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Resolution Copper Mining

Resolution Copper Project

Near West Tailings Storage Facility
Closure Cover Study

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March 2016

March 31, 2016

Resolution Copper Mining
P.O. Box 1944
Superior, Arizona
85273

Ms. Victoria Peacey
Senior Manager of Environment, Permitting and Communities

Dear Ms. Peacey:

Resolution Copper Project
Near West Tailings Storage Facility Closure Cover Study

Please find enclosed our final report for the Near West Tailings Storage Facility Closure Cover Study.

Yours truly,

KLOHN CRIPPEN BERGER LTD.



Kate Patterson, P.Eng., M.Eng.
Project Manager

KP:dl

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Resolution Copper Mining

Resolution Copper Project

Near West Tailings Storage Facility
Closure Cover Study

EXECUTIVE SUMMARY

Resolution Copper Mining LLC (RCM) commissioned Klohn Crippen Berger Ltd. (KCB) to assess conceptual closure covers for the proposed Near West Tailings Storage Facility (TSF) which will be used to store scavenger tailings and cleaner tailings. The scope of work included a closure cover material characterization program, climate analyses, and water balance modeling for closure cover strategies.

Closure and Cover Strategy

The closure strategy for the facility begins during tailings deposition planning and operations, and continues through to the onset of closure. The long-term closure goals for the Near West TSF are to have a well-drained, stable facility and to limit the generation and potential release of poor seepage water quality. Management during operations of the potentially acid generating (PAG) cleaner tailings and their location within the facility post-closure is important to reducing the risk of acid rock drainage (ARD) and metals leaching (ML). The tailings deposition strategy is to encapsulate the cleaner tailings within the scavenger slimes and to maintain high levels of saturation to help limit oxygen ingress.

The primary performance objectives for closure and reclamation of the TSF are to:

- develop a stable vegetated reclaimed surface that limits net infiltration (defined as infiltration of precipitation that is not subsequently lost to evaporation or transpiration) and protects surface water runoff quality;
- minimize ponded water on the closed tailings surface;
- if possible, promote saturation of the PAG cleaner tailings to reduce their exposure to atmospheric oxygen;
- protect the reclaimed surface against wind and water erosion; and
- provide a growth medium for vegetation establishment and long term sustainability.

The Near West site's climate is hot and semi-arid. The annual average precipitation is 18 inches, and the estimated annual average potential evapotranspiration (PET) is 72 inches, or four times annual precipitation. Under these conditions, an appropriate cover type is store and release (evapotranspiration or ET covers), which can be effective at significantly reducing net infiltration, be constructed of local earthen borrow sources, and accommodate settlement post closure. Locally available borrow material (Gila Conglomerate) has been successfully used previously in the region as a cover material and is identified as a preferred cover material for this study.

Material Characterization

A field sampling and extensive laboratory testing program was conducted to estimate the physical, geochemical and hydraulic properties of Gila Conglomerate and the hydraulic properties of the tailings.

Gila Conglomerate is highly variable in constituent source and particle size distributions ranging from sandy silt to cobbly sand and gravel, and will likely provide good resistance to erosion. It is classified as not potentially acid generating (NPAG) and has high net neutralization potential (NNP). Laboratory testing on available materials yielded a high hydraulic conductivity and low water holding capacity; however, processing and natural weathering of the Gila Conglomerate, and potential blending with tailings, can be expected to improve its characteristics for reclamation.

The scavenger tailings gradation is expected to vary along the length of the deposited beach, from coarse sands near the embankment beach areas to fine-grained slimes in the vicinity of the reclaim pond. The scavenger beach tailings are expected to have a hydraulic conductivity of approximately 10^{-4} cm/s and relatively low available water holding capacity compared to the finer tailings. Conversely, the cleaner tailings and scavenger slimes tailings have very low hydraulic conductivity (~10^{-9} cm/s and ~10^{-8} cm/s, respectively) and high moisture retention capacity.

Water Balance Analysis

One-dimensional soil-atmosphere numerical modeling was conducted on a variety of cover configurations for the scavenger and cleaner tailings. The modeling accounted for precipitation, runoff, evaporation, root uptake and plant transpiration, moisture storage and redistribution, and deep percolation. The focus of the water balance analysis was predicted net infiltration (i.e. potential tailings seepage) and moisture content of the cleaner tailings. The modeling used an hourly 56-year climate dataset developed from the long-term daily record from the Superior station and short-term hourly record from the West Plant. Different scenarios were run with variations on:

- presence of a monolithic Gila Conglomerate cover on the surface;
- thickness of the Gila Conglomerate layer on the surface (1 ft to 2.3 ft);
- fine or coarse texture of the Gila Conglomerate;
- with and without root water uptake and transpiration by vegetation;
- allowance for ponding of excess precipitation (e.g. reducing runoff); and
- presence of a scavenger tailings/Gila Conglomerate composite (blended) layer on the surface (1.6 ft thick) at ratios of 25% (tailings)/75% (Gila Conglomerate), 30%/70%, 50%/50%, and 65%/35%).

Major findings from the water balance analysis are:

- Predicted net infiltration rates for scavenger tailings are sensitive to 1) the gradation of the scavenger tailings, with higher predicted net infiltration for coarser materials, lower for finer grained materials; and 2) the thickness of the Gila Conglomerate cover, with higher predicted net infiltration for a thicker cover, lower for the thinner cover.
- Predicted net infiltration is relatively insensitive to the texture of the Gila Conglomerate cover, due to the small variance in gradation and the coarse nature of the material tested during this program. The monolithic Gila Conglomerate covers, as represented by the material properties

developed for this study, are predicted to perform poorly to control net infiltration into scavenger tailings. This results from its low moisture retention capacity. Based on the modeling results, predicted net infiltration can be expected to increase with Gila Conglomerate cover thickness.

- The predicted net infiltration was lowest for directly revegetated scavenger tailings and for composite blended material covers consisting of Gila Conglomerate and tailings.
- Predicted net infiltration for covers overlying scavenger slimes or cleaner tailings is generally low, and is primarily controlled by the low saturated hydraulic conductivity of the tailings, which severely limits downward moisture redistribution in the profile.
- For cleaner tailings, a cover of scavenger tailings overlain by vegetated Gila Conglomerate or blended tailings and Gila Conglomerate (approximately 2 ft) will maintain high saturation levels (85% or higher) in the underlying cleaner tailings.

Conclusions

The climate at the Near West TSF, with a high ratio of PET to precipitation, is conducive to a reclamation strategy of using earthen store and release covers. Such covers include direct revegetation of suitable tailings, imported natural materials, like the local Gila Conglomerate, which is commonly used in the district for tailings reclamation, or some blend of these materials.

The characteristics of the sampled Gila Conglomerate suggest that locally it exhibits variable physical properties, but generally it is a coarse, unreactive material that will provide good erosion protection. Scavenger tailings have moderately low hydraulic conductivity and good moisture retention characteristics. These materials, as a layered system or blended composite, are likely to meet reclamation performance objectives.

Store and release covers over tailings will significantly reduce net infiltration, as supported by the water balance analysis. Vegetated covers using native species can be expected to reduce net infiltration to low rates, typically less than 3% of annual precipitation. Net infiltration can be expected to increase when a thick monolithic layer of coarse cover material is placed on the surface of the tailings.

This evaluation has identified closure strategies for cleaner tailings that maintain a high degree of saturation in the cleaner tailings and low net infiltration rates. These strategies exploit the physical characteristics of the cleaner tailings (and co-mingled scavenger slimes), specifically the very low saturated hydraulic conductivity and high moisture retention characteristics. Burying the cleaner tailings with scavenger tailings to below the evapotranspiration zone maintained the minimum targeted saturation of 85% using 6.6 feet of scavenger tailings; other configurations may provide similar performance.

The following key conclusions for the preliminary closure plan of the Near West TSF can be made:

- The tailings deposition strategy should keep the cleaner tailings saturated during operations and ultimately encapsulate them at 10 ft to 15 ft below the surface post-closure to maintain cleaner tailings saturation above 85%.

- Establish vegetation on the tailings surface to reduce wind and water erosion, and decrease net infiltration. Revegetation of the tailings directly may not be possible or favorable depending on the vegetation type and growth properties of the near surface tailings. Therefore, the placement of Gila Conglomerate or a Gila Conglomerate/tailings composite could be required. A cover thickness of 1 ft over scavenger tailings and 2 ft over areas underlain by cleaner tailings would meet the closure objectives based on the modeling results.

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1 INTRODUCTION

1.1 Background

Klohn Crippen Berger Ltd. (KCB) was commissioned by Resolution Copper Mining LLC (RCM) to assess the hydraulic performance of conceptual closure covers for the proposed Near West Tailings Storage Facility (TSF).

RCM is proposing to develop an underground copper mine using the Panel Cave mining method approximately two miles east of the town of Superior in the Pioneer Mining District, Pinal County, Arizona. It is anticipated that this project would generate approximately 1.6 billion tons of tailings over a projected mine life of 45 years. The ore processing will generate two mineralogically and geochemically discrete tailings streams known as “cleaner” tailings and “scavenger” tailings. The primary goal of this separation is to concentrate the remaining non-economic (or gangue) sulfide minerals (primarily pyrite) and residual metals into the cleaner tailings, and thus minimize sulfide minerals and residual metals in the scavenger tailings stream. The two streams can them be specifically managed according to their expected behaviors.

In the current Mine Plan of Operations (MPO), both tailings streams will be stored in the Near West TSF. The thickened scavenger tailings will be deposited behind upstream raised perimeter embankments. Cleaner tailings will be deposited behind a separate internal starter dam for the initial eight years and thereafter deposited in the scavenger reclaim pond. Details on the TSF design are included in the MPO study (KCB 2014). The cleaner tailings are Potentially Acid Generating (PAG) and are strategically sited to minimize the potential for acid rock drainage and metal leaching (ARD/ML) during operations and post closure. This includes initially placing the tailings on low permeability Gila Conglomerate, saturating the tailings in the reclaim pond during operations, encapsulating the cleaner tailings within low-permeability slimes segregated from the scavenger tailings, and burying the cleaner tailings at closure.

This study assesses the long-term hydraulic performance of potential closure cover options for both tailings streams.

1.2 Scope of Work

The scope of this report includes summaries of:

- field sample collection from potential borrow material sites (Gila Conglomerate);
- a laboratory testing program for material characterization;
- a climate assessment for the Near West site, which includes development of a comprehensive and internally consistent climate dataset for use in water balance predictions; and
- simulation of the hydraulic performance of potential closure cover options (net infiltration and moisture content) using water balance modeling.

The scope of this study excludes any assessment of vegetation establishment and sustainability using the available borrow materials and tailings. Although standard geochemical and nutrient testing of the Gila Conglomerate was conducted as part of this study, no assessment is provided regarding the agronomic suitability of the materials for reclamation, including required amendments. No analysis was made of expected or relative erosion rates for the proposed covers.

1.3 Report Organization

This report is organized into the following sections:

- **Section 1** – Introduction - summarizes objectives, scope and organization of the report;
- **Section 2** – Closure and Cover Strategy - summarizes the overall closure cover strategy;
- **Section 3** – Material Characterization - summarizes the laboratory testing results and material characterization for the infiltration modeling for the closure cover assessment;
- **Section 4** – Climate Assessment - summarizes the climate analysis and the climate dataset generation.
- **Section 5** – Closure Cover Predictions - summarizes the infiltration modeling completed to assess the closure cover options;
- **Section 6** – Summary and Conclusions; and
- **Section 7** – Clarifications Regarding this Report.

Several supporting appendices are included in this report:

- **Appendix I** – Laboratory Testing Summary;
- **Appendix II** – Climate Analysis – provides a summary of how the climate dataset was generated; and
- **Appendix III** – Closure Cover Water Balance Predictions - describes the wager balance modeling completed to assess the closure cover options.

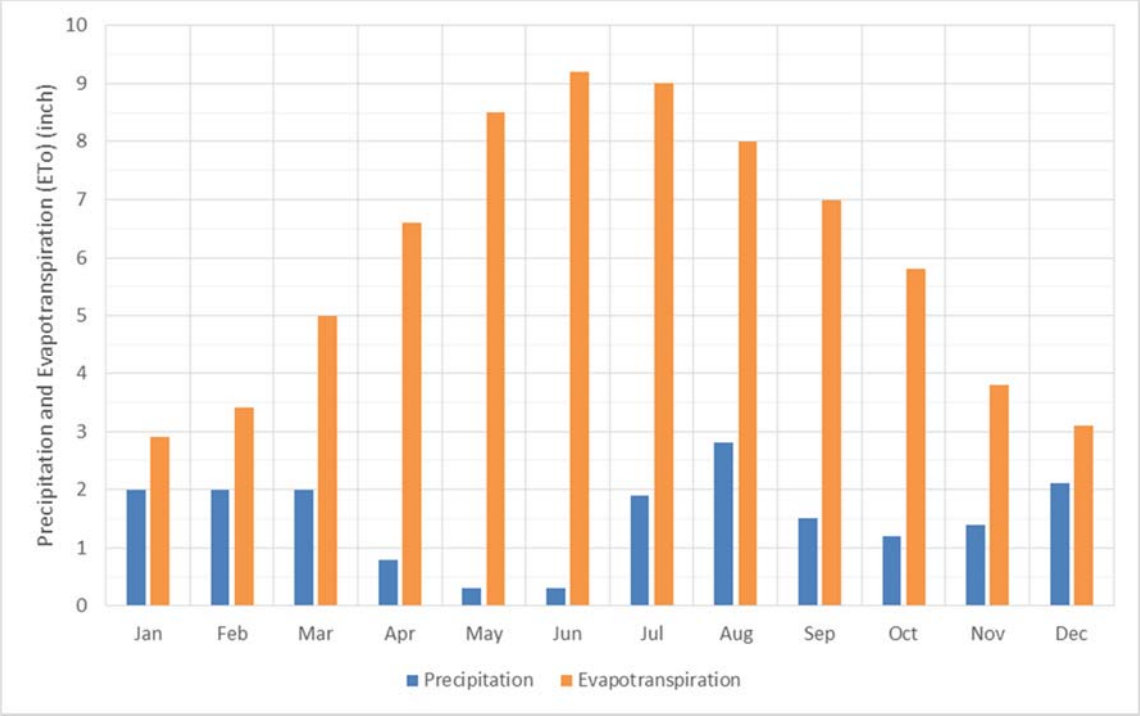
2 CLOSURE AND COVER STRATEGY

The long-term closure goals for the Near West TSF are to have a well-drained, stable facility and to limit poor seepage water quality released to the environment. Management during operations of the PAG cleaner tailings and their location within the facility post-closure is important to reducing the risk of ARD/ML in tailings seepage. The tailings deposition strategy is to encapsulate the cleaner tailings within the scavenger tailings to minimize contact with water and oxygen.

