Location:	N/A
First Aid Kit Location:	In vehicles	Fire Extinguisher Location:	N/A

Have all personnel reviewed and understand the site-specific safety plan?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No*
Are current Pre-Job Hazard Assessments in place for each of the tasks to be performed today and understood by all?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No*
Does each subcontractor have hazard assessments (e.g., THA, JSA, JHA) for their activities?	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input checked="" type="checkbox"/> N/A
Are any required permits in place for the applicable tasks to be performed today and understood by all? Identify required permits and permit #s.	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input checked="" type="checkbox"/> N/A
Have all members of the work team confirmed understanding of the work, hazards, and controls/mitigation?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No*
Have work areas been properly cordoned-off to protect workers, site staff, and the public?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No* <input type="checkbox"/> N/A
Have equipment checks been completed, documented, and reviewed?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No* <input type="checkbox"/> N/A
Do all site workers understand injury/ intervention reporting requirements including immediately notifying the AECOM Site Supervisor of any injury near miss, unsafe condition or hazard observation?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No*

* If No, then work cannot be performed until corrective action is completed and documented.

Topics covered in today's tailgate meeting:	<ul style="list-style-type: none"> -Slip, trip, fall hazards -Working in/around water -Heat/Cold exposure -Working in low light
---	---

Other Items Discussed Today:	Stop Work Authority & Obligation
<ul style="list-style-type: none"> - Tying off on gravel island. - maybe peristaltic 	<ul style="list-style-type: none"> * All employees will stop the job any time anyone is concerned or uncertain about safety. * All employees will stop the job if anyone identifies a hazard or additional mitigation not recorded on the THA. * All employees will be alerted to any changes in personnel or conditions at the worksite. * All employees will stop the job and reassess a task, hazards, and mitigations, and then amend the THA as needed.

Telephone Number:		781 883 6425	
Name of Vessel:		Mellow Yellow	
Registration No.:		AIS14-R031189	
Description of Vessel: Type: Make: Color of Hull/Trim: Most distinguishing identifiable feature:		We No Nah Northfork Yellow canoe	
Rafts/Dinghies: Number: <u>NA</u> Size: _____ Color: _____			
Radio: Type: _____ Frequencies Monitored: _____			
Number of persons onboard:			
Name:	Age:	Address & Telephone:	
Rick Purdy	53	781 883 6425	
Clare M+H	26	503 318 5970	
Engine Type: <u>NA</u> H.P.: _____ Normal Fuel Supply (days): _____			
Survival equipment on board: (check as appropriate)			
<input checked="" type="checkbox"/> Life Jackets	<input type="checkbox"/> Flares	<input type="checkbox"/> Smoke Signals	
<input checked="" type="checkbox"/> Medical Kit	<input type="checkbox"/> EPIRB	<input checked="" type="checkbox"/> Paddles	
<input checked="" type="checkbox"/> Anchor	<input type="checkbox"/> Loran/Gps	<input checked="" type="checkbox"/> <u>throw rope</u>	
Trip: <u>Transect TG.35 on Las Vegas Wash</u>			
Date & Time of Departure:		<u>2/3/17 0830</u>	
Departure From:		<u>PABCO Rd weir</u>	
Departure To:		<u>River Mile 6.35</u>	
Expected to arrive by: <u>1000</u>		In no case later than: <u>1200</u>	

Telephone Number:		603 520-0169	
Name of Vessel:		Big Red	
Registration No.:		AIS 17 R013391	
Description of Vessel: Type: Make: Color of Hull/Trim: Most distinguishing identifiable feature:		Old Town Discovey 169 Red Curue	
Rafts/Dinghies: Number: <u>NA</u> Size: _____ Color: _____			
Radio: Type: <u>NA</u> Frequencies Monitored: _____			
Number of persons onboard: _____			
Name:	Age:	Address & Telephone:	
Steve Howe	54	603 520 0169	
Rachel Macphie	27	978 877 9436	
Engine Type: <u>NA</u> H.P.: _____ Normal Fuel Supply (days): _____			
Survival equipment on board: (check as appropriate)			
<input checked="" type="checkbox"/> Life Jackets	<input type="checkbox"/> Flares	<input type="checkbox"/> Smoke Signals	
<input checked="" type="checkbox"/> Medical Kit	<input type="checkbox"/> EPIRB	<input checked="" type="checkbox"/> Paddles	
<input checked="" type="checkbox"/> Anchor	<input type="checkbox"/> Loran/Gps	<input checked="" type="checkbox"/> <u>throw a rope</u>	
Trip: <u>Transect 6.8 at Duck Creek Confluence Weir</u>			
Date & Time of Departure:		<u>2/3/17 0900</u>	
Departure From:		<u>Duck Creek Weir</u>	
Departure To:		<u>River Mile 6.8</u>	
Expected to arrive by: <u>0900</u> In no case later than: <u>1200</u>			

Americas

Daily Tailgate Meeting

S3AM-209-FM5

Job Location:	Las Vegas Wash, Henderson, NV	Date:	2-3-17
AECOM Site Supervisor:	Steve Howe	Person Conducting Tailgate Meeting:	Richard Purdy
AECOM Site Supervisor Phone:	603-520-0169	AECOM Safety Officer Name & Phone:	R. Purdy 781-883-6425

List activities to be performed today:	<input checked="" type="checkbox"/> Transect SW Sampling in LVW <input type="checkbox"/> Discreet Location SW Sampling in LVW
--	---

Muster Point:	PABCO Pavilion area	Spill Kit Location:	N/A
First Aid Kit Location:	In vehicles	Fire Extinguisher Location:	N/A

Have all personnel reviewed and understand the site-specific safety plan?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No*
Are current Pre-Job Hazard Assessments in place for each of the tasks to be performed today and understood by all?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No*
Does each subcontractor have hazard assessments (e.g., THA, JSA, JHA) for their activities?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No* <input checked="" type="checkbox"/> N/A
Are any required permits in place for the applicable tasks to be performed today and understood by all? Identify required permits and permit #s:	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input checked="" type="checkbox"/> N/A
Have all members of the work team confirmed understanding of the work, hazards, and controls/mitigation?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No*
Have work areas been properly cordoned-off to protect workers, site staff, and the public?	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input checked="" type="checkbox"/> N/A
Have equipment checks been completed, documented, and reviewed?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No* <input type="checkbox"/> N/A
Do all site workers understand injury/ intervention reporting requirements including immediately notifying the AECOM Site Supervisor of any injury near miss, unsafe condition or hazard observation?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No*

* If No, then work cannot be performed until corrective action is completed and documented.

Topics covered in today's tailgate meeting:	<ul style="list-style-type: none"> -Slip, trip, fall hazards -Working in/around water -Heat/Cold exposure -Working in low light - end of week complacency - new locations
---	--

Other Items Discussed Today:	Stop Work Authority & Obligation
- current of crosswinds	<ul style="list-style-type: none"> * All employees will stop the job any time anyone is concerned or uncertain about safety. * All employees will stop the job if anyone identifies a hazard or additional mitigation not recorded on the THA. * All employees will be alerted to any changes in personnel or conditions at the worksite. * All employees will stop the job and reassess a task, hazards, and mitigations, and then amend the THA as needed.

Boat Safety Checklist

Keep this page with your boat, ready for inspection. By using this checklist, or one fine-tuned by yourself, you'll be sure that everything is on board and in good working order. Your passengers will appreciate knowing you're concerned about boating safety.

- Float plan--let a friend or relative know when you're leaving, where you're going, when you expect to return, what to do if you don't, and a description of your boat
- Registration certificate or documentation
- Personal Flotation Devices (wearable and throw able)--USCG approved, good condition, readily accessible, assigned and fitted
- Fire Extinguishers--right number, size, and class for boat; charged, not corroded, nozzle clear, bracketed, readily accessible
- Visual Distress Signals--current dates on flares, proper number, batteries good if lights or EPIRB
- Anchors and Line--adequate anchor for bottom, adequate line for water depth
- Bilge device --bilge pump operable, alternative bailing device available
- Watch or clock--operable
- Bright flashlight or searchlight
- Navigation lights --tested and operable, spare bulbs
- Batteries--fully charged, encased in plastic boxes or terminals covered, securely fastened down
- Sound-producing device--horn, whistle appropriate for boat
- Alternate propulsion--paddle or oar
- First Aid Kit
- Tools, spare outboard prop and lock nut
- Compass
- Sunscreen
- Weather Radio


2/6/17

2-6-17 Tate + Claire

Boat Safety Checklist

Keep this page with your boat, ready for inspection. By using this checklist, or one fine-tuned by yourself, you'll be sure that everything is on board and in good working order. Your passengers will appreciate knowing you're concerned about boating safety.

- Float plan--let a friend or relative know when you're leaving, where you're going, when you expect to return, what to do if you don't, and a description of your boat
- Registration certificate or documentation
- Personal Flotation Devices (wearable and throw able)--USCG approved, good condition, readily accessible, assigned and fitted
- Fire Extinguishers--right number, size, and class for boat; charged, not corroded, nozzle clear, bracketed, readily accessible
- Visual Distress Signals--current dates on flares, proper number, batteries good if lights or EPIRB
- Anchors and Line--adequate anchor for bottom, adequate line for water depth
- Bilge device --bilge pump operable, alternative bailing device available
- Watch or clock--operable
- Bright flashlight or searchlight
- Navigation lights --tested and operable, spare bulbs
- Batteries--fully charged, encased in plastic boxes or terminals covered, securely fastened down
- Sound-producing device--horn, whistle appropriate for boat
- Alternate propulsion--paddle or oar
- First Aid Kit
- Tools, spare outboard prop and lock nut
- Compass
- Sunscreen
- Weather Radio

Tate + Claire

Boat Safety Checklist

Keep this page with your boat, ready for inspection. By using this checklist, or one fine-tuned by yourself, you'll be sure that everything is on board and in good working order. Your passengers will appreciate knowing you're concerned about boating safety.

- Float plan--let a friend or relative know when you're leaving, where you're going, when you expect to return, what to do if you don't, and a description of your boat
- Registration certificate or documentation
- Personal Flotation Devices (wearable and throw able)--USCG approved, good condition, readily accessible, assigned and fitted
- Fire Extinguishers--right number, size, and class for boat; charged, not corroded, nozzle clear, bracketed, readily accessible
- Visual Distress Signals--current dates on flares, proper number, batteries good if lights or EPIRB
- Anchors and Line--adequate anchor for bottom, adequate line for water depth
- Bilge device --bilge pump operable, alternative bailing device available
- Watch or clock--operable
- Bright flashlight or searchlight
- Navigation lights --tested and operable, spare bulbs
- Batteries--fully charged, encased in plastic boxes or terminals covered, securely fastened down
- Sound-producing device--horn, whistle appropriate for boat
- Alternate propulsion--paddle or oar
- First Aid Kit
- Tools, spare outboard prop and lock nut
- Compass
- Sunscreen
- Weather Radio

2/4/17

Mellow Yellow

R. MURPHY



Telephone Number:	603 770 4945	
Name of Vessel:	Mellow Yellow	
Registration No.:		
Description of Vessel: Type: Make: Color of Hull/Trim: Most distinguishing identifiable feature:	We No Nah Northfork Yellow canoe	
Rafts/Dinghies: Number: <u>NA</u> Size: _____ Col: _____		
Radio: Type: <u>NA</u> Frequencies Monitored: _____		
Number of persons onboard:		
Name:	Age:	Address & Telephone
Ryan McCarthy	37	603 770 4945
Connor Givens	27	781 439 7762
Engine Type: <u>NA</u> H.P.: _____ Normal Fuel Supply (days): _____		
Survival equipment on board: (check as appropriate)		
<input checked="" type="checkbox"/> Life Jackets	<input type="checkbox"/> Flares	<input type="checkbox"/> Smoke Signals
<input checked="" type="checkbox"/> Medical Kit	<input type="checkbox"/> EPIRB	<input checked="" type="checkbox"/> Paddles
<input checked="" type="checkbox"/> Anchor	<input type="checkbox"/> Loran C's	<input checked="" type="checkbox"/> <u>throw rope</u>
Trip: <u>Las Vegas Wash and tributary near Pubco Road Weir</u>		
Date & Time of Departure:	<u>2/6/17 0800</u>	
Departure From:	<u>Pubco Road</u>	
Departure To:	<u>LWS.9 and GLWCG.1_4</u>	
Expected to arrive by: <u>1500</u> In no case later than: <u>1700</u>		

Telephone Number:	503 318 5970		
Name of Vessel:	Big Red		
Registration No.:			
Description of Vessel: Type: Make: Color of Hull/Trim: Most distinguishing identifiable feature:	Old Town Discovery 169 red canoe		
Rafts/Dinghies: Number: <u>NA</u> Size: _____ Co: _____			
Radio: Type: <u>NA</u> Frequencies Mon: _____ Id: _____			
Number of persons onboard:			
Name:	Age:	Address:	Telephone:
Care Murphy-Hagan	26	503 318	5970
Tate Yulga	24	651 301	9260
Engine Type: <u>NA</u> H.P.: _____ Normal Fuel Consumption (gals/hr): _____ Reply (days): _____			
Survival equipment on board: (check as appropriate)			
<input checked="" type="checkbox"/> Life Jackets	<input type="checkbox"/> Flares	<input type="checkbox"/> Smoke Signals	
<input type="checkbox"/> Medical Kit	<input type="checkbox"/> EPIRB	<input checked="" type="checkbox"/> Paddles	
<input checked="" type="checkbox"/> Anchor	<input type="checkbox"/> Lubricants	<input checked="" type="checkbox"/> Throw rope	
Trip:	Las Vegas Wash		
Date & Time of Departure:	Palco Road Weir		
Departure From:	2/6/17 0800		
Departure To:	stations LW5.3, LW4.95, GLW4.9		
Expected to arrive by: <u>1500</u> In no case later than: <u>1700</u>			

Telephone Number:		781-883-6425	
Name of Vessel:		Oceans II	
Registration No.:			
Description of Vessel:		Old Town Piscary 169	
Type:		red canoe	
Make:			
Color of Hull/Trim:			
Most distinguishing identifiable feature:			
Rafts/Dinghies: Number:	NA	Size:	
Radio: Type:	NA	Frequencies Monitored:	
Number of persons onboard:			
Name:	Age:	Address & Telephone:	
Rox Purdy	54	781-883-6425	
Mick Pryor	37	805-200-7839	
Engine Type:	NA	H.P.:	
Normal Fuel Supply (days):			
Survival equipment on board: (check as appropriate)			
<input checked="" type="checkbox"/> Life Jackets	<input type="checkbox"/> Flares	<input type="checkbox"/> Smoke Signals	
<input checked="" type="checkbox"/> Medical Kit	<input type="checkbox"/> EPIRB	<input checked="" type="checkbox"/> Paddles	
<input checked="" type="checkbox"/> Anchor	<input type="checkbox"/> Loran C	<input checked="" type="checkbox"/> throw rope	
Trip: Las Vegas Wash			
Date & Time of Departure:		2/6/17 0800	
Departure From:		Pabco Road near	
Departure To:		Stations LW7.2, LW6.7,	
Expected to arrive by:		1500 In no case later than: 1700	

Americas

Daily Tailgate Meeting

S3AM-209-FM5

Job Location:	Las Vegas Wash, Henderson, NV	Date:	2-6-17
AECOM Site Supervisor:	Steve Howe	Person Conducting Tailgate Meeting:	Richard Purdy
AECOM Site Supervisor Phone:	603-520-0169	AECOM Safety Officer Name & Phone:	R. Purdy 781-883-6425

List activities to be performed today: Transect SW Sampling in LVW Discreet Location SW Sampling in LVW

Muster Point:	PABCO Pavilion area	Spill Kit Location:	N/A
First Aid Kit Location:	In vehicles	Fire Extinguisher Location:	N/A

Have all personnel reviewed and understand the site-specific safety plan?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No*
Are current Pre-Job Hazard Assessments in place for each of the tasks to be performed today and understood by all?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No*
Does each subcontractor have hazard assessments (e.g., THA, JSA, JHA) for their activities?	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input checked="" type="checkbox"/> N/A
Are any required permits in place for the applicable tasks to be performed today and understood by all? Identify required permits and permit #s:	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input checked="" type="checkbox"/> N/A
Have all members of the work team confirmed understanding of the work, hazards, and controls/mitigation?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No*
Have work areas been properly cordoned-off to protect workers, site staff, and the public?	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input checked="" type="checkbox"/> N/A
Have equipment checks been completed, documented, and reviewed?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No* <input type="checkbox"/> N/A
Do all site workers understand injury/ intervention reporting requirements including immediately notifying the AECOM Site Supervisor of any injury near miss, unsafe condition or hazard observation?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No*

* if No, then work cannot be performed until corrective action is completed and documented.

Topics covered in today's tailgate meeting:	<ul style="list-style-type: none"> -Slip, trip, fall hazards -Working in/around water -Heat/Cold exposure -Working in low light -
---	--

Other Items Discussed Today:	Stop Work Authority & Obligation
<p>- see attached sheet</p>	<ul style="list-style-type: none"> * All employees will stop the job any time anyone is concerned or uncertain about safety. * All employees will stop the job if anyone identifies a hazard or additional mitigation not recorded on the THA. * All employees will be alerted to any changes in personnel or conditions at the worksite. * All employees will stop the job and reassess a task, hazards, and mitigations, and then amend the THA as needed.

SITE WORKERS (including AECOM Contractors and Subcontractors): By signing here, you are stating the following:

- * You have been involved in reviewing the THAs and understand the hazards and control measures associated with each task you are about to perform.
- * You understand the permit to work requirements applicable to the work you are about to perform (if it includes permitted activities).
- * You are aware that no tasks or work (that is not risk-assessed) is to be performed.
- * You are aware of your authority and obligation to 'Stop Work'.

I arrived and departed fit for duty:

- * You are physically and mentally fit for duty.
- * You are not under the influence of any type of medication, drugs, or alcohol that could affect your ability to work safely.
- * You are aware of your responsibility to immediately report any illness, injury (regardless of where or when it occurred), or fatigue issue you may have to the AECOM Supervisor.
- * You signed-out uninjured unless you have otherwise informed the AECOM Supervisor.

Print Name & Company	Signature	Initials & Sign In Time	Initials & Sign Out Time
Rene Purn AECOM	<i>[Signature]</i>	In & Fit 0800	Out & Fit 1700
Nick Pyle AECOM	<i>[Signature]</i>	In & Fit 0800	Out & Fit
James McCoy AECOM	<i>[Signature]</i>	In & Fit 0800	Out & Fit
Petero Pallas AECOM	<i>[Signature]</i>	In & Fit 0800	Out & Fit
Tate Yulga AECOM	<i>[Signature]</i>	In & Fit 08:00	Out & Fit
Ryan McEneaney	<i>[Signature]</i>	In & Fit 0800	Out & Fit

(Attach additional Site Worker sign-in/out sheets if needed)

SITE VISITOR / SITE REPRESENTATIVE

Name	Company Name	Arrival Time	Departure Time	Signature

To be completed once activities for the day have been concluded:

Were there any Incidents, Near Misses or Observations?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes, details:
Were there any 'Stop Work' interventions?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes, details:
Were there any areas for improvement noted?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes, details:
At the conclusion of the day, the job site is being left in a safe condition and there were no reports of injury or first aid.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	AECOM Supervisor Signature: <i>[Signature]</i>

Connor Galda
Chloe Murphy-Hayden

Daily Tailgate Meeting (S3AM-209-FMS)
Revision 5 December 15, 2016

PRINTED COPIES ARE UNCONTROLLED. CONTROLLED COPY IS AVAILABLE ON COMPANY INTRANET

Andrea Christian
Rachel Webster

[Signatures]

0800
0800

[Signature]

0800
0800

all ok
- 1700 -

Boat Safety Checklist

Keep this page with your boat, ready for inspection. By using this checklist, or one fine-tuned by yourself, you'll be sure that everything is on board and in good working order. Your passengers will appreciate knowing you're concerned about boating safety.

- Float plan--let a friend or relative know when you're leaving, where you're going, when you expect to return, what to do if you don't, and a description of your boat
- Registration certificate or documentation **NA**
- Personal Flotation Devices (wearable and throw able)--USCG approved, good condition, readily accessible, assigned and fitted
- Fire Extinguishers--right number, size, and class for boat; charged, not corroded, nozzle clear, bracketed, readily accessible **NA**
- Visual Distress Signals--current dates on flares, proper number, batteries good if lights or EPIRB **NA**
- Anchors and Line--adequate anchor for bottom, adequate line for water depth
- Bilge device --bilge pump operable, alternative bailing device available **NA**
- Watch or clock--operable
- Bright flashlight or searchlight **NA**
- Navigation lights --tested and operable, spare bulbs **NA**
- Batteries--fully charged, encased in plastic boxes or terminals covered, securely fastened down **NA**
- Sound-producing device--horn, whistle appropriate for boat
- Alternate propulsion--paddle or oar
- First Aid Kit
- Tools, spare outboard prop and lock nut **NA**
- Compass **NA**
- Sunscreen
- Weather Radio **NA**

[Handwritten signature]
2/2/12

2-7-17 Tate+Claire

Boat Safety Checklist

Keep this page with your boat, ready for inspection. By using this checklist, or one fine-tuned by yourself, you'll be sure that everything is on board and in good working order. Your passengers will appreciate knowing you're concerned about boating safety.

- Float plan--let a friend or relative know when you're leaving, where you're going, when you expect to return, what to do if you don't, and a description of your boat
- Registration certificate or documentation
- Personal Flotation Devices (wearable and throw able)--USCG approved, good condition, readily accessible, assigned and fitted
- Fire Extinguishers--right number, size, and class for boat; charged, not corroded, nozzle clear, bracketed, readily accessible
- Visual Distress Signals--current dates on flares, proper number, batteries good if lights or EPIRB
- Anchors and Line--adequate anchor for bottom, adequate line for water depth
- Bilge device --bilge pump operable, alternative bailing device available
- Watch or clock--operable
- Bright flashlight or searchlight
- Navigation lights --tested and operable, spare bulbs
- Batteries--fully charged, encased in plastic boxes or terminals covered, securely fastened down
- Sound-producing device--horn, whistle appropriate for boat
- Alternate propulsion--paddle or oar
- First Aid Kit
- Tools, spare outboard prop and lock nut
- Compass
- Sunscreen
- Weather Radio



Boat Safety Checklist

Keep this page with your boat, ready for inspection. By using this checklist, or one fine-tuned by yourself, you'll be sure that everything is on board and in good working order. Your passengers will appreciate knowing you're concerned about boating safety.

- Float plan--let a friend or relative know when you're leaving, where you're going, when you expect to return, what to do if you don't, and a description of your boat
- Registration certificate or documentation
- Personal Flotation Devices (wearable and throw able)--USCG approved, good condition, readily accessible, assigned and fitted
- Fire Extinguishers--right number, size, and class for boat; charged, not corroded, nozzle clear, bracketed, readily accessible
- Visual Distress Signals--current dates on flares, proper number, batteries good if lights or EPIRB
- Anchors and Line--adequate anchor for bottom, adequate line for water depth
- Bilge device --bilge pump operable, alternative bailing device available
- Watch or clock--operable
- Bright flashlight or searchlight
- Navigation lights --tested and operable, spare bulbs
- Batteries--fully charged, encased in plastic boxes or terminals covered, securely fastened down
- Sound-producing device--horn, whistle appropriate for boat
- Alternate propulsion--paddle or oar
- First Aid Kit
- Tools, spare outboard prop and lock nut
- Compass
- Sunscreen
- Weather Radio

2/7/17

MELLOW YELLOW

R. MCCARTHY

RJA

Telephone Number: 508-318-5970

Name of Vessel:

Registration No.:

Description of Vessel: Canoe
 Type:
 Make:
 Color of Hull/Trim: Red
 Most distinguishing identifiable feature: People Inside

Rafts/Dinghies: Number: _____ Size: _____ Co: _____ N/A

Radio: Type: _____ Frequency: _____ Mhz _____ N/A

Number of persons onboard: 2

Name:	Age:	Address:	Telephone:
Chae MH	26	280 College St Lewiston, ME 04243	508-318-5970
Tate Y			

Engine Type: _____ H.P.: _____ Normal Fuel Supply (days): _____ N/A

Survival equipment on board: (check as appropriate)

Life Jackets Flare Smoke Signals

Medical Kit EPIRB Paddles

Anchor Loran _____

Trip:

Date & Time of Departure: 2/7/17

Departure From: RM 5.3 & RM 4.9/4.95

Departure To:

Expected to arrive by: 5pm In no case later _____

Telephone Number:	781-883-6425	
Name of Vessel:		
Registration No.:		
Description of Vessel: Type: Make: Color of Hull/Trim: Most distinguishing identifiable feature:	Old town Discovery 169 red canoe	
Rafts/Dinghies: Number: <u>NA</u> Size: _____ Color: _____		
Radio: Type: <u>NA</u> Frequencies Monitored: _____		
Number of persons onboard: <u>2</u>		
Name:	Age:	Address & Telephone:
Rick Purdy	53	781-883-6425
Mike Pryor	37	805-200-7839
Engine Type: <u>NA</u> H.P.: _____ Normal Fuel Supply (days): _____		
Survival equipment on board: (check as appropriate)		
<input checked="" type="checkbox"/> Life Jackets	<input type="checkbox"/> Flares	<input type="checkbox"/> Smoke Signals
<input checked="" type="checkbox"/> Medical Kit	<input type="checkbox"/> EPIRB	<input checked="" type="checkbox"/> Paddles
<input type="checkbox"/> Anchor	<input type="checkbox"/> Loran/Gps	<input checked="" type="checkbox"/> <u>throw rope</u>
Trip: <u>Las Vegas Wash River Mile 6.05 to 7.20</u>		
Date & Time of Departure:	<u>2/7 0800</u>	
Departure From:	<u>Parso Road</u>	
Departure To:	<u>Duck Creek Confluence</u>	
Expected to arrive by: <u>1500</u> In no case later than: <u>1700</u>		

Telephone Number:		781.439.7762	
Name of Vessel:		"Mellow Yellow" 16'	
Registration No.:			
Description of Vessel:		Ve... WE-NO-NAH	
Type:		...	
Make:		Northfork	
Color of Hull/Trim:	Yellow		
Most distinguishing identifiable feature:			
Rafts/Dinghies: Number:	Size:	Color:	
Radio: Type:	Cell phone	Frequencies Monitored:	
Number of persons onboard:		2	
Name:	Age:	Address:	Telephone:
Connor Golden	27	...	781-439-7762
Ryan McCarthy	38	603	520-6169
Engine Type:		H.P.:	Normal Fuel Supply (days):
Paddle		15	
Survival equipment on board: (check as appropriate)			
<input checked="" type="checkbox"/> Life Jackets	<input type="checkbox"/> Flare	<input type="checkbox"/> Smoke Signals	
<input checked="" type="checkbox"/> Medical Kit	<input type="checkbox"/> EPIR	<input checked="" type="checkbox"/> Paddles	
<input checked="" type="checkbox"/> Anchor	<input checked="" type="checkbox"/> Loran Cps		
Trip:		Multiple locations in wash	
Date & Time of Departure:		2/7/17	
Departure From:		Shore	
Departure To:		Wash	
Expected to arrive by:		0830 In the case later than: 1000 1600	

Connor Golden

[Signature]

2/7/17 0718

Americas

Daily Tailgate Meeting

S3AM-209-FM5

Job Location:	Las Vegas Wash, Henderson, NV	Date:	2-7-17
AECOM Site Supervisor:	Steve Howe	Person Conducting Tailgate Meeting:	Richard Purdy
AECOM Site Supervisor Phone:	603-520-0169	AECOM Safety Officer Name & Phone:	R. Purdy 781-883-6425

List activities to be performed today:	___ Transect SW Sampling in LVW ___ Discreet Location SW Sampling in LVW
--	--

Muster Point:	PABCO Pavilion area	Spill Kit Location:	N/A
First Aid Kit Location:	In vehicles	Fire Extinguisher Location:	N/A

Have all personnel reviewed and understand the site-specific safety plan?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No*
Are current Pre-Job Hazard Assessments in place for each of the tasks to be performed today and understood by all?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No*
Does each subcontractor have hazard assessments (e.g., THA, JSA, JHA) for their activities?	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input checked="" type="checkbox"/> N/A
Are any required permits in place for the applicable tasks to be performed today and understood by all? Identify required permits and permit #s:	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input checked="" type="checkbox"/> N/A
Have all members of the work team confirmed understanding of the work, hazards, and controls/mitigation?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No*
Have work areas been properly cordoned-off to protect workers, site staff, and the public?	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input checked="" type="checkbox"/> N/A
Have equipment checks been completed, documented, and reviewed?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No* <input type="checkbox"/> N/A
Do all site workers understand injury/ intervention reporting requirements including immediately notifying the AECOM Site Supervisor of any injury near miss, unsafe condition or hazard observation?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No*

* if No, then work cannot be performed until corrective action is completed and documented.

Topics covered in today's tailgate meeting:	-Slip, trip, fall hazards -Working in/around water -Heat/Cold exposure -Working in low light <i>all water by 5pm</i>
---	---

Other Items Discussed Today:	Stop Work Authority & Obligation
	<ul style="list-style-type: none"> * All employees will stop the job any time anyone is concerned or uncertain about safety. * All employees will stop the job if anyone identifies a hazard or additional mitigation not recorded on the THA. * All employees will be alerted to any changes in personnel or conditions at the worksite. * All employees will stop the job and reassess a task, hazards, and mitigations, and then amend the THA as needed.

SITE WORKERS (including AECOM Contractors and Subcontractors): By signing here, you are stating the following:

- * You have been involved in reviewing the THAs and understand the hazards and control measures associated with each task you are about to perform.
- * You understand the permit to work requirements applicable to the work you are about to perform (if it includes permitted activities).
- * You are aware that no tasks or work (that is not risk-assessed) is to be performed.
- * You are aware of your authority and obligation to 'Stop Work'.

I arrived and departed fit for duty:

- * You are physically and mentally fit for duty.
- * You are not under the influence of any type of medication, drugs, or alcohol that could affect your ability to work safely.
- * You are aware of your responsibility to immediately report any illness, injury (regardless of where or when it occurred), or fatigue issue you may have to the AECOM Supervisor.
- * You signed-out uninjured unless you have otherwise informed the AECOM Supervisor.

Print Name & Company	Signature	Initials & Sign In Time	Initials & Sign Out Time
Clare Murphy Hogan AECOM		In & Fit 0830	Out & Fit 1700
Nick Payer AECOM		In & Fit 0830	Out & Fit
Tate Yulgan		In & Fit 0830	Out & Fit
Rico Poseny		In & Fit 0830	Out & Fit
Ryan McAtamney		In & Fit 0830	Out & Fit
Connor Childers		In & Fit 0830	Out & Fit

(Attach additional Site Worker sign-in/out sheets if needed)

SITE VISITOR / SITE REPRESENTATIVE

Name	Company Name	Arrival Time	Departure Time	Signature

To be completed once activities for the day have been concluded:

Were there any Incidents, Near Misses or Observations?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes, details:
Were there any 'Stop Work' interventions?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes, details:
Were there any areas for improvement noted?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes, details:
At the conclusion of the day, the job site is being left in a safe condition and there were no reports of injury or first aid.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	AECOM Supervisor Signature:

Steve Howe
Petros Paulos

0830
0830

Daily Tailgate Meeting (S3AM-209-FM5)
Revision 5 December 15, 2016

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TEAM 3

Tate + Claire
2/9/17

Boat Safety Checklist

Keep this page with your boat, ready for inspection. By using this checklist, or one fine-tuned by yourself, you'll be sure that everything is on board and in good working order. Your passengers will appreciate knowing you're concerned about boating safety.

- Float plan--let a friend or relative know when you're leaving, where you're going, when you expect to return, what to do if you don't, and a description of your boat
- Registration certificate or documentation
- Personal Flotation Devices (wearable and throw able)--USCG approved, good condition, readily accessible, assigned and fitted
- Fire Extinguishers--right number, size, and class for boat; charged, not corroded, nozzle clear, bracketed, readily accessible
- Visual Distress Signals--current dates on flares, proper number, batteries good if lights or EPIRB
- Anchors and Line--adequate anchor for bottom, adequate line for water depth
- Bilge device --bilge pump operable, alternative bailing device available
- Watch or clock--operable
- Bright flashlight or searchlight
- Navigation lights --tested and operable, spare bulbs
- Batteries--fully charged, encased in plastic boxes or terminals covered, securely fastened down
- Sound-producing device--horn, whistle appropriate for boat
- Alternate propulsion--paddle or oar
- First Aid Kit
- Tools, spare outboard prop and lock nut
- Compass
- Sunscreen
- Weather Radio

TEAM 4

Boat Safety Checklist

Keep this page with your boat, ready for inspection. By using this checklist, or one fine-tuned by yourself, you'll be sure that everything is on board and in good working order. Your passengers will appreciate knowing you're concerned about boating safety.

Float plan--let a friend or relative know when you're leaving, where you're going, when you expect to return, what to do if you don't, and a description of your boat

Registration certificate or documentation

Personal Flotation Devices (wearable and throw able)--USCG approved, good condition, readily accessible, assigned and fitted

Fire Extinguishers--right number, size, and class for boat; charged, not corroded, nozzle clear, bracketed, readily accessible

Visual Distress Signals--current dates on flares, proper number, batteries good if lights or EPIRB

Anchors and Line--adequate anchor for bottom, adequate line for water depth

Bilge device --bilge pump operable, alternative bailing device available

Watch or clock--operable

Bright flashlight or searchlight

Navigation lights --tested and operable, spare bulbs

Batteries--fully charged, encased in plastic boxes or terminals covered, securely fastened down

Sound-producing device--horn, whistle appropriate for boat

Alternate propulsion--paddle or oar

First Aid Kit

Tools, spare outboard prop and lock nut

Compass

Sunscreen

Weather Radio cell phone

MELAN YEAN

R. MURPHY

RJA

2/8/17

TEAM 5

Boat Safety Checklist

Keep this page with your boat, ready for inspection. By using this checklist, or one fine-tuned by yourself, you'll be sure that everything is on board and in good working order. Your passengers will appreciate knowing you're concerned about boating safety.

Float plan--let a friend or relative know when you're leaving, where you're going, when you expect to return, what to do if you don't, and a description of your boat

Registration certificate or documentation

Personal Flotation Devices (wearable and throw able)--USCG approved, good condition, readily accessible, assigned and fitted

Fire Extinguishers--right number, size, and class for boat; charged, not corroded, nozzle clear, bracketed, readily accessible

Visual Distress Signals--current dates on flares, proper number, batteries good if lights or EPIRB

Anchors and Line--adequate anchor for bottom, adequate line for water depth

Bilge device --bilge pump operable, alternative bailing device available

Watch or clock--operable

Bright flashlight or searchlight

Navigation lights --tested and operable, spare bulbs

Batteries--fully charged, encased in plastic boxes or terminals covered, securely fastened down

Sound-producing device--horn, whistle appropriate for boat

Alternate propulsion--paddle or oar

First Aid Kit

Tools, spare outboard prop and lock nut

Compass

Sunscreen


Weather Radio

 A handwritten signature, possibly 'F. J.', is written above the date '2/8/17'. The date is underlined.

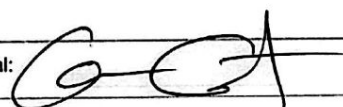
Daily Float Plan

Name of vessel's operator:		Clare Murphy - Hagan	
Telephone Number:		503-318-5970	
Name of Vessel:			
Registration No.:		NA	
Description of Vessel:		Old town Discovery 169	
Type:			
Make:			
Color of Hull/Trim:		red canoe	
Most distinguishing identifiable feature:			
Rafts/Dinghies: Number: <u>NA</u> Size: <u> </u> Color: <u> </u>			
Radio/Communication Type: <u>cell phones</u>			
Number of persons onboard: <u>2</u>			
Name:		Age:	Address & Telephone:
Clare Murphy - Hagan		26	503-318-5970
Tate Yulga		25	651 301 9260
Engine Type: <u>NA</u> H.P.: <u> </u> Normal Fuel Supply (days): <u> </u>			
Survival equipment on board: (check as appropriate)			
<input checked="" type="checkbox"/> Life Jackets	<input type="checkbox"/> Flares	<input type="checkbox"/> Smoke Signals	
<input checked="" type="checkbox"/> Medical Kit	<input type="checkbox"/> EPIRB	<input checked="" type="checkbox"/> Paddles	
<input checked="" type="checkbox"/> Anchor	<input type="checkbox"/> Loran/GPS	<input type="checkbox"/> Life Ring	
Trip: <u>Las Vegas Wash river mile 4.90 to 5.3</u>			
Date & Time of Departure: <u>2/8 0800</u>			
Departure From: <u>Palco Road</u>		Departure To: <u> </u>	
Expected to arrive by: <u>1630</u> In no case later than: <u>1730</u>			
Date & Time of Arrival: <u> </u>		Boat Lead Signature at Arrival: <u> </u>	

Daily Float Plan

Name of vessel's operator:		Rick Purdy	
Telephone Number:			
Name of Vessel:			
Registration No.:			
Description of Vessel: Type: Make: Color of Hull/Trim		Old Town Discovery 69 red canoe	
Most distinguishing identifiable feature:			
Rafts/Dinghies: Number: <u>NA</u> Size: <u> </u> Color: <u> </u>			
Radio/Communication Type: <u>NA</u> cell phones			
Number of persons onboard: <u>2</u>			
Name:		Age:	Address & Telephone:
Rick Purdy		53	781-883-6425
Nick Fryer		37	805-200-7839
Engine Type: <u>NA</u> H.P.: <u> </u> Normal Fuel Supply (days): <u> </u>			
Survival equipment on board: (check as appropriate)			
<input checked="" type="checkbox"/> Life Jackets	<input type="checkbox"/> Flares	<input type="checkbox"/> Smoke Signals	
<input checked="" type="checkbox"/> Medical Kit	<input type="checkbox"/> EPIRB	<input checked="" type="checkbox"/> Paddles	
<input checked="" type="checkbox"/> Anchor	<input type="checkbox"/> Loran/GPS	<input type="checkbox"/> Life Ring	
Trip: <u>Las Vegas Wash river mile 6.05 to 7.2</u>			
Date & Time of Departure: <u> </u>			
Departure From: <u>Pasco Road</u>		Departure To: <u>RM 7.2</u>	
Expected to arrive by: <u>1600</u> In no case later than: <u>1700</u>			
Date & Time of Arrival: <u>1450 2/8/17</u>		Boat Lead Signature at Arrival: 	

Daily Float Plan

Name of vessel's operator:		Ryan McCarthy	
Telephone Number:		603 770 4945	
Name of Vessel:		Mellow Yellow	
Registration No.:			
Description of Vessel: Type: WE - No - Nahn Make: Northfork Color of Hull/Trim: Yellow Canoe Most distinguishing identifiable feature: 16, 9'			
Rafts/Dinghies: Number: __ Size: __ Color: __			
Radio/Communication Type: Cell Phone			
Number of persons onboard: 2			
Name:		Age:	Address & Telephone:
Ryan McCarthy		38	603-770-4945
Connor Gildea		27	781-439-7762
Engine Type: _____ H.P.: _____ Normal Fuel Supply (days): _____			
Survival equipment on board: (check as appropriate)			
<input checked="" type="checkbox"/> Life Jackets	<input type="checkbox"/> Flares	<input type="checkbox"/> Smoke Signals	
<input checked="" type="checkbox"/> Medical Kit	<input type="checkbox"/> EPIRB	<input checked="" type="checkbox"/> Paddles	
<input checked="" type="checkbox"/> Anchor	<input checked="" type="checkbox"/> Loran/GPS	<input checked="" type="checkbox"/> Life Ring	
Trip: Multiple Locations in Wash			
Date & Time of Departure: 2/8/17			
Departure From: Shore 1700		Departure To:	
Expected to arrive by: 0630 1730		In no case later than: 0630 1730	
Date & Time of Arrival: 0630 1700 2/8/17		Boat Lead Signature at Arrival: 	

Americas

Daily Tailgate Meeting

S3AM-209-FM5

Job Location:	Las Vegas Wash, Henderson, NV	Date:	2-8-17
AECOM Site Supervisor:	Steve Howe	Person Conducting Tailgate Meeting:	Richard Purdy
AECOM Site Supervisor Phone:	603-520-0169	AECOM Safety Officer Name & Phone:	R. Purdy 781-883-6425

List activities to be performed today: Transect SW Sampling in LVW Discreet Location SW Sampling in LVW

Muster Point:	PABCO Pavilion area	Spill Kit Location:	N/A
First Aid Kit Location:	In vehicles	Fire Extinguisher Location:	N/A

Have all personnel reviewed and understand the site-specific safety plan?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No*
Are current Pre-Job Hazard Assessments in place for each of the tasks to be performed today and understood by all?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No*
Does each subcontractor have hazard assessments (e.g., THA, JSA, JHA) for their activities?	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input checked="" type="checkbox"/> N/A
Are any required permits in place for the applicable tasks to be performed today and understood by all? Identify required permits and permit #s:	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input checked="" type="checkbox"/> N/A
Have all members of the work team confirmed understanding of the work, hazards, and controls/mitigation?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No*
Have work areas been properly cordoned-off to protect workers, site staff, and the public?	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input checked="" type="checkbox"/> N/A
Have equipment checks been completed, documented, and reviewed?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No* <input type="checkbox"/> N/A
Do all site workers understand injury/ intervention reporting requirements including immediately notifying the AECOM Site Supervisor of any injury near miss, unsafe condition or hazard observation?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No*

* if No, then work cannot be performed until corrective action is completed and documented.

Topics covered in today's tailgate meeting:	<ul style="list-style-type: none"> -Slip, trip, fall hazards -Working in/around water -Heat/Cold exposure -Working in low light - lifting crane - high wheel
---	--

Other Items Discussed Today:	Stop Work Authority & Obligation
<ul style="list-style-type: none"> - Bees - sun block 	<ul style="list-style-type: none"> * All employees will stop the job any time anyone is concerned or uncertain about safety. * All employees will stop the job if anyone identifies a hazard or additional mitigation not recorded on the THA. * All employees will be alerted to any changes in personnel or conditions at the worksite. * All employees will stop the job and reassess a task, hazards, and mitigations, and then amend the THA as needed.

SITE WORKERS (including AECOM Contractors and Subcontractors): By signing here, you are stating the following:

- * You have been involved in reviewing the THAs and understand the hazards and control measures associated with each task you are about to perform.
- * You understand the permit to work requirements applicable to the work you are about to perform (if it includes permitted activities).
- * You are aware that no tasks or work (that is not risk-assessed) is to be performed.
- * You are aware of your authority and obligation to 'Stop Work'.

I arrived and departed fit for duty:

- * You are physically and mentally fit for duty.
- * You are not under the influence of any type of medication, drugs, or alcohol that could affect your ability to work safely.
- * You are aware of your responsibility to immediately report any illness, injury (regardless of where or when it occurred), or fatigue issue you may have to the AECOM Supervisor.
- * You signed-out uninjured unless you have otherwise informed the AECOM Supervisor.

Print Name & Company	Signature	Initials & Sign In Time	Initials & Sign Out Time
R Purney AECOM		In & Fit 0745	Out & Fit
R McCarthy AECOM		In & Fit 0745	Out & Fit
Clare Murphy-Alyn AECOM		In & Fit 0745	Out & Fit
A. Kelly AECOM		In & Fit 0745	Out & Fit
Connor G. Hill		In & Fit	Out & Fit
Tate Vulga		In & Fit 0745	Out & Fit

(Attach additional Site Worker sign-in/out sheets if needed)

SITE VISITOR / SITE REPRESENTATIVE

Name	Company Name	Arrival Time	Departure Time	Signature

To be completed once activities for the day have been concluded:

Were there any Incidents, Near Misses or Observations?	<input type="checkbox"/> Yes <input type="checkbox"/> No	If yes, details:
Were there any 'Stop Work' interventions?	<input type="checkbox"/> Yes <input type="checkbox"/> No	If yes, details:
Were there any areas for improvement noted?	<input type="checkbox"/> Yes <input type="checkbox"/> No	If yes, details:
At the conclusion of the day, the job site is being left in a safe condition and there were no reports of injury or first aid.	<input type="checkbox"/> Yes <input type="checkbox"/> No	AECOM Supervisor Signature:

ANDREA CHRISTIAN AECOM 0800 AL C. Steve How
 James McCoy AECOM 0900

Daily Tailgate Meeting (S3AM-209-FM5)
 Revision 5 December 15, 2016

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Rachel Madole AECOM 0745 RBH
 Petros Paulos AECOM 09:00

Team 3

2-9-17 Tate + Claire

Tate + Claire

Boat Safety Checklist

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- Float plan--let a friend or relative know when you're leaving, where you're going, when you expect to return, what to do if you don't, and a description of your boat
- Registration certificate or documentation
- Personal Flotation Devices (wearable and throw able)--USCG approved, good condition, readily accessible, assigned and fitted
- Fire Extinguishers--right number, size, and class for boat; charged, not corroded, nozzle clear, bracketed, readily accessible
- Visual Distress Signals--current dates on flares, proper number, batteries good if lights or EPIRB
- Anchors and Line--adequate anchor for bottom, adequate line for water depth
- Bilge device --bilge pump operable, alternative bailing device available
- Watch or clock--operable
- Bright flashlight or searchlight
- Navigation lights --tested and operable, spare bulbs
- Batteries--fully charged, encased in plastic boxes or terminals covered, securely fastened down
- Sound-producing device--horn, whistle appropriate for boat
- Alternate propulsion--paddle or oar
- First Aid Kit
- Tools, spare outboard prop and lock nut
- Compass
- Sunscreen
- Weather Radio

TEAM 4

Connor & James (T4)

2/9/17

Boat Safety Checklist

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- Float plan--let a friend or relative know when you're leaving, where you're going, when you expect to return, what to do if you don't, and a description of your boat
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- Fire Extinguishers--right number, size, and class for boat; charged, not corroded, nozzle clear, bracketed, readily accessible
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- Anchors and Line--adequate anchor for bottom, adequate line for water depth
- Bilge device --bilge pump operable, alternative bailing device available
- Watch or clock--operable
- Bright flashlight or searchlight
- Navigation lights --tested and operable, spare bulbs
- Batteries--fully charged, encased in plastic boxes or terminals covered, securely fastened down
- Sound-producing device--horn, whistle appropriate for boat
- Alternate propulsion--paddle or oar
- First Aid Kit
- Tools, spare outboard prop and lock nut
- Compass
- Sunscreen
- Weather Radio

TEAM 5

Boat Safety Checklist

Keep this page with your boat, ready for inspection. By using this checklist, or one fine-tuned by yourself, you'll be sure that everything is on board and in good working order. Your passengers will appreciate knowing you're concerned about boating safety.

Float plan--let a friend or relative know when you're leaving, where you're going, when you expect to return, what to do if you don't, and a description of your boat

Registration certificate or documentation

Personal Flotation Devices (wearable and throw able)--USCG approved, good condition, readily accessible, assigned and fitted

Fire Extinguishers--right number, size, and class for boat; charged, not corroded, nozzle clear, bracketed, readily accessible

Visual Distress Signals--current dates on flares, proper number, batteries good if lights or EPIRB

Anchors and Line--adequate anchor for bottom, adequate line for water depth

Bilge device --bilge pump operable, alternative bailing device available

Watch or clock--operable

Bright flashlight or searchlight

Navigation lights --tested and operable, spare bulbs

Batteries--fully charged, encased in plastic boxes or terminals covered, securely fastened down

Sound-producing device--horn, whistle appropriate for boat

Alternate propulsion--paddle or oar

First Aid Kit

Tools, spare outboard prop and lock nut

Compass

Sunscreen

Weather Radio

RCZ/12/13

Daily Float Plan

Name of vessel's operator: <u>Connor Gilder</u>	
Telephone Number: <u>781.439.7762</u>	
Name of Vessel: <u>Mellow Yellow</u>	
Registration No.:	
Description of Vessel: <u>Yellow 16' Canoe</u> Type: <u>We-No-Nan</u> Make: <u>"</u> Color of Hull/Trim <u>Yellow</u>	
Most distinguishing identifiable feature:	

Rafts/Dinghies: Number: Size: Color:

Radio/Communication Type: Cell phone

Number of persons onboard: 2

Name:	Age:	Address & Telephone:
<u>Connor Gilder</u>	<u>27</u>	<u>781-439-7762</u>
<u>James McCoy</u>	<u>24</u>	<u>507-828-0760</u>

Engine Type: H.P.: Normal Fuel Supply (days):

Survival equipment on board: (check as appropriate)

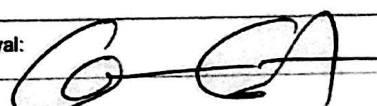
<input checked="" type="checkbox"/> Life Jackets	<input type="checkbox"/> Flares	<input type="checkbox"/> Smoke Signals
<input checked="" type="checkbox"/> Medical Kit	<input type="checkbox"/> EPIRB	<input checked="" type="checkbox"/> Paddles
<input checked="" type="checkbox"/> Anchor	<input checked="" type="checkbox"/> Loran/GPS	<input checked="" type="checkbox"/> Life Ring

Trip: From Shore


Date & Time of Departure: 0800

Departure From: Las Vegas Wash Departure To: Las Vegas Wash


Expected to arrive by: 1730 In no case later than: 1800

Date & Time of Arrival: 1730 2/9/17 Boat Lead Signature at Arrival: 

Daily Float Plan

Name of vessel's operator: <u>RICK PURN</u>		
Telephone Number: <u>781.883.6425</u>		
Name of Vessel: <u>OCEANS II</u>		
Registration No.: <u>—</u>		
Description of Vessel: Type: <u>200 OLD ROWING CANOE</u> Make: Color of Hull/Trim: Most distinguishing identifiable feature:		
Rafts/Dinghies: Number: <u>—</u> Size: <u>—</u> Color: <u>—</u> <u>Ø</u>		
Radio/Communication Type: <u>CELL PHONE</u>		
Number of persons onboard: <u>2</u>		
Name:	Age:	Address & Telephone:
<u>RICK PURN</u>	<u>53</u>	<u>WATERFORD MA 781 883 6425</u>
<u>NICK PRYOR</u>	<u>37</u>	<u>CAMBRIDGE MA 855 200 7839</u>
Engine Type: <u>Ø</u> H.P.: <u>—</u> Normal Fuel Supply (days): <u>—</u>		
Survival equipment on board: (check as appropriate)		
<input type="checkbox"/> Life Jackets	<input checked="" type="checkbox"/> Flares	<input checked="" type="checkbox"/> Smoke Signals
<input checked="" type="checkbox"/> Medical Kit	<input checked="" type="checkbox"/> EPIRB	<input checked="" type="checkbox"/> Paddles
<input checked="" type="checkbox"/> Anchor	<input checked="" type="checkbox"/> Loran/GPS	<input checked="" type="checkbox"/> Life Ring
Trip: <u>SAMPLING @ DUCK CREEK WEIR</u>		
Date & Time of Departure: <u>2/9/17 0830</u>		
Departure From: <u>PABCO</u>	Departure To: <u>DUCK CREEK REM 7-2</u>	
Expected to arrive by: <u>0900</u> In no case later than: <u>—</u>		
Date & Time of Arrival: <u>2/9/17 1600</u>	Boat Lead Signature at Arrival: 	

Daily Float Plan

Name of vessel's operator: <u>Clare & Murphy-Hagan</u>		<u>Tate Yulga</u>
Telephone Number: <u>503-318-5970</u>		
Name of Vessel:		
Registration No.:		
Description of Vessel: <u>Canoe</u>		
Type:		
Make:		
Color of Hull/Trim <u>Red</u>		
Most distinguishing identifiable feature:		
Rafts/Dinghies: Number: <u> </u> Size: <u> </u> Color: <u> </u>		
Radio/Communication Type: <u>NIA Cell phone</u>		
Number of persons onboard: <u>2</u>		
Name:	Age:	Address & Telephone:
<u>C. Murphy-Hagan</u>	<u>26</u>	
<u>T. Yulga</u>	<u>24</u>	
Engine Type: <u> </u> H.P.: <u> </u> Normal Fuel Supply (days): <u> </u>		
Survival equipment on board: (check as appropriate)		
<input checked="" type="checkbox"/> Life Jackets	<input type="checkbox"/> Flares	<input type="checkbox"/> Smoke Signals
<input type="checkbox"/> Medical Kit	<input type="checkbox"/> EPIRB	<input checked="" type="checkbox"/> Paddles
<input checked="" type="checkbox"/> Anchor	<input type="checkbox"/> Loran/GPS	<input type="checkbox"/> Life Ring
Trip:		
Date & Time of Departure: <u>2/9/2017 0930</u>		
Departure From:		Departure To:
Expected to arrive by: <u>1700</u> In no case later than: <u>1730</u>		
Date & Time of Arrival: <u>2/9/2017 1700</u>		Boat Lead Signature at Arrival: 

Americas

Daily Tailgate Meeting

S3AM-209-FM5

Job Location:	Las Vegas Wash, Henderson, NV	Date:	2-9-17
AECOM Site Supervisor:	Steve Howe	Person Conducting Tailgate Meeting:	Richard Purdy
AECOM Site Supervisor Phone:	603-520-0169	AECOM Safety Officer Name & Phone:	R. Purdy 781-883-6425

List activities to be performed today: Transect SW Sampling in LVW Discreet Location SW Sampling in LVW

Muster Point:	PABCO Pavilion area	Spill Kit Location:	N/A
First Aid Kit Location:	In vehicles	Fire Extinguisher Location:	N/A

Have all personnel reviewed and understand the site-specific safety plan?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No*
Are current Pre-Job Hazard Assessments in place for each of the tasks to be performed today and understood by all?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No*
Does each subcontractor have hazard assessments (e.g., THA, JSA, JHA) for their activities?	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input checked="" type="checkbox"/> N/A
Are any required permits in place for the applicable tasks to be performed today and understood by all? Identify required permits and permit #s:	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input checked="" type="checkbox"/> N/A
Have all members of the work team confirmed understanding of the work, hazards, and controls/mitigation?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No*
Have work areas been properly cordoned-off to protect workers, site staff, and the public?	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input checked="" type="checkbox"/> N/A
Have equipment checks been completed, documented, and reviewed?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No* <input type="checkbox"/> N/A
Do all site workers understand injury/ intervention reporting requirements including immediately notifying the AECOM Site Supervisor of any injury near miss, unsafe condition or hazard observation?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No*

** if No, then work cannot be performed until corrective action is completed and documented.*

Topics covered in today's tailgate meeting:	<ul style="list-style-type: none"> -Slip, trip, fall hazards -Working in/around water -Heat/Cold exposure -Working in low light - Bees - COMPLACENCY
---	--

Other Items Discussed Today:	Stop Work Authority & Obligation
	<ul style="list-style-type: none"> * All employees will stop the job any time anyone is concerned or uncertain about safety. * All employees will stop the job if anyone identifies a hazard or additional mitigation not recorded on the THA. * All employees will be alerted to any changes in personnel or conditions at the worksite. * All employees will stop the job and reassess a task, hazards, and mitigations, and then amend the THA as needed.

SITE WORKERS (including AECOM Contractors and Subcontractors): By signing here, you are stating the following:

- * You have been involved in reviewing the THAs and understand the hazards and control measures associated with each task you are about to perform.
- * You understand the permit to work requirements applicable to the work you are about to perform (if it includes permitted activities).
- * You are aware that no tasks or work (that is not risk-assessed) is to be performed.
- * You are aware of your authority and obligation to 'Stop Work'.

I arrived and departed fit for duty:

- * You are physically and mentally fit for duty.
- * You are not under the influence of any type of medication, drugs, or alcohol that could affect your ability to work safely.
- * You are aware of your responsibility to immediately report any illness, injury (regardless of where or when it occurred), or fatigue issue you may have to the AECOM Supervisor.
- * You signed-out uninjured unless you have otherwise informed the AECOM Supervisor.

Print Name & Company	Signature	Initials & Sign In Time	Initials & Sign Out Time
Rick Poyon AECOM	<i>[Signature]</i>	In & Fit 0830	Out & Fit 1700
Connos C. Ido AECOM	<i>[Signature]</i>	In & Fit 0830	Out & Fit
Nick Pryor AECOM	<i>[Signature]</i>	In & Fit 0830	Out & Fit
James McCoy AECOM	<i>[Signature]</i>	In & Fit 0830	Out & Fit
Tate Vulgar AECOM	<i>[Signature]</i>	In & Fit 0830	Out & Fit
Clare Murphy-Hagan AECOM	<i>[Signature]</i>	In & Fit 0830	Out & Fit

(Attach additional Site Worker sign-in/out sheets if needed)

SITE VISITOR / SITE REPRESENTATIVE				
Name	Company Name	Arrival Time	Departure Time	Signature

To be completed once activities for the day have been concluded:

Were there any Incidents, Near Misses or Observations?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes, details:
Were there any 'Stop Work' interventions?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes, details:
Were there any areas for improvement noted?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes, details:
At the conclusion of the day, the job site is being left in a safe condition and there were no reports of injury or first aid.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	AECOM Supervisor Signature: <i>[Signature]</i>

ANDREA CHRISTIAN AECOM
C. Steve Hone AECOM

[Signature] 0830
[Signature] 0830

Daily Tailgate Meeting (S3AM-209-FM5)
Revision 5 December 15, 2016

PRINTED COPIES ARE UNCONTROLLED. CONTROLLED COPY IS AVAILABLE ON COMPANY INTRANET.

Petras Paulos AECOM *[Signature]* 0830
Rachel Madler AECOM *[Signature]* 0830

[Signature]
all @ 1700
2 of 2

Appendix C

Calibration Logs

NERT Water Quality Sonde Calibration Sheet

Calibration									Post Calibration			
YSI	lot number	expiration date	calibration standard	reading		date	time	initials	initial reading	temp	time	initials
				initial	adjusted							
	F215-18	8-5-18	pH 7.0	7.00	-	12-3-18	0740	FL				
	F202-03	7-20-18	pH 4.0	4.03	-				4.10	14.16	16:00	SG
	F225-16	8-17-17	pH 10.0	10.01	-				10.06	14.15		
	F126-12	6-28-18	Cond. 1409	1312	1411				1381	1390		
			DO %	barometer reading					-			
	F237-01	9-7-21	Turbidity 0.0	2.2	-0.3				-			
			Turbidity 123.0									

Calibration									Post Calibration			
YSI	lot number	expiration date	calibration standard	reading		date	time	initials	initial reading	temp	time	initials
				initial	adjusted							
			pH 7.0									
			pH 4.0									
			pH 10.0									
			Cond.									
			DO %	barometer reading								
			Turbidity 0.0									
			Turbidity 123.0									

HOUSSE 03C100736

SONDE U73411X

BAE 732-1 mm am

7220 pm

Water Quality Calibration Log

AECOM

Site Name / TO# / Job#

Field Activity

Fieldwork Dates

Date & Result of Last Temp. Check

Air temperature:

Solution Temperature:

Inst. Barometric Press. ("HG):

Pressure Corrected / Source:

Lag Veggs Wash

Surface water sampling

1/30/17 -

AM 14.12	PM 17.14
AM 13.09	PM 14.11
AM 762.3	PM 765.3
AM	PM

Manufacture/Model: **V5B 1990 VZ**

Serial Number: **933 711 X**

CALIBRATION DATE: **2/1/17**

Calibration

Initials: **[Signature]**

Time: **0915**

Calibration Check

Initials: **[Signature]**

Time: **1230**

INSTRUMENT NUMBER

CALIBRATION INFORMATION (circle results outside of criteria)

Parameter	Units	STANDA RD #1	STANDA RD #2	STANDA RD #3	CHECK																					
					Standard	Solut ion	Stan dard	Readi ng	Differ ence	Stan dard	Solut ion	Stan dard	Readi ng	Differ ence	Stan dard	Solut ion	Stan dard	Readi ng	Differ ence							
DO	%sat	100			14.24	NA	104.2	3.4	0mg/L	-	NA	-		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA			
pH	S.U.	7.00			12.73	7.07	7.00	0.07	4.00	13.05	3.98	4.00	0.02	10.00	12.69	9.13	9.99	0.07						Cal or Ck (circle)		
turb	ntu	0			13.09	0.0	0.0	1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
cond	µs/cm	1409			14.75	NA	1365	4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1409	NA	NA			Cal or Ck (circle)		
END OF DAY CHECK REQUIREMENTS																										
Parameter	Units	Standard value @	Solution/ Air	Standard Correctio	Reading	Differenc e	Reqmnt.	Action	Parameter	Units	Standard	Reqmnt.	Action	Parameter	Units	Standard	Reqmnt.									
DO	%sat	100	%	mg/L	104.2	4.2	mg/L		DO	%	mg/L	DO	mg/L	O ₂ Solubility	± 0.2	change DO membrane	DO	mg/L	100 % Saturation	± 5 mg/L						
DO	mg/L	0	NA	NA					DO	mg/L	0.0	± 0.50 but ≥ 0	change DO membrane	DO	mg/L	0.0		DO	mg/L	100 % Saturation	± 5 mg/L					
pH	S.U.	7.0			14.12	-	7.04	0.04	pH	S.U.	7.0	± 0.05	recalibrate	pH	S.U.	7.0 Temp. Adj.		pH	S.U.	7.0 Temp. Adj.	± 0.3					
ORP	mV	231							ORP	mV	Specified standard	± 10.0	calibrate*	ORP	mV	Specified standard		ORP	mV	Specified standard	± 10.0					
cond	µs/cm	1409	NA	NA	1404	5			sp. Cond.	µs/cm	Specified standard	± 5%	Recalibrate	sp. Cond.	µs/cm	Specified standard		sp. Cond.	µs/cm	Specified standard	± 5%					
* - ORP is checked ("RUN" mode) instead of calibrated. Only calibrated ("CALIBRATE" mode) when check fails criteria															Record information for one instrument per sheet Pen only; line-out errors, initial and date											

1/30/17
13:09
13:11
13:14

Water Quality Calibration Log

AECOM

Site Name / TO# / Job#

Field Activity

Fieldwork Dates

Date & Result of Last Temp. Check

Air temperature:

Solution Temperature:

Inst. Barometric Press. ("HG):

Pressure Corrected / Source:

Los Vegas Wash

Surface Water Sampling

Manufacture/Model: *YSI 6920Z*

Serial Number: *473411X*

CALIBRATION DATE: *2/2/17*

Calibration Initials: *[Signature]*

Time: *08:50*

Calibration Check Initials: *[Signature]*

Time: *11:25*

INSTRUMENT NUMBER

CALIBRATION INFORMATION (circle results outside of criteria)

Parameter	Units	STANDARD			CHECK					CHECK					CHECK							
		RD #1	RD #2	RD #3	Standard	Solution	Reading	Difference	Standard	Solution	Reading	Difference	Standard	Solution	Reading	Difference	Standard	Solution	Reading	Difference		
DO	%sat		100		100	95.9	4.1	0 mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
pH	S.U.		7.00		16.25	7.09	0.09	4.00	16.25	4.07	3.99	0.08	10.00	16.60	4.89	0.10						Cal or Ck (circle)
turb	NTU		0		16.57	0.3	0.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
cond	µs/cm		1409		16.25	1410	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	1409	NA	NA	NA	NA	Cal or Ck (circle)

END OF DAY CHECK REQUIREMENTS

Parameter	Units	Standard value @ %	Solution/ Air Temperature	Standard Correctio	Reading	Difference	Parameter	Units	Standard	Reqmnt.	Action	Parameter	Units	Standard	Reqmnt.	
DO	%sat / mg/L	100	16.52	mg/L	97.2	%	DO	mg/L	0.0	± 0.2	change DO	DO	mg/L	100 % Saturation	± 5 mg/L	
DO	mg/L	0	NA	NA	8.91		DO	mg/L	0.0	± 0.50 but ± 0	change DO	DO	mg/L	0.0	± 0.50 mg/L but ± 0	
pH	S.U.	7.0	17.72	6.97	1.75		pH	S.U.	7.0	± 0.05	recalibrate	pH	S.U.	7.0 Temp. Adj.	± 0.3	
ORP	mV	231					ORP	mV	Specified standard	± 10.0	calibrate*	ORP	mV	Specified standard	± 10.0	
cond	µs/cm	1409	NA	NA	1409		sp. Cond.	µs/cm	Specified standard	± 5%	Recalibrate	sp. Cond.	µs/cm	Specified standard	± 5%	
Turbidity	NTU	0	NA	NA	1.8		* - ORP is checked ("RUN" mode) instead of calibrated. Only calibrated ("CALIBRATE" mode) when check fails criteria					Record information for one instrument per sheet Pen only; line-out errors, initial and data				

CALIBRATION SN# 074102047

CHECK POST CALIBRATION

Lot No & Exp Date	Standard	Parameter	Reading Initial	Cal Reading	Date	Time	Initials	Reading	Temp	Time	Initials
NA	719.9 mmHg	DO%	92.7% [*]	94.8% [*]	2/3/17	0815	CMA	94.5%	22.25	1055	CMA
F055-18 2/24/21	0.0 NTU	Turbidity	0.6	0.0	2/3/17	0818	CMA	-0.3	18.42	1058	CMA
E335-05 12/4/17	1409	Spec Cond	1414	1409	2/3/17	0824	CMA	1345	18.26	1103	CMA
F064-20 3/14/18	4.0	pH	3.98	4.00	2/3/17	0835	CMA	79.94	20.41	1124	CMA
F287-06 10/17/17	10.0	pH	9.98	10.00	2/3/17	0840	CMA	54.02	20.00	1117	CMA
F034-09 2/18/18	^{xx} 7.0	pH	7.03	7.00	2/3/17	0850	CMA	7.02	20.26	1112	CMA

* ~~NA~~ Redid DO% Cal @ 855 720.6 mmHg Initial Reading is 98.5% (9.72%) post Cal 94.8% (9.38%)

xx USI handset keeps freezing after calibrating point 2 of 3 point pH calibration. Solution has been to turn off and on handset and do last point (7.0 pH) as a one point calibration.

James M. TEAM 1
&

Water Quality Calibration Log



Rachael

Site Name / TO# / Job#

Las Vegas

Field Activity

Surface water sampling

Air temperature:

AM 61°F PM 65°F

Solution Temperature:

AM PM

Inst. Barometric Press. ("HG):

AM 722.2 PM 722.8

Pressure Corrected / Source:

AM 1 PM 1

Manufacture/Model:

YSI 650 MDS

Serial Number:

09C100736

CALIBRATION DATE:

2-7-17

Calibration

Initials: JM

Time: 0900

Calibration Check

Initials: JM

Time: 1745

INSTRUMENT NUMBER

CALIBRATION INFORMATION (circle results outside of criteria)

Parameter	Units	STANDARD #1	STANDARD #2	STANDARD #3	CHECK																	
		Standard	Solution	Initial Reading	Calibrated	Difference	Standard	Solution	Standard	Reading	Difference	Standard	Solution	Standard	Reading	Difference	Standard	Solution	Standard	Reading	Difference	
DO	%sat	100	61°F	94.7	95.2	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
pH	S.U.	7.00	7.00	7.04	7.00	0.04	4.00	7.00	3.80	3.20	4.10	0.50	10.00	14.45	9.78	9.97	NA	NA	NA	NA	NA	NA
Turbidity	NTU	0.0	20.8	2.6	0.0	2.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Conductivity	µs/cm	1409	20.34	1498	1409	89	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

END OF DAY CHECK REQUIREMENTS

Parameter	Units	Standard value @ 25°C	Solution/Air Temperature	Reading	Difference	Parameter	Units	Standard	Reqmnt.	Action	Parameter	Units	Standard	Reqmnt.
DO	%sat / mg/L	100	63°F	100	0.0	DO	mg/L	mg/L	O ₂ Solubility	± 0.2	DO	mg/L	100 % Saturation	± 5 mg/L
pH	S.U.	7.0	7.80	7.0	NA	DO	mg/L	0.0	≤ 0.50 but ≥ 0	change DO membrane	DO	mg/L	0.0	≤ 0.50 mg/L but ≥ 0
Conductivity	µs/cm	1409	21.7	1287	NA	pH	S.U.	7/4/10 Temp Adj.	± 0.05	recalibrate	pH	S.U.	7.0 Temp. Adj.	± 0.3
Turbidity	NTU	0.0	21.8	0.0	NA	ORP	mV	Specified standard	± 10.0	calibrate*	ORP	mV	Specified standard	± 10.0
						sp. Cond.	us/cm	Specified standard	± 5%	Recalibrate	sp. Cond.	us/cm	Specified standard	± 5%

* - ORP is checked ("RUN" mode) instead of calibrated. Only calibrated ("CALIBRATE" mode) when check fails criteria

Record information for one instrument per sheet
Pen only; line-out errors, initial and date

TEAM 2

Water Quality Calibration Log

AECOM

Site Name / TO# / Job#

LV: Wash

Field Activity

Corab samples

Air temperature:

AM _____ PM _____

Solution Temperature:

AM 19.50°C PM _____

Inst. Barometric Press. ("HG):

AM 718.9 mmHg PM 718.2

Pressure Corrected / Source:

AM 1 PM 1

Manufacture/Model:

YSI 6920

Serial Number:

07H202047

CALIBRATION DATE:

2-7-17

Calibration

Initials: PP

Time: 9:11

Calibration Check

Initials: LG: PP

Time: 18:13

INSTRUMENT NUMBER

Petros
Paulos
team 2

CALIBRATION INFORMATION (circle results outside of criteria)

Parameter	Units	STANDARD #1	STANDARD #2	STANDARD #3	Initial Cal.						CHECK						Initial Calib					
					Initial Reading	Calibrated	Difference	Standard	Solution	Standard	Solution	Standard	Solution	Standard	Solution	Standard	Solution	Standard	Solution	Standard	Solution	
DO	%sat	100			104.9	95.0	9.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
pH	S.U.	7.00	F034-09 2/18/18		7.10	7.02	0.08	4.00	F069-20 3/14/18	3.91	4.00	0.09	10.00	F287-06 10/17/17	9.82	9.97	0.15	NA	NA	NA	NA	
Turbidity	NTU	0.0	F025-18 2/24/18		1.9	0.1	1.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Conductivity	µs/cm	1409	F025-08 12/4/17		1.366	1.410	0.044	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	

END OF DAY CHECK REQUIREMENTS

Parameter	Units	Standard value @ 25°C	Solution/Air Temperature	Reading	Difference	Parameter	Units	Standard	Reqmnt.	Action	Parameter	Units	Standard	Reqmnt.
DO	%sat / mg/L	100	22.91	93.2%	mg/L	DO	mg/L	mg/L	O ₂ Solubility	± 0.2	DO	mg/L	100 % Saturation	± 5 mg/L
pH	S.U.	7.0	23.10	7.06	NA	DO	mg/L	0.0	≤ 0.50 but ≥ 0	change DO membrane	DO	mg/L	0.0	≤ 0.50 mg/L but ≥ 0
Conductivity	µs/cm	1409	23.21	1.380	NA	pH	S.U.	7.0/10 Temp. Adj.	± 0.05	recalibrate	pH	S.U.	7.0 Temp. Adj.	± 0.3
Turbidity	NTU	0.0	23.26	0.8	NA	ORP	mV	Specified standard	± 10.0	calibrate*	ORP	mV	Specified standard	± 10.0
						sp. Cond.	us/cm	Specified standard	± 5%	Recalibrate	sp. Cond.	us/cm	Specified standard	± 5%

PH 9.0 23.18 4.06
10 23.42 9.92

* - ORP is checked ("RUN" mode) instead of calibrated. Only calibrated ("CALIBRATE" mode) when check fails criteria

Record information for one instrument per sheet
Pen only; line-out errors, initial and date

TEAM 3

Water Quality Calibration Log

AECOM

Site Name / TO# / Job#

Los Vegas Wash

Field Activity

Discrete SW Sampling

Air temperature:

AM 13.13°C PM 16.60°C

Solution Temperature:

AM PM

Inst. Barometric Press. ("HG):

AM 720.4 mmHg PM 720.4 mmHg

Pressure Corrected / Source:

AM 1 PM 1

Manufacture/Model:

YSI 6920

Serial Number:

66329

CALIBRATION DATE:

2/7/17

Calibration

Initials: CMH

Time: 0830

Calibration Check

Initials: TY

Time: 1730

INSTRUMENT NUMBER

CALIBRATION INFORMATION (circle results outside of criteria)

Parameter	Units	STANDARD #1	STANDARD #2	STANDARD #3	CHECK																	
					Initial Reading	Calibrated	Difference	Standard	Solution	Standard	Reading	Difference	Standard	Solution	Standard	Reading	Difference	Standard	Solution	Standard	Reading	Difference
DO	%sat	100	14.65	94.2 95.6	94.9 91.62	0.7 0.06	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
pH	S.U.	7.00	15.45	7.01	7.00	0.01	4.00	15.64	4.21	4.00	0.21	10.00	15.56	10.00	10.00	0	NA	NA	NA	NA	NA	NA
Turbidity	NTU	0.0	15.57	0.9 1.0	0.0	0.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Conductivity	µs/cm	1409	15.69	1330	1409	79	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

END OF DAY CHECK REQUIREMENTS

Parameter	Units	Standard value @ 25°C	Solution Temp	Reading	Difference	Parameter	Units	Standard	Reqmnt.	Action	Parameter	Units	Standard	Reqmnt.
DO	%sat / mg/L	100	98.0	19.38	%	mg/L	DO	mg/L	O ₂ Solubility	± 0.2	DO	mg/L	100 % Saturation	± 5 mg/L
pH	S.U.	7.0	7.07	21.00	NA	mg/L	DO	mg/L	≤ 0.50 but ≥ 0	change DO membrane	DO	mg/L	0.0	≤ 0.50 mg/L but ≥ 0
Conductivity	µs/cm	1409	1446	20.28	NA	mg/L	pH	S.U.	7/4/10 Temp. Adj.	± 0.05	pH	S.U.	7.0 Temp. Adj.	± 0.3
Turbidity	NTU	0.0	20.9	20.49	NA	mg/L	ORP	mV	Specified standard	± 10.0	ORP	mV	Specified standard	± 10.0
						mg/L	sp. Cond.	µs/cm	Specified standard	± 5%	sp. Cond.	µs/cm	Specified standard	± 5%

* - ORP is checked ("RUN" mode) instead of calibrated. Only calibrated ("CALIBRATE" mode) when check fails criteria

Record information for one instrument per sheet
Pen only; line-out errors, initial and date



TEAM 4

Ryan St Connor Water Quality Calibration Log

AECOM

Site Name / ID / Job #

Field Activity

Air Temperature:

Solution Temperature:

Inst. Barometric Press. ("HG):

Pressure Corrected / Source:

LU Wash
 Grab Sampling
 AM 0810:60°F PM
 AM See below PM See below
 AM 0810: 718.6 PM
 AM / PM /

Manufacture/Model: VSI 6920 V2
 Serial Number: U8420 AX
 CALIBRATION DATE: 2/17/17
 Calibration Initials: CMC
 Time: 0810
 Calibration Check Initials: CMC
 Time: 1815

INSTRUMENT NUMBER

CALIBRATION INFORMATION (circle results outside of criteria)

Parameter	Units	STANDA RD #1	STANDA RD #2	STANDA RD #3	CHECK																
					Standard	Solution	Initial Reading	Calibrated	Difference	Standard	Solution	Standard	Reading	Difference	Standard	Solution	Standard	Reading	Difference		
DO	%sat	100	12.26	44.5	96.7	2.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
pH	S.U.	7.00	13.06	7.17	7.0	.17	4.00	12.91	3.91	4.0	.09	10.00	12.97	9.81	10.0	.19	NA	NA	NA	NA	NA
Turbidity	NTU	0.0	13.11	2.1	1	1.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Conductivity	µs/cm	1409	13.08	1.409	1.409	.006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

END OF DAY CHECK REQUIREMENTS

Parameter	Units	Standard value @ 25°C	Solution/Air Temperature	Reading	Difference	Parameter	Units	Standard	Reqmnt.	Action	Parameter	Units	Standard	Reqmnt.	
DO	%sat / mg/L	100	16.24	93.6	%	mg/L	DO	mg/L	O ₂ Solubility	± 0.2	change DO membrane	DO	mg/L	100 % Saturation	± 5 mg/L
pH	S.U.	7.0	16.92	7.12	NA	NA	DO	mg/L	0.0	≤ 0.50 but ≥ 0	change DO membrane	DO	mg/L	0.0	≤ 0.50 mg/L but ≥ 0
Conductivity	µs/cm	1409	16.88	1.396	NA	NA	pH	S.U.	7/4/10 Temp. Adj.	± 0.05	recalibrate	pH	S.U.	7.0 Temp. Adj.	± 0.3
Turbidity	NTU	0.0	17.06	2.1	NA	NA	ORP	mV	Specified standard	± 10.0	calibrate*	ORP	mV	Specified standard	± 10.0
							sp Cond	us/cm	Specified standard	± 5%	Recalibrate	sp. Cond.	us/cm	Specified standard	± 5%

Lot No
 F215-18
 F202-03
 F550-17
 E335-05
 F055-18

Date
 1-15-18
 1-20-18
 12-20-17
 12/14/17
 2/21/18

pH 4.0
 7.0
 10.0
 Const. DI

* - ORP is checked ("RUN" mode) instead of calibrated. Only calibrated ("CALIBRATE" mode) when check fails criteria

Record information for one instrument per sheet
 Pen only; line-out errors, initial and date

TEAM 5

Water Quality Calibration Log

AECOM

Site Name / TO# / Job#

NDER

Field Activity

Surface Water Sampling

Air temperature:

AM 16.81 PM

Solution Temperature:

AM PM

Inst. Barometric Press. ("HG):

AM 7.7 PM 717.6

Pressure Corrected / Source:

AM / PM /

Manufacture/Model:

YSI 6-Series Water Quality Sonde

Serial Number:

Oceans # (no S/N)

CALIBRATION DATE:

2/7/17

Calibration

Initials: NP

Time: 07:42

Calibration Check

Initials:

Time:

INSTRUMENT NUMBER

No S/N
"OCEANS #"

CALIBRATION INFORMATION (circle results outside of criteria)

Parameter	Units	Standard	Solution	Initial Reading	Calibrated	Difference	Standard	Solution	Standard	Reading	Difference	Standard	Solution	Standard	Reading	Difference	Standard	Solution	Standard	Reading	Difference		
DO	%sat	100	NA	91.8	93.7		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
pH	S.U.	7.00	F172-20 6/27/18	3.99	4.00		4.00	F175-B 6/27/17	7.01	7.02		10.00	F175-23 6/27/17	10.00	9.99		NA	NA	NA	NA	NA	NA	NA
Turbidity	NTU	0.0	F117-03 4/27/14	3.9	-0.1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Conductivity	us/cm	1405	F137-11 4/27/18	1365	1409		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

END OF DAY CHECK REQUIREMENTS

Parameter	Units	Standard value @ 25°C	Solution/Air Temperature	Reading	Difference	Parameter	Units	Standard	Reqmnt.	Action	Parameter	Units	Standard	Reqmnt.
DO	%sat / mg/L	100	23.23	76.5%	mg/L	DO	mg/L	mg/L	O ₂ Solubility	± 0.2	DO	mg/L	mg/L	100% Saturation ± 5 mg/L
pH	S.U.	7.0	F172-18 6/27/18	7.01	NA	DO	mg/L	0.0	≤ 0.50 but ≥ 0	change DO membrane	DO	mg/L	0.0	≤ 0.50 mg/L but ≥ 0
Conductivity	us/cm	1405	F175-11 4/27/14	1323	NA	pH	S.U.	7.0 Temp Adj	± 0.05	recalibrate	pH	S.U.	7.0 Temp Adj	± 0.3
Turbidity	NTU	0.0	F117-03 4/27/14	-0.2	NA	ORP	mV	Specified standard	± 10.0	calibrate*	ORP	mV	Specified standard	± 10.0
						sp Cond	us/cm	Specified standard	± 5%	Recalibrate	sp Cond	us/cm	Specified standard	± 5%

pH 4.0 F172-20
6/27/18 4.03
10.0 F175-B
6/27/17 9.99

* - ORP is checked ("RUN" mode) instead of calibrated. Only calibrated ("CALIBRATE" mode) when check fails criteria

Record information for one instrument per sheet
Pen only; line-out errors, initial and date

TEAM 1

Water Quality Calibration Log

AECOM

Site Name / TO# / Job#

Las Vegas

Field Activity

Surface Water Sampling

Air temperature:

AM 63°F PM 63°F

Solution Temperature:

AM 52.6 below PM

Inst. Barometric Press. ("HG):

AM 728.5 PM 728.5

Pressure Corrected / Source:

AM / PM /

Manufacture/Model:

YSI 650 MDS

Serial Number:

09C100736

CALIBRATION DATE:

2-8-17

Calibration

Initials: JM

Time: 0900

Calibration Check

Initials: JM

Time: 1800

INSTRUMENT NUMBER

CALIBRATION INFORMATION (circle results outside of criteria)

Parameter	Units	STANDARD #1	STANDARD #2	STANDARD #3	CHECK																	
					Initial Reading	Calibrated	Difference	Standard	Solution	Standard	Reading	Difference	Standard	Solution	Standard	Reading	Difference	Standard	Solution	Standard	Reading	Difference
DO	%sat	100			63°F	96.3	95.9	0.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
pH	S.U.	7.00			22.11	7.09	7.00	0.09	4.00	22.18	3.99	4.00	0.01	10.00	22.05	9.91	9.99	0.08	NA	NA	NA	NA
Turbidity	NTU	0.0			22.46	0.3	0.0	0.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Conductivity	µs/cm	1409			22.58	1528	1409	119	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

END OF DAY CHECK REQUIREMENTS

Parameter	Units	Standard value @ 25°C	Solution/Air Temperature	Reading	Difference	Parameter	Units	Standard	Reqmnt.	Action	Parameter	Units	Standard	Reqmnt.
DO	%sat / mg/L	100	63°F	95.7	4.3 mg/L	DO	mg/L	0.0	O ₂ Solubility	± 0.2	DO	mg/L	100 % Saturation	± 5 mg/L
pH	S.U.	7.0	23.13	7.09	NA	DO	mg/L	0.0	≤ 0.50 but ≥ 0	change DO membrane	DO	mg/L	0.0	≤ 0.50 mg/L but ≥ 0
Conductivity	µs/cm	1409	22.69	1405	NA	pH	S.U.	7.0	± 0.05	7/4/10 Temp. Adj. recalibrate	pH	S.U.	7.0 Temp. Adj.	± 0.3
Turbidity	NTU	0.0	22.74	0.7	NA	ORP	mV	Specified standard	± 10.0	calibrate*	ORP	mV	Specified standard	± 10.0
						sp. Cond.	us/cm	Specified standard	± 5%	Recalibrate	sp. Cond.	us/cm	Specified standard	± 5%

* - ORP is checked ("RUN" mode) instead of calibrated. Only calibrated ("CALIBRATE" mode) when check fails criteria

Record information for one instrument per sheet
Pen only; line-out errors, initial and date

TEAM 2

Water Quality Calibration Log

AECOM

Site Name / TO# / Job#

L.V. Wash

Field Activity

Crab Sample

Air temperature:

AM _____ PM _____

Solution Temperature:

AM _____ PM _____

Inst. Barometric Press. ("HG):

AM 724.7 PM 723.7

Pressure Corrected / Source:

AM 1 PM 1

Manufacture/Model:

YSI 6920

Serial Number:

074102047

CALIBRATION DATE:

2-8-17

Calibration

Initials: PP

Calibration Check

Time: 9:17

Initials: PP

Time: 17:12

INSTRUMENT NUMBER

Petros Paulos
team 2 Steve

CALIBRATION INFORMATION (circle results outside of criteria)

Parameter	Units	STANDARD #1	STANDARD #2	STANDARD #3	CHECK																
					Initial Reading	Calibrated	Difference	Standard	Solution	Standard	Reading	Difference	Standard	Solution	Standard	Reading	Difference	Standard	Solution	Standard	Reading
DO	%sat	100			94.2	95.6	0.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
pH	S.U.	7.00			7.12	7.01	0.11	4.00	4.00	3.99	4.00	0.03	10.00	9.79	9.96	0.17	NA	NA	NA	NA	NA
Turbidity	NTU	0.0			1.8	0.0	1.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Conductivity	µs/cm	1409			1.375	1.41	0.035	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

END OF DAY CHECK REQUIREMENTS

Parameter	Units	Standard value @ 25°C	Solution/Air Temperature	Reading	Difference	Parameter	Units	Standard	Reqmnt.	Action	Parameter	Units	Standard	Reqmnt.
DO	%sat / mg/L	100	20.61	97.7%	mg/L	DO	mg/L	0.0	± 0.2	change DO membrane	DO	mg/L	100 % Saturation	± 5 mg/L
pH	S.U.	7.0	7.05	NA		DO	mg/L	0.0	≤ 0.50 but ≥ 0	change DO membrane	DO	mg/L	0.0	≤ 0.50 mg/L but ≥ 0
Conductivity	µs/cm	1409	22.38	1.404	NA	pH	S.U.	7.0 Temp. Adj.	± 0.05	recalibrate	pH	S.U.	7.0 Temp. Adj.	± 0.3
Turbidity	NTU	0.0	22.12	-0.7	NA	ORP	mV	Specified standard	± 10.0	calibrate*	ORP	mV	Specified standard	± 10.0
						sp. Cond.	us/cm	Specified standard	± 5%	Recalibrate	sp. Cond.	us/cm	Specified standard	± 5%

PH 4.0 81.94 4.00
10.0 21.70 9.95

* - ORP is checked ("RUN" mode) instead of calibrated. Only calibrated ("CALIBRATE" mode) when check fails criteria

Record information for one instrument per sheet
Pen only; line-out errors, initial and date

TEAM 3

Water Quality Calibration Log



James Pappalardo

Site Name / TO# / Job#

Field Activity

Air temperature:

Solution Temperature:

Inst. Barometric Press. ("HG):

Pressure Corrected / Source:

Las Vegas Wash
Discrete SW Sampling

Manufacture/Model: YSI 6920
 Serial Number: 66329
 CALIBRATION DATE: 2/8/17
 Calibration Initials: T.Y.
 Time: 0900
 Calibration Check Initials: T.Y.
 Time:

INSTRUMENT NUMBER

CALIBRATION INFORMATION (circle results outside of criteria)

Parameter	Units	STANDARD #1	STANDARD #2	STANDARD #3	CHECK																	
		Standard	Solution	Initial Reading	Calibrated	Difference	Standard	Solution	Standard	Reading	Difference	Standard	Solution	Standard	Reading	Difference	Standard	Solution	Standard	Reading	Difference	
DO	%sat	100	5.80	93.1			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
pH	S.U.	7.00	17.92	7.07	6.99		4.00	18.20	3.76	4.00		10.00	17.72	9.96	9.99		NA	NA	NA	NA	NA	NA
Turbidity	NTU	0.0	15.62	0.0			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Conductivity	µs/cm	1409	15.42	1308			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

END OF DAY CALIBRATION REQUIREMENTS		END OF DAY CHECK REQUIREMENTS															
Parameter	Units	Standard value @ 25°C	Solution/Air Temperature	Reading	Difference	Parameter	Units	Standard	Reqmnt.	Action	Parameter	Units	Standard	Reqmnt.			
DO	%sat / mg/L	100	99.5	22.12	%	mg/L	DO	mg/L	O ₂ Solubility	± 0.2	change DO membrane	DO	mg/L	100 % Saturation	± 5 mg/L		
pH	S.U.	7.0	7.06	20.26		NA	DO	mg/L	0.0	≤ 0.50 but ≥ 0	change DO membrane	DO	mg/L	0.0	≤ 0.50 mg/L but ≥ 0		
Conductivity	µs/cm	1409	1557	2030		NA	pH	S.U.	7.0/10 Temp. Adj.	± 0.05	recalibrate	pH	S.U.	7.0 Temp. Adj.	± 0.3		
Turbidity	NTU	0.0	0.9	23.30		NA	ORP	mV	Specified standard	± 10.0	calibrate*	ORP	mV	Specified standard	± 10.0		
							sp. Cond.	µs/cm	Specified standard	± 5%	Recalibrate	sp. Cond.	µs/cm	Specified standard	± 5%		

* - ORP is checked ("RUN" mode) instead of calibrated. Only calibrated ("CALIBRATE" mode) when check fails criteria

Record information for one instrument per sheet
 Pen only; line-out errors, initial and date

TEAM 4

Connor & Ryan Water Quality Calibration Log

AECOM

Site Name / TO# / Job#

Las Vegas Wash

Field Activity

Grab Sampling

Manufacture/Model:

YST 650 MDS

Air temperature:

AM 0855 / 60°F PM

Serial Number:

V04204X

Solution Temperature:

AM See below PM

CALIBRATION DATE:

2/8/17

Inst. Barometric Press. ("HG):

AM 0900 / 724.0 PM

Calibration

Initials: CME

Pressure Corrected / Source:

AM PM 1

Calibration Check

Time: 0900

Initials: CMG

Time: 1621

INSTRUMENT NUMBER

CALIBRATION INFORMATION (circle results outside of criteria)

Parameter	Units	STANDA RD #1	STANDA RD #2	STANDA RD #3	CHECK																
					Initial Reading	Calibrated	Difference	Standard	Solution	Standard	Reading	Difference	Standard	Solution	Standard	Reading	Difference	Standard	Solution		
DO	%sat	100	16.06	95.8	99.7	3.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
pH	S.U.	7.00	14.93	7.17	7	0.17	4.00	15.32	4.0	4.0	0	10.00	14.26	9.86	10.00	.14	NA	NA	NA	NA	NA
Turbidity	NTU	0.0	16.23	1	1	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Conductivity	µs/cm	1409	15.18	1398	1409	.011	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

END OF DAY CHECK REQUIREMENTS

Parameter	Units	Standard value @ 25°C	Solution/Air Temperature	Reading	Difference	Reqmnt.	Action	Parameter	Units	Standard	Reqmnt.
DO	%sat / mg/L	100	13.46	0.0		%	mg/L	DO	mg/L	100	100 % Saturation ± 5 mg/L
pH	S.U.	7.0	15.87	7.01		NA		DO	mg/L	0.0	± 0.50 mg/L but ≥ 0
Conductivity	µs/cm	1409	18.95	1225		NA		pH	S.U.	7.0 Temp. Adj.	± 0.3
Turbidity	NTU	0.0	14.17	63.7		NA		ORP	mV	Specified standard	± 10.0
								sp. Cond.	µs/cm	Specified standard	± 5%

* - ORP is checked ("RUN" mode) instead of calibrated. Only calibrated ("CALIBRATE" mode) when check fails criteria

Record information for one instrument per sheet
Pen only; line-out errors, initial and date

Const. E231-17 8/24/17
 pH 4.0 P215-18 8/15/18
 pH 7.0 P202-03 1/20/18
 pH 10.0 P350-17 12/20/17

TEAM 5

Water Quality Calibration Log

AECOM

Site Name / TO# / Job#

NDEP

Field Activity

Surface Water Grab Sampling

Air temperature:

AM 16.78 PM 20.79

Solution Temperature:

AM PM

Inst. Barometric Press. ("HG):

AM 724.6 PM 721

Pressure Corrected / Source:

AM / PM /

Manufacture/Model:

YSI 6 Series WQA

Serial Number:

No S/N "OCEANS II"

CALIBRATION DATE:

2/8/17

Calibration

Initials: NP

Time: 08:10

Calibration Check

Initials: NP

Time: 16:25

INSTRUMENT NUMBER

No S/N
"OCEANS II"

CALIBRATION INFORMATION (circle results outside of criteria)

Parameter	Units	STANDARD #1	STANDARD #2	STANDARD #3	CHECK																	
					Initial Reading	Calibrated	Difference	Standard	Solution	Standard	Reading	Difference	Standard	Solution	Standard	Reading	Difference	Standard	Solution			
DO	%sat	100			95.3	95.4		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
pH	S.U.	7.00	F172-18 6/29/13		7.00	7.00		4.00	F172-20 6/27/14	4.00	4.06		10.00	F175-B 6/28/17	10.00	9.94		NA	NA	NA	NA	NA
Turbidity	NTU	0.0	F17-03 4/27/11		-1.3	0.0		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Conductivity	µs/cm	1409	F13-11 4/25/10		1406	1409		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

END OF DAY CHECK REQUIREMENTS

Parameter	Units	Standard value @ 25°C	Solution/Air Temperature	Reading	Difference	Parameter	Units	Standard	Reqmnt.	Action	Parameter	Units	Standard	Reqmnt.
DO	%sat / mg/L	100		97.7	mg/L	DO	mg/L	O ₂ Solubility	± 0.2	change DO membrane	DO	mg/L	100 % Saturation	± 5 mg/L
pH	S.U.	7.0	21.32	7.14	NA	DO	mg/L	0.0	≤ 0.50 but ≥ 0	change DO membrane	DO	mg/L	0.0	≤ 0.50 mg/L but ≥ 0
Conductivity	µs/cm	1409	21.71	1419	NA	pH	S.U.	7.0 Temp. Adj.	± 0.05	recalibrate	pH	S.U.	7.0 Temp. Adj.	± 0.3
Turbidity	NTU	0.0	22.19	-0.3	NA	ORP	mV	Specified standard	± 10.0	calibrate*	ORP	mV	Specified standard	± 10.0
						sp. Cond.	µs/cm	Specified standard	± 5%	Recalibrate	sp. Cond.	µs/cm	Specified standard	± 5%

pH 4.0 21.78 4.3
10.0 21.42 9.81

* - ORP is checked ("RUN" mode) instead of calibrated. Only calibrated ("CALIBRATE" mode) when check fails criteria

Record information for one instrument per sheet
Pen only; line-out errors, initial and date

TEAM 1

Water Quality Calibration Log



Site Name / TO# / Job#

LU Wash

Field Activity

Grab Sample

Air temperature:

AM PM 20.75

Solution Temperature:

AM PM 4.22

Inst. Barometric Press. ("HG):

AM 727.8 PM 714.7

Pressure Corrected / Source:

AM PM

Manufacture/Model:

VSI 6920

Serial Number:

U73408X

CALIBRATION DATE:

2-9-17

Calibration

Initials: PP

Calibration Check

Time: 9:35

Initials: PP

Time: 11:47

INSTRUMENT NUMBER

Petros Prod
&
Rachel

CALIBRATION INFORMATION (circle results outside of criteria)

Parameter	Units	STANDARD #1	STANDARD #2	STANDARD #3	CHECK																	
					Initial Reading	Calibrated	Difference	Standard	Solution	Standard	Reading	Difference	Standard	Solution	Standard	Reading	Difference	Standard	Solution	Standard	Reading	Difference
DO	%sat				96.1	96.1	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
pH	S.U.	7.00	F0340 2/18/18		7.50	6.99	0.51	4.00	5.97	4.00	F06920 3/14/18	0.03	10.00	F29196 10/17/17	9.96	10.00	0.04	NA	NA	NA	NA	NA
Turbidity	NTU	0.0	F0519 2/18/18		0.3	0.1	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Conductivity	µs/cm	1409	F3350 12/4/17		1.389	1.411	0.022	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

END OF DAY CHECK REQUIREMENTS

Parameter	Units	Standard value @ 76°	Solution / Air Temperature	Reading	Difference	Parameter	Units	Standard	Reqmnt.	Action	Parameter	Units	Standard	Reqmnt.
DO	%sat / mg/L	100	20.75	89.7%	mg/L	DO	mg/L	0.0	± 0.2	change DO membrane	DO	mg/L	100% Saturation	± 5 mg/L
pH	S.U.	7.0	24.19	7.03	NA	DO	mg/L	0.0	≤ 0.50 but ≥ 0	change DO membrane	DO	mg/L	0.0	≤ 0.50 mg/L but ≥ 0
Conductivity	µs/cm	1409	24.22	1.391	NA	pH	S.U.	7.0 Temp. Adj.	± 0.05	recalibrate	pH	S.U.	7.0 Temp. Adj.	± 0.3
Turbidity	NTU	0.0	23.92	2.9	NA	ORP	mV	Specified standard	± 10.0	calibrate*	ORP	mV	Specified standard	± 10.0
						sp. Cond.	us/cm	Specified standard	± 5%	Recalibrate	sp. Cond.	us/cm	Specified standard	± 5%