The closure and cover strategy for the facility begins during operations and tailings deposition planning, and continues through to the onset of closure. The primary performance objectives for closure and reclamation of the TSF are to:

- develop a stable vegetated cover system that limits net infiltration (defined in this study as infiltration of precipitation that is not subsequently lost to evaporation or plant transpiration) and protects surface water runoff quality;
- minimize ponded water on the closed tailings surface;
- promote high levels of saturation of the cleaner tailings to reduce their exposure to atmospheric oxygen;
- protect the reclaimed surface against wind and water erosion; and
- provide a growth medium for vegetation establishment and long term sustainability.

The Near West site's climate is hot and semi-arid. The annual average precipitation is about 18 inches, and the estimated annual average potential evapotranspiration (PET) is 72 inches, or four times annual precipitation. Monthly averages are shown in Figure 2.1 (details on the climate assessment are given in Section 4, Appendix II and Appendix III). Under these conditions, the cover type generally employed based on the Covers and Climate Types relationship shown in Figure 2.2 is a store and release cover, which can be effective at significantly reducing net infiltration.



Note: Evapotranspiration (ETo) is calculated using the Penman-Monteith combined equation in Hydrus1D based on the generated Superior climate data set and reference surface and vegetation parameters (see Appendix III).

Figure 2.1 Superior Monthly Average Precipitation and Potential Evapotranspiration (ETo)

Figure 6-9: Covers and Climate Types (modified from Holdridge et al., 1971 by Wickland and Wilson)

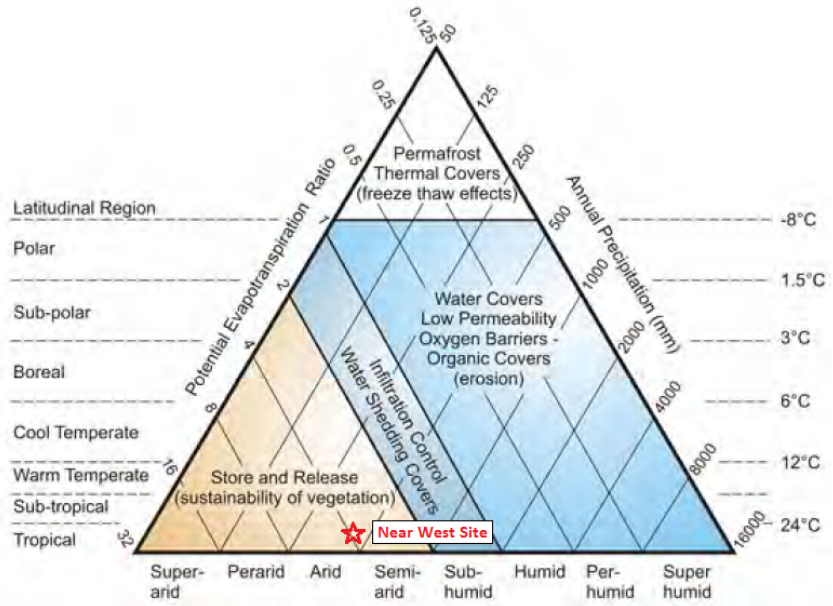


Figure 2.2 Cover and Climate Types Figure (INAP 2009)

Store and release (or evaporative) covers rely on high evapotranspiration, low precipitation, and soil moisture storage to limit deep infiltration. These covers function by preventing water from entering the protected material; they contain a “storage layer” which collects water during precipitation events and releases the water through runoff or by evaporation and evapotranspiration during dry periods.

Locally available borrow material (Gila Conglomerate) has been successfully used previously in the region as a cover material and is identified as a preferred cover material for this study because:

- there are potential borrow locations close to the Near West TSF site;
- it is relatively easy to excavate/blast compared to other harder rock geological units in the area;
- it is expected to be unreactive and therefore protective of surface water quality; and
- it tends to weather with time into a soil.

The characteristics of the Gila Conglomerate are highly variable even within small areas, as noted by KCB while in the field (KCB 2014). Characteristics depend on the sources of the constituent materials, the transportation and sorting mechanisms, and nature of cementation. Deposits range from unsorted and unconsolidated rubble of angular blocks as much as 15 ft in diameter to well-stratified deposits of firmly cemented sand, silt and gravel containing well-rounded pebbles and cobbles (Peterson 1962). Locally available variations in this unit at the Near West TSF were sampled and tested (Section 3). Material blends (composites) were also assessed with the Gila Conglomerate and tailings to exploit the rock fragments of the Gila Conglomerate and moisture retention characteristic of tailings to improve cover performance.

In addition to limiting net infiltration into tailings, closure and reclamation strategies for areas with cleaner tailings will need to provide a suitable construction surface, a growth medium for vegetation, and limit exposure of cleaner tailings to atmospheric oxygen. Strategies that bury the cleaner tailings with scavenger tailings can meet these objective and were a specific focus of this assessment. Oxygen diffusion rapidly decreases by 3 to 4 orders of magnitude as the degree of saturation increases above 85% (INAP 2009, Mbonimpa et al. 2002). The low hydraulic conductivity and moisture retention characteristics of the cleaner tailings will help to maintain high saturation levels when the materials are below the effective depth of evapotranspiration, even in arid and semi-arid climates. Further, burying the cleaner tailings increases the distance to the atmosphere, thereby reducing oxygen diffusion to the cleaner tailings by increasing the oxygen diffusion length.

An evapotranspirative cover concept is expected to be the preferred cover configuration based on the closure objectives, local climate, available cover materials, and the ability to construct the cover.

3 MATERIAL CHARACTERIZATION

3.1 Laboratory Testing Program

A field sampling program of Gila Conglomerate at the Near West site and from a nearby stockpile was conducted in July 2014, and a laboratory testing program was conducted on the tailings and Gila Conglomerate to characterize the materials and assess their suitability for store and release closure covers. Details are presented in Appendix I. The scope of the laboratory testing program is assumed to be sufficient for this stage of design, further characterization will be completed when borrow locations are selected and permitted for site investigation.

The laboratory testing was conducted on the following samples:

Near West Site Gila Conglomerate

Thirty surface samples of Gila Conglomerate were collected from surface exposures within the footprint of the proposed Near West TSF and potential closure cover borrow areas. Physical index, geochemical and soil nutrient testing was conducted.

Superior Mine Stockpile Gila Conglomerate

Twenty-five 5-gallon buckets were collected from a stockpile of blasted, crushed and screened Gila Conglomerate at the Superior Mine. Physical index, geochemical, soil nutrient, saturated hydraulic conductivity, and saturated and unsaturated hydraulic parameter testing was completed on these samples.

The most representative available material for the potential closure cover borrow is bulk sampling in an excavated pit developed in one of the potential borrow areas close to the Near West site. However, bulk sampling could not be carried out at this stage without an Environmental Assessment (EA). Therefore for this study, material from an existing stockpile at the nearby Superior Mine was used to estimate the hydraulic properties of the Gila Conglomerate as a surrogate.

Tailings

Scavenger and cleaner tailings from the metallurgical testing inventory were used for the laboratory testing. The scavenger tailings gradation is expected to vary along the length of the deposited beach. Coarse particles will be deposited on the beach close to the embankment crest, referred to as “beach” scavenger tailings in this report. Fine particles “slimes” will settle in the vicinity of the reclaim pond. The beach and slimes gradations of scavenger tailings were manufactured in the laboratory by wet sieving the scavenger tailings and recombining fractions.

A Gila Conglomerate and tailings composite sample was prepared by combining Superior Mine Site Stockpile samples and scavenger tailings at a gravimetric ratio of 3:1. The 3:1 ratio was chosen to target a bulk fines content (clay and silt sized particles passing a #200 sieve) in the range of 20% to 25% by weight.

Saturated hydraulic conductivity and moisture retention curve testing was completed on these samples.

3.2 Results

The results of the physical, geochemical and hydraulic material properties are given in Appendix I. A summary of the measured hydraulic properties used in the closure water balance modeling is given in Table 3.1.

Table 3.1 Material Properties

Material	Saturated Hydraulic Conductivity K_{sat} cm/s	Residual Vol. Water Content Θ_r cm^3/cm^3	Saturated Vol. Water Content Θ_s cm^3/cm^3	van Genutchen Parameters		Available Water Holding Capacity (AWHC)[1] cm/cm
				α 1/cm	N	
Cleaner Tailings	$7.5x10^{-8}$	0.001	0.500	$9.3x10^{-4}$	1.999	0.35
Total Scavenger Tailings[2]	$2.3x10^{-5}$	0.003	0.442	$6.1x10^{-3}$	1.513	0.31
Scavenger Beach Tailings[2]	$2.3x10^{-4}$	0.010	0.442	$1.2x10^{-2}$	1.803	0.19
Scavenger Slimes Tailings[2]	$6.3x10^{-7}$	0.001	0.442	$1.2x10^{-3}$	1.591	0.32
Coarse Gila Conglomerate[3]	$8.2x10^{-1}$	0.003	0.322	7.8	1.177	0.06
Fine Gila Conglomerate[3]	$1.7x10^{-1}$	0.000	0.385	4.4	1.160	0.11
Scavenger Tailings and Gila Conglomerate Laboratory Composite (25%/75%)	$3.3x10^{-3}$	0.000	0.338	0.75	1.180	0.05[4]

1. Calculated as the difference between field capacity (volumetric water content at -1/3 bar for coarse materials and -1/10 bar for tailings) and permanent wilting point (volumetric water content at -15 bar).
2. The total scavenger tailings sample was taken from the bulk scavenger sample. The beach and slimes gradations of scavenger tailings were manufactured in the laboratory by wet sieving the scavenger tailings and recombining fractions. The scavenger tailings sample was wet sieved into 4 separate fraction sizes: #40 to #60 Mesh, #60 to #100 Mesh, #100 to #200 Mesh and below #200 Mesh. From these the tailings were reconstituted to meet the target gradation.
3. Sixteen buckets of the Superior Mine Site Stockpile were sent to GSA. GSA passed each bucket through the #10 Mesh (2.0 mm). The buckets were separated into “fine” and “coarse” sizes by the percent passing the #10 sieve. The average percent passing the #10 of the “fine” samples was 24%. The average percent passing the #10 of the “coarse” samples was 10%. The buckets defined as “fine” were mixed together and a representative “fine” sample was taken for testing. The same procedure was done for the “coarse” sample.
4. The calculated AWHC for the Gila/Tailings Mix is lower than expected based on the shape of the moisture retention curve. In practice, we expect the AWHC for this material to be higher than that of the fine Gila Conglomerate.

Gila Conglomerate Characterization

A summary of the laboratory results for the Gila Conglomerate are listed below:

- The Gila Conglomerate exhibits a high degree of variability in composition and degree of cementation. As such, its characteristics as a cover borrow are expected to be highly variable.
- Excavated and placed Gila Conglomerate as a monolithic cover material is expected to:
  - have high saturated hydraulic conductivity initially but is expected to decrease with weathering; and

    - will retain moisture at a low capacity (low AWHC) unless blended with tailings.
- Is classified as not Potentially Acid Generating (NPAG) using Acid Base Accounting (ABA) and Net Acid Generation (NAG) classification systems.
- Has measurable acid neutralization potential.

Tailings Characterization

Based on the saturated and unsaturated laboratory testing conducted on the tailings, the following conclusions can be made:

- The cleaner tailings and scavenger slimes tailings have the lowest saturated hydraulic conductivity of the materials tested (10^{-9} cm/s and 10^{-8} cm/s, respectively) and, of the materials assessed, has the highest capacity to retain moisture, as defined by the AWHC convention.
- Total scavenger tailings have a saturated hydraulic conductivity of approximately 10^{-5} cm/s and relatively high AWHC (compared to the beach tailings).
- Scavenger beach tailings have the highest saturated hydraulic conductivity of the tailings (10^{-4} cm/s) and comparatively lower AWHC.
- The scavenger tailings are expected to store and release moisture in a manner that can reduce net infiltration at closure.

4 CLIMATE ASSESSMENT

An analysis was conducted on the climate stations close to the Near West site in order to generate a climate dataset for the predictive cover water balance modeling. Details of the assessment and results are included in Appendix II.

4.1 Regional Climate

Superior is located in a semi-arid climate zone with low average annual precipitation (18 inches) and high estimated average annual potential evapotranspiration, or PET (72 inches); monthly averages are shown in Figure 2.1. Annual average temperature is 69°F and daily temperatures typically range from 40°F to 100°F. The climate is suitable for store and release cover systems, given the year round PET and a high ratio of PET to precipitation.

Southern Arizona experiences three generalized types of precipitation events seasonally with very little precipitation occurring from April through June (Applied Weather Associates 2013). Typically, July and August are the wettest months and April to June are the driest. The three types of precipitation seasons are winter storms that occur during October through March, tropical storms that occur during August through October and local monsoonal storms that occur during June through September. The winter storms are typically longer duration, lower intensity precipitation events. Local storms are typically short-duration, high-intensity thunderstorms.

To a degree, precipitation trends observed at the Superior climate station are correlated to the Oceanic Nino Index (ONI). Conversely, periods that included large tropical storms, such as Hurricane Doreen in 1977 and Hurricane Lester in 1992, produced precipitation events uncharacteristic of the ONI.

4.2 Climate Dataset

A continuous long-term daily precipitation and temperature data set was created for January 1, 1951 to December 31, 2006 for use in the water balance modeling (presented in Section 5). The Superior station (NOAA ID: 028348) has a long-term daily precipitation and temperature data set for January 1, 1951 to December 31, 2006. Data gaps were amended with data from nearby stations. The West Plant station (operated and maintained by RCM) has a shorter term hourly climate dataset (precipitation, maximum temperature, minimum temperature, solar radiation, relative humidity and wind speed - all required to estimate PET).

In order to generate an hourly climate dataset, a comprehensive continuous daily climate data set was first developed using data from nearby stations. The daily data were then subdivided into hourly data using a correlation between data collected at Superior and West Plant. This was based on matching daily records at Superior to similar daily records at West Plant by comparing time of year ($\pm$ 21 Julian days), total daily precipitation, whether the precipitation was part of a multiday event, and minimum and maximum temperature. In doing so, an hourly climate dataset for Superior was created for 1951 to 2006.

The Superior dataset (56 years) includes wetter than average (termed “wet”) precipitation events as a result of winter storms, tropical hurricanes and local summer storms. Some of these are listed below (return periods are approximate, and years are water years):

- a 100-year wet year in 1992;
- a 50-year 7-day wet winter event in 1993;
- a 200-year 7-day and 14-day wet summer event in 1990 (Tropical depression Diana);
- a 100-year 14-day wet winter event in 1968 and 1993;
- a 100-year 30-day wet winter event in 1993; and
- a 100-year 30-day wet summer event in 1963.

The climate set also includes the following drier than average years (termed “dry”) (return periods are approximate, and years are water years):

- 15-year dry years in 1961 and 1997; and
- 500-year dry years in 2000 and 2002.

5 CLOSURE COVER PREDICTIONS

Predictive water balance (or soil-atmosphere) modeling of conceptual closure cover options was conducted using the software program Hydrus1D (Šimůnek et al. 2009), which can simulate liquid and vapor flow in one dimension. Details of modeling and results are given in Appendix III.

The objective of the modeling was to identify the most suitable closure cover(s) by assessing quantitatively:

- the tailings cover water balance;
- the moisture and saturation profiles within the near surface tailings; and
- the relative hydraulic performance for base case (no cover) conditions and closure cover options.

5.1 Scenarios

The model was configured as a one dimensional column, 9.8 ft (3 m) deep with a grid spacing of 0.5 cm and assumed to be free draining (unit hydraulic gradient) at the bottom. Layering, material properties and select boundary conditions were varied for the different scenarios. The models were run on a maximum hourly time step for 56 years (1951 to 2006).

Three main modeling scenarios were assessed with results organized into the following:

- Base Case Scenarios, comprised of uncovered tailings only configurations;
- Covers for Scavenger Tailings Scenarios; and
- Cover for Cleaner Tailings Scenarios.

A total of 41 scenarios were evaluated with variations on:

- presence of a monolithic Gila Conglomerate layer on the surface;
- thickness of the Gila Conglomerate layer on the surface (1 ft to 2.3 ft);
- fine or coarse texture of the Gila Conglomerate layer;
- with and without root water uptake and transpiration by vegetation;
- allowance for ponding of excess precipitation (e.g. reducing runoff); and
- presence of a scavenger tailings/Gila Conglomerate composite (blended) layer on the surface (1.6 ft thick) at ratios of 25% (tailings)/75% (Gila Conglomerate), 30%/70%, 50%/50% and, 65%/35%).

5.2 Model Inputs

Climate Inputs

A climate set was developed for the water balance modeling from the Superior station (NOAA ID: 028348) and West Plant dataset, as described in Section 4.2. The dataset is hourly precipitation, maximum temperature, minimum temperature, solar radiation, relative humidity and wind speed from 1951 to 2006.

Average, wet and dry years (water years) were identified to assess predicted cover performance for a range of conditions. Infiltration at the surface for the scavenger beach tailings base case (BC 1) was used to select a typical average, “wet” (high infiltration) and “dry” (low infiltration) water year as well as a 10 year wet sequence (highest infiltration). These years do not necessarily correspond to the average, wettest and driest water year precipitation. The following water years were chosen for reporting of results:

- Average conditions: 1980. The annual rainfall is 20.3 inches.
- Wet conditions: 1992. The annual rainfall is 36.6 inches.
- Dry conditions: 2000. The annual rainfall is 5.5 inches.
- Long-term wet conditions (highest infiltration): 1983 to 1992 (water years). The average annual rainfall is 22.7 inches (ranging from 11.7 inches to 36.6 inches).

Vegetation Parameters

The required vegetation inputs to Hydrus1D are Leaf Area Index (LAI), Root Density Function (RDF) and moisture uptake function. RDF is a function representing the distribution of roots with depth. The moisture uptake function relates the volume of water removed by vegetation to soil suction, accounting for decreased root-water uptake by roots under high suction stresses. The values used in the Hydrus1D model are provided in Appendix III.

Hydraulic Parameters

Materials represented in the modeling assessment include cleaner and scavenger tailings, Gila Conglomerate, and proposed scavenger tailings and Gila Conglomerate composites. Hydraulic material properties were based on the laboratory testing results summarized in Section 3.2.

The Gila Conglomerate and scavenger tailings composite tested in the laboratory has a ratio of 25% scavenger tailings and 75% Gila Conglomerate. Different ratios of tailings to Gila Conglomerate were modeled. Three other composite ratios were developed to assess other options for a manufactured material cover:

- 30% scavenger tailings and 70% Gila Conglomerate;
- 50% scavenger tailings and 50% Gila Conglomerate; and
- 65% scavenger tailings and 35% Gila Conglomerate.

Initial Saturation

Sensitivity analyses were completed for initial moisture conditions and the results were sensitive in scenarios with fine tailings close to the ground surface (cleaner and scavenger slimes tailings), the remaining scenarios were not. Cleaner tailings and scavenger slimes tailings will be deposited within the reclaim pond and kept saturated until closure. Therefore, an initial saturation of 95% was assumed for these scenarios.

Ponding

A ponding depth on the surface was defined for each scenario. For scenarios on the embankment slope, a ponding depth of 0 inches was assigned, to simulate runoff. Ponding depths between 0.8 inch to 2.4 inch were assigned for relatively flat areas within the impoundment interior depending. A range was used to accommodate model numerical convergence requirements for some of the scenarios (the specified ponding water depth did not have a large influence on predicted net infiltration).

5.3 Predictions

5.3.1 Scavenger Beach Tailings

Covers over scavenger beach tailings were assessed to estimate net infiltration to the scavenger tailings on the embankment and along the beaches.

Water balance results for the scavenger beach tailings scenarios over the simulated 56 year period are presented in Figure 5.1.

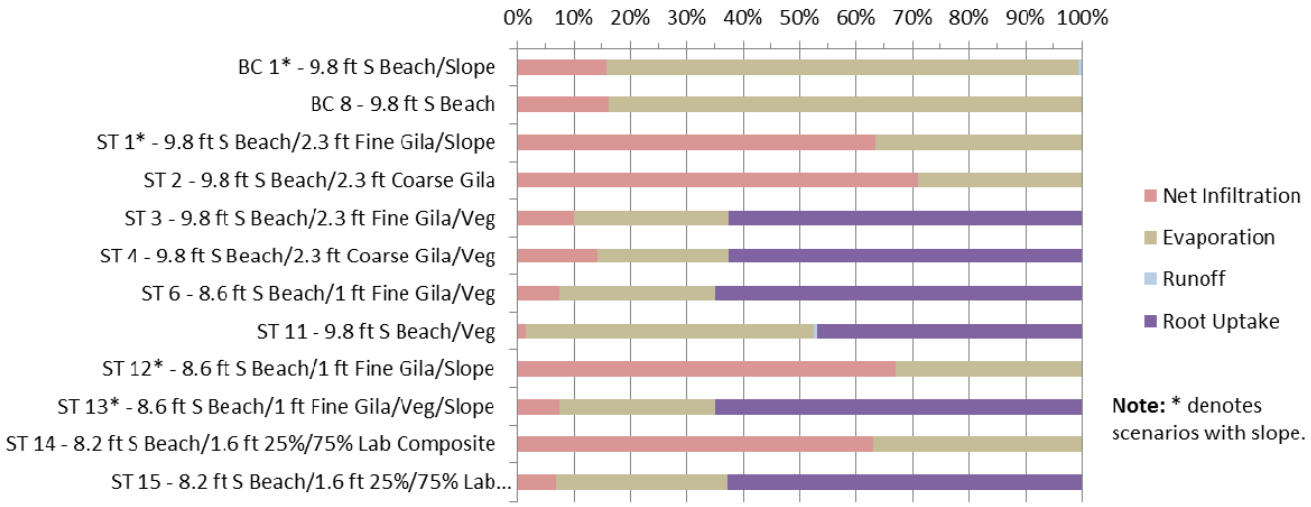


Figure 5.1 Scavenger Beach Tailings Water Balance Results as Percentage of Total Precipitation

Predicted net infiltration into unvegetated scavenger beach tailings is approximately 16% of total annual precipitation. Root uptake, assuming a similar vegetation community to native areas, reduces

predicted net infiltration to approximately 1.4%. No runoff is predicted for beach scavenger tailings, so the model is insensitive to ponding depth.

A vegetated monolithic Gila Conglomerate cover increases predicted net infiltration to an amount depending on the cover thickness. A thicker cover (2.3 ft) permits predicted net infiltration of between 10% and 14% of annual precipitation for fine and coarse textured material, respectively. These rates decrease for a shallower cover of 1 ft to about 7% for fine textured Gila Conglomerate. The thinner cover permits more evapotranspiration from the underlying tailings, where additional moisture is held, thus the improved predicted performance. Predicted net infiltration with a Gila Conglomerate cover increases to about 65% to 75% without vegetation, which would indicative of performance immediately following construction. A vegetated blended cover material (25%/75%) also permitted about 7% net infiltration. Significant runoff was not predicted for these scenarios.

5.3.2 Total Scavenger Tailings

Covers over total scavenger tailings beaches were assessed to estimate net infiltration to the scavenger tailings along the middle areas of the beach. These tailings have a lower overall hydraulic conductivity than the scavenger beach tailings discussed above.

Net water balance results for the total scavenger tailings scenarios over the simulated 56 year period are presented in Figure 5.2.

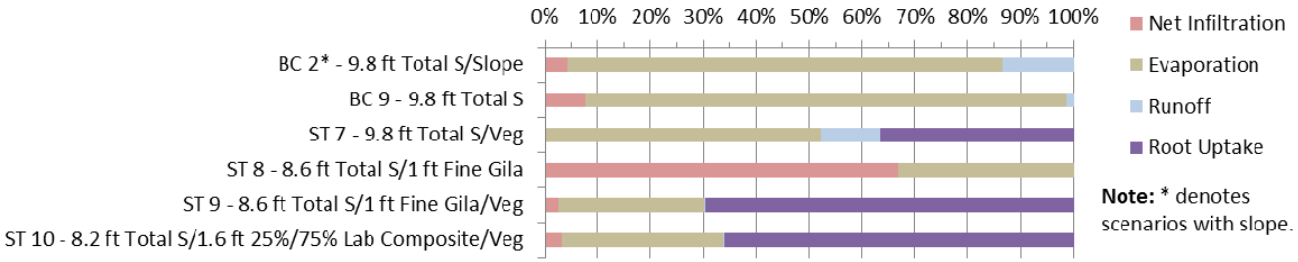


Figure 5.2 Total Scavenger Tailings Water Balance Results as Percentage of Total Precipitation

The model predicts lower net infiltration rates for comparable scenarios compared to the beach tailings. Predicted net infiltration into the uncovered tailings cover is less than 0.1% of average annual precipitation with vegetation, 8% without vegetation. Some runoff is predicted for exposed tailings, so the predictions are sensitive to ponded depth. Construction of a 1 ft vegetated Gila Conglomerate cover yielded a predicted infiltration of 3%. The predicted net infiltration for a vegetated blended cover material (25%/75%) were comparable. Significant runoff was not predicted for any Gila Conglomerate cover configurations.

5.3.3 Scavenger Slimes Tailings

The hydraulic performance of covers constructed over scavenger slimes tailings (the fine grain size fraction of tailings generally deposited in the reclaim pond) was not simulated. The scavenger slimes

tailings have similar properties as the cleaner tailings, and are therefore expected to perform similarly (Section 5.3.4).

Water balance results for the base case unvegetated and uncovered scavenger slimes tailings for the simulated period are presented in Figure 5.3. The low hydraulic conductivity of the scavenger slimes tailings limits the predicted net infiltration to less than 1% of average annual precipitation.

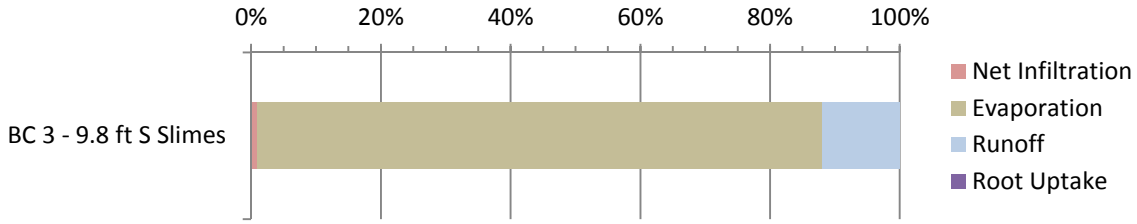


Figure 5.3 Scavenger Slimes Tailings Results as Percentage of Total Precipitation

5.3.4 Cleaner Tailings

Cover configurations for the cleaner tailings utilize a 6.6 ft (2 m) thickness of scavenger tailing placed on the cleaner tailings to encapsulate the cleaner tailings, increase the oxygen diffusion length between the surface of the cleaner tailings and the atmosphere, and provide a working surface for cover construction and/or revegetation.

Net infiltration over the simulated 56 year period is plotted with the minimum saturation at 4 inches (0.3 ft) depth below the top of the cleaner tailings that occurred during the dry, low infiltration year (2000) in the month of June (May is typically the driest month of the year) in Figure 5.4 and Figure 5.5. Figure 5.4 considers a cover of coarser-grained scavenger beach tailings while Figure 5.5 considers a cover of finer-grained total scavenger tailings.

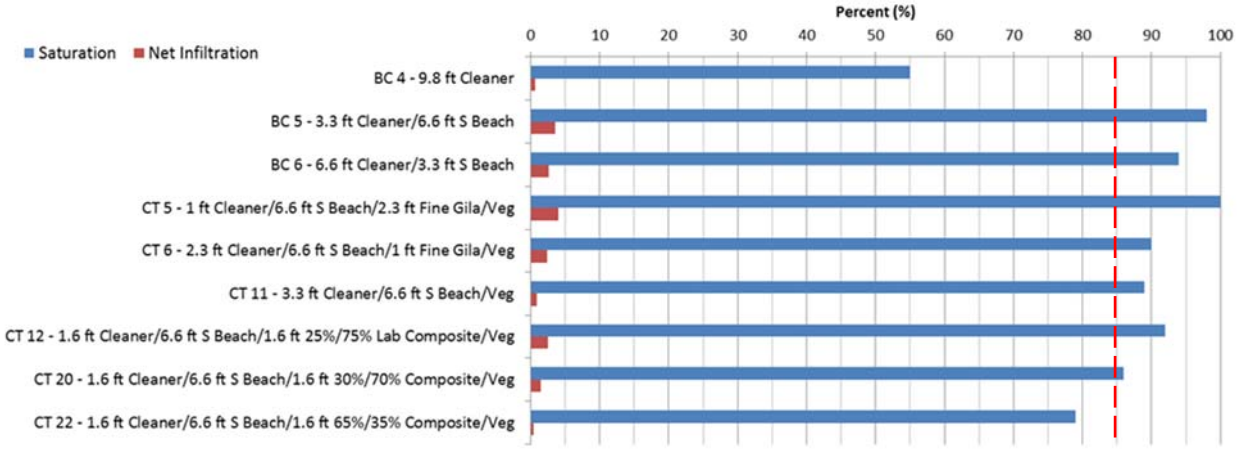


Figure 5.4 Net Infiltration and Minimum Saturation of the Cleaner Tailings at 0.3 ft Depth below Top of Cleaner Tailings for June of a 500-year Dry Year (2000) (Overlain by Beach Tailings)

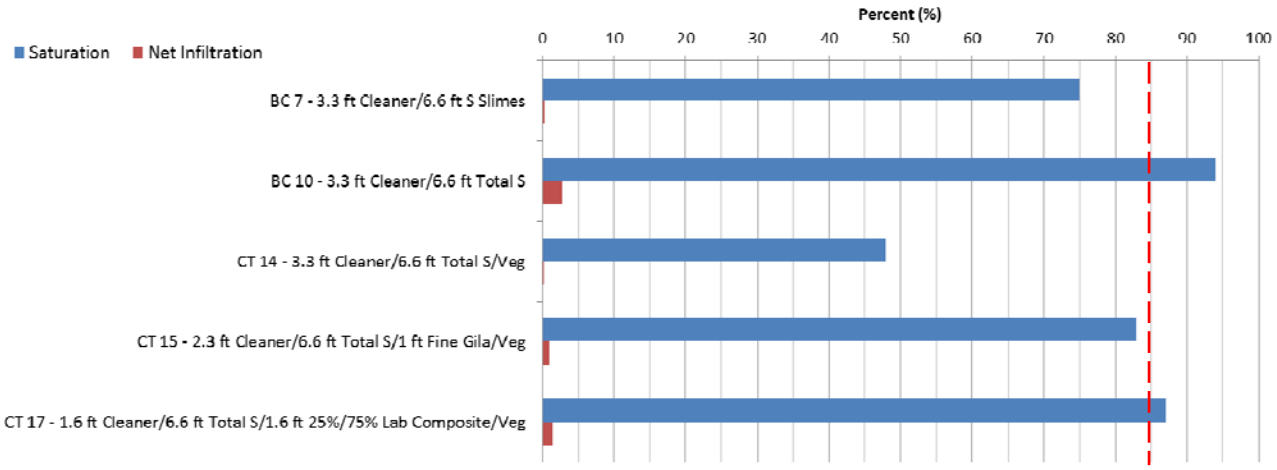


Figure 5.5 Net Infiltration and Minimum Saturation of the Cleaner Tailings at 0.3 ft Depth below Top of Cleaner Tailings for June of a 500-year Dry Year (2000) (Overlain by Total Scavenger Tailings)

For the cleaner covers modeled, net infiltration to the cleaner tailings is low at less than 6% of precipitation. The low hydraulic conductivity of the cleaner tailings is the dominant factor for limiting net infiltration, even at depth. The model is relatively insensitive to cover variations.