PP changed date
 pH 4.0 23.73 2.4
 10.0 23.41 10.02

* - ORP is checked ("RUN" mode) instead of calibrated. Only calibrated ("CALIBRATE" mode) when check fails criteria

Record information for one instrument per sheet
 Pen only; line-out errors, initial and date

TEAM 2

Water Quality Calibration Log

AECOM

Site Name / TO# / Job#

Las Vegas Wash

Field Activity

Grab Sampling - SW

Air temperature:

AM PM

Solution Temperature:

AM PM

Inst. Barometric Press. ("HG):

AM 723.9 PM

Pressure Corrected / Source:

AM / PM /

Manufacture/Model:

YSI 6920

Serial Number:

07H 102047

CALIBRATION DATE:

2/9/17

Calibration

Initials: AC/CSH

Time:

Calibration Check

Initials:

Time:

INSTRUMENT NUMBER

CALIBRATION INFORMATION (circle results outside of criteria)

Parameter	Units	STANDARD #1	STANDARD #2	STANDARD #3	CHECK																	
					Initial Reading	Calibrated	Difference	Standard	Solution	Standard	Reading	Difference	Standard	Solution	Standard	Reading	Difference	Standard	Solution	Standard	Reading	Difference
DO	%sat	100			95.0	95.4		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
pH	S.U.	7.00	7.00		7.09	7.00		4.00	4.00	3.91	4.00		10.00	10.00	9.84	9.97		NA	NA	NA	NA	NA
Turbidity	NTU	0.0	0.0		-2.0	0.0		NA	NA	NA	NA		NA	NA	NA	NA		NA	NA	NA	NA	NA
Conductivity	µs/cm	1409	1409		1404	1410		NA	NA	NA	NA		NA	NA	NA	NA		NA	NA	NA	NA	NA

END OF DAY CHECK REQUIREMENTS

Parameter	Units	Standard value @ 25°C	Solution/Air Temperature	Reading	Difference	Parameter	Units	Standard	Reqmnt.	Action	Parameter	Units	Standard	Reqmnt.
DO	%sat / mg/L	100	20.6	94%	8.5 (mg/L)	DO	mg/L	0.0	≤ 0.50 but ≥ 0	change DO membrane	DO	mg/L	0.0	100% Saturation ± 5 mg/L
pH	S.U.	7.0	7.09	7.10	NA	DO	mg/L	0.0	≤ 0.50 but ≥ 0	change DO membrane	DO	mg/L	0.0	± 0.50 mg/L but ≥ 0
Conductivity	µs/cm	1409	21.83	1475	NA	pH	S.U.	7.0	± 0.05	recalibrate	pH	S.U.	7.0 Temp. Adj.	± 0.3
Turbidity	NTU	0.0	21.91	2.2	NA	ORP	mV	Specified standard	± 10.0	calibrate*	ORP	mV	Specified standard	± 10.0
						sp. Cond.	µs/cm	Specified standard	± 5%	Recalibrate	sp. Cond.	µs/cm	Specified standard	± 5%

* - ORP is checked ("RUN" mode) instead of calibrated. Only calibrated ("CALIBRATE" mode) when check fails criteria

Record information for one instrument per sheet
Pen only; line-out errors, initial and date

TEAM 3

Water Quality Calibration Log

AECOM

Team: Lewis & Clarke

INSTRUMENT NUMBER

Site Name / TO# / Job#

Las Vegas Wash

Field Activity

Discrete SW Sampling

Manufacture/Model:

YSI / 6920 V2

Air temperature:

AM ~~15.30~~ PM 20.19

Serial Number:

66329

Solution Temperature:

AM PM

CALIBRATION DATE:

2/9/2017

Inst. Barometric Press. ("HG):

AM 725.5 mmHg PM 719.9 mmHg

Calibration

Initials: CMH

Pressure Corrected / Source:

AM PM

Calibration Check

Time: 0830

Initials: CMH

Time:

CALIBRATION INFORMATION (circle results outside of criteria)

Parameter	Units	STANDARD #1	STANDARD #2	STANDARD #3	CHECK																		
					Initial Reading	Calibrated	Difference	Standard	Solution	Standard	Reading	Difference	Standard	Solution	Standard	Reading	Difference	Standard	Solution	Standard	Reading	Difference	
DO	%sat	100			17.38	97.0	95.7	1.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
					9.31	9.13	0.18																
pH	S U	7.00			7.00	7.05	7.00	0.05	4.00	17.36	3.98	4.00	0.02	10.00	17.55	9.91	9.99	0.08	NA	NA	NA	NA	NA
Turbidity	NTU	0.0			14.79	0.2	0.0	0.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Conductivity	µs/cm	1409			17.07	1525	1409	116	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
END OF DAY CALIBRATION REQUIREMENTS					* Check 7.00 after cal and reading 7.01 @ 17.05% OF DAY CHECK REQUIREMENTS																		
Parameter	Units	Standard value @ 25°C	Solution/Air Temperature	Reading	Difference	Parameter	Units	Standard	Reqmnt.	Action	Parameter	Units	Standard	Reqmnt.									
DO	%sat / mg/L	100	20.50	95.86	95.5 %	mg/L	DO	mg/L	O ₂ Solubility	± 0.2	change DO membrane	DO	mg/L	100 % Saturation	± 5 mg/L								
pH	S U	7.0	20.98		7.03	NA	DO	mg/L	≤ 0.50 but ≥ 0	change DO membrane	DO	mg/L	0.0	≤ 0.50 mg/L but ≥ 0									
Conductivity	µs/cm	1409	21.05		1408	NA	pH	S U	7/4/10 Temp Adj	± 0.05	recalibrate	pH	S U	7.0 Temp Adj	± 0.3								
Turbidity	NTU	0.0	24.24		0.6	NA	ORP	mV	Specified standard	± 10.0	calibrate	ORP	mV	Specified standard	± 10.0								
							sp Cond	us/cm	Specified standard	± 5%	Recalibrate	sp Cond	us/cm	Specified standard	± 5%								

* - ORP is checked ("RUN" mode) instead of calibrated. Only calibrated ("CALIBRATE" mode) when check fails criteria

Record information for one instrument per sheet
Pen only: line-out errors, initial and date

TEAM 4

Water Quality Calibration Log

AECOM

Site Name / TO# / Job#

Las Vegas

Field Activity

Surface Water Sampling

Air temperature:

AM 52°F PM

Solution Temperature:

AM See below PM

Inst. Barometric Press. ("HG):

AM 723.6 PM 718.7

Pressure Corrected / Source:

AM 1 PM 1

Manufacture/Model:

YSI 650 MDS

Serial Number:

12C101281

CALIBRATION DATE:

2-9-11

Calibration

Initials: JM

Calibration Check

Time: 0845

Initials: JM

Time: 1623

INSTRUMENT NUMBER

CALIBRATION INFORMATION (circle results outside of criteria)

Parameter	Units	STANDARD #1	STANDARD #2	STANDARD #3	CHECK																	
					Initial Reading	Calibrated	Difference	Standard	Solution	Standard	Reading	Difference	Standard	Solution	Standard	Reading	Difference	Standard	Solution	Standard	Reading	Difference
DO	%sat	100	52°F	0.0	0.0	0.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
pH	S.U.	7.00	15.51	7.02	7.00	0.02	4.00	15.53	4.09	4.00		10.00	14.78	9.04	10.0		NA	NA	NA	NA	NA	NA
Turbidity	NTU	0.0	Err				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Conductivity	µs/cm	1409	15.78	1245	1409	164	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

END OF DAY CHECK REQUIREMENTS

Parameter	Units	Standard value @ 25°C	Solution/Air Temperature	Reading	Difference	Parameter	Units	Standard	Reqmnt.	Action	Parameter	Units	Standard	Reqmnt.
DO	%sat / mg/L	100	17.36	0.0	0.0 mg/L	DO	mg/L	0.0	± 0.2	change DO membrane	DO	mg/L	100 % Saturation	± 5 mg/L
pH	S.U.	7.0	19.12	7.17	NA	DO	mg/L	0.0	≤ 0.50 but ≥ 0	change DO membrane	DO	mg/L	0.0	≤ 0.50 mg/L but ≥ 0
Conductivity	µs/cm	1409	18.94	1.395	NA	pH	S.U.	7.0/10 Temp. Adj.	± 0.05	recalibrate	pH	S.U.	7.0 Temp. Adj.	± 0.3
Turbidity	NTU	0.0	Err		NA	ORP	mV	Specified standard	± 10.0	calibrate*	ORP	mV	Specified standard	± 10.0
						sp. Cond.	µs/cm	Specified standard	± 5%	Recalibrate	sp. Cond.	µs/cm	Specified standard	± 5%

* - ORP is checked ("RUN" mode) instead of calibrated. Only calibrated ("CALIBRATE" mode) when check fails criteria

Record information for one instrument per sheet
Pen only; line-out errors, initial and date

TEAM 5

Water Quality Calibration Log

AECOM

Site Name / TO# / Job#

Field Activity

Air temperature:

Solution Temperature:

Inst. Barometric Press. ("HG):

Pressure Corrected / Source:

ADP
Surface Water Sampling
 AM 16.74 PM 16.55
 AM 724.2 PM 718.7
 AM / PM /
 Manufacture/Model: **YSI 6000 WRM**
 Serial Number: **NO S/N "OCEANUS II"**
 CALIBRATION DATE: **2/9/17**
 Initials: **NP**
 Time: **08:18**
 Initials: **NP**
 Time: **15:36**

INSTRUMENT NUMBER

CALIBRATION INFORMATION (circle results outside of criteria)

Parameter	Units	STANDARD #1	STANDARD #2	STANDARD #3	CHECK																	
		Standard	Solution	Initial Reading	Calibrated	Difference	Standard	Solution	Standard	Reading	Difference	Standard	Solution	Standard	Reading	Difference	Standard	Solution	Standard	Reading	Difference	
DO	% sat	100	/	93.6	95.4	/	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
pH	S U	7.00	F172-18 6/29/18	7.12	7.00	/	4.00	F172-20 6/27/18	4.00	4.02	/	10.00	F175-13 6/28/17	10.00	9.94	/	NA	NA	NA	NA	NA	NA
Turbidity	NTU	0.0	F117-03 4/27/21	-0.9	0.0	/	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Conductivity	us/cm	1409	F113-11 4/25/18	1460	1409	/	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

END OF DAY CHECK REQUIREMENTS

Parameter	Units	Standard value @ 25°C	Solution/Air Temperature	Reading	Difference	Parameter	Units	Standard	Reqmnt.	Action	Parameter	Units	Standard	Reqmnt.
DO	% sat / mg/L	100	/	98.3	mg/L	DO	mg/L	0.0	± 0.2	change DO membrane	DO	mg/L	100% Saturation	± 5 mg/L
pH	S U	7.0	F172-18 6/29/18	7.07	NA	DO	mg/L	0.0	≤ 0.50 but ≥ 0	change DO membrane	DO	mg/L	0.0	≤ 0.50 mg/L but ≥ 0
Conductivity	us/cm	1409	F113-11 4/24/18	1381	NA	pH	S U	7.0 Temp. Adj.	± 0.05	recalibrate	pH	S U	7.0 Temp. Adj.	± 0.3
Turbidity	NTU	0.0	F117-03 4/27/21	-0.6	NA	ORP	mV	Specified standard	± 10.0	calibrate*	ORP	mV	Specified standard	± 10.0
						sp. Cond.	us/cm	Specified standard	± 5%	Recalibrate	sp. Cond.	us/cm	Specified standard	± 5%

pH 4.0 F172-20 4.09
 6/27/18
 pH 10.0 F175-13 9.95
 6/28/17

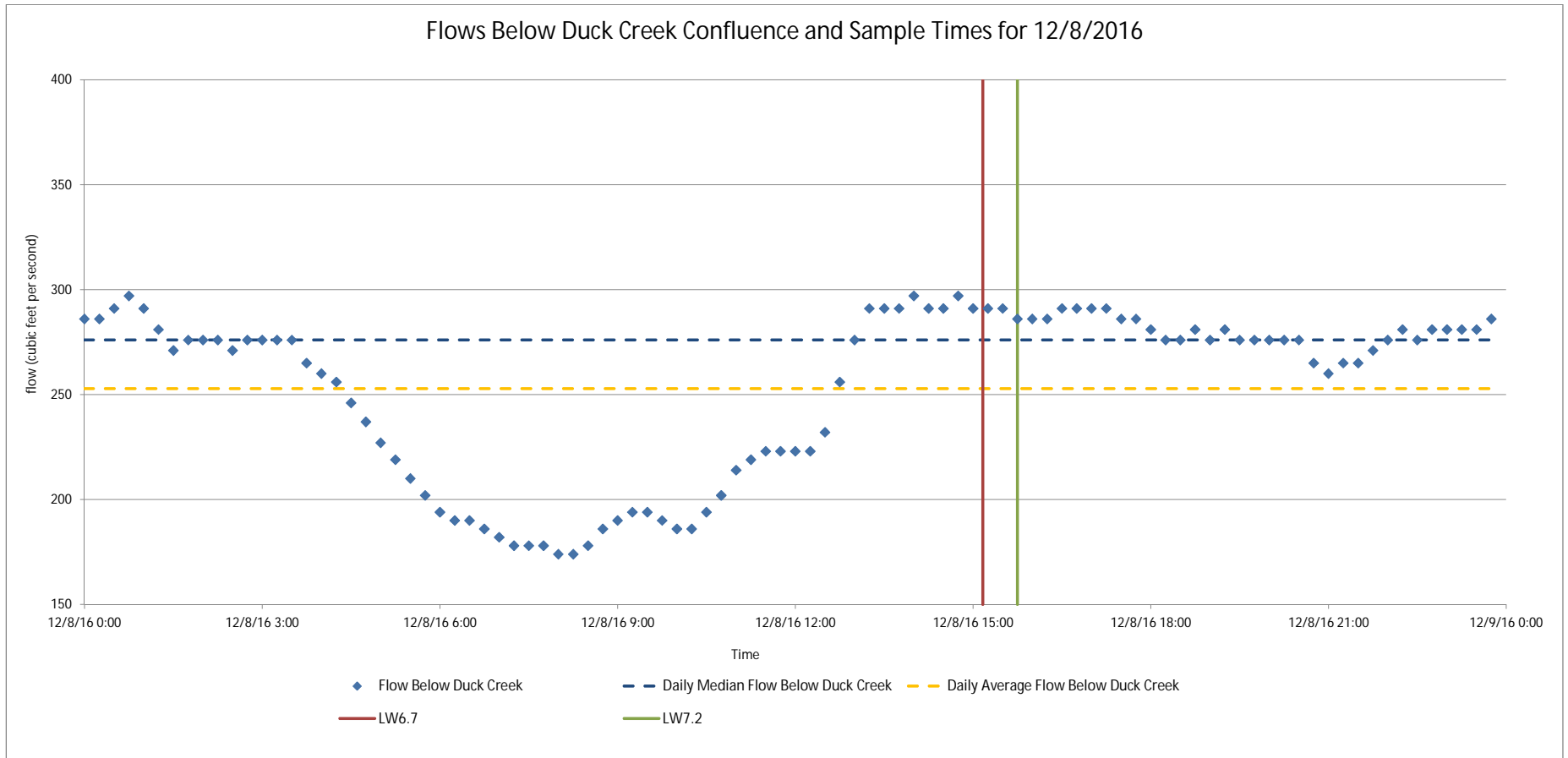
* - ORP is checked ("RUN" mode) instead of calibrated. Only calibrated ("CALIBRATE" mode) when check fails criteria

Record information for one instrument per sheet
Pen only; line-out errors, initial and date

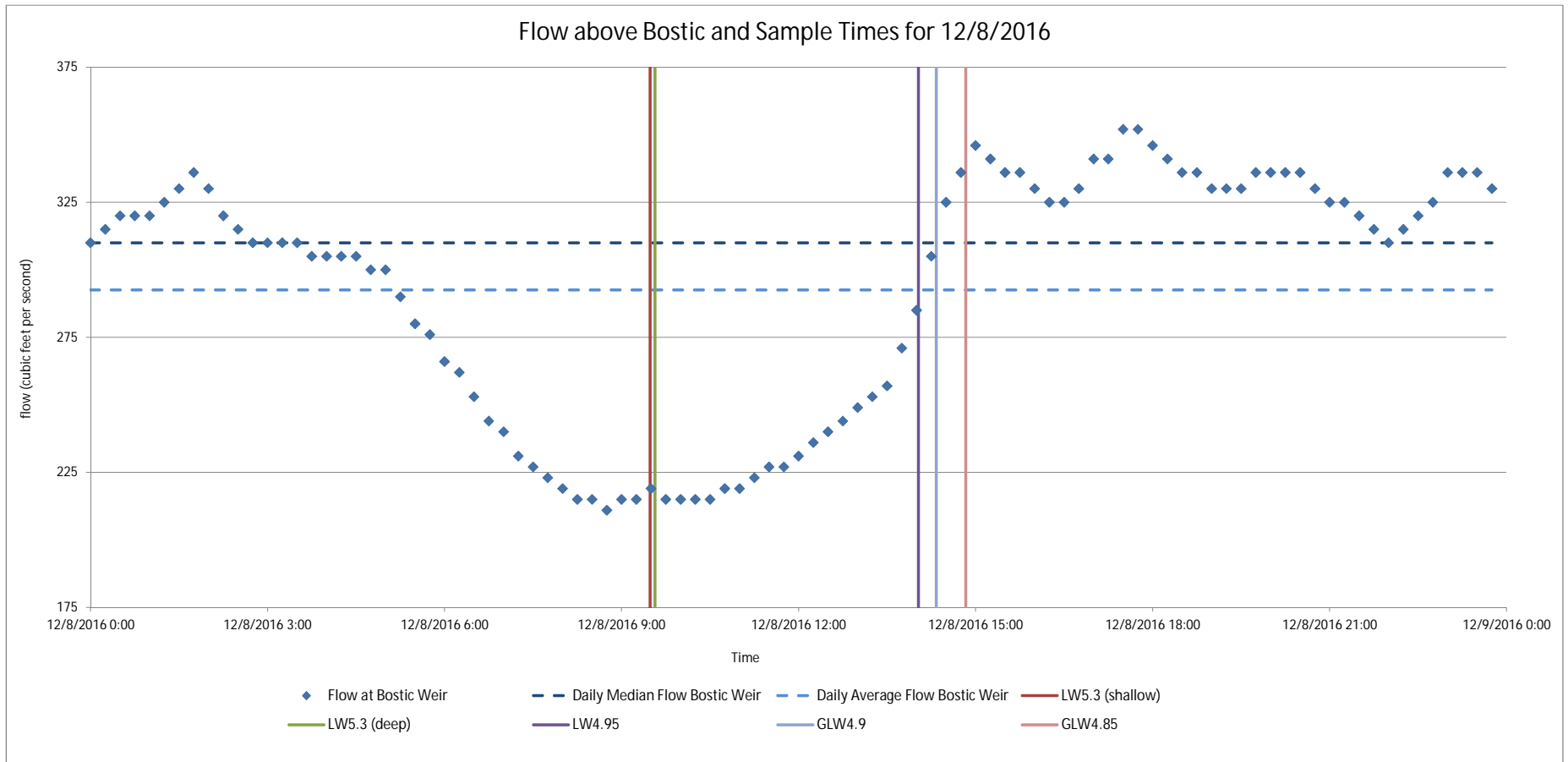
Appendix D

Sample Times and Flows

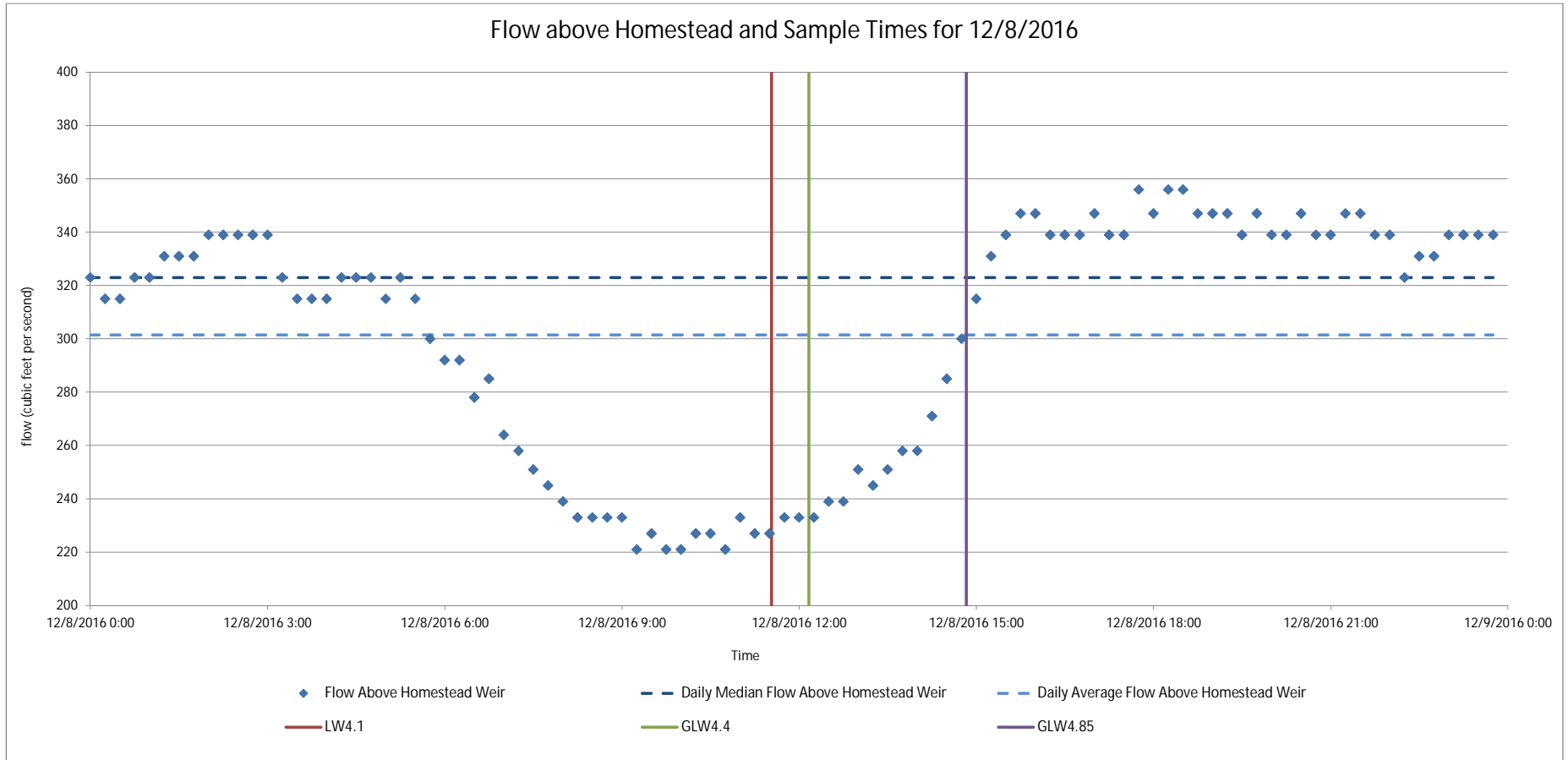
Appendix D-1
USGS Coordination Sampling
December 8, 2016
NERT Remedial Investigation - Downgradient Study Area
Henderson, Nevada



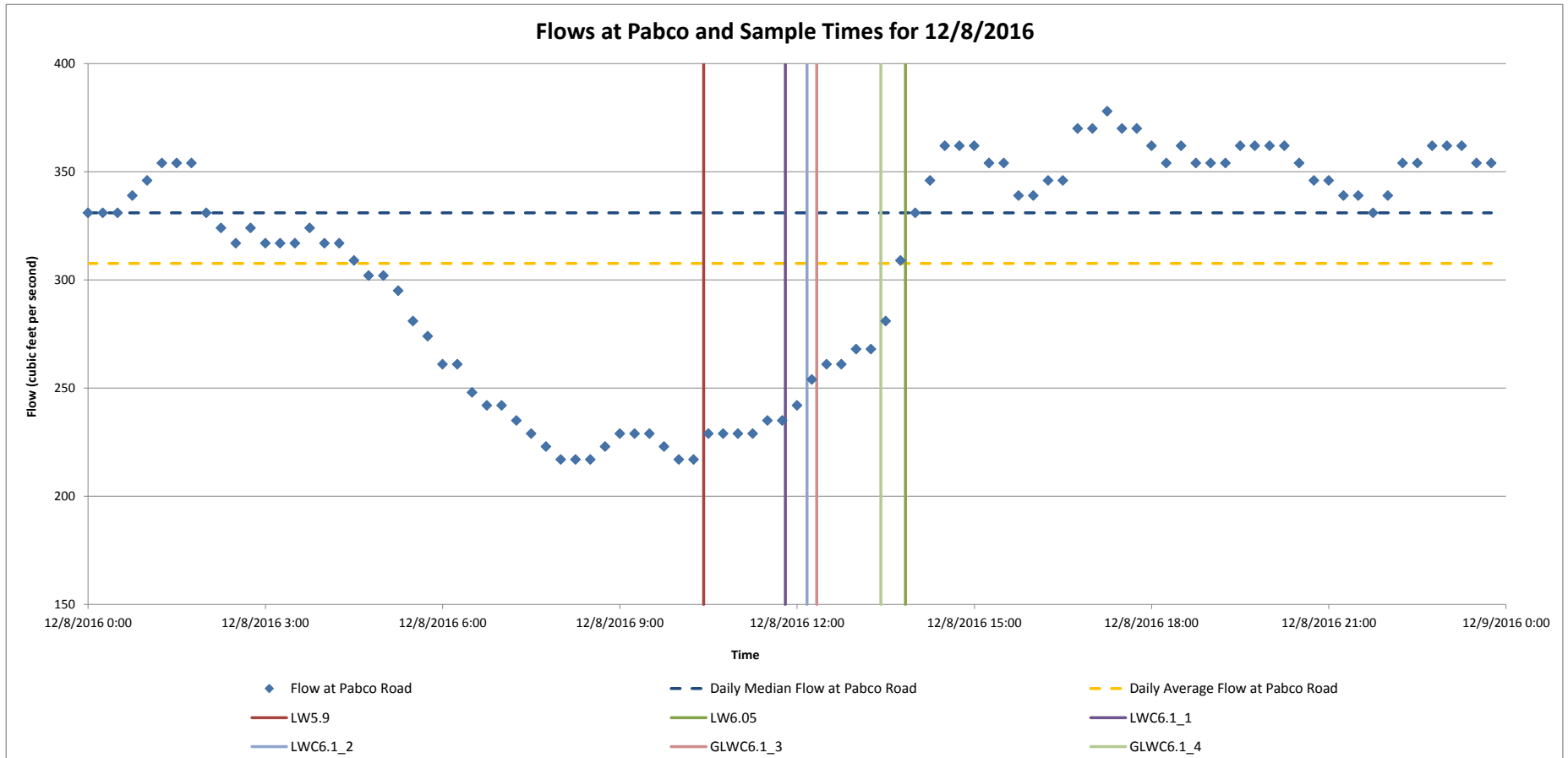
Appendix D-1
 USGS Coordination Sampling
 December 8, 2016
 NERT Remedial Investigation - Downgradient Study Area
 Henderson, Nevada



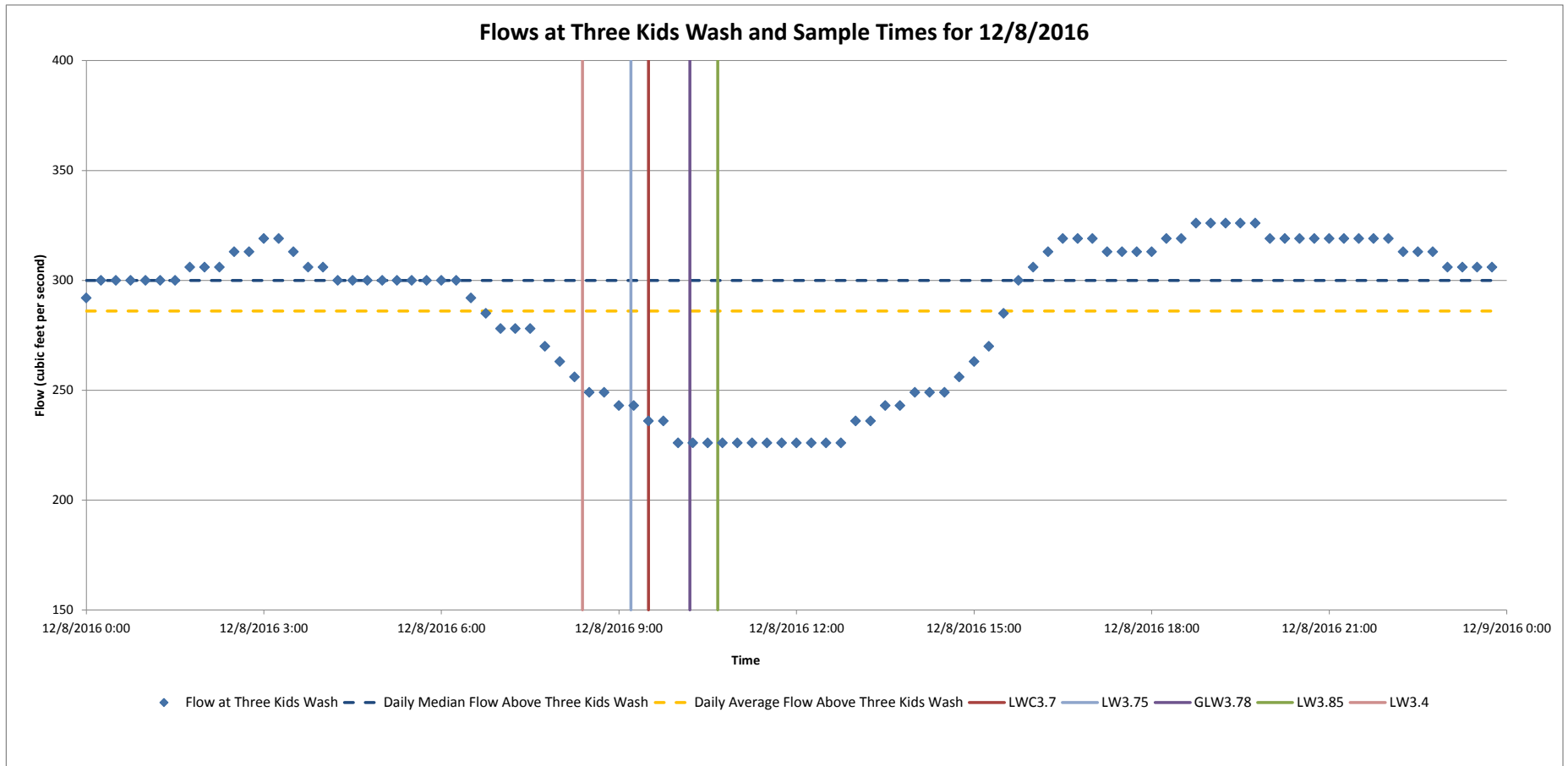
Appendix D-1
USGS Coordination Sampling
December 8, 2016
NERT Remedial Investigation - Downgradient Study Area
Henderson, Nevada



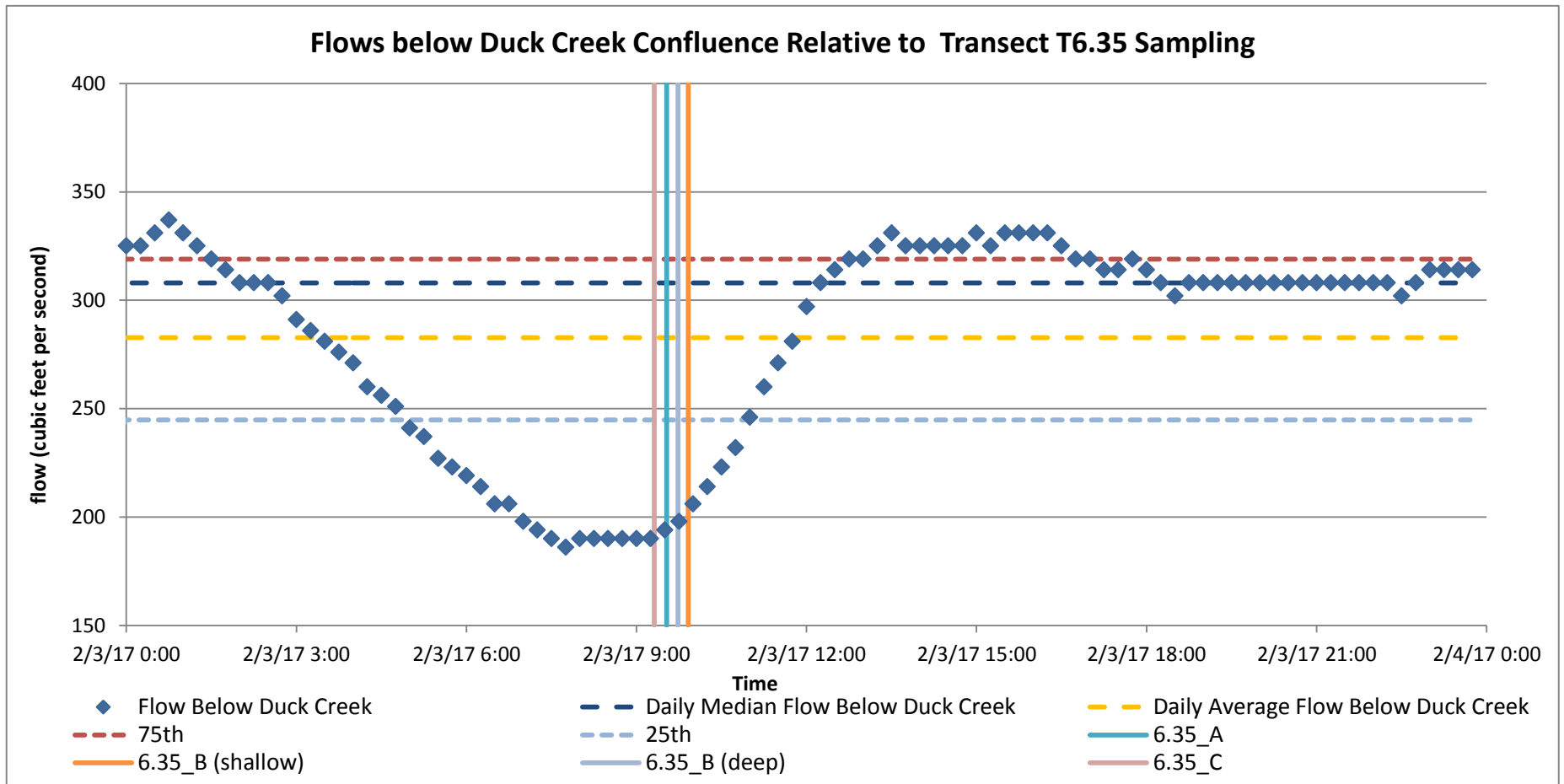
Appendix D-1
USGS Coordination Sampling
December 8, 2016
 NERT Remedial Investigation - Downgradient Study Area
 Henderson, Nevada



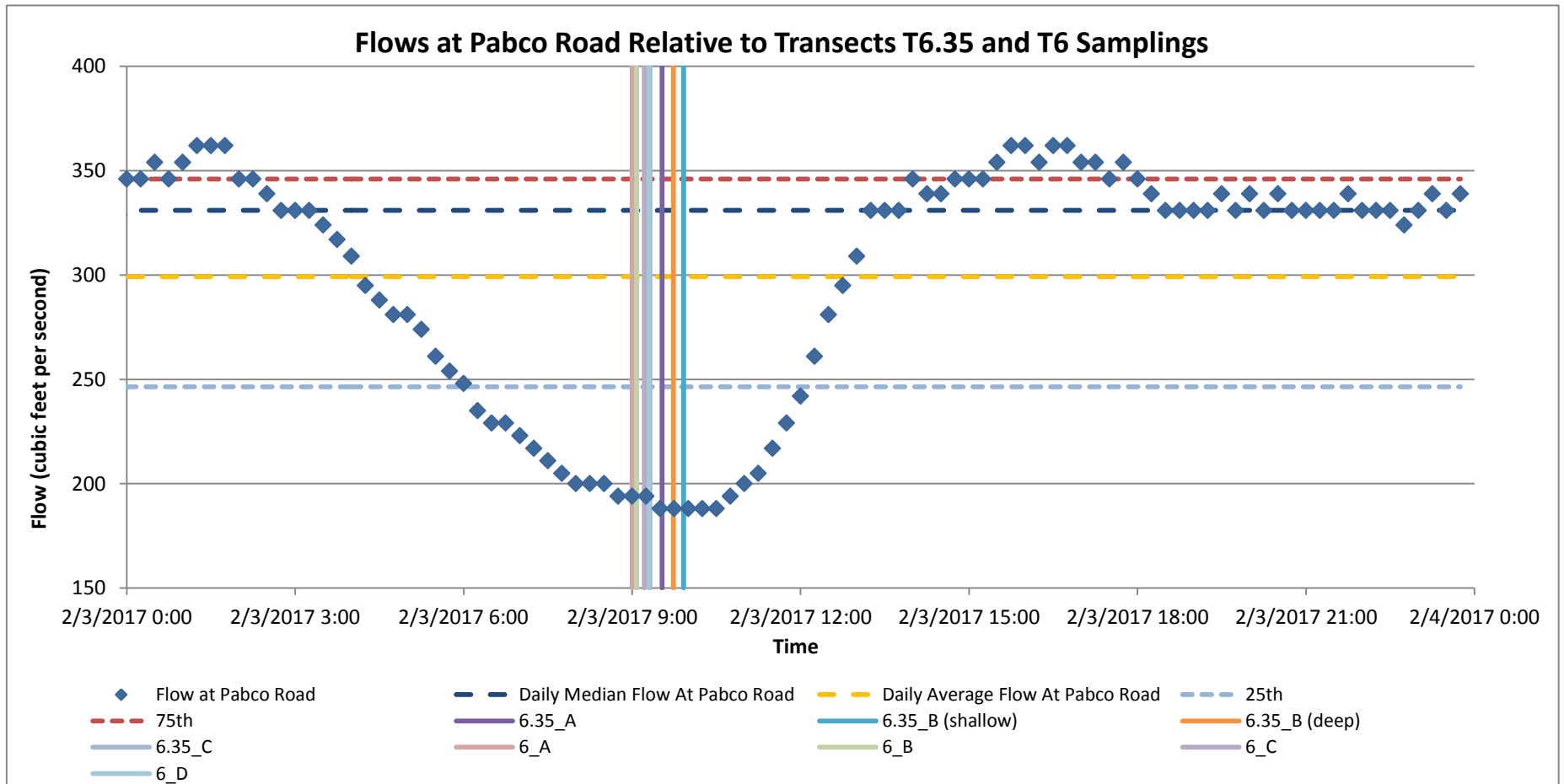
Appendix D-1
USGS Coordination Sampling
December 8, 2016
NERT Remedial Investigation - Downgradient Study Area
Henderson, Nevada



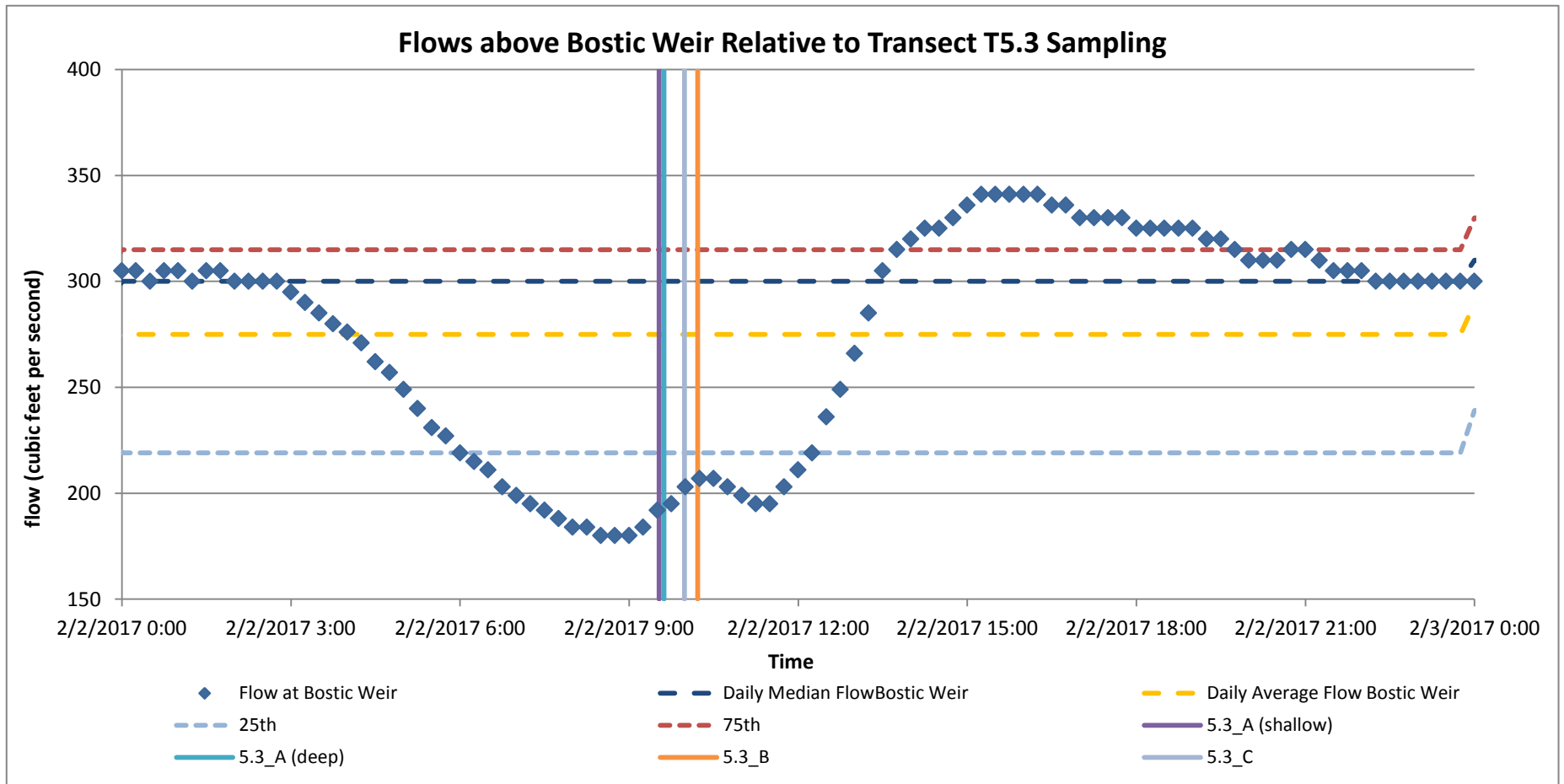
Appendix D-2
 Transect Sampling
 January 30 - February 3, 2017
 NERT Remedial Investigation - Downgradient Study Area
 Henderson, Nevada



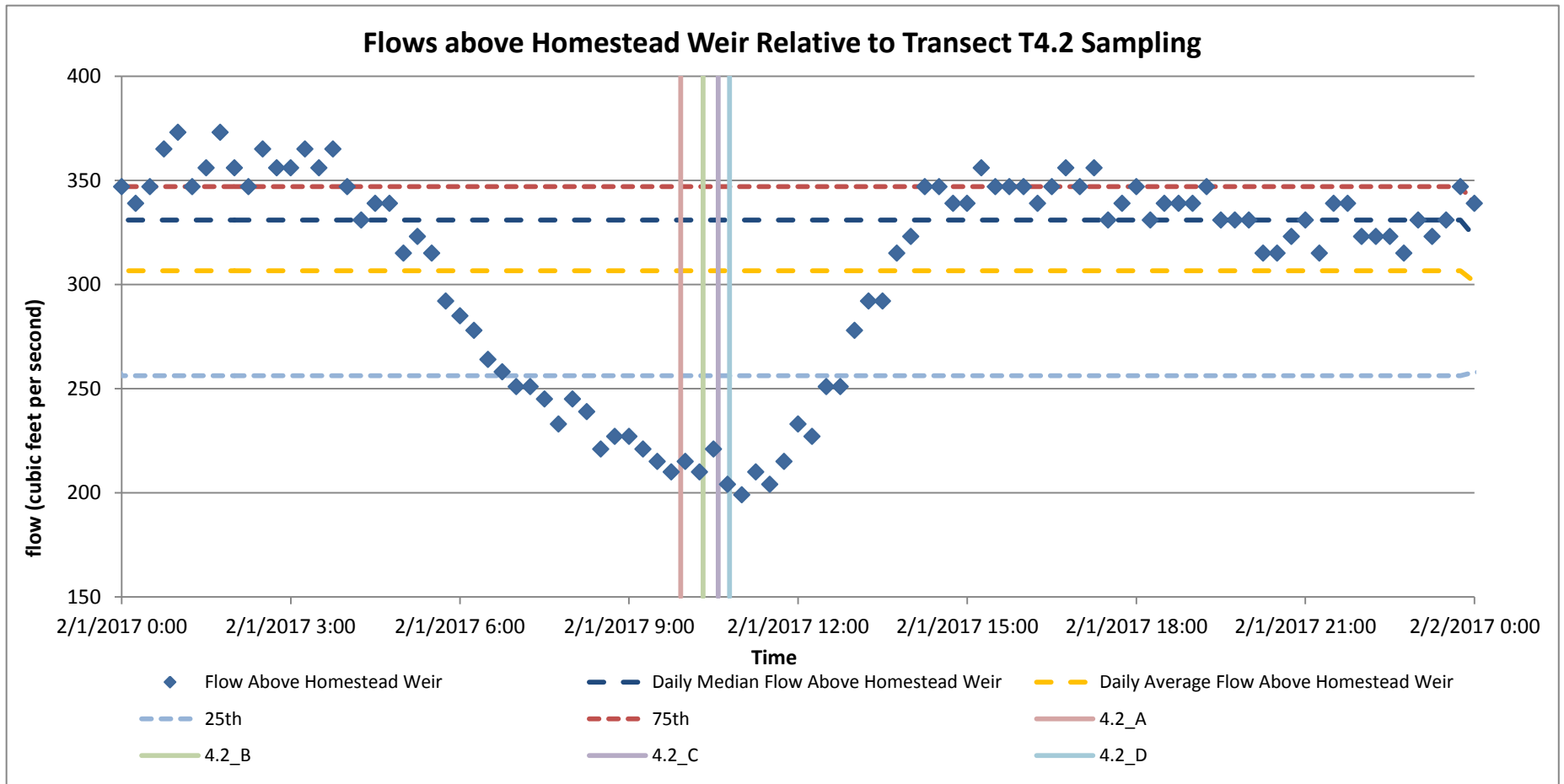
Appendix D-2
Transect Sampling
January 30 - February 3, 2017
 NERT Remedial Investigation - Downgradient Study Area
 Henderson, Nevada



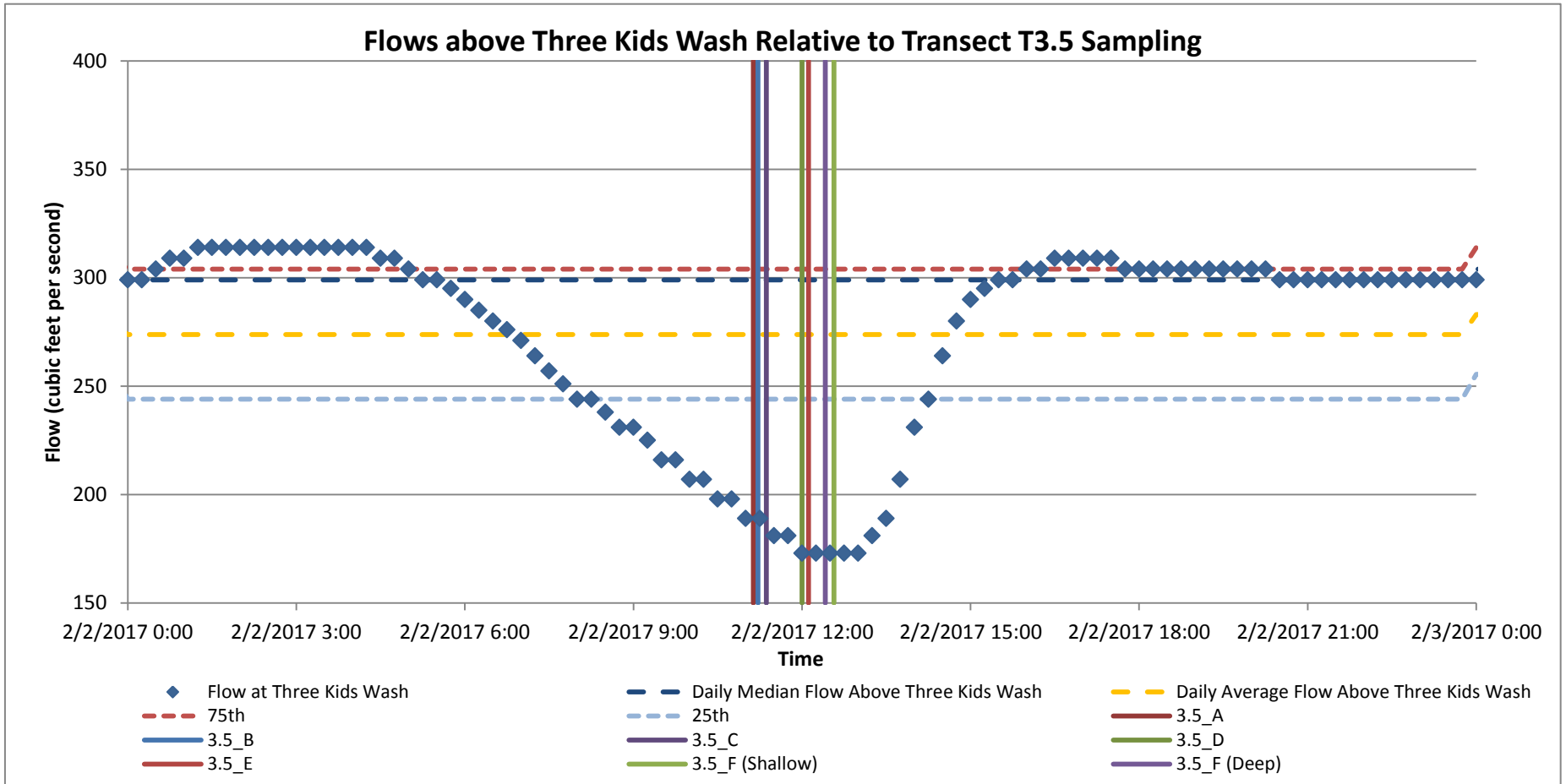
Appendix D-2
Transect Sampling
January 30 - February 3, 2017
 NERT Remedial Investigation - Downgradient Study Area
 Henderson, Nevada



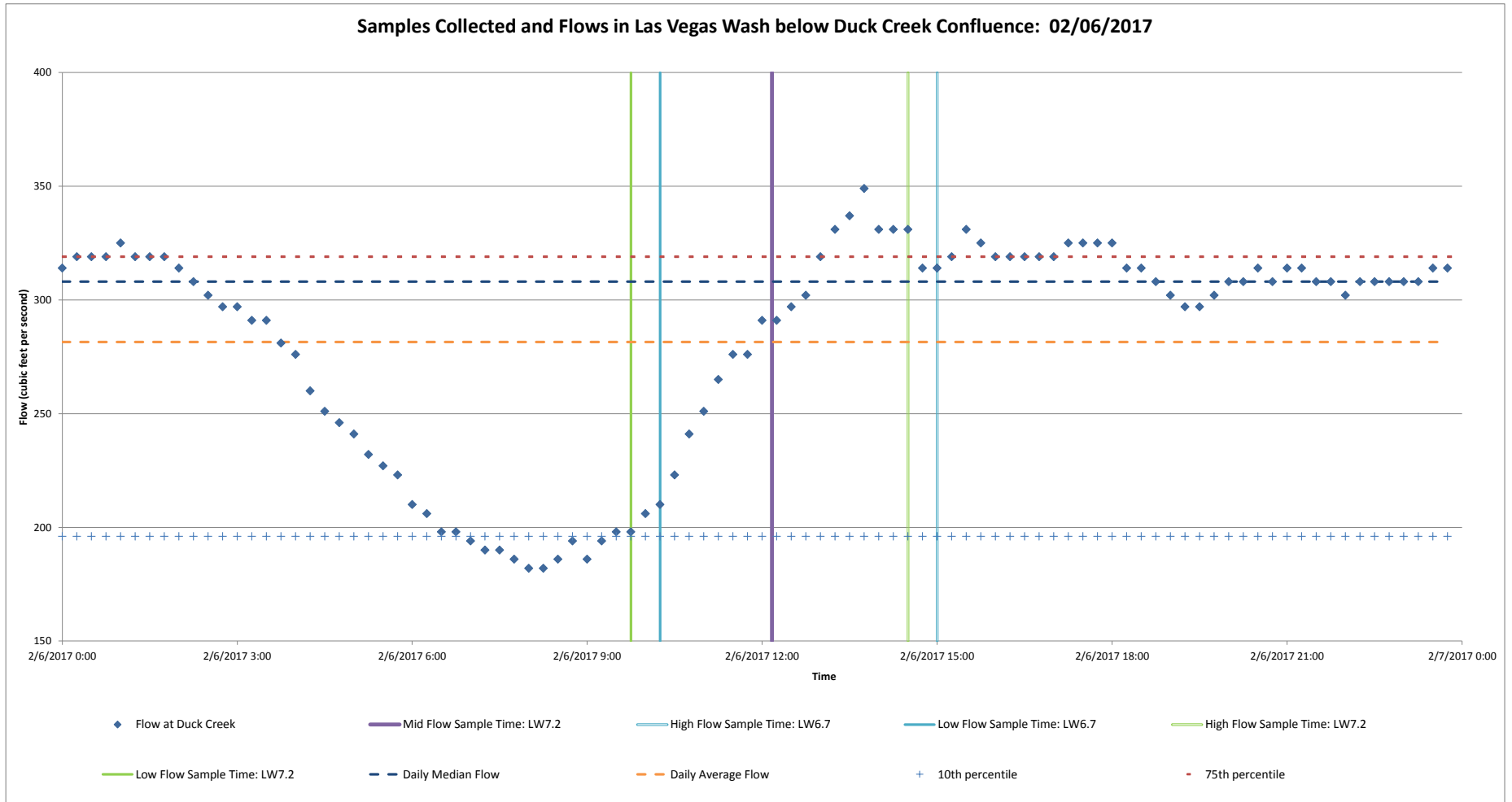
Appendix D-2
Transect Sampling
January 30 - February 3, 2017
 NERT Remedial Investigation - Downgradient Study Area
 Henderson, Nevada



Appendix D-2
Transect Sampling
January 30 - February 3, 2017
 NERT Remedial Investigation - Downgradient Study Area
 Henderson, Nevada

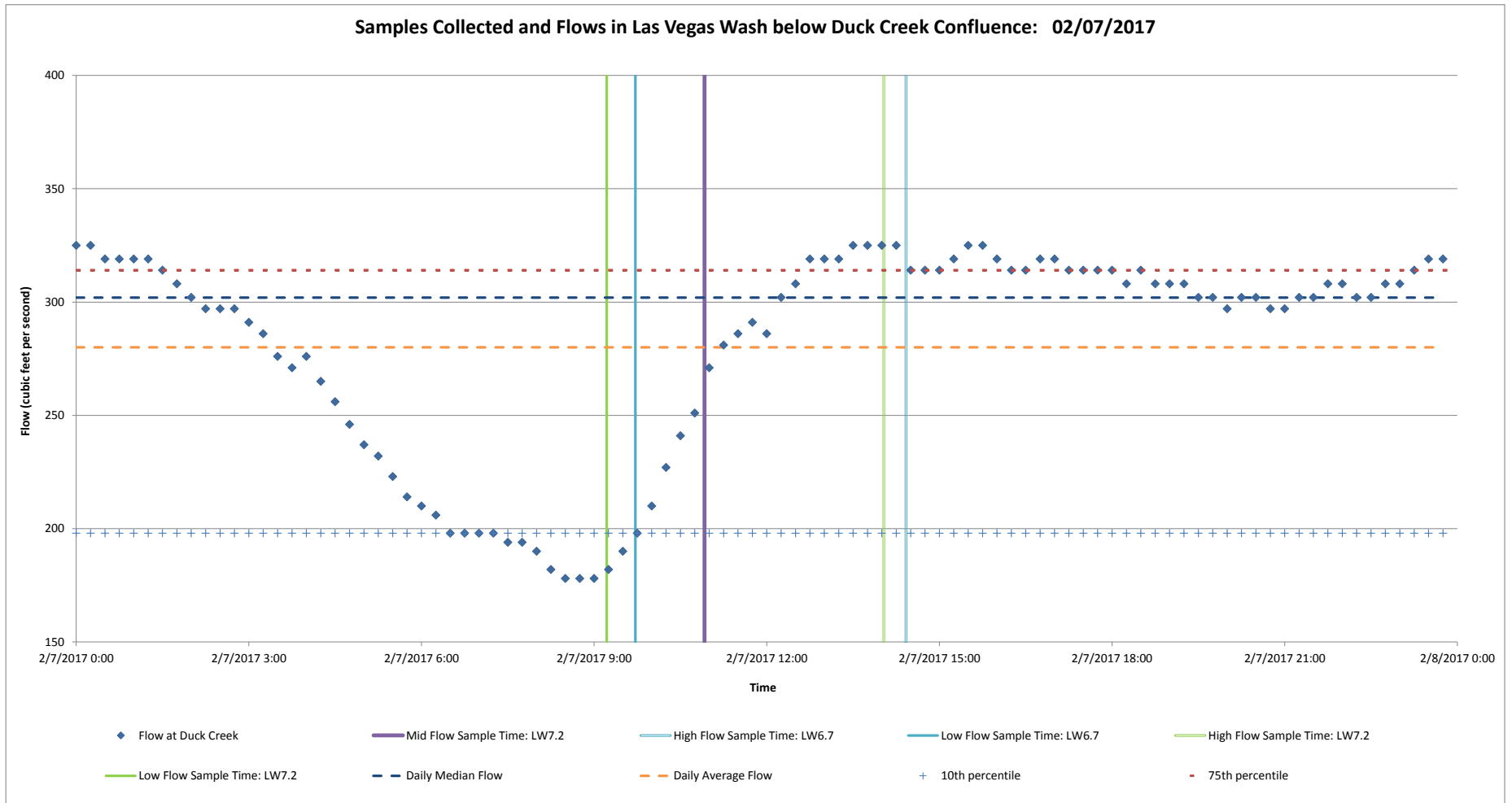


Appendix D-3
Discrete Sampling
February 6 - 9, 2017
 NERT Remedial Investigation - Downgradient Study Area
 Henderson, Nevada

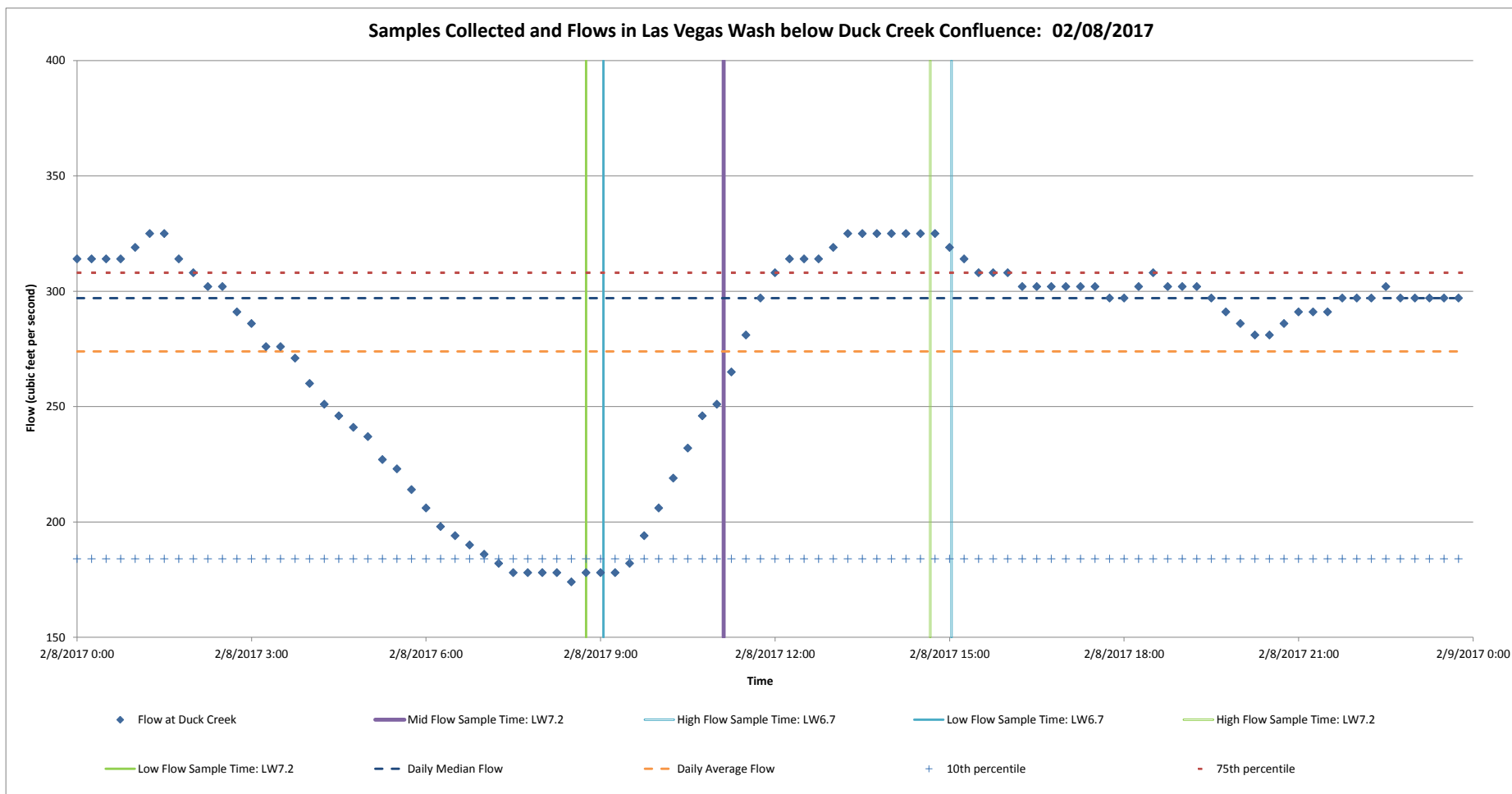


Appendix D-3
Discrete Sampling
February 6 - 9, 2017

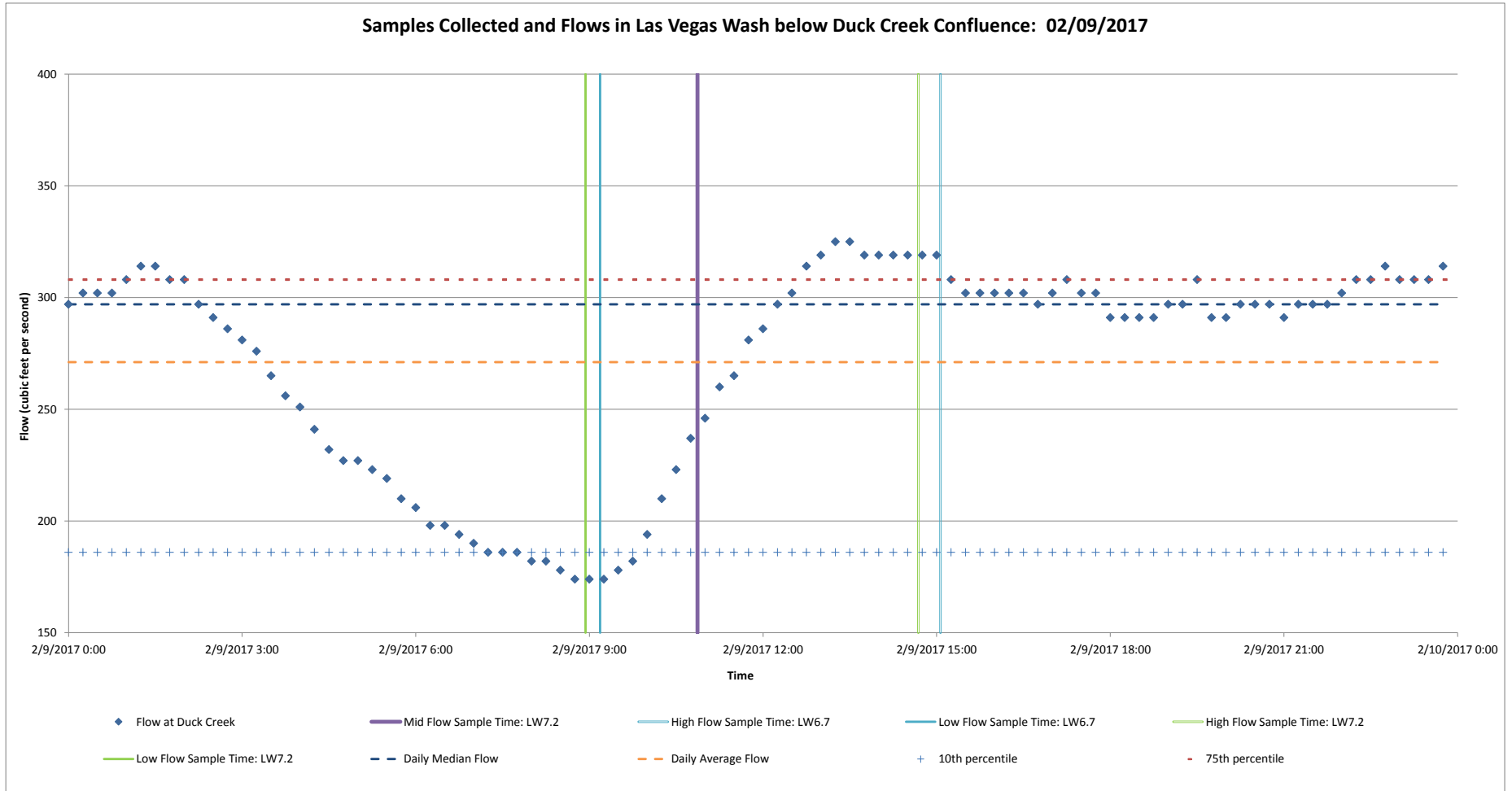
NERT Remedial Investigation - Downgradient Study Area
Henderson, Nevada



Appendix D-3
Discrete Sampling
February 6 - 9, 2017
 NERT Remedial Investigation - Downgradient Study Area
 Henderson, Nevada

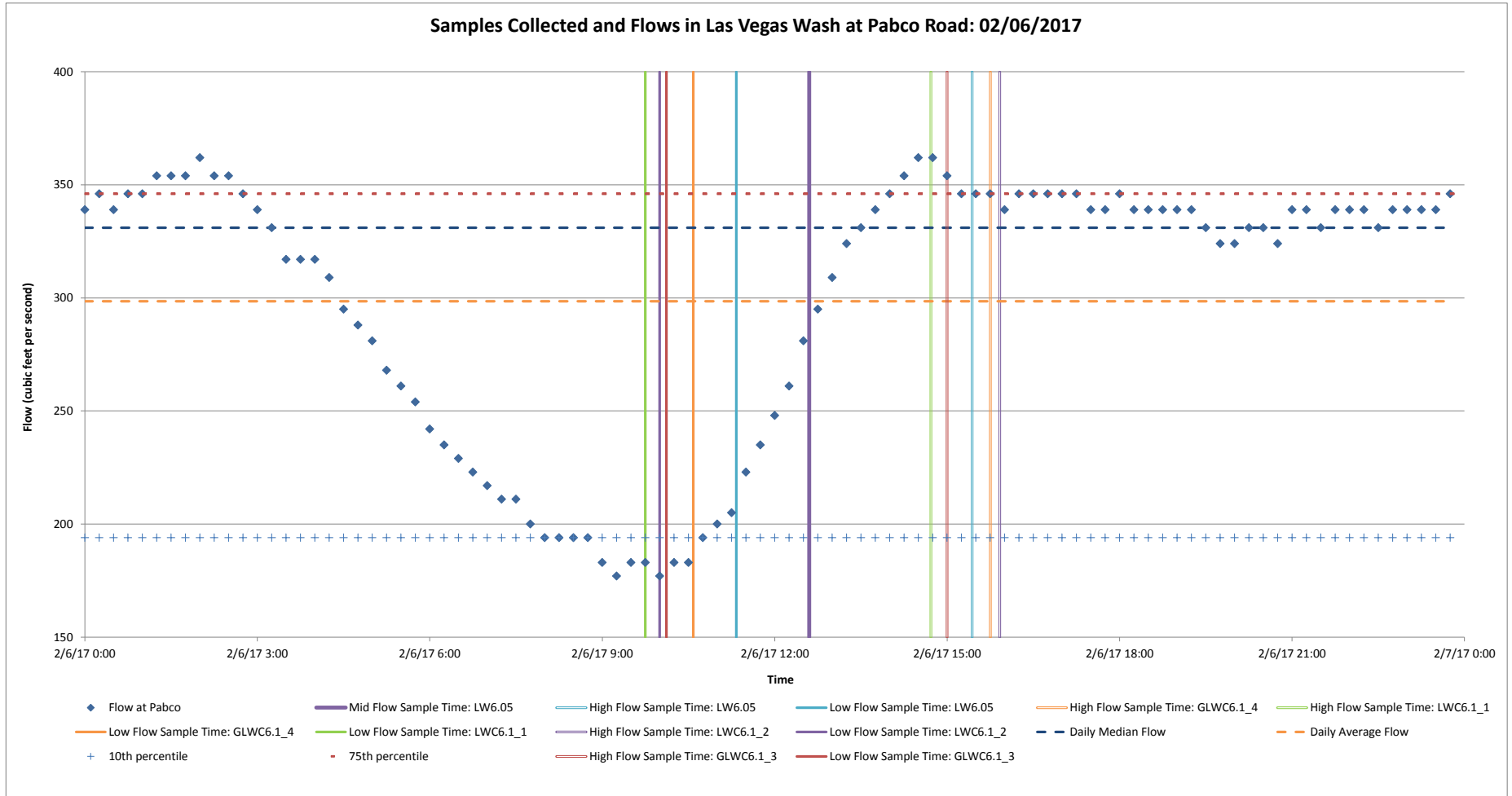


Appendix D-3
Discrete Sampling
February 6 - 9, 2017
 NERT Remedial Investigation - Downgradient Study Area
 Henderson, Nevada



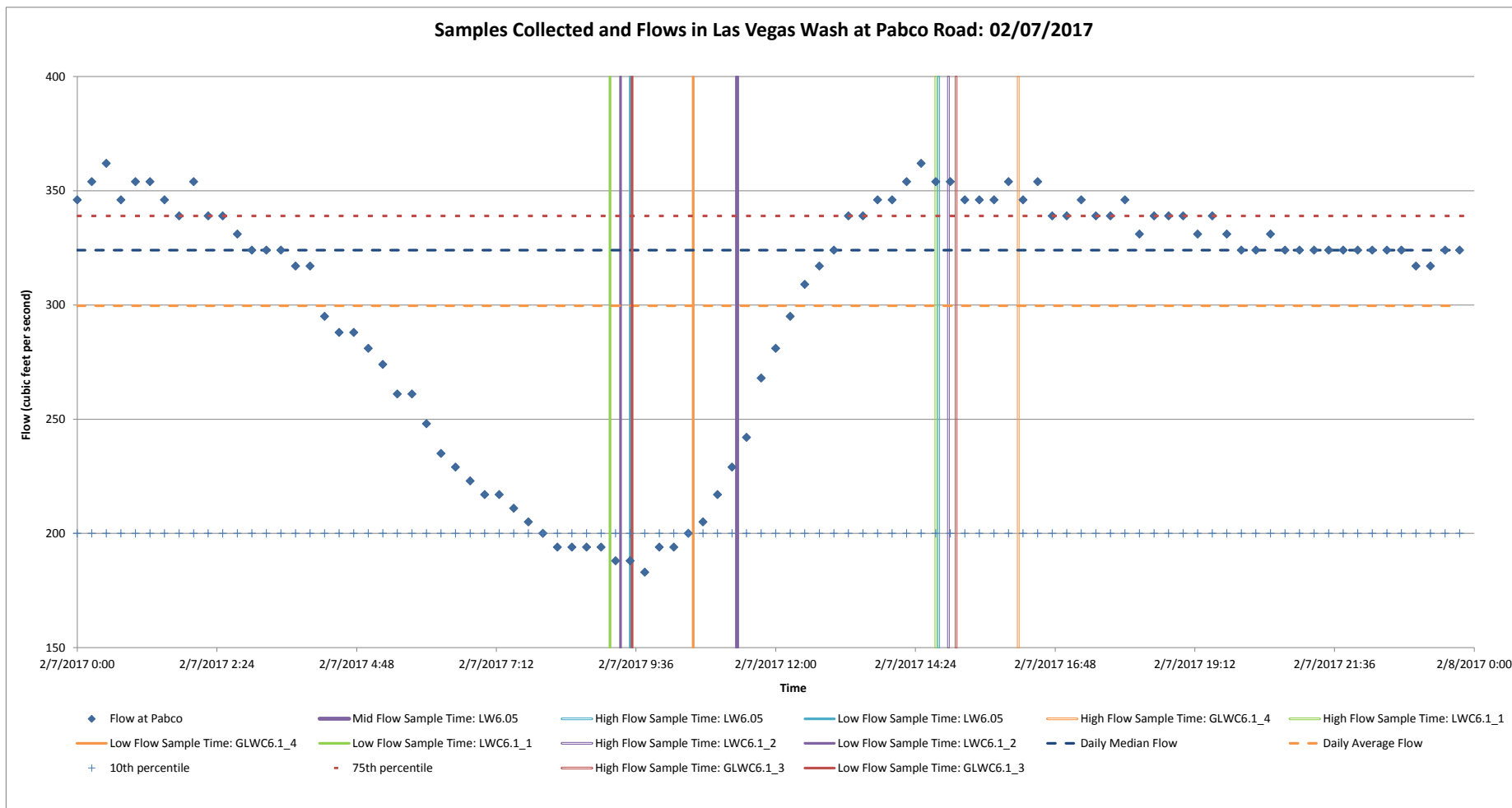
**Appendix D-3
Discrete Sampling
February 6 - 9, 2017**

NERT Remedial Investigation - Downgradient Study Area
Henderson, Nevada



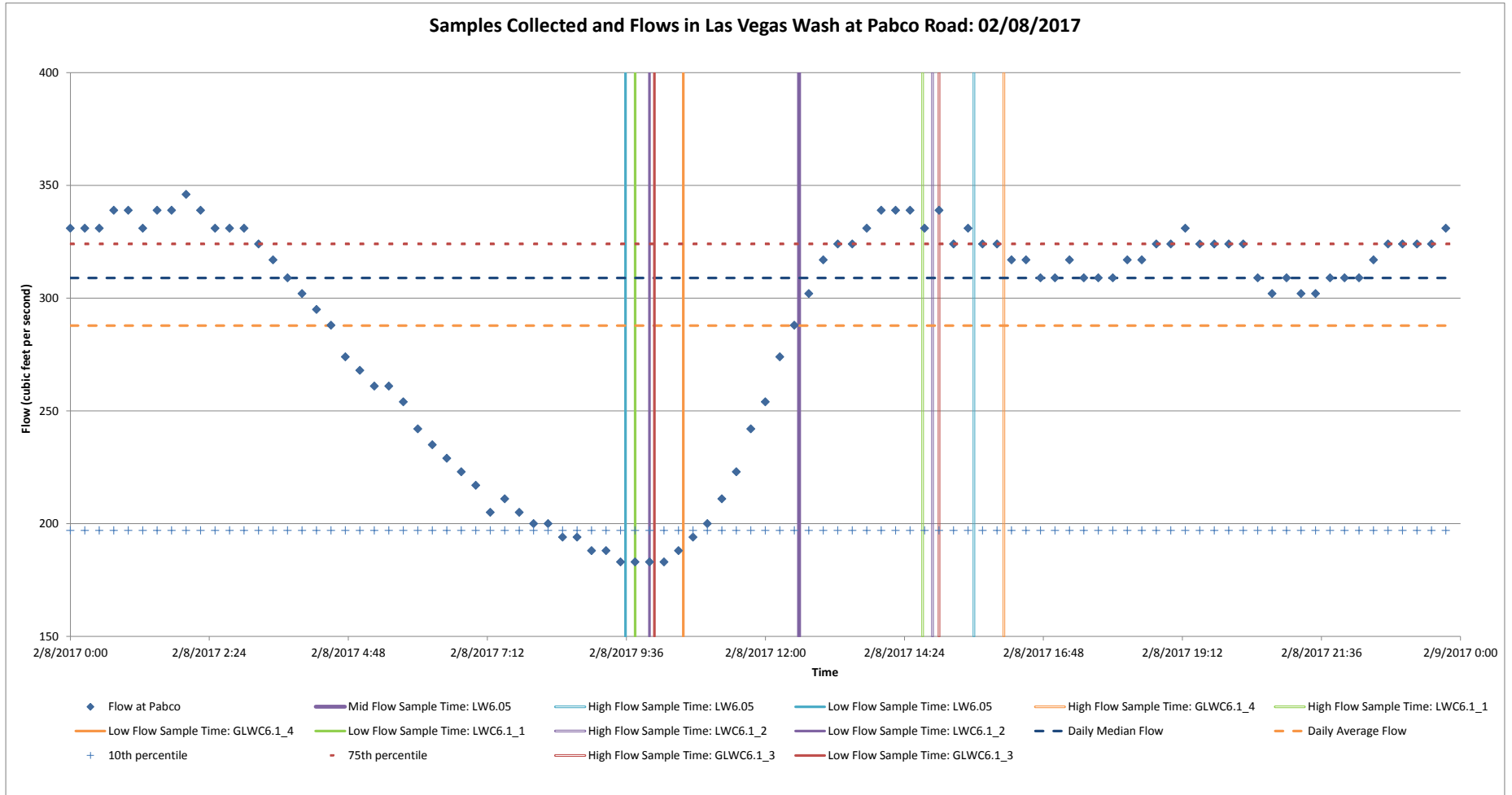
**Appendix D-3
Discrete Sampling
February 6 - 9, 2017**

NERT Remedial Investigation - Downgradient Study Area
Henderson, Nevada



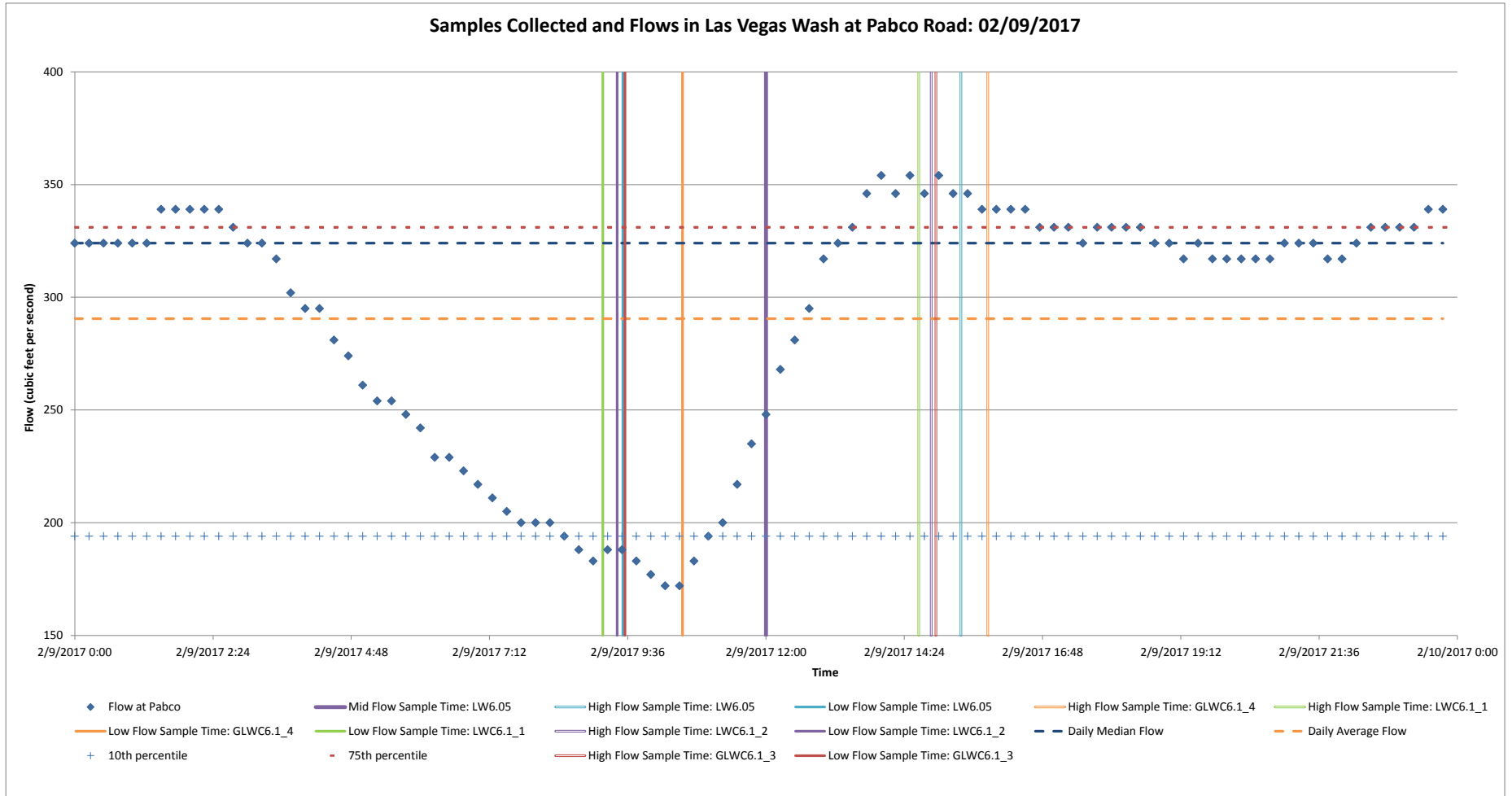
**Appendix D-3
Discrete Sampling
February 6 - 9, 2017**

NERT Remedial Investigation - Downgradient Study Area
Henderson, Nevada

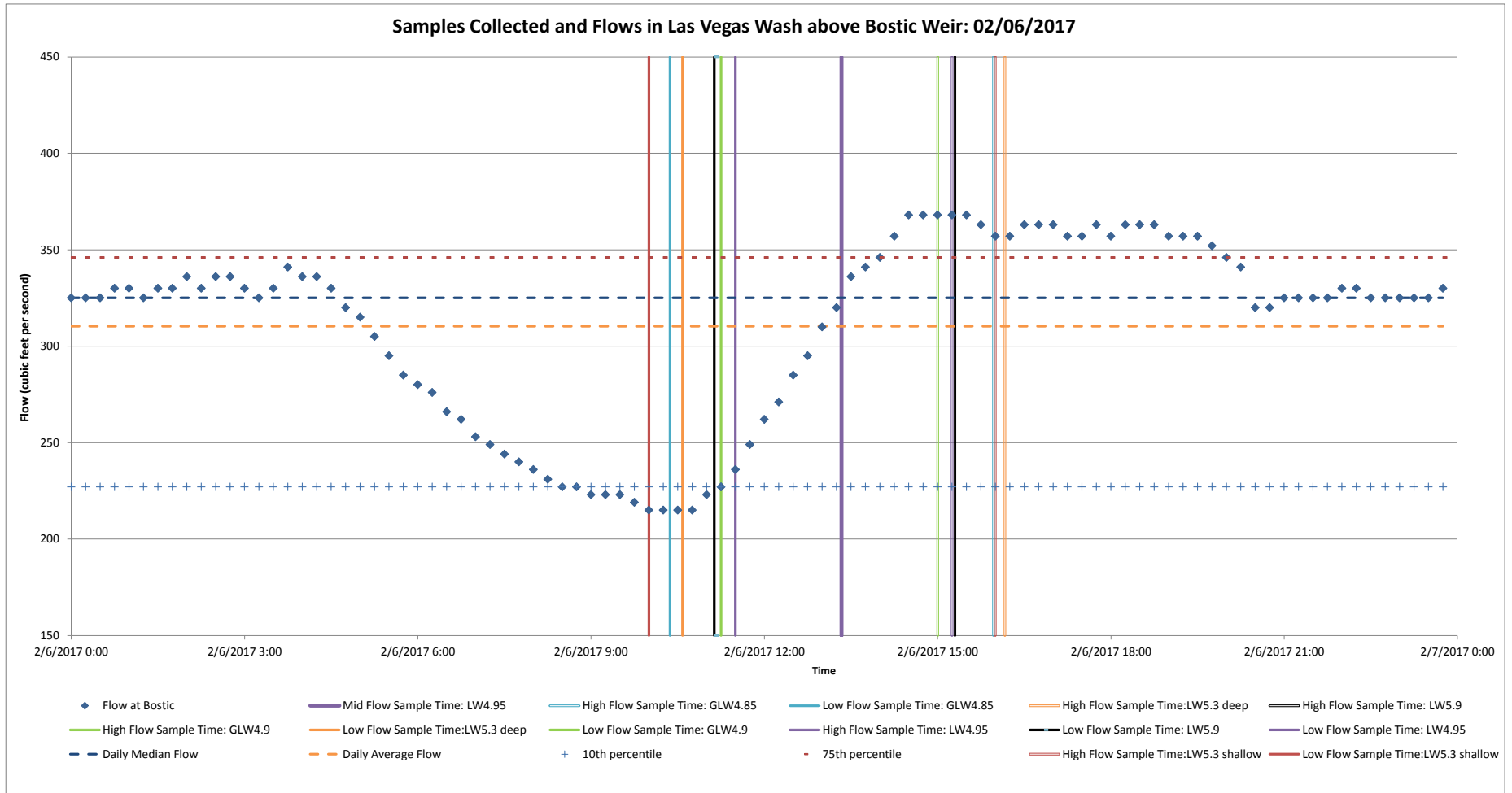


**Appendix D-3
Discrete Sampling
February 6 - 9, 2017**

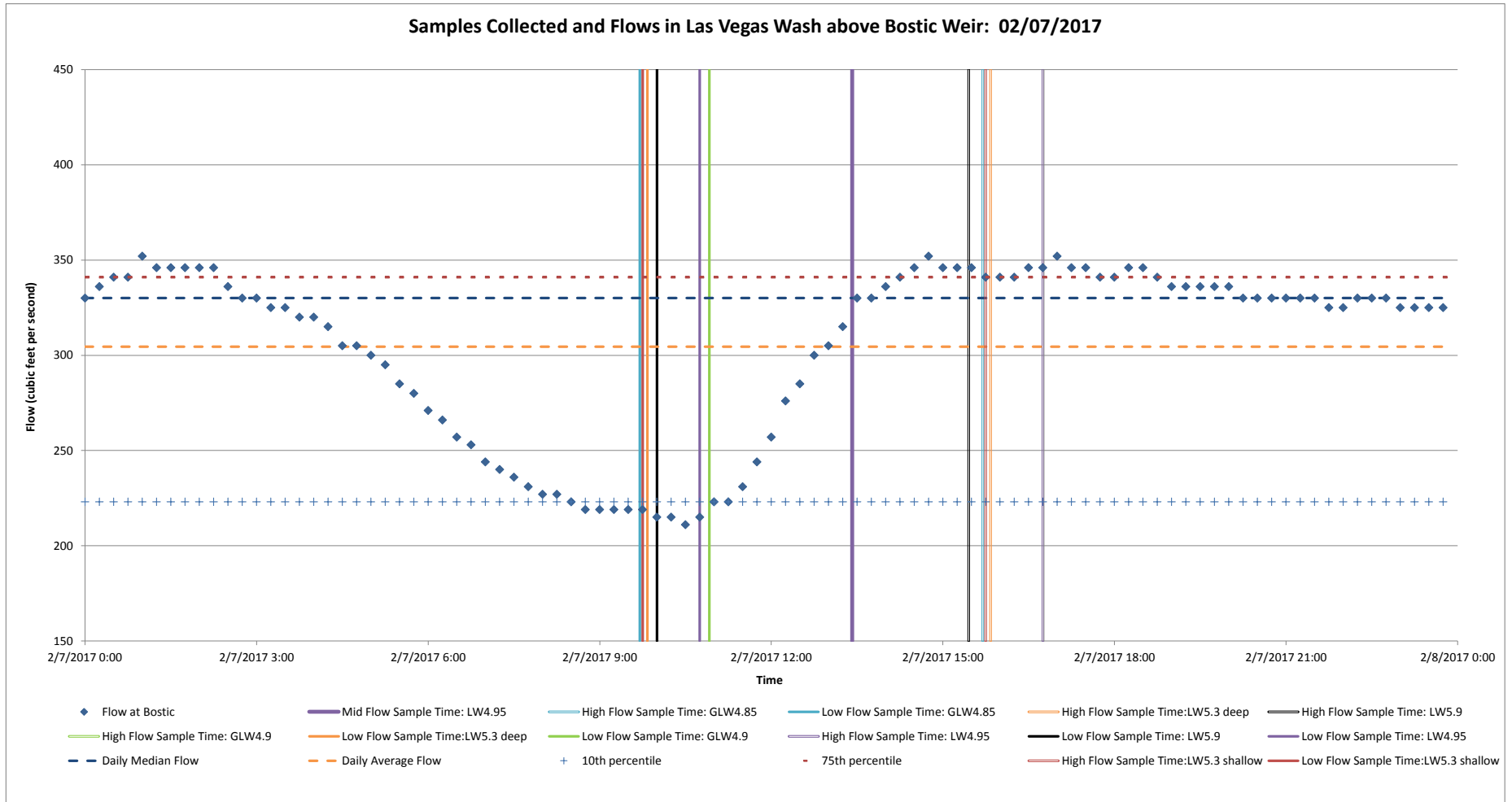
NERT Remedial Investigation - Downgradient Study Area
Henderson, Nevada



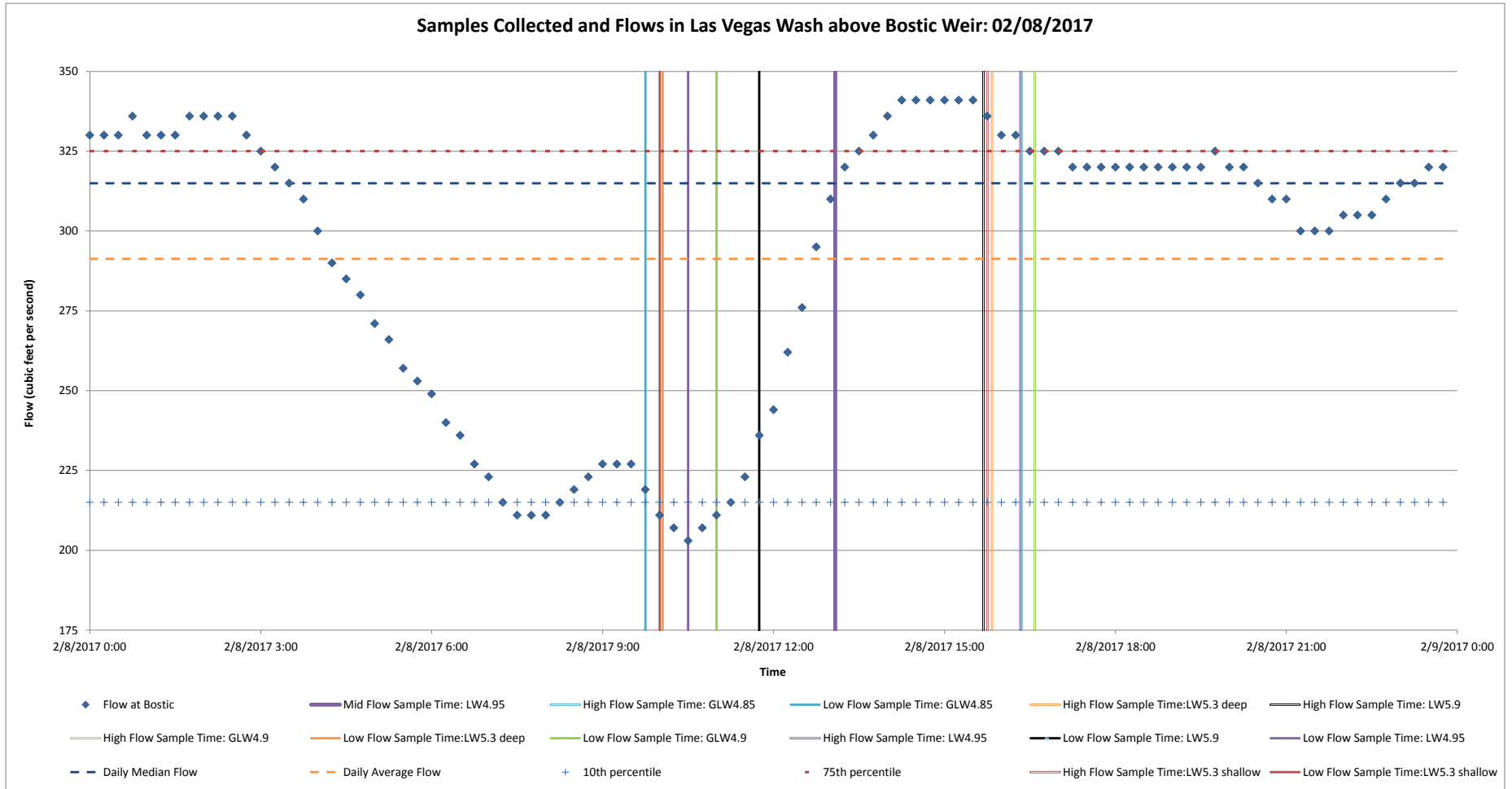
Appendix D-3
Discrete Sampling
February 6 - 9, 2017
 NERT Remedial Investigation - Downgradient Study Area
 Henderson, Nevada