Scenarios that predicted low net infiltration while maintaining a high saturation level in the cleaner tailings (above 85%) include the following:

- 6.6 ft scavenger beach tailings, 2.3 ft of fine Gila Conglomerate and vegetation (net infiltration = 4%);
- 6.6 ft scavenger beach tailings, 1 ft of fine Gila Conglomerate and vegetation (net infiltration = 2%);
- 6.6 ft scavenger beach tailings, 1.6 ft of Gila Conglomerate/scavenger tailings composite (30%/70% mixtures) and vegetation (net infiltration = 2%); and
- 6.6 ft total scavenger tailings, 1.6 ft of Gila Conglomerate/scavenger tailings composite (25%/75% mixtures) and vegetation (net infiltration = 1%).

These results demonstrate that the cleaner tailings can be reclaimed in a manner that minimizes net infiltration while maintaining a high degree of saturation in the cleaner tailings. Other scenarios not considered here, with less thickness of scavenger tailings overlying cleaner tailings, may perform equally well.

6 SUMMARY AND CONCLUSIONS

Key findings of the study are as follows:

Climate and cover concepts

- The average annual site PET of approximately 72 inches far exceeds average precipitation of 18 inches. PET occurs year round, although PET is markedly lower during winter months. For these conditions, store and release covers are an appropriate strategy for reclamation to reduce net infiltration at closure. Such covers are commonly earthen materials that can sustain vegetation, can be designed to control erosion, and their performance will not be significantly affected by surface settlement (even differential settlement - unlike barrier type cover systems). This study has focused on monolithic and blended store and release cover designs using locally available materials that are considered appropriate for this climate and the geochemical characteristics of the scavenger tailings.
- Apart from surface reclamation, there are some special considerations for encapsulation of the cleaner tailings at closure, specifically measures to promote high moisture content conditions in the cleaner tailings once buried. It is widely accepted that a high degree of saturation (85% or higher) will minimize gaseous oxygen diffusion. The combined influence from (a) the physical material properties of the cleaner tailings and comingled scavenger slimes, (b) the operational and closure water management strategy, (c) depth of burial at closure, and (d) the long term low net infiltration through the covers are likely to maintain the desired high saturation levels in the cleaner tailings post closure. This is supported by the numerical water balance modeling conducted during this study.

Material Properties

- Gila Conglomerate:
  - The Gila Conglomerate exhibits a high degree of variability in composition and degree of cementation. As such, its characteristics as a cover borrow are expected to be highly variable. To some degree, the variability can be managed during borrow development and construction.
  - The coarse nature, low fines content, and high rock fragment content of the Gila Conglomerate sampled and tested for this program will likely provide good erosion protection on slopes, even as it weathers in the long term.
  - Gila Conglomerate as sampled during this program is not predicted to reduce net infiltration when used as a monolithic cover due to its coarse nature, relatively high saturated hydraulic conductivity (0.2 cm/s to 0.8 cm/s), and low AWHC (~0.1). Although natural weathering of the Gila Conglomerate will improve its long-term characteristics as a growth medium and store and release cover, additional processing would be required to improve its characteristics in the short-term. The characteristics of the Gila Conglomerate at the Near West Site may differ from that of the Superior Mine Site Stockpile sampled and tested during this program.

- The Gila Conglomerate may be suitable as a cover material when blended with scavenger tailings, in which the Gila Conglomerate improves erosion resistance and the tailings improves moisture retention (AWHC).

- Scavenger Tailings:
  - Scavenger tailings gradation is expected to vary along the length of the deposited beach. Coarse particles will be deposited on the beach close to the embankment crest, and fine particles (slimes) will settle in the vicinity of the reclaim pond. The hydraulic conductivity and moisture retention properties of the scavenger tailings will therefore also vary along the length of the deposited beach.
  - The saturated hydraulic conductivity of the scavenger tailings is likely to range from 10^{-4} cm/s (beach) to 10^{-8} cm/s (slimes). The slimes saturated hydraulic conductivity is equivalent to 0.7% of annual precipitation, assuming a unit hydraulic gradient.
  - The AWHC is expected to range from 0.2 to 0.3 for beach and slimes, respectively.
  - Scavenger tailings are expected to hold plant available moisture near the surface that can support vegetation establishment and sustainability.
  - Scavenger slimes are unlikely to desaturate at depth with even minor net infiltration rates due to the very low saturated hydraulic conductivity and moisture retention characteristics typical for very fine grained tailings.
  - The scavenger tailings may be suitable as a cover material when blended with Gila Conglomerate, wherein Gila Conglomerate is incorporated to improve erosion resistance.
- Cleaner Tailings:
  - Due to the high fines content, the saturated hydraulic conductivity of the cleaner tailings is very low (10^{-8} cm/s or less). This saturated hydraulic conductivity is equivalent to 0.07% of annual precipitation, assuming a unit hydraulic gradient.
  - Like the scavenger slimes, cleaner tailings are unlikely to de-saturate at depth with even minor net infiltration.

Predicted hydraulic performance

- Predicted net infiltration rates for scavenger tailings are sensitive to:
  - Texture of the scavenger tailings, with higher predicted net infiltration for coarser materials, lower for finer materials.
  - The thickness of the Gila Conglomerate cover, with higher predicted net infiltration for a thicker cover, lower for the thinner cover.
- The predictions are relatively insensitive to the texture of the Gila Conglomerate cover material.
- The monolithic Gila Conglomerate covers, as represented by the material properties developed for this study, are predicted to perform poorly to control net infiltration into

scavenger tailings. This results from the low moisture retention characteristics resulting from the coarse texture of the material. Where Gila Conglomerate is used for erosion protection, net infiltration can be expected to increase with increasing cover thickness based on this study.

- The predicted net infiltration was lowest for directly revegetated scavenger tailings and for composite blended material covers consisting of Gila Conglomerate and tailings. Both may be viable reclamation strategies under certain conditions at the TSF.
- Predicted net infiltration for covers overlying scavenger slimes or cleaner tailings is generally low, and is primarily controlled by the low saturated hydraulic conductivity of the tailings, which severely limits downward moisture redistribution in the profile.
- For cleaner tailings, a cover of scavenger tailings overlain by vegetated Gila Conglomerate or blended tailings and Gila Conglomerate (1 ft to 2 ft) will maintain high saturation levels (85% or higher) in the underlying cleaner tailings.

7 CLARIFICATIONS REGARDING THIS REPORT

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APPENDIX I

Laboratory Testing Summary

Appendix I
Laboratory Testing Summary

I-1 INTRODUCTION

This appendix summarizes the laboratory testing undertaken on cleaner and scavenger tailings and Gila Conglomerate samples for closure cover design. The testing occurred between August 2014 and December 2014. The work was conducted by KCB with technical advice from Matt Wickham (Rio Tinto, Technology and Innovation).

I-2 SAMPLE COLLECTION

Jim Casey (KCB) collected the Gila Conglomerate samples for the laboratory testing program between July 22, 2014 and July 25, 2014. The Gila Conglomerate sampling locations are shown in Figure 1 (Appendix I-A). Photographs of the sampling locations and samples are given in Appendix I-B. A list of the samples with descriptions is given in Appendix I-C; some sample locations are have been previously described in the MPO (KCB 2014).

The most representative material for the potential closure cover borrow would be from bulk sampling in an excavated pit developed in one of the potential borrow areas shown on Figure 1. However, bulk sampling could not be carried out at this stage without permits and significant construction costs. KCB collected samples from surface exposures of Gila Conglomerate at the Near West Site within the limits of permitted activities and collected bulk samples from a Gila Conglomerate borrow stockpile at the Superior Mine Stockpile as a surrogate. Additional sampling from the Near West Site will proceed following EA approval.

It was agreed with RCM to use the Superior Mine site stockpile material for saturated hydraulic conductivity and unsaturated property testing because:

- surficial samples collected for the Near West site by hand tools will not be representative of the potential fresh cover borrow material from a borrow pit;
- the stockpile material was blasted and stockpiled, likely in a similar process that will be used for construction of the closure cover;
- the stockpile material is relatively fresh compared to the long exposed surficial samples from the Near West site; and
- the stockpile material is available to sample in bulk; where it was not possible at this stage without a permit at the Near West site.

I-2.1 Near West TSF Site

Thirty surface samples of the Gila Conglomerate were collected from surface exposures within the footprint of the proposed Near West TSF and potential borrow areas. Samples were collected at 24 locations within the TSF footprint and 6 locations on the east side of Potts Canyon within the proposed borrow areas in Rice Canyon and Happy Camp Canyon. Sampling stations were located

either along ridges, close to access roads, or within drainage channels. Outcrops were typically not present on the ridges, so samples of the weathered Gila Conglomerate surface (weathered to a soil) were collected in hand-dug excavations at a depth of approximately 1 ft below the ground surface. In the drainage channels, intact "chunks" of Gila were broken off of outcrops using chisels and picks. Samples were described in the field and carbonate content was assessed qualitatively using hydrochloric acid, see Appendix I-C.

I-2.2 Superior Mine Stockpile

In 2010/2011, a pad was constructed in a Gila Conglomerate deposit for storage of PAG material from an ongoing shaft excavation. The Gila Conglomerate, which was blasted and excavated to create the pad, was crushed through a 6" jaw crusher and stockpiled. The excess stockpiled material has been used as a closure cover for reclamation of existing tailings facilities at the West Plant site of the Superior Mine.

The Gila Conglomerate from the stockpile was sampled. To avoid sampling segregated material, the Gila Conglomerate was removed from the stockpile with a loader and then spread in a two foot lift with the track dozer to mimic the placement methodology used for an earthen cover. A total of twenty-five 5-gallon buckets were taken. Sixteen buckets were collected near the surface of the lift and 9 buckets were taken from fresh, excavated face of the stockpile.

I-2.3 Tailings

A cleaner and a (rougher) scavenger tailings (#1) sample were supplied by RCM from their metallurgical testing inventory. Tailings were originally produced for the barrel leaching testing program but never used.

An additional 15 kg of scavenger tailings (#2) was sourced from the metallurgical test processing of a composite ore sample taken from RCM exploration Holes 29A (P-2924AX) and 29B (P-2924BA).

I-3 LABORATORY TESTING

The samples of Gila Conglomerate and tailings were subjected to physical and chemical testing, including:

- physical index testing (particle size distribution (with hydrometer), moisture content, specific gravity, Atterberg limits, and modified proctor);
- chemical analyses (acid base accounting (ABA), total elemental analysis, and static leach tests including the synthetic precipitation leaching procedure (SPLP), and toxicity characteristic leaching procedure (TCLP));
- soil nutrient testing (total organic carbon, organic matter, and available nutrients);
- unsaturated soil parameters (particle size distribution (with hydrometer) and the moisture retention curves); and
- saturated hydraulic conductivity.

A summary of the laboratory testing program is given in Appendix I-C. Laboratory testing reports are given in Appendix I-D to Appendix I-F. Three laboratories were used for the testing of samples:

- Initial index testing and qualitative comparisons were done by ATL, Inc. (Phoenix, Arizona).
- Geochemical testing was coordinated by ALS Global and ALS Minerals, (Tucson, Arizona). Testing was completed at ALS Minerals (North Vancouver, BC), ALS Environmental (Kelso, WA) and ALS Environmental (Saskatoon, SK).
- The testing required for estimating saturated and unsaturated parameters was undertaken by GeoSystems Analysis, Inc. (GSA) (Tucson, Arizona).

I-3.1 Initial Physical Index Testing

Initial physical index testing for comparison of the Near West site Gila Conglomerate and the Superior Mine stockpiled Gila Conglomerate was undertaken by ATL in August 2014. All test results are presented in Appendix I-D.

I-3.1.1 Particle Size Distribution - Near West Site and Superior Mine Site Stockpile Comparison

Two Near West site Gila Conglomerate samples and two Superior Mine Site Stockpile Gila Conglomerate were exposed to mechanical pressure and wetting conditions to compare how their particle size distributions were affected.

Near West site samples GILA22 and GILA24 where made up of intact “chunks” of Gila Conglomerate broken off of outcrops using chisels and picks. These samples were chosen to represent fresh, un-weathered Gila Conglomerate borrow material from the Near West site. The Superior Mine Site Stockpile samples were treated as one large sample; therefore two buckets were picked at random for the testing.

A dry particle size distribution test was completed on the Near West site samples GILA22 and GILA24. After which they were broken down by hand with a hammer to assess how the samples might react to mechanical breakdown during placement of the cover material.

Both Near West site and Superior Mine site stockpile samples underwent the following particle size distribution comparison procedure:

1. A “dry” particle size distribution test (ASTM D6913) was performed.
2. The sample was then reconstituted, weighed and then soaked (completely submerged) in a bucket for 24 hours.
3. A “washed” particle size distribution (ASTM D6913) was then performed on the soaked sample.

Results are given in Appendix I-D-1 and summarized in Table I-3.1.