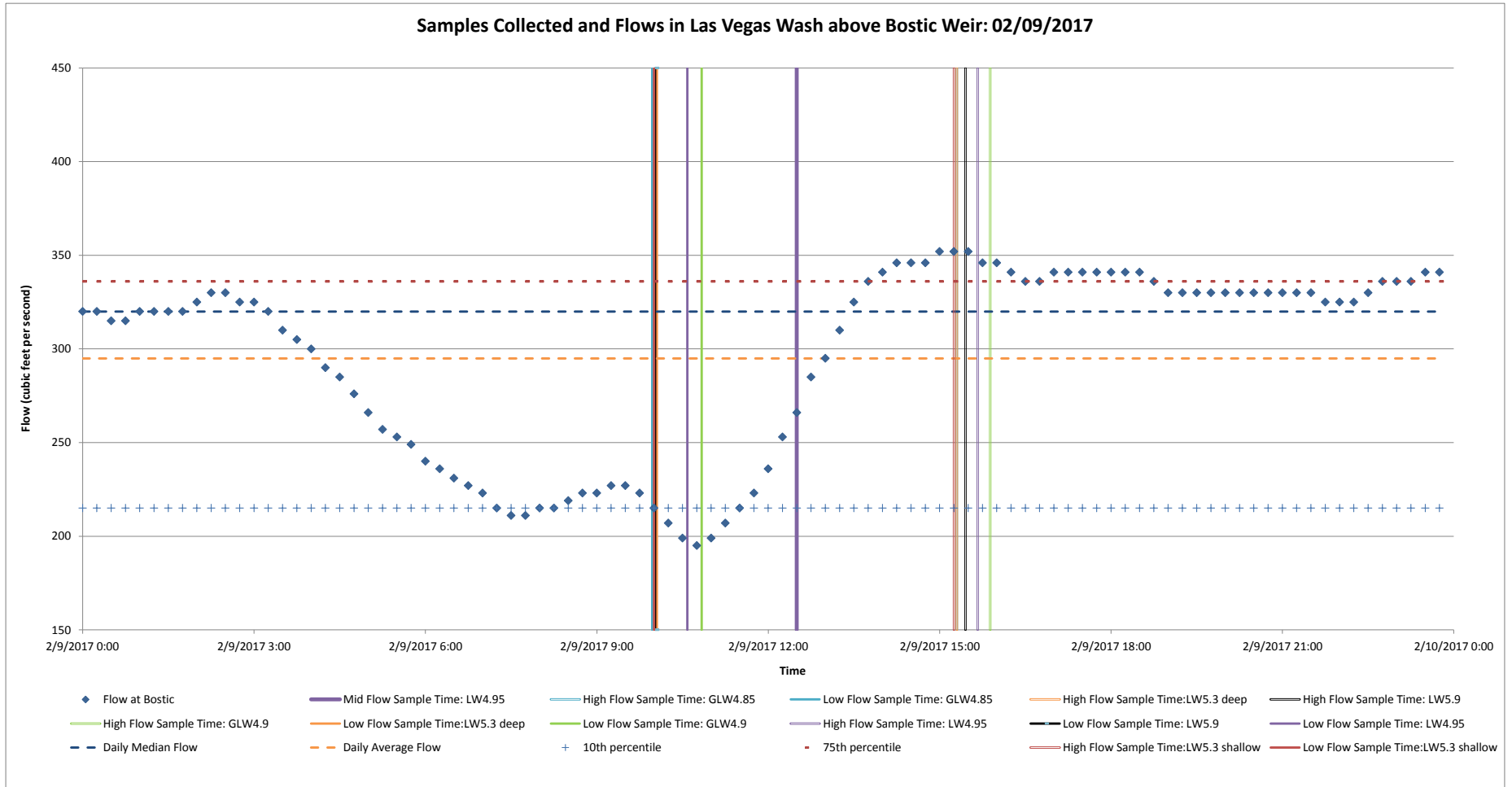
Appendix D-3
Discrete Sampling
February 6 - 9, 2017
 NERT Remedial Investigation - Downgradient Study Area
 Henderson, Nevada



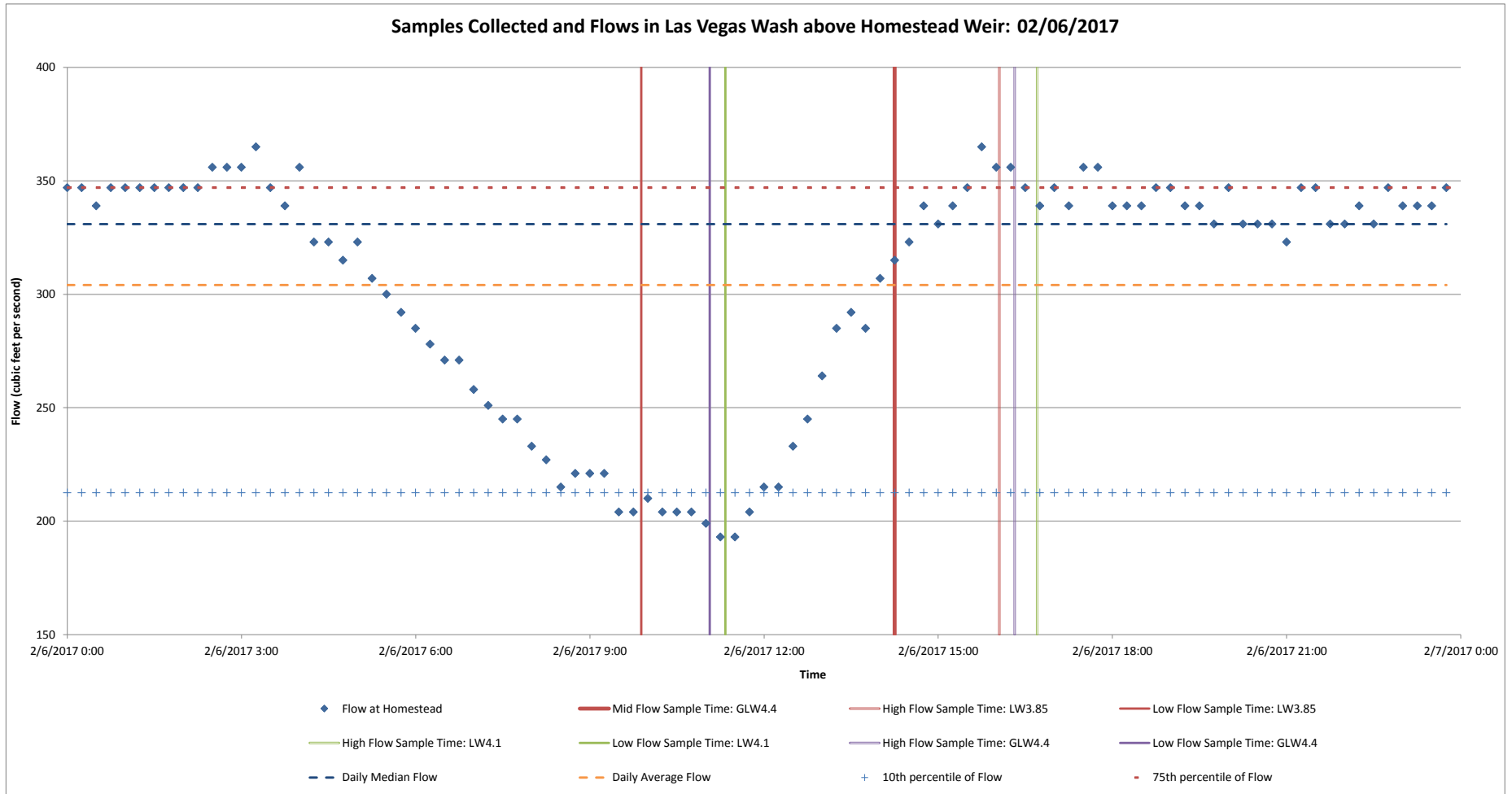
Appendix D-3
Discrete Sampling
February 6 - 9, 2017
 NERT Remedial Investigation - Downgradient Study Area
 Henderson, Nevada



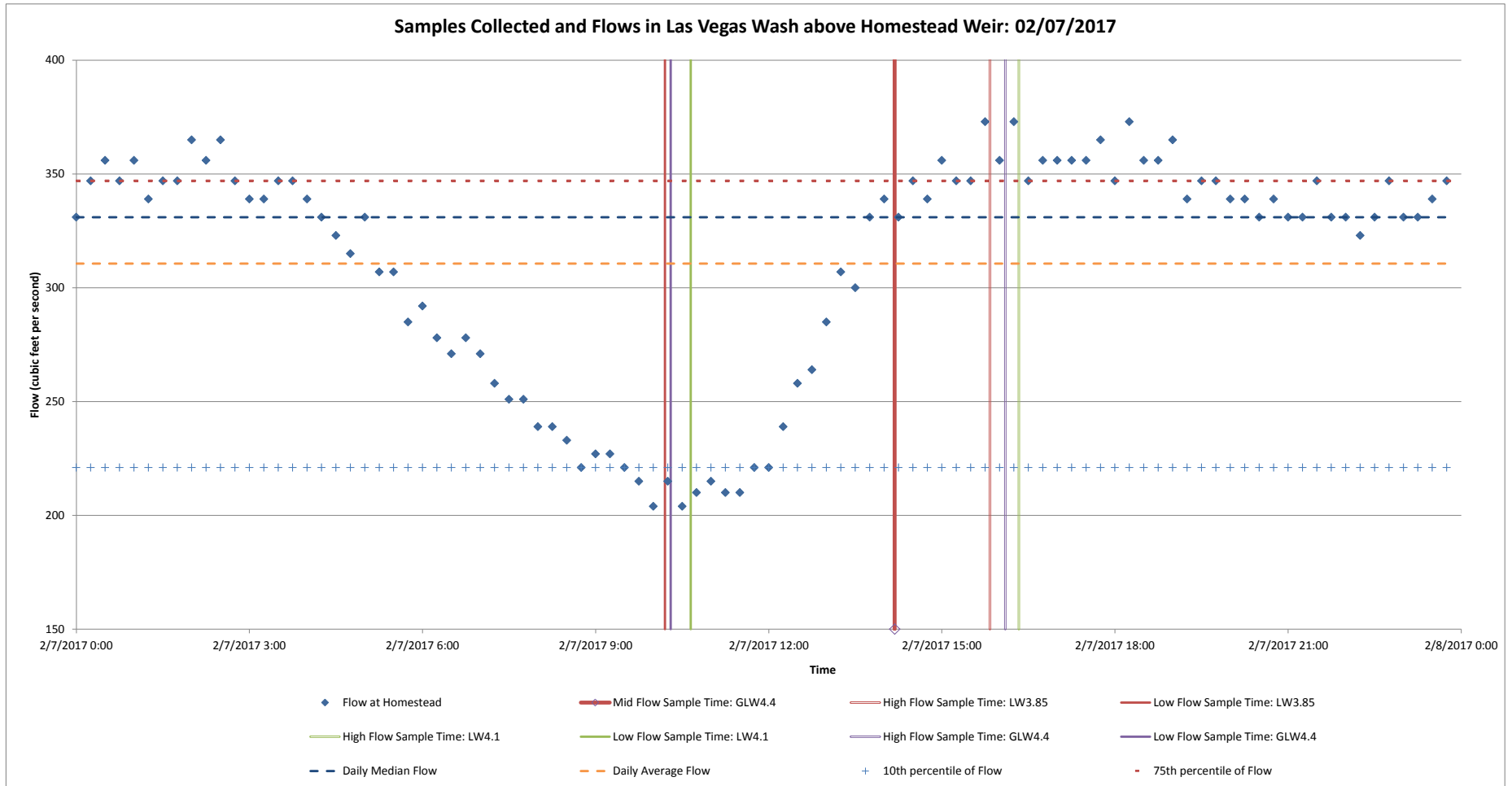
Appendix D-3
Discrete Sampling
February 6 - 9, 2017
 NERT Remedial Investigation - Downgradient Study Area
 Henderson, Nevada



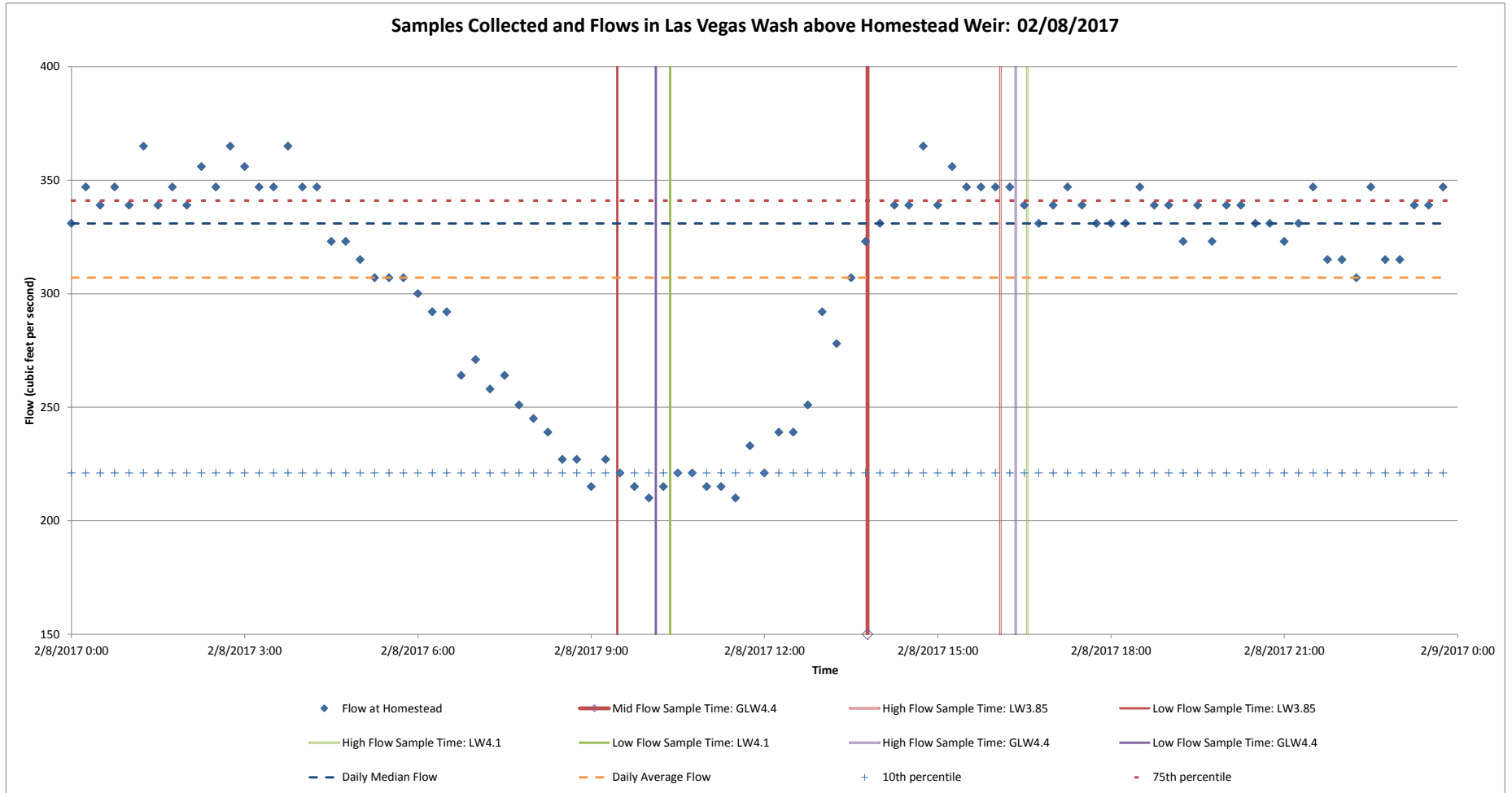
Appendix D-3
Discrete Sampling
February 6 - 9, 2017
 NERT Remedial Investigation - Downgradient Study Area
 Henderson, Nevada



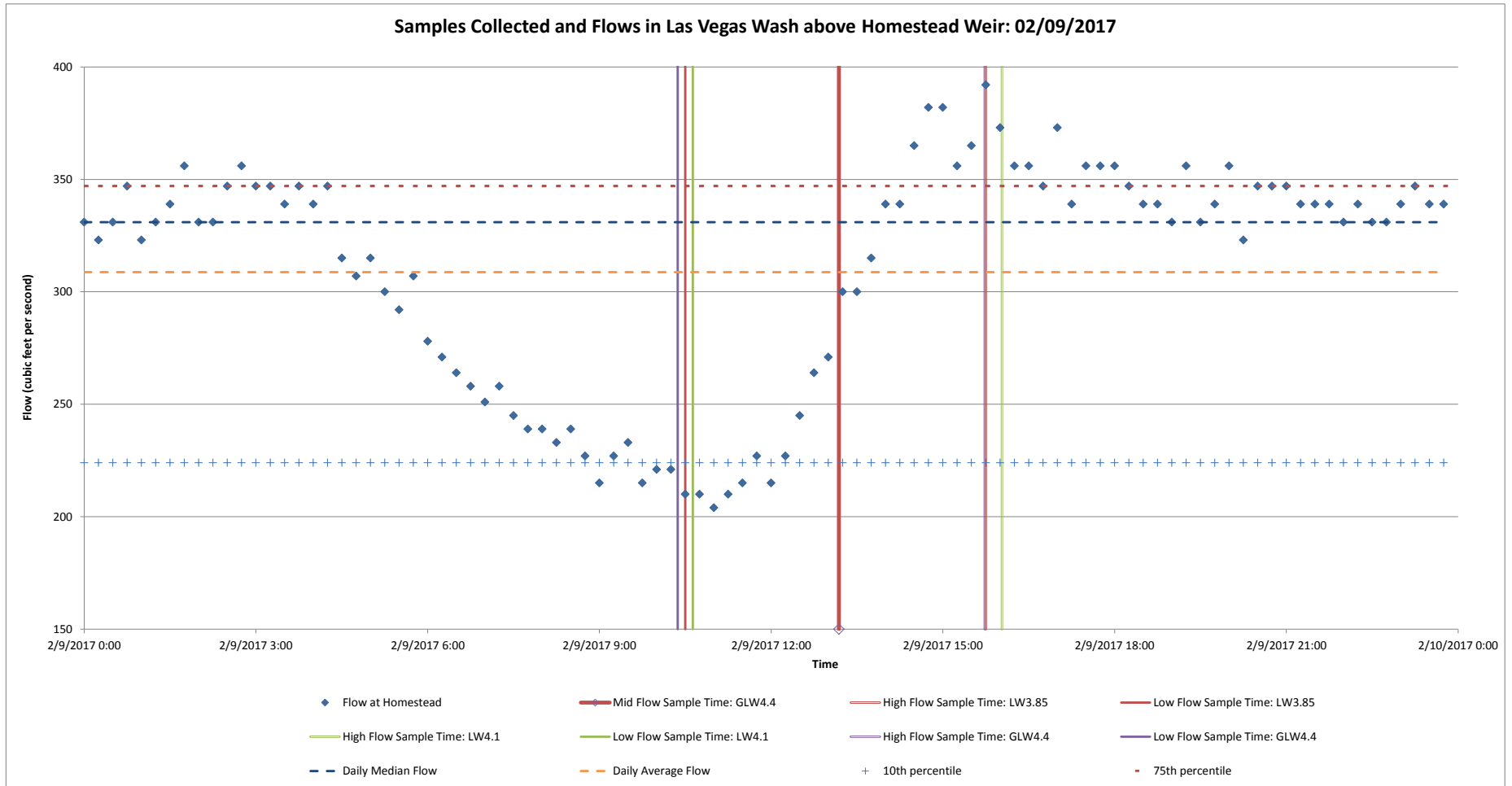
Appendix D-3
Discrete Sampling
February 6 - 9, 2017
 NERT Remedial Investigation - Downgradient Study Area
 Henderson, Nevada



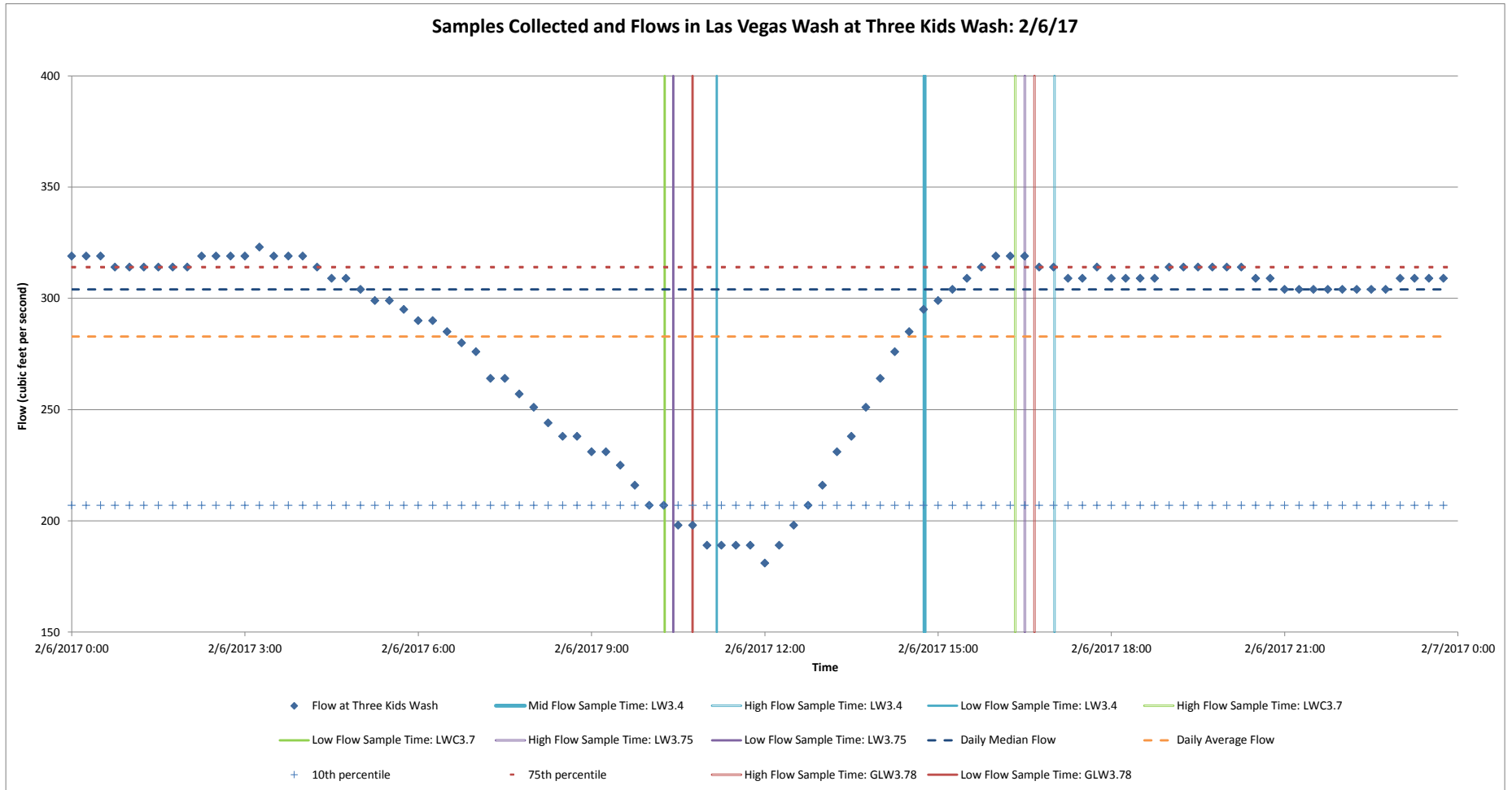
Appendix D-3
Discrete Sampling
February 6 - 9, 2017
 NERT Remedial Investigation - Downgradient Study Area
 Henderson, Nevada



Appendix D-3
Discrete Sampling
February 6 - 9, 2017
 NERT Remedial Investigation - Downgradient Study Area
 Henderson, Nevada

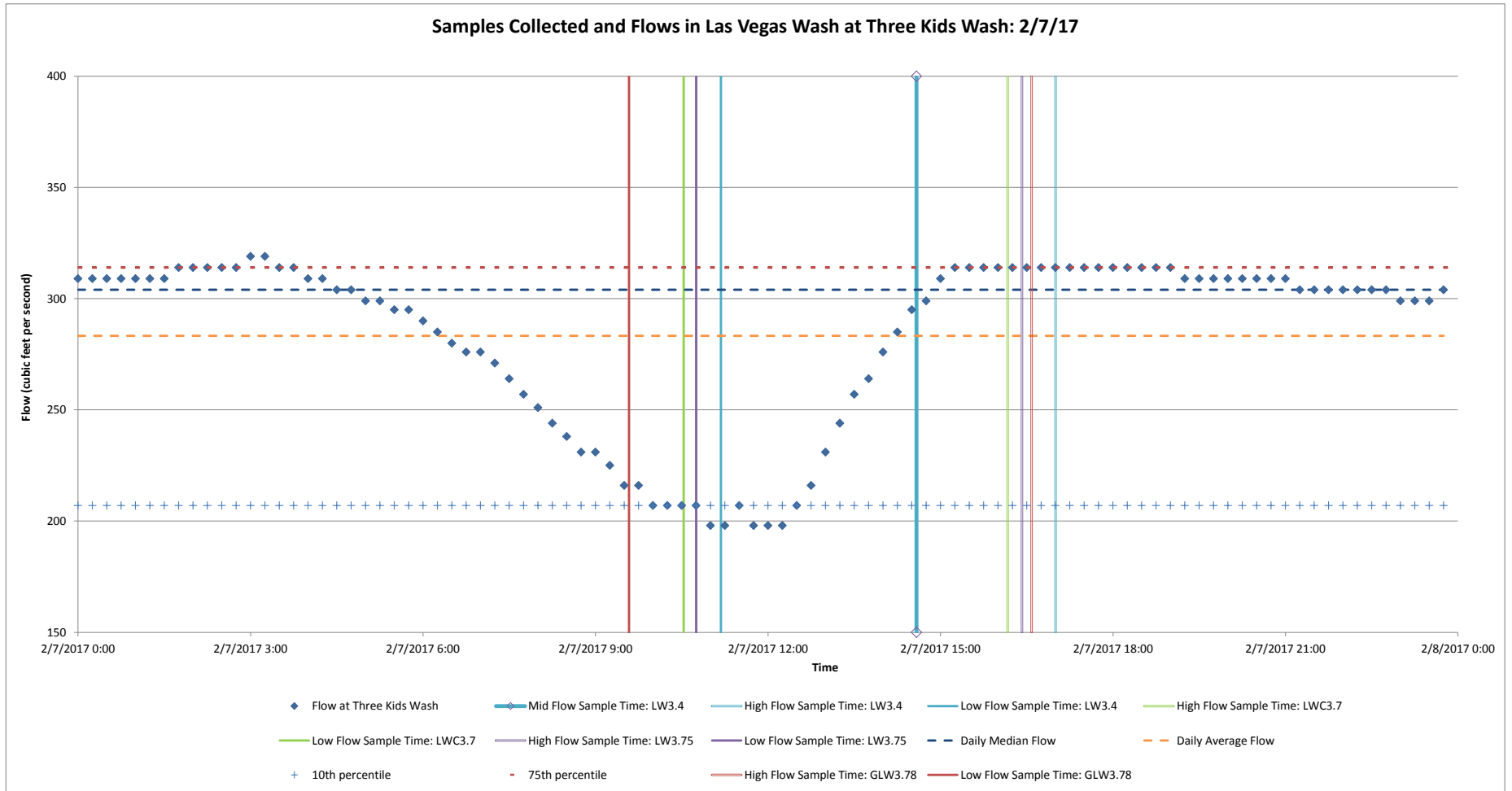


Appendix D-3
Discrete Sampling
February 6 - 9, 2017
 NERT Remedial Investigation - Downgradient Study Area
 Henderson, Nevada



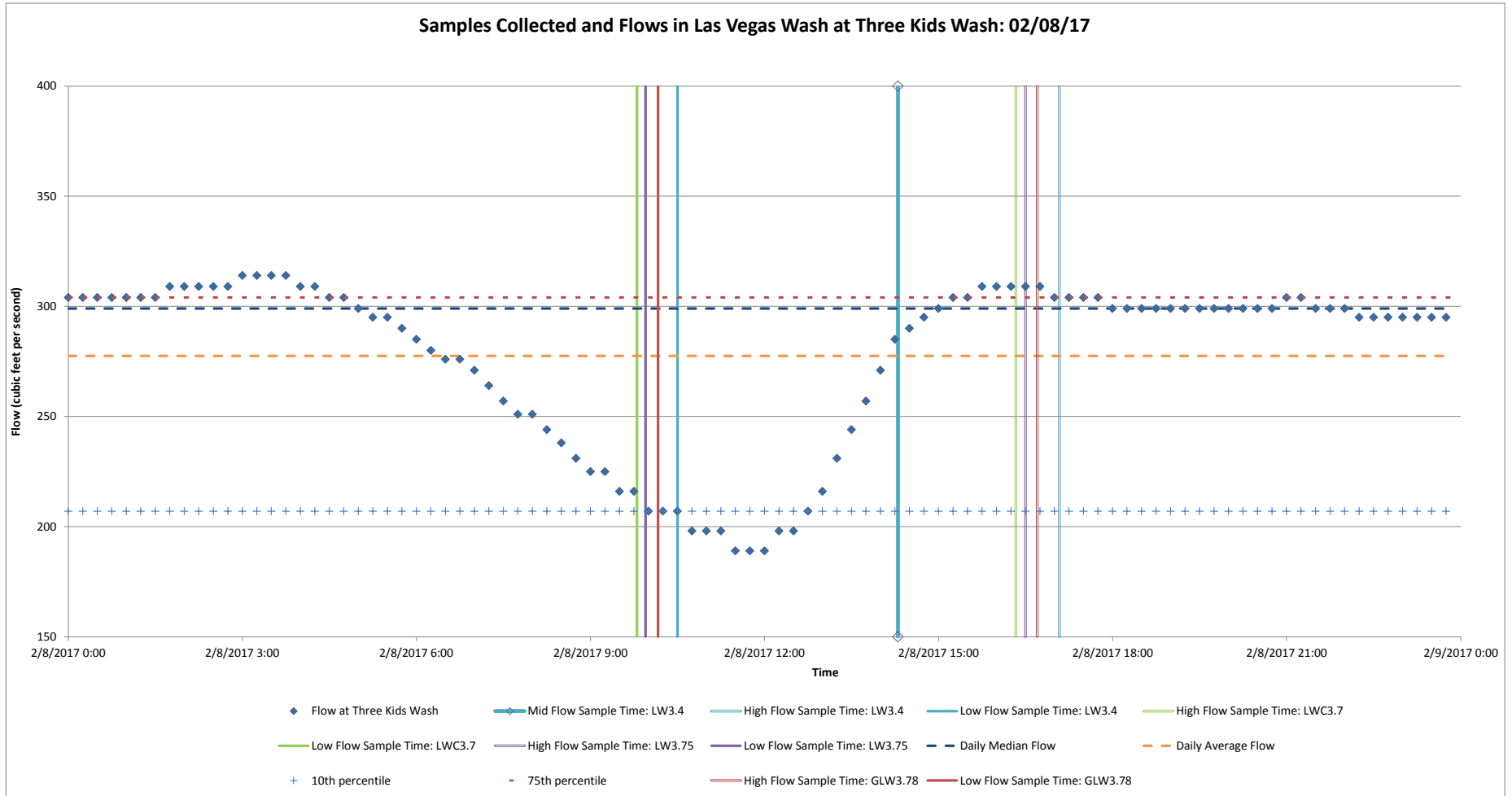
**Appendix D-3
Discrete Sampling
February 6 - 9, 2017**

NERT Remedial Investigation - Downgradient Study Area
Henderson, Nevada

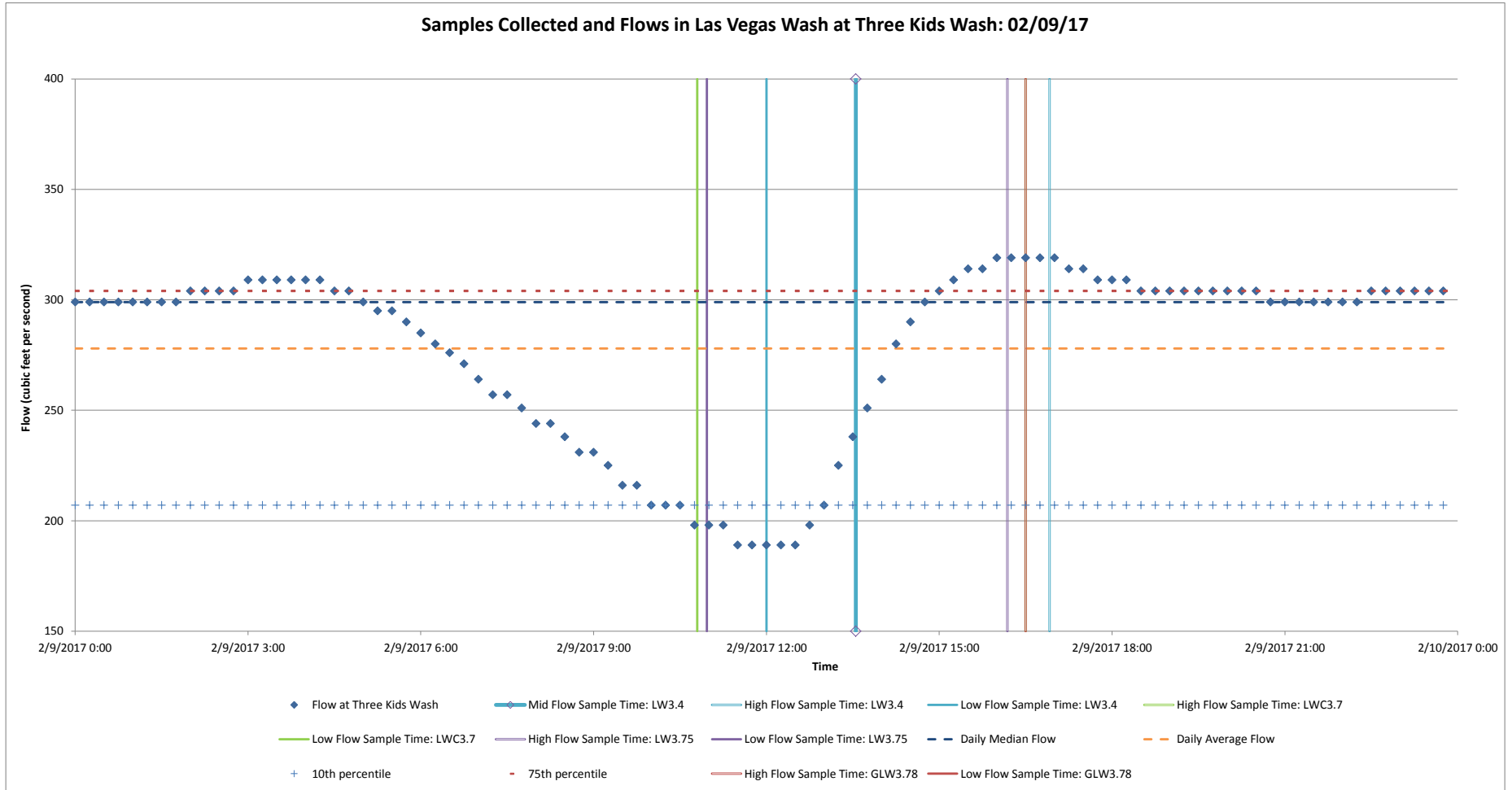


**Appendix D-3
Discrete Sampling
February 6 - 9, 2017**

NERT Remedial Investigation - Downgradient Study Area
Henderson, Nevada



Appendix D-3
Discrete Sampling
February 6 - 9, 2017
 NERT Remedial Investigation - Downgradient Study Area
 Henderson, Nevada



Appendix E
Laboratory Reports
(See Attached Files)

Client/Project Name: NDEP/NERT		Project Location: Las Vegas Wash					Analysis Requested					Container Type		Preservation	
Project Number: 60477365 2015-151B-01		Field Logbook No.: #1 & #2										Total dissolved solids (Standard Method [SM] 2540C)	Chlorate (EPA Method 300.1)	Chloride (EPA Method 300.0)	Bromide (EPA Method 300.0)
Sampler (Print Name)/(Affiliation): AECOM		Chain of Custody Tape Nos.: ---					G - Clear Glass		2 - H2SO4, 4°						
Signature: 		Send Results/Report to: Kristen Durocher			TAT:		V - VOA Vial		3 - HNO3, 4°		4 - NaOH, 4°		5 - NaOH/ZnAc, 4°		
						O - Other		6 - Na2S2O3, 4°		7 - 4°		Matrix Codes			
						W - Water		S - Soil		SL - Sludge		WW - Wastewater		SD - Sediment	
						ST - Storm Water		SO - Solid		A - Air		L - Liquid		P - Product	

Field Sample No./Identification	Date	Time	COMP	GRAB	Matrix	Field Filtered	Total dissolved solids (Standard Method [SM] 2540C)	Chlorate (EPA Method 300.1)	Chloride (EPA Method 300.0)	Bromide (EPA Method 300.0)	Perchlorate (EPA Method 314.0)	Lab I.D.	Remarks
LW5-9-20161208-0.5	12-8-16	1025		✓	SW	NA	✓	✓	✓	✓	✓		2 BOTTLES
LW3-78-20161208-0.1	12-8-16	1012		✓	SD	NA	✓	✓	✓	✓	✓		2
LW5-75-20161208-0.3	12-8-16	0912		✓	SD	NA	✓	✓	✓	✓	✓		2
LW4-95-20161208-0.7	12-8-16	1402		✓	SD	NA	✓	✓	✓	✓	✓		2
LW3-7-20161208-0.6	12-8-16	0930		✓	SD	NA	✓	✓	✓	✓	✓		2
LW3-7-20161208-06-FO	12-8-16	0930		✓	SD	NA	✓	✓	✓	✓	✓		2
LW6-1-2-20161208-05	12-8-16	1210		✓	SD	NA	✓	✓	✓	✓	✓		2 BOTTLES
LW6-1-1-20161208-05	12-8-16	1148		✓	SD	NA	✓	✓	✓	✓	✓		2
LW4-9-20161208-1-1	12-8-16	1420		✓	SD	NA	✓	✓	✓	✓	✓		2
LW4-4-20161208-1-1	12-8-16	1210		✓	SD	NA	✓	✓	✓	✓	✓		2
LW4-85-20161208-08	12-8-16	1450		✓	SW	NA	✓	✓	✓	✓	✓		2

Sample Container (Size/Mat'l)					
Preserv.		4°	4°	4°	4°

Relinquished by: (Print Name)/(Affiliation)	Date:	Received by: (Print Name)/(Affiliation)	Date:	Analytical Laboratory (Destination): Test America Irvine, CA
Signature:	Time:	Signature:	Time:	
Relinquished by: (Print Name)/(Affiliation)	Date:	Received by: (Print Name)/(Affiliation)	Date:	
Signature:	Time:	Signature:	Time:	
Relinquished by: (Print Name)/(Affiliation)	Date:	Received by: (Print Name)/(Affiliation)	Date:	Sample Shipped Via: UPS FedEx Courier Other
Signature:	Time:	Signature:	Time:	
				Temp blank Yes No

Client/Project Name: NDEP/NERT		Project Location: Las Vegas Wash					Analysis Requested					Container Type P - Plastic A - Amber Glass G - Clear Glass V - VOA Vial O - Other E - Encore		Preservation 1 - HCl, 4° 2 - H2SO4, 4° 3 - HNO3, 4° 4 - NaOH, 4° 5 - NaOH/ZnAc, 4° 6 - Na2S2O3, 4° 7 - 4°	
Project Number: 60477365 2015-151B-01		Field Logbook No.: #1 #2					Total dissolved solids (Standard Method [SM] 2540C)	Chlorate (EPA Method 300.1)	Chloride (EPA Method 300.0)	Bromide (EPA Method 300.0)	Perchlorate (EPA Method 314.0)	Matrix Codes:			
Sampler (Print Name)/(Affiliation): AECOM		Chain of Custody Tape Nos.: _____										DW - Drinking Water WW - Wastewater GW - Groundwater SW - Surface Water ST - Storm Water W - Water		S - Soil SL - Sludge SD - Sediment SO - Solid A - Air L - Liquid P - Product	
Signature: 		Send Results/Report to: Kristen Durocher			TAT:							Lab I.D.		Remarks	
Field Sample No./Identification	Date	Time	COMP	GRAB	Matrix	Field Filtered									
LW6-7-20161208-05	12-8-16	1510		✓	SWSD	NA	✓	✓	✓	✓	✓	2 BOTTLES			
LW7-2-20161208-1-0	12-8-16	1545		✓	SD	NA	✓	✓	✓	✓	✓	↓			
LW4-1-20161208-0-2	12-8-16	1132		✓	SD	NA	✓	✓	✓	✓	✓				
LW3-4-20161208-0-5	12-8-16	0823		✓	SD	NA	✓	✓	✓	✓	✓				
LW3-4-20161208-0-5FB	12-8-16	1425		✓	SD	NA	✓	✓	✓	✓	✓				
LW5-3-20161208-1-0-EB	12-8-16	1420		✓	SD	NA	✓	✓	✓	✓	✓				
LW3-85-20161208-0-3	12-8-16	1040		✓	SD	NA	✓	✓	✓	✓	✓				
LW3-85-20161208-0-3-FD	12-8-16	1040		✓	SD	NA	✓	✓	✓	✓	✓				
LW5-3-20161208-1-0	12-8-16	0934		✓	SD	NA	✓	✓	✓	✓	✓				
LW5-3-20161208-2-5	12-8-16	0929		✓	SD	NA	✓	✓	✓	✓	✓				
LW6-05-20161208-0-5	12-8-16	1350		✓	SW	NA	✓	✓	✓	✓	✓		6 BOTTLES MS/MSD		
Sample Container (Size/Mat'l)															
Preserv.							4°	4°	4°	4°					
Relinquished by: (Print Name)/(Affiliation)		Date:	Received by: (Print Name)/(Affiliation)			Date:	Analytical Laboratory (Destination):								
Signature:		Time:	Signature:			Time:	Test America Irvine, CA								
Relinquished by: (Print Name)/(Affiliation)		Date:	Received by: (Print Name)/(Affiliation)			Date:	Sample Shipped Via: _____ Temp blank _____								
Signature:		Time:	Signature:			Time:									
Relinquished by: (Print Name)/(Affiliation)		Date:	Received by: (Print Name)/(Affiliation)			Date:									
Signature:		Time:	Signature:			Time:	UPS		FedEx		Courier		Other		
						Yes		No							

Client/Project Name: NDEP/NERT		Project Location: Las Vegas Wash					Analysis Requested					Container Type P - Plastic A - Amber Glass G - Clear Glass V - VOA Vial O - Other E - Encore		Preservation 1 - HCl, 4° 2 - H2SO4, 4° 3 - HNO3, 4° 4 - NaOH, 4° 5 - NaOH/ZnAc, 4° 6 - Na2S2O3, 4° 7 - 4°	
Project Number: 60477365 2015-151B-01		Field Logbook No.: #1 + #2					Total dissolved solids (Standard Method [SM] 2540C)	Chlorate (EPA Method 300.1)	Chloride (EPA Method 300.0)	Bromide (EPA Method 300.0)	Perchlorate (EPA Method 314.0)	Matrix Codes: DW - Drinking Water WW - Wastewater GW - Groundwater SW - Surface Water ST - Storm Water W - Water		S - Soil SL - Sludge SD - Sediment SO - Solid A - Air L - Liquid P - Product	
Sampler (Print Name)/(Affiliation): AECOM		Chain of Custody Tape Nos.: —										Matrix Codes: DW - Drinking Water WW - Wastewater GW - Groundwater SW - Surface Water ST - Storm Water W - Water		S - Soil SL - Sludge SD - Sediment SO - Solid A - Air L - Liquid P - Product	
Signature: 		Send Results/Report to: Kristen Durocher			TAT:										
Field Sample No./Identification	Date	Time	COMP	GRAB	Matrix	Field Filtered						Lab I.D.	Remarks		
0000					SD	NA									
Grab 1.4-20161208-05	12.8.16	1325		✓	SW SD	NA	✓	✓	✓	✓	✓		2 BOTTLES		
Grab 1.3-20161208-05	12.8.16	1220		✓	SW SD	NA	✓	✓	✓	✓	✓		2 BOTTLES		
					SD	NA									
					SD	NA									
					SD	NA									
					SD	NA									
					SD	NA									
					SD	NA									
					SD	NA									
Sample Container (Size/Mat'l)															
							Preserv.	4°	4°	4	4				
Relinquished by: (Print Name)/(Affiliation)		Date:		Received by: (Print Name)/(Affiliation)			Date:		Analytical Laboratory (Destination):						
Signature:		Time:		Signature:			Time:		Test America Irvine, CA						
Relinquished by: (Print Name)/(Affiliation)		Date:		Received by: (Print Name)/(Affiliation)			Date:		Sample Shipped Via: _____ Temp blank _____						
Signature:		Time:		Signature:			Time:								
Relinquished by: (Print Name)/(Affiliation)		Date:		Received by: (Print Name)/(Affiliation)			Date:		UPS FedEx Courier Other						
Signature:		Time:		Signature:			Time:		Yes No						

TestAmerica Irvine

17461 Derian Ave Suite 100
Irvine, CA 92614-5817
Phone (949) 261-1022 Fax (949) 260-3297

Chain of Custody Record

Client Information

Client Contact:
Carmen Caceres-Schnell
Company:
AECOM, Inc.
Address:
1220 Avenida Acaso
City:
Camarillo
State, Zip:
CA, 93012
Phone:
805-764-4031
Email:
carmen.caceres-schnell@aecom.com
Project Name:
NERT Surface Water
Site:
NERT - Downgradient Study Area

Sampler:
C. Steve Howe
Lab PM:
Mata, Patty
E-Mail:
patty.mata@testamericainc.com
Carrier Tracking No(s):

COC No:
Page:
Page
Job #:

Analysis Requested

Due Date Requested:
TAT Requested (days):
10 Days
PO #:
74770 and 74771
WO #:
Project #:
60477365-2015.151B
SSOW#:

- Preservation Codes:**
- A - HCL
 - B - NaOH
 - C - Zn Acetate
 - D - Nitric Acid
 - E - NaHSO4
 - F - MeOH
 - G - Amchlor
 - H - Ascorbic Acid
 - I - Ice
 - J - DI Water
 - K - EDTA
 - L - EDA
 - M - Hexane
 - N - None
 - O - AsNaO2
 - P - Na2O4S
 - Q - Na2SO3
 - R - Na2S2O3
 - S - H2SO4
 - T - TSP Dodecahydrate
 - U - Acetone
 - V - MCAA
 - W - ph 4-5
 - Z - other (specify)
- Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=wastewater, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)		Total Number of Containers		Special Instructions/Note:
					2540C-TDS, 300-Cl, Br, 314.0-Perchlorate	300.1B_280 - Chlorate			
T3.75A-2017 0130 - 0.9	1-30-17	1148	G	W	N	X	X		Z
T3.75B-2017 0130 - 0.7	1-30-17	1153	G	W	N	X	X		Z
T3.75C-2017 0130 - 0.6	1-30-17	1200	G	W	N	X	X		Z
T3.75D-2017 0130 - 0.4	1-30-17	1209	G	W	N	X	X		Z
T3.75E-2017	---	---	G	W	N	X	X		X
T-375A - 01-30-EB	1-30-17	1105	G	W	N	X	X		Z
			G	W	N	X	X		
			G	W	N	X	X		
			G	W	N	X	X		
			G	W	N	X	X		

Possible Hazard Identification
 Non-Hazard Flammable Skin Irritant Poison B Unknown Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
 Return To Client Disposal By Lab Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify): Level II

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:
Relinquished by: <i>[Signature]</i>	Date/Time: 1-30-17 1500	Company: AECOM	Received by: <i>[Signature]</i>
Relinquished by:	Date/Time:	Company:	Received by:
Relinquished by:	Date/Time:	Company:	Received by:

Custody Seals Intact: Yes No
Custody Seal No.:
Cooler Temperature(s) °C and Other Remarks:

TestAmerica Irvine

17461 Derian Ave Suite 100
Irvine, CA 92614-5817
Phone (949) 261-1022 Fax (949) 260-3297

Chain of Custody Record

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: C. Steve Howe	Lab PM: Mata, Patty	Carrier Tracking No(s):	COC No:
Client Contact: Carmen Caceres-Schnell	Phone: (805) 764-4031	E-Mail: patty.mata@testamericainc.com		Page: Page
Company: AECOM, Inc.				Job #:

Address: 1220 Avenida Acaso	Due Date Requested:	Analysis Requested Field Filtered Sample (Yes or No) Perform MS, SS (Yes or No) 2540C-TDS, 300-Cl, Br, 314.0-Perchlorate 300.1B_28D - Chlorate	Total Number of containers	Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA	M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - ph 4-5 Z - other (specify)
City: Camarillo	TAT Requested (days): 10 Days			Other:	
State, Zip: CA, 93012	PO #: 74770 and 74771				
Phone: 805-764-4031	WO #:				
Email: carmen.caceres-schnell@aecom.com	Project #: 60477365-2015.151B				
Project Name: NERT Surface Water	SSOW#:				
Site: NERT - Downgradient Study Area					

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=wastel/ol, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS, SS (Yes or No)	2540C-TDS, 300-Cl, Br, 314.0-Perchlorate	300.1B_28D - Chlorate	Total Number of containers	Special Instructions/Note:
T3.8A-2017 0130 - 0.4	1-30-17	1130	G	W	N	X	X		2	
T3.8A-2017 0130 01 - 30 -FB	1-30-17	1105	G	W	N	X	X		2	
T3.8B-2017 0130 - 0.4	1-30-17	1137	G	W	N	X	X		2	
T3.8B-2017 0130 - 0.4-MS	1-30-17	1137	G	W	N	X	X		2	
T3.8B-2017 0130 - 0.4-MSD	1-30-17	1137	G	W	N	X	X		2	
T3.8C-2017 0130 - 0.4	1-30-17	1146	G	W	N	X	X		2	
T3.8C-2017 0130 0130 - 0.4 -FD	1-30-17	1146	G	W	N	X	X		2	
T3.8D-2017 0130 - 0.4	1-30-17	1155	G	W	N	X	X		2	
T3.8E-2017			G	W	N	X	X			
			G	W	N	X	X			
			G	W	N	X	X			

Possible Hazard Identification
 Non-Hazard Flammable Skin Irritant Poison B Unknown Radiological

Deliverable Requested: I, II, III, IV, Other (specify): Level II

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
 Return To Client Disposal By Lab Archive For _____ Months

Special Instructions/QC Requirements:

Empty Kit Relinquished by: _____ Date: _____ Time: _____ Method of Shipment: _____

Relinquished by:	Date/Time: 1-30-17 1500	Company: AECOM	Received by:	Date/Time: 1-30-17 1500	Company: TA
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:

Custody Seals Intact: _____ Custody Seal No.: _____

TestAmerica Irvine

17461 Denian Ave Suite 100
 Irvine, CA 92614-5817
 Phone (949) 261-1022 Fax (949) 260-3297

Chain of Custody Record



THE LEADER IN ENVIRONMENTAL TESTING

Client Information		Sampler C. Steve Howe		Lab PM: Mata, Patty		Carrier Tracking No(s)		COC No	
Client Contact Carmen Caceres-Schnell		Phone (805) 764-4031		E-Mail patty.mata@testamericainc.com				Page Page	
Company AECOM, Inc.		Due Date Requested:		Analysis Requested		Total Number of containers		Preservation Codes: A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2O3 G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate I - Ice U - Acetone J - DI Water V - MCAA K - EDTA W - ph 4-5 L - EDA Z - other (specify) Other:	
Address 1220 Avenida Acaso		TAT Requested (days): 10 Days							
City Camarillo									
State, Zip CA, 93012									
Phone 805-764-4031		PO # 74770 and 74771							
Email carmen.caceres-schnell@aecom.com		WO #							
Project Name NERT Surface Water		Project # 60477365-2015.151B							
Site NERT - Downgradient Study Area		SSOW#							
Sample Identification		Sample Date		Sample Time		Sample Type (C=Comp, G=grab)		Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	
								Field Filtered Sample (Yes or No) Perform MS/MSD (Yes or No) 2540C-TDS, 300-Cl, Br, 314.0-Perchlorate 300-1B_28D - Chlorate	
						Preservation Code:			
T4 6A-2017 0131 - 0.3		1-31-17		1040		G W		N N X X	
T4 6B-2017 0131 - 0.6		1-31-17		1042		G W		N X X	
T4 6C-2017 0131 - 0.8		1-31-17		1056		G W		N Y X X	
T4 6D-2017 0131 - 0.8		1-31-17		1113		G W		N X X	
T4 6E-2017 0131		1-31-17				G W		N X X	
T4-6B						G W		N X X	
T4-6B - 20170131 - 0.6 - FD		1-31-17		1047		G W		N X X	
T4-6A - 20170131 - EB		1-31-17		1000		G W		N X X	
T4-6A						G W		N X X	
						G W		N X X	
						G W		N X X	
						G W		N X X	
						G W		N X X	
Possible Hazard Identification									
<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological									
Deliverable Requested: I, II, III, IV, Other (specify): Level II									
								Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input checked="" type="checkbox"/> Archive For _____ Months	
								Special Instructions/QC Requirements:	
Empty Kit Relinquished by:		Date:		Time:		Method of Shipment:			
Relinquished by:		Date/Time: 1-31-17 1515		Company: AECOM		Received by:		Date/Time: 1/31/17 1510	
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:	
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:	
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.:				Cooler Temperature(s) °C and Other Remarks:		9.3	

Chain of Custody Record

Irvine, CA 92614-5817
 Phone (949) 261-1022 Fax (949) 260-2267

Form C-001 (01/01/2010)

Client Information	Company C. Stevens-Holmes	Lab No. Made, Pelly	Client / Testing Name	COC No.
Client Contact Carmen Cabezas-Dobson	Phone (949) 264-4024	E-Mail celly.made@postbeam.com		Page
Company AECOM, Inc.				Page
Address 1220 Avenida Adams	Due Date Requested 10 Days			Job #

City Camarillo	Lab Requested (Days)	Analysis Requested			Preservation Codes: A - HCL M - Hexane B - NaOH N - None C - 2% Acetic O - Acetic 50% D - 10% Acetic P - NaOH 50% E - 10% HCl Q - NaOH 20% F - MeOH R - Acetic 20% G - Acetic S - H2SO4 H - Acetic Acid T - 70% Distilled Water I - Ice U - Acetone J - DI Water V - MeOH K - CO2 W - 50% H2O L - CDA X - Other (Specify)
State Zip CA 93012	POB 14710 and 74771	Total Number of Containers (Please Printed Sample Type or No.) (Type: 1000, 2000, 3000, 4000) 1000 1000 2000 3000 4000 5000 6000 7000 8000 9000 Other			
Phone 805-764-4024	WYS N/A				
E-mail carmen.cabezas.dobson@aecom.com	Project # 09407305-2016-1314				

Sample Identification	Sample Date	Sample Time	Sample Type (C=Composite, G=Grab)	Matrix (F=Filter, S=Soil, W=Water, O=Other)	Preservation Code		Total Number of Containers	Special Instructions/Notes
					N	L		
14-05A-2017-0130-0.7	1/30/17	1040	G	W	N	X X	2	
14-05A-2017-0130-0.7 - MS	1/31/17	1040	G	W	N	X X	2	
14-05A-2017-0130-0.7 - MS	1/31/17	1040	G	W	N	X X	2	
14-05B-2017-0131-0.7 0.9	1/31/17	1050	G	W	N	X X	2	
14-05B-2017-0131-0.7 0.9	1/31/17	1050	G	W	N	X X	2	
14-05C-2017-0131-1.3	1/31/17	1058	G	W	N	X X	2	
14-05D-2017-0131-0.6	1/31/17	1106	G	W	N	X X	2	
14-05E-2017-			G	W	N	X X		
			G	W	N	X X		
			G	W	N	X X		

Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input checked="" type="checkbox"/> Archive For _____ Months
Deliverable Requested (E, S, M, Other (Specify) Level B)	Special Instructions/OC Requirements

Empty Kit Requisitioned by 	Date 1-31-17	Time 1515	Company AECOM	Received by 	Date/Time 1/31/17	Company 1500
Requisitioned by	Date/Time	Company	Received by	Date/Time	Company	
Requisitioned by	Date/Time	Company	Received by	Date/Time	Company	

Custody Seals Intact <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Custody Seal No.	Cooler Temperature (°C) and Other Remarks 9.3 °C
---	------------------	--

Irvine, CA 92614-5817
 Phone (949) 261-1022 Fax (949) 260-3297

Chain of Custody Record

Form 100-1 (Rev. 10/1/2004)

Client Information		Sample C. Steve Howe	Lab PM Mata, Patty	Sample Tracking Req.	COC No.
Client Contact Carmen Caceres-Schnell		Phone (805) 764-4031	E-Mail patty.mata@testamericainc.com		Page
Company AECOM, Inc.					Page

Address 1220 Avenida Acosta		Due Date Requested:	Analysis Requested	Preservation Codes: A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsHAc3 D - Nitric Acid P - NaOH45 E - HNO3Q4 Q - Na2SO3 F - NaOH R - H2SO4 G - H2SO4 S - H2SO4 H - Acetic Acid T - TSP Dodecylhydrate I - Ice U - Acetone J - DI Water V - MCAA K - EDTA W - pH 4.5 L - EDA Z - other (specify)
City Camarillo		TAT Requested (days): 10 Days		
State, Zip CA, 93012		Project # 74770 and 74771		

Phone 805-764-4031	Project # 74770 and 74771
Email carmen.caceres-schnell@aecom.com	Project # 60477365-2015.151B
Project Name NERT Surface Water	Site SSOWA
Site NERT - Downgradient Study Area	

Sample Identification	Sample Date	Sample Time	Sample Type (C/Comp, G/grab)	Matrix (Invert, Invert, Invert, Invert, Invert)	Field Filtered Sample (Yes or No)	Special Instructions/Note
T4 2A-2017 0201 -0.4	2-1-17	0955	G	W	N	X X X
T4 2A-2017 0201 -0.4 EB	2-1-17	1000	G	W	N	X X X
T4 2A-2017 0201 -0.4 MS	2-1-17	0955	G	W	N	✓ X X
T4 2A-2017 0201 -0.4 MS	2-1-17	0955	G	W	N	✓ X X
T4 2B-2017 0201 -1.0 -FD	2-1-17	1019	G	W	N	X X X
T4 2C-2017 0201 -0.8	2-1-17	1055	G	W	N	X X X
T4 2D-2017 0201 -1.0	2-1-17	1047	G	W	N	X X X
T4 2B-2017			G	W	N	X X X
T4 2B-2017 0201 -1.0	2-1-17	1019	G	W	N	X X X

Possible Hazard Identification		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)	
<input type="checkbox"/> Non-Hazard	<input type="checkbox"/> Flammable	<input type="checkbox"/> Skin Irritant	<input type="checkbox"/> Poison B
<input type="checkbox"/> Unknown	<input type="checkbox"/> Radiological	<input type="checkbox"/> Return To Client	<input type="checkbox"/> Disposal By Lab
Deliverable Requested: I, II, III, IV, Other (specify): Level II		<input checked="" type="checkbox"/> Archive For _____ Months	

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:
Relinquished by:	Date/Time	Company	Received by:
Relinquished by:	Date/Time	Company	Received by:
Relinquished by:	Date/Time	Company	Received by:

Custody Seals Intact	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		6.5 PLW

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Chain of Custody

Center Tracking No(s)

QC No:

Page

Job #:

Client Information

Client Contact:
Carmen Caceres-Schnell

Company:
AECOM, Inc.

Address:
1220 Avenida Acaso

City:
Camarillo

State, Zip:
CA, 93012

Phone:
805-764-4031

Email:
carmen.caceres-schnell@aecom.com

Project Name:
NERT Surface Water

Site:
NERT - Downgradient Study Area

Sample:
C. Steve Howitt
Phone:
(805) 764-4031

Lab PM:
Mata, Patty
E-Mail:
patty.mata@testamericinc.com

Analysis Requested

Preservation Codes:

- A - HCl
- B - NaOH
- C - Zn Acetate
- D - Nitric Acid
- E - NaHSO4
- F - NaOH
- G - Amchlor
- H - Ascorbic Acid
- I - Ice
- J - DI Water
- K - EDTA
- L - CDA
- M - Heane
- N - None
- O - AsstiaO2
- P - Na2O4S
- Q - Na2SO3
- R - Na2B2O3
- S - H3BO4
- T - TSP Dodecahydrate
- U - Acetone
- V - MCAA
- W - pH 4.5
- Z - other (specify)

Other:

Special Instructions/Note:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix (Inorganic, Organic, Inorganic/Organic)	Field Filtered Sample (Yes or No)		AECOM Method		206C-TOL, 306-CI, In, 314.5-Perchlorate	306.1B, 310 - Chloride	Total Number of Containers
					Field Filtered	Sample	206C-TOL	306.1B, 310 - Chloride			
T8A-2017 0202 - 0.9	2-2-17	0900	G	W	N	X	X				2
T8A-2017 0202 - FB	2-2-17	1535	G	W	N	X	X				2
T8B-2017 0202 - 1.7	2-2-17	0905	G	W	N	X	X				2
T8C-2017 0202 - 1.7	2-2-17	0913	G	W	N	X	X				2
T8D-2017 0202 - 0.4	2-2-17	0918	G	W	N	X	X				X
T8E-2017			G	W	N	X	X				
			G	W	N	X	X				
			G	W	N	X	X				
			G	W	N	X	X				
			G	W	N	X	X				

Possible Hazard Identification
 Non-Hazard Flammable Skin Irritant Poison B Unknown Radiological

Deliverable Requested: I, II, III, IV, Other (specify): Level II

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
 Return To Client Disposal By Lab Archive For _____ Months

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:
Relinquished by: <i>[Signature]</i>	Date/Time: 2-2-17 1630	Company: AECOM	Received by: <i>[Signature]</i>
Relinquished by:	Date/Time:	Company:	Received by:
Relinquished by:	Date/Time:	Company:	Received by:

Custody Seals Intact: Yes No Custody Seal No.: _____
 Cooler Temperature(s) °C and Other Remarks:

Client Information	Sampler: C. Steve Howe	Lab PM: Mata, Patty	Center Tracking No(s):	COC No:
	Client Contact: Carmen Caceres-Schnell Phone: (805) 764-4031	E-Mail: patty.mata@testamericainc.com		Page: Page

Company: AECOM, Inc.	Address: 1220 Avenida Acaso City: Camarillo State, Zip: CA, 93012	Due Date Requested:	Analysis Requested	Total Number of containers	Preservation Codes: A - HCL M - HCl B - NaOH N - NaOH C - Zn Acetate Q - Asl D - Nitric Acid P - Na E - NaHSO4 Q - Na F - MeOH R - Na G - Amchlor S - H2 H - Ascorbic Acid T - TB I - Ice U - Ac J - DI Water V - MC K - EDTA W - pl L - EDA Z - oth
Phone: 805-764-4031	PO #: 74770 and 74771	TAT Requested (days): 10 Days			
Email: carmen.caceres-schnell@aecom.com	WO #:				
Project Name: NERT Surface Water	Project #: 60477365-2015.151B				

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=soil, G=grab, B=Blank, A=Air)	Field Filtered Sample (Yes or No)	Random Weighing (Y or N)	2540C-TDS, 300-02, Br, 314.0-Perchlorate	300.10_310 - Chlorate	Special Instruct
T5.3A-2017_0202 - 1.4	2-2-17	0932	G	W	N	X	X		2
T5.3B-2017_0202 - 2.0	2-2-17	1013	G	W	N	X	X		2
T5.3B-2017_0202 - 2.0-FD	2-2-17	1013	G	W	N	X	X		2
T5.3C-2017_0202 - 1.2	2-2-17	0959	G	W	N	X	X		2
T5.3D-2017			G	W	N	X	X		X
T5.3E-2017			G	W	N	X	X		X
T5-3A-20170202-1.4-EB	2-2-17	1530	G	W	N	X	X		2
T5-3A-20170202-2.8	2-2-17	0937	G	W	N	X	X		2
			G	W	N	X	X		
			G	W	N	X	X		

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological	<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input checked="" type="checkbox"/> Archive For
Deliverable Requested: I, II, III, IV, Other (specify): Level II	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date: 2-2-17	Time: 1630	Company: AECOM	Received by:	Date/Time: 2-2-17 1630
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	

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 Phone (949) 261-1022 Fax (949) 260-3297

Chain of Custody Record

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Client Information			Sampler: C. Steve Howe		Lab PM: Mata, Patty		Carrier Tracking No(s):		COC No:	
Client Contact: Carmen Caceres-Schnell			Phone: (805) 764-4031		E-Mail: patty.mata@testamericainc.com				Page: Page	
Company: AECOM, Inc.			Due Date Requested:		Analysis Requested (Field Filled Sample (Yes or No)) Perform MSWSP (Yes or No) 2540C-TDS, 300-Cl, Br, 314.0-Perchlorate 300-IB, 280 - Chlorate		Total Number of Containers		Preservation Codes: A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2O3 G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate I - Ice U - Acetone J - DI Water V - MCAA K - EDTA W - ph 4-5 L - EDA Z - other (specify)	
Address: 1220 Avenida Acaso			TAT Requested (days): 10 Days							
City: Camarillo			PO #: 74770 and 74771							
State, Zip: CA, 93012			WO #:							
Phone: 805-764-4031			Project #: 60477385-2015.151B							
Email: carmen.caceres-schnell@aecom.com			SSOW#:							
Project Name: NERT Surface Water			Site: NERT - Downgradient Study Area							
			Special Instructions/Note:							

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=soil, BT=tissue, AA=air)	Preservation Code:	Field Filled Sample (Yes or No)	Perform MSWSP (Yes or No)	Total Number of Containers
T6.35A-2017 0203 - 1.5	02.03.17	0932	G	W	N	X	X	Z
T6.35B-2017 0203 - 1.0	2.3.17	0955	G	W	N	X	X	Z
T6.35C-2017 0203 - 1.0	2.3.17	0919	G	W	N	X	X	Z
T6.35D-2017 _____ PD	—	—	G	W	N	X	X	K
T6.35E-2017 _____	—	—	G	W	N	X	X	K
T6.35F-2017 0203 - 3.0	2.3.17	0944	G	W	N	X	X	Z
B			G	W	N	X	X	
			G	W	N	X	X	
			G	W	N	X	X	
			G	W	N	X	X	

Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological			Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input checked="" type="checkbox"/> Archive For _____ Months		
Deliverable Requested: I, II, III, IV, Other (specify): Level II			Special Instructions/QC Requirements:		
Empty Kit Relinquished by: <i>[Signature]</i>		Date: 2.3.17 1430	Time:	Method of Shipment:	
Relinquished by: <i>[Signature]</i>	Date/Time: 2.3.17 1430	Company: AECOM	Received by: <i>[Signature]</i>	Date/Time: 2-3-17 1430	Company: TA
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:

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Chain of Custody

Client Information	Sampler: C. Steve Howe	Lab PM: Mata, Patty	Carrier Tracking No(s):	COC No:
	Client Contact: Carmen Caceres-Schnell	Phone: (805) 764-4031		
Company: AECOM, Inc.		Page:		
Address: 1220 Avenida Acaso		Page		
City: Camarillo		Job #:		
State, Zip: CA, 93012				
Phone: 805-764-4031				
Email: carmen.caceres-schnell@aecom.com				

Due Date Requested:		Analysis Requested										Preservation Codes: A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2O3 G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate I - Ice U - Acetone J - DI Water V - MCAA K - EDTA W - ph 4-5 L - EDA Z - other (specify)
TAT Requested (days): 10 Days		Field Filtered Sample (Yes or No) <input type="checkbox"/> Perform MS/MSD (Yes or No) <input type="checkbox"/> 2540C-TDS, 300-Cl, Br, 314, 6-Perchlorate 300.1B_280 - Chlorate										
Project #: 60477365-2015.151B												Other: Special Instructions/Note:
Site: NERT - Downgradient Study Area												

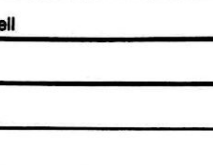
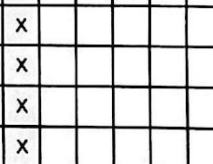
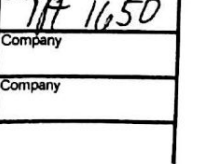
Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=soil/sediment, BT=Throat, Air/Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	2540C-TDS, 300-Cl, Br, 314, 6-Perchlorate	300.1B_280 - Chlorate	Total Number of Containers
T6.8A-2017 0203 -1.0	2.3.17	0913	G	W	N	X	X		2
T6.8A-2017 0203 FB 02215	2.3.17		G	W	N	X	X		X
T6.8B-2017 0203 -1.3	2.3.17	0925	G	W	N	X	X		2
T6.8C-2017 0203 -0.4	2.3.17	0932	G	W	N	X	X		2
T6.8D-2017 0203 -0.9	2.3.17	0941	G	W	N	X	X		2
T6.8E-2017 0203 -0.7	2.3.17	0950	G	W	N	X	X		2
			G	W	N	X	X		
			G	W	N	X	X		
			G	W	N	X	X		
			G	W	N	X	X		

Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input checked="" type="checkbox"/> Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify): Level II	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:
Relinquished by:	Date/Time: 2-3-17 1430	Company: AECOM	Received by: [Signature] Date/Time: 2-3-17 1430 Company: TA
Relinquished by:	Date/Time:	Company:	Received by:
Relinquished by:	Date/Time:	Company:	Received by:
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:	

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Chain of Custody Record

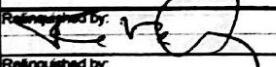
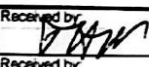
Client Information		Sampler: C. Steve Howe		Lab PM: Mata, Patty		Carrier Tracking No(s):		COC No:			
Client Contact: Carmen Caceres-Schnell		Phone: (805) 764-4031		E-Mail: patty.mata@testamericainc.com				Page: Page			
Company: AECOM, Inc.		Due Date Requested:		Analysis Requested						Job #:	
Address: 1220 Avenida Acaso		TAT Requested (days): 10 Days								Preservation Codes:	
City: Camarillo										A - HCL M - Hexane	
State, Zip: CA, 93012										B - NaOH N - None	
Phone: 805-764-4031		PO #: 74770 and 74771		C - Zn Acetate O - AsNaO2							
Email: carmen.caceres-schnell@aecom.com		WO #:		D - Nitric Acid P - Na2O4S							
Project Name: NERT Surface Water		Project #: 60477365-2015.151B		E - NaHSO4 Q - Na2SO3							
Site: NERT - Downgradient Study Area		SSOW#:		F - MeOH R - Na2S2O3							
				G - Amchlor S - H2SO4							
				H - Ascorbic Acid T - TSP Dodecahydrate							
				I - Ice U - Acetone							
				J - DI Water V - MCAA							
				K - EDTA W - ph 4-5							
				L - EDA Z - other (specify)							
				Other:							
Sample Identification		Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=soils/sludg, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)		Total Number of Containers	Special Instructions/Note:		
LW3.85-20170206- 13 : 00 - FB		2/6/17	13:00	G	W	N	X X		Z		
LW3.85-20170206- 13 ⁰⁰ : 05 - EB		2/6/17	13:05	G	W	N	X X		Z		
LW3.4-20170206- 11 : 10 - 0.42		2/6/17	11:10	G	W	N	X X		Z		
LW3.75-20170206- 10 : 25 - 0.83		2/6/17	10:25	G	W	N	X X		Z		
LWC3.7-20170206- 10 : 16 - 0.33		2/6/17	10:16	G	W	N	X X		Z		
GLW3.78-20170206- 10 : 45 - 0.42		2/6/17	10:45	G	W	N	X X		Z		
LW3.85-20170206- 09 : 53 - 0.6		2/6/17	09:53	G	W	N	X X		Z		
				G	W	N	X X				
				G	W	N	X X				
				G	W	N	X X				
				G	W	N	X X				
Possible Hazard Identification						Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)					
<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological						<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input checked="" type="checkbox"/> Archive For _____ Months					
Deliverable Requested: I, II, III, IV, Other (specify): Level II						Special Instructions/QC Requirements:					
Empty Kit Relinquished by:		Date:		Time:		Method of Shipment:					
Relinquished by: 		Date/Time: 2/6/17 1650		Company: AECOM		Received by: 		Date/Time: 2/6/17		Company:  1650	
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:		Company:	
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:		Company:	
Custody Seals Intact: Δ Yes Δ No		Custody Seal No.:				Cooler Temperature(s) °C and Other Remarks:					

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Chain of Custody Record

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THE LEADER IN ENVIRONMENTAL TESTING

Client Information		Sampler: C. Steve Howe		Lab PM: Mata, Patty		Carrier Tracking No(s):		COC No:					
Client Contact: Carmen Caceres-Schnell		Phone: (805) 764-4031		E-Mail: patty.mata@testamericainc.com				Page: Page					
Company: AECOM, Inc.						Analysis Requested		Job #					
Address: 1220 Avenida Acaso		Due Date Requested:		Field Filtered Sample (Yes or No) 2549C-TDS, 300-Cl, Br, 314,6-Perchlorate 300,1B, 280 - Chlorate									
City: Camarillo		TAT Requested (days): 10 Days											
State, Zip: CA, 93012		PO #: 74770 and 74771											
Phone: 805-764-4031		WO #:											
Email: carmen.caceres-schnell@aecom.com		Project #: 60477365-2015.151B						Preservation Codes: A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsH ₂ CO ₂ D - Nitric Acid P - Na ₂ SO ₄ S E - NaHSO ₄ Q - Na ₂ SO ₃ F - NaOH R - Na ₂ SO ₃ G - Amoxic S - H ₂ SO ₄ H - Ascorbic Acid T - TSP Dodecalhydrate I - Ice U - Acetone J - Cl Water V - MCA K - EDTA W - pH 4-5 L - EDA Z - Other (specify)					
Project Name: NERT Surface Water		SSOW#:											
Site: NERT - Downgradient Study Area								Other:					
Sample Identification		Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, B=soil, O=sediment, ST=Tissue, A=Air)						Total Number of containers	Special Instructions/Note:	
LW3.4-20170206- 14 : 46 - 0.63 x		2/6/17	14:46	G	W	N	X	X					2
		2/6/17		G	W	N	X	X					
		2/6/17		G	W	N	X	X					
		2/6/17		G	W	N	X	X					
				G	W	N	X	X					
				G	W	N	X	X					
				G	W	N	X	X					
				G	W	N	X	X					
				G	W	N	X	X					
				G	W	N	X	X					
				G	W	N	X	X					
				G	W	N	X	X					
				G	W	N	X	X					
				G	W	N	X	X					
				G	W	N	X	X					
Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input checked="" type="checkbox"/> Archive For _____ Months											
Deliverable Requested: I, II, III, IV, Other (specify): Level II		Special Instructions/QC Requirements:											
Empty Kit Relinquished by: _____ Date: _____ Time: _____ Method of Shipment: _____													
Relinquished by: 	Date/Time: 2/6/17 1650	Company: AECOM			Received by: 	Date/Time: 2/6/17 1650	Company: TA						
Relinquished by: _____	Date/Time: _____	Company: _____			Received by: _____	Date/Time: _____	Company: _____						
Relinquished by: _____	Date/Time: _____	Company: _____			Received by: _____	Date/Time: _____	Company: _____						
Custody Seals Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Custody Seal No.: _____		Cooler Temperature(s) °C and Other Remarks: _____										

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Chain of Custody Record



THE LEADER IN ENVIRONMENTAL TESTING

Client Information		Sampler: C. Steve Howe		Lab PM: Mata, Patty	Carrier Tracking No(s):				COC No:							
Client Contact: Carmen Caceres-Schnell		Phone: (805) 764-4031		E-Mail: patty.mata@testamericainc.com					Page: Page							
Company: AECOM, Inc.				Analysis Requested						Job #:						
Address: 1220 Avenida Acaso		Due Date Requested:								Preservation Codes:						
City: Camarillo		TAT Requested (days): 10 Days		Field Filtered Sample (Yes or No) <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes 2540C-TDS, 300-Cl, Br, 314, P-Perchlorate 300.1B, 280 - Chlorate						A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - ph 4-5 Z - other (specify)						
State, Zip: CA, 93012		PO #: 74770 and 74771														
Phone: 805-764-4031		WO #:														
Email: carmen.caceres-schnell@aecom.com		Project #: 60477365-2015.151B														
Project Name: NERT Surface Water		SSOW#:				Other:										
Site: NERT - Downgradient Study Area																
Sample Identification			Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=wastewater, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	2540C-TDS	300-Cl	Br	314	P-Perchlorate	300.1B	280 - Chlorate	Total Number of Containers	Special Instructions/Note
GLW4.4-20170206- <u>14</u> : <u>55</u> - <u>FB</u>			2/6/17	14:55	G	W	N	X	X						2	
GLW4.4-20170206- <u>14</u> : <u>58</u> - <u>EB</u>			2/6/17	14:58	G	W	N	X	X						2	
LW4.1-20170206- <u>11</u> : <u>20</u> - <u>0.3</u>			2/6/17	11:20	G	W	N	X	X						2	
GLW4.4-20170206- <u>11</u> : <u>04</u> - <u>1.1</u>			2/6/17	11:04	G	W	N	X	X						2	
GLW4.85-20170206- <u>10</u> : <u>22</u> - <u>0.6</u>			2/6/17	10:22	G	W	N	X	X						2	GLW4.85-20170206-1022-0.6
					G	W	N	X	X							
					G	W	N	X	X							
					G	W	N	X	X							
					G	W	N	X	X							
					G	W	N	X	X							
					G	W	N	X	X							

Possible Hazard Identification				Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)							
<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological				<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input checked="" type="checkbox"/> Archive For _____ Months							
Deliverable Requested: I, II, III, IV, Other (specify): Level II				Special Instructions/QC Requirements:							
Empty Kit Relinquished by:		Date:		Time:		Method of Shipment:					
Relinquished by: <i>[Signature]</i>		Date/Time: <u>2/6/17</u> <u>1550</u>		Company: AECOM		Received by: <i>[Signature]</i>		Date/Time: <u>2/6/17</u> <u>1650</u>		Company: <u>IA</u>	
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:		Company:	
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:		Company:	
Custody Seals Intact:		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:							
Δ Yes Δ No											



TestAmerica Irvine

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Chain of Custody Record



THE LEADER IN ENVIRONMENTAL TESTING

Client Information		Sampler: C. Steve Howe		Lab PM: Mata, Patty		Carrier Tracking No(s):		COC No:							
Client Contact: Carmen Caceres-Schnell		Phone: (805) 764-4031		E-Mail: patty.mata@testamericainc.com				Page: Page							
Company: AECOM, Inc.						Analysis Requested		Job #:							
Address: 1220 Avenida Acaso		Due Date Requested:		Field Filtered Sample (Yes or No) 2540C-TDS, 300-Cl, Br, 314,6-Perchlorate 300.1B_28D - Chlorate				Preservation Codes:							
City: Camarillo		TAT Requested (days): 10 Days						Total Number of containers:		A - HCL		M - Hexane			
State, Zip: CA, 93012										B - NaOH		N - None		O - AsNaO2	
Phone: 805-764-4031		PO #: 74770 and 74771								C - Zn Acetate		P - Na2O4S		Q - Na2SO3	
Email: carmen.caceres-schnell@aecom.com		WO #:		G - Amchlor		R - Na2S2O3		S - H2SO4							
Project Name: NERT Surface Water		Project #: 60477365-2015.151B		H - Ascorbic Acid		T - TSP Dodecahydrate		Other:							
Site: NERT - Downgradient Study Area		SSOW#:		I - Ice		U - Acetone									
				J - DI Water		V - MCAA									
				K - EDTA		W - ph 4-5									
				L - ETA		Z - other (specify)									
Sample Identification		Sample Date		Sample Time		Sample Type (C=comp, G=grab)		Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)							
GLW4.4-20170206- 14 : 15 - 1.2		2/6/17		14:15		G W		N X X							
		2/6/17				G W		N X X							
		2/6/17				G W		N X X							
		2/6/17				G W		N X X							
						G W		N X X							
						G W		N X X							
						G W		N X X							
						G W		N X X							
						G W		N X X							
						G W		N X X							
						G W		N X X							
						G W		N X X							
						G W		N X X							
						G W		N X X							
						G W		N X X							
Possible Hazard Identification		<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)		<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input checked="" type="checkbox"/> Archive For _____ Months									
Deliverable Requested: I, II, III, IV, Other (specify): Level II				Special Instructions/QC Requirements:											
Empty Kit Relinquished by:		Date:		Time:		Method of Shipment:									
Relinquished by: 		Date/Time: 2/6/17 1650		Company: AECOM		Received by: 		Date/Time: 2/6/17 1650							
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:							
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:							
Custody Seals Intact:		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:											

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Chain of Custody Record



THE LEADER IN ENVIRONMENTAL TESTING

Client Information		Sampler: C. Steve Howe		Lab PM: Mata, Patty		Carrier Tracking No(s):		COC No:			
Client Contact: Carmen Caceres-Schnell		Phone: (805) 764-4031		E-Mail: patty.mata@testamericainc.com				Page: Page			
Company: AECOM, Inc.						Analysis Requested		Job #:			
Address: 1220 Avenida Acaso		Due Date Requested:						Preservation Codes:			
City: Camarillo		TAT Requested (days): 10 Days						A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA			
State, Zip: CA, 93012								M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - ph 4-5 Z - other (specify)			
Phone: 805-764-4031		PO #: 74770 and 74771									
Email: carmen.caceres-schnell@aecom.com		WO #:									
Project Name: NERT Surface Water		Project #: 80477365-2015.151B									
Site: NERT - Downgradient Study Area		SSOW#:									
Sample Identification		Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=wastewater, ST=Tissue, A=Air)	Field Filled Sample (Yes or No)		Total Number of Containers	Special Instructions/Note:		
						25-40C-TDS, 300-CI, Br, 314.0-Perchlorate 300-IB_280 - Chlorate					
LW5.3-20170206-14:26-FB		x	2/6/17	14:26	G	W	N	X	X	2	
LW5.3-20170206-14:24-EB		x	2/6/17	14:24	G	W	N	X	X	2	
GLW4.9-20170206-11:15-1.45		x	2/6/17	11:15	G	W	N	X	X	2	
LW4.95-20170206-11:30-1.10		x	2/6/17	11:30	G	W	N	X	X	2	
LW5.3-20170206-10:00-1.2		x	2/6/17	10:00	G	W	N	X	X	2	
LW5.3-20170206-10:35-2.35		x	2/6/17	10:35	G	W	N	X	X	2	
					G	W	N	X	X		
					G	W	N	X	X		
					G	W	N	X	X		
					G	W	N	X	X		
Possible Hazard Identification		<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)		<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input checked="" type="checkbox"/> Archive For _____ Months					
Deliverable Requested: I, II, III, IV, Other (specify): Level II				Special Instructions/QC Requirements:							
Empty Kit Relinquished by:		Date:		Time:		Method of Shipment:					
Relinquished by:		Date/Time: 2/6/17 1650		Company: AECOM		Received by:		Date/Time: 2/6/17 1650		Company: TA	
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:		Company:	
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:		Company:	
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.:									
										Cooler Temperature(s) °C and Other Remarks:	

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Chain of Custody Record

Client Information Client Contact: Carmen Caceres-Schnell Company: AECOM, Inc. Address: 1220 Avenida Acaso City: Camarillo State, Zip: CA, 93012 Phone: 805-764-4031 Email: carmen.caceres-schnell@aecom.com		Sampler: C. Steve Howe Phone: (805) 764-4031	Lab PM: Mata, Patty E-Mail: patty.mata@testamericainc.com	Carrier Tracking No(s):	COC No: Page: Page: Job #:			
Due Date Requested: TAT Requested (days): <div style="text-align: center; font-weight: bold;">10 Days</div> PO #: 74770 and 74771 WO #: Project #: 60477365-2015.151B SSOV#:			Analysis Requested		Preservation Codes: A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2O3 G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate I - Ice U - Acetone J - DI Water V - MCAA K - EDTA W - ph 4-5 L - EDA Z - other (specify) Other:			
Sample Identification Sample Date Sample Time Sample Type (C=comp, G=grab) Matrix (W=water, S=solid, O=volatile, BT=BIOWASTE, A=Air)		Field Filtered Sample (Yes or No) 2546C-TDS, 300-CJ, Br, 314, O-Pentachlorate 300-IB_280 - Chlorate		Total Number of containers <div style="text-align: center; font-weight: bold; font-size: 2em;">2</div>		Special Instructions/Note:		
LV4.95-20170206- <u>13:20-1.08</u> x 2/6/17 13:20 G W N X X 2/6/17 G W N X X 2/6/17 G W N X X 2/6/17 G W N X X G W N X X G W N X X G W N X X G W N X X G W N X X G W N X X G W N X X		Preservation Code: N L						
Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological			Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input checked="" type="checkbox"/> Archive For _____ Months					
Deliverable Requested: I, II, III, IV, Other (specify): Level II			Special Instructions/QC Requirements:					
Empty Kit Relinquished by:		Date:					Time:	
Relinquished by:		Date/Time: 2/6/17 1650					Company: AECOM	
Relinquished by:		Date/Time:					Received by:	
Relinquished by:		Date/Time:					Received by:	
Relinquished by:		Date/Time:					Received by:	
Relinquished by:		Date/Time:			Received by:			
Custody Seals Intact: Custody Seal No.: Δ Yes Δ No			Cooler Temperature(s) °C and Other Remarks:					

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Chain of Custody Record

TestAmerica
 THE LEADER IN ENVIRONMENTAL TESTING

Client Information		Sampler: C. Steve Howe		Lab PM: Mala, Patty		Carrier Tracking No(s)		COC No			
Client Contact: Carmen Caceres-Schnell		Phone: (805) 764-4031		E-Mail: patty.mala@testamericainc.com				Page #			
Company: AECOM, Inc.								Job #			
Address: 1220 Avenida Acaso		Due Date Requested:		Analysis Requested						Preservation Codes:	
City: Camarillo		TAT Requested (days): 10 Days									
State, Zip: CA, 93012		Project #: 74770 and 74771		Field Filtered Sample (Yes or No) Perform MS/MSD (Yes or No) 2540C-TDS, 300-CI, Br, 314-B-Pentachlorate 300.1B, 240 - Chlorate		Total Number of Containers		Other:			
Phone: 805-764-4031		WO #:									
Email: carmen.caceres-schnell@aecom.com		Project Name: NERT Surface Water		Project #: 60477365-2015.151B							
Site: NERT - Downgradient Study Area		SSOW#:									
Sample Identification		Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=wastewater, BT=Tissue, A=Air)	Preservation Code:		Special Instructions/Note:			
						N	L				
LW6.05-20170206-15:26-0.7		2/6/17	15:26	G	W	N	X	X	Z		
LW6.7-20170206-15:00-0.6		2/6/17	15:00	G	W	N	X	X	Z		
LW7.2-20170206-14:30-1.0		2/6/17	14:30	G	W	N	X	X	Z		
LW7.2-20170206-14:30-1.0 FD		2/6/17	14:30	G	W	N	X	X	Z		
				G	W	N	X	X			
				G	W	N	X	X			
				G	W	N	X	X			
				G	W	N	X	X			
				G	W	N	X	X			
				G	W	N	X	X			
				G	W	N	X	X			
				G	W	N	X	X			
Possible Hazard Identification		<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)							
Deliverable Requested: I, II, III, IV, Other (specify): Level II						<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input checked="" type="checkbox"/> Archive For _____ Months					
Empty Kit Relinquished by:		Date:		Time:		Special Instructions/QC Requirements:					
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:			
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:			
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:			
Custody Seals Intact: Δ Yes Δ No		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:							

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Chain of Custody Record

TestAmerica
 THE LEADER IN ENVIRONMENTAL TESTING

Client Information		Sampler: C. Steve Howe		Lab PM: Mata, Patty		Carrier Tracking No(s)		COC No:	
Client Contact: Carmen Caceres-Schnell		Phone: (805) 764-4031		E-Mail: patty.mata@testamericainc.com				Page: Page	
Company: AECOM, Inc.		Due Date Requested:		Analysis Requested				Job #	
Address: 1220 Avenida Acaso		TAT Requested (days): 10 Days				Field Filtered Sample (Yes or No) <input checked="" type="checkbox"/> Perform MS/MSD (Yes or No) <input checked="" type="checkbox"/> 2#400-105, 300-Cl, Br, 314.0-Perchlorate <input checked="" type="checkbox"/> 300.1B_28D - chlorate <input checked="" type="checkbox"/>		Preservation Codes:	
City: Camarillo		PO #: 74770 and 74771						A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - ph 4-5 Z - other (specify)	
State, Zip: CA, 93012		WO #:		Total Number of containers				Other:	
Phone: 805-764-4031		Project #: 60477365-2015.151B		Project Name: NERT Surface Water		Site: NERT - Downgradient Study Area		SSOW#:	
Email: carmen.caceres-schnell@aecom.com		Sample Date		Sample Time		Sample Type (C=comp, G=grab)		Matrix (W=water, S=solid, O=waste/sol, BT=Tissue, AnAl)	
		Preservation Code:						Special Instructions/Note:	
Sample Identification		2/6/17		12:36		G W		N X X	
LW6.05-20170206-12:36-0.7		2/6/17		12:10		G W		N X X	
LW7.2-20170206-12:10-0.8		2/6/17				G W		N X X	
		2/6/17				G W		N X X	
						G W		N X X	
						G W		N X X	
						G W		N X X	
						G W		N X X	
						G W		N X X	
						G W		N X X	
						G W		N X X	
						G W		N X X	
						G W		N X X	
						G W		N X X	
						G W		N X X	
Possible Hazard Identification		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)							
<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological		<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input checked="" type="checkbox"/> Archive For _____ Months							
Deliverable Requested: I, II, III, IV, Other (specify): Level II		Special Instructions/QC Requirements:							
Empty Kit Relinquished by:		Date:		Time:		Method of Shipment:			
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:	
				AECOM					
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:	
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:	
Custody Seats Intact:		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:					
Δ Yes Δ No									

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Chain of Custody Record

TestAmerica
 THE LEADER IN ENVIRONMENTAL TESTING

Client Information		Sampler: C. Steve Howe		Lab P/N: Mata, Patty		Carrier Tracking No(s):		COC No:			
Client Contact: Carmen Caceres-Schnell		Phone: (805) 764-4031		E-Mail: patty.mata@testamericainc.com				Page: Page			
Company: AECOM, Inc.		Address: 1220 Avenida Acaso City: Camarillo State, Zip: CA, 93012		Due Date Requested: TAT Requested (days): 10 Days		Analysis Requested		Job #:			
Phone: 805-764-4031		Email: carmen.caceres-schnell@aecom.com		PO #: 74770 and 74771		Project #: 60477365-2015.151B		SSOW#:			
Project Name: NERT Surface Water		Site: NERT - Downgradient Study Area		Sample Type (C=Comp, G=grab)		Matrix (W=water, S=solid, O=soils/slur, AT=Tissue, Ar=Air)		Preservation Codes:			
Field Filtered Sample (Yes or No)		Perform. MS/MSD (Yes or No)		2540C-TDS, 300-Cl, Br, 314.0-Perchlorate		300.1B, 280 - Chlorate		A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - ph 4-5 Z - other (specify)			
Special Instructions/Note:		Other:									
Sample Identification		Sample Date		Sample Time		Sample Type (C=Comp, G=grab)		Matrix (W=water, S=solid, O=soils/slur, AT=Tissue, Ar=Air)		Total Number of Containers	
LW7.2-20170206-15 : 50 - EB		2/6/17		15:50		G W		N X X		2	
LW6.05-20170206-11 : 20 - 0.6		2/6/17		11:20		G W		N X X		2	
LW6.7-20170206-10 : 15 - 0.4		2/6/17		10:15		G W		N X X		2	
LW7.2-20170206-09 : 45 - 0.8		2/6/17		09:45		G W		N X X		2	
						G W		N X X			
						G W		N X X			
						G W		N X X			
						G W		N X X			
						G W		N X X			
						G W		N X X			
						G W		N X X			
						G W		N X X			
Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological						Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input checked="" type="checkbox"/> Archive For _____ Months					
Deliverable Requested: I, II, III, IV, Other (specify): Level II						Special Instructions/QC Requirements:					
Empty Kit Relinquished by:		Date:		Time:		Method of Shipment:					
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:		Company:	
				AECOM							
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:		Company:	
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:		Company:	
Custody Seals Intact: Δ Yes Δ No		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:							

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Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information		Sampler: C. Steve Howe		Lab PM: Mata, Patty		Carrier Tracking No(s)		COC No:					
Client Contact: Carmen Caceres-Schnell		Phone: (805) 764-4031		E-Mail: patty.mata@testamericainc.com				Page:					
Company: AECOM, Inc.		Due Date Requested:		Analysis Requested				Job #:					
Address: 1220 Avenida Acaso		TAT Requested (days): 10 Days						Preservation Codes:					
City: Camarillo		PO #: 74770 and 74771						A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA					
State, Zip: CA, 93012		WO #:						M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - ph 4-5 Z - other (specify)					
Phone: 805-764-4031		Project #: 60477365-2015.151B						Other:					
Email: carmen.caceres-schnell@aecom.com		SSOW#:											
Project Name: NERT Surface Water													
Site: NERT - Downgradient Study Area													
Sample Identification		Sample Date		Sample Time		Sample Type (C=comp, G=grab)		Matrix (W=water, S=sed, O=soils, ST=Tissue, A=Air)		Total Number of containers		Special Instructions/Note:	
LW3.75-20170206- 16 : 30 - 0.67		2/6/17		16:30		G W		N X X					
LWC3.7-20170206- 16 : 20 - 0.58		2/6/17		16:20		G W		N X X					
GLW3.78-20170206- 16 : 40 - 0.96		2/6/17		16:40		G W		N X X					
LW3.85-20170206- 16 : 03 - 0.58		2/6/17		16:03		G W		N X X					
LW3.4-20170206- 17 : 01 - 0.7		2/6/17		17:01		G W		N X X					
LW3.4-20170206- 17 : 01 - 0.7 FD		2/6/17		17:01		G W		N X X					
						G W		N X X					
						G W		N X X					
						G W		N X X					
						G W		N X X					
						G W		N X X					
						G W		N X X					
Possible Hazard Identification													
<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological													
Deliverable Requested: I, II, III, IV, Other (specify): Level II													
Empty Kit Relinquished by:		Date:		Time:		Method of Shipment:							
Relinquished by:		Date/Time:		Company		Received by:		Date/Time:		Company			
Relinquished by:		Date/Time:		Company		Received by:		Date/Time:		Company			
Relinquished by:		Date/Time:		Company		Received by:		Date/Time:		Company			
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.:				Cooler Temperature(s) °C and Other Remarks:							

TestAmerica Irvine
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 Irvine, CA 92614-5817
 Phone (949) 261-1022 Fax (949) 260-3297

Chain of Custody Record

TestAmerica
 THE LEADER IN ENVIRONMENTAL TESTING

Client Information		Sampler: C. Steve Howe		Lab PM: Mata, Patty		Carrier Tracking No(s)		COC No:			
Client Contact: Carmen Caceres-Schnell		Phone: (805) 764-4031		E-Mail: patty.mata@testamericainc.com				Page: Page			
Company: AECOM, Inc.								Job #			
Address: 1220 Avenida Acaso		Due Date Requested: 10 Days		Analysis Requested						Preservation Codes: A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2O3 G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate I - Ice U - Acetone J - DI Water V - MCAA K - EDTA W - ph 4-5 L - EDA Z - other (specify) Other:	
City: Camarillo		TAT Requested (days):									
State, Zip: CA, 93012		PO #: 74770 and 74771									
Phone: 805-764-4031		WO #:									
Email: carmen.caceres-schnell@aecom.com		Project #: 60477365-2015.151B		SSOW#:							
Site: NERT - Downgradient Study Area											
Sample Identification		Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/soil, BT=Tissue, AA=Air)	Field Filtered Sample (Yes or No)		Total Number of Containers		Special Instructions/Note:	
						Perform MS/MSD (Yes or No)					
LW5.9-20170206-14 : 23 - -EB		2/6/17	14:23	G	W	N	X	X		2	
LW5.9-20170206-11 : 08 - 0.5		2/6/17	11:08	G	W	N	X	X		2	
LW6.1_1-20170206-09 : 45 - 0.58		2/6/17	09:45	G	W	N	X	X		2	
LW6.1_2-20170206-10 : 00 - 0.8		2/6/17	10:00	G	W	N	X	X		2	
LW6.1_3-20170206-10 : 07 - 1.0		2/6/17	10:07	G	W	N	X	X		2	
LW6.1_4-20170206-10 : 35 - 1.1		2/6/17	10:35	G	W	N	X	X		2	
				G	W	N	X	X			
				G	W	N	X	X			
				G	W	N	X	X			
				G	W	N	X	X			
				G	W	N	X	X			
				G	W	N	X	X			
				G	W	N	X	X			
Possible Hazard Identification		<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)							
Deliverable Requested: I, II, III, IV, Other (specify): Level II				<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input checked="" type="checkbox"/> Archive For _____ Months							
Empty Kit Relinquished by:		Date:		Time:		Method of Shipment:					
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:						
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:						
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:						
Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:								

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Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information Client Contact: Carmen Caceres-Schnell Company: AECOM, Inc.		Sampler: C. Steve Howe Lab PM: Mala, Patty Phone: (805) 764-4031 E-Mail: patty.mala@testamericainc.com		Carrier Tracking No(s)		COC No				
Address: 1220 Avenida Acaso City: Camarillo State, Zip: CA, 93012 Phone: 805-764-4031 Email: carmen.caceres-schnell@aecom.com		Due Date Requested: TAT Requested (days): 10 Days PO #: 74770 and 74771 WO #:		Analysis Requested		Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDTA M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - ph 4-5 Z - other (specify)				
Project Name: NERT Surface Water Site: NERT - Downgradient Study Area		Project #: 60477365-2015.151B SSOW#:		Field Filtered Sample (Yes or No) Perform MS/MSD (Yes or No) 2640C:105, 306-C1, Br, 314, 6-Perchlorate 300, 1B, 240 - Chlorate		Total Number of containers				
Sample Identification		Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=water/soil, BT=Soil, A=Air)	Special Instructions/Note:				
					Preservation Code: N L					
LW5.9-20170206-15:18-0.6		2/6/17	15:18	G	W	N	X	X	2	
LWC6.1_1-20170206-14:43-0.8		2/6/17	14:43	G	W	N	X	X	2	
LWC6.1_2-20170206-14:55-0.6		2/6/17	14:55	G	W	N	X	X	2	14:55
LWC6.1_3-20170206-15:00-0.9		2/6/17	15:00	G	W	N	X	X	2	LWC6.1-3-20170206-15:00-0.9
LWC6.1_4-20170206-15:45-1.3		2/6/17	15:45	G	W	N	X	X	2	LWC6.1-4-20170206-15:45-1.3
LWC6.1_4-20170206-15:45-1.3 FD		2/6/17	15:45	G	W	N	X	X	2	LWC6.1-4-20170206-15:45-1.3 FD
				G	W	N	X	X		
				G	W	N	X	X		
				G	W	N	X	X		
				G	W	N	X	X		
				G	W	N	X	X		
				G	W	N	X	X		
				G	W	N	X	X		
Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input checked="" type="checkbox"/> Archive For _____ Months		Special Instructions/QC Requirements:						
Deliverable Requested: I, II, III, IV, Other (specify): Level II		Empty Kit Relinquished by: _____ Date: _____		Time: _____		Method of Shipment:				
Relinquished by: _____		Date/Time: _____		Company: AECOM		Received by: _____		Date/Time: _____		Company: _____
Relinquished by: _____		Date/Time: _____		Company: _____		Received by: _____		Date/Time: _____		Company: _____
Relinquished by: _____		Date/Time: _____		Company: _____		Received by: _____		Date/Time: _____		Company: _____
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.: _____		Cooler Temperature(s) °C and Other Remarks:						

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Chain of Custody Record

TestAmerica
 THE LEADER IN ENVIRONMENTAL TESTING

Client Information		Sampler: C. Steve Howe	Lab PM: Mata, Patty	Carrier Tracking No(s):	COC No:																								
Client Contact: Carmen Caceres-Schnell		Phone: (805) 764-4031	E-Mail: patty.mata@testamericainc.com		Page: Page																								
Company: AECOM, Inc.		Analysis Requested			Job #:																								
Address: 1220 Avenida Acaso		Due Date Requested:	<table border="1"> <tr> <td>Field Filtered Sample (Yes or No)</td> <td>Perform MS/MSD (Yes or No)</td> <td>2540C-TDS, 300-Cd, Br, 314, 6-Pentachlorate</td> <td>300, 100, 240D - Chlorate</td> <td rowspan="5">Total Number of Containers</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> </table>			Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	2540C-TDS, 300-Cd, Br, 314, 6-Pentachlorate	300, 100, 240D - Chlorate	Total Number of Containers																			
Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	2540C-TDS, 300-Cd, Br, 314, 6-Pentachlorate				300, 100, 240D - Chlorate	Total Number of Containers																						
City: Camarillo		TAT Requested (days): 10 Days																											
State, Zip: CA, 93012																													
Phone: 805-764-4031		PO #: 74770 and 74771																											
Email: carmen.caceres-schnell@aecom.com		WO #:																											
Project Name: NERT Surface Water		Project #: 60477365-2015.151B	Preservation Codes:																										
Site: NERT - Downgradient Study Area		SSOW#:	<table border="0"> <tr> <td>A - HCL</td> <td>M - Hexane</td> </tr> <tr> <td>B - NaOH</td> <td>N - None</td> </tr> <tr> <td>C - Zn Acetate</td> <td>O - AsNaO2</td> </tr> <tr> <td>D - Nitric Acid</td> <td>P - Na2O4S</td> </tr> <tr> <td>E - NaHSO4</td> <td>Q - Na2SO3</td> </tr> <tr> <td>F - MeOH</td> <td>R - Na2S2O3</td> </tr> <tr> <td>G - Amchlor</td> <td>S - H2SO4</td> </tr> <tr> <td>H - Ascorbic Acid</td> <td>T - TSP Dodecalhydrate</td> </tr> <tr> <td>I - Ice</td> <td>U - Acetone</td> </tr> <tr> <td>J - DI Water</td> <td>V - MCAA</td> </tr> <tr> <td>K - EDTA</td> <td>W - ph 4-5</td> </tr> <tr> <td>L - EDA</td> <td>Z - other (specify)</td> </tr> </table>			A - HCL	M - Hexane	B - NaOH	N - None	C - Zn Acetate	O - AsNaO2	D - Nitric Acid	P - Na2O4S	E - NaHSO4	Q - Na2SO3	F - MeOH	R - Na2S2O3	G - Amchlor	S - H2SO4	H - Ascorbic Acid	T - TSP Dodecalhydrate	I - Ice	U - Acetone	J - DI Water	V - MCAA	K - EDTA	W - ph 4-5	L - EDA	Z - other (specify)
A - HCL	M - Hexane																												
B - NaOH	N - None																												
C - Zn Acetate	O - AsNaO2																												
D - Nitric Acid	P - Na2O4S																												
E - NaHSO4	Q - Na2SO3																												
F - MeOH	R - Na2S2O3																												
G - Amchlor	S - H2SO4																												
H - Ascorbic Acid	T - TSP Dodecalhydrate																												
I - Ice	U - Acetone																												
J - DI Water	V - MCAA																												
K - EDTA	W - ph 4-5																												
L - EDA	Z - other (specify)																												
Other:																													
Sample Identification		Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=wasteflot, ST=Tissue, An=Al)	Special Instructions/Note:																							
GLW4.9-20170206- 15 : 00 - 1.5		2/6/17	15:00	G	W																								
LW4.95-20170206- 15 : 15 - 1.1		2/6/17	15:15	G	W																								
LW5.3-20170206- 16 : 00 - 1.2		2/6/17	16:00	G	W																								
LW5.3-20170206- FD		2/6/17		G	W	AC 2/6/17																							
LW5.3-20170206- 16:10 - 2.3		2/6/17	16:10	G	W	2 LW5.3-10 AC 2/6/17																							
				G	W																								
				G	W																								
				G	W																								
				G	W																								
				G	W																								
				G	W																								
				G	W																								
				G	W																								
Possible Hazard Identification		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)																											
<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological		<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input checked="" type="checkbox"/> Archive For _____ Months																											
Deliverable Requested: I, II, III, IV, Other (specify): Level II		Special Instructions/QC Requirements:																											
Empty Kit Relinquished by:		Date:	Time:	Method of Shpmt:																									
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:																								
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:																								
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:																								
Custody Seals Intact:	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:																											
<input type="checkbox"/> Yes <input type="checkbox"/> No																													

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 Irvine, CA 92614-5817
 Phone (949) 261-1022 Fax (949) 260-3297

Chain of Custody Record

TestAmerica
 THE LEADER IN ENVIRONMENTAL TESTING

Client Information Client Contact: Carmen Caceres-Schnell Company: AECOM, Inc. Address: 1220 Avenida Acaso City: Camarillo State, Zip: CA, 93012 Phone: 805-764-4031 Email: carmen.caceres-schnell@aecom.com	Sampler: C. Steve Howe Phone: (805) 764-4031	Lab PM: Mata, Patty E-Mail: patty.mata@testamericainc.com	Carrier Tracking No(s):	COC No: Page: Job #:			
Due Date Requested: TAT Requested (days): 10 Days		Analysis Requested		Preservation Codes: A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2O3 G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate I - Ica U - Acetone J - DI Water V - MCAA K - EDTA W - ph 4-5 L - EDTA Z - other (specify) Other:			
Project Name: NERT Surface Water Site: NERT - Downgradient Study Area	Project #: 60477365-2015.151B SSOW#:	Field Filtered Sample (Yes or No) Perform MS/MSD (Yes or No) 300.1B_290 - Chlorate 300.1B_290 - Chlorate					
Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, B=soil, O=vegetation, BT=Tissue, A=Air)	Preservation Code:	Total Number of Containers	Special Instructions/Note:
LW4.1-20170206- <u>16</u> - <u>42</u> - <u>0.3</u>	2/6/17	<u>16:42</u>	G	W	N X X	2	
GLW4.1.85-20170206- <u>15</u> - <u>58</u> - <u>0.6</u>	2/6/17	<u>15:58</u>	G	W	N X X	2	GLW4.85-20170206-15-58-0.6
GLW4.4-20170206- <u>16</u> - <u>19</u> - <u>1.3</u>	2/6/17	<u>16:19</u>	G	W	N X X	2	
GLW4.4-20170206- <u>FD</u>	2/6/17		G	W	N X X		AC 2/6/17
			G	W	N X X		
			G	W	N X X		
			G	W	N X X		
			G	W	N X X		
			G	W	N X X		

Possible Hazard Identification
 Non-Hazard Flammable Skin Irritant Poison B Unknown Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
 Return To Client Disposal By Lab Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify): Level II Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:
Relinquished by:	Date/Time:	Company AECOM	Received by: Date/Time Company
Relinquished by:	Date/Time:	Company	Received by: Date/Time Company
Relinquished by:	Date/Time:	Company	Received by: Date/Time Company

Custody Seals Intact: Custody Seal No.:
 Δ Yes Δ No

Cooler Temperature(s) °C and Other Remarks:

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Chain of Custody Record

Client Information		Sampler: C. Steve Howe		Lab PM: Mata, Patty		Carrier Tracking No(s):		COC No:							
Client Contact: Carmen Caceres-Schnell		Phone: (805) 764-4031		E-Mail: patty.mata@testamericainc.com				Page: Page							
Company: AECOM, Inc.		Due Date Requested:		Analysis Requested Total Number of containers		Preservation Codes: A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2O3 G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate I - Ice U - Acetone J - DI Water V - MCAA K - EDTA W - ph 4-5 L - EDA Z - other (specify)		Other:							
Address: 1220 Avenida Acaso		TAT Requested (days): 10 Days													
City: Camarillo		PO #: 74770 and 74771													
State, Zip: CA, 93012		WO #:													
Phone: 805-764-4031		Project #: 60477365-2015.151B													
Email: carmen.caceres-schnell@aecom.com		SSOW#:		Project Name: NERT Surface Water		Site: NERT - Downgradient Study Area									
Sample Identification		Sample Date		Sample Time		Sample Type (C=Comp, G=grab)		Matrix (W=water, S=solid, O=wastecol, BT=Tissue, A=Air)		Field Filtered Sample (Yes or No)		Perform: MS/MSD (Yes or No)		Special Instructions/Note:	
LW4.95-20170207- <u>13 : 25 - 1.2</u>		2/7/17		13:25		G W		N		N		X X		2	
						G W		N		X X					
						G W		N		X X					
						G W		N		X X					
						G W		N		X X					
						G W		N		X X					
						G W		N		X X					
						G W		N		X X					
						G W		N		X X					
Possible Hazard Identification		<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)		<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input checked="" type="checkbox"/> Archive For _____ Months									
Deliverable Requested: I, II, III, IV, Other (specify): Level II				Special Instructions/QC Requirements:											
Empty Kit Relinquished by:		Date:		Time:		Method of Shipment:									
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:		Company:					
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:		Company:					
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:		Company:					
Custody Seals Intact:		Custody Seal No.:				Cooler Temperature(s) °C and Other Remarks:									
△ Yes △ No															

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Chain of Custody Record



THE LEADER IN ENVIRONMENTAL TESTING

Client Information		Sampler: C. Steve Howe		Lab PM: Mata, Patty		Carrier Tracking No(s):		COC No:									
Client Contact: Carmen Caceres-Schnell		Phone: (805) 764-4031		E-Mail: patty.mata@testamericainc.com				Page: Page									
Company: AECOM, Inc.				Analysis Requested				Job #:									
Address: 1220 Avenida Acaso		Due Date Requested:						Field Filtered Sample (Yes or No) Perform MS/MSD (Yes or No) 2540C-TDS, 300-Cl, Br, 314, D-Perchlorate 300-1B_28D - Chlorate		Total Number of Containers		Preservation Codes: A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2O3 G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate I - Ice U - Acetone J - DI Water V - MCAA K - EDTA W - ph 4-5 L - EDA Z - other (specify)					
City: Camarillo		TAT Requested (days): 10 Days															
State, Zip: CA, 93012		PO #: 74770 and 74771															
Phone: 805-764-4031		WO #:															
Email: carmen.caceres-schnell@aecom.com		Project #: 60477365-2015.151B															
Project Name: NERT Surface Water		SSOW#:		Site: NERT - Downgradient Study Area				Special Instructions/Note:									
Site: NERT - Downgradient Study Area																	
Sample Identification		Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=wastewater, BT=TISSUE, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	2540C-TDS	300-Cl	Br	314	D-Perchlorate	300-1B_28D	Chlorate	Total Number of Containers		
LW6.05-20170207- <u>14 : 48 - 0.7</u>		2/7/17	14:48	G	W	N	N	X	X						2		
LW6.7-20170207- <u>14 : 25 - 0.6</u>		2/7/17	14:25	G	W	N	N	X	X						2		
LW6.7-20170207- <u>14 : 25 - 0.6</u> FD		2/7/17	14:25	G	W	N	N	X	X						2		
LW7.2-20170207- <u>14 : 02 - 0.9</u>		2/7/17	14:02	G	W	N	N	X	X						2		
				G	W	N		X	X								
				G	W	N		X	X								
				G	W	N		X	X								
				G	W	N		X	X								
				G	W	N		X	X								
				G	W	N		X	X								
Possible Hazard Identification						Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)											
<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological						<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input checked="" type="checkbox"/> Archive For _____ Months											
Deliverable Requested: I, II, III, IV, Other (specify): Level II						Special Instructions/QC Requirements:											
Empty Kit Relinquished by:				Date:		Time:		Method of Shipment:									
Relinquished by:		Date/Time:		Company		Received by:		Date/Time:		Company							
Relinquished by:		Date/Time:		Company		Received by:		Date/Time:		Company							
Relinquished by:		Date/Time:		Company		Received by:		Date/Time:		Company							
Custody Seals Intact: Δ Yes Δ No		Custody Seal No.:				Cooler Temperature(s) °C and Other Remarks:											

TestAmerica Irvine
 17461 Derian Ave Suite 100
 Irvine, CA 92614-5817
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Chain of Custody Record



Client Information		Sampler: C. Steve Howe		Lab PM: Mata, Patty		Carrier Tracking No(s):		COC No:			
Client Contact: Carmen Caceres-Schnell		Phone: (805) 764-4031		E-Mail: patty.mata@testamericainc.com				Page: Page			
Company: AECOM, Inc.				Analysis Requested						Job #:	
Address: 1220 Avenida Acaso		Due Date Requested:								Field Filtered Sample (Yes or No)	
City: Camarillo		TAT Requested (days): 10 Days									
State, Zip: CA, 93012		PO #: 74770 and 74771									
Phone: 805-764-4031		WO #:		2540C-TDS, 300-Cl, Br, 314, 0-Perchlorate		300.1B_28D - Chlorate		Preservation Codes: A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2O3 G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate I - Ice U - Acetone J - DI Water V - MCAA K - EDTA W - ph 4-5 L - EDA Z - other (specify)			
Email: carmen.caceres-schnell@aecom.com		Project #: 60477365-2015.151B									
Project Name: NERT Surface Water		SSOW#:		Field Filtered Sample (Yes or No)		Perform MS/MSD (Yes or No)		Total Number of containers			
Site: NERT - Downgradient Study Area											
Sample Identification		Sample Date		Sample Time		Sample Type (C=comp, G=grab)		Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)		Special Instructions/Note:	
LW3.4-20170207- <u>14:35</u> - 0.6		2/7/17		14:35		G W		N W		2	
						G W		N X X			
						G W		N X X			
						G W		N X X			
						G W		N X X			
						G W		N X X			
						G W		N X X			
						G W		N X X			
						G W		N X X			
						G W		N X X			
Possible Hazard Identification						Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)					
<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological						<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input checked="" type="checkbox"/> Archive For _____ Months					
Deliverable Requested: I, II, III, IV, Other (specify): Level II						Special Instructions/QC Requirements:					
Empty Kit Relinquished by:		Date:		Time:		Method of Shipment:					
Relinquished by:		Date/Time:		Company		Received by:		Date/Time:		Company	
Relinquished by:		Date/Time:		Company		Received by:		Date/Time:		Company	
Relinquished by:		Date/Time:		Company		Received by:		Date/Time:		Company	
Custody Seals Intact: Δ Yes Δ No		Custody Seal No.:				Cooler Temperature(s) °C and Other Remarks:					

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Chain of Custody Record

Client Information		Sampler: C. Steve Howe		Lab PM: Mata, Patty		Carrier Tracking No(s):		COC No:			
Client Contact: Carmen Caceres-Schnell		Phone: (805) 764-4031		E-Mail: patty.mata@testamericainc.com				Page: Page			
Company: AECOM, Inc.		Due Date Requested:		Analysis Requested		Total Number of Containers		Job #:			
Address: 1220 Avenida Acaso		TAT Requested (days): 10 Days						Preservation Codes:			
City: Camarillo		PO #: 74770 and 74771						A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA		M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2SO3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - ph 4-5 Z - other (specify)	
State, Zip: CA, 93012		WO #:						Other:			
Phone: 805-764-4031		Project #: 60477365-2015.151B									
Email: carmen.caceres-schnell@aecom.com		SSOW#:									
Project Name: NERT Surface Water		Site: NERT - Downgradient Study Area									
Sample Identification		Sample Date		Sample Time		Sample Type (C=Comp, G=grab)		Matrix (W=water, S=solid, O=soil/sed, BT=Tissue, AM=Air)			
LW5.9-20170207- <u>15 : 27 - 0.6</u>		2/7/17		15:27		G W		N N X X			
LWC6.1_1-20170207- <u>14 : 45 - 0.8</u>		2/7/17		14:45		G W		N N X X			
LWC6.1_2-20170207- <u>14 : 58 - 0.7</u>		2/7/17		14:58		G W		N N X X			
GLWC6.1_3-20170207- <u>15 : 06 - 0.9</u>		2/7/17		15:06		G W		N N X X			
GLWC6.1_3-20170207- <u>15 : 06 - 0.9 FD</u>		2/7/17		15:06		G W		N N X X			
GLWC6.1_4-20170207- <u>16 : 10 - 1.3</u>		2/7/17		16:10		G W		N N X X			
						G W		N X X			
						G W		N X X			
						G W		N X X			
						G W		N X X			
						G W		N X X			
						G W		N X X			
Possible Hazard Identification		<input type="checkbox"/> Non-Hazard		<input type="checkbox"/> Flammable		<input type="checkbox"/> Skin Irritant		<input type="checkbox"/> Poison B			
		<input type="checkbox"/> Unknown		<input type="checkbox"/> Radiological							
Deliverable Requested: I, II, III, IV, Other (specify): Level II		Special Instructions/QC Requirements:		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)		<input type="checkbox"/> Return To Client		<input type="checkbox"/> Disposal By Lab			
						<input checked="" type="checkbox"/> Archive For		Months			
Empty Kit Relinquished by:		Date:		Time:		Method of Shipment:					
Relinquished by:		Date/Time:		Company		Received by:		Date/Time:			
				AECOM							
Relinquished by:		Date/Time:		Company		Received by:		Date/Time:			
Relinquished by:		Date/Time:		Company		Received by:		Date/Time:			
Custody Seals Intact: Δ Yes Δ No		Custody Seal No.:				Cooler Temperature(s) °C and Other Remarks:					

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Chain of Custody Record



Client Information		Sampler: C. Steve Howe		Lab PM: Mata, Patty		Carrier Tracking No(s):		COC No:			
Client Contact: Carmen Caceres-Schnell		Phone: (805) 764-4031		E-Mail: patty.mata@testamericainc.com				Page: Page			
Company: AECOM, Inc.				Analysis Requested						Job #:	
Address: 1220 Avenida Acaso		Due Date Requested:									
City: Camarillo		TAT Requested (days): 10 Days								A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA	M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - ph 4-5 Z - other (specify)
State, Zip: CA, 93012		PO #: 74770 and 74771								Other:	
Phone: 805-764-4031		WO #:									
Email: carmen.caceres-schnell@aecom.com		Project #: 60477365-2015.151B									
Project Name: NERT Surface Water		SSOW#:									
Site: NERT - Downgradient Study Area											
Sample Identification		Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/soil)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	2540C-TDS, 300-CI, Br, 314, 0-Perchlorate	300.1B_28D - Chlorate	Total Number of containers	Special Instructions/Note:
LW3.75-20170207- 16 : 25 - 1.0		2/7/17	16:25	G	W	N	X	X		2	
LWC3.7-20170207- 16 : 10 - 0.6		2/7/17	16:10	G	W	N	X	X		2	
GLW3.78-20170207- 16 : 35 - 1.2		2/7/17	16:35	G	W	N	X	X		2	
LW3.85-20170207- 15 : 50 - 0.6		2/7/17	15:50	G	W	N	X	X		2	
LW3.85-20170207- 15 : 50 - 0.6 FD		2/7/17	15:50	G	W	N	X	X		2	
LW3.4-20170207- 17 : 00 - 0.7		2/7/17	17:00	G	W	N	X	X		2	
				G	W	N	X	X			
				G	W	N	X	X			
				G	W	N	X	X			
				G	W	N	X	X			
				G	W	N	X	X			
				G	W	N	X	X			
Possible Hazard Identification						Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)					
<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological						<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input checked="" type="checkbox"/> Archive For _____ Months					
Deliverable Requested: I, II, III, IV, Other (specify): Level II						Special Instructions/QC Requirements:					
Empty Kit Relinquished by:			Date:	Time:		Method of Shipment:					
Relinquished by:			Date/Time:	Company	Received by:		Date/Time:	Company			
Relinquished by:			Date/Time:	Company	Received by:		Date/Time:	Company			
Relinquished by:			Date/Time:	Company	Received by:		Date/Time:	Company			
Custody Seals Intact: Δ Yes Δ No		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:							

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Chain of Custody Record

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THE LEADER IN ENVIRONMENTAL TESTING

Client Information			Sampler: C. Steve Howe		Lab PM: Mata, Patty		Carrier Tracking No(s):		COC No:						
Client Contact: Carmen Caceres-Schnell			Phone: (805) 764-4031		E-Mail: patty.mata@testamericainc.com		Page: Page								
Company: AECOM, Inc.			Analysis Requested												
Address: 1220 Avenida Acaso			Due Date Requested:							Job #:					
City: Camarillo			TAT Requested (days): 10 Days							Preservation Codes:					
State, Zip: CA, 93012										A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2O3 G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate I - Ice U - Acetone J - DI Water V - MCAA K - EDTA W - ph 4-5 L - EDA Z - other (specify)					
Phone: 805-764-4031			PO #: 74770 and 74771												
Email: carmen.caceres-schnell@aecom.com			WO #:							Other:					
Project Name: NERT Surface Water			Project #: 60477365-2015.151B												
Site: NERT - Downgradient Study Area			SSOW#:												
Sample Identification			Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=wastewater, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	2540C-TDS	300-CI, Br, 314, 0-Perchlorate	300-1B, 28D - Chlorate	Total Number of Containers	Special Instructions/Note:		
GLW4.9-20170207- 16 : 45 - 1.4			2/7/17	16:45	G	W	N	N	X	X		2			
LW4.95-20170207- 16 : 30 - 1.2			2/7/17	16:30	G	W	N	N	X	X		2			
LW4.95-20170207- 16 : 30 - 1.2 FD			2/7/17	16:30	G	W	N	N	X	X		2			
LW5.3-20170207- 15 : 45 - 1.2			2/7/17	15:45	G	W	N	N	X	X		2			
LW5.3-20170207- 15 : 50 - 2.4			2/7/17	15:50	G	W	N	N	X	X		2			
					G	W	N		X	X					
					G	W	N		X	X					
					G	W	N		X	X					
					G	W	N		X	X					
					G	W	N		X	X					
					G	W	N		X	X					
Possible Hazard Identification												Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)			
<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological												<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input checked="" type="checkbox"/> Archive For _____ Months			
Deliverable Requested: I, II, III, IV, Other (specify): Level II												Special Instructions/QC Requirements:			
Empty Kit Relinquished by:			Date:			Time:			Method of Shipment:						
Relinquished by:			Date/Time:			Company			Received by:			Date/Time:			
Relinquished by:			Date/Time:			Company			Received by:			Date/Time:			
Relinquished by:			Date/Time:			Company			Received by:			Date/Time:			
Custody Seals Intact: Δ Yes Δ No			Custody Seal No.:			Cooler Temperature(s) °C and Other Remarks:									

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 Irvine, CA 92614-5817
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Chain of Custody Record

Client Information		Sampler C. Steve Howe		Lab PM Mata, Patty		Carrier Tracking No(s)		COC No			
Client Contact Carmen Caceres-Schnell		Phone: (805) 764-4031		E-Mail patty.mata@testamericainc.com				Page Page			
Company: AECOM, Inc.				Analysis Requested				Job #			
Address: 1220 Avenida Acaso											
City: Camarillo		Due Date Requested:		Field Filtered Sample (Yes or No)		Perform MS/MSD (Yes or No)		Total Number of containers			
State, Zip: CA, 93012		TAT Requested (days): 10 Days									
Phone: 805-764-4031		PO #: 74770 and 74771									
Email: carmen.caceres-schnell@aecom.com		W/O #:		2540C-TDS, 300-CI, Br. 314, O-Perchlorate 300.1B_28D - Chlorate				Preservation Codes: A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2O3 G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate I - Ice U - Acetone J - DI Water V - MCAA K - EDTA W - ph 4-5 L - EDA Z - other (specify)			
Project Name: NERT Surface Water		Project #: 60477365-2015.151B								Other:	
Site: NERT - Downgradient Study Area		SSOW#:									
Sample Identification		Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/soil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	2540C-TDS, 300-CI, Br. 314, O-Perchlorate	300.1B_28D - Chlorate	Special Instructions/Note:	
				Preservation Code:							
LW4.1-20170207- 16 : 20 - 0.4		2/7/17	16:20	G	W	N	N	X	X		2
GLW4.4-20170207- 16 : 06 - 1.2		2/7/17	16:06	G	W	N	L	X	X	2	
GLWC4.85-20170207- 15 : 42 - 0.8		2/7/17	15:42	G	W	N	Z	X	X	2	
GLW4.85-20170207- 15 : 42 - 0.8 FD		2/7/17	15:42	G	W	N	Z	X	X	2	
				G	W	N		X	X		
				G	W	N		X	X		
				G	W	N		X	X		
				G	W	N		X	X		
				G	W	N		X	X		
				G	W	N		X	X		
				G	W	N		X	X		
				G	W	N		X	X		
				G	W	N		X	X		
Possible Hazard Identification										Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)	
<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological										<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input checked="checked" type="checkbox"/> Archive For _____ Months	
Deliverable Requested: I, II, III, IV, Other (specify): Level II										Special Instructions/QC Requirements:	
Empty Kit Relinquished by:		Date:		Time:						Method of Shipment:	
Relinquished by:		Date/Time:		Company AECOM		Received by:		Date/Time:		Company	
Relinquished by:		Date/Time:		Company		Received by:		Date/Time:		Company	
Relinquished by:		Date/Time:		Company		Received by:		Date/Time:		Company	
Custody Seals Intact: Δ Yes Δ No		Custody Seal No.:				Cooler Temperature(s) °C and Other Remarks:					

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Chain of Custody Record**TestAmerica**

THE LEADER IN ENVIRONMENTAL TESTING

Client Information					Sampler: C. Steve Howe		Lab PM: Mata, Patty		Camer Tracking No(s):			COC No:														
Client Contact: Carmen Caceres-Schnell					Phone: (805) 764-4031		E-Mail: patty.mata@testamericainc.com					Page: Page														
Company: AECOM, Inc.					Analysis Requested										Job #:											
Address: 1220 Avenida Acaso															Due Date Requested:								Preservation Codes: A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2O3 G - Amchlors S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate I - Ice U - Acetone J - DI Water V - MCAA K - EDTA W - ph 4-5 L - EDA Z - other (specify)			
City: Camarillo															TAT Requested (days): 10 Days											
State, Zip: CA, 93012																										
Phone: 805-764-4031															PO #: 74770 and 74771											
Email: carmen.caceres-schnell@aecom.com					WO #:																					
Project Name: NERT Surface Water					Project #: 60477365-2015.151B		Field Filtered Sample (Yes or No)		Perform MS/MSD (Yes or No)		Total Number of containers		Special Instructions/Note:													
Site: NERT - Downgradient Study Area					SSOW#:																					
Sample Identification					Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=wastefl, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	2640C-TDS, 300-Cl, Br, 314.0-Perchlorate	300.1B_28D - Chlorate														
							Preservation Code:	X	X	N	L															
GLW4.4-20170207-14:11-1.3					2/7/17	14:11	G	W	N	N	X	X			2											
GLW4.4-20170207-14:11-1.3 FD					2/7/17	14:11	G	W	N	N	X	X			2											
							G	W	N	X	X															
							G	W	N	X	X															
							G	W	N	X	X															
							G	W	N	X	X															
							G	W	N	X	X															
							G	W	N	X	X															
							G	W	N	X	X															
							G	W	N	X	X															
							G	W	N	X	X															

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Chain of Custody Record

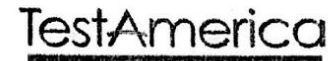


Client Information		Sampler: C. Steve Howe		Lab PM: Mata, Patty		Carrier Tracking No(s):		COC No:													
Client Contact: Carmen Caceres-Schnell		Phone: (805) 764-4031		E-Mail: patty.mata@testamericainc.com				Page: Page													
Company: AECOM, Inc.								Job #:													
Address: 1220 Avenida Acaso		Due Date Requested:		Analysis Requested				Preservation Codes: A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2O3 G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate I - Ice U - Acetone J - DI Water V - MCAA K - EDTA W - ph 4-5 L - EDA Z - other (specify)													
City: Camarillo		TAT Requested (days): 10 Days																			
State, Zip: CA, 93012		PO #: 74770 and 74771																			
Phone: 805-764-4031		WVO #:																			
Email: carmen.caceres-schnell@aecom.com		Project #: 60477365-2015.151B						Other:													
Project Name: NERT Surface Water		SSOW#:																			
Site: NERT - Downgradient Study Area																					
Sample Identification		Sample Date		Sample Time		Sample Type (C=comp, G=grab)		Matrix (W=water, S=solid, O=wastefill, BT=Tissue, A=Air)		Field Filtered Sample (Yes or No)		Perform MS/MSD (Yes or No)		2540C-TDS, 300-Cl, Br, 314.0-Perchlorate		300.1B_28D - Chlorate		Total Number of containers		Special Instructions/Note:	
						Preservation Code:															
LW3.4-20170207- 11 : 11 - 0.5 MS		2/7/17		11:11		G W		N		Y		X X						2			
LW3.4-20170207- 11 : 11 - 0.5 MSD		2/7/17		11:11		G W		N		Y		X X						2			
LW3.4-20170207- 11 : 11 - 0.5		2/7/17		11:11		G W		N		N		X X						2			
LW3.75-20170207- 10 : 45 - 0.9		2/7/17		10:45		G W		N		N		X X						2			
LWC3.7-20170207- 10 : 32 - 0.4		2/7/17		10:32		G W		N		N		X X						2			
GLW3.78-20170207- 09 : 35 - 0.7		2/7/17		09:35		G W		N		N		X X						2			
LW3.85-20170207- 10 : 12 - 0.5		2/7/17		10:12		G W		N		N		X X						2			
						G W		N				X X									
						G W		N				X X									
						G W		N				X X									
						G W		N				X X									
Possible Hazard Identification																					
<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological																					
Deliverable Requested: I, II, III, IV, Other (specify): Level II																					
Empty Kit Relinquished by:		Date:		Time:		Method of Shipment:															
Relinquished by: <i>[Signature]</i>		Date/Time: 2/7/17 13:30		Company: AECOM		Received by: <i>[Signature]</i>		Date/Time: 2.7.17 1330		Company: <i>[Signature]</i>											
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:		Company:											
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:		Company:											
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.:																			

TestAmerica Irvine

17461 Derian Ave Suite 100
Irvine, CA 92614-5817
Phone (949) 261-1022 Fax (949) 260-3297

Chain of Custody Record



Client Information		Sampler: C. Steve Howe		Lab PM: Mata, Patty		Carrier Tracking No(s):		COC No:																					
Client Contact: Carmen Caceres-Schnell		Phone: (805) 764-4031		E-Mail: patty.mata@testamericainc.com				Page: Page																					
Company: AECOM, Inc.								Job #:																					
Address: 1220 Avenida Acaso		Due Date Requested:		Analysis Requested						Preservation Codes: A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2O3 G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate I - Ice U - Acetone J - DI Water V - MCAA K - EDTA W - ph 4-5 L - EDA Z - other (specify)																			
City: Camarillo		TAT Requested (days): 10 Days																											
State, Zip: CA, 93012		PO #: 74770 and 74771																											
Phone: 805-764-4031		WO #:																											
Email: carmen.caceres-schnell@aecom.com																													
Project Name: NERT Surface Water		Project #: 60477365-2015.151B																											
Site: NERT - Downgradient Study Area		SSOW#:																											
Sample Identification		Sample Date		Sample Time		Sample Type (C=comp, G=grab)		Matrix (W=water, S=solid, O=waste/oli, BT=Tissue, A=Air)		Field Filtered Sample (Yes or No)		Perform MS/MSD (Yes or No)		2540C-TDS, 300-Cl, Br, 314.0-Perchlorate		300.1B_2BD - Chlorate		Total Number of containers		Special Instructions/Note:									
						Preservation Code:																							
GLW4.9-20170207- 10 : 55 - 1.2 MS		2/7/17		10:55		G		W		N		X		X						2									
GLW4.9-20170207- 10 : 55 - 1.2 MSD		2/7/17		10:55		G		W		N		X		X						2									
GLW4.9-20170207- 10 : 55 - 1.2		2/7/17		10:55		G		W		N		X		X						2									
LW4.95-20170207- 10 : 45 - 1.0		2/7/17		10:45		G		W		N		X		X						2									
LW5.3-20170207- 09 : 45 - 1.0		2/7/17		09:45		G		W		N		X		X						2									
LW5.3-20170207- 09 : 50 - 2.0		2/7/17		09:50		G		W		N		X		X						2									
						G		W		N		X		X															
						G		W		N		X		X															
						G		W		N		X		X															
						G		W		N		X		X															
						G		W		N		X		X															
						G		W		N		X		X															
Possible Hazard Identification										Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)																			
<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological										<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input checked="" type="checkbox"/> Archive For _____ Months																			
Deliverable Requested: I, II, III, IV, Other (specify): Level II										Special Instructions/QC Requirements:																			
Empty Kit Relinquished by:					Date:					Time:					Method of Shipment:														
Relinquished by: <i>[Signature]</i>					Date/Time: 2/7/2017 13:30					Company: AECOM					Received by: <i>[Signature]</i>					Date/Time: 2-7-17 1330					Company: <i>[Signature]</i>				
Relinquished by:					Date/Time:					Company:					Received by:					Date/Time:					Company:				
Relinquished by:					Date/Time:					Company:					Received by:					Date/Time:					Company:				
Custody Seals Intact: Δ Yes Δ No					Custody Seal No.:					Cooler Temperature(s) °C and Other Remarks: 25																			

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Chain of Custody Record

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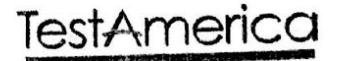
THE LEADER IN ENVIRONMENTAL TESTING

Client Information		Sampler: C. Steve Howe		Lab PM: Mata, Patty		Carrier Tracking No(s):		COC No:			
Client Contact: Carmen Caceres-Schnell		Phone: (805) 764-4031		E-Mail: patty.mata@testamericainc.com				Page: Page			
Company: AECOM, Inc.								Job #:			
Address: 1220 Avenida Acaso		Due Date Requested:		Analysis Requested						Preservation Codes: A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2O3 G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate I - Ice U - Acetone J - DI Water V - MCAA K - EDTA W - ph 4-5 L - EDA Z - other (specify)	
City: Camarillo		TAT Requested (days): 10 Days									
State, Zip: CA, 93012		PO #: 74770 and 74771		Field Filtered Sample (Yes or No)		Perform MS/MSD (Yes or No)		Total Number of Containers			
Phone: 805-764-4031		WO #:		2540C-TDS, 300-Cl, Br, 314, 0-Perchlorate		300.1B_280 - Chlorate					
Email: carmen.caceres-schnell@aecom.com		Project #: 60477365-2015.151B									
Project Name: NERT Surface Water		SSOW#:									
Site: NERT - Downgradient Study Area											
Sample Identification		Sample Date		Sample Time		Sample Type (C=comp, G=grab)		Matrix (W=water, S=solid, O=wastefoil, BT=Tissue, A=Air)			
								Preservation Code:			
LW5.9-20170207- 10 : 00 - 0.4 MS		2/7/17		10:00		G W		N X X			
LW5.9-20170207- 10 : 00 - 0.4 MSD		2/7/17		10:00		G W		N X X			
LW5.9-20170207- 10 : 00 - 0.4		2/7/17		10:00		G W		N X X			
LWC6.1_1-20170207- 09 : 03 - 0.9		2/7/17		09:03		G W		N X X			
LWC6.1_2-20170207- 09 : 20 - 0.7		2/7/17		09:20		G W		N X X			
GLWC6.1_3-20170207- 09 : 30 - 1.0		2/7/17		09:30		G W		N X X			
GLWC6.1_4-20170207- 10 : 35 - 1.3		2/7/17		10:35		G W		N X X			
						G W		N X X			
						G W		N X X			
						G W		N X X			
						G W		N X X			
Possible Hazard Identification		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)									
<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological		<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input checked="" type="checkbox"/> Archive For _____ Months									
Deliverable Requested: I, II, III, IV, Other (specify): Level II		Special Instructions/QC Requirements:									
Empty Kit Relinquished by:		Date:		Time:		Method of Shipment:					
Relinquished by: <i>[Signature]</i>		Date/Time: 2/7/17 1330		Company: AECOM		Received by: <i>[Signature]</i>		Date/Time: 2-7-17 1330			
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:			
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:			
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks: 2.8							

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Chain of Custody Record



Client Information		Sampler: C. Steve Howe		Lab PM: Mata, Patty		Carrier Tracking No(s):		COC No:		
Client Contact: Carmen Caceres-Schnell		Phone: (805) 764-4031		E-Mail: patty.mata@testamericainc.com				Page: Page		
Company: AECOM, Inc.								Job #:		
Address: 1220 Avenida Acaso		Due Date Requested:		Analysis Requested		Total Number of containers		Preservation Codes: A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2O3 G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate I - Ice U - Acetone J - DI Water V - MCAA K - EDTA W - ph 4-5 L - EDA Z - other (specify)		
City: Camarillo		TAT Requested (days): 10 Days								
State, Zip: CA, 93012		PO #: 74770 and 74771								
Phone: 805-764-4031		WO #:								
Email: carmen.caceres-schnell@aecom.com										
Project Name: NERT Surface Water		Project #: 60477365-2015.151B								
Site: NERT - Downgradient Study Area		SSOW#:								
Sample Identification		Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/soil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	2540C-TDS, 300-Cl, Br, 314,0-Perchlorate	300.1B_280 - Chlorate	Special Instructions/Note:
				Preservation Code:		X	X	N	L	X
LW6.05-20170207- 09 : 30 - 0.6 MS		2/7/17	09:30	G	W	N	Y	X	X	2
LW6.05-20170207- 09 : 30 - 0.6 MSD		2/7/17	09:30	G	W	N	Y	X	X	2
LW6.05-20170207- 09 : 30 - 0.6		2/7/17	09:30	G	W	N	Z	X	X	2
LW6.7-20170207- 09 : 13 - 0.4		2/7/17	09:13	G	W	N	Z	X	X	2
LW7.2-20170207- 08 : 55 - 0.7		2/7/17	08:55	G	W	N	Z	X	X	2
				G	W	N		X	X	
				G	W	N		X	X	
				G	W	N		X	X	
				G	W	N		X	X	
				G	W	N		X	X	
				G	W	N		X	X	
Possible Hazard Identification		<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)		<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input checked="" type="checkbox"/> Archive For _____ Months				
Deliverable Requested: I, II, III, IV, Other (specify): Level II		Special Instructions/QC Requirements:								
Empty Kit Relinquished by:		Date:		Time:		Method of Shipment:				
Relinquished by: <i>[Signature]</i>		Date/Time: 2/7/17 13:30		Company: AECOM		Received by: <i>[Signature]</i>		Date/Time: 2-7-17 1330		Company: <i>[Signature]</i>
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:		Company:
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:		Company:
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.:				Cooler Temperature(s) °C and Other Remarks:				

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Chain of Custody Record

Client Information		Sampler: C. Steve Howe		Lab PM: Mata, Patty		Carrier Tracking No(s):		COC No:	
Client Contact: Carmen Caceres-Schnell		Phone: (805) 764-4031		E-Mail: patty.mata@testamericainc.com				Page: Page	
Company: AECOM, Inc.								Job #:	
Address: 1220 Avenida Acaso		Due Date Requested:							
City: Camarillo		TAT Requested (days): 10 Days							
State, Zip: CA, 93012									
Phone: 805-764-4031		PO #: 74770 and 74771							
Email: carmen.caceres-schnell@aecom.com		WO #:							
Project Name: NERT Surface Water		Project #: 60477365-2015.151B							
Site: NERT - Downgradient Study Area		SSOW#:							
								Analysis Requested Preservation Codes: A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2O3 G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate I - Ice U - Acetone J - DI Water V - MCAA K - EDTA W - ph 4-5 L - EDA Z - other (specify) Other:	
								Total Number of containers Special Instructions/Note:	
Sample Identification		Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=wastewater, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	2540C-TDS, 300-Cl, Br, 314.B-Perchlorate	300.1B_240 - Chlorate	
				Preservation Code:					
LW3.4-20170208- 10 : 55 - FB		2/8/17	10:55	G	W	N	X	X	2
LW3.4-20170208- 10 : 30 - 0.5		2/8/17	10:50	G	W	N	X	X	2
LWC3.7-20170208- 09 : 48 - 0.5		2/8/17	09:48	G	W	N	X	X	2
LW3.75-20170208- 09 : 57 - 0.8		2/8/17	09:57	G	W	N	X	X	2
GLW3.78-20170208- 10 : 10 - 0.5		2/8/17	10:10	G	W	N	X	X	2
LW3.85-20170208- 09 : 27 - 0.5		2/8/17	09:27	G	W	N	X	X	2
LW3.85-20170208- 09 : 27 - 0.5 FD		2/8/17	09:27	G	W	N	X	X	2
				G	W	N	X	X	
				G	W	N	X	X	
				G	W	N	X	X	
				G	W	N	X	X	
				G	W	N	X	X	
Possible Hazard Identification									
<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological									
Deliverable Requested: I, II, III, IV, Other (specify): Level II								Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input checked="" type="checkbox"/> Archive For _____ Months	
Empty Kit Relinquished by:		Date:		Time:		Method of Shipment:			
Relinquished by: <i>[Signature]</i>		Date/Time: 2/8/2017 1325		Company: AECOM		Received by: <i>[Signature]</i>		Date/Time: 2/8/17 1325 Company: TA	
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time: Company:	
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time: Company:	
Custody Seals Intact: Δ Yes Δ No		Custody Seal No.:				Cooler Temperature(s) °C and Other Remarks:			

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Chain of Custody Record

TestAmerica
 THE LEADER IN ENVIRONMENTAL TESTING

Client Information		Sampler: C. Steve Howe		Lab PM: Mata, Patty		Carrier Tracking No(s):		COC No:	
Client Contact: Carmen Caceres-Schnell		Phone: (805) 764-4031		E-Mail: patty.mata@testamericainc.com				Page: Page	
Company: AECOM, Inc.								Job #:	
Address: 1220 Avenida Acaso		Due Date Requested:		Analysis Requested Field Filtered Sample (Yes or No) 2540C-TDS, 300-Cl, Br, 314,0-Perrchlorate 900.1B_260 - Chlorate				Preservation Codes: A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2O3 G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate I - Ice U - Acetone J - DI Water V - MCAA K - EDTA W - ph 4-5 L - EDA Z - other (specify)	
City: Camarillo		TAT Requested (days): 10 Days							
State, Zip: CA, 93012		PO #: 74770 and 74771							
Phone: 805-764-4031		WO #:							
Email: carmen.caceres-schnell@aecom.com		Project #: 60477365-2015.151B							
Project Name: NERT Surface Water		SSOW#:						Other:	
Site: NERT - Downgradient Study Area									
Sample Identification		Sample Date		Sample Time		Sample Type (C=Comp, G=grab)		Matrix (W=water, S=solid, O=wastefell, BT=Tissue, A=Air)	
LW4.1-20170208- <u>11:12</u> - <u>FB</u>		2/8/17		11:12		G W		N N X X	
GLW4.4-20170208- <u>11:02</u> - <u>EB</u>		2/8/17		11:02		G W		N N X X	
LW4.1-20170208- <u>10:22</u> - <u>0.4</u>		2/8/17		10:22		G W		N N X X	
GLW4.85-20170208- <u>09:45</u> - <u>0.6</u>		2/8/17		09:45		G W		N N X X	
GLW4.4-20170208- <u>10:07</u> - <u>1.1</u>		2/8/17		10:07		G W		N N X X	
LW4.1-20170208- <u>10:22</u> - <u>0.4</u>		2/8/17		10:22		G W		N N X X	
						G W		N X X	
						G W		N X X	
						G W		N X X	
						G W		N X X	
						G W		N X X	
Possible Hazard Identification									
<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological									
Deliverable Requested: I, II, III, IV, Other (specify): Level II								Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input checked="" type="checkbox"/> Archive For _____ Months	
Empty Kit Relinquished by:		Date:		Time:		Method of Shipment:			
Relinquished by: <i>[Signature]</i>		Date/Time: 2/8/2017 1325		Company: AECOM		Received by: <i>[Signature]</i>		Date/Time: 2/8/17 1325	
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:	
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:	
Custody Seals Intact: Δ Yes Δ No		Custody Seal No.:						Cooler Temperature(s) °C and Other Remarks:	

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Chain of Custody Record

TestAmerica
 THE LEADER IN ENVIRONMENTAL TESTING

Client Information		Sampler: C. Steve Howe		Lab PM: Mata, Patty		Carrier Tracking No(s):		COC No:											
Client Contact: Carmen Caceres-Schnell		Phone: (805) 764-4031		E-Mail: patty.mata@testamericainc.com				Page: Page											
Company: AECOM, Inc.		Due Date Requested:		Analysis Requested		Job #:		Preservation Codes: A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2O3 G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate I - Ice U - Acetone J - DI Water V - MCAA K - EDTA W - ph 4-5 L - EDA Z - other (specify) Other:											
Address: 1220 Avenida Acaso		TAT Requested (days): 10 Days																	
City: Camarillo		PO #: 74770 and 74771																	
State, Zip: CA, 93012		WO #:																	
Phone: 805-764-4031		Project #: 60477365-2015.151B		Field Filtered Sample (Y=Yes or No)		Total Number of Containers		Special Instructions/Note:											
Email: carmen.caceres-schnell@aecom.com		SSOW#:		2540C-TDS, 300-Cl, Br, 314,0-Perchlorate		300.1B, 240 - Chlorate													
Project Name: NERT Surface Water		Site: NERT - Downgradient Study Area		Sample Date		Sample Time		Sample Type (C=comp, G=grab)		Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)		Preservation Code		Field Filtered Sample (Y=Yes or No)		Total Number of Containers		Special Instructions/Note:	
GLW4.9-20170208- 11 : 09 - FB		2/8/17 11:09		G W		N N		X X								2			
LW4.95-20170208- 11 : 06 - EB		2/8/17 11:06		G W		N N		X X								2			
GLW4.9-20170208- 10 : 50 - 1.2		2/8/17 10:50		G W		N N		X X								2			
LW4.95-20170208- 10 : 30 - 1.1		2/8/17 10:30		G W		N N		X X								2			
LW5.3-20170208- 10 : 00 - 1.0		2/8/17 10:00		G W		N N		X X								2			
LW5.3-20170208- 10 : 03 - 2.0		2/8/17 10:03		G W		N N		X X								2			
				G W		N		X X											
				G W		N		X X											
				G W		N		X X											
				G W		N		X X											
				G W		N		X X											
Possible Hazard Identification		<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)		<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input checked="" type="checkbox"/> Archive For _____ Months													
Deliverable Requested: I, II, III, IV, Other (specify): Level II		Special Instructions/QC Requirements:																	
Empty Kit Relinquished by:		Date:		Time:		Method of Shipment:													
Relinquished by: <i>AWC</i>		Date/Time: 2/8/2017 1325		Company: AECOM		Received by: <i>AM</i>		Date/Time: 2/8/17 1325		Company: <i>TA</i>									
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:		Company:									
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:		Company:									
Custody Seals Intact: Δ Yes Δ No		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:															

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Chain of Custody Record

TestAmerica
 THE LEADER IN ENVIRONMENTAL TESTING

Client Information		Sampler: C. Steve Howe		Lab PM: Mala, Patty		Carrier Tracking No(s):		COC No:			
Client Contact: Carmen Caceres-Schnell		Phone: (805) 764-4031		E-Mail: patty.mata@testamericainc.com				Page: Page			
Company: AECOM, Inc.		Due Date Requested:		Analysis Requested 2540C-TDS, 300-CI, Pr, 314, D-Pentachlorate 300.1B_280 - Chlorate		Total Number of Containers		Job #:			
Address: 1220 Avenida Acaso		TAT Requested (days): 10 Days						Preservation Codes:			
City: Camarillo		PO #: 74770 and 74771						A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA		M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - ph 4-5 Z - other (specify)	
State, Zip: CA, 93012		WO #:						Other:			
Phone: 805-764-4031		Project #: 60477365-2015.151B									
Email: carmen.caceres-schnell@aecom.com		SSOW#:									
Project Name: NERT Surface Water											
Site: NERT - Downgradient Study Area											
Sample Identification		Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=leachate, A=Air)	Field Filtered Sample (Yes or No)		Special Instructions/Note:			
						N	N	X	X		
LW5.9-20170208-11:45-FB		2/8/17	11:45	G	W	N	N	X	X		
LWC6.1_1-20170208-11:40-EB		2/8/17	11:40	G	W	N	N	X	X		
LW5.9-20170208-10:35-0.4		2/8/17	10:35	G	W	N	N	X	X		
LWC6.1_1-20170208-09:45-0.9		2/8/17	09:45	G	W	N	N	X	X		
LWC6.1_2-20170208-10:00-0.6		2/8/17	10:00	G	W	N	N	X	X		
GLWC6.1_3-20170208-10:05-1.2		2/8/17	10:05	G	W	N	N	X	X		
GLWC6.1_4-20170208-10:35-1.3		2/8/17	10:35	G	W	N	N	X	X		
GLWC6.1_4-20170208-10:35-1.3FD		2/8/17	10:35	G	W	N	N	X	X		
				G	W	N		X	X		
				G	W	N		X	X		
				G	W	N		X	X		
Possible Hazard Identification						Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)					
<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological						<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input checked="" type="checkbox"/> Archive For _____ Months					
Deliverable Requested: I, II, III, IV, Other (specify): Level II						Special Instructions/QC Requirements:					
Empty Kit Relinquished by:		Date:	Time:	Method of Shipment:							
Relinquished by: <i>Alv</i>		Date/Time: 2/8/2017 1325	Company: AECOM	Received by: <i>JAM</i>		Date/Time: 2/8/17 1325	Company: <i>TA</i>				
Relinquished by:		Date/Time:	Company:	Received by:		Date/Time:	Company:				
Relinquished by:		Date/Time:	Company:	Received by:		Date/Time:	Company:				
Custody Seals Intact: Δ Yes Δ No		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:							

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Chain of Custody Record

TestAmerica

Client Information		Sampler C. Steve Howe		Lab PM: Mala, Patty		Carrier Tracking No(s)		COC No			
Client Contact Carmen Caceres-Schnell		Phone (805) 764-4031		E-Mail patty.mala@testamericainc.com				Page: Page			
Company AECOM, Inc.								Job #			
Address 1220 Avenida Acaso		Due Date Requested:		Analysis Requested						Preservation Codes: A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2O3 G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate I - Ice U - Acetone J - DI Water V - MCAA K - EDTA W - ph 4-5 L - EDTA Z - other (specify) Other:	
City Camarillo		TAT Requested (days): 10 Days									
State, Zip CA, 93012		PO #: 74770 and 74771									
Phone 805-764-4031		WO #									
Email carmen.caceres-schnell@aecom.com		Project #: 60477365-2015.151B									
Project Name NERT Surface Water		SSOW#		Field Filtered Sample (Yes or No)		Perform MS/MSD (Yes or No)		Total Number of Containers			
Site NERT - Downgradient Study Area				2540C-TDS, 300-Cl, Br, 314.0-Perchlorate		300.1B, 280 - Chlorate					
Sample Identification		Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=wastewater, BT=Tissue, A=Air)	Preservation Code:		Special Instructions/Note:			
LW4.1-20170208- <u>16:33-0.4</u>		2/8/17	16:33	G	W	N	N	X	X	2 2 2 FOR GLW4.85, PRIORITIZE ANALYSIS OF: 300-Cl, Br; AND 314.0-PERCHLORATE (PLASTIC, CLEAR BOTTLE)	
GLW4.4-20170208- <u>16:21-1.3</u>		2/8/17	16:21	G	W	N	N	X	X		
GLW4.85-20170208- <u>16:00-0.8</u>		2/8/17	16:00	G	W	N	N	X	X		
				G	W	N		X	X		
				G	W	N		X	X		
				G	W	N		X	X		
				G	W	N		X	X		
				G	W	N		X	X		
Possible Hazard Identification		<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological				Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input checked="" type="checkbox"/> Archive For _____ Months					
Deliverable Requested: I, II, III, IV, Other (specify): Level II		Special Instructions/QC Requirements:									
Empty Kit Relinquished by:		Date:		Time:		Method of Shipment:					
Relinquished by: <i>[Signature]</i>		Date/Time: 2/9/2017 08:15		Company: AECOM		Received by: <i>[Signature]</i>		Date/Time: 2/9/17		Company:	
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time: 8:15am		Company:	
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:		Company:	
Custody Seals Intact: Δ Yes Δ No		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:							

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Chain of Custody Record

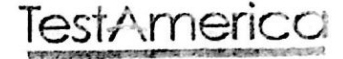


Client Information					Sampler C Steve Howe		Lab PM Mala, Patty		Carrier Tracking No(s)				COC No				
Client Contact Carmen Caceres-Schnell					Phone (805) 764-4031		E-Mail patty.mata@testamericainc.com						Page Page				
Company AECOM, Inc					Analysis Requested										Job #		
Address 1220 Avenida Acaso																	Due Date Requested:
City Camarillo					TAT Requested (days): 10 Days										Preservation Codes: A - HCL M - Hexano B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2O3 G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate I - Ice U - Acetone J - DI Water V - MCAA K - EDTA W - ph 4.5 L - EDA Z - other (specify)		
State Zip CA, 93012					PO # 74770 and 74771		WO #										
Phone 805-764-4031					Project # 60477365-2015 151B		SSOW#								Other: Special Instructions/Note:		
Email carmen.caceres-schnell@aecom.com					Site NERT - Downgradient Study Area												
Sample Identification					Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/soil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	2540C-TDS, 300-Cl, Br, 314.0-Perchlorate	300.1B_2BD - Chlorate					Total Number of containers
GLW4 4-20170208- <u>13 47</u> .1.2					2/8/17	13:47	G	W	N	N	X	X					2
							G	W	N		X	X					
							G	W	N		X	X					
							G	W	N		X	X					
							G	W	N		X	X					
							G	W	N		X	X					
							G	W	N		X	X					
							G	W	N		X	X					
							G	W	N		X	X					
							G	W	N		X	X					
							G	W	N		X	X					
Possible Hazard Identification					Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)												
<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological					<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input checked="" type="checkbox"/> Archive For _____ Months												
Deliverable Requested: I, II, III, IV, Other (specify): Level II					Special Instructions/QC Requirements:												
Empty Kit Relinquished by:					Date:		Time:		Method of Shipment:								
Relinquished by: <i>[Signature]</i>					Date/Time: 2/9/2017 08:15		Company: AECOM		Received by: <i>[Signature]</i>				Date/Time: 2/9/17		Company:		
Relinquished by:					Date/Time:		Company:		Received by:				Date/Time: 8:15am		Company:		
Relinquished by:					Date/Time:		Company:		Received by:				Date/Time:		Company:		
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No					Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:										

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Chain of Custody Record



Client Information		Sampler C. Steve Howe		Lab PM: Mata, Patty		Carrier Tracking No(s)		COC No:			
Client Contact Carmen Caceres-Schnell		Phone: (805) 764-4031		E-Mail: patty.mata@testamericainc.com				Page: Page			
Company AECOM, Inc.		Due Date Requested:		Analysis Requested						Job #:	
Address 1220 Avenida Acaso		TAT Requested (days): 10 Days									
City Camarillo		PO #: 74770 and 74771		Field Filtered Sample (Yes or No)		Perform MS/MSD (Yes or No) 2540C-TDS, 300-Cl, Br, 314.0-Perchlorate 300.1B-280 - Chlorate		Total Number of containers			
State, Zip CA, 93012		WO #:									
Project Name NERT Surface Water		Project #: 60477365-2015.151B								Special Instructions/Note:	
Site: NERT - Downgradient Study Area		SSOW#:									
Sample Identification		Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)			Total Number of containers	Special Instructions/Note:
LW4.95-20170208- 13:05 - 1.2		2/8/17	13:05	G	W	N	N	X	X	2	
				G	W	N		X	X		
				G	W	N		X	X		
				G	W	N		X	X		
				G	W	N		X	X		
				G	W	N		X	X		
				G	W	N		X	X		
				G	W	N		X	X		
				G	W	N		X	X		
				G	W	N		X	X		
				G	W	N		X	X		
				G	W	N		X	X		

Possible Hazard Identification
 Non-Hazard Flammable Skin Irritant Poison B Unknown Radiological

Deliverable Requested: I, II, III, IV, Other (specify): Level II

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
 Return To Client Disposal By Lab Archive For _____ Months

Special Instructions/QC Requirements:

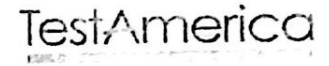
Empty Kit Relinquished by: _____ Date: _____ Time: _____ Method of Shipment: _____

Relinquished by:	Date/Time: 2/9/2017 08:15	Company: AECOM	Received by:	Date/Time: 2/9/17	Company: _____
Relinquished by: _____	Date/Time: _____	Company: _____	Received by: _____	Date/Time: 8:15am	Company: _____
Relinquished by: _____	Date/Time: _____	Company: _____	Received by: _____	Date/Time: _____	Company: _____

Custody Seals Intact: Yes No Custody Seal No.: _____ Cooler Temperature(s) °C and Other Remarks:

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Chain of Custody Record

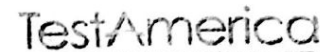


Client Information		Sampler C. Steve Howe		Lab PM: Mata, Patty		Carrier Tracking No(s)		COC No.					
Client Contact Carmen Caceres-Schnell		Phone (805) 764-4031		E-Mail patty.mata@testamericainc.com				Page: Page					
Company AECOM, Inc.								Job #:					
Address 1220 Avenida Acaso		Due Date Requested:		Analysis Requested						Preservation Codes: A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2O3 G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate I - Ice U - Acetone J - DI Water V - MCAA K - EDTA W - ph 4-S L - EDA Z - other (specify)			
City Camarillo		TAT Requested (days): 10 Days											
State, Zip CA, 93012		PO # 74770 and 74771											
Phone 805-764-4031		WO #											
Email carmen.caceres-schnell@aecom.com													
Project Name NERT Surface Water		Project #: 60477365-2015.151B											
Site NERT - Downgradient Study Area		SSOW#											
Sample Identification		Sample Date		Sample Time		Sample Type (C=Comp, G=grab)		Matrix (W=water, S=solid, O=waste/soil, BT=BTSE, AP=AP)		Total Number of containers		Special Instructions/Note:	
LW5_9-20170208- <u>15 : 41</u> - 0.6		2/8/17		15:41		G W		N N X X					
LWC6.1_1-20170208- <u>14 : 43</u> - 0.7		2/8/17		14:43		G W		N N X X					
LWC6.1_2-20170208- <u>14 : 53</u> - 0.7		2/8/17		14:53		G W		N N X X					
GLWC6.1_3-20170208- <u>15 : 00</u> - 1.0		2/8/17		15:00		G W		N N X X					
GLWC6.1_4-20170208- <u>16 : 07</u> - 1.0		2/8/17		16:07		G W		N N X X					
						G W		N X X					
						G W		N X X					
						G W		N X X					
						G W		N X X					
						G W		N X X					
						G W		N X X					
						G W		N X X					
Possible Hazard Identification													
<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological													
Deliverable Requested: I, II, III, IV, Other (specify): Level II													
Empty Kit Relinquished by:		Date:		Time:		Method of Shipment:							
Relinquished by: <i>[Signature]</i>		Date/Time: 2/9/2017 08:15		Company: AECOM		Received by: <i>[Signature]</i>		Date/Time: 2/9/17		Company:			
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time: 8:15am		Company:			
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:		Company:			
Custody Seals Intact: Δ Yes Δ No		Custody Seal No.:										Cooler Temperature(s) °C and Other Remarks:	

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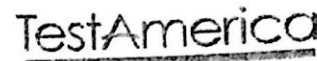
Chain of Custody Record



Client Information				Sampler: C. Steve Howe	Lab PM: Mata, Patty			Carrier Tracking No(s):	COC No:						
Client Contact: Carmen Caceres-Schnell				Phone: (805) 764-4031	E-Mail: patty.mata@testamericainc.com				Page: Page						
Company: AECOM, Inc.				Analysis Requested						Job #:					
Address: 1220 Avenida Acaso										Due Date Requested:		Preservation Codes: A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2O3 G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate I - Ice U - Acetone J - DI Water V - MCAA K - EDTA W - ph 4-5 L - EDA Z - other (specify) Other:			
City: Camarillo				TAT Requested (days): 10 Days											
State, Zip: CA, 93012				PO #: 74770 and 74771											
Phone: 805-764-4031				WO #:											
Email: carmen.caceres-schnell@aecom.com				Project #: 60477365-2015.151B											
Project Name: NERT Surface Water				SSOW#:											
Site: NERT - Downgradient Study Area															
Sample Identification				Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=wastewater, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	2540C-TDS, 300-Cl, Br, 314,0-Perchlorate	300.1B_28D - Chlorate	Total Number of containers	Special Instructions/Note:		
Preservation Code:															
GLW4 9-20170208- <u>16</u> : <u>35</u> - <u>1.4</u>				2/8/17	16:35	G	W	N	N	X	X			2	
GLW4 9-20170208- <u>16</u> : <u>35</u> - <u>1.4</u> FD				2/8/17	16:35	G	W	N	N	X	X			2	
LW4 95-20170208- <u>16</u> : <u>20</u> - <u>1.3</u>				2/8/17	16:20	G	W	N	N	X	X			2	
LW5 3-20170208- <u>15</u> : <u>45</u> - <u>1.2</u>				2/8/17	15:45	G	W	N	N	X	X			2	
LW5 3-20170208- <u>15</u> : <u>50</u> - <u>2.4</u>				2/8/17	15:50	G	W	N	N	X	X			2	
						G	W	N		X	X				
						G	W	N		X	X				
						G	W	N		X	X				
						G	W	N		X	X				
						G	W	N		X	X				
						G	W	N		X	X				
Possible Hazard Identification								Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)							
<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological				<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input checked="" type="checkbox"/> Archive For _____ Months				Special Instructions/QC Requirements:							
Deliverable Requested: I, II, III, IV, Other (specify): Level II				Cooler Temperature(s) °C and Other Remarks:											
Empty Kit Relinquished by:				Date:		Time:		Method of Shipment:							
Relinquished by: <u>Alicia Caceres</u>				Date/Time: <u>2/9/2017 08:15</u>		Company: <u>AECOM</u>		Received by: <u>Patty Mata</u>		Date/Time: <u>2/9/17</u>		Company:			
Relinquished by:				Date/Time:		Company:		Received by:		Date/Time: <u>8:15 am</u>		Company:			
Relinquished by:				Date/Time:		Company:		Received by:		Date/Time:		Company:			
Custody Seals Intact: △ Yes △ No				Custody Seal No.:											

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Irvine, CA 92614-5817
Phone (949) 261-1022 Fax (949) 260-3297

Chain of Custody Record



Client Information		Sampler: C. Steve Howe	Lab PM: Mala, Patty	Carrier Tracking No(s):	COC No:					
Client Contact: Carmen Caceres-Schnell		Phone: (805) 764-4031	E-Mail: patty.mata@testamericainc.com		Page: Page					
Company: AECOM, Inc.		Analysis Requested								
Address: 1220 Avenida Acaso		Due Date Requested:				Job #:				
City: Camarillo		TAT Requested (days): 10 Days				Preservation Codes: A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2O3 G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate I - Ice U - Acetone J - DI Water V - MCAA K - EDTA W - ph 4-5 L - EDA Z - other (specify)				
State, Zip: CA, 93012		PO #: 74770 and 74771								
Phone: 805-764-4031		WO #:								
Email: carmen.caceres-schnell@aecom.com						Other:				
Project Name: NERT Surface Water		Project #: 60477365-2015.151B				Special Instructions/Note:				
Site: NERT - Downgradient Study Area		SSOW#:								
Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	2546C-TDS, 300-Cl, Br, 314,0-Perchlorate	300-1B_28D - Chlorate	Total Number of containers	
						<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	N L		
LW3 4-20170209- 13 : 33 - 0.5	2/9/17	13:33	G	W	N	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	X X		2
LW3 4-20170209- 13 : 33 - 0.5 FD	2/9/17	13:33	G	W	N	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	X X		2
			G	W	N			X X		
			G	W	N			X X		
			G	W	N			X X		
			G	W	N			X X		
			G	W	N			X X		
			G	W	N			X X		
			G	W	N			X X		
			G	W	N			X X		
			G	W	N			X X		
			G	W	N			X X		
			G	W	N			X X		
			G	W	N			X X		
Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological					Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input checked="" type="checkbox"/> Archive For _____ Months					
Deliverable Requested: I, II, III, IV, Other (specify): Level II					Special Instructions/QC Requirements:					
Empty Kit Relinquished by:			Date:	Time:	Method of Shipment:					
Relinquished by:			Date/Time: 2/10/2017 0855	Company: AECOM	Received by:		Date/Time: 2-10-17 855	Company:		
Relinquished by:			Date/Time:	Company:	Received by:		Date/Time:	Company:		
Relinquished by:			Date/Time:	Company:	Received by:		Date/Time:	Company:		
Custody Seals Intact: A Yes A No		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:						

TestAmerica Irvine

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Irvine, CA 92614-5817
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Chain of Custody Record

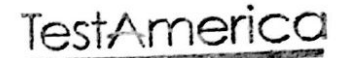


Client Information		Sampler C. Steve Howe		Lab PM Mata, Patty		Carrier Tracking No(s)		COC No																
Client Contact Carmen Caceres-Schnell		Phone (805) 764-4031		E-Mail patty.mata@testamericainc.com				Page Page																
Company AECOM, Inc.				Analysis Requested						Job #														
Address 1220 Avenida Acaso		Due Date Requested:			<table style="width:100%; border-collapse: collapse;"> <tr> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">Field Filtered Sample (Yes or No)</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">Perform MS/MSD (Yes or No)</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">2549C-TDS, 300-Cl, Br, 314, O-Pentachlorate</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">300, 1B, 28D - Chlorate</td> </tr> </table>						Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	2549C-TDS, 300-Cl, Br, 314, O-Pentachlorate	300, 1B, 28D - Chlorate	TAT Requested (days): 10 Days		<table style="width:100%; border-collapse: collapse;"> <tr> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">Total Number of containers</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">Preservation Codes:</td> </tr> </table>				Total Number of containers	Preservation Codes:	A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA M - Hexano N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - ph 4-5 Z - other (specify)	
Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	2549C-TDS, 300-Cl, Br, 314, O-Pentachlorate	300, 1B, 28D - Chlorate																					
Total Number of containers	Preservation Codes:																							
City Camarillo																								
State, Zip CA, 93012																								
Phone 805-764-4031		PO # 74770 and 74771																						
Email carmen.caceres-schnell@aecom.com		WO #																						
Project Name NERT Surface Water		Project # 60477365-2015.151B																						
Site NERT - Downgradient Study Area		SSOW#																						
Sample Identification		Sample Date		Sample Time		Sample Type (C=Comp, G=grab)		Matrix (W=water, S=solid, O=wastewater, BT=Tissue, A=Air)		Field Filtered Sample (Yes or No)		Perform MS/MSD (Yes or No)		2549C-TDS, 300-Cl, Br, 314, O-Pentachlorate		300, 1B, 28D - Chlorate		Special Instructions/Note:						
										Preservation Code:														
LW3 4-20170209- 12 00 - 0.5		2/9/17		12:00		G W		N N		X X		X X												
LW3 75-20170209- 10 58 - 0.5		2/9/17		10:58		G W		N N		X X		X X												
LWC3.7-20170209- 10 48 - 0.4		2/9/17		10:48		G W		N N		X X		X X												
GLW3.78-20170209- 11 28 - 0.3		2/9/17		11:28		G W		N N		X X		X X												
LW3 85-20170209- 10 30 - 0.5		2/9/17		10:30		G W		N N		X X		X X												
						G W		N		X X														
						G W		N		X X														
						G W		N		X X														
						G W		N		X X														
						G W		N		X X														
						G W		N		X X														

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Chain of Custody Record

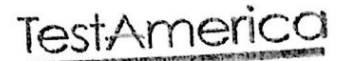


Client Information		Sampler C. Steve Howe		Lab PM Mata, Patty		Carrier Tracking No(s)		COC No															
Client Contact Carmen Caceres-Schnell		Phone (805) 764-4031		E-Mail patty.mata@testamericainc.com				Page Page															
Company AECOM, Inc.								Job #															
Address 1220 Avenida Acaso		Due Date Requested:																					
City Camarillo		TAT Requested (days): 10 Days																					
State Zip CA, 93012																							
Phone 805-764-4031		PO # 74770 and 74771																					
Email carmen.caceres-schnell@aecom.com		WO #																					
Project Name NERT Surface Water		Project # 60477365-2015.151B																					
Site NERT - Downgradient Study Area		SSOW#																					
Sample Identification		Sample Date		Sample Time		Sample Type (C=comp, G=grab)		Matrix (W=water, S=solid, O=water/solid, BT=Thios, AA=AA)		Field Filtered Sample (Yes or No)		Perform MS/MSD (Yes or No)		2846C-TDS, 300-Cl, Br, 314, 0-Perchlorate		300-1B_280 - Chlorate		Total Number of containers		Preservation Codes:		Special Instructions/Note:	
						Preservation Code:				<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		N		L							
LW3 75-20170209- 16 11 - 0.8		2/9/17		16:11		G W		N		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		N		L				2			
LWC3 7-20170209- 16 00 - 0.6		2/9/17		16:00		G W		N		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		N		L				2			
GLW3 78-20170209- 16 30 - 1.4		2/9/17		16:30		G W		N		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		N		L				2			
LW3 85-20170209- 15 45 - 0.6		2/9/17		15:45		G W		N		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		N		L				2			
LW3 4-20170209- 16 55 - 0.6		2/9/17		16:55		G W		N		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		N		L				2			
						G W		N		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		N		L							
						G W		N		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		N		L							
						G W		N		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		N		L							
						G W		N		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		N		L							
						G W		N		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		N		L							
Possible Hazard Identification		<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological																					
Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)		<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input checked="" type="checkbox"/> Archive For _____ Months																					
Deliverable Requested: I, II, III, IV, Other (specify) Level II																							
Empty Kit Relinquished by:		Date:		Time:		Method of Shipment:																	
Relinquished by: <i>[Signature]</i>		Date/Time: 2/10/2017 08:55		Company: AECOM		Received by: CL		Date/Time: 2-10-17 8:55		Company:													
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:		Company:													
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:		Company:													
Custody Seals Intact		Custody Seal No.:																					
Yes No																							

TestAmerica Irvine

17461 Denan Ave Suite 100
Irvine, CA 92614-5817
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Chain of Custody Record



Client Information		Sampler: C. Steve Howe		Lab PM: Mata, Patty		Carrier Tracking No(s):		COC No.													
Client Contact Carmen Caceres-Schnell		Phone (805) 764-4031		E-Mail patty.mata@testamericainc.com				Page: Page													
Company AECOM, Inc.		Due Date Requested:		Analysis Requested				Job #:													
Address 1220 Avenida Acaso		TAT Requested (days): 10 Days						Preservation Codes:													
City Camarillo								A - HCL M - Hexane													
State, Zip CA, 93012								B - NaOH N - None													
Phone 805-764-4031		PO #: 74770 and 74771						C - Zn Acetate O - AsNaO2													
Email carmen.caceres-schnell@aecom.com		WO #:						D - Nitric Acid P - Na2O4S													
Project Name NERT Surface Water		Project #: 60477365-2015.151B						E - NaHSO4 Q - Na2SO3													
Site NERT - Downgradient Study Area		SSOW#:						F - MeOH R - Na2S2O3													
								G - Amchlor S - H2SO4													
								H - Ascorbic Acid T - TSP Dodecahydrate													
								I - Ice U - Acetone													
								J - DI Water V - MCAA													
								K - EDTA W - ph 4-5													
								L - EDA Z - other (specify)													
								Other:													
								Special Instructions/Note:													
Sample Identification		Sample Date		Sample Time		Sample Type (C=comp, G=grab)		Matrix (W=water, S=solid, D=wasteflot, BT=Tissue, A=Air)		Field Filtered Sample (Yes or No)		Perform MS/MSD (Yes or No)		2540C-TDS, 300-Cl, Br, 314.0-Perchlorate		300.1B_280 - Chlorate		Total Number of containers			
						Preservation Code:															
LW6.05-20170209- <u>15</u> : <u>23</u> - <u>0.7</u>		2/9/17		15:23		G W		N		N		X X						2			
LW6.7-20170209- <u>15</u> : <u>04</u> - <u>0.6</u>		2/9/17		15:04		G W		N		N		X X						2			
LW7.2-20170209- <u>14</u> : <u>41</u> - <u>0.9</u>		2/9/17		14:41		G W		N		N		X X						2			
LW7.2-20170209- <u>14</u> : <u>41</u> - <u>0.9</u> FD		2/9/17		14:41		G W		N		N		X X						2			
						G W		N				X X									
						G W		N				X X									
						G W		N				X X									
						G W		N				X X									
						G W		N				X X									
						G W		N				X X									
						G W		N				X X									
						G W		N				X X									
						G W		N				X X									
						G W		N				X X									
						G W		N				X X									
Possible Hazard Identification		<input type="checkbox"/> Non-Hazard		<input type="checkbox"/> Flammable		<input type="checkbox"/> Skin Irritant		<input type="checkbox"/> Poison B		<input type="checkbox"/> Unknown		<input type="checkbox"/> Radiological		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)		<input type="checkbox"/> Return To Client		<input type="checkbox"/> Disposal By Lab		<input checked="" type="checkbox"/> Archive For _____ Months	
Deliverable Requested: I, II, III, IV, Other (specify): Level II														Special Instructions/QC Requirements:							
Empty Kit Relinquished by:		Date:		Time:		Method of Shipment:															
Relinquished by: <i>AC</i>		Date/Time: 2/10/2017 08:55		Company: AECOM		Received by: <i>AC</i>		Date/Time: 2-10-17 8:55		Company:											
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:		Company:											
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:		Company:											
Custody Seals Intact A Yes A No		Custody Seal No.:																			

TestAmerica Irvine

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 Irvine, CA 92614-5817
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Chain of Custody Record

TestAmerica

Client Information				Sampler: C. Steve Howe		Lab PM: Mata, Patty		Carrier Tracking No(s)		COC No:				
Client Contact Carmen Caceres-Schnell				Phone: (805) 764-4031		E-Mail: patty.mata@testamericainc.com				Page: Page				
Company: AECOM, Inc.				Due Date Requested:		Analysis Requested		Field Filtered Sample (Yes or No) Perform MS/MSD (Yes or No) 2540C-TDS, 300-Cl, Br, 314.0-Perchlorate 300.1B_24D - Chlorate		Total Number of containers		Preservation Codes: A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2O3 G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate I - Ice U - Acetone J - DI Water V - MCAA K - EDTA W - ph 4-5 L - EDA Z - other (specify) Other:		
Address 1220 Avenida Acaso				TAT Requested (days): 10 Days										
City Camarillo				PO #: 74770 and 74771										
State, Zip CA, 93012				WO #:										
Phone 805-764-4031				Project #: 60477365-2015.151B										
Email carmen.caceres-schnell@aecom.com				SSOW#:										
Project Name NERT Surface Water				Site NERT - Downgradient Study Area										
Sample Identification														
Sample Date		Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=wastefoil, BT=Tissue, A=Air)	Preservation Code:	Field Filtered Sample	Perform MS/MSD	2540C-TDS	300-Cl, Br	314.0-Perchlorate	300.1B_24D - Chlorate	Total Number of containers	Special Instructions/Note:	
GLW4 9-20170209- 15 : 53 - 1.4		2/9/17	15:53	G	W	N	N	X	X			2		
LW4.95-20170209- 15 : 40 - 1.2		2/9/17	15:40	G	W	N	N	X	X			2		
LW5.3-20170209- 15 : 15 - 1.1		2/9/17	15:15	G	W	N	N	X	X			2		
LW5.3-20170209- 15 : 18 - 2.2		2/9/17	15:18	G	W	N	N	X	X			2		
				G	W	N		X	X					
				G	W	N		X	X					
				G	W	N		X	X					
				G	W	N		X	X					
				G	W	N		X	X					
				G	W	N		X	X					
				G	W	N		X	X					
Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological												Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input checked="" type="checkbox"/> Archive For _____ Months		
Deliverable Requested: I, II, III, IV, Other (specify): Level II												Special Instructions/QC Requirements:		
Empty Kit Relinquished by:				Date:		Time:		Method of Shipment:						
Relinquished by: <i>Al Clute</i>				Date/Time: 2/10/2017 08:55		Company: AECOM		Received by: <i>CK</i>		Date/Time: 2/10/17 9:55		Company:		
Relinquished by:				Date/Time:		Company:		Received by:		Date/Time:		Company:		
Relinquished by:				Date/Time:		Company:		Received by:		Date/Time:		Company:		
Custody Seals Intact: Yes A No				Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:								

Chain of Custody Record



Client Information		Sampler C. Steve Howe	Lab PM Mala, Patty	Carrier Tracking No(s)	COC No:
Client Contact Carmen Caceres-Schnell		Phone (805) 764-4031	E-Mail: patty.mala@testamericainc.com		Page Page
Company: AECOM, Inc.		Analysis Requested			Job #:
Address 1220 Avenida Acaso	Due Date Requested:				
City: Camarillo	TAT Requested (days): 10 Days	Field Filtered Sample (Yes or No) Perform MS/MSD (Yes or No) 2540C-TDS, 300-Cl, Br, 314.0-Perchlorate 300.1B_28D - Chlorate Total Number of containers			Special Instructions/Note:
State, Zip: CA, 93012					
Phone: 805-764-4031	PO #: 74770 and 74771				
Email: carmen.caceres-schnell@aecom.com	WO #:				
Project Name NERT Surface Water	Project #: 60477365-2015.151B				
Site NERT - Downgradient Study Area	SSOW#:				

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)									Total Number of containers	Special Instructions/Note:
					Field Filtered	Perchlorate	Chlorate	MS/MSD	MS/MSD	MS/MSD	MS/MSD	MS/MSD	MS/MSD		
			Preservation Code:		X	X	N	L							
LW4.95-20170209- 12 : 30 - 1.1	2/9/17	12:30	G	W	N	N	X	X							2
LW4.95-20170209- 12 : 30 - 1.1 MS	2/9/17	12:30	G	W	N	Y	X	X							2
LW4.95-20170209- 12 : 30 - 1.1 MSD	2/9/17	12:30	G	W	N	Y	X	X							2
			G	W	N		X	X							
			G	W	N		X	X							
			G	W	N		X	X							
			G	W	N		X	X							
			G	W	N		X	X							
			G	W	N		X	X							
			G	W	N		X	X							
			G	W	N		X	X							

Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological			Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input checked="" type="checkbox"/> Archive For _____ Months		
Deliverable Requested: I, II, III, IV, Other (specify): Level II			Special Instructions/QC Requirements:		
Empty Kit Relinquished by:		Date:	Time:	Method of Shipment:	
Relinquished by: <i>April Carter</i>	Date/Time: 2/10/2017 0855	Company: AECOM	Received by: <i>April Carter</i>	Date/Time: 2/10/17 8:55am	Company:
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:
Custody Seals Intact: △ Yes △ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:			

TestAmerica Irvine
 17461 Derian Ave Suite 100
 Irvine, CA 92614-5817
 Phone (949) 261-1022 Fax (949) 260-3297

Chain of Custody Record

TestAmerica

Client Information Client Contact: Carmen Caceres-Schnell Company: AECOM, Inc. Address: 1220 Avenida Acaso City: Camarillo State, Zip: CA, 93012 Phone: 805-764-4031 Email: carmen.caceres-schnell@aecom.com Project Name: NERT Surface Water Site: NERT - Downgradient Study Area		Sampler: C. Steve Howe Phone: (805) 764-4031 Lab PM: Mala, Patty E-Mail: patty.mata@testamericainc.com Carrier Tracking No(s): COC No: Page: Page: Job #:																																																																																																																									
Due Date Requested: TAT Requested (days): 10 Days		Analysis Requested																																																																																																																									
PO #: 74770 and 74771 WO #:		Preservation Codes: A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2O3 G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate I - Ice U - Acetone J - DI Water V - MCAA K - EDTA W - ph 4-5 L - EDA Z - other (specify) Other:																																																																																																																									
Project #: 60477365-2015.151B SSOW#:		Special Instructions/Note:																																																																																																																									
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Sample Identification</th> <th>Sample Date</th> <th>Sample Time</th> <th>Sample Type (C=Comp, G=grab)</th> <th>Matrix (W=water, S=solid, O=waste/sol, BT=Tissue, A=Air)</th> <th>Field Filtered Sample (Yes or No)</th> <th>Perform MS/MSD (Yes or No)</th> <th>2540C-TDS, 300-Cl, Br, 314.0-Perchlorate</th> <th>300.1B, 280 - Chlorate</th> <th>Total Number of containers</th> </tr> </thead> <tbody> <tr> <td>LW5.9-20170209- <u>15 : 27 - 0.7</u></td> <td>2/9/17</td> <td>15:27</td> <td>G</td> <td>W</td> <td>N</td> <td>N</td> <td>X</td> <td>X</td> <td>2</td> </tr> <tr> <td>LWC6.1_1-20170209- <u>14 : 39 - 1.1</u></td> <td>2/9/17</td> <td>14:39</td> <td>G</td> <td>W</td> <td>N</td> <td>N</td> <td>X</td> <td>X</td> <td>2</td> </tr> <tr> <td>LWC6.1_1-20170209- <u>14 : 39 - 1.1</u> FD</td> <td>2/9/17</td> <td>14:39</td> <td>G</td> <td>W</td> <td>N</td> <td>N</td> <td>X</td> <td>X</td> <td>2</td> </tr> <tr> <td>LWC6.1_2-20170209- <u>14 : 52 - 0.8</u></td> <td>2/9/17</td> <td>14:52</td> <td>G</td> <td>W</td> <td>N</td> <td>N</td> <td>X</td> <td>X</td> <td>2</td> </tr> <tr> <td>GLWC6.1_3-20170209- <u>14 : 57 - 1.1</u></td> <td>2/9/17</td> <td>14:57</td> <td>G</td> <td>W</td> <td>N</td> <td>N</td> <td>X</td> <td>X</td> <td>2</td> </tr> <tr> <td>GLWC6.1_4-20170209- <u>15 : 51 - 1.6</u></td> <td>2/9/17</td> <td>15:51</td> <td>G</td> <td>W</td> <td>N</td> <td>N</td> <td>X</td> <td>X</td> <td>2</td> </tr> <tr> <td></td> <td></td> <td></td> <td>G</td> <td>W</td> <td>N</td> <td></td> <td>X</td> <td>X</td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td>G</td> <td>W</td> <td>N</td> <td></td> <td>X</td> <td>X</td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td>G</td> <td>W</td> <td>N</td> <td></td> <td>X</td> <td>X</td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td>G</td> <td>W</td> <td>N</td> <td></td> <td>X</td> <td>X</td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td>G</td> <td>W</td> <td>N</td> <td></td> <td>X</td> <td>X</td> <td></td> </tr> </tbody> </table>		Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/sol, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	2540C-TDS, 300-Cl, Br, 314.0-Perchlorate	300.1B, 280 - Chlorate	Total Number of containers	LW5.9-20170209- <u>15 : 27 - 0.7</u>	2/9/17	15:27	G	W	N	N	X	X	2	LWC6.1_1-20170209- <u>14 : 39 - 1.1</u>	2/9/17	14:39	G	W	N	N	X	X	2	LWC6.1_1-20170209- <u>14 : 39 - 1.1</u> FD	2/9/17	14:39	G	W	N	N	X	X	2	LWC6.1_2-20170209- <u>14 : 52 - 0.8</u>	2/9/17	14:52	G	W	N	N	X	X	2	GLWC6.1_3-20170209- <u>14 : 57 - 1.1</u>	2/9/17	14:57	G	W	N	N	X	X	2	GLWC6.1_4-20170209- <u>15 : 51 - 1.6</u>	2/9/17	15:51	G	W	N	N	X	X	2				G	W	N		X	X					G	W	N		X	X					G	W	N		X	X					G	W	N		X	X					G	W	N		X	X		Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological Deliverable Requested: I, II, III, IV, Other (specify): Level II	
Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/sol, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	2540C-TDS, 300-Cl, Br, 314.0-Perchlorate	300.1B, 280 - Chlorate	Total Number of containers																																																																																																																		
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LWC6.1_2-20170209- <u>14 : 52 - 0.8</u>	2/9/17	14:52	G	W	N	N	X	X	2																																																																																																																		
GLWC6.1_3-20170209- <u>14 : 57 - 1.1</u>	2/9/17	14:57	G	W	N	N	X	X	2																																																																																																																		
GLWC6.1_4-20170209- <u>15 : 51 - 1.6</u>	2/9/17	15:51	G	W	N	N	X	X	2																																																																																																																		
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Empty Kit Relinquished by: _____ Date: _____ Time: _____ Method of Shipment: _____		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input checked="" type="checkbox"/> Archive For _____ Months Special Instructions/QC Requirements:																																																																																																																									
Relinquished by: <u>[Signature]</u> Date/Time: <u>2/10/2017 0855</u> Company: AECOM		Received by: <u>[Signature]</u> Date/Time: <u>2/10/17 8:55</u> Company:																																																																																																																									
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Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No Custody Seal No.: _____		Cooler Temperature(s) °C and Other Remarks:																																																																																																																									

TestAmerica Irvine
 17461 Denan Ave Suite 100
 Irvine, CA 92614-5817
 Phone (949) 261-1022 Fax (949) 260-3297

Chain of Custody Record

TestAmerica

Client Information		Sampler C. Steve Howe		Lab PM Mata, Patty		Carrier Tracking No(s)		COC No	
Client Contact Carmen Caceres-Schnell		Phone (805) 764-4031		E-Mail patty.mata@tesamericainc.com				Page Page	
Company AECOM, Inc.		Due Date Requested:		Analysis Requested		Job #		Preservation Codes: A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2O3 G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate I - Ice U - Acetone J - DI Water V - MCAA K - EDTA W - ph 4-5 L - EDA Z - other (specify) Other:	
Address 1220 Avenida Acaso		TAT Requested (days): 10 Days							
City Camarillo		PO # 74770 and 74771							
State, Zip CA, 93012		WO #							
Phone 805-764-4031		Project # 60477365-2015.151B							
Email carmen.caceres-schnell@aecom.com		SSOW#		Field Filtered Sample (Yes or No)		Perform MS/MSD (Yes or No)		Total Number of containers	
Project Name NERT Surface Water		Site NERT - Downgradient Study Area		2540C-TDS, 300-CI, Br, 314.0-Perchlorate		300.1B, 28D - Chlorate			
Sample Identification		Sample Date		Sample Time		Sample Type (C=Comp, G=grab)		Matrix (W=water, S=solid, O=wastewater, BT=Tissue, A=Air)	
						Preservation Code:			
LW5.9-20170209-10:01-0.4		2/9/17		10:01		G W		N N	
LWC6.1_1-20170209-09:10-1.0		2/9/17		09:10		G W		N N	
LWC6.1_2-20170209-09:25-0.6		2/9/17		09:25		G W		N N	
GLWC6.1_3-20170209-09:32-1.2		2/9/17		09:32		G W		N N	
GLWC6.1_4-20170209-10:33-1.3		2/9/17		10:33		G W		N N	
GLWC6.1_4-20170209-10:33-1.3 MS		2/9/17		10:33		G W		N Y	
GLWC6.1_4-20170209-10:33-1.3 MSD		2/9/17		10:33		G W		N Y	
						G W		N X X	
						G W		N X X	
						G W		N X X	
						G W		N X X	
Possible Hazard Identification		<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)		<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input checked="" type="checkbox"/> Archive For _____ Months			
Deliverable Requested: I, II, III, IV, Other (specify): Level II				Special Instructions/QC Requirements:					
Empty Kit Relinquished by:		Date:		Time:		Method of Shipment:			
Relinquished by: <i>[Signature]</i>		Date/Time: 2/10/2017 0855		Company: AECOM		Received by: <i>[Signature]</i>		Date/Time: 2/10/17 8:55am	
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:	
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:	
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.:				Cooler Temperature(s) °C and Other Remarks:			

Chain of Custody Record

Client Information			Sampler C. Steve Howe		Lab PM Mata, Patty		Carrier Tracking No(s):		COC No:													
Client Contact Carmen Caceres-Schnell			Phone: (805) 764-4031		E-Mail: patty.mata@testamericainc.com				Page: Page													
Company AECOM, Inc.						Analysis Requested			Job #:													
Address: 1220 Avenida Acaso			Due Date Requested:								Preservation Codes: A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2O3 G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate I - Ice U - Acetone J - DI Water V - MCAA K - EDTA W - ph 4-5 L - EDA Z - other (specify)											
City: Camarillo			TAT Requested (days): 10 Days																			
State, Zip CA, 93012																						
Phone: 805-764-4031			PO #: 74770 and 74771																			
Email: carmen.caceres-schnell@aecom.com			WO #:																			
Project Name: NERT Surface Water			Project #: 60477365-2015.151B																			
Site: NERT - Downgradient Study Area			SSOW#:																			
Sample Identification			Sample Date		Sample Time		Sample Type (C=Comp, G=grab)		Matrix (W=water, S=solid, O=wastefork, BT=Tissue, A=Air)		Field Filtered Sample (Yes or No)		Perform MS/MSD (Yes or No)		2540C-TDS, 300-CI, Br, 314.0-Perchlorate		300.1B_28D - Chlorate		Total Number of containers		Special Instructions/Note:	
							Preservation Code:															
LW4.1-20170209- 16 : 02 - 0.4			2/9/17		16:02		G		W		N		N		X		X					
LW4.1-20170209- 16 : 02 - 0.4 FD			2/9/17		16:02		G		W		N		N		X		X					
GLW4.4-20170209- 15 : 44 - 1.3			2/9/17		15:44		G		W		N		N		X		X					
GLW4.85-20170209- 15 : 18 - 0.8			2/9/17		15:18		G		W		N		N		X		X					
							G		W		N				X		X					
							G		W		N				X		X					
							G		W		N				X		X					
							G		W		N				X		X					
							G		W		N				X		X					
							G		W		N				X		X					
							G		W		N				X		X					
							G		W		N				X		X					

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 Irvine, CA 92614-5817
 Phone (949) 261-1022 Fax (949) 260-3297

Chain of Custody Record

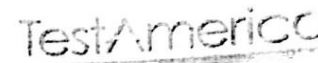


Client Information					Sampler: C. Steve Howe			Lab PM: Mata, Patty			Carrier Tracking No(s)			COC No										
Client Contact Carmen Caceres-Schnell					Phone (805) 764-4031			E-Mail: patty.mata@testamericainc.com						Page										
Company AECOM, Inc.														Job #:										
Address 1220 Avenida Acaso					Due Date Requested:			Analysis Requested											Preservation Codes: A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2O3 G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate I - Ice U - Acetone J - DI Water V - MCAA K - EDTA W - ph 4-5 L - EDA Z - other (specify)					
City Camarillo					TAT Requested (days): 10 Days																			
State, Zip CA, 93012					PO #: 74770 and 74771																			
Phone 805-764-4031					WO #:																			
Email: carmen.caceres-schnell@aecom.com																								
Project Name: NERT Surface Water					Project #: 60477365-2015.151B																			
Site NERT - Downgradient Study Area					SSOW#:																			
Sample Identification		Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=wastefoil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	2540C-TDS, 300-CI, Br, 314, D-Perchlorate	300-1B, 280 - Chlorate												Total Number of containers	Special Instructions/Note:		
LW6.05-20170209- 09 : 31 - 0.5		2/9/17	09:31	G	W	N	N	X	X												2			
LW6.05-20170209- 10 : 40 - FB		2/9/17	10:40	G	W	N	N	X	X												2			
LW6.7-20170209- 09 : 11 - 0.3		2/9/17	09:11	G	W	N	N	X	X												2			
LW7.2-20170209- 08 : 56 - 0.7		2/9/17	08:56	G	W	N	N	X	X												2			
				G	W	N		X	X															
				G	W	N		X	X															
				G	W	N		X	X															
				G	W	N		X	X															
				G	W	N		X	X															
				G	W	N		X	X															
				G	W	N		X	X															
				G	W	N		X	X															
Possible Hazard Identification					Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)																			
<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological					<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input checked="" type="checkbox"/> Archive For _____ Months																			
Deliverable Requested: I, II, III, IV, Other (specify): Level II					Special Instructions/QC Requirements:																			
Empty Kit Relinquished by:				Date:				Time:				Method of Shipment:												
Relinquished by: <i>[Signature]</i>				Date/Time: 2/10/2017 0855				Company: AECOM				Received by: <i>[Signature]</i>				Date/Time: 2/10/17 8:55								
Relinquished by:				Date/Time:				Company:				Received by:				Date/Time:								
Relinquished by:				Date/Time:				Company:				Received by:				Date/Time:								
Custody Seals Intact:		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:																				
△ Yes △ No																								

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Chain of Custody Record



Client Information		Sampler C. Steve Howe		Lab PM Mala, Patty		Carrier Tracking No(s)		COC No.			
Client Contact Carmen Caceres-Schnell		Phone (805) 764-4031		E-Mail patty.mala@testamericainc.com				Page Page			
Company AECOM, Inc								Job #			
Address 1220 Avenida Acaso		Due Date Requested:		Analysis Requested		Field Filtered Sample (Yes or No)		Total Number of containers			
City Camarillo		TAT Requested (days): 10 Days									
State, Zip CA, 93012		PO #: 74770 and 74771									
Phone 805-764-4031		WO #									
Email carmen.caceres-schnell@aecom.com		Project # 60477365-2015.151B									
Project Name NERT Surface Water		SSOW#						Preservation Codes: A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2O3 G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate I - Ice U - Acetone J - DI Water V - MCAA K - EDTA W - ph 4-5 L - EDA Z - other (specify)			
Site NERT - Downgradient Study Area								Other:			
Sample Identification		Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=wastewater, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	2540C-TDS, 300-Cl, Br, 314, O-Perchlorate	300-1B_28D - Chlorate	Special Instructions/Note:	
				Preservation Code:							
GLW4 4-20170209- 13 : 11 - 1.2		2/9/17	13:11	G	W	N	N	X	X	Z	
GLW4 4-20170209- 13 : 11 - 1.2 MS		2/9/17	13:11	G	W	N	Y	X	X	Z	
GLW4 4-20170209- 13 : 11 - 1.2 MSD		2/9/17	13:11	G	W	N	Y	X	X	Z	
				G	W	N		X	X		
				G	W	N		X	X		
				G	W	N		X	X		
				G	W	N		X	X		
				G	W	N		X	X		
				G	W	N		X	X		
				G	W	N		X	X		
				G	W	N		X	X		
				G	W	N		X	X		
				G	W	N		X	X		
				G	W	N		X	X		
				G	W	N		X	X		
				G	W	N		X	X		
Possible Hazard Identification											
<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological											
Deliverable Requested: I, II, III, IV, Other (specify): Level II											
Empty Kit Relinquished by:		Date:		Time:		Method of Shipment:					
Relinquished by: <i>Adulita</i>		Date/Time: 2/10/2017 0855		Company: AECOM		Received by: <i>[Signature]</i>		Date/Time: 2/10/17 8:55a		Company:	
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:		Company:	
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:		Company:	
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.:				Cooler Temperature(s) °C and Other Remarks:					

TestAmerica Irvine

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Irvine, CA 92614-5817
Phone (949) 261-1022 Fax (949) 260-3297

Chain of Custody Record



Client Information Client Contact: Carmen Caceres-Schnell Company: AECOM, Inc. Address: 1220 Avenida Acaso City: Camarillo State, Zip: CA, 93012 Phone: 805-764-4031 Email: carmen.caceres-schnell@aecom.com			Sampler: C. Steve Howe Phone: (805) 764-4031		Lab PM: Mata, Patty E-Mail: patty.mata@testamericainc.com		Carrier Tracking No(s):			COC No: Page: Page: Job #:					
Project Name: NERT Surface Water Site: NERT - Downgradient Study Area				Project #: 60477365-2015.151B SSOW#:				Analysis Requested			Preservation Codes: A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2O3 G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate I - Ice U - Acetone J - DI Water V - MCAA K - EDTA W - ph 4-5 L - EDA Z - other (specify)				
Due Date Requested: TAT Requested (days): 10 Days										Total Number of containers					
Sample Identification Sample ID Sample Date Sample Time			Sample Type (C=Comp, G=grab)		Matrix (W=water, S=solid, O=wasteflot, BT=Blood, A=Air)		Field Filtered Sample (Yes or No)						Perform MS/MSD (Yes or No) 2540C-TDS, 300-CI, Br, 314.0-Perchlorate 300.1B_280 - Chlorate		
LW4.1-20170209- 10 : 38 - 0.3			G		W		N N X X			2					
GLW4.85-20170209- 09 : 58 - 0.7			G		W		N N X X			2					
GLW4.4-20170209- 10 : 22 - 1.1			G		W		N N X X			2					
			G		W		N X X								
			G		W		N X X								
			G		W		N X X								
			G		W		N X X								
			G		W		N X X								
			G		W		N X X								
			G		W		N X X								
			G		W		N X X								

Possible Hazard Identification
 Non-Hazard Flammable Skin Irritant Poison B Unknown Radiological

Deliverable Requested: I, II, III, IV, Other (specify): Level II

Empty Kit Relinquished by: _____ Date: _____ Time: _____ Method of Shipment: _____

Relinquished by: <i>[Signature]</i>	Date/Time: 2/10/2017 0855	Company: AECOM	Received by: <i>[Signature]</i>	Date/Time: 2/10/17 8:55am	Company:
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:

Cooler Temperature(s) °C and Other Remarks:

TestAmerica Irvine

17461 Dezan Ave Suite 100
 Irvine, CA 92614-5817
 Phone (949) 261-1022 Fax (949) 260-3297

Chain of Custody Record

TestAmerica

Client Information			Sampler C. Steve Howe	Lab PM Mata, Patty	Carrier Tracking No(s)	COC No	
Client Contact Carmen Caceres-Schnell			Phone (805) 764-4031	E-Mail patty.mata@testamericainc.com		Page	
Company AECOM, Inc.						Page	
Address 1220 Avenida Acaso			Due Date Requested:	Analysis Requested		Job #	
City Camarillo			TAT Requested (days): 10 Days			Preservation Codes: A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2O3 G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate I - Ice U - Acetone J - DI Water V - MCAA K - EDTA W - ph 4-5 L - EDA Z - other (specify)	
State, Zip CA, 93012			PO # 74770 and 74771				Special Instructions/Note:
Phone 805-764-4031			WO #				
Email carmen.caceres-schnell@aecom.com			Project # 60477365-2015.151B				
Project Name NERT Surface Water			SSOW#	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Total Number of containers	
Site NERT - Downgradient Study Area							
Sample Identification			Sample Date	Sample Time	Sample Type (C=comp, G=grab)		Matrix (W=water, S=solid, O=wastefluid, BT=Tissue, A=Air)
					Preservation Code:		
GLW4 9-20170209- <u>10</u> : <u>50</u> - <u>1.2</u>			2/9/17	10:50	G		W
LW4 95-20170209- <u>10</u> : <u>35</u> - <u>1.0</u>			2/9/17	10:35	G		W
LW4 95-20170209- <u>10</u> : <u>35</u> - <u>1.0</u> FD			2/9/17	10:35	G		W
LW5 3-20170209- <u>10</u> : <u>00</u> - <u>1.0</u>			2/9/17	10:00	G		W
LW5 3-20170209- <u>10</u> : <u>03</u> - <u>2.0</u>			2/9/17	10:03	G		W
					G		W
					G	W	
					G	W	
					G	W	
					G	W	
					G	W	
					G	W	

Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input checked="" type="checkbox"/> Archive For _____ Months
---	---

Deliverable Requested: I, II, III, IV, Other (specify): Level II

Special Instructions/QC Requirements:

Empty Kit Relinquished by: _____ Date: _____ Time: _____ Method of Shipment: _____

Relinquished by:	Date/Time: 2/10/2017 0855	Company: AECOM	Received by:	Date/Time: 2/10/17 8:55am	Company: _____
Relinquished by: _____	Date/Time: _____	Company: _____	Received by: _____	Date/Time: _____	Company: _____
Relinquished by: _____	Date/Time: _____	Company: _____	Received by: _____	Date/Time: _____	Company: _____

Cooler Temperature(s) °C and Other Remarks:

TestAmerica Irvine

17461 Denan Ave Suite 100
 Irvine, CA 92614-5817
 Phone (949) 261-1022 Fax (949) 260-3297

Chain of Custody Record



Client Information			Sampler C. Steve Howe	Lab PM Mata, Patty	Carrier Tracking No(s)	COC No																					
Client Contact Carmen Caceres-Schnell			Phone (805) 764-4031	E-Mail patty.mata@testamericainc.com		Page																					
Company AECOM, Inc.			Due Date Requested:						Analysis Requested						Job #												
Address 1220 Avenida Acaso			TAT Requested (days): 10 Days						Preservation Codes:						Other:												
City Camarillo			PO # 74770 and 74771						Total Number of containers						Special Instructions/Note:												
State, Zip CA, 93012			WO #						Field Filtered Sample (Yes or No)																		
Phone 805-764-4031			Project # 60477365-2015.151B						Perform MS/MSD (Yes or No)																		
Email carmen.caceres-schnell@aecom.com			SSOW#						25-90C-1DS, 300-Cl, Br, 314-D-Perchlorate																		
Project Name NERT Surface Water			Site NERT - Downgradient Study Area						300-1B_28D - Chlorate																		
Sample Identification			Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=water/soil, BT=tissue, A=air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)																			
			Preservation Code:																								
LW6.05-20170209- 12 : 00 - 0.6			2/9/17	12:00	G	W	N	N	X	X															2		
LW7.2-20170209- 10 : 52 - 0.8			2/9/17	10:52	G	W	N	N	X	X																2	
LW7.2-20170209- 10 : 52 - 0.8 MS			2/9/17	10:52	G	W	N	Y	X	X																	2
LW7.2-20170209- 10 : 52 - 0.8 MSD			2/9/17	10:52	G	W	N	Y	X	X																	2
					G	W	N		X	X																	
					G	W	N		X	X																	
					G	W	N		X	X																	
					G	W	N		X	X																	
					G	W	N		X	X																	
					G	W	N		X	X																	
					G	W	N		X	X																	
					G	W	N		X	X																	
					G	W	N		X	X																	
					G	W	N		X	X																	
Possible Hazard Identification						Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)																					
<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological						<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input checked="" type="checkbox"/> Archive For _____ Months						Special Instructions/QC Requirements:															
Deliverable Requested I, II, III, IV, Other (specify): Level II																											
Empty Kit Relinquished by:			Date:		Time:		Method of Shipment:																				
Relinquished by: [Signature]			Date/Time: 2/10/2017 08:55		Company: AECOM		Received by: [Signature]		Date/Time: 2/10/17 8:55am		Company:																
Relinquished by:			Date/Time:		Company:		Received by:		Date/Time:		Company:																
Relinquished by:			Date/Time:		Company:		Received by:		Date/Time:		Company:																
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No			Custody Seal No.:			Cooler Temperature(s) °C and Other Remarks:																					

Appendix F

Data Validation Summary Report

Data Validation Summary Report

December 2016 - March 2017 Surface Water Sampling

NERT Remedial Investigation – Downgradient Study Area
Nevada Environmental Response Trust Site
Henderson, Nevada

Final



Data Validation Summary Report

December 2016 - March 2017 Surface Water Sampling

Final



Prepared By Lily Bayati



Reviewed By Chad Roper, PhD, CEM #2428

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Appendices

Appendix A – Notification Letter from Test America to AECOM

Appendix B – Notification Email from AECOM to NDEP

List of Acronyms

DQO	Data Quality Objective
EB	Equipment Blank
EPA	Environmental Protection Agency
FB	Field Blank
LCS/LCSD	Laboratory Control Sample / Laboratory Control Sample Duplicate
MDL	Method Detection Limit
MS/MSD	Matrix Spike / Matrix Spike Duplicate
NDEP	Nevada Division of Environmental Protection
NERT	Nevada Environmental Response Trust
PARCCS	Precision, Accuracy, Representativeness, Comparability, Completeness, Sensitivity
PQL	Practical Quantitation Limit
QA/QC	Quality Assurance / Quality Control
QAPP	Quality Assurance Project Plan
RPD	Relative Percent Difference
SDG	Sample Delivery Group
SQL	Sample Quantitation Limit
TDS	Total Dissolved Solids

1.0 Introduction

This data validation summary report has been prepared by AECOM to assess the validity and usability of laboratory analytical data for samples collected during December 2016-March 2017 as part of the Surface Water Sampling in the Downgradient Study Area of the Nevada Environmental Response Trust (NERT) site in Henderson, Nevada. Samples were collected during this period in accordance with AECOM's *Surface Water Investigation Plan* (SWIP, December 2016). This plan divided the collected samples into three groups: those samples coordinated with the USGS Seepage Study, a set of Transect surface water samples, and a set of Discrete surface water samples. The data assessment was performed by AECOM under their April 7, 2016, Quality Assurance Project Plan (QAPP) and included the collection and analyses of the following samples:

- One hundred-ninety-nine (199) Discrete surface water samples (including 17 field duplicates), nine equipment blanks and nine field blanks;
- 55 Transect surface water samples (including seven field duplicates), six equipment blanks and three field blanks; and
- 22 surface water samples coordinated with the USGS seepage study (including two field duplicates), one field blank and one equipment blank.