Table I-3.1 Summary of Particle Size Distribution Results

Sample	Test	USCS Classification (Note 1)	% Fines (below #200 sieve)	% Coarse (above ¾")
Superior Mine Site Stockpile #1	Step 1 – dry PSD	GW	6	75
	Step 3 – wet PSD	GW	11	70
Superior Mine Site Stockpile #2	Step 1 – dry PSD	GW	5	78
	Step 3 – wet PSD	GW	8	74
New West Site (Gila 22)	Step 1 – dry PSD	GW	5	82
	Step 3 – wet PSD	GW	6	66
New West Site (Gila 24)	Step 1 – dry PSD	GW	6	78
	Step 3 – wet PSD	GW	6	64

Notes:
1. Unified Soil Classification System (USCS) – ASTM D2487
2. PSD – particle size distribution
3. USCS Classification GW is a well-graded gravel, fine to coarse gravel

These results indicate that both sources of Gila Conglomerate produce coarse gravelly and cobbly material with little fines. The Near West samples' matrix break down more from wetting and mechanical pressure than the stockpile samples.

I-3.1.2 Moisture Content

Ten Near West site Gila Conglomerate samples were tested for in situ moisture content (ASTM D2216). Moisture contents ranged from 2.8% to 6.8%. Moisture contents were typically lower in large rock "chunk" samples that were taken from outcrops. Results are presented in Appendix I-D-2.

I-3.1.3 Specific Gravity

Specific gravity tests (ASTM C127) were completed on two Near West site and two Superior Mine site samples. The samples were "chunks" of Gila Conglomerate (matrix and clasts). The two metallurgical tailings samples were analyzed for specific gravity (ASTM D854-02). The average specific gravity for the Near West site samples is 2.40. The average specific gravity for the Superior Mine site samples is 2.64.

The specific gravity values for the scavenger and cleaner tailings were measured by GSA (ASTM D854) and are 3.45 and 2.78, respectively. These results are presented in Appendix I-F-2.

I-3.1.4 Atterberg Limits

Atterberg Limits testing (ASTM D4318) was completed on the fine fraction of three Near West site Gila Conglomerate surface soil samples (GILA02, GILA20, GILA21). These are surficial samples that have undergone weathering and transportation and therefore may not be indicative of the closure cover surface.

Results indicate that the fine portions of the Gila Conglomerate samples are medium plasticity clay. Results are included in Appendix I-D-2.

I-3.1.5 Standard Proctor Compaction Test

A sample from the Superior Mine Site Stockpile was crushed to pass the ¾" screen and analyzed by the Standard Proctor Compaction Test method (ASTM D698-12e1), results are shown on Figure 2 (Attachment I) and the report is given in Appendix I-D-2.

The maximum dry density (MDD) achieved was 121.5 pcf (1946 kg/m^3) at the optimum moisture content of 10.6%. An initial proctor point at the natural moisture content (3.4%) was found to be 113.5 pcf (1818 kg/m^3). This density equates to 93.4% of the MDD.

I-3.2 Geochemical Testing

A total of 34 samples (30 from the Near West site and 4 buckets from the Superior Mine Site Stockpile) were sent to ALS for geochemical analysis. Testing results are presented in Appendix I-E.

The geochemical testing program consists of acid base accounting (ABA), total element analysis, Synthetic Precipitation Leaching Procedure (SPLP), and Toxicity Characteristic Leaching Procedure (TCLP). Paste conductivity was added to the ATL testing program on January 22, 2015.

The ABA and total element analysis testing was conducted at the ALS Minerals, North Vancouver, BC facility, the SPLP and TCLP tests were conducted at the ALS Environmental, Kelso, WA facility.

I-3.2.1 Sample Preparation

Sample preparation for the ABA suite, elemental analysis and available nutrients consisted of a three stage crushing and pulverizing sequence to a final product of 85% of sample material less than 75 µm.

The other procedures followed the standard methods for sample preparation.

I-3.2.2 Acid Base Accounting

The ABA test was done using the Sobek method with siderite correction which corrects for the presence of net neutral iron carbonates. The suite consisted of a siderite corrected neutralization potential (ALS OA-VOL08s), paste pH, sulfur speciation (total sulfur, sulfate by HCl leach and sulfate by carbonate leach), and inorganic carbon (see Table I-3.2 for all method references). There is no reporting of a residual sulfur value in these methods. In the absence of a direct measurement, sulfide is calculated by the difference between total sulfur and sulfate (ALS S-CAL06).

Net acid generation (NAG) tests (ALS OA-VOL11) were also conducted. The NAG test is used in association with ABA to classify the acid generating potential of a sample. NAG testing is used to assess whether a sample is capable of neutralizing the acid produced by the complete oxidation of all sulfide minerals present in the sample. The oxidation is achieved using hydrogen peroxide (H_2O_2), a much stronger oxidizer than oxygen in air. After complete oxidation of the sulfide minerals within the sample, the NAG solution is analyzed for pH and, for this study, total acidity.

Results are summarized in Table I-3.2.

Table I-3.2 Summary of NAG and ABA Results for Gila Conglomerate Samples

Sample Source	Result	Acid Generating Potential (AGP)	Siderite Corrected Acid Neutralization Potential (ANP)		Net Neutralization Potential (NNP) (ANP-AGP)[3]	Neutralization Potential Ratio (NPR) (ANP:AGP)	Paste pH	Total Sulfur	Sulfate[5] (as S)	Sulfate[6] (as S)	Sulfide (Calculated as Total Sulfur – Sulfate) (as S)	Total Inorganic Carbon (as CO_2)	Carbonate ANP		Static Net Acid Generation (NAG) acidity to pH 4.5	Static Net Acid Generation (NAG) pH
	Method Code	OA-VOL08s[4]	OA-VOL08s[4]				OA-ELE07	S-IR08	S-GRA06	S-GRA06a	S-CAL06	C-GAS05	Calculated[7]		OA-VOL11	OA-VOL11
	Units	g $CaCO_3$/kg	g $CaCO_3$/kg	Mass % $CaCO_3$	g $CaCO_3$/kg			%	%	%	%	%	g $CaCO_3$/kg	Mass % $CaCO_3$	g H_2SO_4/kg	N/A
Near West TSF Site[1]	Average	<0.5	27	3	26	77	7.7	0.0145	<0.01	<0.01	0.012	0.6	13.6	1.3		9.2
	Max	1.6	85	9	85	272	8.2	0.05	0.02	0.02	0.04	3.3	75	7.3	<0.5	11
	Min	<0.5	11	1	11	11	7.0	0.005	<0.01	<0.01	<0.01	0.1	2.3	0.2		7.3
Superior Mine Site Stockpile[2]	Average	<0.5	232	23	232	622	7.9	0.0125	<0.01	<0.01	0.011	9.25	210	20.5		11.0
	Max	0.6	297	30	296	752	8.0	0.02	0.01	<0.01	0.02	11.9	271	26.4	<0.5	11.1
	Min	<0.5	178	18	178	475	7.8	0.01	<0.01	<0.01	<0.01	6.8	155	15.1		10.9

Notes:

1. 30 Near West outcrop samples were tested
2. 4 Superior Mine Site bulk samples were tested
3. NNP is calculated as the difference between the ANP and AGP
4. Method includes Siderite correction
5. Sulfate by carbonate leach method
6. Sulfate by hydrochloric acid leach method
7. Carbonate acid neutralization potential by calculation, $\mathrm{CarbANP} = [CO_2]_{\mathrm{inorganic}} \times \frac{\text{molar weight } CaCO_3}{\text{molar weight } CO_2}$

The samples classify as not potentially acid generating (NPAG) with the neutralization potential ratio (NPR) well in excess of 2 (INAP 2014). Sulfur values are similar for both sample groups but the Superior Mine Site Stockpile samples have a greater inorganic carbon content which is reflected in higher acid neutralization potential (ANP) values and the corresponding NPR. This may indicate a difference in the material matrix between the Near West and Superior Stockpile sources and could result in different physical and chemical behavior.

The NAG tests results are consistent with this classification. NAG results are interpreted as follows (MEND 2009; Stewart et al. 2006):

- Final pH > 4.5: NPAG
- Final pH < 4.5: PAG

Based on this scheme, the Gila Conglomerate is considered NPAG.

I-3.2.3 Total Elemental Analysis

The total elemental analysis was conducted using a 4 acid digestion method and inductively coupled plasma atomic emission spectrometry (ICP-AES) (ALS method ME-ICP61) for most parameters with an inductively coupled plasma mass spectrometry (ICP-MS) method for mercury (ALS method HG-MS42).

Ratios of elemental abundances with low mobility (not typically weathered by rain) were compared for both the Near West site and the Superior Mine Site Stockpile (Table I-3.3). Results indicate both sample sets have similar ratio of low mobility elements.

Table I-3.3 Elemental Abundance Ratios

Sample Group	Number of Samples	Lead / Zinc (Pb/Zn)	Aluminum/Iron (Al/Fe)	Copper/Iron (Cu/Fe)
New West Site	30	0.22 ±0.08	1.8 ±0.4	$7.8 \pm 1.6 \times 10^{-4}$
Superior Mine Site Stockpile	4	0.24 ±0.03	1.8 ±0.1	$8.2 \pm 1.0 \times 10^{-4}$

I-3.2.4 Synthetic Precipitation Leaching Procedure

The SPLP (EPA SW-846 Method 1312) was modified from an extraction ratio from 20:1 liquid to solid ratio to a 4:1 liquid to solid ratio. This decreases dilution resulting in a greater probability that concentrations for trace elements would be within the detectable range. A total of 13 Near West site and two Superior Mine Site Stockpile samples were tested. Samples were selected to get a spatial variability over the site. The leachate was analyzed by a combination of ICP-MS and ICP-AES for the parameters listed in Table I-C-2 of Appendix I-C. The results are summarized in Appendix I-E.

The SPLP analyses revealed that the potential for leaching of Al, Fe, and Mg in the Near West samples is greater than the Superior Stockpile samples analyzed. This is likely due to differences in matrix composition and previous weathering and degradation of the Superior samples.

I-3.2.5 Toxicity Characteristic Leaching Procedure

The TCLP (EPA SW-846 method 1311) was performed on five spatially representative Near West site samples (GILA 7, GILA 15, GILA 20, GILA 22, GILA 29). The TCLP methodology defines an extraction ratio of 20:1 liquid to solid ratio which was not altered (as was done for the SPLP testing). The leachate was analyzed by ICP-MS for the parameters listed in Table I-C-2 of Appendix I-C.

Parameters analyzed and reported by the laboratory were below the method of detection limit, with the exception of barium (Appendix I-E). Barium reported values between 0.05 mg/L and 0.22 mg/L, with a mean value of 0.12 mg/L. Results of the TCLP testing indicate the materials are not classified as hazardous by this method.

I-3.2.6 Paste Conductivity

Paste conductivity analysis was conducted on all the Near West site samples and four Superior Mine site samples (ALS method OA-ELE17). Results are given in Table I-3.4.

Table I-3.4 Paste Conductivity Results

Sample Group	Statistic	Paste Conductivity (µS/cm)
Near West Site	Mean	525 (393[3])
	Maximum	4340[3]
	Minimum	240
Superior Mine Site Stockpile	Stockpile bucket #5	334
	Stockpile bucket #10	345
	Stockpile bucket #15	362
	Stockpile bucket #20	255

Notes:
1. 30 Near West samples were tested.
2. 4 Superior Mine Site samples were tested.
3. Majority of the paste conductivity results are between 270 µS/cm and 500 µS/cm. Three samples were above this: 1020 µS/cm, 1285 µS/cm and 4340 µS/cm. The mean value is 525 µS/cm including 4340 µS/cm, the mean value is 393 µS/cm excluding 4340 µS/cm.

The paste conductivity results show low soluble salt concentrations which are not expected to influence the salinity of the pore water to a level that would be deleterious to vegetation.

I-3.3 Soil Nutrient Testing

The soil nutrient testing program consists of total organic carbon, organic matter and available nutrients. The total organic content and nutrient package testing was conducting at the ALS Environmental, Saskatoon, Saskatchewan facility. Fifteen samples were tested for organic carbon and nine samples were tested for organic matter and available nutrients.

I-3.3.1 Total Organic Carbon

Fifteen samples were analyzed for total organic carbon (EPA SW846-2012 method 9060A). The results are presented in Table I-3.5.

Table I-3.5 Total Organic Carbon Results

Sample Group	Statistic	Total Organic Carbon (%)
New West Site	Mean	2.2
	Max	3.2
	Min	1.6
Superior Mine Site Stockpile	Stockpile bucket #10	1.5
	Stockpile bucket #20	1.7

Notes:
1. 13 Near West samples were tested.
2. 2 Superior Mine Site samples were tested.

The results show slightly more organic carbon in the Near West site samples.

I-3.3.2 Organic Matter and Available Nutrients

One Superior Mine Site Stockpile sample and eight Near West site Gila Conglomerate samples were analyzed for organic matter content and available nutrients (total nitrogen, phosphorous, potassium and total sulfur). The analytical methods are given in Table I-3.6. The summary of the results are given in Table I-3.7.

Table I-3.6 Organic Matter and Available Nutrients Analytical Methods

Parameter	Analytical Method	Method Reference
Potassium	Strong Acid Leachable Potassium	EPA Method 200.2, APHA 3120B
Total Nitrogen	Total Nitrogen by Combustion	Nelson and Sommers (1996)
Organic Content	Organic Matter by LOI	McKeague (1978)
Phosphorus	Strong Acid Leachable Phosphorous	EPA Method 200.2, APHA 3120B
Total Sulfur	Total Sulfur by Combustion	ISO 15178:2000

Table I-3.7 Organic Matter and Available Nutrients Results

Sample Group		Organic Matter	Total Nitrogen (N)	Phosphorus (P)	Potassium (K)	Sulfur (S)
		%	%	ppm	ppm	ppm
New West Site	Mean	2.1	<0.02	482	2851	<500
	Max	3.2	0.028	1220	4720	<500
	Min	1.6	<0.02	234	2010	<500
Superior Mine Site Stockpile		1.7	<0.02	508	3030	<500

Notes:
1. 8 Near West samples were tested.
2. 1 Superior Mine Site sample was tested.

I-3.4 Saturated and Unsaturated Material Testing

The unsaturated soil testing program was designed for estimating the unsaturated soil parameters and to understand the available water holding capacity (AWHC) of the materials. It was completed by GeoSystems Analysis (GSA) (Tucson, Arizona). The results are presented in Appendix I-F.

I-3.4.1 Representative Sample Development

Seven samples were developed or selected for testing (Table I-3.8).

Table I-3.8 Test Samples for Saturated Hydraulic Conductivity and Soil Moisture Retention Curves

Sample Name	Source
Cleaner Tailings	Barrel leaching testing
Total Scavenger Tailings	Barrel leaching testing
Scavenger Tailings ("Slimes" gradation)	Manufactured from scavenger tailings (#2) from composite ore sample taken from RCM exploration Holes 29A (P-2924AX) and 29B (P-2924BA)
Scavenger Tailings ("Beach" gradation)	Manufactured from scavenger tailings (#2) from composite ore sample taken from RCM exploration Holes 29A (P-2924AX) and 29B (P-2924BA)
Coarse Gila Conglomerate	Superior Mine Site Stockpile
Fine Gila Conglomerate	Superior Mine Site Stockpile
Gila Conglomerate and Tailings Composite	Superior Mine Site Stockpile and scavenger tailings (#2) from composite ore sample taken from RCM exploration Holes 29A (P-2924AX) and 29B (P-2924BA)

Sample modification for particle size distribution was required for the scavenger tailings to develop representative beach tailings. The sample selection/development for the conglomerate samples and tailings are described below.