All samples were analyzed for the following:

- Chloride, and Bromide (Anions) by EPA Method 300.0,
- Chlorate by EPA Method 300.1B,
- Perchlorate by EPA Method 314.0, and
- Total Dissolved Solids (TDS) by Standard Method 2540C.

Laboratory analytical services were provided by TestAmerica Laboratories, Inc. (Irvine, California). The samples were grouped into sample delivery groups (SDGs). **Table 1** (included at the end of this document) is a cross-reference table listing each sample, analysis, SDG, collection date, laboratory sample identification, matrix, and validation level. **Table 2** (included at the end of this document) is a reference table that identifies the QC elements reviewed for each validation level per method, as applicable.

The laboratory analytical data were validated in accordance with procedures described in the Nevada Division of Environmental Protection (NDEP) Data Verification and Validation Requirements - Supplement established for the BMI Plant Sites and Common Areas Projects, Henderson, Nevada, dated April 13, 2009. These requirements were modified via email from James Dotchin dated March 9, 2017. Consistent with the NDEP requirements as modified, 100 percent of the analytical data were validated according to EPA Stage 2A data validation.

The analytical data were evaluated for QA/QC based on the following documents: AECOM's QAPP Downgradient Study Area, Henderson, Nevada, Revision, dated April 2016; NDEP's Revised Guidance on Qualifying Data due to Blank Contamination for the BMI Complex and Common Areas, dated January 5 2012; EPA's Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, dated September 2016; and EPA's SW 846 Third Edition, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, EPA publication SW-846, Third Edition, Final Updates I (1993), II (1995), IIA (1994), IIB (1995), III (1997), IIIA (1999), IIIB (2005), IV (2008), and V (2015). This report summarizes the QA/QC evaluation of the data according to precision, accuracy, representativeness, completeness, comparability, and sensitivity (PARCCS) relative to the project data quality objectives (DQOs). This report provides a quantitative and qualitative assessment of the data and identifies potential sources of error, uncertainty, and bias that may affect the overall usability.

The PARCCS summary report evaluates and summarizes the results of QA/QC data validation for the entire sampling program. Each analytical fraction has a separate section for each PARCCS criterion. These sections interpret specific QC deviations and their effects on both individual data points and the analyses as a whole. Section 5.0 presents a summary of the PARCCS criteria by comparing quantitative parameters with acceptability criteria defined in the project DQOs. Qualitative PARCCS criteria are also summarized in this section.

1.1 Precision and Accuracy of Environmental Data

Environmental data quality depends on sample collection procedures, analytical methods and instrumentation, documentation, and sample matrix properties. Both sampling procedures and laboratory analyses contain potential sources of uncertainty, error, and/or bias, which affect the overall quality of a measurement. Errors for sample data may result from incomplete equipment decontamination, inappropriate sampling techniques, sample heterogeneity, improper filtering, and improper preservation. The accuracy of analytical results is dependent on selecting appropriate analytical methods, maintaining equipment properly, and complying with QC requirements. The sample matrix also is an important factor in the ability to obtain precise and accurate results within a given medium.

Environmental and laboratory QA/QC samples assess the effects of sampling procedures and evaluate laboratory contamination, laboratory performance, and matrix effects. QA/QC samples include: equipment blanks (EBs), field blanks (FBs), field duplicates, method blanks, laboratory control samples/laboratory control sample duplicates (LCS/LCSDs), and matrix spike/matrix spike duplicates (MS/MSDs).

Before conducting the PARCCS evaluation, the analytical data were reviewed and validated according to the QAPP (AECOM 2016), Functional Guidelines (EPA 2016), and EPA SW 846 Test Methods (EPA 2015). During the data review process, the following list of qualifiers were used for results not meeting the acceptance criteria as applicable:

- J The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
- J+ The result is an estimated quantity, but the result may be biased high.
- J- The result is an estimated quantity, but the result may be biased low.
- R The data are unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the sample.
- U The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
- UJ The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.
- DNR Do Not Report - A more appropriate result is reported from another analysis or dilution.
- None indicates the data were not significantly impacted by the finding; therefore, qualification was not required.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.

The hierarchy of qualifiers is listed below:

R > J and UJ The R qualifier will always take precedence over the J qualifier.

J > J+ or J-	A non-biased (J) qualifier will always supersede biased (J+ or J-) qualifier because it is not possible to assess the direction of the potential bias.
J = J+ plus J-	Adding biased (J+, J-) qualifier with opposite signs will result in a nonbiased qualifier (J).

Table 3 (Included at the end of this document) lists the reason codes used. Reason codes explain why qualifiers have been applied and identify possible limitations of data use. Reason codes are cumulative except when one of the qualifier is R then only the reason code associated to the R qualifier will be used.

Table 4 (Included at the end of this document) presents all results after all qualifiers and any associated reason codes have been applied.

Once the data are reviewed and qualified according to the QAPP, Functional Guidelines, and EPA Test Methods, the data set is then evaluated using PARCCS criteria. PARCCS criteria provide an evaluation of overall data usability. The following is a discussion of PARCCS criteria as related to the project DQOs.

Precision- Measures the reproducibility of repetitive measurements. It is strictly defined as the degree of mutual agreement among independent measurements as the result of repeated application of the sample process under similar conditions.

Analytical precision is a measurement of the variability associated with duplicate or replicate analyses of the same sample in the laboratory and is determined by analysis of laboratory quality control samples, such as duplicate control samples (LCSD), field-designated matrix spike duplicates (MSD), or sample duplicates. If the recoveries of analytes in the specified control samples are comparable within established laboratory control limits, then precision is within limits.

Total precision is a measurement of the variability associated with the entire sampling and analytical process. It is determined by analysis of duplicate or replicate field samples and measures variability introduced by both the laboratory and field operations. Field duplicate samples are analyzed to assess field and analytical precision.

Duplicate results are assessed using the relative percent difference (RPD) between duplicate measurements. If the RPD for laboratory quality control samples exceeds the laboratory's statistically determined acceptance ranges, data will be qualified as described in the applicable validation procedure. If the RPD between primary and duplicate field samples exceeds 30 percent for water samples, data will be qualified as described in the applicable validation procedure. The RPD will be calculated as follows:

$$RPD = (D1-D2)/\{1/2(D1+D2)\} \times 100$$

Where:

D1 is the smaller of the two observed values and

D2 is the larger of the two observed values

Possible causes of poor precision include sample matrix interference, improper sample collection or handling, inconsistent sample preparation, and poor instrument stability. In some duplicate pairs, results may be reported in either the primary or duplicate samples at levels below the practical quantitation limit (PQL) or non-detected. As these values are considered to be estimates, RPD exceedances from these duplicate pairs do not suggest a significant impact on the data quality. Field duplicate RPDs are presented in detail in **Table 5** (included at the end of this document).

Accuracy- The degree of agreement between a measurement and an accepted reference or "true" value, includes a combination of random error (precision) and systematic error (bias) components of both sampling and analytical operations. Accuracy of measurement data will be assessed through the use of LCS/LCSDs, and site specific matrix spikes (MSs) and MSDs. Accuracy is expressed as the percent recovery (%R). If the percent recovery is determined to be outside of acceptance criteria specified by the previously noted documents, data will be qualified as described in the applicable validation procedure. Spike recoveries outside of the acceptable QC accuracy limits provide an indication of bias, where the reported data may overestimate or underestimate the actual concentration of compounds detected or quantitation limits reported for environmental samples.

The calculation of percent recovery (%R) is provided below:

$$\%R = (A-B)/C \times 100$$

where:

A is the measured value of the spiked sample
B is the measured value of the unspiked sample,
C is the true value of the spike solution added.

Field accuracy is assessed through the analysis of field blanks and equipment. Analysis of these blanks will monitor errors associated with the sampling process, possible field-related contamination, and sample handling. The DQO for EBs is that all values are less than the reporting limit for each target constituent. If contamination is reported in either the FBs or EBs, data will be qualified as described in the applicable validation procedure.

Representativeness is a qualitative parameter that expresses the degree to which the sample data are characteristic of a population. It is evaluated by reviewing the QC results of blanks, samples and holding times. Positive detection of compounds in the blank samples identifies compounds that may have been introduced into the samples during sample collection, transport, preparation, or analysis. The QA/QC blanks collected and analyzed are method blanks, EBs and FBs.

A method blank is an analyte-free matrix to which all reagents are added in the same volumes or proportions as used in sample processing. The method blank shall be carried through the complete sample preparation and analytical procedure. The method blank is used to document contamination resulting from the analytical process and shall be included in every analytical batch.

EBs consists of analyte-free water poured over or through the sample collection equipment. The water is collected in a sample container for laboratory analysis. These blanks are collected after the sampling equipment is decontaminated and measures efficiency of the decontamination procedure. EBs were collected and analyzed for all target analytes.

FBs consist of analyte-free source water stored at the sample collection site. The water is collected from each source water used during each sampling event. FBs were collected and analyzed for all target analytes.

Contaminants found in both the environmental sample and the blank sample are assumed to be laboratory artifacts if both values are less than the PQL or if a sample result and blank contaminant value were greater than the PQL and less than 10 times the blank contaminant value. The blanks and associated samples were evaluated according to the NDEP's Revised Guidance on Qualifying Data due to Blank Contamination for the BMI Complex and Common Areas (NDEP 2012).

Holding times are evaluated to assure that the sample integrity is intact for accurate sample preparation and analysis. Holding times will be specific for each method and matrix analyzed. Holding time exceedance can cause loss of sample constituents due to biodegradation, precipitation, volatilization, and chemical degradation. In

accordance with EPA guidance (EPA 2016), sample results for analyses that were performed after the method holding time but less than two times the method holding time (if any) would be qualified as estimated (J- or UJ), and sample results for analyses that were performed after two times the method holding time would be qualified as rejected (R).

Comparability is a qualitative expression of the confidence with which one data set may be compared to another. It provides an assessment of the equivalence of the analytical results to data obtained from other analyses. It is important that data sets be comparable if they are used in conjunction with other data sets. The factors affecting comparability include the following: sample collection and handling techniques, matrix type, and analytical method. If these aspects of sampling and analysis are carried out according to standard analytical procedures, the data are considered comparable. Comparability is also dependent upon other PARCCS criteria, because data sets can be compared with confidence only when precision, accuracy, and representativeness are known.

Completeness is defined as the percentage of acceptable sample results compared to the total number of sample results. Completeness is evaluated to determine if an acceptable amount of usable data were obtained so that a valid scientific site assessment can be completed. As specified in the project DQOs, the goal for completeness for target analytes in each analytical fraction is 90 percent.

Percent completeness (%C) is calculated using the following equation:

$$\%C = (T - R)/T \times 100$$

Where:

T = total number of sample results

R = total number of rejected sample results

Completeness is also determined by comparing the planned number of samples per method and matrix as specified in the QAPP, with the number determined above.

Sensitivity is the ability of an analytical method or instrument to discriminate between measurement responses representing different concentrations. This capability is established during the planning phase to meet the DQOs. It is important that calibration requirements, detection limits, and PQLs presented in the QAPP are achieved and that target analytes can be detected at concentrations necessary to support the DQOs. The method detection limits (MDLs) represent the minimum concentration of a substance that can be measured and reported with 99-percent confidence that the analyte concentration is greater than zero. Sample quantitation limits (SQLs) are adjusted MDL values that reflect sample specific actions, such as dilutions or varying aliquot sizes. PQLs are the lowest level at which the entire analytical system gives a recognizable signal and acceptable calibration point for the analyte. The laboratory is required to report detected analytes down to the MDL for this project. The laboratory uses a formatter that reports estimated values down to the MDL. In addition, sample results are compared to method blank and FB results to identify potential effects of laboratory background and field procedures on sensitivity.

The following sections present a review of QC data for wet chemistry analyses (bromide, chloride, chlorate, perchlorate, and TDS).

2.0 Results

A total of 250 primary water samples, 26 field duplicates, 13 FBs, and 16 EBs were analyzed for chloride and bromide by EPA Method 300.0; chlorate by EPA Method 300.1B; perchlorate by EPA Method 314.0; and TDS by Standard Method 2540C. Overall, based on this data validation covering the QC parameters listed below, the data as qualified are useable for their intended purpose. This section discusses the QA/QC supporting documentation as defined by the PARCCS criteria and evaluated based on the DQOs.

2.1 Precision and Accuracy

2.1.1 Surrogate

Surrogate (dichloroacetic acid) recoveries were evaluated for chlorate analysis by EPA Method 300.1B. All surrogate percent recoveries met the acceptance criteria as stated in the QAPP.

2.1.2 MS/MSD Samples

Matrix spike (MS) and matrix spike duplicate (MSD) sample analyses were performed on project samples. All percent recoveries (%R) and RPDs were within QC limits with the following exceptions:

Method	Analyte	Sample	MS/MSD (%R)	RPD	Qualified Samples	Qualifier
EPA 300.0	Bromide	GLWC6.1_4-20170206-10:35-1.1	198/199	0	None	NA
EPA 314.0	Perchlorate	LW3.4-20170207-11:11-0.5	175/174	0	LW3.4-20170207-11:11-0.5 LW3.75-20170207-10:45-0.9 LWC3.7-20170207-10:32-0.4 LW3.85-20170207-10:12-0.5	J+
		LW6.05-20170207-09:30-0.6	148/148	0	LW6.05-20170207-09:30-0.6	
		LW4.1-20170207-10:39-0.3	170/168	1	LW4.1-20170207-10:39-0.3 GLW4.4-20170207-10:18-1.1 GLW4.85-20170207-09:42-0.7	
		LW5.9-20170207-10:00-0.4	125/127	1	LW5.9-20170207-10:00-0.4 LWC6.1_1-20170207-09:03-0.9 LWC6.1_2-20170207-09:20-0.7 GLWC6.1_3-20170207-09:30-1.0 GLWC6.1_4-20170207-10:35-1.3	
		GLW4.9-20170207-10:55-1.2	149/149	0	GLW4.9-20170207-10:55-1.2 LW4.95-20170207-10:45-1.0 LW5.3-20170207-09:45-1.0 LW5.3-20170207-09:50-2.0	
		LW3.75-20170206-16:30-0.67	146/149	1	LW3.75-20170206-16:30-0.67 LW3.85-20170206-16:03-0.58 LW3.4-20170206-17:01-0.7 LW3.4-20170206-17:01-0.7-FD	
		LW4.1-20170207-16:20-0.4	164/169	2	LW4.1-20170207-16:20-0.4 GLW4.4-20170207-16:06-1.2	
		LW4.95-20170209-12:30-1.1	141/144	2	LW4.95-20170209-12:30-1.1	

Method	Analyte	Sample	MS/MSD (%R)	RPD	Qualified Samples	Qualifier
EPA 314.0	Perchlorate	GLW4.4-20170209-13:11-1.2	145/144	0	GLW4.4-20170209-13:11-1.2	J+
		T3.8B-20170130-0.4	188/190	0	T3.8A-20170130-0.4 T3.8B-20170130-0.4 T3.8C-20170130-0.4 T3.8C-20170130-0.4-FD T3.8D-20170130-0.4	
		T4.65A-20170131-0.7	141/138	1	T4.65A-20170131-0.7	
		T4.6C-20170131-0.8	168/169	0	T4.6A-20170131-0.3 T4.6B-20170131-0.6 T4.6C-20170131-0.8 T4.6D-20170131-0.8 T4.6B-20170131-0.6-FD	
		T4.75B-20170201-0.9	148/150	1	T4.75A-20170201-1.3 T4.75A-20170201-1.3-FD T4.75B-20170201-0.9 T4.75C-20170201-2.2 T4.75D-2017-201-1.5	
		LW6.05-20161208-0.5	142/143	0	LW4.1-20161208-0.2 LW3.4-20161208-0.5 LW3.85-20161208-0.3 LW3.85-20161208-0.3-FD LW5.3-20161208-1.0 LW5.3-20161208-2.5 LW6.05-20161208-0.5 GLWC6.1_4-20161208-0.5 GLWC6.1_3-20161208-0.5	
Notes: NA – Not Applicable, sample result is non-detect and the potential bias is high.						

2.1.3 LCS/LCSD Samples

LCSs were prepared and analyzed at the proper frequency for each analysis. All LCS and LCSD recoveries reported and RPDs between the results (for applicable analytical batches) met acceptance criteria as stated in the QAPP.

2.1.4 Laboratory Duplicate Samples

Laboratory duplicate samples were evaluated for TDS analysis by SM 2540c. All laboratory duplicate RPDs met the acceptance criteria as stated in the QAPP.

2.1.5 Field Duplicate Samples

Field duplicate samples were collected at a frequency of 10 percent (%). There were 26 field duplicates taken for 250 samples. Field duplicate RPDs are presented in detail in **Table 5** (included at the end of this document). Acceptable field and analytical precision was demonstrated for all field duplicate pairs with the exceptions listed in the following table.

Field Duplicate Pair	Analyte	RPD	Qualifier
LW6.05-20170208-12:35-0.8/ LW6.05-20170208-12:35-0.8-FD	Perchlorate	32	J
GLW4.9-20170208-16:35-1.4/ GLW4.9-20170208-16:35-1.4FD	Bromide	33	
T3.8C-20170130-0.4/ T3.8C-20170130-0.4-FD	Bromide	52	
Note: Field Duplicate RPD was compared to a criteria of <30%			

2.1.6 Analyte Quantitation and Target Identification

All analytes reported and the detection limits obtained comply with project specifications. All dilutions were appropriate.

2.2 Representativeness

2.2.1 Sample Preservation and Holding Times

All samples were collected and preserved appropriately, and all analyses were performed within the method-specified holding times. All analyses were performed as requested on the chain of custodies. The laboratory reported all requested analyses and the deliverable data reports were complete.

2.2.2 Blanks

Method blanks, EBs, and FBs were analyzed to evaluate representativeness. The concentration for an individual target compound in any of the types of QA/QC blanks was used for data qualification.

If contaminants were detected in a blank, qualifiers were assigned for the chemical analytical data during data validation based on the following criteria.

Results Below the PQL If a sample result and blank contaminant value were less than the PQL, the sample result was amended as non-detect (U) at the PQL.

Results Above the PQL If a sample result and blank contaminant value were greater than the PQL and less than 10 times the blank contaminant value, the sample result was qualified as detected estimated (J+) at the concentration reported in the sample results.

No Action If blank contaminant values were less than the PQL and associated sample results were greater than the PQL, or if blank contaminant values were greater than the PQL and associated sample results were greater than 10 times the blank contaminant value, the result was not amended.

2.2.2.1 Method Blanks

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed. Target analytes were not detected in associated method blanks.

2.2.2.2 EBs and FBs

Target analytes were either not detected in EBs and FBs or did not require data qualification.

2.3 Comparability

The laboratory used standard analytical methods for all of the analyses. In all cases, the SQLs attained were at or below the PQLs. Target compounds detected below the PQLs are qualified (J) by the laboratory and should be considered estimated. The comparability of the data is regarded as acceptable.

2.4 Completeness

The completeness level attained for metal field samples was 100 percent; no results were rejected.

2.5 Sensitivity

The calibration was evaluated for instrument sensitivity and was determined to be technically acceptable. All laboratory PQLs met the specified requirements described in the QAPP.

3.0 Variances in Analytical Performance

The laboratory used standard analytical methods for all of the analyses throughout the project. No systematic variances in analytical performance were noted in the laboratory case narratives.

On June 23, 2017, TestAmerica notified AECOM by phone that their certification for perchlorate analysis in non-potable water lapsed during the period from October 27, 2016 to June 21, 2017. Phone notification was followed by a letter dated July 24, 2017 (**Appendix A**). All analyses conducted related to the *Surface Water Investigation Plan* (SWIP, December 2016) were conducted during the lapse. AECOM provided phone notice to NDEP on June 27, 2017 and email notice to NDEP on July 20, 2017 (**Appendix B**).

Our Quality Assurance Project Plan (QAPP) states “The laboratories used for chemical surface water and groundwater testing will be certified by the State of Nevada for the analysis of interest.” Once AECOM was aware of this deviation, we began our investigation.

Data usability in regards to the data quality objectives for the perchlorate data included in the SWI Tech Memo was unaffected for the following reasons:

1. TestAmerica maintained their drinking water certification for perchlorate (by the same method- 314.0) with the State of Nevada and maintained their certification as an environmental laboratory from the State of Nevada throughout the affected period.
2. The analytical method (314.0) used for the analysis was accredited by other states with similar accreditation requirements as the State of Nevada.
3. Standard Operating Procedures, Instrumentation, Standards, and Staff performing the perchlorate analysis remained the same throughout the affected period.
4. Accreditation was restored June 21, 2017 including the successful completion of a performance test.

In conclusion, it is our opinion that the data are valid for their intended use and that no additional qualifiers are warranted.

Corrective actions for this deviation are as follows:

1. AECOM will require the labs to provide proof of current certification for each of the analytical methods when we place the order. Current certification will be confirmed by the Analytical Task Leader or Investigation Task Leader prior to samples being shipped for analysis.
2. TestAmerica renewed their certification as soon as they were aware of the lapse. To prevent any future occurrences of certification lapses, TestAmerica will be checking their annual scope of accreditation against what was applied for and what was on the scope the previous year. Any discrepancies would be investigated and resolved within 30 days (or less) of the issuance of the scope.

4.0 Summary of PARCCS Criteria

The validation reports present the PARCCS results for all SDGs. Each PARCCS criterion is discussed in detail in the following sections.

4.1 Precision and Accuracy

Precision and accuracy were evaluated using data quality indicators such as calibration, surrogate, MS/MSD, duplicate, LCS/LCSD, and FD. The precision and accuracy of the data set were considered acceptable after incorporation of validation-qualified results.

4.2 Representativeness

All surrogate, MS/MSD, duplicate, LCS, and FD percent recoveries and RPDs, met acceptance criteria with the exceptions noted in the above sections.

All samples for each method and matrix were evaluated for holding-time compliance. All samples were associated with a method blank in each individual SDG. The representativeness of the project data is considered acceptable after incorporation of validation-qualified results.

4.3 Comparability

Sampling frequency requirements were met in obtaining necessary EBs, FBs, and FDs. The laboratory used standard analytical methods for the analyses. The analytical results were reported in correct standard units. Sample integrity criteria were met. Sample preservation and holding times were within QC criteria. Additionally, because all samples in this data set were collected and analyzed under similar prescribed conditions, the data within this set are considered to be comparable.

4.4 Completeness

All results are considered to be valid; the analytical completeness defined as the ratio of the number of valid analytical results (valid analytical results include values qualified as estimated) to the total number of analytical results requested on samples submitted for analysis, for the project is 100% (The percentage completeness met the 90-percent DQO goal). Additionally, because all samples in this data set were collected and analyzed under similar prescribed conditions, the data within this set are considered to be comparable.

4.5 Sensitivity

Sensitivity was achieved by the laboratory to support the DQOs. Calibration concentrations and PQLs met the project requirements and low-level contamination in the method blanks, calibration blanks, EBs, and FBs did not affect sensitivity.

5.0 Conclusions and Recommendations

The analytical data quality assessment for the water sample laboratory analytical results generated during surface water sampling from December 2016 - March 2017 in the Downgradient Study Area of the NERT site in Henderson, Nevada, established that the overall project requirements and completeness levels were met. No results were rejected. Sample results that were found to be estimated (J) are usable for limited purposes only. Although the laboratory used had a temporary lapse in their certification for perchlorate in non-potable water, this deviation was investigated and found to have no impact on data quality (see Section 3.0, Appendices A & B). Corrective actions are being implemented to insure that this deviation does not occur in the future. Based upon the EPA Stage 2A data validation, all other results are considered to be valid and usable for their intended purpose.

6.0 References

AECOM. 2016. Quality Assurance Project Plan, Downgradient Study Area, Henderson, Nevada (QAPP), Revision. April 17.

Environmental Protection Agency (EPA). 2016. Contract Laboratory Program National Functional Guidelines for Inorganic Data Review. August.

———. 2015. Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, EPA publication SW-846, Third Edition, Final Updates I (1993), II (1995), IIA (1994), IIB (1995), III (1997), IIIA (1999), IIIB (2005), IV (2008), and V (2015).

Nevada Division of Environmental Protection (NDEP). 2009. Data Verification and Validation Requirements - Supplement established for the BMI Plant Sites and Common Areas Projects, Henderson, Nevada. April 13.

———. 2012. Revised Guidance on Qualifying Data due to Blank Contamination for the BMI Complex and Common Areas. January 5.

Tables

Table 1
Sample Cross Reference
NERT RI Downgradient Study Area
Henderson, Nevada

SDG	Client Sample ID	Lab Sample ID	Matrix	Sample Date	QC Type	Validation Level	Bromide (E300)	Chlorate (E300.1)	Chloride (E300)	Perchlorate (E314.0)	Total Dissolved Solids (SM2540C)
Samples coordinated with the USGS Seepage Study											
4401688961	GLW3.78-20161208-0.1	440-168896-2	W	12/08/16		Stage 2A	X	X	X	X	X
4401688961	GLW4.4-20161208-1.1	440-168896-10	W	12/08/16		Stage 2A	X	X	X	X	X
4401688961	GLW4.85-20161208-0.8	440-168896-11	W	12/08/16		Stage 2A	X	X	X	X	X
4401688961	GLW4.9-20161208-1.1	440-168896-9	W	12/08/16		Stage 2A	X	X	X	X	X
4401688961	GLWC6.1_3-20161208-0.5	440-168896-24	W	12/08/16		Stage 2A	X	X	X	X	X
4401688961	GLWC6.1_4-20161208-0.5	440-168896-23	W	12/08/16		Stage 2A	X	X	X	X	X
4401688961	LW3.4-20161208-0.5	440-168896-15	W	12/08/16		Stage 2A	X	X	X	X	X
4401688961	LW3.4-20161208-0.5-FB	440-168896-16	W	12/08/16	FB	Stage 2A	X	X	X	X	X
4401688961	LW3.75-20161208-0.3	440-168896-3	W	12/08/16		Stage 2A	X	X	X	X	X
4401688961	LW3.85-20161208-0.3	440-168896-18	W	12/08/16		Stage 2A	X	X	X	X	X
4401688961	LW3.85-20161208-0.3-FD	440-168896-19	W	12/08/16	DUP	Stage 2A	X	X	X	X	X
4401688961	LW4.1-20161208-0.2	440-168896-14	W	12/08/16		Stage 2A	X	X	X	X	X
4401688961	LW4.95-20161208-0.7	440-168896-4	W	12/08/16		Stage 2A	X	X	X	X	X
4401688961	LW5.3-20161208-1.0	440-168896-20	W	12/08/16		Stage 2A	X	X	X	X	X
4401688961	LW5.3-20161208-1.0-EB	440-168896-17	W	12/08/16	EB	Stage 2A	X	X	X	X	X
4401688961	LW5.3-20161208-2.5	440-168896-21	W	12/08/16		Stage 2A	X	X	X	X	X
4401688961	LW5.9-20161208-0.5	440-168896-1	W	12/08/16		Stage 2A	X	X	X	X	X
4401688961	LW6.05-20161208-0.5	440-168896-22	W	12/08/16		Stage 2A	X	X	X	X	X
4401688961	LW6.1_2-20161208-0.5	440-168896-7	W	12/08/16		Stage 2A	X	X	X	X	X
4401688961	LW6.7-20161208-0.5	440-168896-12	W	12/08/16		Stage 2A	X	X	X	X	X
4401688961	LW7.2-20161208-1.0	440-168896-13	W	12/08/16		Stage 2A	X	X	X	X	X
4401688961	LWC3.7-20161208-0.6	440-168896-5	W	12/08/16		Stage 2A	X	X	X	X	X
4401688961	LWC3.7-20161208-0.6-FD	440-168896-6	W	12/08/16	DUP	Stage 2A	X	X	X	X	X
4401688961	LWC6.1_1-20161208-0.5	440-168896-8	W	12/08/16		Stage 2A	X	X	X	X	X
Transect Surface Water Samples											
4401751531	T3.8A-20170130-0.4	440-175153-1	W	01/30/17		Stage 2A	X	X	X	X	X
4401751531	T3.8A-20170130-FB	440-175153-2	W	01/30/17	FB	Stage 2A	X	X	X	X	X
4401751531	T3.8B-20170130-0.4	440-175153-3	W	01/30/17		Stage 2A	X	X	X	X	X
4401751531	T3.8C-20170130-0.4	440-175153-4	W	01/30/17		Stage 2A	X	X	X	X	X
4401751531	T3.8C-20170130-0.4-FD	440-175153-5	W	01/30/17	DUP	Stage 2A	X	X	X	X	X
4401751531	T3.8D-20170130-0.4	440-175153-6	W	01/30/17		Stage 2A	X	X	X	X	X
4401751541	T3.75A-20170130-0.9	440-175154-1	W	01/30/17		Stage 2A	X	X	X	X	X
4401751541	T3.75A-20170130-EB	440-175154-5	W	01/30/17	EB	Stage 2A	X	X	X	X	X
4401751541	T3.75B-20170130-0.7	440-175154-2	W	01/30/17		Stage 2A	X	X	X	X	X
4401751541	T3.75C-20170130-0.6	440-175154-3	W	01/30/17		Stage 2A	X	X	X	X	X
4401751541	T3.75D-20170130-0.4	440-175154-4	W	01/30/17		Stage 2A	X	X	X	X	X
4401752491	T4.65A-20170131-0.7	440-175249-1	W	01/31/17		Stage 2A	X	X	X	X	X
4401752491	T4.65B-20170131-0.9	440-175249-2	W	01/31/17		Stage 2A	X	X	X	X	X
4401752491	T4.65B-20170131-0.9-FD	440-175249-3	W	01/31/17	DUP	Stage 2A	X	X	X	X	X
4401752491	T4.65C-20170131-1.3	440-175249-4	W	01/31/17		Stage 2A	X	X	X	X	X
4401752491	T4.65D-20170131-0.6	440-175249-5	W	01/31/17		Stage 2A	X	X	X	X	X

Table 1
Sample Cross Reference
NERT RI Downgradient Study Area
Henderson, Nevada

SDG	Client Sample ID	Lab Sample ID	Matrix	Sample Date	QC Type	Validation Level	Bromide (E300)	Chlorate (E300.1)	Chloride (E300)	Perchlorate (E314.0)	Total Dissolved Solids (SM2540C)
4401752731	T4.6A-20170131-0.3	440-175273-1	W	01/31/17		Stage 2A	X	X	X	X	X
4401752731	T4.6A-20170131-EB	440-175273-6	W	01/31/17	EB	Stage 2A	X	X	X	X	X
4401752731	T4.6B-20170131-0.6	440-175273-2	W	01/31/17		Stage 2A	X	X	X	X	X
4401752731	T4.6B-20170131-0.6-FD	440-175273-5	W	01/31/17	DUP	Stage 2A	X	X	X	X	X
4401752731	T4.6C-20170131-0.8	440-175273-3	W	01/31/17		Stage 2A	X	X	X	X	X
4401752731	T4.6D-20170131-0.8	440-175273-4	W	01/31/17		Stage 2A	X	X	X	X	X
4401753881	T4.2A-20170201-0.4	440-175388-1	W	02/01/17		Stage 2A	X	X	X	X	X
4401753881	T4.2A-20170201-0.4-EB	440-175388-2	W	02/01/17	EB	Stage 2A	X	X	X	X	X
4401753881	T4.2B-20170201-1.0	440-175388-6	W	02/01/17		Stage 2A	X	X	X	X	X
4401753881	T4.2B-20170201-1.0-FD	440-175388-3	W	02/01/17	DUP	Stage 2A	X	X	X	X	X
4401753881	T4.2C-20170201-0.8	440-175388-4	W	02/01/17		Stage 2A	X	X	X	X	X
4401753881	T4.2D-20170201-1.0	440-175388-5	W	02/01/17		Stage 2A	X	X	X	X	X
4401755201	T4.75A-20170201-1.3	440-175520-1	W	02/01/17		Stage 2A	X	X	X	X	X
4401755201	T4.75A-20170201-1.3-FD	440-175520-2	W	02/01/17	DUP	Stage 2A	X	X	X	X	X
4401755201	T4.75B-20170201-0.9	440-175520-3	W	02/01/17		Stage 2A	X	X	X	X	X
4401755201	T4.75B-20170201-EB	440-175520-6	W	02/01/17	EB	Stage 2A	X	X	X	X	X
4401755201	T4.75C-20170201-2.2	440-175520-4	W	02/01/17		Stage 2A	X	X	X	X	X
4401755201	T4.75D-2017-201-1.5	440-175520-5	W	02/01/17		Stage 2A	X	X	X	X	X
4401755961	T5.3A-20170202-1.4	440-175596-1	W	02/02/17		Stage 2A	X	X	X	X	X
4401755961	T5.3A-20170202-1.4-EB	440-175596-5	W	02/02/17	EB	Stage 2A	X	X	X	X	X
4401755961	T5.3A-20170202-2.8	440-175596-6	W	02/02/17		Stage 2A	X	X	X	X	X
4401755961	T5.3B-20170202-2.0	440-175596-2	W	02/02/17		Stage 2A	X	X	X	X	X
4401755961	T5.3B-20170202-2.0-FD	440-175596-3	W	02/02/17	DUP	Stage 2A	X	X	X	X	X
4401755961	T5.3C-2010202-1.2	440-175596-4	W	02/02/17		Stage 2A	X	X	X	X	X
4401755981	T3.5A-20170202-0.2	440-175598-1	W	02/02/17		Stage 2A	X	X	X	X	X
4401755981	T3.5A-20170202-FB	440-175598-2	W	02/02/17	FB	Stage 2A	X	X	X	X	X
4401755981	T3.5B-20170202-0.5	440-175598-3	W	02/02/17		Stage 2A	X	X	X	X	X
4401755981	T3.5B-20170202-0.5-FD	440-175598-4	W	02/02/17	DUP	Stage 2A	X	X	X	X	X
4401755981	T3.5C-20170202-0.6	440-175598-5	W	02/02/17		Stage 2A	X	X	X	X	X
4401755981	T3.5C-20170202-0.6-EB	440-175598-6	W	02/02/17	EB	Stage 2A	X	X	X	X	X
4401755981	T3.5D-20170202-1.4	440-175598-7	W	02/02/17		Stage 2A	X	X	X	X	X
4401755981	T3.5E-20170202-1.5	440-175598-8	W	02/02/17		Stage 2A	X	X	X	X	X
4401755981	T3.5F-20170202-1.5	440-175598-9	W	02/02/17		Stage 2A	X	X	X	X	X
4401755981	T3.5F-20170202-4.0	440-175598-10	W	02/02/17		Stage 2A	X	X	X	X	X
4401756011	T6A-20170202-0.9	440-175601-1	W	02/02/17		Stage 2A	X	X	X	X	X
4401756011	T6A-20170202-FB	440-175601-2	W	02/02/17	FB	Stage 2A	X	X	X	X	X
4401756011	T6B-20170202-1.7	440-175601-3	W	02/02/17		Stage 2A	X	X	X	X	X
4401756011	T6C-20170202-1.7	440-175601-4	W	02/02/17		Stage 2A	X	X	X	X	X
4401756011	T6D-20170202-0.4	440-175601-5	W	02/02/17		Stage 2A	X	X	X	X	X
4401756311	T6.8A-20170203-1.0	440-175631-1	W	02/03/17		Stage 2A	X	X	X	X	X
4401756311	T6.8B-20170203-1.3	440-175631-2	W	02/03/17		Stage 2A	X	X	X	X	X
4401756311	T6.8C-20170203-0.4	440-175631-3	W	02/03/17		Stage 2A	X	X	X	X	X

Table 1
Sample Cross Reference
NERT RI Downgradient Study Area
Henderson, Nevada

SDG	Client Sample ID	Lab Sample ID	Matrix	Sample Date	QC Type	Validation Level	Bromide (E300)	Chlorate (E300.1)	Chloride (E300)	Perchlorate (E314.0)	Total Dissolved Solids (SM2540C)
4401756311	T6.8D-20170203-0.9	440-175631-4	W	02/03/17		Stage 2A	X	X	X	X	X
4401756311	T6.8E-20170203-0.7	440-175631-5	W	02/03/17		Stage 2A	X	X	X	X	X
4401756321	T6.35A-20170203-1.5	440-175632-1	W	02/03/17		Stage 2A	X	X	X	X	X
4401756321	T6.35B-20170203-1.0	440-175632-2	W	02/03/17		Stage 2A	X	X	X	X	X
4401756321	T6.35B-20170203-3.0	440-175632-4	W	02/03/17		Stage 2A	X	X	X	X	X
4401756321	T6.35C-20170203-1.0	440-175632-3	W	02/03/17		Stage 2A	X	X	X	X	X
Discrete Surface Water Samples											
4401758651	GLW4.9-20170206-11:15-1.45	440-175865-3	W	02/06/17		Stage 2A	X	X	X	X	X
4401758651	LW4.95-20170206-11:30-1.1	440-175865-4	W	02/06/17		Stage 2A	X	X	X	X	X
4401758651	LW5.3-20170206-10:00-1.2	440-175865-5	W	02/06/17		Stage 2A	X	X	X	X	X
4401758651	LW5.3-20170206-10:35-2.35	440-175865-6	W	02/06/17		Stage 2A	X	X	X	X	X
4401758651	LW5.3-20170206-14:24-EB	440-175865-2	W	02/06/17	EB	Stage 2A	X	X	X	X	X
4401758651	LW5.3-20170206-14:26-FB	440-175865-1	W	02/06/17	FB	Stage 2A	X	X	X	X	X
4401758671	LW3.4-20170206-14:46-0.63	440-175867-1	W	02/06/17		Stage 2A	X	X	X	X	X
4401758681	GLW4.4-20170206-14:15-1.2	440-175868-1	W	02/06/17		Stage 2A	X	X	X	X	X
4401758691	LW4.95-20170206-13:20-1.08	440-175869-1	W	02/06/17		Stage 2A	X	X	X	X	X
4401758701	GLW4.4-20170206-11:04-1.1	440-175870-4	W	02/06/17		Stage 2A	X	X	X	X	X
4401758701	GLW4.4-20170206-14:55-FB	440-175870-1	W	02/06/17	FB	Stage 2A	X	X	X	X	X
4401758701	GLW4.4-20170206-14:58-EB	440-175870-2	W	02/06/17	EB	Stage 2A	X	X	X	X	X
4401758701	GLW4.85-20170206-10:22-0.6	440-175870-5	W	02/06/17		Stage 2A	X	X	X	X	X
4401758701	LW4.1-20170206-11:20-0.3	440-175870-3	W	02/06/17		Stage 2A	X	X	X	X	X
4401758721	GLW3.78-20170206-10:45-0.42	440-175872-6	W	02/06/17		Stage 2A	X	X	X	X	X
4401758721	LW3.4-20170206-11:10-0.42	440-175872-3	W	02/06/17		Stage 2A	X	X	X	X	X
4401758721	LW3.75-20170206-10:25-0.83	440-175872-4	W	02/06/17		Stage 2A	X	X	X	X	X
4401758721	LW3.85-20170206-09:53-0.6	440-175872-7	W	02/06/17		Stage 2A	X	X	X	X	X
4401758721	LW3.85-20170206-13:00-FB	440-175872-1	W	02/06/17	FB	Stage 2A	X	X	X	X	X
4401758721	LW3.85-20170206-13:05-EB	440-175872-2	W	02/06/17	EB	Stage 2A	X	X	X	X	X
4401758721	LWC3.7-20170206-10:16-0.33	440-175872-5	W	02/06/17		Stage 2A	X	X	X	X	X
4401759871	GLW4.9-20170206-15:00-1.5	440-175987-1	W	02/06/17		Stage 2A	X	X	X	X	X
4401759871	LW4.95-20170206-15:15-1.1	440-175987-2	W	02/06/17		Stage 2A	X	X	X	X	X
4401759871	LW5.3-20170206-16:00-1.2	440-175987-3	W	02/06/17		Stage 2A	X	X	X	X	X
4401759871	LW5.3-20170206-16:10-2.3	440-175987-4	W	02/06/17		Stage 2A	X	X	X	X	X
4401759891	GLWC6.1_3-20170206-10:07-1.0	440-175989-5	W	02/06/17		Stage 2A	X	X	X	X	X
4401759891	GLWC6.1_4-20170206-10:35-1.1	440-175989-6	W	02/06/17		Stage 2A	X	X	X	X	X
4401759891	LW5.9-20170206-11:08-0.5	440-175989-2	W	02/06/17		Stage 2A	X	X	X	X	X
4401759891	LW5.9-20170206-14:23-EB	440-175989-1	W	02/06/17	EB	Stage 2A	X	X	X	X	X
4401759891	LWC6.1_1-20170206-09:45-0.58	440-175989-3	W	02/06/17		Stage 2A	X	X	X	X	X
4401759891	LWC6.1_2-20170206-10:00-0.8	440-175989-4	W	02/06/17		Stage 2A	X	X	X	X	X
4401759921	GLW4.4-20170206-16:19-1.3	440-175992-3	W	02/06/17		Stage 2A	X	X	X	X	X
4401759921	GLW4.85-20170206-15:58-0.6	440-175992-2	W	02/06/17		Stage 2A	X	X	X	X	X
4401759921	LW4.1-20170206-16:42-0.3	440-175992-1	W	02/06/17		Stage 2A	X	X	X	X	X
4401759941	GLWC6.1_3-20170206-15:00-0.9	440-175994-4	W	02/06/17		Stage 2A	X	X	X	X	X

Table 1
Sample Cross Reference
NERT RI Downgradient Study Area
Henderson, Nevada

SDG	Client Sample ID	Lab Sample ID	Matrix	Sample Date	QC Type	Validation Level	Bromide (E300)	Chlorate (E300.1)	Chloride (E300)	Perchlorate (E314.0)	Total Dissolved Solids (SM2540C)
4401759941	GLWC6.1_4-20170206-15:45-1.3	440-175994-5	W	02/06/17		Stage 2A	X	X	X	X	X
4401759941	GLWC6.1_4-20170206-15:45-1.3-FD	440-175994-6	W	02/06/17	DUP	Stage 2A	X	X	X	X	X
4401759941	LW5.9-20170206-15:18-0.6	440-175994-1	W	02/06/17		Stage 2A	X	X	X	X	X
4401759941	LWC6.1_1-20170206-14:43-0.8	440-175994-2	W	02/06/17		Stage 2A	X	X	X	X	X
4401759941	LWC6.1_2-20170206-14:55-0.6	440-175994-3	W	02/06/17		Stage 2A	X	X	X	X	X
4401760741	GLW3.78-20170207-09:35-0.7	440-176074-4	W	02/07/17		Stage 2A	X	X	X	X	X
4401760741	LW3.4-20170207-11:11-0.5	440-176074-1	W	02/07/17		Stage 2A	X	X	X	X	X
4401760741	LW3.75-20170207-10:45-0.9	440-176074-2	W	02/07/17		Stage 2A	X	X	X	X	X
4401760741	LW3.85-20170207-10:12-0.5	440-176074-5	W	02/07/17		Stage 2A	X	X	X	X	X
4401760741	LWC3.7-20170207-10:32-0.4	440-176074-3	W	02/07/17		Stage 2A	X	X	X	X	X
4401760761	LW6.05-20170207-09:30-0.6	440-176076-1	W	02/07/17		Stage 2A	X	X	X	X	X
4401760761	LW6.7-20170207-09:13-0.4	440-176076-2	W	02/07/17		Stage 2A	X	X	X	X	X
4401760761	LW7.2-20170207-08:55-0.7	440-176076-3	W	02/07/17		Stage 2A	X	X	X	X	X
4401760781	GLW4.4-20170207-10:18-1.1	440-176078-2	W	02/07/17		Stage 2A	X	X	X	X	X
4401760781	GLW4.85-20170207-09:42-0.7	440-176078-3	W	02/07/17		Stage 2A	X	X	X	X	X
4401760781	LW4.1-20170207-10:39-0.3	440-176078-1	W	02/07/17		Stage 2A	X	X	X	X	X
4401760791	LW6.05-20170207-11:20-0.6	440-176079-1	W	02/07/17		Stage 2A	X	X	X	X	X
4401760791	LW7.2-20170207-10:55-0.8	440-176079-2	W	02/07/17		Stage 2A	X	X	X	X	X
4401760801	GLWC6.1_3-20170207-09:30-1.0	440-176080-4	W	02/07/17		Stage 2A	X	X	X	X	X
4401760801	GLWC6.1_4-20170207-10:35-1.3	440-176080-5	W	02/07/17		Stage 2A	X	X	X	X	X
4401760801	LW5.9-20170207-10:00-0.4	440-176080-1	W	02/07/17		Stage 2A	X	X	X	X	X
4401760801	LWC6.1_1-20170207-09:03-0.9	440-176080-2	W	02/07/17		Stage 2A	X	X	X	X	X
4401760801	LWC6.1_2-20170207-09:20-0.7	440-176080-3	W	02/07/17		Stage 2A	X	X	X	X	X
4401760821	GLW4.9-20170207-10:55-1.2	440-176082-1	W	02/07/17		Stage 2A	X	X	X	X	X
4401760821	LW4.95-20170207-10:45-1.0	440-176082-2	W	02/07/17		Stage 2A	X	X	X	X	X
4401760821	LW5.3-20170207-09:45-1.0	440-176082-3	W	02/07/17		Stage 2A	X	X	X	X	X
4401760821	LW5.3-20170207-09:50-2.0	440-176082-4	W	02/07/17		Stage 2A	X	X	X	X	X
4401762381	LW6.05-20170206-11:20-0.6	440-176238-2	W	02/06/17		Stage 2A	X	X	X	X	X
4401762381	LW6.7-20170206-10:15-0.4	440-176238-3	W	02/06/17		Stage 2A	X	X	X	X	X
4401762381	LW7.2-20170206-09:45-0.8	440-176238-4	W	02/06/17		Stage 2A	X	X	X	X	X
4401762381	LW7.2-20170206-15:50-EB	440-176238-1	W	02/06/17	EB	Stage 2A	X	X	X	X	X
4401762431	GLW3.78-20170206-16:40-0.96	440-176243-3	W	02/06/17		Stage 2A	X	X	X	X	X
4401762431	LW3.4-20170206-17:01-0.7	440-176243-5	W	02/06/17		Stage 2A	X	X	X	X	X
4401762431	LW3.4-20170206-17:01-0.7-FD	440-176243-6	W	02/06/17		Stage 2A	X	X	X	X	X
4401762431	LW3.75-20170206-16:30-0.67	440-176243-1	W	02/06/17		Stage 2A	X	X	X	X	X
4401762431	LW3.85-20170206-16:03-0.58	440-176243-4	W	02/06/17		Stage 2A	X	X	X	X	X
4401762431	LWC3.7-20170206-16:20-0.58	440-176243-2	W	02/06/17		Stage 2A	X	X	X	X	X
4401762481	LW6.05-20170206-15:26-0.7	440-176248-1	W	02/06/17		Stage 2A	X	X	X	X	X
4401762481	LW6.7-20170206-15:00-0.6	440-176248-2	W	02/06/17		Stage 2A	X	X	X	X	X
4401762481	LW7.2-20170206-14:30-1.0	440-176248-3	W	02/06/17		Stage 2A	X	X	X	X	X
4401762481	LW7.2-20170206-14:30-1.0-FD	440-176248-4	W	02/06/17		Stage 2A	X	X	X	X	X
4401762531	LW6.05-20170206-12:36-0.7	440-176253-1	W	02/06/17		Stage 2A	X	X	X	X	X

Table 1
Sample Cross Reference
NERT RI Downgradient Study Area
Henderson, Nevada

SDG	Client Sample ID	Lab Sample ID	Matrix	Sample Date	QC Type	Validation Level	Bromide (E300)	Chlorate (E300.1)	Chloride (E300)	Perchlorate (E314.0)	Total Dissolved Solids (SM2540C)
4401762531	LW7.2-20170206-12:10-0.8	440-176253-2	W	02/06/17		Stage 2A	X	X	X	X	X
4401763631	GLW3.78-20170208-10:10-0.5	440-176363-5	W	02/08/17		Stage 2A	X	X	X	X	X
4401763631	LW3.4-20170208-10:30-0.5	440-176363-2	W	02/08/17		Stage 2A	X	X	X	X	X
4401763631	LW3.4-20170208-10:55-FB	440-176363-1	W	02/08/17	FB	Stage 2A	X	X	X	X	X
4401763631	LW3.75-20170208-09:57-0.8	440-176363-4	W	02/08/17		Stage 2A	X	X	X	X	X
4401763631	LW3.85-20170208-09:27-0.5	440-176363-6	W	02/08/17		Stage 2A	X	X	X	X	X
4401763631	LW3.85-20170208-09:27-0.5-FD	440-176363-7	W	02/08/17	DUP	Stage 2A	X	X	X	X	X
4401763631	LWC3.7-20170208-09:48-0.5	440-176363-3	W	02/08/17		Stage 2A	X	X	X	X	X
4401763641	GLW4.4-20170208-10:07-1.1	440-176364-5	W	02/08/17		Stage 2A	X	X	X	X	X
4401763641	GLW4.4-20170208-11:02-EB	440-176364-2	W	02/08/17	EB	Stage 2A	X	X	X	X	X
4401763641	GLW4.85-20170208-09:45-0.6	440-176364-4	W	02/08/17		Stage 2A	X	X	X	X	X
4401763641	LW4.1-20170208-10:22-0.4	440-176364-3	W	02/08/17		Stage 2A	X	X	X	X	X
4401763641	LW4.1-20170208-10:22-0.4-FD	440-176364-6	W	02/08/17	DUP	Stage 2A	X	X	X	X	X
4401763641	LW4.1-20170208-11:12-FB	440-176364-1	W	02/08/17	FB	Stage 2A	X	X	X	X	X
4401763671	GLW4.9-20170208-10:50-1.2	440-176367-3	W	02/08/17		Stage 2A	X	X	X	X	X
4401763671	GLW4.9-20170208-11:09-FB	440-176367-1	W	02/08/17	FB	Stage 2A	X	X	X	X	X
4401763671	LW4.95-20170208-10:30-1.1	440-176367-4	W	02/08/17		Stage 2A	X	X	X	X	X
4401763671	LW4.95-20170208-11:06-EB	440-176367-2	W	02/08/17	EB	Stage 2A	X	X	X	X	X
4401763671	LW5.3-20170208-10:00-1.0	440-176367-5	W	02/08/17		Stage 2A	X	X	X	X	X
4401763671	LW5.3-20170208-10:03-2.0	440-176367-6	W	02/08/17		Stage 2A	X	X	X	X	X
4401763681	LW6.05-20170208-09:35-0.5	440-176368-3	W	02/08/17		Stage 2A	X	X	X	X	X
4401763681	LW6.05-20170208-10:30-FB	440-176368-1	W	02/08/17	FB	Stage 2A	X	X	X	X	X
4401763681	LW6.7-20170208-09:03-0.3	440-176368-4	W	02/08/17		Stage 2A	X	X	X	X	X
4401763681	LW6.7-20170208-10:35-EB	440-176368-2	W	02/08/17	EB	Stage 2A	X	X	X	X	X
4401763681	LW7.2-20170208-08:45-0.7	440-176368-5	W	02/08/17		Stage 2A	X	X	X	X	X
4401763701	GLWC6.1_3-20170208-10:05-1.2	440-176370-6	W	02/08/17		Stage 2A	X	X	X	X	X
4401763701	GLWC6.1_4-20170208-10:35-1.3	440-176370-7	W	02/08/17		Stage 2A	X	X	X	X	X
4401763701	GLWC6.1_4-20170208-10:35-1.3-FD	440-176370-8	W	02/08/17	DUP	Stage 2A	X	X	X	X	X
4401763701	LW5.9-20170208-10:35-0.4	440-176370-3	W	02/08/17		Stage 2A	X	X	X	X	X
4401763701	LW5.9-20170208-11:45-FB	440-176370-1	W	02/08/17	FB	Stage 2A	X	X	X	X	X
4401763701	LWC6.1_1-20170208-09:45-0.9	440-176370-4	W	02/08/17		Stage 2A	X	X	X	X	X
4401763701	LWC6.1_1-20170208-11:40-EB	440-176370-2	W	02/08/17	EB	Stage 2A	X	X	X	X	X
4401763701	LWC6.1_2-20170208-10:00-0.6	440-176370-5	W	02/08/17		Stage 2A	X	X	X	X	X
4401763711	LW4.95-20170207-13:25-1.2	440-176371-1	W	02/07/17		Stage 2A	X	X	X	X	X
4401763731	LW3.4-20170207-14:35-0.6	440-176373-1	W	02/07/17		Stage 2A	X	X	X	X	X
4401763741	GLW4.4-20170207-14:11-1.3	440-176374-1	W	02/07/17		Stage 2A	X	X	X	X	X
4401763741	GLW4.4-20170207-14:11-1.3-FD	440-176374-2	W	02/07/17	DUP	Stage 2A	X	X	X	X	X
4401763751	LW6.05-20170208-12:35-0.8	440-176375-1	W	02/08/17		Stage 2A	X	X	X	X	X
4401763751	LW6.05-20170208-12:35-0.8-FD	440-176375-2	W	02/08/17	DUP	Stage 2A	X	X	X	X	X
4401763751	LW7.2-20170208-11:07-0.8	440-176375-3	W	02/08/17		Stage 2A	X	X	X	X	X
4401763761	LW6.05-20170207-14:48-0.7	440-176376-1	W	02/07/17		Stage 2A	X	X	X	X	X
4401763761	LW6.7-20170207-14:25-0.6	440-176376-2	W	02/07/17		Stage 2A	X	X	X	X	X

Table 1
Sample Cross Reference
NERT RI Downgradient Study Area
Henderson, Nevada

SDG	Client Sample ID	Lab Sample ID	Matrix	Sample Date	QC Type	Validation Level	Bromide (E300)	Chlorate (E300.1)	Chloride (E300)	Perchlorate (E314.0)	Total Dissolved Solids (SM2540C)
4401763761	LW6.7-20170207-14:25-0.6-FD	440-176376-3	W	02/07/17	DUP	Stage 2A	X	X	X	X	X
4401763761	LW7.2-20170207-14:02-0.9	440-176376-4	W	02/07/17		Stage 2A	X	X	X	X	X
4401763801	GLW4.4-20170207-16:06-1.2	440-176380-2	W	02/07/17		Stage 2A	X	X	X	X	X
4401763801	GLW4.85-20170207-15:42-0.8	440-176380-3	W	02/07/17		Stage 2A	X	X	X	X	X
4401763801	GLW4.85-20170207-15:42-0.8-FD	440-176380-4	W	02/07/17	DUP	Stage 2A	X	X	X	X	X
4401763801	LW4.1-20170207-16:20-0.4	440-176380-1	W	02/07/17		Stage 2A	X	X	X	X	X
4401763821	GLW4.9-20170207-16:45-1.4	440-176382-1	W	02/07/17		Stage 2A	X	X	X	X	X
4401763821	LW4.95-20170207-16:30-1.2	440-176382-2	W	02/07/17		Stage 2A	X	X	X	X	X
4401763821	LW4.95-20170207-16:30-1.2-FD	440-176382-3	W	02/07/17	DUP	Stage 2A	X	X	X	X	X
4401763821	LW5.3-20170207-15:45-1.2	440-176382-4	W	02/07/17		Stage 2A	X	X	X	X	X
4401763821	LW5.3-20170207-15:50-2.4	440-176382-5	W	02/07/17		Stage 2A	X	X	X	X	X
4401763841	GLW3.78-20170207-16:35-1.2	440-176384-3	W	02/07/17		Stage 2A	X	X	X	X	X
4401763841	LW3.4-20170207-17:00-0.7	440-176384-6	W	02/07/17		Stage 2A	X	X	X	X	X
4401763841	LW3.75-20170207-16:25-1.0	440-176384-1	W	02/07/17		Stage 2A	X	X	X	X	X
4401763841	LW3.85-20170207-15:50-0.6	440-176384-4	W	02/07/17		Stage 2A	X	X	X	X	X
4401763841	LW3.85-20170207-15:50-0.6-FD	440-176384-5	W	02/07/17	DUP	Stage 2A	X	X	X	X	X
4401763841	LWC3.7-20170207-16:10-0.6	440-176384-2	W	02/07/17		Stage 2A	X	X	X	X	X
4401763901	GLWC6.1_3-20170207-15:06-0.9	440-176390-4	W	02/07/17		Stage 2A	X	X	X	X	X
4401763901	GLWC6.1_3-20170207-15:06-0.9-FD	440-176390-5	W	02/07/17	DUP	Stage 2A	X	X	X	X	X
4401763901	GLWC6.1_4-20170207-16:10-1.3	440-176390-6	W	02/07/17		Stage 2A	X	X	X	X	X
4401763901	LW5.9-20170207-15:27-0.6	440-176390-1	W	02/07/17		Stage 2A	X	X	X	X	X
4401763901	LWC6.1_1-20170207-14:45-0.8	440-176390-2	W	02/07/17		Stage 2A	X	X	X	X	X
4401763901	LWC6.1_2-20170207-14:58-0.7	440-176390-3	W	02/07/17		Stage 2A	X	X	X	X	X
4401764851	GLW4.4-20170208-13:47-1.2	440-176485-1	W	02/08/17		Stage 2A	X	X	X	X	X
4401764881	GLWC6.1_3-20170208-15:00-1.0	440-176488-4	W	02/08/17		Stage 2A	X	X	X	X	X
4401764881	GLWC6.1_4-20170208-16:07-1.0	440-176488-5	W	02/08/17		Stage 2A	X	X	X	X	X
4401764881	LW5.9-20170208-15:41-0.6	440-176488-1	W	02/08/17		Stage 2A	X	X	X	X	X
4401764881	LWC6.1_1-20170208-14:43-0.7	440-176488-2	W	02/08/17		Stage 2A	X	X	X	X	X
4401764881	LWC6.1_2-20170208-14:53-0.7	440-176488-3	W	02/08/17		Stage 2A	X	X	X	X	X
4401764961	LW4.95-20170208-13:05-1.2	440-176496-1	W	02/08/17		Stage 2A	X	X	X	X	X
4401765001	LW3.4-20170208-14:18-0.6	440-176500-1	W	02/08/17		Stage 2A	X	X	X	X	X
4401765011	LW6.05-20170208-15:36-0.7	440-176501-1	W	02/08/17		Stage 2A	X	X	X	X	X
4401765011	LW6.7-20170208-15:02-0.6	440-176501-2	W	02/08/17		Stage 2A	X	X	X	X	X
4401765011	LW7.2-20170208-14:40-0.9	440-176501-3	W	02/08/17		Stage 2A	X	X	X	X	X
4401765051	GLW4.4-20170208-16:21-1.3	440-176505-2	W	02/08/17		Stage 2A	X	X	X	X	X
4401765051	GLW4.85-20170208-16:00-0.8	440-176505-3	W	02/08/17		Stage 2A	X	X	X	X	X
4401765051	LW4.1-20170208-16:33-0.4	440-176505-1	W	02/08/17		Stage 2A	X	X	X	X	X
4401765081	GLW4.9-20170208-16:35-1.4	440-176508-1	W	02/08/17		Stage 2A	X	X	X	X	X
4401765081	GLW4.9-20170208-16:35-1.4-FD	440-176508-2	W	02/08/17	DUP	Stage 2A	X	X	X	X	X
4401765081	LW4.95-20170208-16:20-1.3	440-176508-3	W	02/08/17		Stage 2A	X	X	X	X	X
4401765081	LW5.3-20170208-15:45-1.2	440-176508-4	W	02/08/17		Stage 2A	X	X	X	X	X
4401765081	LW5.3-20170208-15:50-2.4	440-176508-5	W	02/08/17		Stage 2A	X	X	X	X	X

Table 1
Sample Cross Reference
NERT RI Downgradient Study Area
Henderson, Nevada

SDG	Client Sample ID	Lab Sample ID	Matrix	Sample Date	QC Type	Validation Level	Bromide (E300)	Chlorate (E300.1)	Chloride (E300)	Perchlorate (E314.0)	Total Dissolved Solids (SM2540C)
4401765101	GLW3.78-20170208-16:42-1.4	440-176510-4	W	02/08/17		Stage 2A	X	X	X	X	X
4401765101	LW3.4-20170208-17:05-0.6	440-176510-1	W	02/08/17		Stage 2A	X	X	X	X	X
4401765101	LW3.75-20170208-16:30-1.0	440-176510-2	W	02/08/17		Stage 2A	X	X	X	X	X
4401765101	LW3.85-20170208-16:05-0.5	440-176510-5	W	02/08/17		Stage 2A	X	X	X	X	X
4401765101	LWC3.7-20170208-16:20-0.5	440-176510-3	W	02/08/17		Stage 2A	X	X	X	X	X
4401766401	GLW4.9-20170209-15:53-1.4	440-176640-1	W	02/09/17		Stage 2A	X	X	X	X	X
4401766401	LW4.95-20170209-15:40-1.2	440-176640-2	W	02/09/17		Stage 2A	X	X	X	X	X
4401766401	LW5.3-20170209-15:15-1.1	440-176640-3	W	02/09/17		Stage 2A	X	X	X	X	X
4401766401	LW5.3-20170209-15:18-2.2	440-176640-4	W	02/09/17		Stage 2A	X	X	X	X	X
4401766411	GLW4.4-20170209-15:44-1.3	440-176641-3	W	02/09/17		Stage 2A	X	X	X	X	X
4401766411	GLW4.85-20170209-15:18-0.8	440-176641-4	W	02/09/17		Stage 2A	X	X	X	X	X
4401766411	LW4.1-20170209-16:02-0.4	440-176641-1	W	02/09/17		Stage 2A	X	X	X	X	X
4401766411	LW4.1-20170209-16:02-0.4-FD	440-176641-2	W	02/09/17	DUP	Stage 2A	X	X	X	X	X
4401766421	LW3.4-20170209-13:33-0.5	440-176642-1	W	02/09/17		Stage 2A	X	X	X	X	X
4401766421	LW3.4-20170209-13:33-0.5-FD	440-176642-2	W	02/09/17	DUP	Stage 2A	X	X	X	X	X
4401766431	GLW3.78-20170209-16:30-1.4	440-176643-3	W	02/09/17		Stage 2A	X	X	X	X	X
4401766431	LW3.4-20170209-16:55-0.6	440-176643-5	W	02/09/17		Stage 2A	X	X	X	X	X
4401766431	LW3.75-20170209-16:11-0.8	440-176643-1	W	02/09/17		Stage 2A	X	X	X	X	X
4401766431	LW3.85-20170209-15:45-0.6	440-176643-4	W	02/09/17		Stage 2A	X	X	X	X	X
4401766431	LWC3.7-20170209-16:00-0.6	440-176643-2	W	02/09/17		Stage 2A	X	X	X	X	X
4401766441	LW6.05-20170209-15:23-0.7	440-176644-1	W	02/09/17		Stage 2A	X	X	X	X	X
4401766441	LW6.7-20170209-15:04-0.6	440-176644-2	W	02/09/17		Stage 2A	X	X	X	X	X
4401766441	LW7.2-20170209-14:41-0.9	440-176644-3	W	02/09/17		Stage 2A	X	X	X	X	X
4401766441	LW7.2-20170209-14:41-0.9-FD	440-176644-4	W	02/09/17	DUP	Stage 2A	X	X	X	X	X
4401766451	LW4.95-20170209-12:30-1.1	440-176645-1	W	02/09/17		Stage 2A	X	X	X	X	X
4401766461	GLWC6.1_3-20170209-09:32-1.2	440-176646-4	W	02/09/17		Stage 2A	X	X	X	X	X
4401766461	GLWC6.1_4-20170209-10:33-1.3	440-176646-5	W	02/09/17		Stage 2A	X	X	X	X	X
4401766461	LW5.9-20170209-10:01-0.4	440-176646-1	W	02/09/17		Stage 2A	X	X	X	X	X
4401766461	LWC6.1_1-20170209-09:10-1.0	440-176646-2	W	02/09/17		Stage 2A	X	X	X	X	X
4401766461	LWC6.1_2-20170209-09:25-0.6	440-176646-3	W	02/09/17		Stage 2A	X	X	X	X	X
4401766471	GLWC6.1_3-20170209-14:57-1.1	440-176647-5	W	02/09/17		Stage 2A	X	X	X	X	X
4401766471	GLWC6.1_4-20170209-15:51-1.6	440-176647-6	W	02/09/17		Stage 2A	X	X	X	X	X
4401766471	LW5.9-20170209-15:27-0.7	440-176647-1	W	02/09/17		Stage 2A	X	X	X	X	X
4401766471	LWC6.1_1-20170209-14:39-1.1	440-176647-2	W	02/09/17		Stage 2A	X	X	X	X	X
4401766471	LWC6.1_1-20170209-14:39-1.1-FD	440-176647-3	W	02/09/17	DUP	Stage 2A	X	X	X	X	X
4401766471	LWC6.1_2-20170209-14:52-0.8	440-176647-4	W	02/09/17		Stage 2A	X	X	X	X	X
4401766481	GLW4.4-20170209-10:22-1.1	440-176648-3	W	02/09/17		Stage 2A	X	X	X	X	X
4401766481	GLW4.85-20170209-09:58-0.7	440-176648-2	W	02/09/17		Stage 2A	X	X	X	X	X
4401766481	LW4.1-20170209-10:38-0.3	440-176648-1	W	02/09/17		Stage 2A	X	X	X	X	X
4401766491	LW6.05-20170209-09:31-0.5	440-176649-1	W	02/09/17		Stage 2A	X	X	X	X	X
4401766491	LW6.05-20170209-10:40-FB	440-176649-2	W	02/09/17	FB	Stage 2A	X	X	X	X	X
4401766491	LW6.7-20170209-09:11-0.3	440-176649-3	W	02/09/17		Stage 2A	X	X	X	X	X

Table 1
Sample Cross Reference
NERT RI Downgradient Study Area
Henderson, Nevada

SDG	Client Sample ID	Lab Sample ID	Matrix	Sample Date	QC Type	Validation Level	Bromide (E300)	Chlorate (E300.1)	Chloride (E300)	Perchlorate (E314.0)	Total Dissolved Solids (SM2540C)
4401766491	LW7.2-20170209-08:56-0.7	440-176649-4	W	02/09/17		Stage 2A	X	X	X	X	X
4401766501	GLW4.9-20170209-10:50-1.2	440-176650-1	W	02/09/17		Stage 2A	X	X	X	X	X
4401766501	LW4.95-20170209-10:35-1.0	440-176650-2	W	02/09/17		Stage 2A	X	X	X	X	X
4401766501	LW4.95-20170209-10:35-1.0-FD	440-176650-3	W	02/09/17	DUP	Stage 2A	X	X	X	X	X
4401766501	LW5.3-20170209-10:00-1.0	440-176650-4	W	02/09/17		Stage 2A	X	X	X	X	X
4401766501	LW5.3-20170209-10:03-2.0	440-176650-5	W	02/09/17		Stage 2A	X	X	X	X	X
4401766521	LW6.05-20170209-12:00-0.6	440-176652-1	W	02/09/17		Stage 2A	X	X	X	X	X
4401766521	LW7.2-20170209-10:52-0.8	440-176652-2	W	02/09/17		Stage 2A	X	X	X	X	X
4401766531	GLW4.4-20170209-13:11-1.2	440-176653-1	W	02/09/17		Stage 2A	X	X	X	X	X
4401767151	GLW3.78-20170209-11:28-0.3	440-176715-4	W	02/09/17		Stage 2A	X	X	X	X	X
4401767151	LW3.4-20170209-12:00-0.5	440-176715-1	W	02/09/17		Stage 2A	X	X	X	X	X
4401767151	LW3.75-20170209-10:58-0.5	440-176715-2	W	02/09/17		Stage 2A	X	X	X	X	X
4401767151	LW3.85-20170209-10:30-0.5	440-176715-5	W	02/09/17		Stage 2A	X	X	X	X	X
4401767151	LWC3.7-20170209-10:48-0.4	440-176715-3	W	02/09/17		Stage 2A	X	X	X	X	X

Table 2
Validation Elements
NERT Downgradient Study Area
Henderson, Nevada

Stage 2A	All Analyses
Sample Receipt & Technical Holding Time	√
Laboratory Blanks	√
Field Blanks	√
Surrogate Spikes	√
Matrix Spike (MS), Matrix Spike Duplicate (MSD)	√
Laboratory Duplicate (DUP)	√
Laboratory Control Sample (LCS)/ Laboratory Control Sample Duplicate (LCSD)	√
Field Duplicate	√
Project Quantitation Limits (QL)	√
Multiple Results for One Sample	√
Overall Data Usability Assessment	√

Notes:

√ = Reviewed

n/a = Not applicable to method or not performed during this sampling event

-- = Not applicable for Stage 2B review

Table 3
Qualification Codes and Definitions
NERT Downgradient Study Area
Henderson, Nevada

Reason Code	Explanation
a	qualified due to low abundance (radiochemical activity)
be	qualified due to equipment blank contamination
bf	qualified due to field blank contamination
bl	qualified due to laboratory blank contamination
bt	qualified due to trip blank contamination
bp	qualified due to pump blank contamination (wells w/o dedicated pumps, when contamination is detected in the Pump Blk)
br	qualified due to filter blank contamination (aqueous Hexavalent Chromium and Dissolved sample fractions)
c	qualified due to calibration problems
cp	qualified due to insufficient ingrowth (radiochemical only)
dc	dual column confirmation %D exceeded
e	concentration exceeded the calibration range
fd	qualified due to field duplicate imprecision
h	qualified due to holding time exceedance
i	qualified due to internal standard areas
k	qualified as Estimated Maximum Possible Concentrations (dioxins and PCB congeners)
l	qualified due to LCS recoveries
ld	qualified due to laboratory duplicate imprecision (matrix duplicate, MSD, LCSD)
m	qualified due to matrix spike recoveries
nb	qualified due to negative laboratory blank contamination (nondetect results only)
nd	qualified due to non-detected target analyte
o	other
p	qualified as a false positive due to contamination during shipping
pH	sample preservation not within acceptance range
q	qualified due to quantitation problem
s	qualified due to surrogate recoveries
sd	serial dilution did not meet control criteria
sp	detected value reported >SQL <PQL
st	sample receipt temperature exceeded
t	qualified due to elevated helium tracer concentrations
vh	volatile headspace detected in aqueous sample containers submitted for VOC analysis
x	qualified due to low % solids
z	qualified due to ICS results

Table 4
All Results, Qualifiers, and Reason Codes
NERT Downgradient Study Area
Henderson, Nevada

SDG	Client Sample ID	Sample Date	Method	Client Analyte ID	Analyte	Lab Result	Lab Qualifier	SQL	PQL	Units	Validator Qualifier	Reason Code	Reason Code Definition	Qualification Finding	
Results from Samples coordinated with the USGS Seepage Study															
4401688961	GLW3.78-20161208-0.1	12/8/2016	E300	16887-00-6	Chloride	250		0.25	25	mg/l					
4401688961	GLW3.78-20161208-0.1	12/8/2016	E300	24959-67-9	Bromide	0.79		0.25	0.50	mg/l					
4401688961	GLW3.78-20161208-0.1	12/8/2016	E300.1	14866-68-3	Chlorate	190		20.00	40	ug/l					
4401688961	GLW3.78-20161208-0.1	12/8/2016	E314.0	14797-73-0	Perchlorate	41		0.95	4.0	ug/l					
4401688961	GLW3.78-20161208-0.1	12/8/2016	SM2540C	TDS	Total Dissolved Solids	1400		5.00	10	mg/l					
4401688961	GLW4.4-20161208-1.1	12/8/2016	E300	16887-00-6	Chloride	250		0.50	50	mg/l					
4401688961	GLW4.4-20161208-1.1	12/8/2016	E300	24959-67-9	Bromide	1.6		0.50	1.0	mg/l					
4401688961	GLW4.4-20161208-1.1	12/8/2016	E300.1	14866-68-3	Chlorate	86		20.00	40	ug/l					
4401688961	GLW4.4-20161208-1.1	12/8/2016	E314.0	14797-73-0	Perchlorate	23		0.95	4.0	ug/l					
4401688961	GLW4.4-20161208-1.1	12/8/2016	SM2540C	TDS	Total Dissolved Solids	1400		5.00	10	mg/l					
4401688961	GLW4.85-20161208-0.8	12/8/2016	E300	16887-00-6	Chloride	290		0.50	50	mg/l					
4401688961	GLW4.85-20161208-0.8	12/8/2016	E300	24959-67-9	Bromide	1.8		0.50	1.0	mg/l					
4401688961	GLW4.85-20161208-0.8	12/8/2016	E300.1	14866-68-3	Chlorate	980		50.00	100	ug/l					
4401688961	GLW4.85-20161208-0.8	12/8/2016	E314.0	14797-73-0	Perchlorate	270		4.75	20	ug/l					
4401688961	GLW4.85-20161208-0.8	12/8/2016	SM2540C	TDS	Total Dissolved Solids	1600		5.00	20	mg/l					
4401688961	GLW4.9-20161208-1.1	12/8/2016	E300	16887-00-6	Chloride	250		0.50	50	mg/l					
4401688961	GLW4.9-20161208-1.1	12/8/2016	E300	24959-67-9	Bromide	2.0		0.50	1.0	mg/l					
4401688961	GLW4.9-20161208-1.1	12/8/2016	E300.1	14866-68-3	Chlorate	83		20.00	40	ug/l					
4401688961	GLW4.9-20161208-1.1	12/8/2016	E314.0	14797-73-0	Perchlorate	14		0.95	4.0	ug/l					
4401688961	GLW4.9-20161208-1.1	12/8/2016	SM2540C	TDS	Total Dissolved Solids	1400		5.00	10	mg/l					
4401688961	GLWC6.1_3-20161208-0.5	12/8/2016	E300	16887-00-6	Chloride	200		0.25	25	mg/l					
4401688961	GLWC6.1_3-20161208-0.5	12/8/2016	E300	24959-67-9	Bromide	0.32	J	0.25	0.50	mg/l	J	sp	Detect <PQL	-	-
4401688961	GLWC6.1_3-20161208-0.5	12/8/2016	E300.1	14866-68-3	Chlorate	120		20.00	40	ug/l					
4401688961	GLWC6.1_3-20161208-0.5	12/8/2016	E314.0	14797-73-0	Perchlorate	1.7	J	0.95	4.0	ug/l	J+	m	matrix spike %R	142/143	%
4401688961	GLWC6.1_3-20161208-0.5	12/8/2016	SM2540C	TDS	Total Dissolved Solids	1000		5.00	10	mg/l					
4401688961	GLWC6.1_4-20161208-0.5	12/8/2016	E300	16887-00-6	Chloride	350		0.50	50	mg/l					
4401688961	GLWC6.1_4-20161208-0.5	12/8/2016	E300	24959-67-9	Bromide	0.64	J	0.50	1.0	mg/l	J	sp	Detect <PQL	-	-
4401688961	GLWC6.1_4-20161208-0.5	12/8/2016	E300.1	14866-68-3	Chlorate	110		20.00	40	ug/l					
4401688961	GLWC6.1_4-20161208-0.5	12/8/2016	E314.0	14797-73-0	Perchlorate	1.5	J	0.95	4.0	ug/l	J+	m	matrix spike %R	142/143	%
4401688961	GLWC6.1_4-20161208-0.5	12/8/2016	SM2540C	TDS	Total Dissolved Solids	1500		5.00	20	mg/l					
4401688961	LW3.4-20161208-0.5	12/8/2016	E300	16887-00-6	Chloride	250		0.25	25	mg/l					
4401688961	LW3.4-20161208-0.5	12/8/2016	E300	24959-67-9	Bromide	0.46	J	0.25	0.50	mg/l	J	sp	Detect <PQL	-	-
4401688961	LW3.4-20161208-0.5	12/8/2016	E300.1	14866-68-3	Chlorate	130		20.00	40	ug/l					
4401688961	LW3.4-20161208-0.5	12/8/2016	E314.0	14797-73-0	Perchlorate	33		0.95	4.0	ug/l	J+	m	matrix spike %R	142/143	%
4401688961	LW3.4-20161208-0.5	12/8/2016	SM2540C	TDS	Total Dissolved Solids	1400		5.00	10	mg/l					
4401688961	LW3.4-20161208-0.5-FB	12/8/2016	E300	16887-00-6	Chloride	0.25	U	0.25	0.50	mg/l					
4401688961	LW3.4-20161208-0.5-FB	12/8/2016	E300	24959-67-9	Bromide	0.25	U	0.25	0.50	mg/l					
4401688961	LW3.4-20161208-0.5-FB	12/8/2016	E300.1	14866-68-3	Chlorate	10.00	U	10.00	20	ug/l					
4401688961	LW3.4-20161208-0.5-FB	12/8/2016	E314.0	14797-73-0	Perchlorate	0.95	U	0.95	4.0	ug/l					
4401688961	LW3.4-20161208-0.5-FB	12/8/2016	SM2540C	TDS	Total Dissolved Solids	5.00	U	5.00	10	mg/l					
4401688961	LW3.75-20161208-0.3	12/8/2016	E300	16887-00-6	Chloride	250		0.25	25	mg/l					
4401688961	LW3.75-20161208-0.3	12/8/2016	E300	24959-67-9	Bromide	0.79		0.25	0.50	mg/l					
4401688961	LW3.75-20161208-0.3	12/8/2016	E300.1	14866-68-3	Chlorate	92		20.00	40	ug/l					
4401688961	LW3.75-20161208-0.3	12/8/2016	E314.0	14797-73-0	Perchlorate	20		0.95	4.0	ug/l					
4401688961	LW3.75-20161208-0.3	12/8/2016	SM2540C	TDS	Total Dissolved Solids	1300		5.00	10	mg/l					
4401688961	LW3.85-20161208-0.3	12/8/2016	E300	16887-00-6	Chloride	250		0.25	25	mg/l					
4401688961	LW3.85-20161208-0.3	12/8/2016	E300	24959-67-9	Bromide	0.50		0.25	0.50	mg/l					
4401688961	LW3.85-20161208-0.3	12/8/2016	E300.1	14866-68-3	Chlorate	100		20.00	40	ug/l					
4401688961	LW3.85-20161208-0.3	12/8/2016	E314.0	14797-73-0	Perchlorate	24		0.95	4.0	ug/l	J+	m	matrix spike %R	142/143	%

Table 4
All Results, Qualifiers, and Reason Codes
NERT Downgradient Study Area
Henderson, Nevada

SDG	Client Sample ID	Sample Date	Method	Client Analyte ID	Analyte	Lab Result	Lab Qualifier	SQL	PQL	Units	Validator Qualifier	Reason Code	Reason Code Definition	Qualification Finding
4401688961	LW3.85-20161208-0.3	12/8/2016	SM2540C	TDS	Total Dissolved Solids	1400		5.00	10	mg/l				
4401688961	LW3.85-20161208-0.3-FD	12/8/2016	E300	16887-00-6	Chloride	250		0.50	50	mg/l				
4401688961	LW3.85-20161208-0.3-FD	12/8/2016	E300	24959-67-9	Bromide	0.54	J	0.50	1.0	mg/l	J	sp	Detect <PQL	- -
4401688961	LW3.85-20161208-0.3-FD	12/8/2016	E300.1	14866-68-3	Chlorate	96		20.00	40	ug/l				
4401688961	LW3.85-20161208-0.3-FD	12/8/2016	E314.0	14797-73-0	Perchlorate	25		0.95	4.0	ug/l	J+	m	matrix spike %R	142/143 %
4401688961	LW3.85-20161208-0.3-FD	12/8/2016	SM2540C	TDS	Total Dissolved Solids	1400		5.00	10	mg/l				
4401688961	LW4.1-20161208-0.2	12/8/2016	E300	16887-00-6	Chloride	250		0.25	25	mg/l				
4401688961	LW4.1-20161208-0.2	12/8/2016	E300	24959-67-9	Bromide	0.51		0.25	0.50	mg/l				
4401688961	LW4.1-20161208-0.2	12/8/2016	E300.1	14866-68-3	Chlorate	500		50.00	100	ug/l				
4401688961	LW4.1-20161208-0.2	12/8/2016	E314.0	14797-73-0	Perchlorate	47		0.95	4.0	ug/l	J+	m	matrix spike %R	142/143 %
4401688961	LW4.1-20161208-0.2	12/8/2016	SM2540C	TDS	Total Dissolved Solids	1400		5.00	10	mg/l				
4401688961	LW4.95-20161208-0.7	12/8/2016	E300	16887-00-6	Chloride	250		0.25	25	mg/l				
4401688961	LW4.95-20161208-0.7	12/8/2016	E300	24959-67-9	Bromide	0.57		0.25	0.50	mg/l				
4401688961	LW4.95-20161208-0.7	12/8/2016	E300.1	14866-68-3	Chlorate	69		20.00	40	ug/l				
4401688961	LW4.95-20161208-0.7	12/8/2016	E314.0	14797-73-0	Perchlorate	9.4		0.95	4.0	ug/l				
4401688961	LW4.95-20161208-0.7	12/8/2016	SM2540C	TDS	Total Dissolved Solids	1400		5.00	10	mg/l				
4401688961	LW5.3-20161208-1.0	12/8/2016	E300	16887-00-6	Chloride	250		0.50	50	mg/l				
4401688961	LW5.3-20161208-1.0	12/8/2016	E300	24959-67-9	Bromide	0.56	J	0.50	1.0	mg/l	J	sp	Detect <PQL	- -
4401688961	LW5.3-20161208-1.0	12/8/2016	E300.1	14866-68-3	Chlorate	53		20.00	40	ug/l				
4401688961	LW5.3-20161208-1.0	12/8/2016	E314.0	14797-73-0	Perchlorate	15		0.95	4.0	ug/l	J+	m	matrix spike %R	142/143 %
4401688961	LW5.3-20161208-1.0	12/8/2016	SM2540C	TDS	Total Dissolved Solids	1400		5.00	10	mg/l				
4401688961	LW5.3-20161208-1.0-EB	12/8/2016	E300	16887-00-6	Chloride	0.25	U	0.25	0.50	mg/l				
4401688961	LW5.3-20161208-1.0-EB	12/8/2016	E300	24959-67-9	Bromide	0.25	U	0.25	0.50	mg/l				
4401688961	LW5.3-20161208-1.0-EB	12/8/2016	E300.1	14866-68-3	Chlorate	10.00	U	10.00	20	ug/l				
4401688961	LW5.3-20161208-1.0-EB	12/8/2016	E314.0	14797-73-0	Perchlorate	0.95	U	0.95	4.0	ug/l				
4401688961	LW5.3-20161208-1.0-EB	12/8/2016	SM2540C	TDS	Total Dissolved Solids	5.00	U	5.00	10	mg/l				
4401688961	LW5.3-20161208-2.5	12/8/2016	E300	16887-00-6	Chloride	250		0.50	50	mg/l				
4401688961	LW5.3-20161208-2.5	12/8/2016	E300	24959-67-9	Bromide	0.59	J	0.50	1.0	mg/l	J	sp	Detect <PQL	- -
4401688961	LW5.3-20161208-2.5	12/8/2016	E300.1	14866-68-3	Chlorate	55		20.00	40	ug/l				
4401688961	LW5.3-20161208-2.5	12/8/2016	E314.0	14797-73-0	Perchlorate	12		0.95	4.0	ug/l	J+	m	matrix spike %R	142/143 %
4401688961	LW5.3-20161208-2.5	12/8/2016	SM2540C	TDS	Total Dissolved Solids	1400		5.00	10	mg/l				
4401688961	LW5.9-20161208-0.5	12/8/2016	E300	16887-00-6	Chloride	250		0.25	25	mg/l				
4401688961	LW5.9-20161208-0.5	12/8/2016	E300	24959-67-9	Bromide	0.74		0.25	0.50	mg/l				
4401688961	LW5.9-20161208-0.5	12/8/2016	E300.1	14866-68-3	Chlorate	57		20.00	40	ug/l				
4401688961	LW5.9-20161208-0.5	12/8/2016	E314.0	14797-73-0	Perchlorate	9.8		0.95	4.0	ug/l				
4401688961	LW5.9-20161208-0.5	12/8/2016	SM2540C	TDS	Total Dissolved Solids	1400		5.00	10	mg/l				
4401688961	LW6.05-20161208-0.5	12/8/2016	E300	16887-00-6	Chloride	230		0.25	25	mg/l				
4401688961	LW6.05-20161208-0.5	12/8/2016	E300	24959-67-9	Bromide	1.0		0.25	0.50	mg/l				
4401688961	LW6.05-20161208-0.5	12/8/2016	E300.1	14866-68-3	Chlorate	47		20.00	40	ug/l				
4401688961	LW6.05-20161208-0.5	12/8/2016	E314.0	14797-73-0	Perchlorate	6.2	F1	0.95	4.0	ug/l	J+	m	matrix spike %R	142/143 %
4401688961	LW6.05-20161208-0.5	12/8/2016	SM2540C	TDS	Total Dissolved Solids	1400		5.00	10	mg/l				
4401688961	LW6.1_2-20161208-0.5	12/8/2016	E300	16887-00-6	Chloride	84		0.25	10	mg/l				
4401688961	LW6.1_2-20161208-0.5	12/8/2016	E300	24959-67-9	Bromide	0.31	J	0.25	0.50	mg/l	J	sp	Detect <PQL	- -
4401688961	LW6.1_2-20161208-0.5	12/8/2016	E300.1	14866-68-3	Chlorate	20		10.00	20	ug/l				
4401688961	LW6.1_2-20161208-0.5	12/8/2016	E314.0	14797-73-0	Perchlorate	0.95	U	0.95	4.0	ug/l				
4401688961	LW6.1_2-20161208-0.5	12/8/2016	SM2540C	TDS	Total Dissolved Solids	620		5.00	10	mg/l				
4401688961	LW6.7-20161208-0.5	12/8/2016	E300	16887-00-6	Chloride	240		0.50	50	mg/l				
4401688961	LW6.7-20161208-0.5	12/8/2016	E300	24959-67-9	Bromide	2.0		0.50	1.0	mg/l				
4401688961	LW6.7-20161208-0.5	12/8/2016	E300.1	14866-68-3	Chlorate	64		20.00	40	ug/l				
4401688961	LW6.7-20161208-0.5	12/8/2016	E314.0	14797-73-0	Perchlorate	0.95	U	0.95	4.0	ug/l				

Table 4
All Results, Qualifiers, and Reason Codes
NERT Downgradient Study Area
Henderson, Nevada

SDG	Client Sample ID	Sample Date	Method	Client Analyte ID	Analyte	Lab Result	Lab Qualifier	SQL	PQL	Units	Validator Qualifier	Reason Code	Reason Code Definition	Qualification Finding
4401688961	LW6.7-20161208-0.5	12/8/2016	SM2540C	TDS	Total Dissolved Solids	1400		5.00	10	mg/l				
4401688961	LW7.2-20161208-1.0	12/8/2016	E300	16887-00-6	Chloride	200		0.25	25	mg/l				
4401688961	LW7.2-20161208-1.0	12/8/2016	E300	24959-67-9	Bromide	1.0		0.25	0.50	mg/l				
4401688961	LW7.2-20161208-1.0	12/8/2016	E300.1	14866-68-3	Chlorate	230		20.00	40	ug/l				
4401688961	LW7.2-20161208-1.0	12/8/2016	E314.0	14797-73-0	Perchlorate	0.95	U	0.95	4.0	ug/l				
4401688961	LW7.2-20161208-1.0	12/8/2016	SM2540C	TDS	Total Dissolved Solids	1200		5.00	10	mg/l				
4401688961	LWC3.7-20161208-0.6	12/8/2016	E300	16887-00-6	Chloride	490		1.25	100	mg/l				
4401688961	LWC3.7-20161208-0.6	12/8/2016	E300	24959-67-9	Bromide	2.4	J	1.25	2.5	mg/l	J	sp	Detect <PQL	- -
4401688961	LWC3.7-20161208-0.6	12/8/2016	E300.1	14866-68-3	Chlorate	4300		1000.00	2000	ug/l				
4401688961	LWC3.7-20161208-0.6	12/8/2016	E314.0	14797-73-0	Perchlorate	1600		19.00	80	ug/l				
4401688961	LWC3.7-20161208-0.6	12/8/2016	SM2540C	TDS	Total Dissolved Solids	3300		5.00	50	mg/l				
4401688961	LWC3.7-20161208-0.6-FD	12/8/2016	E300	16887-00-6	Chloride	490		1.25	100	mg/l				
4401688961	LWC3.7-20161208-0.6-FD	12/8/2016	E300	24959-67-9	Bromide	2.9		1.25	2.5	mg/l				
4401688961	LWC3.7-20161208-0.6-FD	12/8/2016	E300.1	14866-68-3	Chlorate	4300		1000.00	2000	ug/l				
4401688961	LWC3.7-20161208-0.6-FD	12/8/2016	E314.0	14797-73-0	Perchlorate	1600		19.00	80	ug/l				
4401688961	LWC3.7-20161208-0.6-FD	12/8/2016	SM2540C	TDS	Total Dissolved Solids	3200		5.00	50	mg/l				
4401688961	LWC6.1_1-20161208-0.5	12/8/2016	E300	16887-00-6	Chloride	230		0.25	25	mg/l				
4401688961	LWC6.1_1-20161208-0.5	12/8/2016	E300	24959-67-9	Bromide	1.2		0.25	0.50	mg/l				
4401688961	LWC6.1_1-20161208-0.5	12/8/2016	E300.1	14866-68-3	Chlorate	160		20.00	40	ug/l				
4401688961	LWC6.1_1-20161208-0.5	12/8/2016	E314.0	14797-73-0	Perchlorate	0.95	U	0.95	4.0	ug/l				
4401688961	LWC6.1_1-20161208-0.5	12/8/2016	SM2540C	TDS	Total Dissolved Solids	1200		5.00	10	mg/l				
Results from Transect Surface Water Samples														
4401751531	T3.8A-20170130-0.4	1/30/2017	E300	16887-00-6	Chloride	260		0.50	50	mg/l				
4401751531	T3.8A-20170130-0.4	1/30/2017	E300	24959-67-9	Bromide	0.60	J	0.50	1.0	mg/l	J	sp	Detect <PQL	- -
4401751531	T3.8A-20170130-0.4	1/30/2017	E300.1	14866-68-3	Chlorate	270		50.00	100	ug/l				
4401751531	T3.8A-20170130-0.4	1/30/2017	E314.0	14797-73-0	Perchlorate	57		0.95	4.0	ug/l	J+	m	matrix spike %R	188/190 %
4401751531	T3.8A-20170130-0.4	1/30/2017	SM2540C	TDS	Total Dissolved Solids	1400		5.00	20	mg/l				
4401751531	T3.8A-20170130-FB	1/30/2017	E300	16887-00-6	Chloride	0.25	U	0.25	0.50	mg/l				
4401751531	T3.8A-20170130-FB	1/30/2017	E300	24959-67-9	Bromide	0.25	U	0.25	0.50	mg/l				
4401751531	T3.8A-20170130-FB	1/30/2017	E300.1	14866-68-3	Chlorate	10.00	U	10.00	20	ug/l				
4401751531	T3.8A-20170130-FB	1/30/2017	E314.0	14797-73-0	Perchlorate	0.95	U	0.95	4.0	ug/l				
4401751531	T3.8A-20170130-FB	1/30/2017	SM2540C	TDS	Total Dissolved Solids	5.00	U	5.00	10	mg/l				
4401751531	T3.8B-20170130-0.4	1/30/2017	E300	16887-00-6	Chloride	260		0.50	50	mg/l				
4401751531	T3.8B-20170130-0.4	1/30/2017	E300	24959-67-9	Bromide	0.59	J	0.50	1.0	mg/l	J	sp	Detect <PQL	- -
4401751531	T3.8B-20170130-0.4	1/30/2017	E300.1	14866-68-3	Chlorate	210		50.00	100	ug/l				
4401751531	T3.8B-20170130-0.4	1/30/2017	E314.0	14797-73-0	Perchlorate	45	F1	0.95	4.0	ug/l	J+	m	matrix spike %R	188/190 %
4401751531	T3.8B-20170130-0.4	1/30/2017	SM2540C	TDS	Total Dissolved Solids	1400		5.00	20	mg/l				
4401751531	T3.8C-20170130-0.4	1/30/2017	E300	16887-00-6	Chloride	250		0.25	25	mg/l				
4401751531	T3.8C-20170130-0.4	1/30/2017	E300	24959-67-9	Bromide	0.53		0.25	0.50	mg/l	J	f	FD RPD >30%	52 %
4401751531	T3.8C-20170130-0.4	1/30/2017	E300.1	14866-68-3	Chlorate	110		20.00	40	ug/l				
4401751531	T3.8C-20170130-0.4	1/30/2017	E314.0	14797-73-0	Perchlorate	32		0.95	4.0	ug/l	J+	m	matrix spike %R	188/190 %
4401751531	T3.8C-20170130-0.4	1/30/2017	SM2540C	TDS	Total Dissolved Solids	1400		5.00	20	mg/l				
4401751531	T3.8C-20170130-0.4-FD	1/30/2017	E300	16887-00-6	Chloride	250		0.25	25	mg/l				
4401751531	T3.8C-20170130-0.4-FD	1/30/2017	E300	24959-67-9	Bromide	0.90		0.25	0.50	mg/l	J	f	FD RPD >30%	52 %
4401751531	T3.8C-20170130-0.4-FD	1/30/2017	E300.1	14866-68-3	Chlorate	110		20.00	40	ug/l				
4401751531	T3.8C-20170130-0.4-FD	1/30/2017	E314.0	14797-73-0	Perchlorate	32		0.95	4.0	ug/l	J+	m	matrix spike %R	188/190 %
4401751531	T3.8C-20170130-0.4-FD	1/30/2017	SM2540C	TDS	Total Dissolved Solids	1400		5.00	20	mg/l				
4401751531	T3.8D-20170130-0.4	1/30/2017	E300	16887-00-6	Chloride	250		0.50	50	mg/l				
4401751531	T3.8D-20170130-0.4	1/30/2017	E300	24959-67-9	Bromide	0.50	U	0.50	1.0	mg/l				
4401751531	T3.8D-20170130-0.4	1/30/2017	E300.1	14866-68-3	Chlorate	130		50.00	100	ug/l				

Table 4
All Results, Qualifiers, and Reason Codes
NERT Downgradient Study Area
Henderson, Nevada

SDG	Client Sample ID	Sample Date	Method	Client Analyte ID	Analyte	Lab Result	Lab Qualifier	SQL	PQL	Units	Validator Qualifier	Reason Code	Reason Code Definition	Qualification Finding
4401751531	T3.8D-20170130-0.4	1/30/2017	E314.0	14797-73-0	Perchlorate	46		0.95	4.0	ug/l	J+	m	matrix spike %R	188/190 %
4401751531	T3.8D-20170130-0.4	1/30/2017	SM2540C	TDS	Total Dissolved Solids	1500		5.00	20	mg/l				
4401751541	T3.75A-20170130-0.9	1/30/2017	E300	16887-00-6	Chloride	280		0.25	25	mg/l				
4401751541	T3.75A-20170130-0.9	1/30/2017	E300	24959-67-9	Bromide	0.34	J	0.25	0.50	mg/l	J	sp	Detect <PQL	- -
4401751541	T3.75A-20170130-0.9	1/30/2017	E300.1	14866-68-3	Chlorate	270		50.00	100	ug/l				
4401751541	T3.75A-20170130-0.9	1/30/2017	E314.0	14797-73-0	Perchlorate	63		0.95	4.0	ug/l	J+	m	matrix spike %R	188/190 %
4401751541	T3.75A-20170130-0.9	1/30/2017	SM2540C	TDS	Total Dissolved Solids	1400		5.00	20	mg/l				
4401751541	T3.75A-20170130-EB	1/30/2017	E300	16887-00-6	Chloride	0.25	U	0.25	0.50	mg/l				
4401751541	T3.75A-20170130-EB	1/30/2017	E300	24959-67-9	Bromide	0.25	U	0.25	0.50	mg/l				
4401751541	T3.75A-20170130-EB	1/30/2017	E300.1	14866-68-3	Chlorate	10.00	U	10.00	20	ug/l				
4401751541	T3.75A-20170130-EB	1/30/2017	E314.0	14797-73-0	Perchlorate	0.95	U	0.95	4.0	ug/l				
4401751541	T3.75A-20170130-EB	1/30/2017	SM2540C	TDS	Total Dissolved Solids	5.00	U	5.00	10	mg/l				
4401751541	T3.75B-20170130-0.7	1/30/2017	E300	16887-00-6	Chloride	280		0.25	25	mg/l				
4401751541	T3.75B-20170130-0.7	1/30/2017	E300	24959-67-9	Bromide	0.33	J	0.25	0.50	mg/l	J	sp	Detect <PQL	- -
4401751541	T3.75B-20170130-0.7	1/30/2017	E300.1	14866-68-3	Chlorate	210		50.00	100	ug/l				
4401751541	T3.75B-20170130-0.7	1/30/2017	E314.0	14797-73-0	Perchlorate	51		0.95	4.0	ug/l	J+	m	matrix spike %R	188/190 %
4401751541	T3.75B-20170130-0.7	1/30/2017	SM2540C	TDS	Total Dissolved Solids	1400		5.00	20	mg/l				
4401751541	T3.75C-20170130-0.6	1/30/2017	E300	16887-00-6	Chloride	280		0.25	25	mg/l				
4401751541	T3.75C-20170130-0.6	1/30/2017	E300	24959-67-9	Bromide	0.34	J	0.25	0.50	mg/l	J	sp	Detect <PQL	- -
4401751541	T3.75C-20170130-0.6	1/30/2017	E300.1	14866-68-3	Chlorate	110		50.00	100	ug/l				
4401751541	T3.75C-20170130-0.6	1/30/2017	E314.0	14797-73-0	Perchlorate	31		0.95	4.0	ug/l				
4401751541	T3.75C-20170130-0.6	1/30/2017	SM2540C	TDS	Total Dissolved Solids	1400		5.00	20	mg/l				
4401751541	T3.75D-20170130-0.4	1/30/2017	E300	16887-00-6	Chloride	280		0.50	50	mg/l				
4401751541	T3.75D-20170130-0.4	1/30/2017	E300	24959-67-9	Bromide	0.50	U	0.50	1.0	mg/l				
4401751541	T3.75D-20170130-0.4	1/30/2017	E300.1	14866-68-3	Chlorate	260		50.00	100	ug/l				
4401751541	T3.75D-20170130-0.4	1/30/2017	E314.0	14797-73-0	Perchlorate	85		0.95	4.0	ug/l				
4401751541	T3.75D-20170130-0.4	1/30/2017	SM2540C	TDS	Total Dissolved Solids	1500		5.00	20	mg/l				
4401752491	T4.65A-20170131-0.7	1/31/2017	E300	16887-00-6	Chloride	280		0.25	25	mg/l				
4401752491	T4.65A-20170131-0.7	1/31/2017	E300	24959-67-9	Bromide	1.4		0.25	0.50	mg/l				
4401752491	T4.65A-20170131-0.7	1/31/2017	E300.1	14866-68-3	Chlorate	250		50.00	100	ug/l				
4401752491	T4.65A-20170131-0.7	1/31/2017	E314.0	14797-73-0	Perchlorate	57	F1	0.95	4.0	ug/l	J+	m	matrix spike %R	188/190 %
4401752491	T4.65A-20170131-0.7	1/31/2017	SM2540C	TDS	Total Dissolved Solids	1500		5.00	20	mg/l				
4401752491	T4.65B-20170131-0.9	1/31/2017	E300	16887-00-6	Chloride	260		0.50	50	mg/l				
4401752491	T4.65B-20170131-0.9	1/31/2017	E300	24959-67-9	Bromide	1.8		0.50	1.0	mg/l				
4401752491	T4.65B-20170131-0.9	1/31/2017	E300.1	14866-68-3	Chlorate	210		50.00	100	ug/l				
4401752491	T4.65B-20170131-0.9	1/31/2017	E314.0	14797-73-0	Perchlorate	51		0.95	4.0	ug/l				
4401752491	T4.65B-20170131-0.9	1/31/2017	SM2540C	TDS	Total Dissolved Solids	1500		5.00	20	mg/l				
4401752491	T4.65B-20170131-0.9-FD	1/31/2017	E300	16887-00-6	Chloride	270		0.50	50	mg/l				
4401752491	T4.65B-20170131-0.9-FD	1/31/2017	E300	24959-67-9	Bromide	1.7		0.50	1.0	mg/l				
4401752491	T4.65B-20170131-0.9-FD	1/31/2017	E300.1	14866-68-3	Chlorate	210		50.00	100	ug/l				
4401752491	T4.65B-20170131-0.9-FD	1/31/2017	E314.0	14797-73-0	Perchlorate	51		0.95	4.0	ug/l				
4401752491	T4.65B-20170131-0.9-FD	1/31/2017	SM2540C	TDS	Total Dissolved Solids	1500		5.00	20	mg/l				
4401752491	T4.65C-20170131-1.3	1/31/2017	E300	16887-00-6	Chloride	260		0.50	50	mg/l				
4401752491	T4.65C-20170131-1.3	1/31/2017	E300	24959-67-9	Bromide	0.74	J	0.50	1.0	mg/l	J	sp	Detect <PQL	- -
4401752491	T4.65C-20170131-1.3	1/31/2017	E300.1	14866-68-3	Chlorate	100		50.00	100	ug/l				
4401752491	T4.65C-20170131-1.3	1/31/2017	E314.0	14797-73-0	Perchlorate	31		0.95	4.0	ug/l				
4401752491	T4.65C-20170131-1.3	1/31/2017	SM2540C	TDS	Total Dissolved Solids	1500		5.00	20	mg/l				
4401752491	T4.65D-20170131-0.6	1/31/2017	E300	16887-00-6	Chloride	260		0.50	50	mg/l				
4401752491	T4.65D-20170131-0.6	1/31/2017	E300	24959-67-9	Bromide	1.7		0.50	1.0	mg/l				
4401752491	T4.65D-20170131-0.6	1/31/2017	E300.1	14866-68-3	Chlorate	78		20.00	40	ug/l				

Table 4
All Results, Qualifiers, and Reason Codes
NERT Downgradient Study Area
Henderson, Nevada

SDG	Client Sample ID	Sample Date	Method	Client Analyte ID	Analyte	Lab Result	Lab Qualifier	SQL	PQL	Units	Validator Qualifier	Reason Code	Reason Code Definition	Qualification Finding
4401752491	T4.65D-20170131-0.6	1/31/2017	E314.0	14797-73-0	Perchlorate	30		0.95	4.0	ug/l				
4401752491	T4.65D-20170131-0.6	1/31/2017	SM2540C	TDS	Total Dissolved Solids	1500		5.00	20	mg/l				
4401752731	T4.6A-20170131-0.3	1/31/2017	E300	16887-00-6	Chloride	280		0.25	25	mg/l				
4401752731	T4.6A-20170131-0.3	1/31/2017	E300	24959-67-9	Bromide	1.7		0.25	0.50	mg/l				
4401752731	T4.6A-20170131-0.3	1/31/2017	E300.1	14866-68-3	Chlorate	260		50.00	100	ug/l				
4401752731	T4.6A-20170131-0.3	1/31/2017	E314.0	14797-73-0	Perchlorate	64		0.95	4.0	ug/l	J+	m	matrix spike %R	168/169 %
4401752731	T4.6A-20170131-0.3	1/31/2017	SM2540C	TDS	Total Dissolved Solids	1600		5.00	20	mg/l				
4401752731	T4.6A-20170131-EB	1/31/2017	E300	16887-00-6	Chloride	0.25	U	0.25	0.50	mg/l				
4401752731	T4.6A-20170131-EB	1/31/2017	E300	24959-67-9	Bromide	0.25	U	0.25	0.50	mg/l				
4401752731	T4.6A-20170131-EB	1/31/2017	E300.1	14866-68-3	Chlorate	10.00	U	10.00	20	ug/l				
4401752731	T4.6A-20170131-EB	1/31/2017	E314.0	14797-73-0	Perchlorate	0.95	U	0.95	4.0	ug/l				
4401752731	T4.6A-20170131-EB	1/31/2017	SM2540C	TDS	Total Dissolved Solids	5.00	U	5.00	10	mg/l				
4401752731	T4.6B-20170131-0.6	1/31/2017	E300	16887-00-6	Chloride	280		0.25	25	mg/l				
4401752731	T4.6B-20170131-0.6	1/31/2017	E300	24959-67-9	Bromide	1.6		0.25	0.50	mg/l				
4401752731	T4.6B-20170131-0.6	1/31/2017	E300.1	14866-68-3	Chlorate	210		50.00	100	ug/l				
4401752731	T4.6B-20170131-0.6	1/31/2017	E314.0	14797-73-0	Perchlorate	57		0.95	4.0	ug/l	J+	m	matrix spike %R	168/169 %
4401752731	T4.6B-20170131-0.6	1/31/2017	SM2540C	TDS	Total Dissolved Solids	1600		5.00	20	mg/l				
4401752731	T4.6B-20170131-0.6-FD	1/31/2017	E300	16887-00-6	Chloride	280		0.25	25	mg/l				
4401752731	T4.6B-20170131-0.6-FD	1/31/2017	E300	24959-67-9	Bromide	1.6		0.25	0.50	mg/l				
4401752731	T4.6B-20170131-0.6-FD	1/31/2017	E300.1	14866-68-3	Chlorate	220		50.00	100	ug/l				
4401752731	T4.6B-20170131-0.6-FD	1/31/2017	E314.0	14797-73-0	Perchlorate	56		0.95	4.0	ug/l	J+	m	matrix spike %R	168/169 %
4401752731	T4.6B-20170131-0.6-FD	1/31/2017	SM2540C	TDS	Total Dissolved Solids	1600		5.00	20	mg/l				
4401752731	T4.6C-20170131-0.8	1/31/2017	E300	16887-00-6	Chloride	280		0.25	25	mg/l				
4401752731	T4.6C-20170131-0.8	1/31/2017	E300	24959-67-9	Bromide	0.25	U	0.25	0.50	mg/l				
4401752731	T4.6C-20170131-0.8	1/31/2017	E300.1	14866-68-3	Chlorate	100		50.00	100	ug/l				
4401752731	T4.6C-20170131-0.8	1/31/2017	E314.0	14797-73-0	Perchlorate	30	F1	0.95	4.0	ug/l	J+	m	matrix spike %R	168/169 %
4401752731	T4.6C-20170131-0.8	1/31/2017	SM2540C	TDS	Total Dissolved Solids	1500		5.00	20	mg/l				
4401752731	T4.6D-20170131-0.8	1/31/2017	E300	16887-00-6	Chloride	280		0.25	25	mg/l				
4401752731	T4.6D-20170131-0.8	1/31/2017	E300	24959-67-9	Bromide	1.6		0.25	0.50	mg/l				
4401752731	T4.6D-20170131-0.8	1/31/2017	E300.1	14866-68-3	Chlorate	83		20.00	40	ug/l				
4401752731	T4.6D-20170131-0.8	1/31/2017	E314.0	14797-73-0	Perchlorate	32		0.95	4.0	ug/l	J+	m	matrix spike %R	168/169 %
4401752731	T4.6D-20170131-0.8	1/31/2017	SM2540C	TDS	Total Dissolved Solids	1500		5.00	20	mg/l				
4401753881	T4.2A-20170201-0.4	2/1/2017	E300	16887-00-6	Chloride	260		0.25	25	mg/l				
4401753881	T4.2A-20170201-0.4	2/1/2017	E300	24959-67-9	Bromide	0.60		0.25	0.50	mg/l				
4401753881	T4.2A-20170201-0.4	2/1/2017	E300.1	14866-68-3	Chlorate	260		50.00	100	ug/l				
4401753881	T4.2A-20170201-0.4	2/1/2017	E314.0	14797-73-0	Perchlorate	66		1.90	8.0	ug/l				
4401753881	T4.2A-20170201-0.4	2/1/2017	SM2540C	TDS	Total Dissolved Solids	1400		5.00	20	mg/l				
4401753881	T4.2A-20170201-0.4-EB	2/1/2017	E300	16887-00-6	Chloride	0.25	U	0.25	0.50	mg/l				
4401753881	T4.2A-20170201-0.4-EB	2/1/2017	E300	24959-67-9	Bromide	0.25	U	0.25	0.50	mg/l				
4401753881	T4.2A-20170201-0.4-EB	2/1/2017	E300.1	14866-68-3	Chlorate	10.00	U	10.00	20	ug/l				
4401753881	T4.2A-20170201-0.4-EB	2/1/2017	E314.0	14797-73-0	Perchlorate	0.95	U	0.95	4.0	ug/l				
4401753881	T4.2A-20170201-0.4-EB	2/1/2017	SM2540C	TDS	Total Dissolved Solids	5.00	U	5.00	10	mg/l				
4401753881	T4.2B-20170201-1.0	2/1/2017	E300	16887-00-6	Chloride	260		0.50	50	mg/l				
4401753881	T4.2B-20170201-1.0	2/1/2017	E300	24959-67-9	Bromide	0.67	J	0.50	1.0	mg/l	J	sp	Detect <PQL	- -
4401753881	T4.2B-20170201-1.0	2/1/2017	E300.1	14866-68-3	Chlorate	170		50.00	100	ug/l				
4401753881	T4.2B-20170201-1.0	2/1/2017	E314.0	14797-73-0	Perchlorate	40		0.95	4.0	ug/l				
4401753881	T4.2B-20170201-1.0	2/1/2017	SM2540C	TDS	Total Dissolved Solids	1400		5.00	20	mg/l				
4401753881	T4.2B-20170201-1.0-FD	2/1/2017	E300	16887-00-6	Chloride	260		0.25	25	mg/l				
4401753881	T4.2B-20170201-1.0-FD	2/1/2017	E300	24959-67-9	Bromide	0.60		0.25	0.50	mg/l				
4401753881	T4.2B-20170201-1.0-FD	2/1/2017	E300.1	14866-68-3	Chlorate	170		50.00	100	ug/l				

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Henderson, Nevada

SDG	Client Sample ID	Sample Date	Method	Client Analyte ID	Analyte	Lab Result	Lab Qualifier	SQL	PQL	Units	Validator Qualifier	Reason Code	Reason Code Definition	Qualification Finding	
4401753881	T4.2B-20170201-1.0-FD	2/1/2017	E314.0	14797-73-0	Perchlorate	40		0.95	4.0	ug/l					
4401753881	T4.2B-20170201-1.0-FD	2/1/2017	SM2540C	TDS	Total Dissolved Solids	1400		5.00	20	mg/l					
4401753881	T4.2C-20170201-0.8	2/1/2017	E300	16887-00-6	Chloride	260		0.25	25	mg/l					
4401753881	T4.2C-20170201-0.8	2/1/2017	E300	24959-67-9	Bromide	0.58		0.25	0.50	mg/l					
4401753881	T4.2C-20170201-0.8	2/1/2017	E300.1	14866-68-3	Chlorate	88		20.00	40	ug/l					
4401753881	T4.2C-20170201-0.8	2/1/2017	E314.0	14797-73-0	Perchlorate	27		0.95	4.0	ug/l					
4401753881	T4.2C-20170201-0.8	2/1/2017	SM2540C	TDS	Total Dissolved Solids	1400		5.00	20	mg/l					
4401753881	T4.2D-20170201-1.0	2/1/2017	E300	16887-00-6	Chloride	270		0.25	25	mg/l					
4401753881	T4.2D-20170201-1.0	2/1/2017	E300	24959-67-9	Bromide	0.58		0.25	0.50	mg/l					
4401753881	T4.2D-20170201-1.0	2/1/2017	E300.1	14866-68-3	Chlorate	78		20.00	40	ug/l					
4401753881	T4.2D-20170201-1.0	2/1/2017	E314.0	14797-73-0	Perchlorate	25		0.95	4.0	ug/l					
4401753881	T4.2D-20170201-1.0	2/1/2017	SM2540C	TDS	Total Dissolved Solids	1400		5.00	20	mg/l					
4401755201	T4.75A-20170201-1.3	2/1/2017	E300	16887-00-6	Chloride	360		0.50	50	mg/l					
4401755201	T4.75A-20170201-1.3	2/1/2017	E300	24959-67-9	Bromide	0.69	J	0.50	1.0	mg/l	J	sp	Detect <PQL	-	-
4401755201	T4.75A-20170201-1.3	2/1/2017	E300.1	14866-68-3	Chlorate	3100		500.00	1000	ug/l					
4401755201	T4.75A-20170201-1.3	2/1/2017	E314.0	14797-73-0	Perchlorate	820		9.50	40	ug/l	J+	m	matrix spike %R	148/150	%
4401755201	T4.75A-20170201-1.3	2/1/2017	SM2540C	TDS	Total Dissolved Solids	2200		5.00	20	mg/l					
4401755201	T4.75A-20170201-1.3-FD	2/1/2017	E300	16887-00-6	Chloride	360		0.50	50	mg/l					
4401755201	T4.75A-20170201-1.3-FD	2/1/2017	E300	24959-67-9	Bromide	0.71	J	0.50	1.0	mg/l	J	sp	Detect <PQL	-	-
4401755201	T4.75A-20170201-1.3-FD	2/1/2017	E300.1	14866-68-3	Chlorate	3100		500.00	1000	ug/l					
4401755201	T4.75A-20170201-1.3-FD	2/1/2017	E314.0	14797-73-0	Perchlorate	830		9.50	40	ug/l	J+	m	matrix spike %R	148/150	%
4401755201	T4.75A-20170201-1.3-FD	2/1/2017	SM2540C	TDS	Total Dissolved Solids	2200		5.00	20	mg/l					
4401755201	T4.75B-20170201-0.9	2/1/2017	E300	16887-00-6	Chloride	260		0.25	25	mg/l					
4401755201	T4.75B-20170201-0.9	2/1/2017	E300	24959-67-9	Bromide	0.59		0.25	0.50	mg/l					
4401755201	T4.75B-20170201-0.9	2/1/2017	E300.1	14866-68-3	Chlorate	94		20.00	40	ug/l					
4401755201	T4.75B-20170201-0.9	2/1/2017	E314.0	14797-73-0	Perchlorate	23	F1	0.95	4.0	ug/l	J+	m	matrix spike %R	148/150	%
4401755201	T4.75B-20170201-0.9	2/1/2017	SM2540C	TDS	Total Dissolved Solids	1600		5.00	10	mg/l					
4401755201	T4.75B-20170201-EB	2/1/2017	E300	16887-00-6	Chloride	0.25	U	0.25	0.50	mg/l					
4401755201	T4.75B-20170201-EB	2/1/2017	E300	24959-67-9	Bromide	0.25	U	0.25	0.50	mg/l					
4401755201	T4.75B-20170201-EB	2/1/2017	E300.1	14866-68-3	Chlorate	10.00	U	10.00	20	ug/l					
4401755201	T4.75B-20170201-EB	2/1/2017	E314.0	14797-73-0	Perchlorate	0.95	U	0.95	4.0	ug/l					
4401755201	T4.75B-20170201-EB	2/1/2017	SM2540C	TDS	Total Dissolved Solids	5.00	U	5.00	10	mg/l					
4401755201	T4.75C-20170201-2.2	2/1/2017	E300	16887-00-6	Chloride	270		0.25	25	mg/l					
4401755201	T4.75C-20170201-2.2	2/1/2017	E300	24959-67-9	Bromide	0.57		0.25	0.50	mg/l					
4401755201	T4.75C-20170201-2.2	2/1/2017	E300.1	14866-68-3	Chlorate	83		20.00	40	ug/l					
4401755201	T4.75C-20170201-2.2	2/1/2017	E314.0	14797-73-0	Perchlorate	22		0.95	4.0	ug/l	J+	m	matrix spike %R	148/150	%
4401755201	T4.75C-20170201-2.2	2/1/2017	SM2540C	TDS	Total Dissolved Solids	1600		5.00	10	mg/l					
4401755201	T4.75D-2017-201-1.5	2/1/2017	E300	16887-00-6	Chloride	350		0.50	50	mg/l					
4401755201	T4.75D-2017-201-1.5	2/1/2017	E300	24959-67-9	Bromide	0.50	U	0.50	1.0	mg/l					
4401755201	T4.75D-2017-201-1.5	2/1/2017	E300.1	14866-68-3	Chlorate	35	J	20.00	40	ug/l	J	sp	Detect <PQL	-	-
4401755201	T4.75D-2017-201-1.5	2/1/2017	E314.0	14797-73-0	Perchlorate	420		9.50	40	ug/l	J+	m	matrix spike %R	148/150	%
4401755201	T4.75D-2017-201-1.5	2/1/2017	SM2540C	TDS	Total Dissolved Solids	2100		5.00	20	mg/l					
4401755961	T5.3A-20170202-1.4	2/2/2017	E300	16887-00-6	Chloride	300		0.25	25	mg/l					
4401755961	T5.3A-20170202-1.4	2/2/2017	E300	24959-67-9	Bromide	0.30	J	0.25	0.50	mg/l	J	sp	Detect <PQL	-	-
4401755961	T5.3A-20170202-1.4	2/2/2017	E300.1	14866-68-3	Chlorate	140		50.00	100	ug/l					
4401755961	T5.3A-20170202-1.4	2/2/2017	E314.0	14797-73-0	Perchlorate	32		0.95	4.0	ug/l					
4401755961	T5.3A-20170202-1.4	2/2/2017	SM2540C	TDS	Total Dissolved Solids	1500		5.00	10	mg/l					
4401755961	T5.3A-20170202-1.4-EB	2/2/2017	E300	16887-00-6	Chloride	0.25	U	0.25	0.50	mg/l					
4401755961	T5.3A-20170202-1.4-EB	2/2/2017	E300	24959-67-9	Bromide	0.25	U	0.25	0.50	mg/l					
4401755961	T5.3A-20170202-1.4-EB	2/2/2017	E300.1	14866-68-3	Chlorate	10.00	U	10.00	20	ug/l					

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4401755961	T5.3A-20170202-1.4-EB	2/2/2017	E314.0	14797-73-0	Perchlorate	0.95	U	0.95	4.0	ug/l				
4401755961	T5.3A-20170202-1.4-EB	2/2/2017	SM2540C	TDS	Total Dissolved Solids	5.00	U	5.00	10	mg/l				
4401755961	T5.3A-20170202-2.8	2/2/2017	E300	16887-00-6	Chloride	290		0.50	50	mg/l				
4401755961	T5.3A-20170202-2.8	2/2/2017	E300	24959-67-9	Bromide	0.50	U	0.50	1.0	mg/l				
4401755961	T5.3A-20170202-2.8	2/2/2017	E300.1	14866-68-3	Chlorate	130		50.00	100	ug/l				
4401755961	T5.3A-20170202-2.8	2/2/2017	E314.0	14797-73-0	Perchlorate	33		0.95	4.0	ug/l				
4401755961	T5.3A-20170202-2.8	2/2/2017	SM2540C	TDS	Total Dissolved Solids	1500		5.00	10	mg/l				
4401755961	T5.3B-20170202-2.0	2/2/2017	E300	16887-00-6	Chloride	290		0.50	50	mg/l				
4401755961	T5.3B-20170202-2.0	2/2/2017	E300	24959-67-9	Bromide	0.50	U	0.50	1.0	mg/l				
4401755961	T5.3B-20170202-2.0	2/2/2017	E300.1	14866-68-3	Chlorate	54		20.00	40	ug/l				
4401755961	T5.3B-20170202-2.0	2/2/2017	E314.0	14797-73-0	Perchlorate	18		0.95	4.0	ug/l				
4401755961	T5.3B-20170202-2.0	2/2/2017	SM2540C	TDS	Total Dissolved Solids	1500		5.00	10	mg/l				
4401755961	T5.3B-20170202-2.0-FD	2/2/2017	E300	16887-00-6	Chloride	290		0.50	50	mg/l				
4401755961	T5.3B-20170202-2.0-FD	2/2/2017	E300	24959-67-9	Bromide	0.50	U	0.50	1.0	mg/l				
4401755961	T5.3B-20170202-2.0-FD	2/2/2017	E300.1	14866-68-3	Chlorate	55		20.00	40	ug/l				
4401755961	T5.3B-20170202-2.0-FD	2/2/2017	E314.0	14797-73-0	Perchlorate	18		0.95	4.0	ug/l				
4401755961	T5.3B-20170202-2.0-FD	2/2/2017	SM2540C	TDS	Total Dissolved Solids	1500		5.00	10	mg/l				
4401755961	T5.3C-2010202-1.2	2/2/2017	E300	16887-00-6	Chloride	290		0.50	50	mg/l				
4401755961	T5.3C-2010202-1.2	2/2/2017	E300	24959-67-9	Bromide	0.50	U	0.50	1.0	mg/l				
4401755961	T5.3C-2010202-1.2	2/2/2017	E300.1	14866-68-3	Chlorate	51		20.00	40	ug/l				
4401755961	T5.3C-2010202-1.2	2/2/2017	E314.0	14797-73-0	Perchlorate	17		0.95	4.0	ug/l				
4401755961	T5.3C-2010202-1.2	2/2/2017	SM2540C	TDS	Total Dissolved Solids	1500		5.00	10	mg/l				
4401755981	T3.5A-20170202-0.2	2/2/2017	E300	16887-00-6	Chloride	420		0.50	50	mg/l				
4401755981	T3.5A-20170202-0.2	2/2/2017	E300	24959-67-9	Bromide	1.1		0.50	1.0	mg/l				
4401755981	T3.5A-20170202-0.2	2/2/2017	E300.1	14866-68-3	Chlorate	310		50.00	100	ug/l				
4401755981	T3.5A-20170202-0.2	2/2/2017	E314.0	14797-73-0	Perchlorate	73		0.95	4.0	ug/l				
4401755981	T3.5A-20170202-0.2	2/2/2017	SM2540C	TDS	Total Dissolved Solids	2700		5.00	20	mg/l				
4401755981	T3.5A-20170202-FB	2/2/2017	E300	16887-00-6	Chloride	0.25	U	0.25	0.50	mg/l				
4401755981	T3.5A-20170202-FB	2/2/2017	E300	24959-67-9	Bromide	0.25	U	0.25	0.50	mg/l				
4401755981	T3.5A-20170202-FB	2/2/2017	E300.1	14866-68-3	Chlorate	10.00	U	10.00	20	ug/l				
4401755981	T3.5A-20170202-FB	2/2/2017	E314.0	14797-73-0	Perchlorate	0.95	U	0.95	4.0	ug/l				
4401755981	T3.5A-20170202-FB	2/2/2017	SM2540C	TDS	Total Dissolved Solids	5.00	U	5.00	10	mg/l				
4401755981	T3.5B-20170202-0.5	2/2/2017	E300	16887-00-6	Chloride	280		0.50	50	mg/l				
4401755981	T3.5B-20170202-0.5	2/2/2017	E300	24959-67-9	Bromide	0.64	J	0.50	1.0	mg/l	J	sp	Detect <PQL	-
4401755981	T3.5B-20170202-0.5	2/2/2017	E300.1	14866-68-3	Chlorate	430		50.00	100	ug/l				
4401755981	T3.5B-20170202-0.5	2/2/2017	E314.0	14797-73-0	Perchlorate	140		1.90	8.0	ug/l				
4401755981	T3.5B-20170202-0.5	2/2/2017	SM2540C	TDS	Total Dissolved Solids	1500		5.00	20	mg/l				
4401755981	T3.5B-20170202-0.5-FD	2/2/2017	E300	16887-00-6	Chloride	270		0.50	50	mg/l				
4401755981	T3.5B-20170202-0.5-FD	2/2/2017	E300	24959-67-9	Bromide	0.50	U	0.50	1.0	mg/l				
4401755981	T3.5B-20170202-0.5-FD	2/2/2017	E300.1	14866-68-3	Chlorate	440		50.00	100	ug/l				
4401755981	T3.5B-20170202-0.5-FD	2/2/2017	E314.0	14797-73-0	Perchlorate	140		1.90	8.0	ug/l				
4401755981	T3.5B-20170202-0.5-FD	2/2/2017	SM2540C	TDS	Total Dissolved Solids	1500		5.00	20	mg/l				
4401755981	T3.5C-20170202-0.6	2/2/2017	E300	16887-00-6	Chloride	270		0.50	50	mg/l				
4401755981	T3.5C-20170202-0.6	2/2/2017	E300	24959-67-9	Bromide	0.50	U	0.50	1.0	mg/l				
4401755981	T3.5C-20170202-0.6	2/2/2017	E300.1	14866-68-3	Chlorate	420		50.00	100	ug/l				
4401755981	T3.5C-20170202-0.6	2/2/2017	E314.0	14797-73-0	Perchlorate	98		0.95	4.0	ug/l				
4401755981	T3.5C-20170202-0.6	2/2/2017	SM2540C	TDS	Total Dissolved Solids	1600		5.00	20	mg/l				
4401755981	T3.5C-20170202-0.6-EB	2/2/2017	E300	16887-00-6	Chloride	0.53		0.25	0.50	mg/l				
4401755981	T3.5C-20170202-0.6-EB	2/2/2017	E300	24959-67-9	Bromide	0.25	U	0.25	0.50	mg/l				
4401755981	T3.5C-20170202-0.6-EB	2/2/2017	E300.1	14866-68-3	Chlorate	10.00	U	10.00	20	ug/l				

Table 4
All Results, Qualifiers, and Reason Codes
NERT Downgradient Study Area
Henderson, Nevada

SDG	Client Sample ID	Sample Date	Method	Client Analyte ID	Analyte	Lab Result	Lab Qualifier	SQL	PQL	Units	Validator Qualifier	Reason Code	Reason Code Definition	Qualification Finding
4401755981	T3.5C-20170202-0.6-EB	2/2/2017	E314.0	14797-73-0	Perchlorate	0.95	U	0.95	4.0	ug/l				
4401755981	T3.5C-20170202-0.6-EB	2/2/2017	SM2540C	TDS	Total Dissolved Solids	5.00	U	5.00	10	mg/l				
4401755981	T3.5D-20170202-1.4	2/2/2017	E300	16887-00-6	Chloride	260		0.50	50	mg/l				
4401755981	T3.5D-20170202-1.4	2/2/2017	E300	24959-67-9	Bromide	0.50	U	0.50	1.0	mg/l				
4401755981	T3.5D-20170202-1.4	2/2/2017	E300.1	14866-68-3	Chlorate	270		50.00	100	ug/l				
4401755981	T3.5D-20170202-1.4	2/2/2017	E314.0	14797-73-0	Perchlorate	66		0.95	4.0	ug/l				
4401755981	T3.5D-20170202-1.4	2/2/2017	SM2540C	TDS	Total Dissolved Solids	1500		5.00	10	mg/l				
4401755981	T3.5E-20170202-1.5	2/2/2017	E300	16887-00-6	Chloride	260		0.50	50	mg/l				
4401755981	T3.5E-20170202-1.5	2/2/2017	E300	24959-67-9	Bromide	0.50	U	0.50	1.0	mg/l				
4401755981	T3.5E-20170202-1.5	2/2/2017	E300.1	14866-68-3	Chlorate	190		50.00	100	ug/l				
4401755981	T3.5E-20170202-1.5	2/2/2017	E314.0	14797-73-0	Perchlorate	47		0.95	4.0	ug/l				
4401755981	T3.5E-20170202-1.5	2/2/2017	SM2540C	TDS	Total Dissolved Solids	1500		5.00	10	mg/l				
4401755981	T3.5F-20170202-1.5	2/2/2017	E300	16887-00-6	Chloride	260		0.50	50	mg/l				
4401755981	T3.5F-20170202-1.5	2/2/2017	E300	24959-67-9	Bromide	0.84	J	0.50	1.0	mg/l	J	sp	Detect <PQL	-
4401755981	T3.5F-20170202-1.5	2/2/2017	E300.1	14866-68-3	Chlorate	140		50.00	100	ug/l				
4401755981	T3.5F-20170202-1.5	2/2/2017	E314.0	14797-73-0	Perchlorate	38		0.95	4.0	ug/l				
4401755981	T3.5F-20170202-1.5	2/2/2017	SM2540C	TDS	Total Dissolved Solids	1500		5.00	10	mg/l				
4401755981	T3.5F-20170202-4.0	2/2/2017	E300	16887-00-6	Chloride	250		0.25	25	mg/l				
4401755981	T3.5F-20170202-4.0	2/2/2017	E300	24959-67-9	Bromide	0.70		0.25	0.50	mg/l				
4401755981	T3.5F-20170202-4.0	2/2/2017	E300.1	14866-68-3	Chlorate	130		50.00	100	ug/l				
4401755981	T3.5F-20170202-4.0	2/2/2017	E314.0	14797-73-0	Perchlorate	37		0.95	4.0	ug/l				
4401755981	T3.5F-20170202-4.0	2/2/2017	SM2540C	TDS	Total Dissolved Solids	1500		5.00	10	mg/l				
4401756011	T6A-20170202-0.9	2/2/2017	E300	16887-00-6	Chloride	290		0.50	50	mg/l				
4401756011	T6A-20170202-0.9	2/2/2017	E300	24959-67-9	Bromide	0.50	U	0.50	1.0	mg/l				
4401756011	T6A-20170202-0.9	2/2/2017	E300.1	14866-68-3	Chlorate	49		20.00	40	ug/l				
4401756011	T6A-20170202-0.9	2/2/2017	E314.0	14797-73-0	Perchlorate	16		0.95	4.0	ug/l				
4401756011	T6A-20170202-0.9	2/2/2017	SM2540C	TDS	Total Dissolved Solids	1500		5.00	10	mg/l				
4401756011	T6A-20170202-FB	2/2/2017	E300	16887-00-6	Chloride	0.25	U	0.25	0.50	mg/l				
4401756011	T6A-20170202-FB	2/2/2017	E300	24959-67-9	Bromide	0.25	U	0.25	0.50	mg/l				
4401756011	T6A-20170202-FB	2/2/2017	E300.1	14866-68-3	Chlorate	10.00	U	10.00	20	ug/l				
4401756011	T6A-20170202-FB	2/2/2017	E314.0	14797-73-0	Perchlorate	0.95	U	0.95	4.0	ug/l				
4401756011	T6A-20170202-FB	2/2/2017	SM2540C	TDS	Total Dissolved Solids	5.00	U	5.00	10	mg/l				
4401756011	T6B-20170202-1.7	2/2/2017	E300	16887-00-6	Chloride	290		0.50	50	mg/l				
4401756011	T6B-20170202-1.7	2/2/2017	E300	24959-67-9	Bromide	0.50	U	0.50	1.0	mg/l				
4401756011	T6B-20170202-1.7	2/2/2017	E300.1	14866-68-3	Chlorate	49		20.00	40	ug/l				
4401756011	T6B-20170202-1.7	2/2/2017	E314.0	14797-73-0	Perchlorate	16		0.95	4.0	ug/l				
4401756011	T6B-20170202-1.7	2/2/2017	SM2540C	TDS	Total Dissolved Solids	1500		5.00	10	mg/l				
4401756011	T6C-20170202-1.7	2/2/2017	E300	16887-00-6	Chloride	280		0.50	50	mg/l				
4401756011	T6C-20170202-1.7	2/2/2017	E300	24959-67-9	Bromide	0.50	U	0.50	1.0	mg/l				
4401756011	T6C-20170202-1.7	2/2/2017	E300.1	14866-68-3	Chlorate	50		20.00	40	ug/l				
4401756011	T6C-20170202-1.7	2/2/2017	E314.0	14797-73-0	Perchlorate	16		0.95	4.0	ug/l				
4401756011	T6C-20170202-1.7	2/2/2017	SM2540C	TDS	Total Dissolved Solids	1500		5.00	10	mg/l				
4401756011	T6D-20170202-0.4	2/2/2017	E300	16887-00-6	Chloride	280		0.50	50	mg/l				
4401756011	T6D-20170202-0.4	2/2/2017	E300	24959-67-9	Bromide	0.50	U	0.50	1.0	mg/l				
4401756011	T6D-20170202-0.4	2/2/2017	E300.1	14866-68-3	Chlorate	50		20.00	40	ug/l				
4401756011	T6D-20170202-0.4	2/2/2017	E314.0	14797-73-0	Perchlorate	15		0.95	4.0	ug/l				
4401756011	T6D-20170202-0.4	2/2/2017	SM2540C	TDS	Total Dissolved Solids	1500		5.00	10	mg/l				
4401756311	T6.8A-20170203-1.0	2/3/2017	E300	16887-00-6	Chloride	250		0.25	25	mg/l				
4401756311	T6.8A-20170203-1.0	2/3/2017	E300	24959-67-9	Bromide	1.3		0.25	0.50	mg/l				
4401756311	T6.8A-20170203-1.0	2/3/2017	E300.1	14866-68-3	Chlorate	51		20.00	40	ug/l				

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SDG	Client Sample ID	Sample Date	Method	Client Analyte ID	Analyte	Lab Result	Lab Qualifier	SQL	PQL	Units	Validator Qualifier	Reason Code	Reason Code Definition	Qualification Finding
4401756311	T6.8A-20170203-1.0	2/3/2017	E314.0	14797-73-0	Perchlorate	0.95	U	0.95	4.0	ug/l				
4401756311	T6.8A-20170203-1.0	2/3/2017	SM2540C	TDS	Total Dissolved Solids	1500		5.00	10	mg/l				
4401756311	T6.8B-20170203-1.3	2/3/2017	E300	16887-00-6	Chloride	270		0.50	50	mg/l				
4401756311	T6.8B-20170203-1.3	2/3/2017	E300	24959-67-9	Bromide	1.6		0.50	1.0	mg/l				
4401756311	T6.8B-20170203-1.3	2/3/2017	E300.1	14866-68-3	Chlorate	59		20.00	40	ug/l				
4401756311	T6.8B-20170203-1.3	2/3/2017	E314.0	14797-73-0	Perchlorate	0.95	U	0.95	4.0	ug/l				
4401756311	T6.8B-20170203-1.3	2/3/2017	SM2540C	TDS	Total Dissolved Solids	1700		5.00	20	mg/l				
4401756311	T6.8C-20170203-0.4	2/3/2017	E300	16887-00-6	Chloride	290		0.50	50	mg/l				
4401756311	T6.8C-20170203-0.4	2/3/2017	E300	24959-67-9	Bromide	1.8		0.50	1.0	mg/l				
4401756311	T6.8C-20170203-0.4	2/3/2017	E300.1	14866-68-3	Chlorate	73		20.00	40	ug/l				
4401756311	T6.8C-20170203-0.4	2/3/2017	E314.0	14797-73-0	Perchlorate	1.6	J	0.95	4.0	ug/l	J	sp	Detect <PQL	-
4401756311	T6.8C-20170203-0.4	2/3/2017	SM2540C	TDS	Total Dissolved Solids	1900		5.00	20	mg/l				
4401756311	T6.8D-20170203-0.9	2/3/2017	E300	16887-00-6	Chloride	230		0.25	25	mg/l				
4401756311	T6.8D-20170203-0.9	2/3/2017	E300	24959-67-9	Bromide	0.64		0.25	0.50	mg/l				
4401756311	T6.8D-20170203-0.9	2/3/2017	E300.1	14866-68-3	Chlorate	52		20.00	40	ug/l				
4401756311	T6.8D-20170203-0.9	2/3/2017	E314.0	14797-73-0	Perchlorate	0.95	U	0.95	4.0	ug/l				
4401756311	T6.8D-20170203-0.9	2/3/2017	SM2540C	TDS	Total Dissolved Solids	1300		5.00	10	mg/l				
4401756311	T6.8E-20170203-0.7	2/3/2017	E300	16887-00-6	Chloride	240		0.25	25	mg/l				
4401756311	T6.8E-20170203-0.7	2/3/2017	E300	24959-67-9	Bromide	0.77		0.25	0.50	mg/l				
4401756311	T6.8E-20170203-0.7	2/3/2017	E300.1	14866-68-3	Chlorate	48		20.00	40	ug/l				
4401756311	T6.8E-20170203-0.7	2/3/2017	E314.0	14797-73-0	Perchlorate	0.95	U	0.95	4.0	ug/l				
4401756311	T6.8E-20170203-0.7	2/3/2017	SM2540C	TDS	Total Dissolved Solids	1200		5.00	10	mg/l				
4401756321	T6.35A-20170203-1.5	2/3/2017	E300	16887-00-6	Chloride	260		0.25	25	mg/l				
4401756321	T6.35A-20170203-1.5	2/3/2017	E300	24959-67-9	Bromide	0.31	J	0.25	0.50	mg/l	J	sp	Detect <PQL	-
4401756321	T6.35A-20170203-1.5	2/3/2017	E300.1	14866-68-3	Chlorate	55		20.00	40	ug/l				
4401756321	T6.35A-20170203-1.5	2/3/2017	E314.0	14797-73-0	Perchlorate	18		0.95	4.0	ug/l				
4401756321	T6.35A-20170203-1.5	2/3/2017	SM2540C	TDS	Total Dissolved Solids	1500		5.00	10	mg/l				
4401756321	T6.35B-20170203-1.0	2/3/2017	E300	16887-00-6	Chloride	270		0.25	25	mg/l				
4401756321	T6.35B-20170203-1.0	2/3/2017	E300	24959-67-9	Bromide	0.57		0.25	0.50	mg/l				
4401756321	T6.35B-20170203-1.0	2/3/2017	E300.1	14866-68-3	Chlorate	53		20.00	40	ug/l				
4401756321	T6.35B-20170203-1.0	2/3/2017	E314.0	14797-73-0	Perchlorate	17		0.95	4.0	ug/l				
4401756321	T6.35B-20170203-1.0	2/3/2017	SM2540C	TDS	Total Dissolved Solids	1600		5.00	10	mg/l				
4401756321	T6.35B-20170203-3.0	2/3/2017	E300	16887-00-6	Chloride	270		0.25	25	mg/l				
4401756321	T6.35B-20170203-3.0	2/3/2017	E300	24959-67-9	Bromide	0.32	J	0.25	0.50	mg/l	J	sp	Detect <PQL	-
4401756321	T6.35B-20170203-3.0	2/3/2017	E300.1	14866-68-3	Chlorate	56		20.00	40	ug/l				
4401756321	T6.35B-20170203-3.0	2/3/2017	E314.0	14797-73-0	Perchlorate	18		0.95	4.0	ug/l				
4401756321	T6.35B-20170203-3.0	2/3/2017	SM2540C	TDS	Total Dissolved Solids	1500		5.00	10	mg/l				
4401756321	T6.35C-20170203-1.0	2/3/2017	E300	16887-00-6	Chloride	270		0.25	25	mg/l				
4401756321	T6.35C-20170203-1.0	2/3/2017	E300	24959-67-9	Bromide	0.25	U	0.25	0.50	mg/l				
4401756321	T6.35C-20170203-1.0	2/3/2017	E300.1	14866-68-3	Chlorate	57		20.00	40	ug/l				
4401756321	T6.35C-20170203-1.0	2/3/2017	E314.0	14797-73-0	Perchlorate	18		0.95	4.0	ug/l				
4401756321	T6.35C-20170203-1.0	2/3/2017	SM2540C	TDS	Total Dissolved Solids	1600		5.00	10	mg/l				
Results from Discrete Surface Water Samples														
4401758651	GLW4.9-20170206-11:15-1.45	2/6/2017	E300	16887-00-6	Chloride	260		0.50	50	mg/l				
4401758651	GLW4.9-20170206-11:15-1.45	2/6/2017	E300	24959-67-9	Bromide	1.7		0.50	1.0	mg/l				
4401758651	GLW4.9-20170206-11:15-1.45	2/6/2017	E300.1	14866-68-3	Chlorate	87		20.00	40	ug/l				
4401758651	GLW4.9-20170206-11:15-1.45	2/6/2017	E314.0	14797-73-0	Perchlorate	23		0.95	4.0	ug/l				
4401758651	GLW4.9-20170206-11:15-1.45	2/6/2017	SM2540C	TDS	Total Dissolved Solids	1500		5.00	10	mg/l				
4401758651	LW4.95-20170206-11:30-1.1	2/6/2017	E300	16887-00-6	Chloride	270		0.50	50	mg/l				
4401758651	LW4.95-20170206-11:30-1.1	2/6/2017	E300	24959-67-9	Bromide	1.6		0.50	1.0	mg/l				

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4401758651	LW4.95-20170206-11:30-1.1	2/6/2017	E300.1	14866-68-3	Chlorate	79		20.00	40	ug/l				
4401758651	LW4.95-20170206-11:30-1.1	2/6/2017	E314.0	14797-73-0	Perchlorate	20		0.95	4.0	ug/l				
4401758651	LW4.95-20170206-11:30-1.1	2/6/2017	SM2540C	TDS	Total Dissolved Solids	1500		5.00	10	mg/l				
4401758651	LW5.3-20170206-10:00-1.2	2/6/2017	E300	16887-00-6	Chloride	260		0.50	50	mg/l				
4401758651	LW5.3-20170206-10:00-1.2	2/6/2017	E300	24959-67-9	Bromide	2.3		0.50	1.0	mg/l				
4401758651	LW5.3-20170206-10:00-1.2	2/6/2017	E300.1	14866-68-3	Chlorate	56		20.00	40	ug/l				
4401758651	LW5.3-20170206-10:00-1.2	2/6/2017	E314.0	14797-73-0	Perchlorate	17		0.95	4.0	ug/l				
4401758651	LW5.3-20170206-10:00-1.2	2/6/2017	SM2540C	TDS	Total Dissolved Solids	1500		5.00	10	mg/l				
4401758651	LW5.3-20170206-10:35-2.35	2/6/2017	E300	16887-00-6	Chloride	260		0.50	50	mg/l				
4401758651	LW5.3-20170206-10:35-2.35	2/6/2017	E300	24959-67-9	Bromide	1.9		0.50	1.0	mg/l				
4401758651	LW5.3-20170206-10:35-2.35	2/6/2017	E300.1	14866-68-3	Chlorate	56		20.00	40	ug/l				
4401758651	LW5.3-20170206-10:35-2.35	2/6/2017	E314.0	14797-73-0	Perchlorate	16		0.95	4.0	ug/l				
4401758651	LW5.3-20170206-10:35-2.35	2/6/2017	SM2540C	TDS	Total Dissolved Solids	1500		5.00	10	mg/l				
4401758651	LW5.3-20170206-14:24-EB	2/6/2017	E300	16887-00-6	Chloride	0.25	U	0.25	0.50	mg/l				
4401758651	LW5.3-20170206-14:24-EB	2/6/2017	E300	24959-67-9	Bromide	0.25	U	0.25	0.50	mg/l				
4401758651	LW5.3-20170206-14:24-EB	2/6/2017	E300.1	14866-68-3	Chlorate	10.00	U	10.00	20	ug/l				
4401758651	LW5.3-20170206-14:24-EB	2/6/2017	E314.0	14797-73-0	Perchlorate	0.95	U	0.95	4.0	ug/l				
4401758651	LW5.3-20170206-14:24-EB	2/6/2017	SM2540C	TDS	Total Dissolved Solids	5.00	U	5.00	10	mg/l				
4401758651	LW5.3-20170206-14:26-FB	2/6/2017	E300	16887-00-6	Chloride	0.25	U	0.25	0.50	mg/l				
4401758651	LW5.3-20170206-14:26-FB	2/6/2017	E300	24959-67-9	Bromide	0.25	U	0.25	0.50	mg/l				
4401758651	LW5.3-20170206-14:26-FB	2/6/2017	E300.1	14866-68-3	Chlorate	10.00	U	10.00	20	ug/l				
4401758651	LW5.3-20170206-14:26-FB	2/6/2017	E314.0	14797-73-0	Perchlorate	0.95	U	0.95	4.0	ug/l				
4401758651	LW5.3-20170206-14:26-FB	2/6/2017	SM2540C	TDS	Total Dissolved Solids	5.00	U	5.00	10	mg/l				
4401758671	LW3.4-20170206-14:46-0.63	2/6/2017	E300	16887-00-6	Chloride	260		0.25	25	mg/l				
4401758671	LW3.4-20170206-14:46-0.63	2/6/2017	E300	24959-67-9	Bromide	0.54		0.25	0.50	mg/l				
4401758671	LW3.4-20170206-14:46-0.63	2/6/2017	E300.1	14866-68-3	Chlorate	160		20.00	40	ug/l				
4401758671	LW3.4-20170206-14:46-0.63	2/6/2017	E314.0	14797-73-0	Perchlorate	53		0.95	4.0	ug/l				
4401758671	LW3.4-20170206-14:46-0.63	2/6/2017	SM2540C	TDS	Total Dissolved Solids	1500		5.00	10	mg/l				
4401758681	GLW4.4-20170206-14:15-1.2	2/6/2017	E300	16887-00-6	Chloride	260		0.25	25	mg/l				
4401758681	GLW4.4-20170206-14:15-1.2	2/6/2017	E300	24959-67-9	Bromide	0.51		0.25	0.50	mg/l				
4401758681	GLW4.4-20170206-14:15-1.2	2/6/2017	E300.1	14866-68-3	Chlorate	93		20.00	40	ug/l				
4401758681	GLW4.4-20170206-14:15-1.2	2/6/2017	E314.0	14797-73-0	Perchlorate	33		0.95	4.0	ug/l				
4401758681	GLW4.4-20170206-14:15-1.2	2/6/2017	SM2540C	TDS	Total Dissolved Solids	1500		5.00	10	mg/l				
4401758691	LW4.95-20170206-13:20-1.08	2/6/2017	E300	16887-00-6	Chloride	240		0.25	25	mg/l				
4401758691	LW4.95-20170206-13:20-1.08	2/6/2017	E300	24959-67-9	Bromide	0.73		0.25	0.50	mg/l				
4401758691	LW4.95-20170206-13:20-1.08	2/6/2017	E300.1	14866-68-3	Chlorate	70		20.00	40	ug/l				
4401758691	LW4.95-20170206-13:20-1.08	2/6/2017	E314.0	14797-73-0	Perchlorate	20		0.95	4.0	ug/l				
4401758691	LW4.95-20170206-13:20-1.08	2/6/2017	SM2540C	TDS	Total Dissolved Solids	1400		5.00	10	mg/l				
4401758701	GLW4.4-20170206-11:04-1.1	2/6/2017	E300	16887-00-6	Chloride	250		0.25	25	mg/l				
4401758701	GLW4.4-20170206-11:04-1.1	2/6/2017	E300	24959-67-9	Bromide	0.61		0.25	0.50	mg/l				
4401758701	GLW4.4-20170206-11:04-1.1	2/6/2017	E300.1	14866-68-3	Chlorate	99		20.00	40	ug/l				
4401758701	GLW4.4-20170206-11:04-1.1	2/6/2017	E314.0	14797-73-0	Perchlorate	28		0.95	4.0	ug/l				
4401758701	GLW4.4-20170206-11:04-1.1	2/6/2017	SM2540C	TDS	Total Dissolved Solids	1400		5.00	10	mg/l				
4401758701	GLW4.4-20170206-14:55-FB	2/6/2017	E300	16887-00-6	Chloride	0.25	U	0.25	0.50	mg/l				
4401758701	GLW4.4-20170206-14:55-FB	2/6/2017	E300	24959-67-9	Bromide	0.25	U	0.25	0.50	mg/l				
4401758701	GLW4.4-20170206-14:55-FB	2/6/2017	E300.1	14866-68-3	Chlorate	10.00	U	10.00	20	ug/l				
4401758701	GLW4.4-20170206-14:55-FB	2/6/2017	E314.0	14797-73-0	Perchlorate	0.95	U	0.95	4.0	ug/l				
4401758701	GLW4.4-20170206-14:55-FB	2/6/2017	SM2540C	TDS	Total Dissolved Solids	5.00	U	5.00	10	mg/l				
4401758701	GLW4.4-20170206-14:58-EB	2/6/2017	E300	16887-00-6	Chloride	0.25	U	0.25	0.50	mg/l				
4401758701	GLW4.4-20170206-14:58-EB	2/6/2017	E300	24959-67-9	Bromide	0.25	U	0.25	0.50	mg/l				

Table 4
All Results, Qualifiers, and Reason Codes
NERT Downgradient Study Area
Henderson, Nevada

SDG	Client Sample ID	Sample Date	Method	Client Analyte ID	Analyte	Lab Result	Lab Qualifier	SQL	PQL	Units	Validator Qualifier	Reason Code	Reason Code Definition	Qualification Finding
4401758701	GLW4.4-20170206-14:58-EB	2/6/2017	E300.1	14866-68-3	Chlorate	10.00	U	10.00	20	ug/l				
4401758701	GLW4.4-20170206-14:58-EB	2/6/2017	E314.0	14797-73-0	Perchlorate	0.95	U	0.95	4.0	ug/l				
4401758701	GLW4.4-20170206-14:58-EB	2/6/2017	SM2540C	TDS	Total Dissolved Solids	5.00	U	5.00	10	mg/l				
4401758701	GLW4.85-20170206-10:22-0.6	2/6/2017	E300	16887-00-6	Chloride	390		0.50	50	mg/l				
4401758701	GLW4.85-20170206-10:22-0.6	2/6/2017	E300	24959-67-9	Bromide	0.91	J	0.50	1.0	mg/l	J	sp	Detect <PQL	-
4401758701	GLW4.85-20170206-10:22-0.6	2/6/2017	E300.1	14866-68-3	Chlorate	4300		500.00	1000	ug/l				
4401758701	GLW4.85-20170206-10:22-0.6	2/6/2017	E314.0	14797-73-0	Perchlorate	1100		19.00	80	ug/l				
4401758701	GLW4.85-20170206-10:22-0.6	2/6/2017	SM2540C	TDS	Total Dissolved Solids	2200		5.00	20	mg/l				
4401758701	LW4.1-20170206-11:20-0.3	2/6/2017	E300	16887-00-6	Chloride	260		0.25	25	mg/l				
4401758701	LW4.1-20170206-11:20-0.3	2/6/2017	E300	24959-67-9	Bromide	0.50		0.25	0.50	mg/l				
4401758701	LW4.1-20170206-11:20-0.3	2/6/2017	E300.1	14866-68-3	Chlorate	220		20.00	40	ug/l				
4401758701	LW4.1-20170206-11:20-0.3	2/6/2017	E314.0	14797-73-0	Perchlorate	51		0.95	4.0	ug/l				
4401758701	LW4.1-20170206-11:20-0.3	2/6/2017	SM2540C	TDS	Total Dissolved Solids	1500		5.00	10	mg/l				
4401758721	GLW3.78-20170206-10:45-0.42	2/6/2017	E300	16887-00-6	Chloride	270		0.25	25	mg/l				
4401758721	GLW3.78-20170206-10:45-0.42	2/6/2017	E300	24959-67-9	Bromide	1.5		0.25	0.50	mg/l				
4401758721	GLW3.78-20170206-10:45-0.42	2/6/2017	E300.1	14866-68-3	Chlorate	220		20.00	40	ug/l				
4401758721	GLW3.78-20170206-10:45-0.42	2/6/2017	E314.0	14797-73-0	Perchlorate	54		0.95	4.0	ug/l				
4401758721	GLW3.78-20170206-10:45-0.42	2/6/2017	SM2540C	TDS	Total Dissolved Solids	1500		5.00	10	mg/l				
4401758721	LW3.4-20170206-11:10-0.42	2/6/2017	E300	16887-00-6	Chloride	270		0.25	25	mg/l				
4401758721	LW3.4-20170206-11:10-0.42	2/6/2017	E300	24959-67-9	Bromide	1.5		0.25	0.50	mg/l				
4401758721	LW3.4-20170206-11:10-0.42	2/6/2017	E300.1	14866-68-3	Chlorate	180		20.00	40	ug/l				
4401758721	LW3.4-20170206-11:10-0.42	2/6/2017	E314.0	14797-73-0	Perchlorate	53		0.95	4.0	ug/l				
4401758721	LW3.4-20170206-11:10-0.42	2/6/2017	SM2540C	TDS	Total Dissolved Solids	1400		5.00	10	mg/l				
4401758721	LW3.75-20170206-10:25-0.83	2/6/2017	E300	16887-00-6	Chloride	270		0.25	25	mg/l				
4401758721	LW3.75-20170206-10:25-0.83	2/6/2017	E300	24959-67-9	Bromide	1.4		0.25	0.50	mg/l				
4401758721	LW3.75-20170206-10:25-0.83	2/6/2017	E300.1	14866-68-3	Chlorate	110		20.00	40	ug/l				
4401758721	LW3.75-20170206-10:25-0.83	2/6/2017	E314.0	14797-73-0	Perchlorate	30		0.95	4.0	ug/l				
4401758721	LW3.75-20170206-10:25-0.83	2/6/2017	SM2540C	TDS	Total Dissolved Solids	1400		5.00	10	mg/l				
4401758721	LW3.85-20170206-09:53-0.6	2/6/2017	E300	16887-00-6	Chloride	260		0.50	50	mg/l				
4401758721	LW3.85-20170206-09:53-0.6	2/6/2017	E300	24959-67-9	Bromide	1.7		0.50	1.0	mg/l				
4401758721	LW3.85-20170206-09:53-0.6	2/6/2017	E300.1	14866-68-3	Chlorate	130		20.00	40	ug/l				
4401758721	LW3.85-20170206-09:53-0.6	2/6/2017	E314.0	14797-73-0	Perchlorate	36		0.95	4.0	ug/l				
4401758721	LW3.85-20170206-09:53-0.6	2/6/2017	SM2540C	TDS	Total Dissolved Solids	1400		5.00	10	mg/l				
4401758721	LW3.85-20170206-13:00-FB	2/6/2017	E300	16887-00-6	Chloride	0.25	U	0.25	0.50	mg/l				
4401758721	LW3.85-20170206-13:00-FB	2/6/2017	E300	24959-67-9	Bromide	0.25	U	0.25	0.50	mg/l				
4401758721	LW3.85-20170206-13:00-FB	2/6/2017	E300.1	14866-68-3	Chlorate	10.00	U	10.00	20	ug/l				
4401758721	LW3.85-20170206-13:00-FB	2/6/2017	E314.0	14797-73-0	Perchlorate	0.95	U	0.95	4.0	ug/l				
4401758721	LW3.85-20170206-13:00-FB	2/6/2017	SM2540C	TDS	Total Dissolved Solids	5.00	U	5.00	10	mg/l				
4401758721	LW3.85-20170206-13:05-EB	2/6/2017	E300	16887-00-6	Chloride	0.25	U	0.25	0.50	mg/l				
4401758721	LW3.85-20170206-13:05-EB	2/6/2017	E300	24959-67-9	Bromide	0.25	U	0.25	0.50	mg/l				
4401758721	LW3.85-20170206-13:05-EB	2/6/2017	E300.1	14866-68-3	Chlorate	10.00	U	10.00	20	ug/l				
4401758721	LW3.85-20170206-13:05-EB	2/6/2017	E314.0	14797-73-0	Perchlorate	0.95	U	0.95	4.0	ug/l				
4401758721	LW3.85-20170206-13:05-EB	2/6/2017	SM2540C	TDS	Total Dissolved Solids	5.00	U	5.00	10	mg/l				
4401758721	LWC3.7-20170206-10:16-0.33	2/6/2017	E300	16887-00-6	Chloride	330		0.50	50	mg/l				
4401758721	LWC3.7-20170206-10:16-0.33	2/6/2017	E300	24959-67-9	Bromide	1.5		0.50	1.0	mg/l				
4401758721	LWC3.7-20170206-10:16-0.33	2/6/2017	E300.1	14866-68-3	Chlorate	1500		200.00	400	ug/l				
4401758721	LWC3.7-20170206-10:16-0.33	2/6/2017	E314.0	14797-73-0	Perchlorate	550		9.50	40	ug/l				
4401758721	LWC3.7-20170206-10:16-0.33	2/6/2017	SM2540C	TDS	Total Dissolved Solids	1900		5.00	10	mg/l				
4401759871	GLW4.9-20170206-15:00-1.5	2/6/2017	E300	16887-00-6	Chloride	260		0.50	50	mg/l				
4401759871	GLW4.9-20170206-15:00-1.5	2/6/2017	E300	24959-67-9	Bromide	0.50	U	0.50	1.0	mg/l				

Table 4
All Results, Qualifiers, and Reason Codes
NERT Downgradient Study Area
Henderson, Nevada

SDG	Client Sample ID	Sample Date	Method	Client Analyte ID	Analyte	Lab Result	Lab Qualifier	SQL	PQL	Units	Validator Qualifier	Reason Code	Reason Code Definition	Qualification Finding
4401759871	GLW4.9-20170206-15:00-1.5	2/6/2017	E300.1	14866-68-3	Chlorate	71		20.00	40	ug/l				
4401759871	GLW4.9-20170206-15:00-1.5	2/6/2017	E314.0	14797-73-0	Perchlorate	21		0.95	4.0	ug/l				
4401759871	GLW4.9-20170206-15:00-1.5	2/6/2017	SM2540C	TDS	Total Dissolved Solids	1500		5.00	10	mg/l				
4401759871	LW4.95-20170206-15:15-1.1	2/6/2017	E300	16887-00-6	Chloride	250		0.50	50	mg/l				
4401759871	LW4.95-20170206-15:15-1.1	2/6/2017	E300	24959-67-9	Bromide	0.50	U	0.50	1.0	mg/l				
4401759871	LW4.95-20170206-15:15-1.1	2/6/2017	E300.1	14866-68-3	Chlorate	57		20.00	40	ug/l				
4401759871	LW4.95-20170206-15:15-1.1	2/6/2017	E314.0	14797-73-0	Perchlorate	13		0.95	4.0	ug/l				
4401759871	LW4.95-20170206-15:15-1.1	2/6/2017	SM2540C	TDS	Total Dissolved Solids	1500		5.00	10	mg/l				
4401759871	LW5.3-20170206-16:00-1.2	2/6/2017	E300	16887-00-6	Chloride	250		0.50	50	mg/l				
4401759871	LW5.3-20170206-16:00-1.2	2/6/2017	E300	24959-67-9	Bromide	0.50	U	0.50	1.0	mg/l				
4401759871	LW5.3-20170206-16:00-1.2	2/6/2017	E300.1	14866-68-3	Chlorate	55		20.00	40	ug/l				
4401759871	LW5.3-20170206-16:00-1.2	2/6/2017	E314.0	14797-73-0	Perchlorate	11		0.95	4.0	ug/l				
4401759871	LW5.3-20170206-16:00-1.2	2/6/2017	SM2540C	TDS	Total Dissolved Solids	1400		5.00	10	mg/l				
4401759871	LW5.3-20170206-16:10-2.3	2/6/2017	E300	16887-00-6	Chloride	250		0.50	50	mg/l				
4401759871	LW5.3-20170206-16:10-2.3	2/6/2017	E300	24959-67-9	Bromide	0.50	U	0.50	1.0	mg/l				
4401759871	LW5.3-20170206-16:10-2.3	2/6/2017	E300.1	14866-68-3	Chlorate	61		20.00	40	ug/l				
4401759871	LW5.3-20170206-16:10-2.3	2/6/2017	E314.0	14797-73-0	Perchlorate	12		0.95	4.0	ug/l				
4401759871	LW5.3-20170206-16:10-2.3	2/6/2017	SM2540C	TDS	Total Dissolved Solids	1400		5.00	10	mg/l				
4401759891	GLWC6.1_3-20170206-10:07-1.0	2/6/2017	E300	16887-00-6	Chloride	230		0.25	25	mg/l				
4401759891	GLWC6.1_3-20170206-10:07-1.0	2/6/2017	E300	24959-67-9	Bromide	0.25	U	0.25	0.50	mg/l				
4401759891	GLWC6.1_3-20170206-10:07-1.0	2/6/2017	E300.1	14866-68-3	Chlorate	100		20.00	40	ug/l				
4401759891	GLWC6.1_3-20170206-10:07-1.0	2/6/2017	E314.0	14797-73-0	Perchlorate	0.95	U	0.95	4.0	ug/l				
4401759891	GLWC6.1_3-20170206-10:07-1.0	2/6/2017	SM2540C	TDS	Total Dissolved Solids	1000		5.00	10	mg/l				
4401759891	GLWC6.1_4-20170206-10:35-1.1	2/6/2017	E300	16887-00-6	Chloride	340		0.50	50	mg/l				
4401759891	GLWC6.1_4-20170206-10:35-1.1	2/6/2017	E300	24959-67-9	Bromide	0.50	UF1	0.50	1.0	mg/l		m	matrix spike %R	198/199 %
4401759891	GLWC6.1_4-20170206-10:35-1.1	2/6/2017	E300.1	14866-68-3	Chlorate	96		20.00	40	ug/l				
4401759891	GLWC6.1_4-20170206-10:35-1.1	2/6/2017	E314.0	14797-73-0	Perchlorate	0.95	U	0.95	4.0	ug/l				
4401759891	GLWC6.1_4-20170206-10:35-1.1	2/6/2017	SM2540C	TDS	Total Dissolved Solids	1400		5.00	10	mg/l				
4401759891	LW5.9-20170206-11:08-0.5	2/6/2017	E300	16887-00-6	Chloride	260		0.50	50	mg/l				
4401759891	LW5.9-20170206-11:08-0.5	2/6/2017	E300	24959-67-9	Bromide	0.50	U	0.50	1.0	mg/l				
4401759891	LW5.9-20170206-11:08-0.5	2/6/2017	E300.1	14866-68-3	Chlorate	71		20.00	40	ug/l				
4401759891	LW5.9-20170206-11:08-0.5	2/6/2017	E314.0	14797-73-0	Perchlorate	21		0.95	4.0	ug/l				
4401759891	LW5.9-20170206-11:08-0.5	2/6/2017	SM2540C	TDS	Total Dissolved Solids	1400		5.00	10	mg/l				
4401759891	LW5.9-20170206-14:23-EB	2/6/2017	E300	16887-00-6	Chloride	0.25	U	0.25	0.50	mg/l				
4401759891	LW5.9-20170206-14:23-EB	2/6/2017	E300	24959-67-9	Bromide	0.25	U	0.25	0.50	mg/l				
4401759891	LW5.9-20170206-14:23-EB	2/6/2017	E300.1	14866-68-3	Chlorate	10.00	U	10.00	20	ug/l				
4401759891	LW5.9-20170206-14:23-EB	2/6/2017	E314.0	14797-73-0	Perchlorate	0.95	U	0.95	4.0	ug/l				
4401759891	LW5.9-20170206-14:23-EB	2/6/2017	SM2540C	TDS	Total Dissolved Solids	5.00	U	5.00	10	mg/l				
4401759891	LWC6.1_1-20170206-09:45-0.58	2/6/2017	E300	16887-00-6	Chloride	250		0.25	25	mg/l				
4401759891	LWC6.1_1-20170206-09:45-0.58	2/6/2017	E300	24959-67-9	Bromide	0.25	U	0.25	0.50	mg/l				
4401759891	LWC6.1_1-20170206-09:45-0.58	2/6/2017	E300.1	14866-68-3	Chlorate	98		20.00	40	ug/l				
4401759891	LWC6.1_1-20170206-09:45-0.58	2/6/2017	E314.0	14797-73-0	Perchlorate	0.95	U	0.95	4.0	ug/l				
4401759891	LWC6.1_1-20170206-09:45-0.58	2/6/2017	SM2540C	TDS	Total Dissolved Solids	1100		5.00	10	mg/l				
4401759891	LWC6.1_2-20170206-10:00-0.8	2/6/2017	E300	16887-00-6	Chloride	120		0.25	25	mg/l				
4401759891	LWC6.1_2-20170206-10:00-0.8	2/6/2017	E300	24959-67-9	Bromide	0.25	U	0.25	0.50	mg/l				
4401759891	LWC6.1_2-20170206-10:00-0.8	2/6/2017	E300.1	14866-68-3	Chlorate	78		20.00	40	ug/l				
4401759891	LWC6.1_2-20170206-10:00-0.8	2/6/2017	E314.0	14797-73-0	Perchlorate	0.95	U	0.95	4.0	ug/l				
4401759891	LWC6.1_2-20170206-10:00-0.8	2/6/2017	SM2540C	TDS	Total Dissolved Solids	690		5.00	10	mg/l				
4401759921	GLW4.4-20170206-16:19-1.3	2/6/2017	E300	16887-00-6	Chloride	250		0.25	25	mg/l				
4401759921	GLW4.4-20170206-16:19-1.3	2/6/2017	E300	24959-67-9	Bromide	0.58		0.25	0.50	mg/l				

Table 4
All Results, Qualifiers, and Reason Codes
NERT Downgradient Study Area
Henderson, Nevada

SDG	Client Sample ID	Sample Date	Method	Client Analyte ID	Analyte	Lab Result	Lab Qualifier	SQL	PQL	Units	Validator Qualifier	Reason Code	Reason Code Definition	Qualification Finding
4401759921	GLW4.4-20170206-16:19-1.3	2/6/2017	E300.1	14866-68-3	Chlorate	79		20.00	40	ug/l				
4401759921	GLW4.4-20170206-16:19-1.3	2/6/2017	E314.0	14797-73-0	Perchlorate	15		0.95	4.0	ug/l				
4401759921	GLW4.4-20170206-16:19-1.3	2/6/2017	SM2540C	TDS	Total Dissolved Solids	1400		5.00	10	mg/l				
4401759921	GLW4.85-20170206-15:58-0.6	2/6/2017	E300	16887-00-6	Chloride	350		0.50	50	mg/l				
4401759921	GLW4.85-20170206-15:58-0.6	2/6/2017	E300	24959-67-9	Bromide	0.75	J	0.50	1.0	mg/l	J	sp	Detect <PQL	- -
4401759921	GLW4.85-20170206-15:58-0.6	2/6/2017	E300.1	14866-68-3	Chlorate	3000		500.00	1000	ug/l				
4401759921	GLW4.85-20170206-15:58-0.6	2/6/2017	E314.0	14797-73-0	Perchlorate	750		19.00	80	ug/l				
4401759921	GLW4.85-20170206-15:58-0.6	2/6/2017	SM2540C	TDS	Total Dissolved Solids	1900		5.00	20	mg/l				
4401759921	LW4.1-20170206-16:42-0.3	2/6/2017	E300	16887-00-6	Chloride	260		0.25	25	mg/l				
4401759921	LW4.1-20170206-16:42-0.3	2/6/2017	E300	24959-67-9	Bromide	0.59		0.25	0.50	mg/l				
4401759921	LW4.1-20170206-16:42-0.3	2/6/2017	E300.1	14866-68-3	Chlorate	180		20.00	40	ug/l				
4401759921	LW4.1-20170206-16:42-0.3	2/6/2017	E314.0	14797-73-0	Perchlorate	38		0.95	4.0	ug/l				
4401759921	LW4.1-20170206-16:42-0.3	2/6/2017	SM2540C	TDS	Total Dissolved Solids	1500		5.00	10	mg/l				
4401759941	GLWC6.1_3-20170206-15:00-0.9	2/6/2017	E300	16887-00-6	Chloride	250		0.25	25	mg/l				
4401759941	GLWC6.1_3-20170206-15:00-0.9	2/6/2017	E300	24959-67-9	Bromide	0.42	J	0.25	0.50	mg/l	J	sp	Detect <PQL	- -
4401759941	GLWC6.1_3-20170206-15:00-0.9	2/6/2017	E300.1	14866-68-3	Chlorate	110		20.00	40	ug/l				
4401759941	GLWC6.1_3-20170206-15:00-0.9	2/6/2017	E314.0	14797-73-0	Perchlorate	1.1	J	0.95	4.0	ug/l	J	sp	Detect <PQL	- -
4401759941	GLWC6.1_3-20170206-15:00-0.9	2/6/2017	SM2540C	TDS	Total Dissolved Solids	1100		5.00	10	mg/l				
4401759941	GLWC6.1_4-20170206-15:45-1.3	2/6/2017	E300	16887-00-6	Chloride	330		0.50	50	mg/l				
4401759941	GLWC6.1_4-20170206-15:45-1.3	2/6/2017	E300	24959-67-9	Bromide	0.68	J	0.50	1.0	mg/l	J	sp	Detect <PQL	- -
4401759941	GLWC6.1_4-20170206-15:45-1.3	2/6/2017	E300.1	14866-68-3	Chlorate	93		20.00	40	ug/l				
4401759941	GLWC6.1_4-20170206-15:45-1.3	2/6/2017	E314.0	14797-73-0	Perchlorate	1.3	J	0.95	4.0	ug/l				
4401759941	GLWC6.1_4-20170206-15:45-1.3	2/6/2017	SM2540C	TDS	Total Dissolved Solids	1400		5.00	10	mg/l	J	sp	Detect <PQL	- -
4401759941	GLWC6.1_4-20170206-15:45-1.3-FD	2/6/2017	E300	16887-00-6	Chloride	330		0.50	50	mg/l				
4401759941	GLWC6.1_4-20170206-15:45-1.3-FD	2/6/2017	E300	24959-67-9	Bromide	0.67	J	0.50	1.0	mg/l	J	sp	Detect <PQL	- -
4401759941	GLWC6.1_4-20170206-15:45-1.3-FD	2/6/2017	E300.1	14866-68-3	Chlorate	91		20.00	40	ug/l				
4401759941	GLWC6.1_4-20170206-15:45-1.3-FD	2/6/2017	E314.0	14797-73-0	Perchlorate	1.2	J	0.95	4.0	ug/l	J	sp	Detect <PQL	- -
4401759941	GLWC6.1_4-20170206-15:45-1.3-FD	2/6/2017	SM2540C	TDS	Total Dissolved Solids	1400		5.00	10	mg/l				
4401759941	LW5.9-20170206-15:18-0.6	2/6/2017	E300	16887-00-6	Chloride	240		0.25	25	mg/l				
4401759941	LW5.9-20170206-15:18-0.6	2/6/2017	E300	24959-67-9	Bromide	0.50		0.25	0.50	mg/l				
4401759941	LW5.9-20170206-15:18-0.6	2/6/2017	E300.1	14866-68-3	Chlorate	54		20.00	40	ug/l				
4401759941	LW5.9-20170206-15:18-0.6	2/6/2017	E314.0	14797-73-0	Perchlorate	6.7		0.95	4.0	ug/l				
4401759941	LW5.9-20170206-15:18-0.6	2/6/2017	SM2540C	TDS	Total Dissolved Solids	1300		5.00	10	mg/l				
4401759941	LWC6.1_1-20170206-14:43-0.8	2/6/2017	E300	16887-00-6	Chloride	250		0.25	25	mg/l				
4401759941	LWC6.1_1-20170206-14:43-0.8	2/6/2017	E300	24959-67-9	Bromide	0.45	J	0.25	0.50	mg/l	J	sp	Detect <PQL	- -
4401759941	LWC6.1_1-20170206-14:43-0.8	2/6/2017	E300.1	14866-68-3	Chlorate	110		20.00	40	ug/l				
4401759941	LWC6.1_1-20170206-14:43-0.8	2/6/2017	E314.0	14797-73-0	Perchlorate	0.95	U	0.95	4.0	ug/l				
4401759941	LWC6.1_1-20170206-14:43-0.8	2/6/2017	SM2540C	TDS	Total Dissolved Solids	1100		5.00	10	mg/l				
4401759941	LWC6.1_2-20170206-14:55-0.6	2/6/2017	E300	16887-00-6	Chloride	140		0.25	25	mg/l				
4401759941	LWC6.1_2-20170206-14:55-0.6	2/6/2017	E300	24959-67-9	Bromide	0.36	J	0.25	0.50	mg/l	J	sp	Detect <PQL	- -
4401759941	LWC6.1_2-20170206-14:55-0.6	2/6/2017	E300.1	14866-68-3	Chlorate	91		20.00	40	ug/l				
4401759941	LWC6.1_2-20170206-14:55-0.6	2/6/2017	E314.0	14797-73-0	Perchlorate	0.95	U	0.95	4.0	ug/l				
4401759941	LWC6.1_2-20170206-14:55-0.6	2/6/2017	SM2540C	TDS	Total Dissolved Solids	710		5.00	10	mg/l				
4401760741	GLW3.78-20170207-09:35-0.7	2/7/2017	E300	16887-00-6	Chloride	260		0.25	25	mg/l				
4401760741	GLW3.78-20170207-09:35-0.7	2/7/2017	E300	24959-67-9	Bromide	0.48	J	0.25	0.50	mg/l	J	sp	Detect <PQL	- -
4401760741	GLW3.78-20170207-09:35-0.7	2/7/2017	E300.1	14866-68-3	Chlorate	200		20.00	40	ug/l				
4401760741	GLW3.78-20170207-09:35-0.7	2/7/2017	E314.0	14797-73-0	Perchlorate	40		0.95	4.0	ug/l				
4401760741	GLW3.78-20170207-09:35-0.7	2/7/2017	SM2540C	TDS	Total Dissolved Solids	1400		5.00	10	mg/l				
4401760741	LW3.4-20170207-11:11-0.5	2/7/2017	E300	16887-00-6	Chloride	270		0.25	25	mg/l				
4401760741	LW3.4-20170207-11:11-0.5	2/7/2017	E300	24959-67-9	Bromide	0.51		0.25	0.50	mg/l				

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NERT Downgradient Study Area
Henderson, Nevada

SDG	Client Sample ID	Sample Date	Method	Client Analyte ID	Analyte	Lab Result	Lab Qualifier	SQL	PQL	Units	Validator Qualifier	Reason Code	Reason Code Definition	Qualification Finding
4401760741	LW3.4-20170207-11:11-0.5	2/7/2017	E300.1	14866-68-3	Chlorate	180		20.00	40	ug/l				
4401760741	LW3.4-20170207-11:11-0.5	2/7/2017	E314.0	14797-73-0	Perchlorate	52	F1	0.95	4.0	ug/l	J+	m	matrix spike %R	174/175 %
4401760741	LW3.4-20170207-11:11-0.5	2/7/2017	SM2540C	TDS	Total Dissolved Solids	1400		5.00	10	mg/l				
4401760741	LW3.75-20170207-10:45-0.9	2/7/2017	E300	16887-00-6	Chloride	270		0.50	50	mg/l				
4401760741	LW3.75-20170207-10:45-0.9	2/7/2017	E300	24959-67-9	Bromide	0.61	J	0.50	1.0	mg/l	J	sp	Detect <PQL	- -
4401760741	LW3.75-20170207-10:45-0.9	2/7/2017	E300.1	14866-68-3	Chlorate	120		20.00	40	ug/l				
4401760741	LW3.75-20170207-10:45-0.9	2/7/2017	E314.0	14797-73-0	Perchlorate	35		0.95	4.0	ug/l	J+	m	matrix spike %R	174/175 %
4401760741	LW3.75-20170207-10:45-0.9	2/7/2017	SM2540C	TDS	Total Dissolved Solids	1400		5.00	10	mg/l				
4401760741	LW3.85-20170207-10:12-0.5	2/7/2017	E300	16887-00-6	Chloride	270		0.50	50	mg/l				
4401760741	LW3.85-20170207-10:12-0.5	2/7/2017	E300	24959-67-9	Bromide	0.57	J	0.50	1.0	mg/l				
4401760741	LW3.85-20170207-10:12-0.5	2/7/2017	E300.1	14866-68-3	Chlorate	120		20.00	40	ug/l				
4401760741	LW3.85-20170207-10:12-0.5	2/7/2017	E314.0	14797-73-0	Perchlorate	32		0.95	4.0	ug/l	J+	m	matrix spike %R	174/175 %
4401760741	LW3.85-20170207-10:12-0.5	2/7/2017	SM2540C	TDS	Total Dissolved Solids	1400		5.00	10	mg/l				
4401760741	LWC3.7-20170207-10:32-0.4	2/7/2017	E300	16887-00-6	Chloride	360		0.50	50	mg/l				
4401760741	LWC3.7-20170207-10:32-0.4	2/7/2017	E300	24959-67-9	Bromide	0.72	J	0.50	1.0	mg/l	J	sp	Detect <PQL	- -
4401760741	LWC3.7-20170207-10:32-0.4	2/7/2017	E300.1	14866-68-3	Chlorate	1800		200.00	400	ug/l				
4401760741	LWC3.7-20170207-10:32-0.4	2/7/2017	E314.0	14797-73-0	Perchlorate	670		9.50	40	ug/l	J+	m	matrix spike %R	174/175 %
4401760741	LWC3.7-20170207-10:32-0.4	2/7/2017	SM2540C	TDS	Total Dissolved Solids	2100		5.00	20	mg/l				
4401760761	LW6.05-20170207-09:30-0.6	2/7/2017	E300	16887-00-6	Chloride	250		0.50	50	mg/l				
4401760761	LW6.05-20170207-09:30-0.6	2/7/2017	E300	24959-67-9	Bromide	0.50	J	0.50	1.0	mg/l				
4401760761	LW6.05-20170207-09:30-0.6	2/7/2017	E300.1	14866-68-3	Chlorate	51		20.00	40	ug/l				
4401760761	LW6.05-20170207-09:30-0.6	2/7/2017	E314.0	14797-73-0	Perchlorate	18	F1	0.95	4.0	ug/l	J+	m	matrix spike %R	148/148 %
4401760761	LW6.05-20170207-09:30-0.6	2/7/2017	SM2540C	TDS	Total Dissolved Solids	1500		5.00	10	mg/l				
4401760761	LW6.7-20170207-09:13-0.4	2/7/2017	E300	16887-00-6	Chloride	270		0.50	50	mg/l				
4401760761	LW6.7-20170207-09:13-0.4	2/7/2017	E300	24959-67-9	Bromide	0.56	J	0.50	1.0	mg/l	J	sp	Detect <PQL	- -
4401760761	LW6.7-20170207-09:13-0.4	2/7/2017	E300.1	14866-68-3	Chlorate	69		20.00	40	ug/l				
4401760761	LW6.7-20170207-09:13-0.4	2/7/2017	E314.0	14797-73-0	Perchlorate	0.95	U	0.95	4.0	ug/l				
4401760761	LW6.7-20170207-09:13-0.4	2/7/2017	SM2540C	TDS	Total Dissolved Solids	1700		5.00	20	mg/l				
4401760761	LW7.2-20170207-08:55-0.7	2/7/2017	E300	16887-00-6	Chloride	210		0.25	25	mg/l				
4401760761	LW7.2-20170207-08:55-0.7	2/7/2017	E300	24959-67-9	Bromide	0.40	J	0.25	0.50	mg/l	J	sp	Detect <PQL	- -
4401760761	LW7.2-20170207-08:55-0.7	2/7/2017	E300.1	14866-68-3	Chlorate	58		20.00	40	ug/l				
4401760761	LW7.2-20170207-08:55-0.7	2/7/2017	E314.0	14797-73-0	Perchlorate	0.95	U	0.95	4.0	ug/l				
4401760761	LW7.2-20170207-08:55-0.7	2/7/2017	SM2540C	TDS	Total Dissolved Solids	1200		5.00	10	mg/l				
4401760781	GLW4.4-20170207-10:18-1.1	2/7/2017	E300	16887-00-6	Chloride	270		0.25	25	mg/l				
4401760781	GLW4.4-20170207-10:18-1.1	2/7/2017	E300	24959-67-9	Bromide	1.4		0.25	0.50	mg/l				
4401760781	GLW4.4-20170207-10:18-1.1	2/7/2017	E300.1	14866-68-3	Chlorate	100		20.00	40	ug/l				
4401760781	GLW4.4-20170207-10:18-1.1	2/7/2017	E314.0	14797-73-0	Perchlorate	25		0.95	4.0	ug/l	J+	m	matrix spike %R	170/168 %
4401760781	GLW4.4-20170207-10:18-1.1	2/7/2017	SM2540C	TDS	Total Dissolved Solids	1400		5.00	10	mg/l				
4401760781	GLW4.85-20170207-09:42-0.7	2/7/2017	E300	16887-00-6	Chloride	380		0.50	50	mg/l				
4401760781	GLW4.85-20170207-09:42-0.7	2/7/2017	E300	24959-67-9	Bromide	1.0		0.50	1.0	mg/l				
4401760781	GLW4.85-20170207-09:42-0.7	2/7/2017	E300.1	14866-68-3	Chlorate	3000		500.00	1000	ug/l				
4401760781	GLW4.85-20170207-09:42-0.7	2/7/2017	E314.0	14797-73-0	Perchlorate	860		9.50	40	ug/l	J+	m	matrix spike %R	170/168 %
4401760781	GLW4.85-20170207-09:42-0.7	2/7/2017	SM2540C	TDS	Total Dissolved Solids	2100		5.00	20	mg/l				
4401760781	LW4.1-20170207-10:39-0.3	2/7/2017	E300	16887-00-6	Chloride	270		0.50	50	mg/l				
4401760781	LW4.1-20170207-10:39-0.3	2/7/2017	E300	24959-67-9	Bromide	1.4		0.50	1.0	mg/l				
4401760781	LW4.1-20170207-10:39-0.3	2/7/2017	E300.1	14866-68-3	Chlorate	230		20.00	40	ug/l				
4401760781	LW4.1-20170207-10:39-0.3	2/7/2017	E314.0	14797-73-0	Perchlorate	47	F1	0.95	4.0	ug/l	J+	m	matrix spike %R	170/168 %
4401760781	LW4.1-20170207-10:39-0.3	2/7/2017	SM2540C	TDS	Total Dissolved Solids	1500		5.00	10	mg/l				
4401760791	LW6.05-20170207-11:20-0.6	2/7/2017	E300	16887-00-6	Chloride	250		0.50	50	mg/l				
4401760791	LW6.05-20170207-11:20-0.6	2/7/2017	E300	24959-67-9	Bromide	1.5		0.50	1.0	mg/l				