Scavenger Tailings ("Slimes" and "Beach" Gradations)

The scavenger tailings gradation is expected to vary along the length of the deposited beach. Coarse particles will be deposited on the beach close to the embankment crest. Fine particles "slimes" will settle in the vicinity of the reclaim pond. Approximate gradations for "beach" and "slimes" scavenger tailings were estimated based on existing copper tailings storage facilities (gradations given in Table I-3.9 and shown in Figure 3 in Appendix I-A).

The two different gradations of scavenger tailings were manufactured in the laboratory by wet sieving the scavenger tailings and recombining fractions. The scavenger tailings was wet sieved into 4 separate fraction sizes: #40 to #60 Mesh, #60 to #100 Mesh, #100 to #200 Mesh and below #200 Mesh. From these the tailings were reconstituted to meet the target gradation. The target and manufactured particles size distribution are given in Appendix I-F-3.

Table I-3.9 Target Particle Size Distribution

Mesh	Nominal Sieve Opening	% Passing	
	microns	Beach	Slimes
#10	2000	100	100
#20	841	100	100
#40	420	100	100
#60	250	97	100
#100	149	60	100
#200	74	25	94

Table I-3.10 Target Interval Proportions

Mesh Size	Nominal Sieve Opening	% Abundance per Fraction	
	microns	Beach	Slimes
#40-#60	420 – 250	3	0
#60-#100	250 – 149	37	0
#100-#200	149 – 74	35	6
Below #200	< 74	25	94

Gila Conglomerate Stockpile Samples

Sixteen buckets of the Superior Mine Site Stockpile were sent to GSA. GSA passed each bucket through the #10 Mesh (2.0 mm). The results are given Appendix I-F-1. The buckets were separated into “fine” and “coarse” sizes by the percent passing the #10 sieve. The average percent passing the #10 of the “fine” samples was 24%. The average percent passing the #10 of the “coarse” samples was 10%. The buckets defined as “fine” were mixed together and a representative “fine” sample was taken for testing. The same procedure was done for the “coarse” sample.

Gila Conglomerate Stockpile and Tailings Composite

The stockpile and tailings composite sample was prepared by combining the Superior Mine Site Stockpile from the “intermediate” sized buckets and scavenger tailings at a gravimetric ratio of 3:1. The 3:1 ratio was chosen to target a fines content in the range of 20% to 25%.

I-3.4.2 Particle Size Distribution

A total of 11 particle size distributions was conducted (ASTM D422-63, ASTM C136-06). A total of four tests was completed on the tailings samples, the remaining tests were conducted on the Gila Conglomerate stockpile samples before and after the tempe cell tests described below. The results are presented in Appendix I-F-1.

I-3.4.3 Saturated Hydraulic Conductivity and Moisture Retention Curves

The samples were tested in 2” and 12” Tempe cells for estimating saturated hydraulic conductivities (ASTM D2434-68, Reynolds and Eldrick 2002) and moisture retention characteristic curves (ASTM D6836-02). From the moisture retention characteristic curve, van Genuchten hydraulic parameters were estimated (USEPA 600/2-91/065).

The Gila Conglomerate samples contain particles up to 6” in diameter, whereas the 12” Tempe cell’s maximum particle size is 2”. A small amount of oversized material was therefore screened from the samples for the test. An oversize correction (ASTM D4718-87) was applied to the results to correct the moisture retention curves.

The Gila Conglomerate samples were placed in the Tempe cell at natural moisture content to a target density of 85% of Standard Proctor maximum dry density (MDD). ATL performed a Standard Proctor Compaction Test (Appendix I-D-2).

The scavenger tailings and cleaner tailings were moist tamped to target densities of 1.55 g/cm^3 and 1.73 g/cm^3, respectively to simulate the estimated density caused from a 3 ft to 5 ft thick closure cover. GSA indicated that the tailings samples had minor swelling near saturation during the tests, which resulted in some measured water contents being greater than total porosity. These water contents have been corrected to be the estimated total porosity.

The test results and fitted parameters are shown in Table I-3.11.

The gradations and estimated moisture retention characteristic curves for the samples are shown in Figure 4 (Appendix I-A).

Table I-3.11 Saturated Hydraulic Conductivity, Porosity, Density, Moisture Retention and van Genuchten Hydraulic Parameters

Parameter	Bulk Density	Estimated Total Porosity	Particle Density	Available Water Holding Capacity (AWHC)[1]	Unsaturated Hydraulic Parameters					Saturated Hydraulic Conductivity[b]
					Volumetric Residual Water Content[3]	Volumetric Saturated Water Content[3]	α[2]	n[3]	L[4]	
Units	g/cm^3	-	g/cm^3	cm/cm	-	-	1/cm			cm/s
Cleaner Tailings	1.73	0.500	3.46	0.35	0.001	0.500	$9.3x10^{-4}$	1.999	-1.000	$7.5x10^{-8}$
Scavenger Tailings	1.55	0.442	2.78	0.31	0.003	0.442	$6.1x10^{-3}$	1.513	-1.000	$2.3x10^{-5}$
"Beach" Scavenger Tailings	1.55	0.442	2.78	0.19	0.010	0.442	$1.2x10^{-2}$	1.803	-1.000	$2.3x10^{-4}$
"Slime" Scavenger Tailings	1.55	0.442	2.78	0.32	0.001	0.442	$1.2x10^{-3}$	1.591	-1.000	$6.3x10^{-7}$
Coarse Gila Conglomerate	1.83	0.322	2.70	0.06	0.003	0.322	7.8	1.177	-1.000	$8.2x10^{-1}$
Fine Gila Conglomerate	1.66	0.385	2.70	0.11	0.000	0.385	4.4	1.160	-1.000	$1.7x10^{-1}$
Gila Conglomerate and Tailings Composite	1.80	0.338	2.72	0.05[5]	0.000	0.338	0.75	1.180	-1.000	$3.3x10^{-3}$

Notes:

1. Calculated as the difference between field capacity (volumetric water content at -1/3 bar for coarse materials and -1/10 bar for tailings) and permanent wilting point (volumetric water content at -15 bar).
2. Fitted.
3. Measured.
4. Referenced value (not measured or fitted) from (Schaap and Leij 2000).
5. The calculated AWHC for the Gila/Tailings Mix is lower than expected based on the shape of the moisture retention curve. In practice, we expect the AWHC for this material to be higher than that of the fine Gila Conglomerate.

The moisture retention curves indicate that the Gila Conglomerate samples lose moisture easily with increased matric suction and have a low AWHC. The tailings are able to retain moisture at higher matric suctions and have higher AWHC.

I-3.5 Quality Assurance and Quality Control

I-3.5.1 Field QA/QC

Care was taken in the field to collect representative samples of the Gila Conglomerate, both from outcrops and from the stockpile. The following sampling procedures were used:

- At Gila outcrops, a sheet of plastic was placed on the ground below the outcrop before chiseling/hammering. Care was taken to collect samples from a number of areas of the outcrop to avoid over representing any one layer in the bulk sample. The broken rock was collected on the plastic sheet to prevent contamination from the underlying sediments. Samples were sealed in plastic buckets and labeled in the field. Samples for geochemical testing were separated from the physical testing samples in cloth bags.
- Stockpiled Gila was sampled from a spread lift and mid-slope of the stockpile face. This was done to limit the sampling of segregated material. Samples from the spread lift were collected in a grid pattern to avoid sampling bias.

I-3.5.2 Laboratory QA/QC

Quality control and quality assurance (QC/QA) of laboratory data were restricted to the procedures undertaken by the individual analytical laboratories. Overall the analytical program has met the defined analytical control criteria.

Reference materials, method blanks, and sample replicates were utilized to control quality in the laboratory analyses. QC results are summarized by laboratory:

- ALS Minerals in Vancouver BC utilized reference standards for ABA and total elemental analysis. Target tolerance of reference materials varied between plus or minus 10% and 50%. The standard for Mo was 1 ppm (or 2%) below the lower bound target range. The standard for NAG pH was 6% to 12% above the target range upper bound. Other reference standards were within the target range.
- ALS Minerals in Vancouver BC utilized blanks for ABA and total elemental analysis. Target tolerance of blanks varied between below detection and twice the method of detection limit (MDL). Blanks measured were within the tolerance range.
- ALS Minerals in Vancouver BC utilized duplicates for ABA and total elemental analysis. Tolerance range for duplicates varied between 10% and 25% relative percent difference. Duplicates measured were within the tolerance range with the exception of Cu which measured 1 ppm greater than the upper bound (or 25%). ALS Environmental in Kelso, WA utilized method blanks, laboratory duplicates, matrix spikes, and laboratory control samples. The matrix spike recovery for total organic carbon for the GILA 07 sample was outside control criteria because of suspected interference this is potentially a high bias. The method blank for

the SPLP tests contained Na greater than the upper limit, likely from high sodium extraction solutions. Other QA/QC measures reported were within acceptable limits.

- ALS Environmental in Saskatoon, SK utilized a replicate analysis (1 per parameter), analysis of reference material (1 per parameter except P and K), and method blanks. QA/QC measures reported were within acceptable limits.

I-3.5.3 General

Results of the testing for the Gila Conglomerate, generally agree with what we know of the material based on previous testing. The area where samples were collected for this study are generally coarser than for previous study work.

Results of the tailings testing agree with what we understand of the different tailings materials and our experience with similar tailings.

Results of the physical testing agree with the results of the unsaturated testing and hydraulic conductivity data.

Attach: Appendix I-A – Figures
Appendix I-B – Sample Photographs
Appendix I-C – List of Laboratory Testing and List of Analyses
Appendix I-D – ATL Laboratory Results
Appendix I-E – ALS Laboratory Results
Appendix I-F – GSA Laboratory Results

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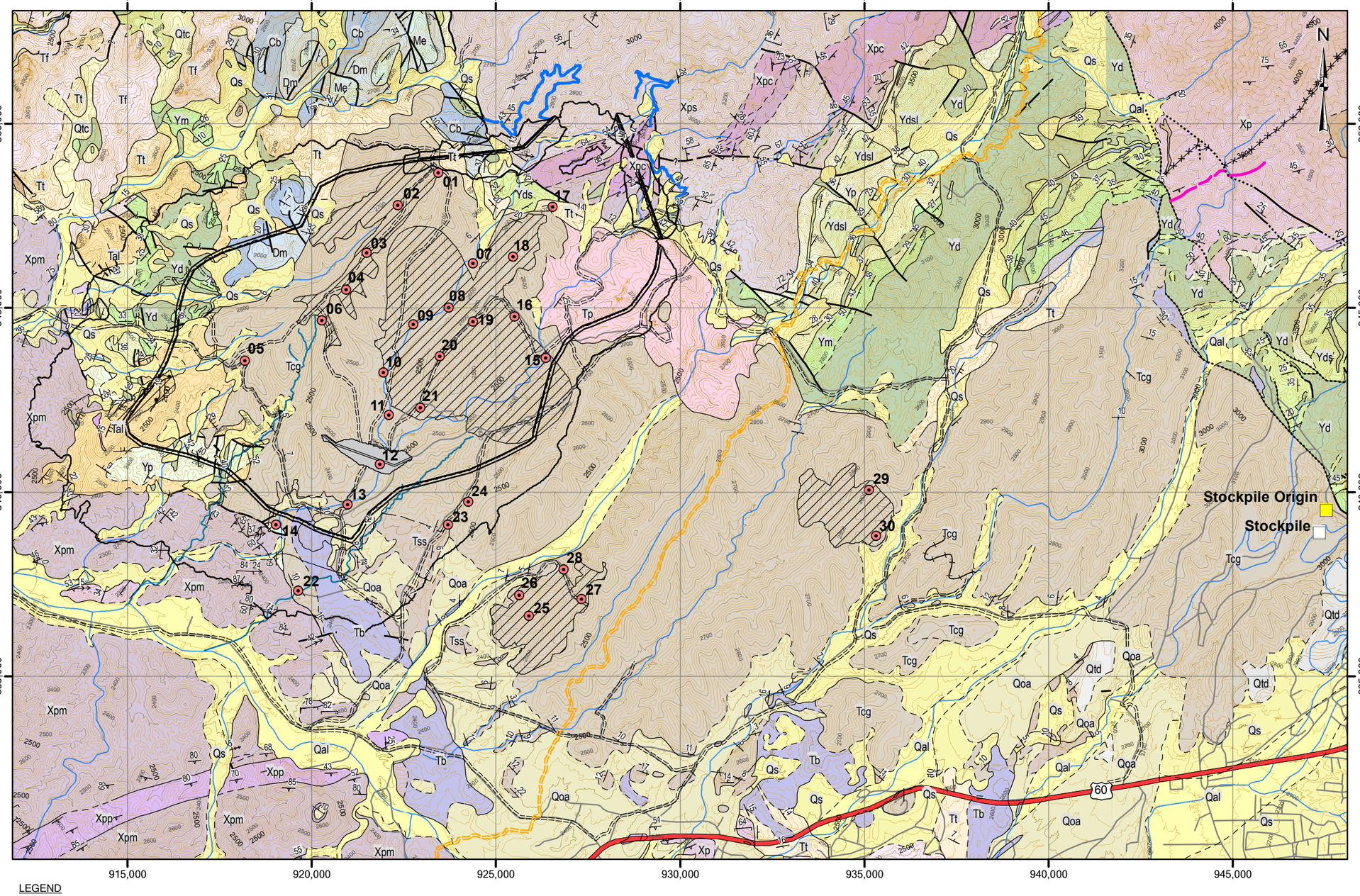
APPENDIX I-A

Figures



- Qs Undivided Surficial Deposits (Quatenary)
- Qtd Disturbed Surficial Deposits (Holocene)
- Qtc Talus and Colluvium (Quaternary)
- Qal Unconsolidated Alluvium (Quaternary)
- Qoa Old Alluvium (Quaternary)
- QTs Older Alluvium (Early Quaternary to Late Tertiary)
- Tcg Conglomerate (Pliocene to Late Miocene)
- Tss Sandstone (Pliocene to late Miocene)
- Tb Basalt (Mid-Miocene to Early Miocene)
- Tp Perlitic Aphyric Rhyolite (Middle Tertiary)
- Tal Apache Leap Tuff (Early Miocene)
- Tt Tuff (poorly welded) (Miocene)
- Tf Felsic Volcanic Rocks, undivided (Middle Tertiary)
- Tbl Lower Basalt (Middle Tertiary)
- Tx Rock Avalanche or Talus Brecchia (Middle Tertiary)
- Tw Whitetail Conglomerate
- Tdb Basaltic Dikes (Middle Tertiary)
- Kd Quartz Diorite (Latest Cretaceous)
- Me Escabrosa Limestone (Mississippian)
- Dm Martin Limestone (Devonian)
- Cb Bolsa Quartzite (Cambrian)
- Yd Diabase (Middle Proterozoic)
- Ym Mescal Limestone (Middle Proterozoic)
- Yds Dripping Spring Quartzite, undivided (Middle Proterozoic)
- Ydsu Dripping Spring Quartzite, Upper Unit (Middle Proterozoic)
- Ydsl Dripping Spring Quartzite, Lower Unit (Middle Proterozoic)
- Yp Pioneer Shale (Middle Proterozoic)
- Ypt Pioneer Shale, Tuff Unit (Middle Proterozoic)
- YXd Diorite (Early or Middle Proterozoic)
- Xp Pinal Schist, undivided (Early Proterozoic)
- Xpc Pinal Schist, Calc-silicate Facies (Early Proterozoic)
- Xpcs Pinal Schist, Calc-silicate and Schist Facies (Early Proterozoic)
- Xpm Pinal Schist, Psammite Facies (Early Proterozoic)
- Xpp Pinal Sctist, Phyllite Facies (Early Proterozoic)
- Xpq Pinal Schist, Quartzite Layers (Early Proterozoic)
- Xps Pinal Schist, Pelitic Schist (Early Proterozoic)

LEGEND

- GILA SAMPLING LOCATION
- STOCKPILE
- STOCKPILE ORIGIN
- PLAN OF OPERATIONS NEAR WEST CLEANER TAILINGS STARTER DAM
- POTENTIAL BORROW AREA
- PLAN OF OPERATIONS DIVERSION
- PLAN OF OPERATIONS NEAR WEST TSF
- ARIZONA TRAIL
- HIGHWAY
- ROAD (FROM RCM)
- ROAD (STATE)
- STREAM
- QUARTZ VEIN
- FELSIC DYKE
- FAULT
- FAULT - APPROXIMATE
- FAULT - CONCEALED
- MARKER HORIZON (LOCAL)
- CONTACT (BETWEEN GEOLOGIC UNITS)
- CONTACT - APPROXIMATE
- CONTACT - INFERRED
- CONTACT BETWEEN PINAL SCHIST *CLAST-RICH CONGOMERATE BELOW AND DRIPPING SPRING QUARTZITE CLAST-RICH CONGLOMERATE ABOVE*

NOTES:
1. NAD83, ARIZONA STATE PLANE CENTRAL.
2. GEOLOGY SOURCE - GEOLOGY FROM SPENCER ET AL, 1998; FAULTS FROM PETERSON, 1969, AND SPENCER AND RICHARD, 1995.

NOT FOR CONSTRUCTION

TO BE READ WITH KLOHN CRIPPEN BERGER LETTER DATED MARCH 2016

0 1 Mile

AS A MUTUAL PROTECTION TO OUR CLIENT, THE PUBLIC AND OURSELVES, ALL REPORTS AND DRAWINGS ARE SUBMITTED FOR THE CONFIDENTIAL INFORMATION OF OUR CLIENT FOR A SPECIFIC PROJECT AND AUTHORIZATION FOR USE AND/OR PUBLICATION OF DATA, STATEMENTS, CONCLUSIONS OR ABSTRACTS FROM OR REGARDING OUR REPORTS AND DRAWINGS IS RESERVED PENDING OUR WRITTEN APPROVAL.

CLIENT: Resolution Copper Mining

Klohn Crippen Berger

PROJECT: RESOLUTION PROJECT
NEAR WEST TAILINGS MANAGEMENT CLOSURE COVER STUDY

TITLE: SAMPLING LOCATIONS

PROJECT No. M09441A16

FIG No. 1

CB
Z:\MVCR\M09441A16 - RES-Near West Closure Cover\400 Drawings\mxd\closure_cover_study\appdx1_NearWest_Geology_Sampling_Locations.mxd 13/07/2015 11:22:34 AM

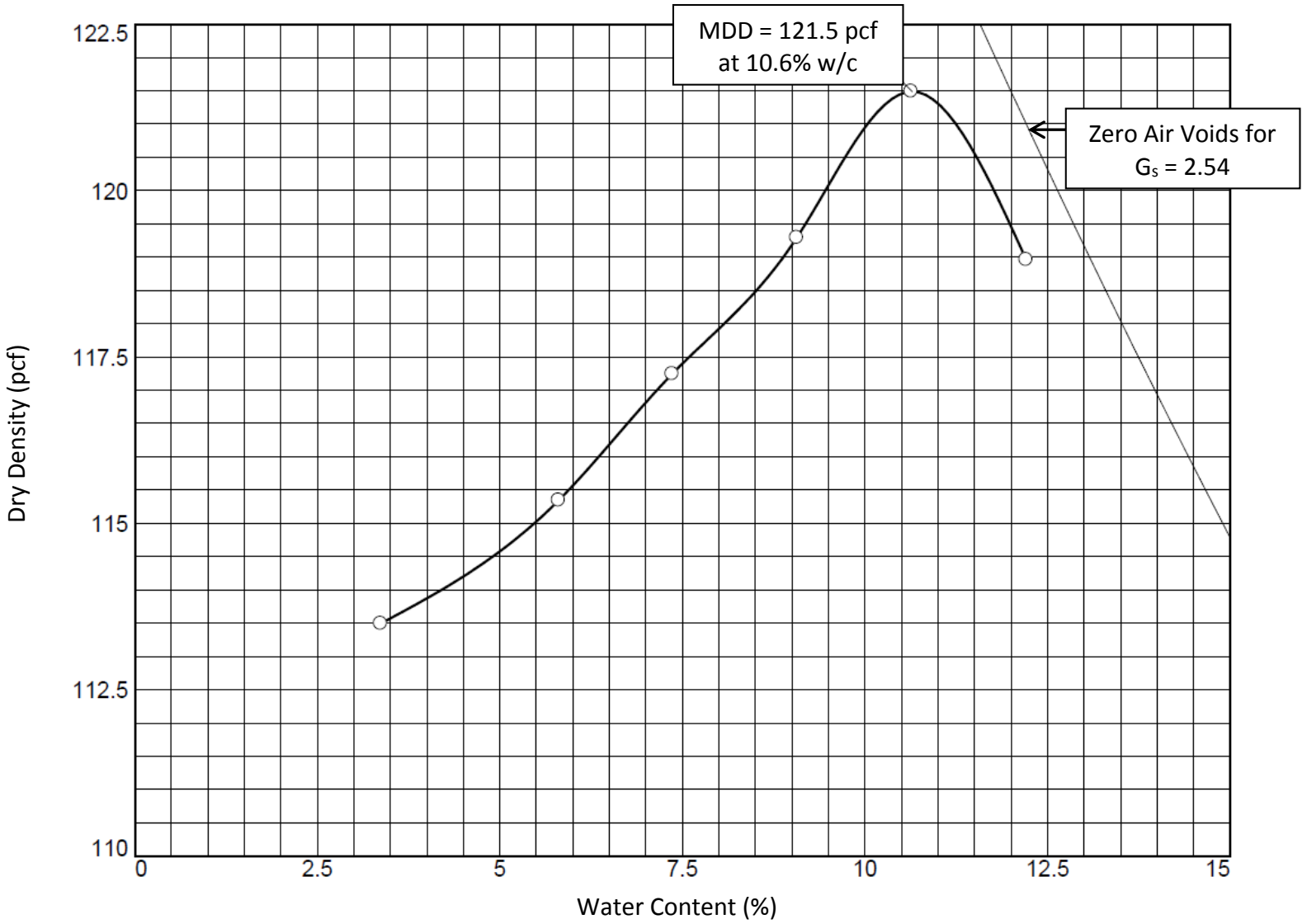


Figure 2 Standard Proctor Compaction Test Results (ATL)

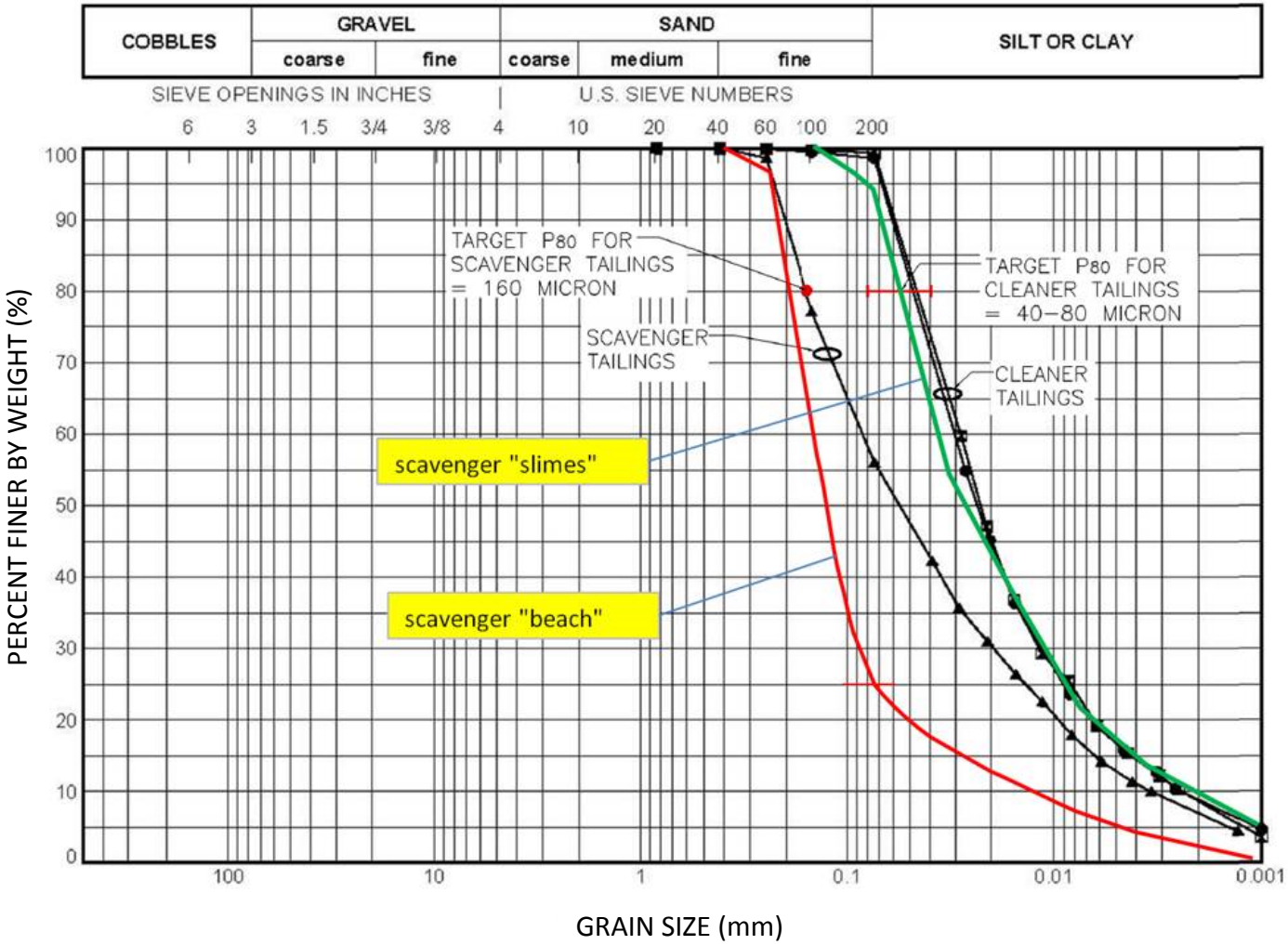
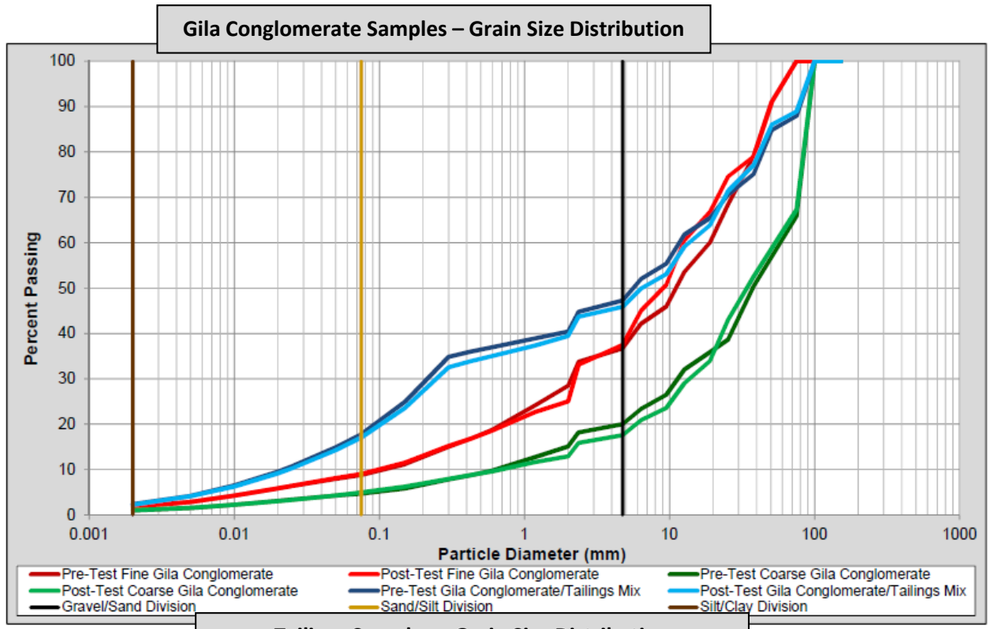
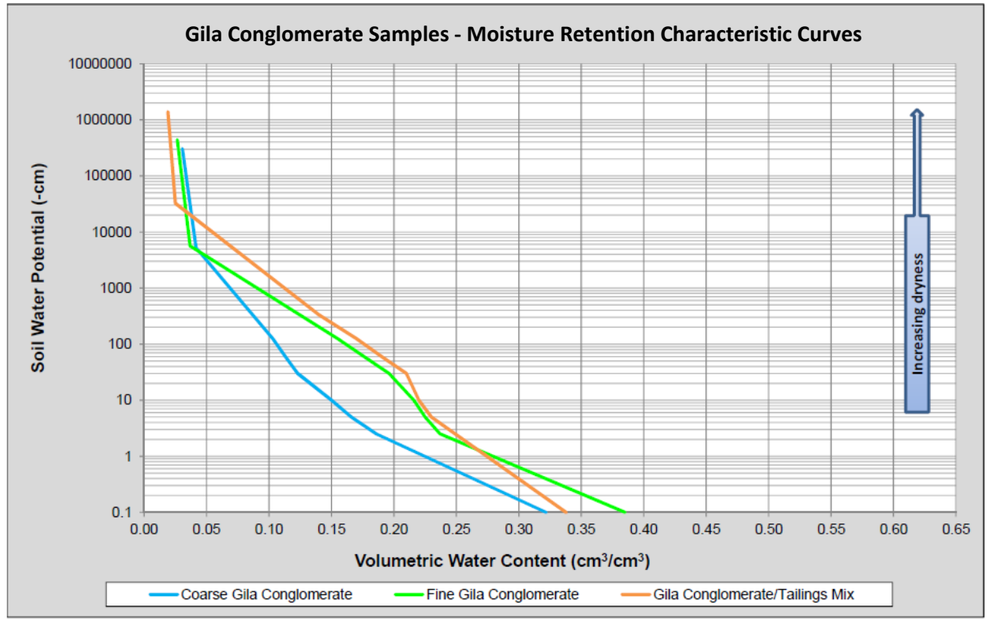
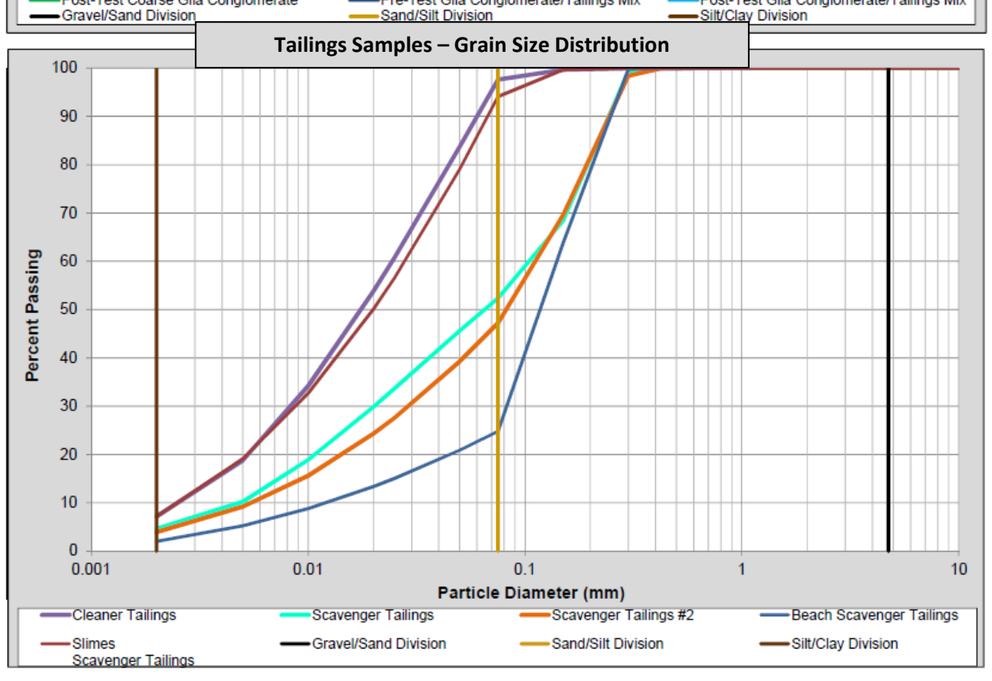