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SDG	Client Sample ID	Sample Date	Method	Client Analyte ID	Analyte	Lab Result	Lab Qualifier	SQL	PQL	Units	Validator Qualifier	Reason Code	Reason Code Definition	Qualification Finding	
4401760791	LW6.05-20170207-11:20-0.6	2/7/2017	E300.1	14866-68-3	Chlorate	63		20.00	40	ug/l					
4401760791	LW6.05-20170207-11:20-0.6	2/7/2017	E314.0	14797-73-0	Perchlorate	17		0.95	4.0	ug/l					
4401760791	LW6.05-20170207-11:20-0.6	2/7/2017	SM2540C	TDS	Total Dissolved Solids	1600		5.00	10	mg/l					
4401760791	LW7.2-20170207-10:55-0.8	2/7/2017	E300	16887-00-6	Chloride	220		0.25	25	mg/l					
4401760791	LW7.2-20170207-10:55-0.8	2/7/2017	E300	24959-67-9	Bromide	1.3		0.25	0.50	mg/l					
4401760791	LW7.2-20170207-10:55-0.8	2/7/2017	E300.1	14866-68-3	Chlorate	60		20.00	40	ug/l					
4401760791	LW7.2-20170207-10:55-0.8	2/7/2017	E314.0	14797-73-0	Perchlorate	0.95	U	0.95	4.0	ug/l					
4401760791	LW7.2-20170207-10:55-0.8	2/7/2017	SM2540C	TDS	Total Dissolved Solids	1300		5.00	10	mg/l					
4401760801	GLWC6.1_3-20170207-09:30-1.0	2/7/2017	E300	16887-00-6	Chloride	220		0.25	25	mg/l					
4401760801	GLWC6.1_3-20170207-09:30-1.0	2/7/2017	E300	24959-67-9	Bromide	0.25	U	0.25	0.50	mg/l					
4401760801	GLWC6.1_3-20170207-09:30-1.0	2/7/2017	E300.1	14866-68-3	Chlorate	100		20.00	40	ug/l					
4401760801	GLWC6.1_3-20170207-09:30-1.0	2/7/2017	E314.0	14797-73-0	Perchlorate	1.5	J	0.95	4.0	ug/l	J	sp	Detect <PQL	-	-
4401760801	GLWC6.1_3-20170207-09:30-1.0	2/7/2017	SM2540C	TDS	Total Dissolved Solids	1100		5.00	10	mg/l					
4401760801	GLWC6.1_4-20170207-10:35-1.3	2/7/2017	E300	16887-00-6	Chloride	280		0.50	50	mg/l					
4401760801	GLWC6.1_4-20170207-10:35-1.3	2/7/2017	E300	24959-67-9	Bromide	0.50	U	0.50	1.0	mg/l					
4401760801	GLWC6.1_4-20170207-10:35-1.3	2/7/2017	E300.1	14866-68-3	Chlorate	100		20.00	40	ug/l					
4401760801	GLWC6.1_4-20170207-10:35-1.3	2/7/2017	E314.0	14797-73-0	Perchlorate	0.95	U	0.95	4.0	ug/l					
4401760801	GLWC6.1_4-20170207-10:35-1.3	2/7/2017	SM2540C	TDS	Total Dissolved Solids	1300		5.00	10	mg/l					
4401760801	LW5.9-20170207-10:00-0.4	2/7/2017	E300	16887-00-6	Chloride	300		0.25	25	mg/l					
4401760801	LW5.9-20170207-10:00-0.4	2/7/2017	E300	24959-67-9	Bromide	0.26	J	0.25	0.50	mg/l	J	sp	Detect <PQL	-	-
4401760801	LW5.9-20170207-10:00-0.4	2/7/2017	E300.1	14866-68-3	Chlorate	56		20.00	40	ug/l					
4401760801	LW5.9-20170207-10:00-0.4	2/7/2017	E314.0	14797-73-0	Perchlorate	17	F1	0.95	4.0	ug/l	J+	m	matrix spike %R	125/127	%
4401760801	LW5.9-20170207-10:00-0.4	2/7/2017	SM2540C	TDS	Total Dissolved Solids	1500		5.00	10	mg/l					
4401760801	LWC6.1_1-20170207-09:03-0.9	2/7/2017	E300	16887-00-6	Chloride	270		0.25	25	mg/l					
4401760801	LWC6.1_1-20170207-09:03-0.9	2/7/2017	E300	24959-67-9	Bromide	0.25	U	0.25	0.50	mg/l					
4401760801	LWC6.1_1-20170207-09:03-0.9	2/7/2017	E300.1	14866-68-3	Chlorate	98		20.00	40	ug/l					
4401760801	LWC6.1_1-20170207-09:03-0.9	2/7/2017	E314.0	14797-73-0	Perchlorate	1.3	J	0.95	4.0	ug/l	J	sp	Detect <PQL	-	-
4401760801	LWC6.1_1-20170207-09:03-0.9	2/7/2017	SM2540C	TDS	Total Dissolved Solids	660		5.00	10	mg/l					
4401760801	LWC6.1_2-20170207-09:20-0.7	2/7/2017	E300	16887-00-6	Chloride	140		0.25	25	mg/l					
4401760801	LWC6.1_2-20170207-09:20-0.7	2/7/2017	E300	24959-67-9	Bromide	0.25	U	0.25	0.50	mg/l					
4401760801	LWC6.1_2-20170207-09:20-0.7	2/7/2017	E300.1	14866-68-3	Chlorate	67		20.00	40	ug/l					
4401760801	LWC6.1_2-20170207-09:20-0.7	2/7/2017	E314.0	14797-73-0	Perchlorate	0.95	U	0.95	4.0	ug/l					
4401760801	LWC6.1_2-20170207-09:20-0.7	2/7/2017	SM2540C	TDS	Total Dissolved Solids	1100		5.00	10	mg/l					
4401760821	GLW4.9-20170207-10:55-1.2	2/7/2017	E300	16887-00-6	Chloride	270		0.25	25	mg/l					
4401760821	GLW4.9-20170207-10:55-1.2	2/7/2017	E300	24959-67-9	Bromide	1.4		0.25	0.50	mg/l					
4401760821	GLW4.9-20170207-10:55-1.2	2/7/2017	E300.1	14866-68-3	Chlorate	94		20.00	40	ug/l					
4401760821	GLW4.9-20170207-10:55-1.2	2/7/2017	E314.0	14797-73-0	Perchlorate	28	F1	0.95	4.0	ug/l	J+	m	matrix spike %R	149/149	%
4401760821	GLW4.9-20170207-10:55-1.2	2/7/2017	SM2540C	TDS	Total Dissolved Solids	1400		5.00	10	mg/l					
4401760821	LW4.95-20170207-10:45-1.0	2/7/2017	E300	16887-00-6	Chloride	260		0.50	50	mg/l					
4401760821	LW4.95-20170207-10:45-1.0	2/7/2017	E300	24959-67-9	Bromide	1.5		0.50	1.0	mg/l					
4401760821	LW4.95-20170207-10:45-1.0	2/7/2017	E300.1	14866-68-3	Chlorate	79		20.00	40	ug/l					
4401760821	LW4.95-20170207-10:45-1.0	2/7/2017	E314.0	14797-73-0	Perchlorate	24		0.95	4.0	ug/l	J+	m	matrix spike %R	149/149	%
4401760821	LW4.95-20170207-10:45-1.0	2/7/2017	SM2540C	TDS	Total Dissolved Solids	1500		5.00	10	mg/l					
4401760821	LW5.3-20170207-09:45-1.0	2/7/2017	E300	16887-00-6	Chloride	260		0.50	50	mg/l					
4401760821	LW5.3-20170207-09:45-1.0	2/7/2017	E300	24959-67-9	Bromide	0.98	J	0.50	1.0	mg/l	J	sp	Detect <PQL	-	-
4401760821	LW5.3-20170207-09:45-1.0	2/7/2017	E300.1	14866-68-3	Chlorate	57		20.00	40	ug/l					
4401760821	LW5.3-20170207-09:45-1.0	2/7/2017	E314.0	14797-73-0	Perchlorate	19		0.95	4.0	ug/l	J+	m	matrix spike %R	149/149	%
4401760821	LW5.3-20170207-09:45-1.0	2/7/2017	SM2540C	TDS	Total Dissolved Solids	1500		5.00	10	mg/l					
4401760821	LW5.3-20170207-09:50-2.0	2/7/2017	E300	16887-00-6	Chloride	260		0.50	50	mg/l					
4401760821	LW5.3-20170207-09:50-2.0	2/7/2017	E300	24959-67-9	Bromide	1.7		0.50	1.0	mg/l					

Table 4
All Results, Qualifiers, and Reason Codes
NERT Downgradient Study Area
Henderson, Nevada

SDG	Client Sample ID	Sample Date	Method	Client Analyte ID	Analyte	Lab Result	Lab Qualifier	SQL	PQL	Units	Validator Qualifier	Reason Code	Reason Code Definition	Qualification Finding
4401760821	LW5.3-20170207-09:50-2.0	2/7/2017	E300.1	14866-68-3	Chlorate	59		20.00	40	ug/l				
4401760821	LW5.3-20170207-09:50-2.0	2/7/2017	E314.0	14797-73-0	Perchlorate	20		0.95	4.0	ug/l	J+	m	matrix spike %R	149/149 %
4401760821	LW5.3-20170207-09:50-2.0	2/7/2017	SM2540C	TDS	Total Dissolved Solids	1500		5.00	10	mg/l				
4401762381	LW6.05-20170206-11:20-0.6	2/6/2017	E300	16887-00-6	Chloride	270		0.25	25	mg/l				
4401762381	LW6.05-20170206-11:20-0.6	2/6/2017	E300	24959-67-9	Bromide	0.26	J	0.25	0.50	mg/l	J	sp	Detect <PQL	- -
4401762381	LW6.05-20170206-11:20-0.6	2/6/2017	E300.1	14866-68-3	Chlorate	57		20.00	40	ug/l				
4401762381	LW6.05-20170206-11:20-0.6	2/6/2017	E314.0	14797-73-0	Perchlorate	18		0.95	4.0	ug/l				
4401762381	LW6.05-20170206-11:20-0.6	2/6/2017	SM2540C	TDS	Total Dissolved Solids	1400		5.00	10	mg/l				
4401762381	LW6.7-20170206-10:15-0.4	2/6/2017	E300	16887-00-6	Chloride	250		0.25	25	mg/l				
4401762381	LW6.7-20170206-10:15-0.4	2/6/2017	E300	24959-67-9	Bromide	0.30	J	0.25	0.50	mg/l	J	sp	Detect <PQL	- -
4401762381	LW6.7-20170206-10:15-0.4	2/6/2017	E300.1	14866-68-3	Chlorate	53		20.00	40	ug/l				
4401762381	LW6.7-20170206-10:15-0.4	2/6/2017	E314.0	14797-73-0	Perchlorate	0.95	U	0.95	4.0	ug/l				
4401762381	LW6.7-20170206-10:15-0.4	2/6/2017	SM2540C	TDS	Total Dissolved Solids	1400		5.00	10	mg/l				
4401762381	LW7.2-20170206-09:45-0.8	2/6/2017	E300	16887-00-6	Chloride	240		0.25	25	mg/l				
4401762381	LW7.2-20170206-09:45-0.8	2/6/2017	E300	24959-67-9	Bromide	0.25	U	0.25	0.50	mg/l				
4401762381	LW7.2-20170206-09:45-0.8	2/6/2017	E300.1	14866-68-3	Chlorate	51		20.00	40	ug/l				
4401762381	LW7.2-20170206-09:45-0.8	2/6/2017	E314.0	14797-73-0	Perchlorate	0.95	U	0.95	4.0	ug/l				
4401762381	LW7.2-20170206-09:45-0.8	2/6/2017	SM2540C	TDS	Total Dissolved Solids	1300		5.00	10	mg/l				
4401762381	LW7.2-20170206-15:50-EB	2/6/2017	E300	16887-00-6	Chloride	0.25	U	0.25	0.50	mg/l				
4401762381	LW7.2-20170206-15:50-EB	2/6/2017	E300	24959-67-9	Bromide	0.25	U	0.25	0.50	mg/l				
4401762381	LW7.2-20170206-15:50-EB	2/6/2017	E300.1	14866-68-3	Chlorate	10.00	U	10.00	20	ug/l				
4401762381	LW7.2-20170206-15:50-EB	2/6/2017	E314.0	14797-73-0	Perchlorate	0.95	U	0.95	4.0	ug/l				
4401762381	LW7.2-20170206-15:50-EB	2/6/2017	SM2540C	TDS	Total Dissolved Solids	5.00	U	5.00	10	mg/l				
4401762431	GLW3.78-20170206-16:40-0.96	2/6/2017	E300	16887-00-6	Chloride	270		0.25	25	mg/l				
4401762431	GLW3.78-20170206-16:40-0.96	2/6/2017	E300	24959-67-9	Bromide	0.50		0.25	0.50	mg/l				
4401762431	GLW3.78-20170206-16:40-0.96	2/6/2017	E300.1	14866-68-3	Chlorate	210		20.00	40	ug/l				
4401762431	GLW3.78-20170206-16:40-0.96	2/6/2017	E314.0	14797-73-0	Perchlorate	40		0.95	4.0	ug/l				
4401762431	GLW3.78-20170206-16:40-0.96	2/6/2017	SM2540C	TDS	Total Dissolved Solids	1500		5.00	10	mg/l				
4401762431	LW3.4-20170206-17:01-0.7	2/6/2017	E300	16887-00-6	Chloride	260		0.25	25	mg/l				
4401762431	LW3.4-20170206-17:01-0.7	2/6/2017	E300	24959-67-9	Bromide	0.50		0.25	0.50	mg/l				
4401762431	LW3.4-20170206-17:01-0.7	2/6/2017	E300.1	14866-68-3	Chlorate	130		20.00	40	ug/l				
4401762431	LW3.4-20170206-17:01-0.7	2/6/2017	E314.0	14797-73-0	Perchlorate	38		0.95	4.0	ug/l	J+	m	matrix spike %R	146/149 %
4401762431	LW3.4-20170206-17:01-0.7	2/6/2017	SM2540C	TDS	Total Dissolved Solids	1500		5.00	10	mg/l				
4401762431	LW3.4-20170206-17:01-0.7-FD	2/6/2017	E300	16887-00-6	Chloride	260		0.25	25	mg/l				
4401762431	LW3.4-20170206-17:01-0.7-FD	2/6/2017	E300	24959-67-9	Bromide	0.48	J	0.25	0.50	mg/l	J	sp	Detect <PQL	- -
4401762431	LW3.4-20170206-17:01-0.7-FD	2/6/2017	E300.1	14866-68-3	Chlorate	140		20.00	40	ug/l				
4401762431	LW3.4-20170206-17:01-0.7-FD	2/6/2017	E314.0	14797-73-0	Perchlorate	38		0.95	4.0	ug/l	J+	m	matrix spike %R	146/149 %
4401762431	LW3.4-20170206-17:01-0.7-FD	2/6/2017	SM2540C	TDS	Total Dissolved Solids	1500		5.00	10	mg/l				
4401762431	LW3.75-20170206-16:30-0.67	2/6/2017	E300	16887-00-6	Chloride	260		0.25	25	mg/l				
4401762431	LW3.75-20170206-16:30-0.67	2/6/2017	E300	24959-67-9	Bromide	0.59		0.25	0.50	mg/l				
4401762431	LW3.75-20170206-16:30-0.67	2/6/2017	E300.1	14866-68-3	Chlorate	100		20.00	40	ug/l				
4401762431	LW3.75-20170206-16:30-0.67	2/6/2017	E314.0	14797-73-0	Perchlorate	26	F1	0.95	4.0	ug/l	J+	m	matrix spike %R	146/149 %
4401762431	LW3.75-20170206-16:30-0.67	2/6/2017	SM2540C	TDS	Total Dissolved Solids	1400		5.00	10	mg/l				
4401762431	LW3.85-20170206-16:03-0.58	2/6/2017	E300	16887-00-6	Chloride	260		0.25	25	mg/l				
4401762431	LW3.85-20170206-16:03-0.58	2/6/2017	E300	24959-67-9	Bromide	0.60		0.25	0.50	mg/l				
4401762431	LW3.85-20170206-16:03-0.58	2/6/2017	E300.1	14866-68-3	Chlorate	100		20.00	40	ug/l				
4401762431	LW3.85-20170206-16:03-0.58	2/6/2017	E314.0	14797-73-0	Perchlorate	28		0.95	4.0	ug/l	J+	m	matrix spike %R	146/149 %
4401762431	LW3.85-20170206-16:03-0.58	2/6/2017	SM2540C	TDS	Total Dissolved Solids	1500		5.00	10	mg/l				
4401762431	LWC3.7-20170206-16:20-0.58	2/6/2017	E300	16887-00-6	Chloride	410		1.25	100	mg/l				
4401762431	LWC3.7-20170206-16:20-0.58	2/6/2017	E300	24959-67-9	Bromide	1.25	U	1.25	2.5	mg/l				

Table 4
All Results, Qualifiers, and Reason Codes
NERT Downgradient Study Area
Henderson, Nevada

SDG	Client Sample ID	Sample Date	Method	Client Analyte ID	Analyte	Lab Result	Lab Qualifier	SQL	PQL	Units	Validator Qualifier	Reason Code	Reason Code Definition	Qualification Finding
4401762431	LWC3.7-20170206-16:20-0.58	2/6/2017	E300.1	14866-68-3	Chlorate	2500		500.00	1000	ug/l				
4401762431	LWC3.7-20170206-16:20-0.58	2/6/2017	E314.0	14797-73-0	Perchlorate	880		19.00	80	ug/l				
4401762431	LWC3.7-20170206-16:20-0.58	2/6/2017	SM2540C	TDS	Total Dissolved Solids	2300		5.00	20	mg/l				
4401762481	LW6.05-20170206-15:26-0.7	2/6/2017	E300	16887-00-6	Chloride	210		0.25	25	mg/l				
4401762481	LW6.05-20170206-15:26-0.7	2/6/2017	E300	24959-67-9	Bromide	0.65		0.25	0.50	mg/l				
4401762481	LW6.05-20170206-15:26-0.7	2/6/2017	E300.1	14866-68-3	Chlorate	48		20.00	40	ug/l				
4401762481	LW6.05-20170206-15:26-0.7	2/6/2017	E314.0	14797-73-0	Perchlorate	8.9		0.95	4.0	ug/l				
4401762481	LW6.05-20170206-15:26-0.7	2/6/2017	SM2540C	TDS	Total Dissolved Solids	1400		5.00	10	mg/l				
4401762481	LW6.7-20170206-15:00-0.6	2/6/2017	E300	16887-00-6	Chloride	200		0.25	25	mg/l				
4401762481	LW6.7-20170206-15:00-0.6	2/6/2017	E300	24959-67-9	Bromide	0.36	J	0.25	0.50	mg/l	J	sp	Detect <PQL	-
4401762481	LW6.7-20170206-15:00-0.6	2/6/2017	E300.1	14866-68-3	Chlorate	44		20.00	40	ug/l				
4401762481	LW6.7-20170206-15:00-0.6	2/6/2017	E314.0	14797-73-0	Perchlorate	0.95	U	0.95	4.0	ug/l				
4401762481	LW6.7-20170206-15:00-0.6	2/6/2017	SM2540C	TDS	Total Dissolved Solids	1200		5.00	10	mg/l				
4401762481	LW7.2-20170206-14:30-1.0	2/6/2017	E300	16887-00-6	Chloride	200		0.25	25	mg/l				
4401762481	LW7.2-20170206-14:30-1.0	2/6/2017	E300	24959-67-9	Bromide	0.44	J	0.25	0.50	mg/l	J	sp	Detect <PQL	-
4401762481	LW7.2-20170206-14:30-1.0	2/6/2017	E300.1	14866-68-3	Chlorate	43		20.00	40	ug/l				
4401762481	LW7.2-20170206-14:30-1.0	2/6/2017	E314.0	14797-73-0	Perchlorate	0.95	U	0.95	4.0	ug/l				
4401762481	LW7.2-20170206-14:30-1.0	2/6/2017	SM2540C	TDS	Total Dissolved Solids	1200		5.00	10	mg/l				
4401762481	LW7.2-20170206-14:30-1.0-FD	2/6/2017	E300	16887-00-6	Chloride	200		0.25	25	mg/l				
4401762481	LW7.2-20170206-14:30-1.0-FD	2/6/2017	E300	24959-67-9	Bromide	0.46	J	0.25	0.50	mg/l	J	sp	Detect <PQL	-
4401762481	LW7.2-20170206-14:30-1.0-FD	2/6/2017	E300.1	14866-68-3	Chlorate	44		20.00	40	ug/l				
4401762481	LW7.2-20170206-14:30-1.0-FD	2/6/2017	E314.0	14797-73-0	Perchlorate	0.95	U	0.95	4.0	ug/l				
4401762481	LW7.2-20170206-14:30-1.0-FD	2/6/2017	SM2540C	TDS	Total Dissolved Solids	1200		5.00	10	mg/l				
4401762531	LW6.05-20170206-12:36-0.7	2/6/2017	E300	16887-00-6	Chloride	240		0.25	25	mg/l				
4401762531	LW6.05-20170206-12:36-0.7	2/6/2017	E300	24959-67-9	Bromide	0.46	J	0.25	0.50	mg/l	J	sp	Detect <PQL	-
4401762531	LW6.05-20170206-12:36-0.7	2/6/2017	E300.1	14866-68-3	Chlorate	60		20.00	40	ug/l				
4401762531	LW6.05-20170206-12:36-0.7	2/6/2017	E314.0	14797-73-0	Perchlorate	13		0.95	4.0	ug/l				
4401762531	LW6.05-20170206-12:36-0.7	2/6/2017	SM2540C	TDS	Total Dissolved Solids	1400		5.00	10	mg/l				
4401762531	LW7.2-20170206-12:10-0.8	2/6/2017	E300	16887-00-6	Chloride	220		0.25	25	mg/l				
4401762531	LW7.2-20170206-12:10-0.8	2/6/2017	E300	24959-67-9	Bromide	0.52		0.25	0.50	mg/l				
4401762531	LW7.2-20170206-12:10-0.8	2/6/2017	E300.1	14866-68-3	Chlorate	53		20.00	40	ug/l				
4401762531	LW7.2-20170206-12:10-0.8	2/6/2017	E314.0	14797-73-0	Perchlorate	0.95	U	0.95	4.0	ug/l				
4401762531	LW7.2-20170206-12:10-0.8	2/6/2017	SM2540C	TDS	Total Dissolved Solids	1200		5.00	10	mg/l				
4401763631	GLW3.78-20170208-10:10-0.5	2/8/2017	E300	16887-00-6	Chloride	260		0.50	50	mg/l				
4401763631	GLW3.78-20170208-10:10-0.5	2/8/2017	E300	24959-67-9	Bromide	0.62	J	0.50	1.0	mg/l	J	sp	Detect <PQL	-
4401763631	GLW3.78-20170208-10:10-0.5	2/8/2017	E300.1	14866-68-3	Chlorate	210		20.00	40	ug/l				
4401763631	GLW3.78-20170208-10:10-0.5	2/8/2017	E314.0	14797-73-0	Perchlorate	52		0.95	4.0	ug/l				
4401763631	GLW3.78-20170208-10:10-0.5	2/8/2017	SM2540C	TDS	Total Dissolved Solids	1400		5.00	10	mg/l				
4401763631	LW3.4-20170208-10:30-0.5	2/8/2017	E300	16887-00-6	Chloride	260		0.50	50	mg/l				
4401763631	LW3.4-20170208-10:30-0.5	2/8/2017	E300	24959-67-9	Bromide	0.60	J	0.50	1.0	mg/l	J	sp	Detect <PQL	-
4401763631	LW3.4-20170208-10:30-0.5	2/8/2017	E300.1	14866-68-3	Chlorate	170		20.00	40	ug/l				
4401763631	LW3.4-20170208-10:30-0.5	2/8/2017	E314.0	14797-73-0	Perchlorate	50		0.95	4.0	ug/l				
4401763631	LW3.4-20170208-10:30-0.5	2/8/2017	SM2540C	TDS	Total Dissolved Solids	1500		5.00	10	mg/l				
4401763631	LW3.4-20170208-10:55-FB	2/8/2017	E300	16887-00-6	Chloride	0.25	U	0.25	0.50	mg/l				
4401763631	LW3.4-20170208-10:55-FB	2/8/2017	E300	24959-67-9	Bromide	0.25	U	0.25	0.50	mg/l				
4401763631	LW3.4-20170208-10:55-FB	2/8/2017	E300.1	14866-68-3	Chlorate	10.00	U	10.00	20	ug/l				
4401763631	LW3.4-20170208-10:55-FB	2/8/2017	E314.0	14797-73-0	Perchlorate	0.95	U	0.95	4.0	ug/l				
4401763631	LW3.4-20170208-10:55-FB	2/8/2017	SM2540C	TDS	Total Dissolved Solids	5.00	U	5.00	10	mg/l				
4401763631	LW3.75-20170208-09:57-0.8	2/8/2017	E300	16887-00-6	Chloride	260		0.50	50	mg/l				
4401763631	LW3.75-20170208-09:57-0.8	2/8/2017	E300	24959-67-9	Bromide	0.56	J	0.50	1.0	mg/l	J	sp	Detect <PQL	-

Table 4
All Results, Qualifiers, and Reason Codes
NERT Downgradient Study Area
Henderson, Nevada

SDG	Client Sample ID	Sample Date	Method	Client Analyte ID	Analyte	Lab Result	Lab Qualifier	SQL	PQL	Units	Validator Qualifier	Reason Code	Reason Code Definition	Qualification Finding
4401763631	LW3.75-20170208-09:57-0.8	2/8/2017	E300.1	14866-68-3	Chlorate	120		20.00	40	ug/l				
4401763631	LW3.75-20170208-09:57-0.8	2/8/2017	E314.0	14797-73-0	Perchlorate	26		0.95	4.0	ug/l				
4401763631	LW3.75-20170208-09:57-0.8	2/8/2017	SM2540C	TDS	Total Dissolved Solids	1400		5.00	10	mg/l				
4401763631	LW3.85-20170208-09:27-0.5	2/8/2017	E300	16887-00-6	Chloride	260		0.50	50	mg/l				
4401763631	LW3.85-20170208-09:27-0.5	2/8/2017	E300	24959-67-9	Bromide	0.58	J	0.50	1.0	mg/l	J	sp	Detect <PQL	-
4401763631	LW3.85-20170208-09:27-0.5	2/8/2017	E300.1	14866-68-3	Chlorate	130		20.00	40	ug/l				
4401763631	LW3.85-20170208-09:27-0.5	2/8/2017	E314.0	14797-73-0	Perchlorate	34		0.95	4.0	ug/l				
4401763631	LW3.85-20170208-09:27-0.5	2/8/2017	SM2540C	TDS	Total Dissolved Solids	1400		5.00	10	mg/l				
4401763631	LW3.85-20170208-09:27-0.5-FD	2/8/2017	E300	16887-00-6	Chloride	260		0.50	50	mg/l				
4401763631	LW3.85-20170208-09:27-0.5-FD	2/8/2017	E300	24959-67-9	Bromide	0.52	J	0.50	1.0	mg/l	J	sp	Detect <PQL	-
4401763631	LW3.85-20170208-09:27-0.5-FD	2/8/2017	E300.1	14866-68-3	Chlorate	130		20.00	40	ug/l				
4401763631	LW3.85-20170208-09:27-0.5-FD	2/8/2017	E314.0	14797-73-0	Perchlorate	34		0.95	4.0	ug/l				
4401763631	LW3.85-20170208-09:27-0.5-FD	2/8/2017	SM2540C	TDS	Total Dissolved Solids	1500		5.00	10	mg/l				
4401763631	LWC3.7-20170208-09:48-0.5	2/8/2017	E300	16887-00-6	Chloride	340		0.50	50	mg/l				
4401763631	LWC3.7-20170208-09:48-0.5	2/8/2017	E300	24959-67-9	Bromide	0.81	J	0.50	1.0	mg/l	J	sp	Detect <PQL	-
4401763631	LWC3.7-20170208-09:48-0.5	2/8/2017	E300.1	14866-68-3	Chlorate	2000		200.00	400	ug/l				
4401763631	LWC3.7-20170208-09:48-0.5	2/8/2017	E314.0	14797-73-0	Perchlorate	570		9.50	40	ug/l				
4401763631	LWC3.7-20170208-09:48-0.5	2/8/2017	SM2540C	TDS	Total Dissolved Solids	2000		5.00	20	mg/l				
4401763641	GLW4.4-20170208-10:07-1.1	2/8/2017	E300	16887-00-6	Chloride	270		0.25	25	mg/l				
4401763641	GLW4.4-20170208-10:07-1.1	2/8/2017	E300	24959-67-9	Bromide	0.25	U	0.25	0.50	mg/l				
4401763641	GLW4.4-20170208-10:07-1.1	2/8/2017	E300.1	14866-68-3	Chlorate	120		20.00	40	ug/l				
4401763641	GLW4.4-20170208-10:07-1.1	2/8/2017	E314.0	14797-73-0	Perchlorate	27		0.95	4.0	ug/l				
4401763641	GLW4.4-20170208-10:07-1.1	2/8/2017	SM2540C	TDS	Total Dissolved Solids	1400		5.00	10	mg/l				
4401763641	GLW4.4-20170208-11:02-EB	2/8/2017	E300	16887-00-6	Chloride	0.25	U	0.25	0.50	mg/l				
4401763641	GLW4.4-20170208-11:02-EB	2/8/2017	E300	24959-67-9	Bromide	0.25	U	0.25	0.50	mg/l				
4401763641	GLW4.4-20170208-11:02-EB	2/8/2017	E300.1	14866-68-3	Chlorate	10.00	U	10.00	20	ug/l				
4401763641	GLW4.4-20170208-11:02-EB	2/8/2017	E314.0	14797-73-0	Perchlorate	0.95	U	0.95	4.0	ug/l				
4401763641	GLW4.4-20170208-11:02-EB	2/8/2017	SM2540C	TDS	Total Dissolved Solids	5.00	U	5.00	10	mg/l				
4401763641	GLW4.85-20170208-09:45-0.6	2/8/2017	E300	16887-00-6	Chloride	310		0.50	50	mg/l				
4401763641	GLW4.85-20170208-09:45-0.6	2/8/2017	E300	24959-67-9	Bromide	0.50	U	0.50	1.0	mg/l				
4401763641	GLW4.85-20170208-09:45-0.6	2/8/2017	E300.1	14866-68-3	Chlorate	1100		100.00	200	ug/l				
4401763641	GLW4.85-20170208-09:45-0.6	2/8/2017	E314.0	14797-73-0	Perchlorate	290		4.75	20	ug/l				
4401763641	GLW4.85-20170208-09:45-0.6	2/8/2017	SM2540C	TDS	Total Dissolved Solids	1600		5.00	10	mg/l				
4401763641	LW4.1-20170208-10:22-0.4	2/8/2017	E300	16887-00-6	Chloride	270		0.25	25	mg/l				
4401763641	LW4.1-20170208-10:22-0.4	2/8/2017	E300	24959-67-9	Bromide	0.25	U	0.25	0.50	mg/l				
4401763641	LW4.1-20170208-10:22-0.4	2/8/2017	E300.1	14866-68-3	Chlorate	210		20.00	40	ug/l				
4401763641	LW4.1-20170208-10:22-0.4	2/8/2017	E314.0	14797-73-0	Perchlorate	53		0.95	4.0	ug/l				
4401763641	LW4.1-20170208-10:22-0.4	2/8/2017	SM2540C	TDS	Total Dissolved Solids	1400		5.00	10	mg/l				
4401763641	LW4.1-20170208-10:22-0.4-FD	2/8/2017	E300	16887-00-6	Chloride	260		0.50	50	mg/l				
4401763641	LW4.1-20170208-10:22-0.4-FD	2/8/2017	E300	24959-67-9	Bromide	0.50	U	0.50	1.0	mg/l				
4401763641	LW4.1-20170208-10:22-0.4-FD	2/8/2017	E300.1	14866-68-3	Chlorate	220		20.00	40	ug/l				
4401763641	LW4.1-20170208-10:22-0.4-FD	2/8/2017	E314.0	14797-73-0	Perchlorate	52		0.95	4.0	ug/l				
4401763641	LW4.1-20170208-10:22-0.4-FD	2/8/2017	SM2540C	TDS	Total Dissolved Solids	1400		5.00	10	mg/l				
4401763641	LW4.1-20170208-11:12-FB	2/8/2017	E300	16887-00-6	Chloride	0.25	U	0.25	0.50	mg/l				
4401763641	LW4.1-20170208-11:12-FB	2/8/2017	E300	24959-67-9	Bromide	0.25	U	0.25	0.50	mg/l				
4401763641	LW4.1-20170208-11:12-FB	2/8/2017	E300.1	14866-68-3	Chlorate	10.00	U	10.00	20	ug/l				
4401763641	LW4.1-20170208-11:12-FB	2/8/2017	E314.0	14797-73-0	Perchlorate	0.95	U	0.95	4.0	ug/l				
4401763641	LW4.1-20170208-11:12-FB	2/8/2017	SM2540C	TDS	Total Dissolved Solids	5.00	U	5.00	10	mg/l				
4401763671	GLW4.9-20170208-10:50-1.2	2/8/2017	E300	16887-00-6	Chloride	250		0.25	25	mg/l				
4401763671	GLW4.9-20170208-10:50-1.2	2/8/2017	E300	24959-67-9	Bromide	1.6		0.25	0.50	mg/l				

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NERT Downgradient Study Area
Henderson, Nevada

SDG	Client Sample ID	Sample Date	Method	Client Analyte ID	Analyte	Lab Result	Lab Qualifier	SQL	PQL	Units	Validator Qualifier	Reason Code	Reason Code Definition	Qualification Finding
4401763671	GLW4.9-20170208-10:50-1.2	2/8/2017	E300.1	14866-68-3	Chlorate	100		20.00	40	ug/l				
4401763671	GLW4.9-20170208-10:50-1.2	2/8/2017	E314.0	14797-73-0	Perchlorate	22		0.95	4.0	ug/l				
4401763671	GLW4.9-20170208-10:50-1.2	2/8/2017	SM2540C	TDS	Total Dissolved Solids	1400		5.00	10	mg/l				
4401763671	GLW4.9-20170208-11:09-FB	2/8/2017	E300	16887-00-6	Chloride	0.25	U	0.25	0.50	mg/l				
4401763671	GLW4.9-20170208-11:09-FB	2/8/2017	E300	24959-67-9	Bromide	0.25	U	0.25	0.50	mg/l				
4401763671	GLW4.9-20170208-11:09-FB	2/8/2017	E300.1	14866-68-3	Chlorate	10.00	U	10.00	20	ug/l				
4401763671	GLW4.9-20170208-11:09-FB	2/8/2017	E314.0	14797-73-0	Perchlorate	0.95	U	0.95	4.0	ug/l				
4401763671	GLW4.9-20170208-11:09-FB	2/8/2017	SM2540C	TDS	Total Dissolved Solids	5.00	U	5.00	10	mg/l				
4401763671	LW4.95-20170208-10:30-1.1	2/8/2017	E300	16887-00-6	Chloride	260		0.25	25	mg/l				
4401763671	LW4.95-20170208-10:30-1.1	2/8/2017	E300	24959-67-9	Bromide	1.4		0.25	0.50	mg/l				
4401763671	LW4.95-20170208-10:30-1.1	2/8/2017	E300.1	14866-68-3	Chlorate	83		20.00	40	ug/l				
4401763671	LW4.95-20170208-10:30-1.1	2/8/2017	E314.0	14797-73-0	Perchlorate	19		0.95	4.0	ug/l				
4401763671	LW4.95-20170208-10:30-1.1	2/8/2017	SM2540C	TDS	Total Dissolved Solids	1400		5.00	10	mg/l				
4401763671	LW4.95-20170208-11:06-EB	2/8/2017	E300	16887-00-6	Chloride	0.25	U	0.25	0.50	mg/l				
4401763671	LW4.95-20170208-11:06-EB	2/8/2017	E300	24959-67-9	Bromide	0.25	U	0.25	0.50	mg/l				
4401763671	LW4.95-20170208-11:06-EB	2/8/2017	E300.1	14866-68-3	Chlorate	10.00	U	10.00	20	ug/l				
4401763671	LW4.95-20170208-11:06-EB	2/8/2017	E314.0	14797-73-0	Perchlorate	0.95	U	0.95	4.0	ug/l				
4401763671	LW4.95-20170208-11:06-EB	2/8/2017	SM2540C	TDS	Total Dissolved Solids	5.00	U	5.00	10	mg/l				
4401763671	LW5.3-20170208-10:00-1.0	2/8/2017	E300	16887-00-6	Chloride	260		0.25	25	mg/l				
4401763671	LW5.3-20170208-10:00-1.0	2/8/2017	E300	24959-67-9	Bromide	1.5		0.25	0.50	mg/l				
4401763671	LW5.3-20170208-10:00-1.0	2/8/2017	E300.1	14866-68-3	Chlorate	73		20.00	40	ug/l				
4401763671	LW5.3-20170208-10:00-1.0	2/8/2017	E314.0	14797-73-0	Perchlorate	15		0.95	4.0	ug/l				
4401763671	LW5.3-20170208-10:00-1.0	2/8/2017	SM2540C	TDS	Total Dissolved Solids	1400		5.00	10	mg/l				
4401763671	LW5.3-20170208-10:03-2.0	2/8/2017	E300	16887-00-6	Chloride	250		0.50	50	mg/l				
4401763671	LW5.3-20170208-10:03-2.0	2/8/2017	E300	24959-67-9	Bromide	1.5		0.50	1.0	mg/l				
4401763671	LW5.3-20170208-10:03-2.0	2/8/2017	E300.1	14866-68-3	Chlorate	81		20.00	40	ug/l				
4401763671	LW5.3-20170208-10:03-2.0	2/8/2017	E314.0	14797-73-0	Perchlorate	17		0.95	4.0	ug/l				
4401763671	LW5.3-20170208-10:03-2.0	2/8/2017	SM2540C	TDS	Total Dissolved Solids	1400		5.00	10	mg/l				
4401763681	LW6.05-20170208-09:35-0.5	2/8/2017	E300	16887-00-6	Chloride	270		0.50	50	mg/l				
4401763681	LW6.05-20170208-09:35-0.5	2/8/2017	E300	24959-67-9	Bromide	0.50	U	0.50	1.0	mg/l				
4401763681	LW6.05-20170208-09:35-0.5	2/8/2017	E300.1	14866-68-3	Chlorate	65		20.00	40	ug/l				
4401763681	LW6.05-20170208-09:35-0.5	2/8/2017	E314.0	14797-73-0	Perchlorate	18		0.95	4.0	ug/l				
4401763681	LW6.05-20170208-09:35-0.5	2/8/2017	SM2540C	TDS	Total Dissolved Solids	1500		5.00	10	mg/l				
4401763681	LW6.05-20170208-10:30-FB	2/8/2017	E300	16887-00-6	Chloride	0.25	U	0.25	0.50	mg/l				
4401763681	LW6.05-20170208-10:30-FB	2/8/2017	E300	24959-67-9	Bromide	0.25	U	0.25	0.50	mg/l				
4401763681	LW6.05-20170208-10:30-FB	2/8/2017	E300.1	14866-68-3	Chlorate	10.00	U	10.00	20	ug/l				
4401763681	LW6.05-20170208-10:30-FB	2/8/2017	E314.0	14797-73-0	Perchlorate	0.95	U	0.95	4.0	ug/l				
4401763681	LW6.05-20170208-10:30-FB	2/8/2017	SM2540C	TDS	Total Dissolved Solids	5.00	U	5.00	10	mg/l				
4401763681	LW6.7-20170208-09:03-0.3	2/8/2017	E300	16887-00-6	Chloride	280		0.50	50	mg/l				
4401763681	LW6.7-20170208-09:03-0.3	2/8/2017	E300	24959-67-9	Bromide	0.50	U	0.50	1.0	mg/l				
4401763681	LW6.7-20170208-09:03-0.3	2/8/2017	E300.1	14866-68-3	Chlorate	62		20.00	40	ug/l				
4401763681	LW6.7-20170208-09:03-0.3	2/8/2017	E314.0	14797-73-0	Perchlorate	0.95	U	0.95	4.0	ug/l				
4401763681	LW6.7-20170208-09:03-0.3	2/8/2017	SM2540C	TDS	Total Dissolved Solids	1700		5.00	20	mg/l				
4401763681	LW6.7-20170208-10:35-EB	2/8/2017	E300	16887-00-6	Chloride	0.25	U	0.25	0.50	mg/l				
4401763681	LW6.7-20170208-10:35-EB	2/8/2017	E300	24959-67-9	Bromide	0.25	U	0.25	0.50	mg/l				
4401763681	LW6.7-20170208-10:35-EB	2/8/2017	E300.1	14866-68-3	Chlorate	10.00	U	10.00	20	ug/l				
4401763681	LW6.7-20170208-10:35-EB	2/8/2017	E314.0	14797-73-0	Perchlorate	0.95	U	0.95	4.0	ug/l				
4401763681	LW6.7-20170208-10:35-EB	2/8/2017	SM2540C	TDS	Total Dissolved Solids	5.00	U	5.00	10	mg/l				
4401763681	LW7.2-20170208-08:45-0.7	2/8/2017	E300	16887-00-6	Chloride	230		0.25	25	mg/l				
4401763681	LW7.2-20170208-08:45-0.7	2/8/2017	E300	24959-67-9	Bromide	0.25	U	0.25	0.50	mg/l				

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Henderson, Nevada

SDG	Client Sample ID	Sample Date	Method	Client Analyte ID	Analyte	Lab Result	Lab Qualifier	SQL	PQL	Units	Validator Qualifier	Reason Code	Reason Code Definition	Qualification Finding
4401763681	LW7.2-20170208-08:45-0.7	2/8/2017	E300.1	14866-68-3	Chlorate	59		20.00	40	ug/l				
4401763681	LW7.2-20170208-08:45-0.7	2/8/2017	E314.0	14797-73-0	Perchlorate	0.95	U	0.95	4.0	ug/l				
4401763681	LW7.2-20170208-08:45-0.7	2/8/2017	SM2540C	TDS	Total Dissolved Solids	1200		5.00	10	mg/l				
4401763701	GLWC6.1_3-20170208-10:05-1.2	2/8/2017	E300	16887-00-6	Chloride	210		0.25	25	mg/l				
4401763701	GLWC6.1_3-20170208-10:05-1.2	2/8/2017	E300	24959-67-9	Bromide	0.26	J	0.25	0.50	mg/l	J	sp	Detect <PQL	-
4401763701	GLWC6.1_3-20170208-10:05-1.2	2/8/2017	E300.1	14866-68-3	Chlorate	93		20.00	40	ug/l				
4401763701	GLWC6.1_3-20170208-10:05-1.2	2/8/2017	E314.0	14797-73-0	Perchlorate	0.95	U	0.95	4.0	ug/l				
4401763701	GLWC6.1_3-20170208-10:05-1.2	2/8/2017	SM2540C	TDS	Total Dissolved Solids	1100		5.00	10	mg/l				
4401763701	GLWC6.1_4-20170208-10:35-1.3	2/8/2017	E300	16887-00-6	Chloride	220		0.25	25	mg/l				
4401763701	GLWC6.1_4-20170208-10:35-1.3	2/8/2017	E300	24959-67-9	Bromide	0.46	J	0.25	0.50	mg/l	J	sp	Detect <PQL	-
4401763701	GLWC6.1_4-20170208-10:35-1.3	2/8/2017	E300.1	14866-68-3	Chlorate	88		20.00	40	ug/l				
4401763701	GLWC6.1_4-20170208-10:35-1.3	2/8/2017	E314.0	14797-73-0	Perchlorate	0.95	U	0.95	4.0	ug/l				
4401763701	GLWC6.1_4-20170208-10:35-1.3	2/8/2017	SM2540C	TDS	Total Dissolved Solids	1200		5.00	10	mg/l				
4401763701	GLWC6.1_4-20170208-10:35-1.3-FD	2/8/2017	E300	16887-00-6	Chloride	230		0.25	25	mg/l				
4401763701	GLWC6.1_4-20170208-10:35-1.3-FD	2/8/2017	E300	24959-67-9	Bromide	0.25	J	0.25	0.50	mg/l	J	sp	Detect <PQL	-
4401763701	GLWC6.1_4-20170208-10:35-1.3-FD	2/8/2017	E300.1	14866-68-3	Chlorate	89		20.00	40	ug/l				
4401763701	GLWC6.1_4-20170208-10:35-1.3-FD	2/8/2017	E314.0	14797-73-0	Perchlorate	0.95	U	0.95	4.0	ug/l				
4401763701	GLWC6.1_4-20170208-10:35-1.3-FD	2/8/2017	SM2540C	TDS	Total Dissolved Solids	1100		5.00	10	mg/l				
4401763701	LW5.9-20170208-10:35-0.4	2/8/2017	E300	16887-00-6	Chloride	240		0.25	25	mg/l				
4401763701	LW5.9-20170208-10:35-0.4	2/8/2017	E300	24959-67-9	Bromide	0.55		0.25	0.50	mg/l				
4401763701	LW5.9-20170208-10:35-0.4	2/8/2017	E300.1	14866-68-3	Chlorate	70		20.00	40	ug/l				
4401763701	LW5.9-20170208-10:35-0.4	2/8/2017	E314.0	14797-73-0	Perchlorate	15		0.95	4.0	ug/l				
4401763701	LW5.9-20170208-10:35-0.4	2/8/2017	SM2540C	TDS	Total Dissolved Solids	1500		5.00	10	mg/l				
4401763701	LW5.9-20170208-11:45-FB	2/8/2017	E300	16887-00-6	Chloride	0.25	U	0.25	0.50	mg/l				
4401763701	LW5.9-20170208-11:45-FB	2/8/2017	E300	24959-67-9	Bromide	0.25	U	0.25	0.50	mg/l				
4401763701	LW5.9-20170208-11:45-FB	2/8/2017	E300.1	14866-68-3	Chlorate	10.00	U	10.00	20	ug/l				
4401763701	LW5.9-20170208-11:45-FB	2/8/2017	E314.0	14797-73-0	Perchlorate	0.95	U	0.95	4.0	ug/l				
4401763701	LW5.9-20170208-11:45-FB	2/8/2017	SM2540C	TDS	Total Dissolved Solids	5.00	U	5.00	10	mg/l				
4401763701	LWC6.1_1-20170208-09:45-0.9	2/8/2017	E300	16887-00-6	Chloride	220		0.25	25	mg/l				
4401763701	LWC6.1_1-20170208-09:45-0.9	2/8/2017	E300	24959-67-9	Bromide	0.39	J	0.25	0.50	mg/l	J	sp	Detect <PQL	-
4401763701	LWC6.1_1-20170208-09:45-0.9	2/8/2017	E300.1	14866-68-3	Chlorate	100		20.00	40	ug/l				
4401763701	LWC6.1_1-20170208-09:45-0.9	2/8/2017	E314.0	14797-73-0	Perchlorate	0.95	U	0.95	4.0	ug/l				
4401763701	LWC6.1_1-20170208-09:45-0.9	2/8/2017	SM2540C	TDS	Total Dissolved Solids	1100		5.00	10	mg/l				
4401763701	LWC6.1_1-20170208-11:40-EB	2/8/2017	E300	16887-00-6	Chloride	0.25	U	0.25	0.50	mg/l				
4401763701	LWC6.1_1-20170208-11:40-EB	2/8/2017	E300	24959-67-9	Bromide	0.25	U	0.25	0.50	mg/l				
4401763701	LWC6.1_1-20170208-11:40-EB	2/8/2017	E300.1	14866-68-3	Chlorate	10.00	U	10.00	20	ug/l				
4401763701	LWC6.1_1-20170208-11:40-EB	2/8/2017	E314.0	14797-73-0	Perchlorate	0.95	U	0.95	4.0	ug/l				
4401763701	LWC6.1_1-20170208-11:40-EB	2/8/2017	SM2540C	TDS	Total Dissolved Solids	5.00	U	5.00	10	mg/l				
4401763701	LWC6.1_2-20170208-10:00-0.6	2/8/2017	E300	16887-00-6	Chloride	96		0.25	10	mg/l				
4401763701	LWC6.1_2-20170208-10:00-0.6	2/8/2017	E300	24959-67-9	Bromide	0.25	U	0.25	0.50	mg/l				
4401763701	LWC6.1_2-20170208-10:00-0.6	2/8/2017	E300.1	14866-68-3	Chlorate	64		20.00	40	ug/l				
4401763701	LWC6.1_2-20170208-10:00-0.6	2/8/2017	E314.0	14797-73-0	Perchlorate	0.95	U	0.95	4.0	ug/l				
4401763701	LWC6.1_2-20170208-10:00-0.6	2/8/2017	SM2540C	TDS	Total Dissolved Solids	630		5.00	10	mg/l				
4401763711	LW4.95-20170207-13:25-1.2	2/7/2017	E300	16887-00-6	Chloride	240		0.25	25	mg/l				
4401763711	LW4.95-20170207-13:25-1.2	2/7/2017	E300	24959-67-9	Bromide	0.25	U	0.25	0.50	mg/l				
4401763711	LW4.95-20170207-13:25-1.2	2/7/2017	E300.1	14866-68-3	Chlorate	74		20.00	40	ug/l				
4401763711	LW4.95-20170207-13:25-1.2	2/7/2017	E314.0	14797-73-0	Perchlorate	12		0.95	4.0	ug/l				
4401763711	LW4.95-20170207-13:25-1.2	2/7/2017	SM2540C	TDS	Total Dissolved Solids	1500		5.00	10	mg/l				
4401763731	LW3.4-20170207-14:35-0.6	2/7/2017	E300	16887-00-6	Chloride	270		0.25	25	mg/l				
4401763731	LW3.4-20170207-14:35-0.6	2/7/2017	E300	24959-67-9	Bromide	0.62		0.25	0.50	mg/l				

Table 4
All Results, Qualifiers, and Reason Codes
NERT Downgradient Study Area
Henderson, Nevada

SDG	Client Sample ID	Sample Date	Method	Client Analyte ID	Analyte	Lab Result	Lab Qualifier	SQL	PQL	Units	Validator Qualifier	Reason Code	Reason Code Definition	Qualification Finding
4401763731	LW3.4-20170207-14:35-0.6	2/7/2017	E300.1	14866-68-3	Chlorate	170		20.00	40	ug/l				
4401763731	LW3.4-20170207-14:35-0.6	2/7/2017	E314.0	14797-73-0	Perchlorate	42		0.95	4.0	ug/l				
4401763731	LW3.4-20170207-14:35-0.6	2/7/2017	SM2540C	TDS	Total Dissolved Solids	1500		5.00	10	mg/l				
4401763741	GLW4.4-20170207-14:11-1.3	2/7/2017	E300	16887-00-6	Chloride	270		0.50	50	mg/l				
4401763741	GLW4.4-20170207-14:11-1.3	2/7/2017	E300	24959-67-9	Bromide	1.6		0.50	1.0	mg/l				
4401763741	GLW4.4-20170207-14:11-1.3	2/7/2017	E300.1	14866-68-3	Chlorate	97		20.00	40	ug/l				
4401763741	GLW4.4-20170207-14:11-1.3	2/7/2017	E314.0	14797-73-0	Perchlorate	25		0.95	4.0	ug/l				
4401763741	GLW4.4-20170207-14:11-1.3	2/7/2017	SM2540C	TDS	Total Dissolved Solids	1500		5.00	10	mg/l				
4401763741	GLW4.4-20170207-14:11-1.3-FD	2/7/2017	E300	16887-00-6	Chloride	270		0.50	50	mg/l				
4401763741	GLW4.4-20170207-14:11-1.3-FD	2/7/2017	E300	24959-67-9	Bromide	1.2		0.50	1.0	mg/l				
4401763741	GLW4.4-20170207-14:11-1.3-FD	2/7/2017	E300.1	14866-68-3	Chlorate	96		20.00	40	ug/l				
4401763741	GLW4.4-20170207-14:11-1.3-FD	2/7/2017	E314.0	14797-73-0	Perchlorate	25		0.95	4.0	ug/l				
4401763741	GLW4.4-20170207-14:11-1.3-FD	2/7/2017	SM2540C	TDS	Total Dissolved Solids	1500		5.00	10	mg/l				
4401763751	LW6.05-20170208-12:35-0.8	2/8/2017	E300	16887-00-6	Chloride	240		0.25	25	mg/l				
4401763751	LW6.05-20170208-12:35-0.8	2/8/2017	E300	24959-67-9	Bromide	0.56		0.25	0.50	mg/l				
4401763751	LW6.05-20170208-12:35-0.8	2/8/2017	E300.1	14866-68-3	Chlorate	72		20.00	40	ug/l				
4401763751	LW6.05-20170208-12:35-0.8	2/8/2017	E314.0	14797-73-0	Perchlorate	11		0.95	4.0	ug/l	J	f	FD RPD >30%	32 %
4401763751	LW6.05-20170208-12:35-0.8	2/8/2017	SM2540C	TDS	Total Dissolved Solids	1500		5.00	10	mg/l				
4401763751	LW6.05-20170208-12:35-0.8-FD	2/8/2017	E300	16887-00-6	Chloride	250		0.50	50	mg/l				
4401763751	LW6.05-20170208-12:35-0.8-FD	2/8/2017	E300	24959-67-9	Bromide	0.70	J	0.50	1.0	mg/l	J	sp	Detect <PQL	- -
4401763751	LW6.05-20170208-12:35-0.8-FD	2/8/2017	E300.1	14866-68-3	Chlorate	70		20.00	40	ug/l				
4401763751	LW6.05-20170208-12:35-0.8-FD	2/8/2017	E314.0	14797-73-0	Perchlorate	8.0		0.95	4.0	ug/l	J	f	FD RPD >30%	32 %
4401763751	LW6.05-20170208-12:35-0.8-FD	2/8/2017	SM2540C	TDS	Total Dissolved Solids	1500		5.00	10	mg/l				
4401763751	LW7.2-20170208-11:07-0.8	2/8/2017	E300	16887-00-6	Chloride	220		0.25	25	mg/l				
4401763751	LW7.2-20170208-11:07-0.8	2/8/2017	E300	24959-67-9	Bromide	0.54		0.25	0.50	mg/l				
4401763751	LW7.2-20170208-11:07-0.8	2/8/2017	E300.1	14866-68-3	Chlorate	86		20.00	40	ug/l				
4401763751	LW7.2-20170208-11:07-0.8	2/8/2017	E314.0	14797-73-0	Perchlorate	0.95	U	0.95	4.0	ug/l				
4401763751	LW7.2-20170208-11:07-0.8	2/8/2017	SM2540C	TDS	Total Dissolved Solids	1300		5.00	10	mg/l				
4401763761	LW6.05-20170207-14:48-0.7	2/7/2017	E300	16887-00-6	Chloride	250		0.25	25	mg/l				
4401763761	LW6.05-20170207-14:48-0.7	2/7/2017	E300	24959-67-9	Bromide	1.2		0.25	0.50	mg/l				
4401763761	LW6.05-20170207-14:48-0.7	2/7/2017	E300.1	14866-68-3	Chlorate	50		20.00	40	ug/l				
4401763761	LW6.05-20170207-14:48-0.7	2/7/2017	E314.0	14797-73-0	Perchlorate	6.0		0.95	4.0	ug/l				
4401763761	LW6.05-20170207-14:48-0.7	2/7/2017	SM2540C	TDS	Total Dissolved Solids	1400		5.00	10	mg/l				
4401763761	LW6.7-20170207-14:25-0.6	2/7/2017	E300	16887-00-6	Chloride	240		0.25	25	mg/l				
4401763761	LW6.7-20170207-14:25-0.6	2/7/2017	E300	24959-67-9	Bromide	1.4		0.25	0.50	mg/l				
4401763761	LW6.7-20170207-14:25-0.6	2/7/2017	E300.1	14866-68-3	Chlorate	55		20.00	40	ug/l				
4401763761	LW6.7-20170207-14:25-0.6	2/7/2017	E314.0	14797-73-0	Perchlorate	0.95	U	0.95	4.0	ug/l				
4401763761	LW6.7-20170207-14:25-0.6	2/7/2017	SM2540C	TDS	Total Dissolved Solids	1400		5.00	10	mg/l				
4401763761	LW6.7-20170207-14:25-0.6-FD	2/7/2017	E300	16887-00-6	Chloride	240		0.25	25	mg/l				
4401763761	LW6.7-20170207-14:25-0.6-FD	2/7/2017	E300	24959-67-9	Bromide	1.4		0.25	0.50	mg/l				
4401763761	LW6.7-20170207-14:25-0.6-FD	2/7/2017	E300.1	14866-68-3	Chlorate	55		20.00	40	ug/l				
4401763761	LW6.7-20170207-14:25-0.6-FD	2/7/2017	E314.0	14797-73-0	Perchlorate	0.95	U	0.95	4.0	ug/l				
4401763761	LW6.7-20170207-14:25-0.6-FD	2/7/2017	SM2540C	TDS	Total Dissolved Solids	1400		5.00	10	mg/l				
4401763761	LW7.2-20170207-14:02-0.9	2/7/2017	E300	16887-00-6	Chloride	210		0.25	25	mg/l				
4401763761	LW7.2-20170207-14:02-0.9	2/7/2017	E300	24959-67-9	Bromide	1.1		0.25	0.50	mg/l				
4401763761	LW7.2-20170207-14:02-0.9	2/7/2017	E300.1	14866-68-3	Chlorate	44		20.00	40	ug/l				
4401763761	LW7.2-20170207-14:02-0.9	2/7/2017	E314.0	14797-73-0	Perchlorate	0.95	U	0.95	4.0	ug/l				
4401763761	LW7.2-20170207-14:02-0.9	2/7/2017	SM2540C	TDS	Total Dissolved Solids	1200		5.00	10	mg/l				
4401763801	GLW4.4-20170207-16:06-1.2	2/7/2017	E300	16887-00-6	Chloride	260		0.25	25	mg/l				
4401763801	GLW4.4-20170207-16:06-1.2	2/7/2017	E300	24959-67-9	Bromide	0.32	J	0.25	0.50	mg/l	J	sp	Detect <PQL	- -

Table 4
All Results, Qualifiers, and Reason Codes
NERT Downgradient Study Area
Henderson, Nevada

SDG	Client Sample ID	Sample Date	Method	Client Analyte ID	Analyte	Lab Result	Lab Qualifier	SQL	PQL	Units	Validator Qualifier	Reason Code	Reason Code Definition	Qualification Finding	
4401763801	GLW4.4-20170207-16:06-1.2	2/7/2017	E300.1	14866-68-3	Chlorate	80		20.00	40	ug/l					
4401763801	GLW4.4-20170207-16:06-1.2	2/7/2017	E314.0	14797-73-0	Perchlorate	20		0.95	4.0	ug/l	J+	m	matrix spike %R	164/169	%
4401763801	GLW4.4-20170207-16:06-1.2	2/7/2017	SM2540C	TDS	Total Dissolved Solids	1400		5.00	10	mg/l					
4401763801	GLW4.85-20170207-15:42-0.8	2/7/2017	E300	16887-00-6	Chloride	300		0.25	25	mg/l					
4401763801	GLW4.85-20170207-15:42-0.8	2/7/2017	E300	24959-67-9	Bromide	0.29	J	0.25	0.50	mg/l	J	sp	Detect <PQL	-	-
4401763801	GLW4.85-20170207-15:42-0.8	2/7/2017	E300.1	14866-68-3	Chlorate	1200		100.00	200	ug/l					
4401763801	GLW4.85-20170207-15:42-0.8	2/7/2017	E314.0	14797-73-0	Perchlorate	290		4.75	20	ug/l					
4401763801	GLW4.85-20170207-15:42-0.8	2/7/2017	SM2540C	TDS	Total Dissolved Solids	1600		5.00	10	mg/l					
4401763801	GLW4.85-20170207-15:42-0.8-FD	2/7/2017	E300	16887-00-6	Chloride	310		0.25	25	mg/l					
4401763801	GLW4.85-20170207-15:42-0.8-FD	2/7/2017	E300	24959-67-9	Bromide	0.32	J	0.25	0.50	mg/l	J	sp	Detect <PQL	-	-
4401763801	GLW4.85-20170207-15:42-0.8-FD	2/7/2017	E300.1	14866-68-3	Chlorate	1200		100.00	200	ug/l					
4401763801	GLW4.85-20170207-15:42-0.8-FD	2/7/2017	E314.0	14797-73-0	Perchlorate	310		4.75	20	ug/l					
4401763801	GLW4.85-20170207-15:42-0.8-FD	2/7/2017	SM2540C	TDS	Total Dissolved Solids	1600		5.00	20	mg/l					
4401763801	LW4.1-20170207-16:20-0.4	2/7/2017	E300	16887-00-6	Chloride	280		0.25	25	mg/l					
4401763801	LW4.1-20170207-16:20-0.4	2/7/2017	E300	24959-67-9	Bromide	0.25	U	0.25	0.50	mg/l					
4401763801	LW4.1-20170207-16:20-0.4	2/7/2017	E300.1	14866-68-3	Chlorate	160		20.00	40	ug/l					
4401763801	LW4.1-20170207-16:20-0.4	2/7/2017	E314.0	14797-73-0	Perchlorate	38	F1	0.95	4.0	ug/l	J+	m	matrix spike %R	164/169	%
4401763801	LW4.1-20170207-16:20-0.4	2/7/2017	SM2540C	TDS	Total Dissolved Solids	1500		5.00	10	mg/l					
4401763821	GLW4.9-20170207-16:45-1.4	2/7/2017	E300	16887-00-6	Chloride	280		0.25	25	mg/l					
4401763821	GLW4.9-20170207-16:45-1.4	2/7/2017	E300	24959-67-9	Bromide	0.32	J	0.25	0.50	mg/l	J	sp	Detect <PQL	-	-
4401763821	GLW4.9-20170207-16:45-1.4	2/7/2017	E300.1	14866-68-3	Chlorate	77		20.00	40	ug/l					
4401763821	GLW4.9-20170207-16:45-1.4	2/7/2017	E314.0	14797-73-0	Perchlorate	17		0.95	4.0	ug/l					
4401763821	GLW4.9-20170207-16:45-1.4	2/7/2017	SM2540C	TDS	Total Dissolved Solids	1400		5.00	10	mg/l					
4401763821	LW4.95-20170207-16:30-1.2	2/7/2017	E300	16887-00-6	Chloride	270		0.25	25	mg/l					
4401763821	LW4.95-20170207-16:30-1.2	2/7/2017	E300	24959-67-9	Bromide	0.26	J	0.25	0.50	mg/l	J	sp	Detect <PQL	-	-
4401763821	LW4.95-20170207-16:30-1.2	2/7/2017	E300.1	14866-68-3	Chlorate	63		20.00	40	ug/l					
4401763821	LW4.95-20170207-16:30-1.2	2/7/2017	E314.0	14797-73-0	Perchlorate	13		0.95	4.0	ug/l					
4401763821	LW4.95-20170207-16:30-1.2	2/7/2017	SM2540C	TDS	Total Dissolved Solids	1400		5.00	10	mg/l					
4401763821	LW4.95-20170207-16:30-1.2-FD	2/7/2017	E300	16887-00-6	Chloride	270		0.25	25	mg/l					
4401763821	LW4.95-20170207-16:30-1.2-FD	2/7/2017	E300	24959-67-9	Bromide	0.25	U	0.25	0.50	mg/l					
4401763821	LW4.95-20170207-16:30-1.2-FD	2/7/2017	E300.1	14866-68-3	Chlorate	59		20.00	40	ug/l					
4401763821	LW4.95-20170207-16:30-1.2-FD	2/7/2017	E314.0	14797-73-0	Perchlorate	12		0.95	4.0	ug/l					
4401763821	LW4.95-20170207-16:30-1.2-FD	2/7/2017	SM2540C	TDS	Total Dissolved Solids	1400		5.00	10	mg/l					
4401763821	LW5.3-20170207-15:45-1.2	2/7/2017	E300	16887-00-6	Chloride	280		0.25	25	mg/l					
4401763821	LW5.3-20170207-15:45-1.2	2/7/2017	E300	24959-67-9	Bromide	0.25	J	0.25	0.50	mg/l	J	sp	Detect <PQL	-	-
4401763821	LW5.3-20170207-15:45-1.2	2/7/2017	E300.1	14866-68-3	Chlorate	54		20.00	40	ug/l					
4401763821	LW5.3-20170207-15:45-1.2	2/7/2017	E314.0	14797-73-0	Perchlorate	11		0.95	4.0	ug/l					
4401763821	LW5.3-20170207-15:45-1.2	2/7/2017	SM2540C	TDS	Total Dissolved Solids	1400		5.00	10	mg/l					
4401763821	LW5.3-20170207-15:50-2.4	2/7/2017	E300	16887-00-6	Chloride	280		0.25	25	mg/l					
4401763821	LW5.3-20170207-15:50-2.4	2/7/2017	E300	24959-67-9	Bromide	0.25	J	0.25	0.50	mg/l	J	sp	Detect <PQL	-	-
4401763821	LW5.3-20170207-15:50-2.4	2/7/2017	E300.1	14866-68-3	Chlorate	52		20.00	40	ug/l					
4401763821	LW5.3-20170207-15:50-2.4	2/7/2017	E314.0	14797-73-0	Perchlorate	9.6		0.95	4.0	ug/l					
4401763821	LW5.3-20170207-15:50-2.4	2/7/2017	SM2540C	TDS	Total Dissolved Solids	1400		5.00	10	mg/l					
4401763841	GLW3.78-20170207-16:35-1.2	2/7/2017	E300	16887-00-6	Chloride	260		0.50	50	mg/l					
4401763841	GLW3.78-20170207-16:35-1.2	2/7/2017	E300	24959-67-9	Bromide	0.50	U	0.50	1.0	mg/l					
4401763841	GLW3.78-20170207-16:35-1.2	2/7/2017	E300.1	14866-68-3	Chlorate	200		20.00	40	ug/l					
4401763841	GLW3.78-20170207-16:35-1.2	2/7/2017	E314.0	14797-73-0	Perchlorate	48		0.95	4.0	ug/l					
4401763841	GLW3.78-20170207-16:35-1.2	2/7/2017	SM2540C	TDS	Total Dissolved Solids	1500		5.00	10	mg/l					
4401763841	LW3.4-20170207-17:00-0.7	2/7/2017	E300	16887-00-6	Chloride	250		0.50	50	mg/l					
4401763841	LW3.4-20170207-17:00-0.7	2/7/2017	E300	24959-67-9	Bromide	0.50	U	0.50	1.0	mg/l					

Table 4
All Results, Qualifiers, and Reason Codes
NERT Downgradient Study Area
Henderson, Nevada

SDG	Client Sample ID	Sample Date	Method	Client Analyte ID	Analyte	Lab Result	Lab Qualifier	SQL	PQL	Units	Validator Qualifier	Reason Code	Reason Code Definition	Qualification Finding
4401763841	LW3.4-20170207-17:00-0.7	2/7/2017	E300.1	14866-68-3	Chlorate	140		20.00	40	ug/l				
4401763841	LW3.4-20170207-17:00-0.7	2/7/2017	E314.0	14797-73-0	Perchlorate	39		0.95	4.0	ug/l				
4401763841	LW3.4-20170207-17:00-0.7	2/7/2017	SM2540C	TDS	Total Dissolved Solids	1500		5.00	10	mg/l				
4401763841	LW3.75-20170207-16:25-1.0	2/7/2017	E300	16887-00-6	Chloride	250		0.50	50	mg/l				
4401763841	LW3.75-20170207-16:25-1.0	2/7/2017	E300	24959-67-9	Bromide	0.55	J	0.50	1.0	mg/l	J	sp	Detect <PQL	- -
4401763841	LW3.75-20170207-16:25-1.0	2/7/2017	E300.1	14866-68-3	Chlorate	110		20.00	40	ug/l				
4401763841	LW3.75-20170207-16:25-1.0	2/7/2017	E314.0	14797-73-0	Perchlorate	27		0.95	4.0	ug/l				
4401763841	LW3.75-20170207-16:25-1.0	2/7/2017	SM2540C	TDS	Total Dissolved Solids	1400		5.00	10	mg/l				
4401763841	LW3.85-20170207-15:50-0.6	2/7/2017	E300	16887-00-6	Chloride	250		0.50	50	mg/l				
4401763841	LW3.85-20170207-15:50-0.6	2/7/2017	E300	24959-67-9	Bromide	0.70	J	0.50	1.0	mg/l	J	sp	Detect <PQL	- -
4401763841	LW3.85-20170207-15:50-0.6	2/7/2017	E300.1	14866-68-3	Chlorate	110		20.00	40	ug/l				
4401763841	LW3.85-20170207-15:50-0.6	2/7/2017	E314.0	14797-73-0	Perchlorate	31		0.95	4.0	ug/l				
4401763841	LW3.85-20170207-15:50-0.6	2/7/2017	SM2540C	TDS	Total Dissolved Solids	1500		5.00	10	mg/l				
4401763841	LW3.85-20170207-15:50-0.6-FD	2/7/2017	E300	16887-00-6	Chloride	250		0.50	50	mg/l				
4401763841	LW3.85-20170207-15:50-0.6-FD	2/7/2017	E300	24959-67-9	Bromide	0.50	J	0.50	1.0	mg/l	J	sp	Detect <PQL	- -
4401763841	LW3.85-20170207-15:50-0.6-FD	2/7/2017	E300.1	14866-68-3	Chlorate	110		20.00	40	ug/l				
4401763841	LW3.85-20170207-15:50-0.6-FD	2/7/2017	E314.0	14797-73-0	Perchlorate	30		0.95	4.0	ug/l				
4401763841	LW3.85-20170207-15:50-0.6-FD	2/7/2017	SM2540C	TDS	Total Dissolved Solids	1500		5.00	10	mg/l				
4401763841	LWC3.7-20170207-16:10-0.6	2/7/2017	E300	16887-00-6	Chloride	370		1.25	100	mg/l				
4401763841	LWC3.7-20170207-16:10-0.6	2/7/2017	E300	24959-67-9	Bromide	1.25	U	1.25	2.5	mg/l				
4401763841	LWC3.7-20170207-16:10-0.6	2/7/2017	E300.1	14866-68-3	Chlorate	2600		500.00	1000	ug/l				
4401763841	LWC3.7-20170207-16:10-0.6	2/7/2017	E314.0	14797-73-0	Perchlorate	830		19.00	80	ug/l				
4401763841	LWC3.7-20170207-16:10-0.6	2/7/2017	SM2540C	TDS	Total Dissolved Solids	2200		5.00	20	mg/l				
4401763901	GLWC6.1_3-20170207-15:06-0.9	2/7/2017	E300	16887-00-6	Chloride	260		0.25	25	mg/l				
4401763901	GLWC6.1_3-20170207-15:06-0.9	2/7/2017	E300	24959-67-9	Bromide	0.25	U	0.25	0.50	mg/l				
4401763901	GLWC6.1_3-20170207-15:06-0.9	2/7/2017	E300.1	14866-68-3	Chlorate	100		20.00	40	ug/l				
4401763901	GLWC6.1_3-20170207-15:06-0.9	2/7/2017	E314.0	14797-73-0	Perchlorate	0.95	U	0.95	4.0	ug/l				
4401763901	GLWC6.1_3-20170207-15:06-0.9	2/7/2017	SM2540C	TDS	Total Dissolved Solids	1100		5.00	10	mg/l				
4401763901	GLWC6.1_3-20170207-15:06-0.9-FD	2/7/2017	E300	16887-00-6	Chloride	270		0.25	25	mg/l				
4401763901	GLWC6.1_3-20170207-15:06-0.9-FD	2/7/2017	E300	24959-67-9	Bromide	0.25	U	0.25	0.50	mg/l				
4401763901	GLWC6.1_3-20170207-15:06-0.9-FD	2/7/2017	E300.1	14866-68-3	Chlorate	100		20.00	40	ug/l				
4401763901	GLWC6.1_3-20170207-15:06-0.9-FD	2/7/2017	E314.0	14797-73-0	Perchlorate	0.95	U	0.95	4.0	ug/l				
4401763901	GLWC6.1_3-20170207-15:06-0.9-FD	2/7/2017	SM2540C	TDS	Total Dissolved Solids	1100		5.00	10	mg/l				
4401763901	GLWC6.1_4-20170207-16:10-1.3	2/7/2017	E300	16887-00-6	Chloride	350		0.25	25	mg/l				
4401763901	GLWC6.1_4-20170207-16:10-1.3	2/7/2017	E300	24959-67-9	Bromide	0.31	J	0.25	0.50	mg/l	J	sp	Detect <PQL	- -
4401763901	GLWC6.1_4-20170207-16:10-1.3	2/7/2017	E300.1	14866-68-3	Chlorate	92		20.00	40	ug/l				
4401763901	GLWC6.1_4-20170207-16:10-1.3	2/7/2017	E314.0	14797-73-0	Perchlorate	0.95	U	0.95	4.0	ug/l				
4401763901	GLWC6.1_4-20170207-16:10-1.3	2/7/2017	SM2540C	TDS	Total Dissolved Solids	1300		5.00	10	mg/l				
4401763901	LW5.9-20170207-15:27-0.6	2/7/2017	E300	16887-00-6	Chloride	280		0.25	25	mg/l				
4401763901	LW5.9-20170207-15:27-0.6	2/7/2017	E300	24959-67-9	Bromide	0.30	J	0.25	0.50	mg/l	J	sp	Detect <PQL	- -
4401763901	LW5.9-20170207-15:27-0.6	2/7/2017	E300.1	14866-68-3	Chlorate	55		20.00	40	ug/l				
4401763901	LW5.9-20170207-15:27-0.6	2/7/2017	E314.0	14797-73-0	Perchlorate	10		0.95	4.0	ug/l				
4401763901	LW5.9-20170207-15:27-0.6	2/7/2017	SM2540C	TDS	Total Dissolved Solids	1400		5.00	10	mg/l				
4401763901	LWC6.1_1-20170207-14:45-0.8	2/7/2017	E300	16887-00-6	Chloride	280		0.25	25	mg/l				
4401763901	LWC6.1_1-20170207-14:45-0.8	2/7/2017	E300	24959-67-9	Bromide	0.25	U	0.25	0.50	mg/l				
4401763901	LWC6.1_1-20170207-14:45-0.8	2/7/2017	E300.1	14866-68-3	Chlorate	100		20.00	40	ug/l				
4401763901	LWC6.1_1-20170207-14:45-0.8	2/7/2017	E314.0	14797-73-0	Perchlorate	0.95	U	0.95	4.0	ug/l				
4401763901	LWC6.1_1-20170207-14:45-0.8	2/7/2017	SM2540C	TDS	Total Dissolved Solids	1100		5.00	10	mg/l				
4401763901	LWC6.1_2-20170207-14:58-0.7	2/7/2017	E300	16887-00-6	Chloride	110		0.25	25	mg/l				
4401763901	LWC6.1_2-20170207-14:58-0.7	2/7/2017	E300	24959-67-9	Bromide	0.25	U	0.25	0.50	mg/l				

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NERT Downgradient Study Area
Henderson, Nevada

SDG	Client Sample ID	Sample Date	Method	Client Analyte ID	Analyte	Lab Result	Lab Qualifier	SQL	PQL	Units	Validator Qualifier	Reason Code	Reason Code Definition	Qualification Finding
4401763901	LWC6.1_2-20170207-14:58-0.7	2/7/2017	E300.1	14866-68-3	Chlorate	47		20.00	40	ug/l				
4401763901	LWC6.1_2-20170207-14:58-0.7	2/7/2017	E314.0	14797-73-0	Perchlorate	0.95	U	0.95	4.0	ug/l				
4401763901	LWC6.1_2-20170207-14:58-0.7	2/7/2017	SM2540C	TDS	Total Dissolved Solids	610		5.00	10	mg/l				
4401764851	GLW4.4-20170208-13:47-1.2	2/8/2017	E300	16887-00-6	Chloride	260		0.25	25	mg/l				
4401764851	GLW4.4-20170208-13:47-1.2	2/8/2017	E300	24959-67-9	Bromide	0.25	U	0.25	0.50	mg/l				
4401764851	GLW4.4-20170208-13:47-1.2	2/8/2017	E300.1	14866-68-3	Chlorate	110		20.00	40	ug/l				
4401764851	GLW4.4-20170208-13:47-1.2	2/8/2017	E314.0	14797-73-0	Perchlorate	27		0.95	4.0	ug/l				
4401764851	GLW4.4-20170208-13:47-1.2	2/8/2017	SM2540C	TDS	Total Dissolved Solids	1400		5.00	10	mg/l				
4401764881	GLWC6.1_3-20170208-15:00-1.0	2/8/2017	E300	16887-00-6	Chloride	240		0.25	25	mg/l				
4401764881	GLWC6.1_3-20170208-15:00-1.0	2/8/2017	E300	24959-67-9	Bromide	0.45	J	0.25	0.50	mg/l	J	sp	Detect <PQL	-
4401764881	GLWC6.1_3-20170208-15:00-1.0	2/8/2017	E300.1	14866-68-3	Chlorate	110		50.00	100	ug/l				
4401764881	GLWC6.1_3-20170208-15:00-1.0	2/8/2017	E314.0	14797-73-0	Perchlorate	0.95	U	0.95	4.0	ug/l				
4401764881	GLWC6.1_3-20170208-15:00-1.0	2/8/2017	SM2540C	TDS	Total Dissolved Solids	1100		5.00	10	mg/l				
4401764881	GLWC6.1_4-20170208-16:07-1.0	2/8/2017	E300	16887-00-6	Chloride	250		0.25	25	mg/l				
4401764881	GLWC6.1_4-20170208-16:07-1.0	2/8/2017	E300	24959-67-9	Bromide	0.54		0.25	0.50	mg/l				
4401764881	GLWC6.1_4-20170208-16:07-1.0	2/8/2017	E300.1	14866-68-3	Chlorate	81		20.00	40	ug/l				
4401764881	GLWC6.1_4-20170208-16:07-1.0	2/8/2017	E314.0	14797-73-0	Perchlorate	0.95	U	0.95	4.0	ug/l				
4401764881	GLWC6.1_4-20170208-16:07-1.0	2/8/2017	SM2540C	TDS	Total Dissolved Solids	1100		5.00	10	mg/l				
4401764881	LW5.9-20170208-15:41-0.6	2/8/2017	E300	16887-00-6	Chloride	240		0.25	25	mg/l				
4401764881	LW5.9-20170208-15:41-0.6	2/8/2017	E300	24959-67-9	Bromide	0.55		0.25	0.50	mg/l				
4401764881	LW5.9-20170208-15:41-0.6	2/8/2017	E300.1	14866-68-3	Chlorate	61		20.00	40	ug/l				
4401764881	LW5.9-20170208-15:41-0.6	2/8/2017	E314.0	14797-73-0	Perchlorate	9.6		0.95	4.0	ug/l				
4401764881	LW5.9-20170208-15:41-0.6	2/8/2017	SM2540C	TDS	Total Dissolved Solids	1300		5.00	10	mg/l				
4401764881	LWC6.1_1-20170208-14:43-0.7	2/8/2017	E300	16887-00-6	Chloride	240		0.25	25	mg/l				
4401764881	LWC6.1_1-20170208-14:43-0.7	2/8/2017	E300	24959-67-9	Bromide	0.49	J	0.25	0.50	mg/l	J	sp	Detect <PQL	-
4401764881	LWC6.1_1-20170208-14:43-0.7	2/8/2017	E300.1	14866-68-3	Chlorate	90		20.00	40	ug/l				
4401764881	LWC6.1_1-20170208-14:43-0.7	2/8/2017	E314.0	14797-73-0	Perchlorate	0.95	U	0.95	4.0	ug/l				
4401764881	LWC6.1_1-20170208-14:43-0.7	2/8/2017	SM2540C	TDS	Total Dissolved Solids	1100		5.00	10	mg/l				
4401764881	LWC6.1_2-20170208-14:53-0.7	2/8/2017	E300	16887-00-6	Chloride	110		0.25	25	mg/l				
4401764881	LWC6.1_2-20170208-14:53-0.7	2/8/2017	E300	24959-67-9	Bromide	0.32	J	0.25	0.50	mg/l	J	sp	Detect <PQL	-
4401764881	LWC6.1_2-20170208-14:53-0.7	2/8/2017	E300.1	14866-68-3	Chlorate	64		20.00	40	ug/l				
4401764881	LWC6.1_2-20170208-14:53-0.7	2/8/2017	E314.0	14797-73-0	Perchlorate	0.95	U	0.95	4.0	ug/l				
4401764881	LWC6.1_2-20170208-14:53-0.7	2/8/2017	SM2540C	TDS	Total Dissolved Solids	590		5.00	10	mg/l				
4401764961	LW4.95-20170208-13:05-1.2	2/8/2017	E300	16887-00-6	Chloride	250		0.50	50	mg/l				
4401764961	LW4.95-20170208-13:05-1.2	2/8/2017	E300	24959-67-9	Bromide	1.7		0.50	1.0	mg/l				
4401764961	LW4.95-20170208-13:05-1.2	2/8/2017	E300.1	14866-68-3	Chlorate	81		20.00	40	ug/l				
4401764961	LW4.95-20170208-13:05-1.2	2/8/2017	E314.0	14797-73-0	Perchlorate	14		0.95	4.0	ug/l				
4401764961	LW4.95-20170208-13:05-1.2	2/8/2017	SM2540C	TDS	Total Dissolved Solids	1400		5.00	10	mg/l				
4401765001	LW3.4-20170208-14:18-0.6	2/8/2017	E300	16887-00-6	Chloride	260		0.50	50	mg/l				
4401765001	LW3.4-20170208-14:18-0.6	2/8/2017	E300	24959-67-9	Bromide	1.7		0.50	1.0	mg/l				
4401765001	LW3.4-20170208-14:18-0.6	2/8/2017	E300.1	14866-68-3	Chlorate	180		20.00	40	ug/l				
4401765001	LW3.4-20170208-14:18-0.6	2/8/2017	E314.0	14797-73-0	Perchlorate	46		0.95	4.0	ug/l				
4401765001	LW3.4-20170208-14:18-0.6	2/8/2017	SM2540C	TDS	Total Dissolved Solids	1400		5.00	10	mg/l				
4401765011	LW6.05-20170208-15:36-0.7	2/8/2017	E300	16887-00-6	Chloride	240		0.25	25	mg/l				
4401765011	LW6.05-20170208-15:36-0.7	2/8/2017	E300	24959-67-9	Bromide	0.32	J	0.25	0.50	mg/l	J	sp	Detect <PQL	-
4401765011	LW6.05-20170208-15:36-0.7	2/8/2017	E300.1	14866-68-3	Chlorate	55		20.00	40	ug/l				
4401765011	LW6.05-20170208-15:36-0.7	2/8/2017	E314.0	14797-73-0	Perchlorate	7.7		0.95	4.0	ug/l				
4401765011	LW6.05-20170208-15:36-0.7	2/8/2017	SM2540C	TDS	Total Dissolved Solids	1400		5.00	10	mg/l				
4401765011	LW6.7-20170208-15:02-0.6	2/8/2017	E300	16887-00-6	Chloride	250		0.25	25	mg/l				
4401765011	LW6.7-20170208-15:02-0.6	2/8/2017	E300	24959-67-9	Bromide	0.33	J	0.25	0.50	mg/l	J	sp	Detect <PQL	-

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SDG	Client Sample ID	Sample Date	Method	Client Analyte ID	Analyte	Lab Result	Lab Qualifier	SQL	PQL	Units	Validator Qualifier	Reason Code	Reason Code Definition	Qualification Finding
4401765011	LW6.7-20170208-15:02-0.6	2/8/2017	E300.1	14866-68-3	Chlorate	55		20.00	40	ug/l				
4401765011	LW6.7-20170208-15:02-0.6	2/8/2017	E314.0	14797-73-0	Perchlorate	0.95	U	0.95	4.0	ug/l				
4401765011	LW6.7-20170208-15:02-0.6	2/8/2017	SM2540C	TDS	Total Dissolved Solids	1400		5.00	10	mg/l				
4401765011	LW7.2-20170208-14:40-0.9	2/8/2017	E300	16887-00-6	Chloride	220		0.25	25	mg/l				
4401765011	LW7.2-20170208-14:40-0.9	2/8/2017	E300	24959-67-9	Bromide	0.25	U	0.25	0.50	mg/l				
4401765011	LW7.2-20170208-14:40-0.9	2/8/2017	E300.1	14866-68-3	Chlorate	49		20.00	40	ug/l				
4401765011	LW7.2-20170208-14:40-0.9	2/8/2017	E314.0	14797-73-0	Perchlorate	0.95	U	0.95	4.0	ug/l				
4401765011	LW7.2-20170208-14:40-0.9	2/8/2017	SM2540C	TDS	Total Dissolved Solids	1100		5.00	10	mg/l				
4401765051	GLW4.4-20170208-16:21-1.3	2/8/2017	E300	16887-00-6	Chloride	230		0.25	25	mg/l				
4401765051	GLW4.4-20170208-16:21-1.3	2/8/2017	E300	24959-67-9	Bromide	0.56		0.25	0.50	mg/l				
4401765051	GLW4.4-20170208-16:21-1.3	2/8/2017	E300.1	14866-68-3	Chlorate	110		20.00	40	ug/l				
4401765051	GLW4.4-20170208-16:21-1.3	2/8/2017	E314.0	14797-73-0	Perchlorate	17		0.95	4.0	ug/l				
4401765051	GLW4.4-20170208-16:21-1.3	2/8/2017	SM2540C	TDS	Total Dissolved Solids	1400		5.00	10	mg/l				
4401765051	GLW4.85-20170208-16:00-0.8	2/8/2017	E300	16887-00-6	Chloride	270		0.25	25	mg/l				
4401765051	GLW4.85-20170208-16:00-0.8	2/8/2017	E300	24959-67-9	Bromide	1.0		0.25	0.50	mg/l				
4401765051	GLW4.85-20170208-16:00-0.8	2/8/2017	E300.1	14866-68-3	Chlorate	940		50.00	100	ug/l				
4401765051	GLW4.85-20170208-16:00-0.8	2/8/2017	E314.0	14797-73-0	Perchlorate	270		4.75	20	ug/l				
4401765051	GLW4.85-20170208-16:00-0.8	2/8/2017	SM2540C	TDS	Total Dissolved Solids	1600		5.00	10	mg/l				
4401765051	LW4.1-20170208-16:33-0.4	2/8/2017	E300	16887-00-6	Chloride	250		0.25	25	mg/l				
4401765051	LW4.1-20170208-16:33-0.4	2/8/2017	E300	24959-67-9	Bromide	0.54		0.25	0.50	mg/l				
4401765051	LW4.1-20170208-16:33-0.4	2/8/2017	E300.1	14866-68-3	Chlorate	170		50.00	100	ug/l				
4401765051	LW4.1-20170208-16:33-0.4	2/8/2017	E314.0	14797-73-0	Perchlorate	0.95	U	0.95	4.0	ug/l				
4401765051	LW4.1-20170208-16:33-0.4	2/8/2017	SM2540C	TDS	Total Dissolved Solids	1500		5.00	10	mg/l				
4401765081	GLW4.9-20170208-16:35-1.4	2/8/2017	E300	16887-00-6	Chloride	240		0.50	50	mg/l				
4401765081	GLW4.9-20170208-16:35-1.4	2/8/2017	E300	24959-67-9	Bromide	1.4		0.50	1.0	mg/l	J	f	FD RPD >30%	33 %
4401765081	GLW4.9-20170208-16:35-1.4	2/8/2017	E300.1	14866-68-3	Chlorate	84		20.00	40	ug/l				
4401765081	GLW4.9-20170208-16:35-1.4	2/8/2017	E314.0	14797-73-0	Perchlorate	15		0.95	4.0	ug/l				
4401765081	GLW4.9-20170208-16:35-1.4	2/8/2017	SM2540C	TDS	Total Dissolved Solids	1400		5.00	10	mg/l				
4401765081	GLW4.9-20170208-16:35-1.4-FD	2/8/2017	E300	16887-00-6	Chloride	240		0.50	50	mg/l				
4401765081	GLW4.9-20170208-16:35-1.4-FD	2/8/2017	E300	24959-67-9	Bromide	1.0		0.50	1.0	mg/l	J	f	FD RPD >30%	33 %
4401765081	GLW4.9-20170208-16:35-1.4-FD	2/8/2017	E300.1	14866-68-3	Chlorate	84		20.00	40	ug/l				
4401765081	GLW4.9-20170208-16:35-1.4-FD	2/8/2017	E314.0	14797-73-0	Perchlorate	14		0.95	4.0	ug/l				
4401765081	GLW4.9-20170208-16:35-1.4-FD	2/8/2017	SM2540C	TDS	Total Dissolved Solids	1400		5.00	10	mg/l				
4401765081	LW4.95-20170208-16:20-1.3	2/8/2017	E300	16887-00-6	Chloride	240		0.25	25	mg/l				
4401765081	LW4.95-20170208-16:20-1.3	2/8/2017	E300	24959-67-9	Bromide	1.3		0.25	0.50	mg/l				
4401765081	LW4.95-20170208-16:20-1.3	2/8/2017	E300.1	14866-68-3	Chlorate	2000		200.00	400	ug/l				
4401765081	LW4.95-20170208-16:20-1.3	2/8/2017	E314.0	14797-73-0	Perchlorate	11		0.95	4.0	ug/l				
4401765081	LW4.95-20170208-16:20-1.3	2/8/2017	SM2540C	TDS	Total Dissolved Solids	1300		5.00	10	mg/l				
4401765081	LW5.3-20170208-15:45-1.2	2/8/2017	E300	16887-00-6	Chloride	240		0.25	25	mg/l				
4401765081	LW5.3-20170208-15:45-1.2	2/8/2017	E300	24959-67-9	Bromide	1.3		0.25	0.50	mg/l				
4401765081	LW5.3-20170208-15:45-1.2	2/8/2017	E300.1	14866-68-3	Chlorate	60		20.00	40	ug/l				
4401765081	LW5.3-20170208-15:45-1.2	2/8/2017	E314.0	14797-73-0	Perchlorate	8.9		0.95	4.0	ug/l				
4401765081	LW5.3-20170208-15:45-1.2	2/8/2017	SM2540C	TDS	Total Dissolved Solids	1400		5.00	10	mg/l				
4401765081	LW5.3-20170208-15:50-2.4	2/8/2017	E300	16887-00-6	Chloride	240		0.25	25	mg/l				
4401765081	LW5.3-20170208-15:50-2.4	2/8/2017	E300	24959-67-9	Bromide	1.4		0.25	0.50	mg/l				
4401765081	LW5.3-20170208-15:50-2.4	2/8/2017	E300.1	14866-68-3	Chlorate	64		20.00	40	ug/l				
4401765081	LW5.3-20170208-15:50-2.4	2/8/2017	E314.0	14797-73-0	Perchlorate	9.0		0.95	4.0	ug/l				
4401765081	LW5.3-20170208-15:50-2.4	2/8/2017	SM2540C	TDS	Total Dissolved Solids	1400		5.00	10	mg/l				
4401765101	GLW3.78-20170208-16:42-1.4	2/8/2017	E300	16887-00-6	Chloride	260		0.25	25	mg/l				
4401765101	GLW3.78-20170208-16:42-1.4	2/8/2017	E300	24959-67-9	Bromide	1.5		0.25	0.50	mg/l				

Table 4
All Results, Qualifiers, and Reason Codes
NERT Downgradient Study Area
Henderson, Nevada

SDG	Client Sample ID	Sample Date	Method	Client Analyte ID	Analyte	Lab Result	Lab Qualifier	SQL	PQL	Units	Validator Qualifier	Reason Code	Reason Code Definition	Qualification Finding
4401765101	GLW3.78-20170208-16:42-1.4	2/8/2017	E300.1	14866-68-3	Chlorate	190		20.00	40	ug/l				
4401765101	GLW3.78-20170208-16:42-1.4	2/8/2017	E314.0	14797-73-0	Perchlorate	46		0.95	4.0	ug/l				
4401765101	GLW3.78-20170208-16:42-1.4	2/8/2017	SM2540C	TDS	Total Dissolved Solids	1500		5.00	10	mg/l				
4401765101	LW3.4-20170208-17:05-0.6	2/8/2017	E300	16887-00-6	Chloride	260		0.25	25	mg/l				
4401765101	LW3.4-20170208-17:05-0.6	2/8/2017	E300	24959-67-9	Bromide	1.4		0.25	0.50	mg/l				
4401765101	LW3.4-20170208-17:05-0.6	2/8/2017	E300.1	14866-68-3	Chlorate	150		20.00	40	ug/l				
4401765101	LW3.4-20170208-17:05-0.6	2/8/2017	E314.0	14797-73-0	Perchlorate	32		0.95	4.0	ug/l				
4401765101	LW3.4-20170208-17:05-0.6	2/8/2017	SM2540C	TDS	Total Dissolved Solids	1500		5.00	10	mg/l				
4401765101	LW3.75-20170208-16:30-1.0	2/8/2017	E300	16887-00-6	Chloride	260		0.25	25	mg/l				
4401765101	LW3.75-20170208-16:30-1.0	2/8/2017	E300	24959-67-9	Bromide	1.5		0.25	0.50	mg/l				
4401765101	LW3.75-20170208-16:30-1.0	2/8/2017	E300.1	14866-68-3	Chlorate	110		20.00	40	ug/l				
4401765101	LW3.75-20170208-16:30-1.0	2/8/2017	E314.0	14797-73-0	Perchlorate	23		0.95	4.0	ug/l				
4401765101	LW3.75-20170208-16:30-1.0	2/8/2017	SM2540C	TDS	Total Dissolved Solids	1500		5.00	10	mg/l				
4401765101	LW3.85-20170208-16:05-0.5	2/8/2017	E300	16887-00-6	Chloride	260		0.25	25	mg/l				
4401765101	LW3.85-20170208-16:05-0.5	2/8/2017	E300	24959-67-9	Bromide	1.4		0.25	0.50	mg/l				
4401765101	LW3.85-20170208-16:05-0.5	2/8/2017	E300.1	14866-68-3	Chlorate	130		20.00	40	ug/l				
4401765101	LW3.85-20170208-16:05-0.5	2/8/2017	E314.0	14797-73-0	Perchlorate	24		0.95	4.0	ug/l				
4401765101	LW3.85-20170208-16:05-0.5	2/8/2017	SM2540C	TDS	Total Dissolved Solids	1500		5.00	10	mg/l				
4401765101	LWC3.7-20170208-16:20-0.5	2/8/2017	E300	16887-00-6	Chloride	360		1.25	100	mg/l				
4401765101	LWC3.7-20170208-16:20-0.5	2/8/2017	E300	24959-67-9	Bromide	1.6	J	1.25	2.5	mg/l	J	sp	Detect <PQL	-
4401765101	LWC3.7-20170208-16:20-0.5	2/8/2017	E300.1	14866-68-3	Chlorate	80		20.00	40	ug/l				
4401765101	LWC3.7-20170208-16:20-0.5	2/8/2017	E314.0	14797-73-0	Perchlorate	770		19.00	80	ug/l				
4401765101	LWC3.7-20170208-16:20-0.5	2/8/2017	SM2540C	TDS	Total Dissolved Solids	2200		5.00	20	mg/l				
4401766401	GLW4.9-20170209-15:53-1.4	2/9/2017	E300	16887-00-6	Chloride	230		0.25	25	mg/l				
4401766401	GLW4.9-20170209-15:53-1.4	2/9/2017	E300	24959-67-9	Bromide	0.54		0.25	0.50	mg/l				
4401766401	GLW4.9-20170209-15:53-1.4	2/9/2017	E300.1	14866-68-3	Chlorate	91		20.00	40	ug/l				
4401766401	GLW4.9-20170209-15:53-1.4	2/9/2017	E314.0	14797-73-0	Perchlorate	14		0.95	4.0	ug/l				
4401766401	GLW4.9-20170209-15:53-1.4	2/9/2017	SM2540C	TDS	Total Dissolved Solids	1400		5.00	10	mg/l				
4401766401	LW4.95-20170209-15:40-1.2	2/9/2017	E300	16887-00-6	Chloride	240		0.25	25	mg/l				
4401766401	LW4.95-20170209-15:40-1.2	2/9/2017	E300	24959-67-9	Bromide	0.54		0.25	0.50	mg/l				
4401766401	LW4.95-20170209-15:40-1.2	2/9/2017	E300.1	14866-68-3	Chlorate	78		20.00	40	ug/l				
4401766401	LW4.95-20170209-15:40-1.2	2/9/2017	E314.0	14797-73-0	Perchlorate	10		0.95	4.0	ug/l				
4401766401	LW4.95-20170209-15:40-1.2	2/9/2017	SM2540C	TDS	Total Dissolved Solids	1400		5.00	10	mg/l				
4401766401	LW5.3-20170209-15:15-1.1	2/9/2017	E300	16887-00-6	Chloride	230		0.25	25	mg/l				
4401766401	LW5.3-20170209-15:15-1.1	2/9/2017	E300	24959-67-9	Bromide	0.54		0.25	0.50	mg/l				
4401766401	LW5.3-20170209-15:15-1.1	2/9/2017	E300.1	14866-68-3	Chlorate	66		20.00	40	ug/l				
4401766401	LW5.3-20170209-15:15-1.1	2/9/2017	E314.0	14797-73-0	Perchlorate	9.1		0.95	4.0	ug/l				
4401766401	LW5.3-20170209-15:15-1.1	2/9/2017	SM2540C	TDS	Total Dissolved Solids	1300		5.00	10	mg/l				
4401766401	LW5.3-20170209-15:18-2.2	2/9/2017	E300	16887-00-6	Chloride	240		0.25	25	mg/l				
4401766401	LW5.3-20170209-15:18-2.2	2/9/2017	E300	24959-67-9	Bromide	0.51		0.25	0.50	mg/l				
4401766401	LW5.3-20170209-15:18-2.2	2/9/2017	E300.1	14866-68-3	Chlorate	69		20.00	40	ug/l				
4401766401	LW5.3-20170209-15:18-2.2	2/9/2017	E314.0	14797-73-0	Perchlorate	8.8		0.95	4.0	ug/l				
4401766401	LW5.3-20170209-15:18-2.2	2/9/2017	SM2540C	TDS	Total Dissolved Solids	1400		5.00	10	mg/l				
4401766411	GLW4.4-20170209-15:44-1.3	2/9/2017	E300	16887-00-6	Chloride	260		0.50	50	mg/l				
4401766411	GLW4.4-20170209-15:44-1.3	2/9/2017	E300	24959-67-9	Bromide	0.50	U	0.50	1.0	mg/l				
4401766411	GLW4.4-20170209-15:44-1.3	2/9/2017	E300.1	14866-68-3	Chlorate	110		20.00	40	ug/l				
4401766411	GLW4.4-20170209-15:44-1.3	2/9/2017	E314.0	14797-73-0	Perchlorate	23		0.95	4.0	ug/l				
4401766411	GLW4.4-20170209-15:44-1.3	2/9/2017	SM2540C	TDS	Total Dissolved Solids	1500		5.00	20	mg/l				
4401766411	GLW4.85-20170209-15:18-0.8	2/9/2017	E300	16887-00-6	Chloride	300		0.50	50	mg/l				
4401766411	GLW4.85-20170209-15:18-0.8	2/9/2017	E300	24959-67-9	Bromide	0.50	U	0.50	1.0	mg/l				

Table 4
All Results, Qualifiers, and Reason Codes
NERT Downgradient Study Area
Henderson, Nevada

SDG	Client Sample ID	Sample Date	Method	Client Analyte ID	Analyte	Lab Result	Lab Qualifier	SQL	PQL	Units	Validator Qualifier	Reason Code	Reason Code Definition	Qualification Finding	
4401766411	GLW4.85-20170209-15:18-0.8	2/9/2017	E300.1	14866-68-3	Chlorate	900		50.00	100	ug/l					
4401766411	GLW4.85-20170209-15:18-0.8	2/9/2017	E314.0	14797-73-0	Perchlorate	180		4.75	20	ug/l					
4401766411	GLW4.85-20170209-15:18-0.8	2/9/2017	SM2540C	TDS	Total Dissolved Solids	1600		5.00	20	mg/l					
4401766411	LW4.1-20170209-16:02-0.4	2/9/2017	E300	16887-00-6	Chloride	270		0.50	50	mg/l					
4401766411	LW4.1-20170209-16:02-0.4	2/9/2017	E300	24959-67-9	Bromide	0.50	U	0.50	1.0	mg/l					
4401766411	LW4.1-20170209-16:02-0.4	2/9/2017	E300.1	14866-68-3	Chlorate	160		20.00	40	ug/l					
4401766411	LW4.1-20170209-16:02-0.4	2/9/2017	E314.0	14797-73-0	Perchlorate	36		0.95	4.0	ug/l					
4401766411	LW4.1-20170209-16:02-0.4	2/9/2017	SM2540C	TDS	Total Dissolved Solids	1500		5.00	20	mg/l					
4401766411	LW4.1-20170209-16:02-0.4-FD	2/9/2017	E300	16887-00-6	Chloride	260		0.50	50	mg/l					
4401766411	LW4.1-20170209-16:02-0.4-FD	2/9/2017	E300	24959-67-9	Bromide	0.50	U	0.50	1.0	mg/l					
4401766411	LW4.1-20170209-16:02-0.4-FD	2/9/2017	E300.1	14866-68-3	Chlorate	170		20.00	40	ug/l					
4401766411	LW4.1-20170209-16:02-0.4-FD	2/9/2017	E314.0	14797-73-0	Perchlorate	35		0.95	4.0	ug/l					
4401766411	LW4.1-20170209-16:02-0.4-FD	2/9/2017	SM2540C	TDS	Total Dissolved Solids	1500		5.00	20	mg/l					
4401766421	LW3.4-20170209-13:33-0.5	2/9/2017	E300	16887-00-6	Chloride	290		0.50	50	mg/l					
4401766421	LW3.4-20170209-13:33-0.5	2/9/2017	E300	24959-67-9	Bromide	0.50	U	0.50	1.0	mg/l					
4401766421	LW3.4-20170209-13:33-0.5	2/9/2017	E300.1	14866-68-3	Chlorate	200		20.00	40	ug/l					
4401766421	LW3.4-20170209-13:33-0.5	2/9/2017	E314.0	14797-73-0	Perchlorate	52		0.95	4.0	ug/l					
4401766421	LW3.4-20170209-13:33-0.5	2/9/2017	SM2540C	TDS	Total Dissolved Solids	1500		5.00	20	mg/l					
4401766421	LW3.4-20170209-13:33-0.5-FD	2/9/2017	E300	16887-00-6	Chloride	290		0.50	25	mg/l					
4401766421	LW3.4-20170209-13:33-0.5-FD	2/9/2017	E300	24959-67-9	Bromide	0.50	U	0.50	1.0	mg/l					
4401766421	LW3.4-20170209-13:33-0.5-FD	2/9/2017	E300.1	14866-68-3	Chlorate	200		20.00	40	ug/l					
4401766421	LW3.4-20170209-13:33-0.5-FD	2/9/2017	E314.0	14797-73-0	Perchlorate	57		0.95	4.0	ug/l					
4401766421	LW3.4-20170209-13:33-0.5-FD	2/9/2017	SM2540C	TDS	Total Dissolved Solids	1500		5.00	10	mg/l					
4401766431	GLW3.78-20170209-16:30-1.4	2/9/2017	E300	16887-00-6	Chloride	370		0.50	50	mg/l					
4401766431	GLW3.78-20170209-16:30-1.4	2/9/2017	E300	24959-67-9	Bromide	0.50	U	0.50	1.0	mg/l					
4401766431	GLW3.78-20170209-16:30-1.4	2/9/2017	E300.1	14866-68-3	Chlorate	200		20.00	40	ug/l					
4401766431	GLW3.78-20170209-16:30-1.4	2/9/2017	E314.0	14797-73-0	Perchlorate	43		0.95	4.0	ug/l					
4401766431	GLW3.78-20170209-16:30-1.4	2/9/2017	SM2540C	TDS	Total Dissolved Solids	1500		5.00	20	mg/l					
4401766431	LW3.4-20170209-16:55-0.6	2/9/2017	E300	16887-00-6	Chloride	290		0.25	25	mg/l					
4401766431	LW3.4-20170209-16:55-0.6	2/9/2017	E300	24959-67-9	Bromide	0.27	J	0.25	0.50	mg/l	J	sp	Detect <PQL	-	-
4401766431	LW3.4-20170209-16:55-0.6	2/9/2017	E300.1	14866-68-3	Chlorate	160		20.00	40	ug/l					
4401766431	LW3.4-20170209-16:55-0.6	2/9/2017	E314.0	14797-73-0	Perchlorate	38		0.95	4.0	ug/l					
4401766431	LW3.4-20170209-16:55-0.6	2/9/2017	SM2540C	TDS	Total Dissolved Solids	1500		5.00	10	mg/l					
4401766431	LW3.75-20170209-16:11-0.8	2/9/2017	E300	16887-00-6	Chloride	320		0.50	50	mg/l					
4401766431	LW3.75-20170209-16:11-0.8	2/9/2017	E300	24959-67-9	Bromide	0.50	U	0.50	1.0	mg/l					
4401766431	LW3.75-20170209-16:11-0.8	2/9/2017	E300.1	14866-68-3	Chlorate	130		20.00	40	ug/l					
4401766431	LW3.75-20170209-16:11-0.8	2/9/2017	E314.0	14797-73-0	Perchlorate	31		0.95	4.0	ug/l					
4401766431	LW3.75-20170209-16:11-0.8	2/9/2017	SM2540C	TDS	Total Dissolved Solids	1500		5.00	20	mg/l					
4401766431	LW3.85-20170209-15:45-0.6	2/9/2017	E300	16887-00-6	Chloride	290		0.50	50	mg/l					
4401766431	LW3.85-20170209-15:45-0.6	2/9/2017	E300	24959-67-9	Bromide	0.50	U	0.50	1.0	mg/l					
4401766431	LW3.85-20170209-15:45-0.6	2/9/2017	E300.1	14866-68-3	Chlorate	130		20.00	40	ug/l					
4401766431	LW3.85-20170209-15:45-0.6	2/9/2017	E314.0	14797-73-0	Perchlorate	32		0.95	4.0	ug/l					
4401766431	LW3.85-20170209-15:45-0.6	2/9/2017	SM2540C	TDS	Total Dissolved Solids	1500		5.00	20	mg/l					
4401766431	LWC3.7-20170209-16:00-0.6	2/9/2017	E300	16887-00-6	Chloride	460		1.25	100	mg/l					
4401766431	LWC3.7-20170209-16:00-0.6	2/9/2017	E300	24959-67-9	Bromide	1.25	U	1.25	2.5	mg/l					
4401766431	LWC3.7-20170209-16:00-0.6	2/9/2017	E300.1	14866-68-3	Chlorate	3100		200.00	400	ug/l					
4401766431	LWC3.7-20170209-16:00-0.6	2/9/2017	E314.0	14797-73-0	Perchlorate	1100		19.00	80	ug/l					
4401766431	LWC3.7-20170209-16:00-0.6	2/9/2017	SM2540C	TDS	Total Dissolved Solids	2500		5.00	20	mg/l					
4401766441	LW6.05-20170209-15:23-0.7	2/9/2017	E300	16887-00-6	Chloride	220		0.25	25	mg/l					
4401766441	LW6.05-20170209-15:23-0.7	2/9/2017	E300	24959-67-9	Bromide	0.31	J	0.25	0.50	mg/l	J	sp	Detect <PQL	-	-

Table 4
All Results, Qualifiers, and Reason Codes
NERT Downgradient Study Area
Henderson, Nevada

SDG	Client Sample ID	Sample Date	Method	Client Analyte ID	Analyte	Lab Result	Lab Qualifier	SQL	PQL	Units	Validator Qualifier	Reason Code	Reason Code Definition	Qualification Finding
4401766441	LW6.05-20170209-15:23-0.7	2/9/2017	E300.1	14866-68-3	Chlorate	60		20.00	40	ug/l				
4401766441	LW6.05-20170209-15:23-0.7	2/9/2017	E314.0	14797-73-0	Perchlorate	6.8		0.95	4.0	ug/l				
4401766441	LW6.05-20170209-15:23-0.7	2/9/2017	SM2540C	TDS	Total Dissolved Solids	1400		5.00	10	mg/l				
4401766441	LW6.7-20170209-15:04-0.6	2/9/2017	E300	16887-00-6	Chloride	220		0.25	25	mg/l				
4401766441	LW6.7-20170209-15:04-0.6	2/9/2017	E300	24959-67-9	Bromide	0.71		0.25	0.50	mg/l				
4401766441	LW6.7-20170209-15:04-0.6	2/9/2017	E300.1	14866-68-3	Chlorate	66		20.00	40	ug/l				
4401766441	LW6.7-20170209-15:04-0.6	2/9/2017	E314.0	14797-73-0	Perchlorate	0.95	U	0.95	4.0	ug/l				
4401766441	LW6.7-20170209-15:04-0.6	2/9/2017	SM2540C	TDS	Total Dissolved Solids	1400		5.00	10	mg/l				
4401766441	LW7.2-20170209-14:41-0.9	2/9/2017	E300	16887-00-6	Chloride	200		0.25	25	mg/l				
4401766441	LW7.2-20170209-14:41-0.9	2/9/2017	E300	24959-67-9	Bromide	0.35	J	0.25	0.50	mg/l	J	sp	Detect <PQL	- -
4401766441	LW7.2-20170209-14:41-0.9	2/9/2017	E300.1	14866-68-3	Chlorate	67		20.00	40	ug/l				
4401766441	LW7.2-20170209-14:41-0.9	2/9/2017	E314.0	14797-73-0	Perchlorate	0.95	U	0.95	4.0	ug/l				
4401766441	LW7.2-20170209-14:41-0.9	2/9/2017	SM2540C	TDS	Total Dissolved Solids	1200		5.00	10	mg/l				
4401766441	LW7.2-20170209-14:41-0.9-FD	2/9/2017	E300	16887-00-6	Chloride	200		0.25	25	mg/l				
4401766441	LW7.2-20170209-14:41-0.9-FD	2/9/2017	E300	24959-67-9	Bromide	0.33	J	0.25	0.50	mg/l	J	sp	Detect <PQL	- -
4401766441	LW7.2-20170209-14:41-0.9-FD	2/9/2017	E300.1	14866-68-3	Chlorate	69		20.00	40	ug/l				
4401766441	LW7.2-20170209-14:41-0.9-FD	2/9/2017	E314.0	14797-73-0	Perchlorate	0.95	U	0.95	4.0	ug/l				
4401766441	LW7.2-20170209-14:41-0.9-FD	2/9/2017	SM2540C	TDS	Total Dissolved Solids	1200		5.00	10	mg/l				
4401766451	LW4.95-20170209-12:30-1.1	2/9/2017	E300	16887-00-6	Chloride	290		0.25	25	mg/l				
4401766451	LW4.95-20170209-12:30-1.1	2/9/2017	E300	24959-67-9	Bromide	0.27	J	0.25	0.50	mg/l	J	sp	Detect <PQL	- -
4401766451	LW4.95-20170209-12:30-1.1	2/9/2017	E300.1	14866-68-3	Chlorate	91		20.00	40	ug/l				
4401766451	LW4.95-20170209-12:30-1.1	2/9/2017	E314.0	14797-73-0	Perchlorate	22	F1	0.95	4.0	ug/l	J+	m	matrix spike %R	141/144 %
4401766451	LW4.95-20170209-12:30-1.1	2/9/2017	SM2540C	TDS	Total Dissolved Solids	1500		5.00	10	mg/l				
4401766461	GLWC6.1_3-20170209-09:32-1.2	2/9/2017	E300	16887-00-6	Chloride	230		0.25	25	mg/l				
4401766461	GLWC6.1_3-20170209-09:32-1.2	2/9/2017	E300	24959-67-9	Bromide	0.39	J	0.25	0.50	mg/l	J	sp	Detect <PQL	- -
4401766461	GLWC6.1_3-20170209-09:32-1.2	2/9/2017	E300.1	14866-68-3	Chlorate	87		20.00	40	ug/l				
4401766461	GLWC6.1_3-20170209-09:32-1.2	2/9/2017	E314.0	14797-73-0	Perchlorate	0.95	U	0.95	4.0	ug/l				
4401766461	GLWC6.1_3-20170209-09:32-1.2	2/9/2017	SM2540C	TDS	Total Dissolved Solids	1100		5.00	10	mg/l				
4401766461	GLWC6.1_4-20170209-10:33-1.3	2/9/2017	E300	16887-00-6	Chloride	250		0.25	25	mg/l				
4401766461	GLWC6.1_4-20170209-10:33-1.3	2/9/2017	E300	24959-67-9	Bromide	0.45	J	0.25	0.50	mg/l	J	sp	Detect <PQL	- -
4401766461	GLWC6.1_4-20170209-10:33-1.3	2/9/2017	E300.1	14866-68-3	Chlorate	71		20.00	40	ug/l				
4401766461	GLWC6.1_4-20170209-10:33-1.3	2/9/2017	E314.0	14797-73-0	Perchlorate	0.95	U	0.95	4.0	ug/l				
4401766461	GLWC6.1_4-20170209-10:33-1.3	2/9/2017	SM2540C	TDS	Total Dissolved Solids	1100		5.00	10	mg/l				
4401766461	LW5.9-20170209-10:01-0.4	2/9/2017	E300	16887-00-6	Chloride	260		0.50	50	mg/l				
4401766461	LW5.9-20170209-10:01-0.4	2/9/2017	E300	24959-67-9	Bromide	0.60	J	0.50	1.0	mg/l	J	sp	Detect <PQL	- -
4401766461	LW5.9-20170209-10:01-0.4	2/9/2017	E300.1	14866-68-3	Chlorate	74		20.00	40	ug/l				
4401766461	LW5.9-20170209-10:01-0.4	2/9/2017	E314.0	14797-73-0	Perchlorate	15		0.95	4.0	ug/l				
4401766461	LW5.9-20170209-10:01-0.4	2/9/2017	SM2540C	TDS	Total Dissolved Solids	1400		5.00	20	mg/l				
4401766461	LWC6.1_1-20170209-09:10-1.0	2/9/2017	E300	16887-00-6	Chloride	240		0.25	25	mg/l				
4401766461	LWC6.1_1-20170209-09:10-1.0	2/9/2017	E300	24959-67-9	Bromide	0.41	J	0.25	0.50	mg/l	J	sp	Detect <PQL	- -
4401766461	LWC6.1_1-20170209-09:10-1.0	2/9/2017	E300.1	14866-68-3	Chlorate	88		20.00	40	ug/l				
4401766461	LWC6.1_1-20170209-09:10-1.0	2/9/2017	E314.0	14797-73-0	Perchlorate	0.95	U	0.95	4.0	ug/l				
4401766461	LWC6.1_1-20170209-09:10-1.0	2/9/2017	SM2540C	TDS	Total Dissolved Solids	1100		5.00	10	mg/l				
4401766461	LWC6.1_2-20170209-09:25-0.6	2/9/2017	E300	16887-00-6	Chloride	100		0.25	25	mg/l				
4401766461	LWC6.1_2-20170209-09:25-0.6	2/9/2017	E300	24959-67-9	Bromide	0.30	J	0.25	0.50	mg/l	J	sp	Detect <PQL	- -
4401766461	LWC6.1_2-20170209-09:25-0.6	2/9/2017	E300.1	14866-68-3	Chlorate	50		20.00	40	ug/l				
4401766461	LWC6.1_2-20170209-09:25-0.6	2/9/2017	E314.0	14797-73-0	Perchlorate	0.95	U	0.95	4.0	ug/l				
4401766461	LWC6.1_2-20170209-09:25-0.6	2/9/2017	SM2540C	TDS	Total Dissolved Solids	610		5.00	10	mg/l				
4401766471	GLWC6.1_3-20170209-14:57-1.1	2/9/2017	E300	16887-00-6	Chloride	270		0.25	25	mg/l				
4401766471	GLWC6.1_3-20170209-14:57-1.1	2/9/2017	E300	24959-67-9	Bromide	0.25	U	0.25	0.50	mg/l				

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All Results, Qualifiers, and Reason Codes
NERT Downgradient Study Area
Henderson, Nevada

SDG	Client Sample ID	Sample Date	Method	Client Analyte ID	Analyte	Lab Result	Lab Qualifier	SQL	PQL	Units	Validator Qualifier	Reason Code	Reason Code Definition	Qualification Finding
4401766471	GLWC6.1_3-20170209-14:57-1.1	2/9/2017	E300.1	14866-68-3	Chlorate	76		20.00	40	ug/l				
4401766471	GLWC6.1_3-20170209-14:57-1.1	2/9/2017	E314.0	14797-73-0	Perchlorate	0.95	U	0.95	4.0	ug/l				
4401766471	GLWC6.1_3-20170209-14:57-1.1	2/9/2017	SM2540C	TDS	Total Dissolved Solids	1100		5.00	10	mg/l				
4401766471	GLWC6.1_4-20170209-15:51-1.6	2/9/2017	E300	16887-00-6	Chloride	290		0.25	25	mg/l				
4401766471	GLWC6.1_4-20170209-15:51-1.6	2/9/2017	E300	24959-67-9	Bromide	0.35	J	0.25	0.50	mg/l	J	sp	Detect <PQL	-
4401766471	GLWC6.1_4-20170209-15:51-1.6	2/9/2017	E300.1	14866-68-3	Chlorate	72		10.00	20	ug/l				
4401766471	GLWC6.1_4-20170209-15:51-1.6	2/9/2017	E314.0	14797-73-0	Perchlorate	0.95	U	0.95	4.0	ug/l				
4401766471	GLWC6.1_4-20170209-15:51-1.6	2/9/2017	SM2540C	TDS	Total Dissolved Solids	1200		5.00	10	mg/l				
4401766471	LW5.9-20170209-15:27-0.7	2/9/2017	E300	16887-00-6	Chloride	260		0.25	25	mg/l				
4401766471	LW5.9-20170209-15:27-0.7	2/9/2017	E300	24959-67-9	Bromide	0.26	J	0.25	0.50	mg/l	J	sp	Detect <PQL	-
4401766471	LW5.9-20170209-15:27-0.7	2/9/2017	E300.1	14866-68-3	Chlorate	61		20.00	40	ug/l				
4401766471	LW5.9-20170209-15:27-0.7	2/9/2017	E314.0	14797-73-0	Perchlorate	6.9		0.95	4.0	ug/l				
4401766471	LW5.9-20170209-15:27-0.7	2/9/2017	SM2540C	TDS	Total Dissolved Solids	1300		5.00	10	mg/l				
4401766471	LWC6.1_1-20170209-14:39-1.1	2/9/2017	E300	16887-00-6	Chloride	280		0.25	25	mg/l				
4401766471	LWC6.1_1-20170209-14:39-1.1	2/9/2017	E300	24959-67-9	Bromide	0.25	U	0.25	0.50	mg/l				
4401766471	LWC6.1_1-20170209-14:39-1.1	2/9/2017	E300.1	14866-68-3	Chlorate	79		20.00	40	ug/l				
4401766471	LWC6.1_1-20170209-14:39-1.1	2/9/2017	E314.0	14797-73-0	Perchlorate	0.95	U	0.95	4.0	ug/l				
4401766471	LWC6.1_1-20170209-14:39-1.1	2/9/2017	SM2540C	TDS	Total Dissolved Solids	1200		5.00	10	mg/l				
4401766471	LWC6.1_1-20170209-14:39-1.1-FD	2/9/2017	E300	16887-00-6	Chloride	280		0.25	25	mg/l				
4401766471	LWC6.1_1-20170209-14:39-1.1-FD	2/9/2017	E300	24959-67-9	Bromide	0.25	U	0.25	0.50	mg/l				
4401766471	LWC6.1_1-20170209-14:39-1.1-FD	2/9/2017	E300.1	14866-68-3	Chlorate	81		20.00	40	ug/l				
4401766471	LWC6.1_1-20170209-14:39-1.1-FD	2/9/2017	E314.0	14797-73-0	Perchlorate	0.95	U	0.95	4.0	ug/l				
4401766471	LWC6.1_1-20170209-14:39-1.1-FD	2/9/2017	SM2540C	TDS	Total Dissolved Solids	1100		5.00	10	mg/l				
4401766471	LWC6.1_2-20170209-14:52-0.8	2/9/2017	E300	16887-00-6	Chloride	100		0.25	10	mg/l				
4401766471	LWC6.1_2-20170209-14:52-0.8	2/9/2017	E300	24959-67-9	Bromide	0.25	U	0.25	0.50	mg/l				
4401766471	LWC6.1_2-20170209-14:52-0.8	2/9/2017	E300.1	14866-68-3	Chlorate	51		20.00	40	ug/l				
4401766471	LWC6.1_2-20170209-14:52-0.8	2/9/2017	E314.0	14797-73-0	Perchlorate	0.95	U	0.95	4.0	ug/l				
4401766471	LWC6.1_2-20170209-14:52-0.8	2/9/2017	SM2540C	TDS	Total Dissolved Solids	590		5.00	10	mg/l				
4401766481	GLW4.4-20170209-10:22-1.1	2/9/2017	E300	16887-00-6	Chloride	250		0.25	25	mg/l				
4401766481	GLW4.4-20170209-10:22-1.1	2/9/2017	E300	24959-67-9	Bromide	0.52		0.25	0.50	mg/l				
4401766481	GLW4.4-20170209-10:22-1.1	2/9/2017	E300.1	14866-68-3	Chlorate	120		20.00	40	ug/l				
4401766481	GLW4.4-20170209-10:22-1.1	2/9/2017	E314.0	14797-73-0	Perchlorate	26		0.95	4.0	ug/l				
4401766481	GLW4.4-20170209-10:22-1.1	2/9/2017	SM2540C	TDS	Total Dissolved Solids	1400		5.00	10	mg/l				
4401766481	GLW4.85-20170209-09:58-0.7	2/9/2017	E300	16887-00-6	Chloride	340		0.50	50	mg/l				
4401766481	GLW4.85-20170209-09:58-0.7	2/9/2017	E300	24959-67-9	Bromide	0.50	U	0.50	1.0	mg/l				
4401766481	GLW4.85-20170209-09:58-0.7	2/9/2017	E300.1	14866-68-3	Chlorate	1600		200.00	400	ug/l				
4401766481	GLW4.85-20170209-09:58-0.7	2/9/2017	E314.0	14797-73-0	Perchlorate	320		4.75	20	ug/l				
4401766481	GLW4.85-20170209-09:58-0.7	2/9/2017	SM2540C	TDS	Total Dissolved Solids	1600		5.00	20	mg/l				
4401766481	LW4.1-20170209-10:38-0.3	2/9/2017	E300	16887-00-6	Chloride	290		0.25	25	mg/l				
4401766481	LW4.1-20170209-10:38-0.3	2/9/2017	E300	24959-67-9	Bromide	0.28	J	0.25	0.50	mg/l	J	sp	Detect <PQL	-
4401766481	LW4.1-20170209-10:38-0.3	2/9/2017	E300.1	14866-68-3	Chlorate	230		20.00	40	ug/l				
4401766481	LW4.1-20170209-10:38-0.3	2/9/2017	E314.0	14797-73-0	Perchlorate	40		0.95	4.0	ug/l				
4401766481	LW4.1-20170209-10:38-0.3	2/9/2017	SM2540C	TDS	Total Dissolved Solids	1400		5.00	10	mg/l				
4401766491	LW6.05-20170209-09:31-0.5	2/9/2017	E300	16887-00-6	Chloride	240		0.25	25	mg/l				
4401766491	LW6.05-20170209-09:31-0.5	2/9/2017	E300	24959-67-9	Bromide	0.77		0.25	0.50	mg/l				
4401766491	LW6.05-20170209-09:31-0.5	2/9/2017	E300.1	14866-68-3	Chlorate	69		20.00	40	ug/l				
4401766491	LW6.05-20170209-09:31-0.5	2/9/2017	E314.0	14797-73-0	Perchlorate	19		0.95	4.0	ug/l				
4401766491	LW6.05-20170209-09:31-0.5	2/9/2017	SM2540C	TDS	Total Dissolved Solids	1500		5.00	10	mg/l				
4401766491	LW6.05-20170209-10:40-FB	2/9/2017	E300	16887-00-6	Chloride	0.25	U	0.25	0.50	mg/l				
4401766491	LW6.05-20170209-10:40-FB	2/9/2017	E300	24959-67-9	Bromide	0.25	U	0.25	0.50	mg/l				

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NERT Downgradient Study Area
Henderson, Nevada

SDG	Client Sample ID	Sample Date	Method	Client Analyte ID	Analyte	Lab Result	Lab Qualifier	SQL	PQL	Units	Validator Qualifier	Reason Code	Reason Code Definition	Qualification Finding	
4401766491	LW6.05-20170209-10:40-FB	2/9/2017	E300.1	14866-68-3	Chlorate	10.00	U	10.00	20	ug/l					
4401766491	LW6.05-20170209-10:40-FB	2/9/2017	E314.0	14797-73-0	Perchlorate	0.95	U	0.95	4.0	ug/l					
4401766491	LW6.05-20170209-10:40-FB	2/9/2017	SM2540C	TDS	Total Dissolved Solids	5.00	U	5.00	10	mg/l					
4401766491	LW6.7-20170209-09:11-0.3	2/9/2017	E300	16887-00-6	Chloride	270		0.50	50	mg/l					
4401766491	LW6.7-20170209-09:11-0.3	2/9/2017	E300	24959-67-9	Bromide	1.7		0.50	1.0	mg/l					
4401766491	LW6.7-20170209-09:11-0.3	2/9/2017	E300.1	14866-68-3	Chlorate	76		20.00	40	ug/l					
4401766491	LW6.7-20170209-09:11-0.3	2/9/2017	E314.0	14797-73-0	Perchlorate	0.95	U	0.95	4.0	ug/l					
4401766491	LW6.7-20170209-09:11-0.3	2/9/2017	SM2540C	TDS	Total Dissolved Solids	1700		5.00	20	mg/l					
4401766491	LW7.2-20170209-08:56-0.7	2/9/2017	E300	16887-00-6	Chloride	230		0.25	25	mg/l					
4401766491	LW7.2-20170209-08:56-0.7	2/9/2017	E300	24959-67-9	Bromide	1.1		0.25	0.50	mg/l					
4401766491	LW7.2-20170209-08:56-0.7	2/9/2017	E300.1	14866-68-3	Chlorate	71		20.00	40	ug/l					
4401766491	LW7.2-20170209-08:56-0.7	2/9/2017	E314.0	14797-73-0	Perchlorate	0.95	U	0.95	4.0	ug/l					
4401766491	LW7.2-20170209-08:56-0.7	2/9/2017	SM2540C	TDS	Total Dissolved Solids	1300		5.00	10	mg/l					
4401766501	GLW4.9-20170209-10:50-1.2	2/9/2017	E300	16887-00-6	Chloride	240		0.25	25	mg/l					
4401766501	GLW4.9-20170209-10:50-1.2	2/9/2017	E300	24959-67-9	Bromide	0.33	J	0.25	0.50	mg/l	J	sp	Detect <PQL	-	-
4401766501	GLW4.9-20170209-10:50-1.2	2/9/2017	E300.1	14866-68-3	Chlorate	100		20.00	40	ug/l					
4401766501	GLW4.9-20170209-10:50-1.2	2/9/2017	E314.0	14797-73-0	Perchlorate	27		0.95	4.0	ug/l					
4401766501	GLW4.9-20170209-10:50-1.2	2/9/2017	SM2540C	TDS	Total Dissolved Solids	1400		5.00	10	mg/l					
4401766501	LW4.95-20170209-10:35-1.0	2/9/2017	E300	16887-00-6	Chloride	240		0.25	25	mg/l					
4401766501	LW4.95-20170209-10:35-1.0	2/9/2017	E300	24959-67-9	Bromide	0.65		0.25	0.50	mg/l					
4401766501	LW4.95-20170209-10:35-1.0	2/9/2017	E300.1	14866-68-3	Chlorate	82		20.00	40	ug/l					
4401766501	LW4.95-20170209-10:35-1.0	2/9/2017	E314.0	14797-73-0	Perchlorate	24		0.95	4.0	ug/l					
4401766501	LW4.95-20170209-10:35-1.0	2/9/2017	SM2540C	TDS	Total Dissolved Solids	1400		5.00	10	mg/l					
4401766501	LW4.95-20170209-10:35-1.0-FD	2/9/2017	E300	16887-00-6	Chloride	240		0.25	25	mg/l					
4401766501	LW4.95-20170209-10:35-1.0-FD	2/9/2017	E300	24959-67-9	Bromide	0.54		0.25	0.50	mg/l					
4401766501	LW4.95-20170209-10:35-1.0-FD	2/9/2017	E300.1	14866-68-3	Chlorate	86		20.00	40	ug/l					
4401766501	LW4.95-20170209-10:35-1.0-FD	2/9/2017	E314.0	14797-73-0	Perchlorate	23		0.95	4.0	ug/l					
4401766501	LW4.95-20170209-10:35-1.0-FD	2/9/2017	SM2540C	TDS	Total Dissolved Solids	1400		5.00	10	mg/l					
4401766501	LW5.3-20170209-10:00-1.0	2/9/2017	E300	16887-00-6	Chloride	240		0.25	25	mg/l					
4401766501	LW5.3-20170209-10:00-1.0	2/9/2017	E300	24959-67-9	Bromide	0.56		0.25	0.50	mg/l					
4401766501	LW5.3-20170209-10:00-1.0	2/9/2017	E300.1	14866-68-3	Chlorate	67		20.00	40	ug/l					
4401766501	LW5.3-20170209-10:00-1.0	2/9/2017	E314.0	14797-73-0	Perchlorate	22		0.95	4.0	ug/l					
4401766501	LW5.3-20170209-10:00-1.0	2/9/2017	SM2540C	TDS	Total Dissolved Solids	1500		5.00	10	mg/l					
4401766501	LW5.3-20170209-10:03-2.0	2/9/2017	E300	16887-00-6	Chloride	280		0.50	50	mg/l					
4401766501	LW5.3-20170209-10:03-2.0	2/9/2017	E300	24959-67-9	Bromide	0.50	U	0.50	1.0	mg/l					
4401766501	LW5.3-20170209-10:03-2.0	2/9/2017	E300.1	14866-68-3	Chlorate	120		20.00	40	ug/l					
4401766501	LW5.3-20170209-10:03-2.0	2/9/2017	E314.0	14797-73-0	Perchlorate	30		0.95	4.0	ug/l					
4401766501	LW5.3-20170209-10:03-2.0	2/9/2017	SM2540C	TDS	Total Dissolved Solids	1400		5.00	20	mg/l					
4401766521	LW6.05-20170209-12:00-0.6	2/9/2017	E300	16887-00-6	Chloride	290		0.25	25	mg/l					
4401766521	LW6.05-20170209-12:00-0.6	2/9/2017	E300	24959-67-9	Bromide	0.30	J	0.25	0.50	mg/l					
4401766521	LW6.05-20170209-12:00-0.6	2/9/2017	E300.1	14866-68-3	Chlorate	74		20.00	40	ug/l					
4401766521	LW6.05-20170209-12:00-0.6	2/9/2017	E314.0	14797-73-0	Perchlorate	14		0.95	4.0	ug/l					
4401766521	LW6.05-20170209-12:00-0.6	2/9/2017	SM2540C	TDS	Total Dissolved Solids	1600		5.00	10	mg/l					
4401766521	LW7.2-20170209-10:52-0.8	2/9/2017	E300	16887-00-6	Chloride	250		0.25	25	mg/l					
4401766521	LW7.2-20170209-10:52-0.8	2/9/2017	E300	24959-67-9	Bromide	0.27	J	0.25	0.50	mg/l	J	sp	Detect <PQL	-	-
4401766521	LW7.2-20170209-10:52-0.8	2/9/2017	E300.1	14866-68-3	Chlorate	69		20.00	40	ug/l					
4401766521	LW7.2-20170209-10:52-0.8	2/9/2017	E314.0	14797-73-0	Perchlorate	0.95	UF1	0.95	4.0	ug/l		m	matrix spike %R	122/126	%
4401766521	LW7.2-20170209-10:52-0.8	2/9/2017	SM2540C	TDS	Total Dissolved Solids	1300		5.00	10	mg/l					
4401766531	GLW4.4-20170209-13:11-1.2	2/9/2017	E300	16887-00-6	Chloride	270		0.50	50	mg/l					
4401766531	GLW4.4-20170209-13:11-1.2	2/9/2017	E300	24959-67-9	Bromide	0.62	J	0.50	1.0	mg/l	J	sp	Detect <PQL	-	-

Table 4
All Results, Qualifiers, and Reason Codes
NERT Downgradient Study Area
Henderson, Nevada

SDG	Client Sample ID	Sample Date	Method	Client Analyte ID	Analyte	Lab Result	Lab Qualifier	SQL	PQL	Units	Validator Qualifier	Reason Code	Reason Code Definition	Qualification Finding	
4401766531	GLW4.4-20170209-13:11-1.2	2/9/2017	E300.1	14866-68-3	Chlorate	140		20.00	40	ug/l					
4401766531	GLW4.4-20170209-13:11-1.2	2/9/2017	E314.0	14797-73-0	Perchlorate	31	F1	0.95	4.0	ug/l	J+	m	matrix spike %R	145/144	%
4401766531	GLW4.4-20170209-13:11-1.2	2/9/2017	SM2540C	TDS	Total Dissolved Solids	1400		5.00	20	mg/l					
4401767151	GLW3.78-20170209-11:28-0.3	2/9/2017	E300	16887-00-6	Chloride	260		0.50	50	mg/l					
4401767151	GLW3.78-20170209-11:28-0.3	2/9/2017	E300	24959-67-9	Bromide	0.50	U	0.50	1.0	mg/l					
4401767151	GLW3.78-20170209-11:28-0.3	2/9/2017	E300.1	14866-68-3	Chlorate	230		20.00	40	ug/l					
4401767151	GLW3.78-20170209-11:28-0.3	2/9/2017	E314.0	14797-73-0	Perchlorate	47		0.95	4.0	ug/l					
4401767151	GLW3.78-20170209-11:28-0.3	2/9/2017	SM2540C	TDS	Total Dissolved Solids	1400		5.00	10	mg/l					
4401767151	LW3.4-20170209-12:00-0.5	2/9/2017	E300	16887-00-6	Chloride	260		0.50	50	mg/l					
4401767151	LW3.4-20170209-12:00-0.5	2/9/2017	E300	24959-67-9	Bromide	0.50	U	0.50	1.0	mg/l					
4401767151	LW3.4-20170209-12:00-0.5	2/9/2017	E300.1	14866-68-3	Chlorate	190		20.00	40	ug/l					
4401767151	LW3.4-20170209-12:00-0.5	2/9/2017	E314.0	14797-73-0	Perchlorate	42		0.95	4.0	ug/l					
4401767151	LW3.4-20170209-12:00-0.5	2/9/2017	SM2540C	TDS	Total Dissolved Solids	1400		5.00	10	mg/l					
4401767151	LW3.75-20170209-10:58-0.5	2/9/2017	E300	16887-00-6	Chloride	260		0.25	25	mg/l					
4401767151	LW3.75-20170209-10:58-0.5	2/9/2017	E300	24959-67-9	Bromide	0.59		0.25	0.50	mg/l					
4401767151	LW3.75-20170209-10:58-0.5	2/9/2017	E300.1	14866-68-3	Chlorate	140		20.00	40	ug/l					
4401767151	LW3.75-20170209-10:58-0.5	2/9/2017	E314.0	14797-73-0	Perchlorate	27		0.95	4.0	ug/l					
4401767151	LW3.75-20170209-10:58-0.5	2/9/2017	SM2540C	TDS	Total Dissolved Solids	1400		5.00	10	mg/l					
4401767151	LW3.85-20170209-10:30-0.5	2/9/2017	E300	16887-00-6	Chloride	260		0.50	50	mg/l					
4401767151	LW3.85-20170209-10:30-0.5	2/9/2017	E300	24959-67-9	Bromide	0.50	U	0.50	1.0	mg/l					
4401767151	LW3.85-20170209-10:30-0.5	2/9/2017	E300.1	14866-68-3	Chlorate	140		20.00	40	ug/l					
4401767151	LW3.85-20170209-10:30-0.5	2/9/2017	E314.0	14797-73-0	Perchlorate	28		0.95	4.0	ug/l					
4401767151	LW3.85-20170209-10:30-0.5	2/9/2017	SM2540C	TDS	Total Dissolved Solids	1400		5.00	10	mg/l					
4401767151	LWC3.7-20170209-10:48-0.4	2/9/2017	E300	16887-00-6	Chloride	360		0.50	50	mg/l					
4401767151	LWC3.7-20170209-10:48-0.4	2/9/2017	E300	24959-67-9	Bromide	0.50	U	0.50	1.0	mg/l					
4401767151	LWC3.7-20170209-10:48-0.4	2/9/2017	E300.1	14866-68-3	Chlorate	1800		200.00	400	ug/l					
4401767151	LWC3.7-20170209-10:48-0.4	2/9/2017	E314.0	14797-73-0	Perchlorate	670		9.50	40	ug/l					
4401767151	LWC3.7-20170209-10:48-0.4	2/9/2017	SM2540C	TDS	Total Dissolved Solids	2100		5.00	20	mg/l					

Table 5
Field Duplicate RPDs
NERT Downgradient Study Area
Henderson, Nevada

Samples coordinated with the USGS Seepage Study				
SDG	Analyte	LW3.85-20161208-0.3	FD	RPD
4401688961	Bromide	0.50 mg/l	0.54 J mg/l	7.69
4401688961	Chloride	250 mg/l	250 mg/l	0.00
4401688961	Chlorate	100 ug/l	96 ug/l	4.08
4401688961	Perchlorate	24 ug/l	25 ug/l	4.08
4401688961	Total Dissolved Solids	1400 mg/l	1400 mg/l	0.00
SDG	Analyte	LWC3.7-20161208-0.6	FD	RPD
4401688961	Bromide	2.4 J mg/l	2.9 mg/l	NC
4401688961	Chloride	490 mg/l	490 mg/l	0.00
4401688961	Chlorate	4300 ug/l	4300 ug/l	0.00
4401688961	Perchlorate	1600 ug/l	1600 ug/l	0.00
4401688961	Total Dissolved Solids	3300 mg/l	3200 mg/l	3.08
Transect Surface Water Samples				
SDG	Analyte	T3.5B-20170202-0.5	FD	RPD
4401755981	Bromide	0.64 J mg/l	1.0 mg/l	NC
4401755981	Bromide	0.64 mg/l	50 mg/l	NC
4401755981	Chloride	280 mg/l	270 mg/l	3.64
4401755981	Chlorate	430 ug/l	440 ug/l	2.30
4401755981	Perchlorate	140 ug/l	140 ug/l	0.00
4401755981	Total Dissolved Solids	1500 mg/l	1500 mg/l	0.00
SDG	Analyte	T3.8C-20170130-0.4	FD	RPD
4401751531	Bromide	0.53 mg/l	0.90 mg/l	51.75
4401751531	Chloride	250 mg/l	250 mg/l	0.00
4401751531	Chlorate	110 ug/l	110 ug/l	0.00
4401751531	Perchlorate	32 ug/l	32 ug/l	0.00
4401751531	Total Dissolved Solids	1400 mg/l	1400 mg/l	0.00
SDG	Analyte	T4.2B-20170201-1.0	FD	RPD
4401753881	Bromide	0.67 J mg/l	0.60 mg/l	11.02
4401753881	Chloride	260 mg/l	260 mg/l	0.00
4401753881	Chlorate	170 ug/l	170 ug/l	0.00
4401753881	Perchlorate	40 ug/l	40 ug/l	0.00
4401753881	Total Dissolved Solids	1400 mg/l	1400 mg/l	0.00
SDG	Analyte	T4.65B-20170131-0.9	FD	RPD
4401752491	Bromide	1.8 mg/l	1.7 mg/l	5.71
4401752491	Chloride	260 mg/l	270 mg/l	3.77
4401752491	Chlorate	210 ug/l	210 ug/l	0.00
4401752491	Perchlorate	51 ug/l	51 ug/l	0.00
4401752491	Total Dissolved Solids	1500 mg/l	1500 mg/l	0.00
SDG	Analyte	T4.6B-20170131-0.6	FD	RPD
4401752731	Bromide	1.6 mg/l	1.6 mg/l	0.00
4401752731	Chloride	280 mg/l	280 mg/l	0.00
4401752731	Chlorate	210 ug/l	220 ug/l	4.65
4401752731	Perchlorate	57 ug/l	56 ug/l	1.77
4401752731	Total Dissolved Solids	1600 mg/l	1600 mg/l	0.00
SDG	Analyte	T4.75A-20170201-1.3	FD	RPD
4401755201	Bromide	0.69 J mg/l	0.71 J mg/l	2.86
4401755201	Chloride	360 mg/l	360 mg/l	0.00

Table 5
Field Duplicate RPDs
NERT Downgradient Study Area
Henderson, Nevada

Samples coordinated with the USGS Seepage Study				
4401755201	Chlorate	3100 ug/l	3100 ug/l	0.00
4401755201	Perchlorate	820 ug/l	830 ug/l	1.21
4401755201	Total Dissolved Solids	2200 mg/l	2200 mg/l	0.00
SDG	Analyte	T5.3B-20170202-2.0	FD	RPD
4401755961	Bromide	1.0 mg/l	1.0 mg/l	NC
4401755961	Bromide	1.0 mg/l	50 mg/l	NC
4401755961	Chloride	290 mg/l	290 mg/l	0.00
4401755961	Chlorate	54 ug/l	55 ug/l	1.83
4401755961	Perchlorate	18 ug/l	18 ug/l	0.00
4401755961	Total Dissolved Solids	1500 mg/l	1500 mg/l	0.00
Discrete Surface Water Samples				
SDG	Analyte	GLW4.4-20170207-14:11-1.3	FD	RPD
4401763741	Bromide	1.6 mg/l	1.2 mg/l	28.57
4401763741	Chloride	270 mg/l	270 mg/l	0.00
4401763741	Chlorate	97 ug/l	96 ug/l	1.04
4401763741	Perchlorate	25 ug/l	25 ug/l	0.00
4401763741	Total Dissolved Solids	1500 mg/l	1500 mg/l	0.00
SDG	Analyte	GLW4.85-20170207-15:42-0.8	FD	RPD
4401763801	Bromide	0.29 J mg/l	0.32 J mg/l	9.84
4401763801	Chloride	300 mg/l	310 mg/l	3.28
4401763801	Chlorate	1200 ug/l	1200 ug/l	0.00
4401763801	Perchlorate	290 ug/l	310 ug/l	6.67
4401763801	Total Dissolved Solids	1600 mg/l	1600 mg/l	0.00
SDG	Analyte	GLW4.9-20170208-16:35-1.4	FD	RPD
4401765081	Bromide	1.4 mg/l	1.0 mg/l	33.33
4401765081	Chloride	240 mg/l	240 mg/l	0.00
4401765081	Chlorate	84 ug/l	84 ug/l	0.00
4401765081	Perchlorate	15 ug/l	14 ug/l	6.90
4401765081	Total Dissolved Solids	1400 mg/l	1400 mg/l	0.00
SDG	Analyte	GLWC6.1_3-20170207-15:06-0.9	FD	RPD
4401763901	Bromide	0.50 mg/l	0.50 mg/l	NC
4401763901	Chloride	260 mg/l	270 mg/l	3.77
4401763901	Chlorate	100 ug/l	100 ug/l	0.00
4401763901	Perchlorate	4.0 ug/l	4.0 ug/l	NC
4401763901	Total Dissolved Solids	1100 mg/l	1100 mg/l	0.00
SDG	Analyte	GLWC6.1_4-20170206-15:45-1.3	FD	RPD
4401759941	Bromide	0.68 J mg/l	0.67 J mg/l	1.48
4401759941	Chloride	330 mg/l	330 mg/l	0.00
4401759941	Chlorate	93 ug/l	91 ug/l	2.17
4401759941	Perchlorate	1.3 J ug/l	1.2 J ug/l	8.00
4401759941	Total Dissolved Solids	1400 mg/l	1400 mg/l	0.00
SDG	Analyte	GLWC6.1_4-20170208-10:35-1.3	FD	RPD
4401763701	Bromide	0.46 J mg/l	0.25 J mg/l	59.15
4401763701	Chloride	220 mg/l	230 mg/l	4.44
4401763701	Chlorate	88 ug/l	89 ug/l	1.13
4401763701	Perchlorate	4.0 ug/l	4.0 ug/l	NC
4401763701	Total Dissolved Solids	1200 mg/l	1100 mg/l	8.70

Table 5
Field Duplicate RPDs
NERT Downgradient Study Area
Henderson, Nevada

Samples coordinated with the USGS Seepage Study				
SDG	Analyte	LW3.4-20170209-13:33-0.5	FD	RPD
4401766421	Bromide	1.0 mg/l	1.0 mg/l	NC
4401766421	Chloride	290 mg/l	290 mg/l	0.00
4401766421	Chlorate	200 ug/l	200 ug/l	0.00
4401766421	Perchlorate	52 ug/l	57 ug/l	9.17
4401766421	Total Dissolved Solids	1500 mg/l	1500 mg/l	0.00
SDG	Analyte	LW3.85-20170207-15:50-0.6	FD	RPD
4401763841	Bromide	0.70 J mg/l	0.50 J mg/l	33.33
4401763841	Chloride	250 mg/l	250 mg/l	0.00
4401763841	Chlorate	110 ug/l	110 ug/l	0.00
4401763841	Perchlorate	31 ug/l	30 ug/l	3.28
4401763841	Total Dissolved Solids	1500 mg/l	1500 mg/l	0.00
SDG	Analyte	LW3.85-20170208-09:27-0.5	FD	RPD
4401763631	Bromide	0.58 J mg/l	0.52 J mg/l	10.91
4401763631	Chloride	260 mg/l	260 mg/l	0.00
4401763631	Chlorate	130 ug/l	130 ug/l	0.00
4401763631	Perchlorate	34 ug/l	34 ug/l	0.00
4401763631	Total Dissolved Solids	1400 mg/l	1500 mg/l	6.90
SDG	Analyte	LW4.1-20170208-10:22-0.4	FD	RPD
4401763641	Bromide	0.50 mg/l	1.0 mg/l	NC
4401763641	Chloride	270 mg/l	260 mg/l	3.77
4401763641	Chlorate	210 ug/l	220 ug/l	4.65
4401763641	Perchlorate	53 ug/l	52 ug/l	1.90
4401763641	Total Dissolved Solids	1400 mg/l	1400 mg/l	0.00
SDG	Analyte	LW4.1-20170209-16:02-0.4	FD	RPD
4401766411	Bromide	1.0 mg/l	1.0 mg/l	NC
4401766411	Chloride	270 mg/l	260 mg/l	3.77
4401766411	Chlorate	160 ug/l	170 ug/l	6.06
4401766411	Perchlorate	36 ug/l	35 ug/l	2.82
4401766411	Total Dissolved Solids	1500 mg/l	1500 mg/l	0.00
SDG	Analyte	LW4.95-20170207-16:30-1.2	FD	RPD
4401763821	Bromide	0.26 J mg/l	0.50 mg/l	NC
4401763821	Chloride	270 mg/l	270 mg/l	0.00
4401763821	Chlorate	63 ug/l	59 ug/l	6.56
4401763821	Perchlorate	13 ug/l	12 ug/l	8.00
4401763821	Total Dissolved Solids	1400 mg/l	1400 mg/l	0.00
SDG	Analyte	LW4.95-20170209-10:35-1.0	FD	RPD
4401766501	Bromide	0.65 mg/l	0.54 mg/l	18.49
4401766501	Chloride	240 mg/l	240 mg/l	0.00
4401766501	Chlorate	82 ug/l	86 ug/l	4.76
4401766501	Perchlorate	24 ug/l	23 ug/l	4.26
4401766501	Total Dissolved Solids	1400 mg/l	1400 mg/l	0.00
SDG	Analyte	LW6.05-20170208-12:35-0.8	FD	RPD
4401763751	Bromide	0.56 mg/l	0.70 J mg/l	22.22
4401763751	Chloride	240 mg/l	250 mg/l	4.08
4401763751	Chlorate	72 ug/l	70 ug/l	2.82
4401763751	Perchlorate	11 ug/l	8.0 ug/l	31.58

Table 5
Field Duplicate RPDs
NERT Downgradient Study Area
Henderson, Nevada

Samples coordinated with the USGS Seepage Study				
4401763751	Total Dissolved Solids	1500 mg/l	1500 mg/l	0.00
SDG	Analyte	LW6.7-20170207-14:25-0.6	FD	RPD
4401763761	Bromide	1.4 mg/l	1.4 mg/l	0.00
4401763761	Chloride	240 mg/l	240 mg/l	0.00
4401763761	Chlorate	55 ug/l	55 ug/l	0.00
4401763761	Perchlorate	4.0 ug/l	4.0 ug/l	NC
4401763761	Total Dissolved Solids	1400 mg/l	1400 mg/l	0.00
SDG	Analyte	LW7.2-20170209-14:41-0.9	FD	RPD
4401766441	Bromide	0.35 J mg/l	0.33 J mg/l	5.88
4401766441	Chloride	200 mg/l	200 mg/l	0.00
4401766441	Chlorate	67 ug/l	69 ug/l	2.94
4401766441	Perchlorate	4.0 ug/l	4.0 ug/l	NC
4401766441	Total Dissolved Solids	1200 mg/l	1200 mg/l	0.00
SDG	Analyte	LWC6.1_1-20170209-14:39-1.1	FD	RPD
4401766471	Bromide	0.50 mg/l	0.50 mg/l	NC
4401766471	Chloride	280 mg/l	280 mg/l	0.00
4401766471	Chlorate	79 ug/l	81 ug/l	2.50
4401766471	Perchlorate	4.0 ug/l	4.0 ug/l	NC
4401766471	Total Dissolved Solids	1200 mg/l	1100 mg/l	8.70

Appendix A

Notification Letter from Test America to AECOM

July 24, 2017

Carmen Caceres-Schnell
AECOM, Inc.
1220 Avenida Acaso
Camarillo, CA 93012

Subject: NDEP Accreditation, Laboratory ID for Perchlorate Non-Potable Water

Dear Ms. Caceres-Schnell:

It is the policy of TestAmerica to provide its clients with defensible data of the highest quality and to comply with the certification requirements of all appropriate regulatory authorities. TestAmerica Irvine is notifying affected clients of a recent gap on our certification with the Nevada Department of Environmental Protection (NDEP) for determination of Perchlorate in non-potable water at our Irvine laboratory. This notification is a part of our standard client notification procedure for events involving State or agency certifications. This certification change does not affect the validity of any data reported by TestAmerica Irvine, and all other required certifications are in place.

- CWA perchlorate was included on our NDEP Fiscal Year 2016 scope, which expired 07/31/16, but was extended per NDEP until an updated scope could be issued, on 10/27/16.
- CWA perchlorate was not included on the 2017 scope issued by NDEP, due to the lack of state-specific Performance Testing studies (PTs) for CWA perchlorate. CWA perchlorate was added to our PT schedule for NDEP, and PTs completed successfully on 2/18/17 and 5/16/17. CWA perchlorate was added back to our NDEP scope effective 06/21/2017.
- We have maintained passing PTs for perchlorate by EPA 314.0 under the Safe Drinking Water Act (SDWA) and Resource Conservation and Recovery Act (RCRA) throughout this timeframe for both ORELAP and NDEP. We have maintained this parameter on our Oregon TNI-NELAP (ORELAP) scope throughout this timeframe. ORELAP is our primary accrediting authority and NDEP certification is based upon reciprocity with ORELAP. The analytical method (EPA 314.0), instrumentation, standards, and analysts are the same for all three programs (CWA, SDWA and RCRA).
- As an immediate corrective action we engaged with NDEP to ensure a return to scope for perchlorate in non-potable water. As a long term corrective action, we have implemented a more rigorous review procedure with regard to scope requests versus existing scope elements versus PT availability in the case of state-specific accreditation programs.

- Initial client notifications were made upon our discovery of the issue and follow up with NDEP regarding requirements for adding perchlorate back to the scope. These notifications occurred in June 2017.

Through this process, TestAmerica has complied with all requests from NDEP for supporting documentation. We appreciate NDEP's dedication and thoroughness to review the PT and comparison data, and assist us in obtaining the appropriate certification. We look forward to continuing to serve our clients, their programs, and the residents of the State of Nevada.

If you have any questions regarding this or require further information, please contact me at linda.scharpenberg@testamericainc.com, or via phone at 949.261.1022.

Sincerely yours,



Linda Scharpenberg Ed. D.
Laboratory Director - Irvine

cc: Chad Roper - AECOM
Kathryn Chang, Quality Assurance Manager - TestAmerica
Pamela Schemmer, Quality Assessment Director - TestAmerica
Patty Mata, Project Manager - TestAmerica

Appendix B

Notification Email from AECOM to NDEP

Roper, Chad

From: Roper, Chad
Sent: Thursday, July 20, 2017 1:47 PM
To: 'jcarltonparker@ndep.nv.gov'
Cc: Van Den Berg, Harry; Caceres-Schnell, Carmen; Bilodeau, Sally; Durocher, Kristen
Subject: Follow up on TestAmerica certification lapse - Downgradient Study Area Surface Water Investigation

Carlton,

As Harry has discussed with you, TestAmerica notified us that their certification for perchlorate analysis in non-potable water lapsed during the period from August of 2016 to June of 2017.

Our Quality Assurance Project Plan (QAPP) states "The laboratories used for chemical surface water and groundwater testing will be certified by the State of Nevada for the analysis of interest." Once we were aware that we had deviated from our plan, we began our investigation. Thus far, our investigation has indicated the following.

1. Only perchlorate analyses contained in the Surface Water Investigation Technical Memorandum (SWI Tech Memo) were performed by Test America during the timeframe of the lapse.
2. Data usability in regards to the data quality objectives for the perchlorate data included in the SWI Tech Memo was unaffected for the following reasons:
 - a. TestAmerica maintained their drinking water certification for perchlorate (by the same method- 314.0) with the State of Nevada and maintained their certification as an environmental laboratory from the State of Nevada throughout the affected period.
 - b. The analytical method (314.0) used for the analysis was accredited by other states with similar accreditation requirements as the State of Nevada.
 - c. Standard Operating Procedures, Instrumentation, Standards, and Staff performing the perchlorate analysis remained the same throughout the affected period.
 - d. Accreditation was restored June 21, 2017 including the successful completion of a performance test.

In conclusion, it is our opinion that the data are valid for their intended use and that no additional qualifiers are warranted. We plan to include this statement in the data validation summary report for the SWI tech memo as well as a copy of this email and a copy of our notification from TestAmerica.

Despite our opinion that there was no effect on data quality due to the lapse, our deviation from our QAPP and TestAmerica's failure to maintain accreditation both require the following corrective actions:

1. AECOM will require the labs to provide proof of current certification for each of the analytical methods when we place the order. Current certification will be confirmed by the Analytical Task Leader or Investigation Task Leader prior to samples being shipped for analysis.
2. TestAmerica renewed their certification as soon as they were aware of the lapse. To prevent any future occurrences of certification lapses, TestAmerica will be checking their annual scope of accreditation against what was applied for and what was on the scope the previous year. Any discrepancies would be investigated and resolved within 30 days (or less) of the issuance of the scope.

We will keep you posted on any developments in this situation. Please let us know if you have any questions or additional suggestions for corrective actions.

Sincerely,

Chad Roper, PhD
Analytical Task Leader
D +1-805-764-4027
M +1-805-236-1009
Chad.Roper@aecom.com

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Appendix G

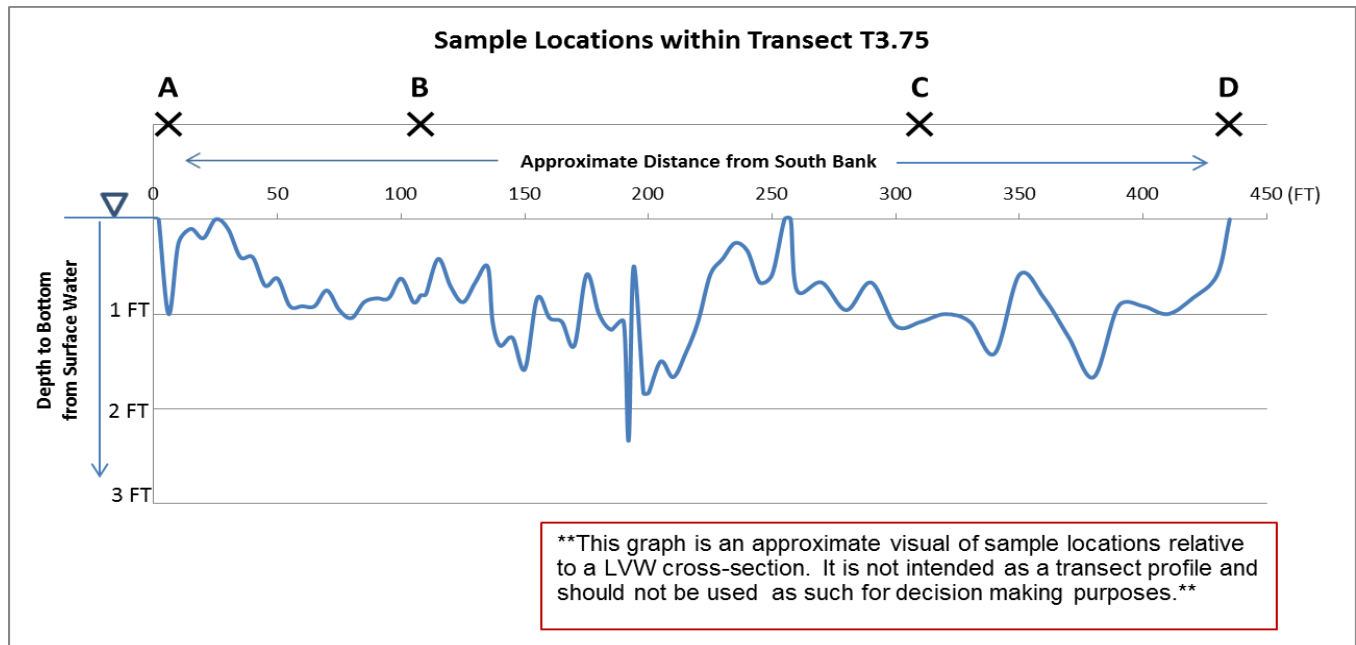
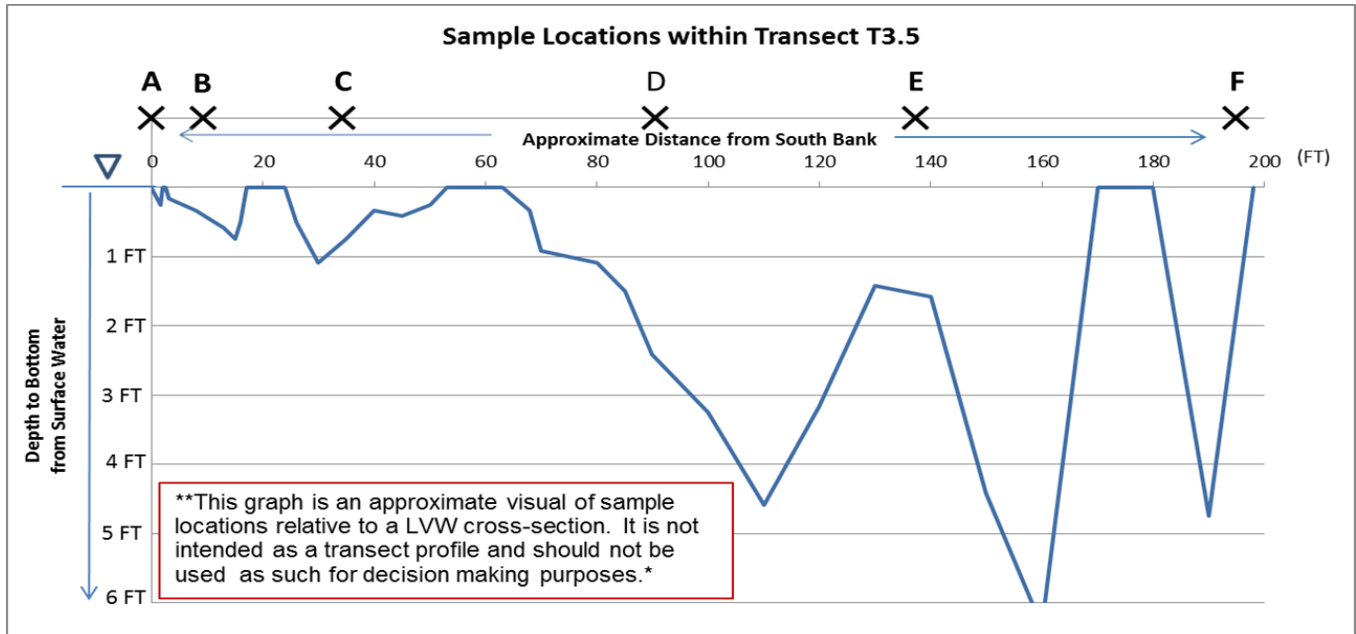
Staff Gage Data and Cross Sections of Transects

Appendix G Depiction of Transect Cross Section - Transect Sampling

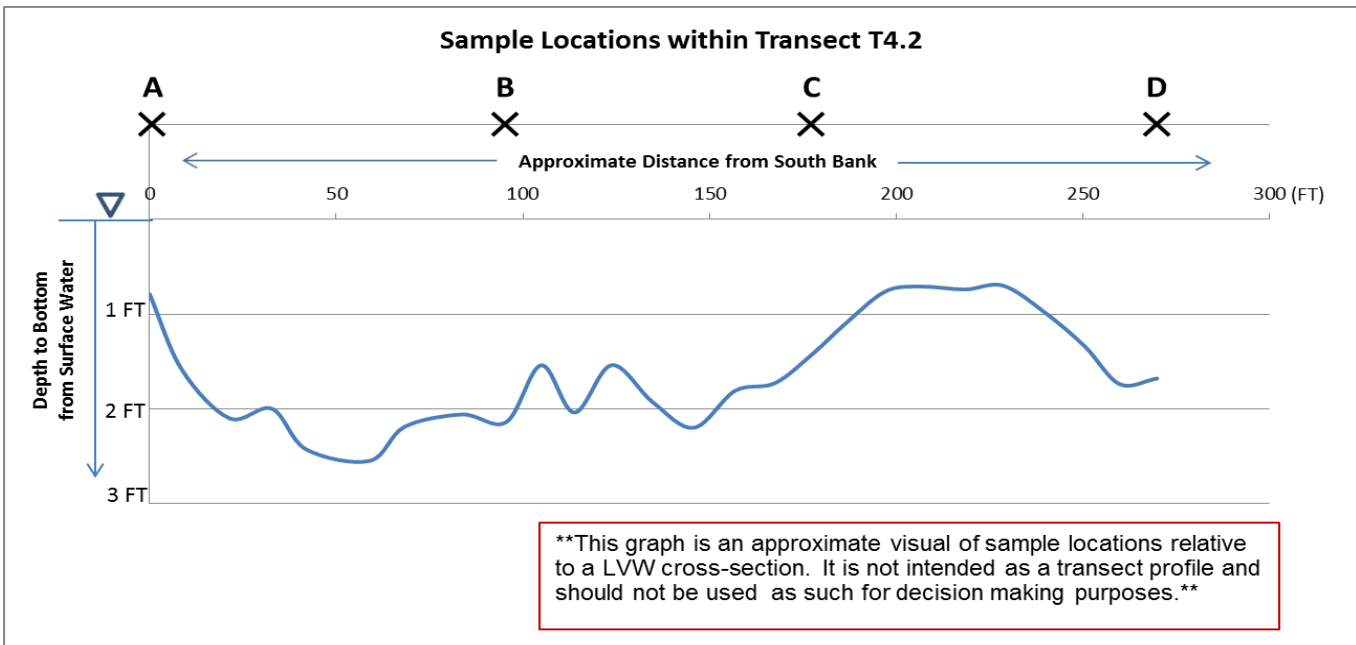
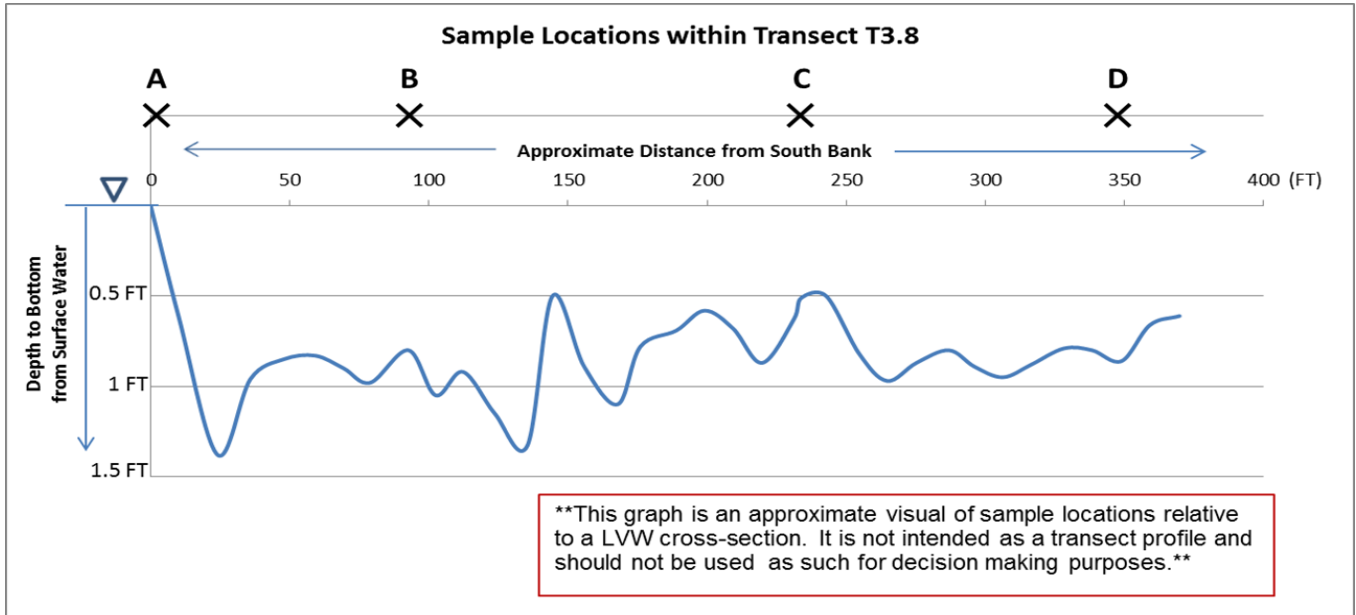
January 30th - February 3rd 2017

NERT Remedial Investigation - Downgradient Study Area

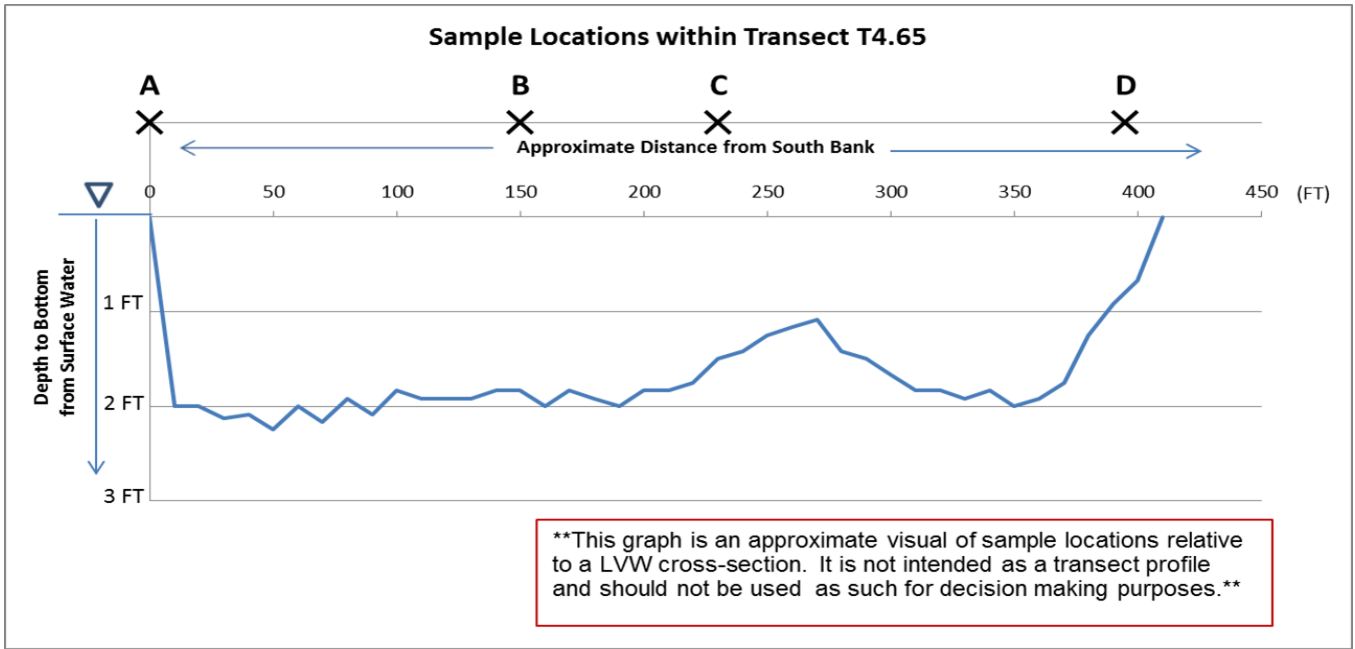
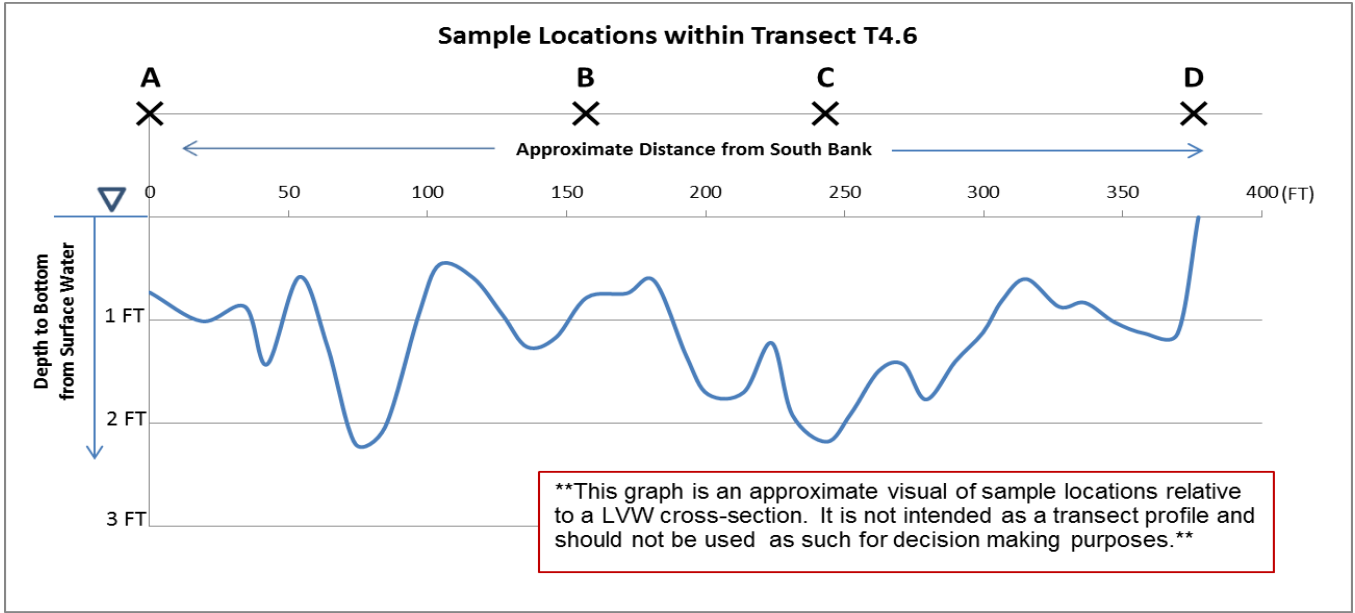
Henderson, Nevada



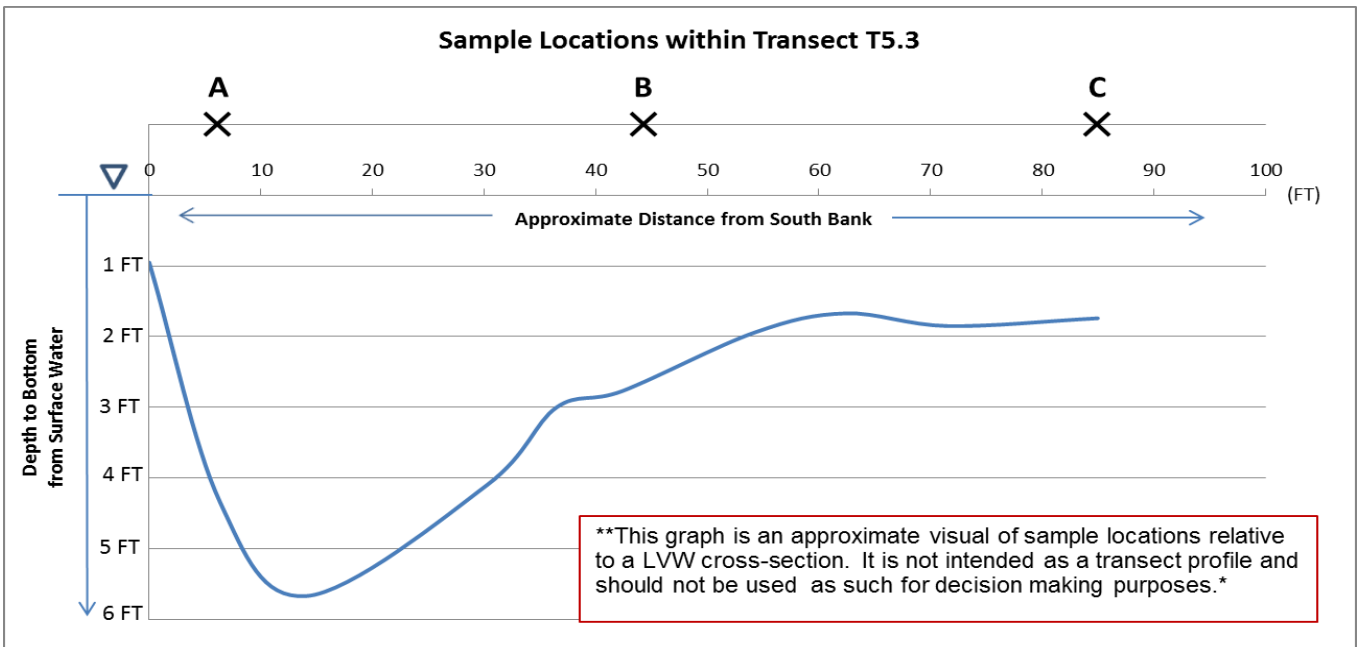
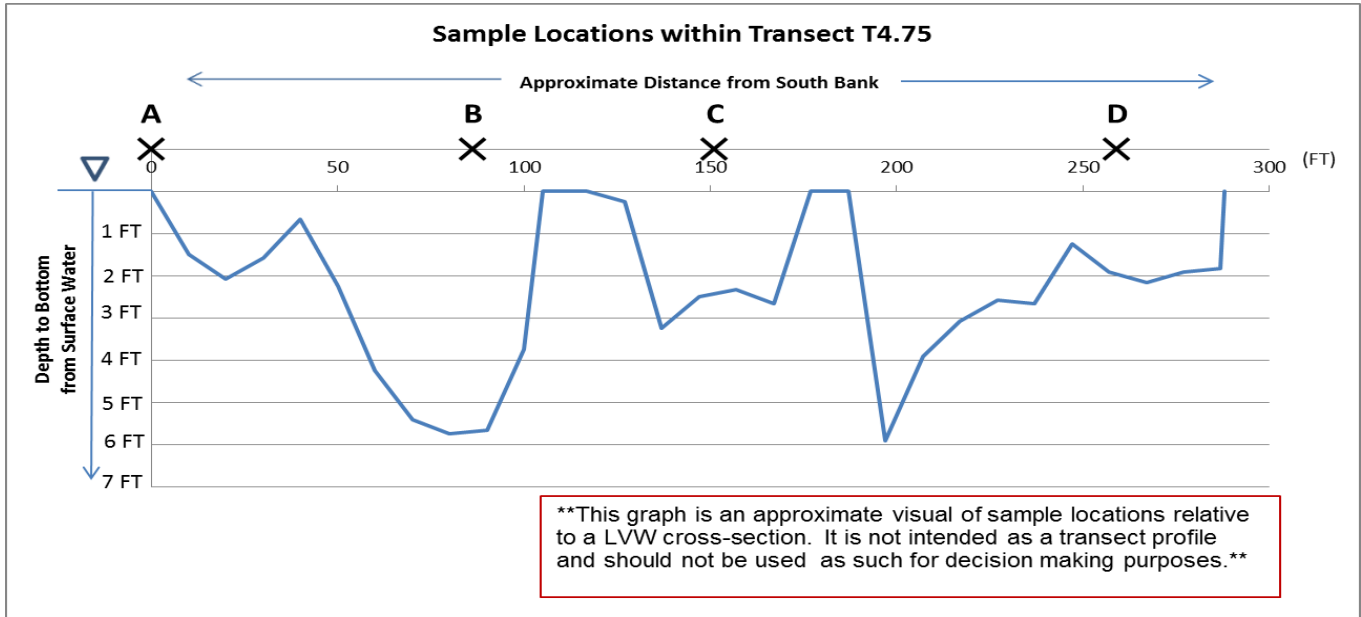
Appendix G Depiction of Transect Cross Section - Transect Sampling
January 30th - February 3rd 2017
 NERT Remedial Investigation - Downgradient Study Area
 Henderson, Nevada



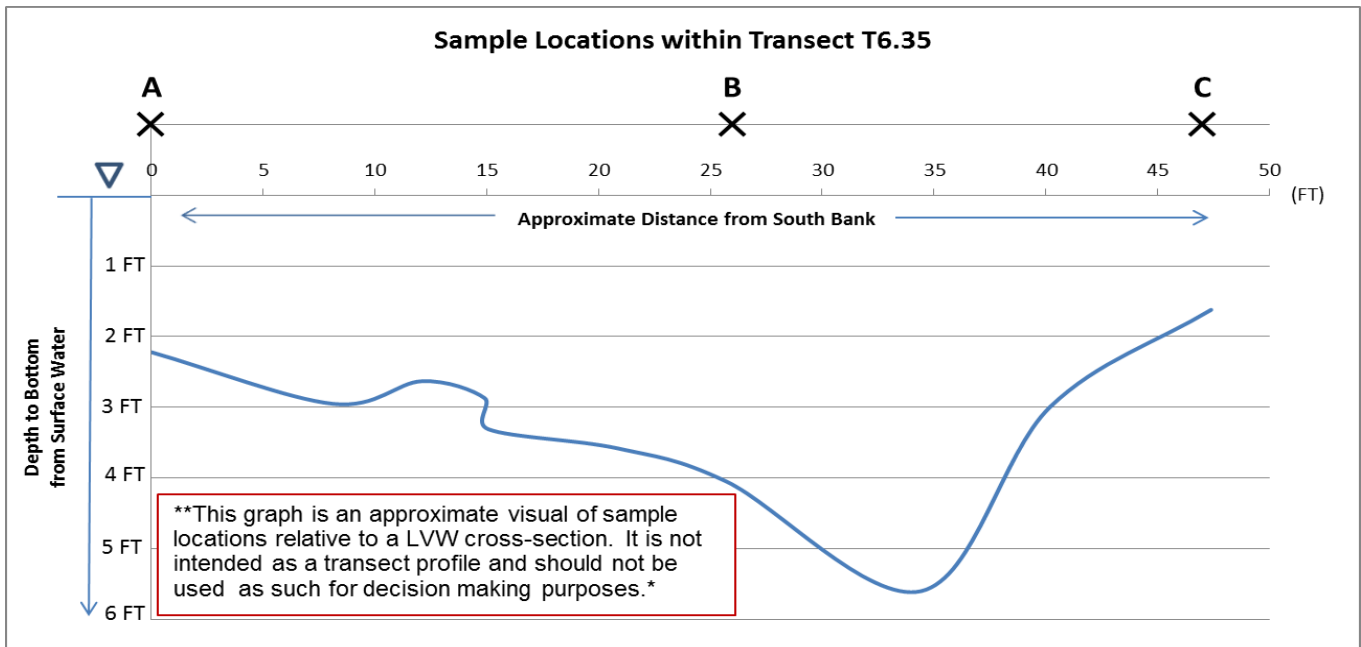
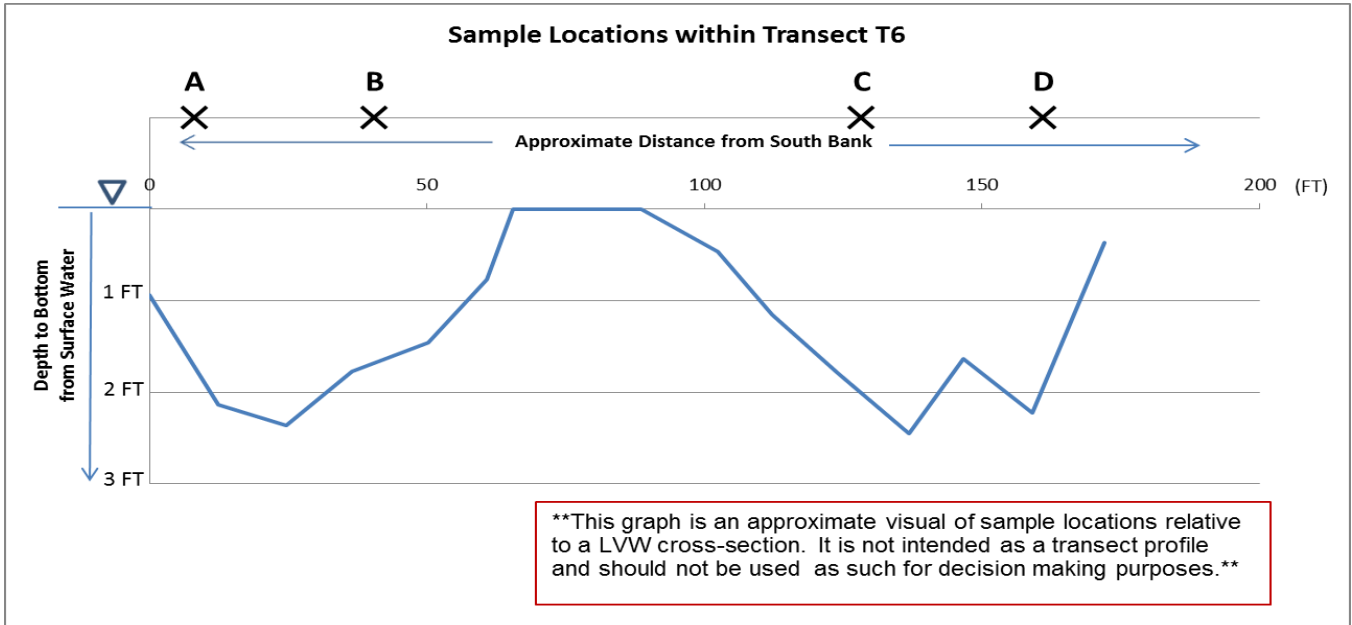
Appendix G Depiction of Transect Cross Section - Transect Sampling
January 30th - February 3rd 2017
 NERT Remedial Investigation - Downgradient Study Area
 Henderson, Nevada



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 Henderson, Nevada



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 Henderson, Nevada

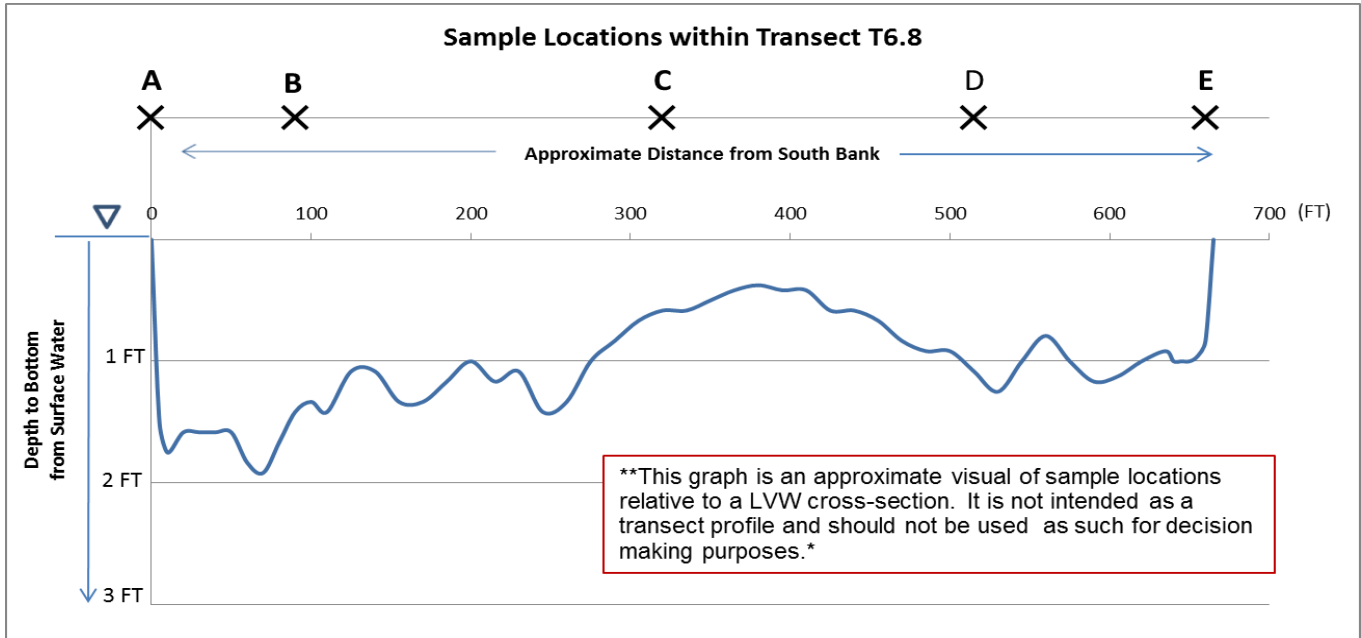


Appendix G Depiction of Transect Cross Section - Transect Sampling

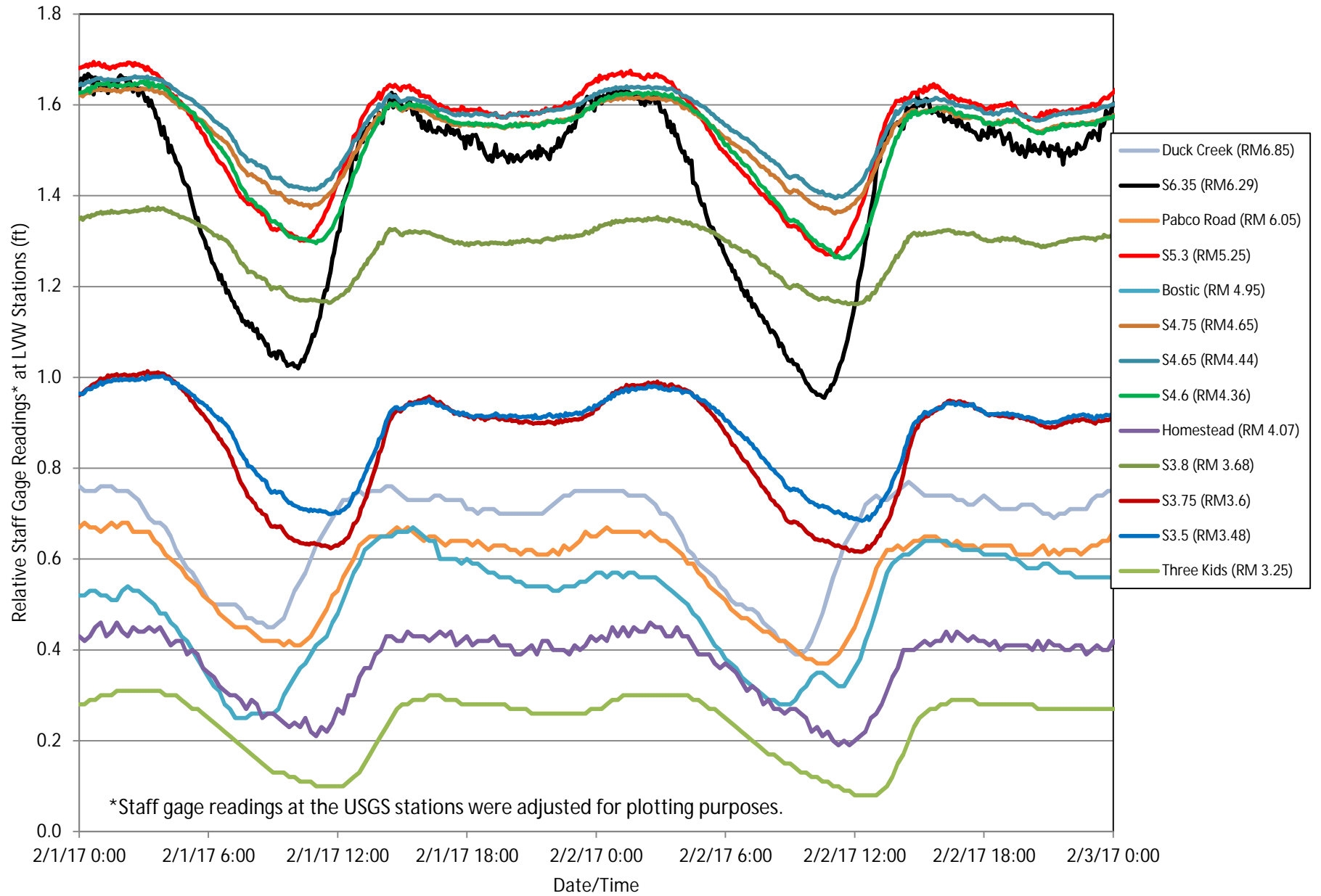
January 30th - February 3rd 2017

NERT Remedial Investigation - Downgradient Study Area

Henderson, Nevada



Staff Gage Readings: Example from February 1 - 2, 2017



Staff Gage Readings from S3.8