Figure 3 Scavenger Tailings Target Gradations







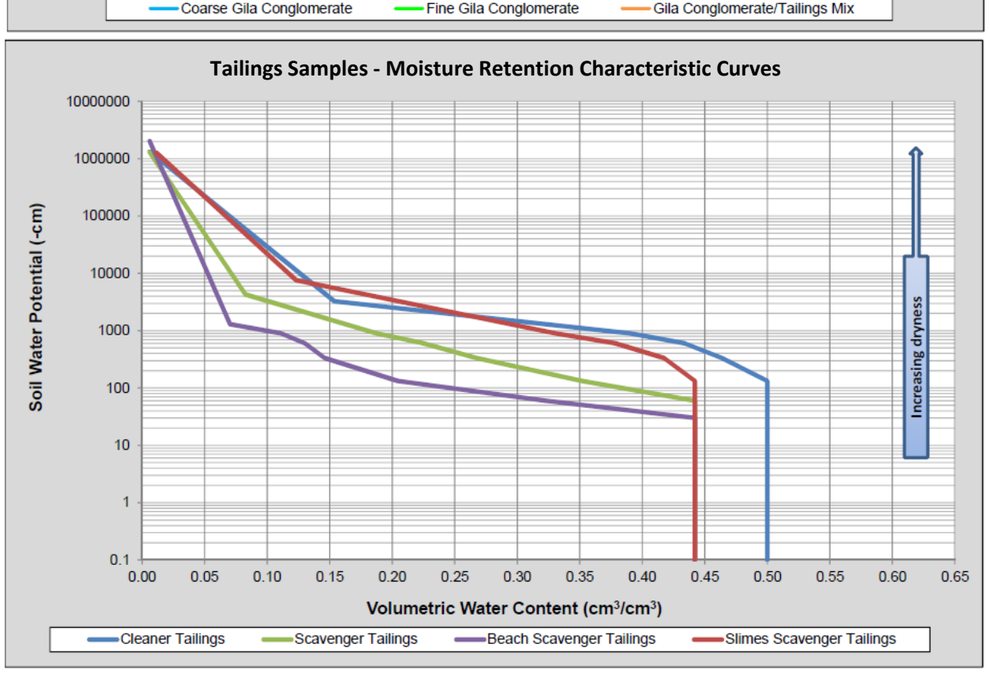


Figure 4 Grain Size Distribution and Soil Moisture Retention Curves (GSA)

APPENDIX I-B

Sample Photographs

Appendix I-B
Sample Photographs

I-B-1 GILA01







I-B-2 GILA02







I-B-3 GILA03









I-B-4 GILA04











I-B-5 GILA05







I-B-6 GILA06

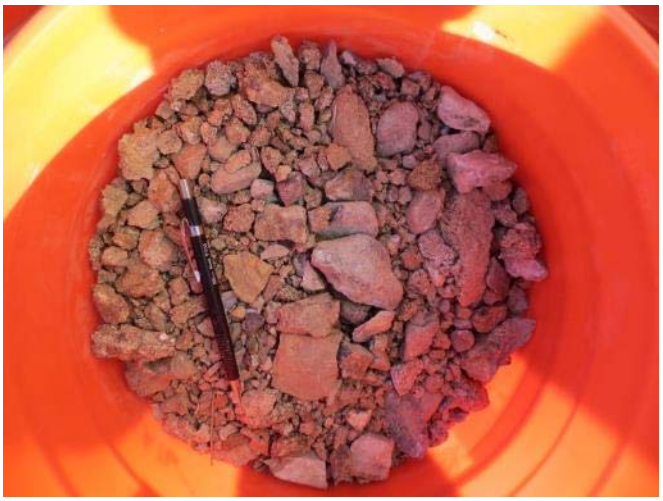








I-B-7 GILA07







I-B-8 GILA08









I-B-9 GILA09







I-B-10 GILA10







I-B-11 GILA11







I-B-12 GILA12







I-B-13 GILA13

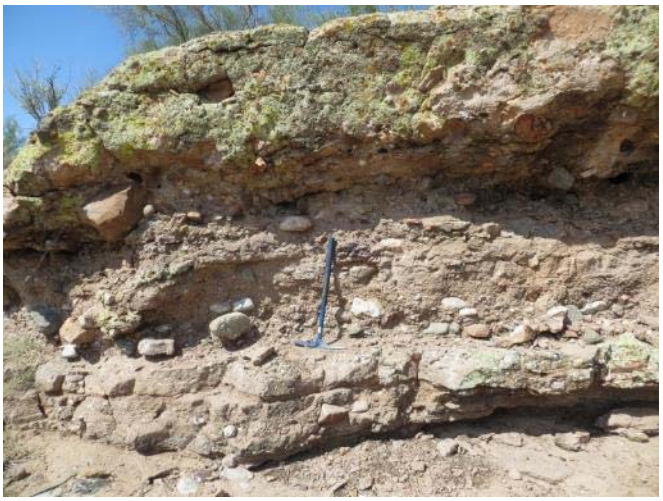






I-B-14 GILA14







I-B-15 GILA15







I-B-16 GILA16









I-B-17 GILA17









I-B-18 GILA18









I-B-19 GILA19









I-B-20 GILA20









I-B-21 GILA21









I-B-22 GILA22







I-B-23 GILA23







I-B-24 GILA24





I-B-25 GILA25









I-B-26 GILA26









I-B-27 GILA27









I-B-28 GILA28







I-B-29 GILA29









I-B-30 GILA30









I-B-31 SUPERIOR MINE TAILINGS COVER


Surface of Cover


Typical Cover Surface Texture


Typical Cover Surface Texture


Drainage Channel Transecting Cover


Drainage Channel Transecting Cover

I-B-32 SUPERIOR MINE SITE GILA CONGLOMERATE STOCKPILE (INACTIVE BORROW)



Slopes of Superior Mine Site Gila Conglomerate Stockpile
(not an active borrow source)

I-B-33 SUPERIOR MINE SITE GILA CONGLOMERATE STOCKPILE (ACTIVE BORROW)





Superior Mine Site Gila Conglomerate Stockpile
(active borrow source)







Gila Conglomerate Stockpile Source
(blasted face)

APPENDIX I-C

List of Laboratory Testing and List of Analyses

Table I-C-1 Summary of Laboratory Testing (Near West Site)

									ATL						ALS								
Sample Name	Date Sampled	Easting (Note 1)	Northing (Note 1)	Location	Description	Acid Reaction (Qualitative Field Assessment)	Rock Strength (Qualitative Field Assessment) (ISRM, 1977)	Field Notes	Water Content	Specific Gravity	Atterberg Limits			Gradation (Dry Sieve)	Gradation (Washed Sieve)	Modified Sobek ABA	NAG pH	Synthetic Precipitation Leaching Procedure (SPLP) (Liquid to Solids Ration of 4:1)	Toxicity Characteristic Leaching Procedure (TCLP)	Total Element Analysis (Ultra Trace - Four Acid Digestion)	Available Nutrients	Organic Matter	Total Organic Carbon	Paste Conductivity
		ft	ft						%		LL	PL	PI					mg/L	mg/L	ppm		%	%	µS/cm
GILA 01	July 22, 2014	923,439	848,700	Near West, Western Ridge in Gila Conglomerate Area	CONGLOMERATE soil-like, Silty SAND and GRAVEL, fine to coarse, well graded, max. particle size = 7 cm, angular to sub-rounded, light brown, dry to moist, variable clast lithology, massive	None	R0/R1	Exposure in bank of small wash on the east side of the ridge								Appendix V	8.6			Appendix V				303
GILA 02	July 22, 2014	922,337	847,812	Near West, Western Ridge in Gila Conglomerate Area	Sandy CLAY, some gravel and large (max. 20 cm) schist cobbles, intermediate plasticity, stiff to very stiff, brownish red, below plastic limit	None	N/A	Sampled 20 – 30 cm below ground surface – no outcrop	6.8		38%	19%	19%			Appendix V	8.3			Appendix V				487
GILA 03	July 22, 2014	921,497	846,525	Near West, Western Ridge in Gila Conglomerate Area	Gravelly/Silty SAND, fine to coarse, some schist cobbles (max. 15 cm), well graded, max. particle size = 15 cm, angular to sub-rounded, brown, dry, variable lithology but coarse particles dominated by schist	None	N/A	Sampled 20 – 30 cm below ground surface – no outcrop								Appendix V	8.6			Appendix V				240
GILA 04	July 22, 2014	920,938	845,530	Near West, Western Ridge in Gila Conglomerate Area	Silty/Gravelly SAND, fine to coarse, some schist cobbles, well graded, max. particle size = 20 cm, sub-rounded to angular, brown, dry, variable lithology but coarse particles dominated by schist	None	N/A	Sampled 20 – 30 cm below ground surface – no outcrop	5							Appendix V	8.3			Appendix V				269
GILA 05	July 22, 2014	918,188	843,591	Near West, Western Ridge in Gila Conglomerate Area	CONGLOMERATE, cemented Silty/Gravelly SAND with cobbles, fine to coarse, well graded, max. particle size = 10 cm, angular to sub-rounded, brown, dry, variable lithology, some sub-horizontal bedding visible	None to Weak	R1	Exposure in bottom of wash	3.2							Appendix V	9.9			Appendix V				462
GILA 06	July 22, 2014	920,279	844,697	Near West, Western Ridge in Gila Conglomerate Area	Silty/Gravelly SAND, fine to coarse, some schist cobbles, well graded, max. particle size = 15 cm, sub-rounded to angular, brown, dry to moist, variable lithology but coarse particles dominated by schist	None	N/A	Sampled 20 – 30 cm below ground surface – no outcrop								Appendix V	8			Appendix V				271
GILA 07	July 22, 2014	924,379	846,238	Near West, in Rebel Tank	FIELD MAPPING STATION GILA4 FROM (KCB, 2014b)																			
					SAND and GRAVEL, fine to coarse, some cobbles to cobbly, some clay, well graded, max. particle size = 10 cm, angular to sub-angular, reddish brown, various lithology (schist, quartzite, tuff, quartz), clast supported, massive	none to moderate	R1	Both layers the same								Appendix V	8.6	Appendix V	Appendix V	Appendix V	Appendix V	2.2	<0.1	372
					SAND, GRAVEL and COBBLES, some clay, well graded, max. particle size = 35 cm, sub-angular to angular, brown, various lithology (as L-1), clast supported, massive	weak to moderate	R1	Both layers the same																
GILA 08	July 22, 2014	923,721	845,035	Near West, in Rebel Tank	CONGLOMERATE, bedded on mm to metre scale, particles ranging from fines up to 20 cm cobbles, one large igneous boulder, varies between matrix and clast supported depending on coarse content, sub-rounded to angular clasts, light brown, preferential weathering of finer layers	Weak to Strong (Silty Layer is Strong Reaction)	R1		2.8							Appendix V	8.9	Appendix V		Appendix V			0.11	304
GILA 09	July 22, 2014	922,763	844,588	Near West, in Rebel Tank	FIELD MAPPING STATION GILA3 FROM (KCB, 2014b)																			
					SAND, GRAVEL and COBBLES, fine to coarse, trace boulders, some to trace clay, well graded, max. particle size = 30 cm, sub-rounded to angular, light brown, various lithology (schist, quartz, granodiorite, quartz sandstone, siltstone, quartzite), matrix supported, massive	weak to moderate	R3 (exposure face) R1 (hand sample)	Stronger, forms overhang								Appendix V	10.4	Appendix V		Appendix V	Appendix V	1.8	0.14	1020
					Silty SAND, GRAVEL and COBBLES, fine to coarse, some boulders, well graded, max. particle size = 1.6 m (schist boulder), angular to sub-angular, light brown, various lithology (as L-1), clast supported, massive	weak to moderate	R1	Weaker, forms undercut																
GILA 10	July 22, 2014	921,956	843,288	Near West, in Rebel Tank	CONGLOMERATE, three large scale beds visible:	Weak to Moderate (Top and Bottom)	R0									Appendix V	10.3	Appendix V			Appendix V			0.11	273
					Top: 1.5 m thick, well graded mixture of silty sand, gravel and cobbles, max. particle size = 30 cm, sub-rounded to angular clasts, variable lithology	Strong (Bottom)																		
					Middle: 1.5 m thick, SILT, some sand, trace gravel and cobbles, light brown, dry																			
					Bottom: 0.5 m thick, same as top																			
GILA 11	July 23, 2014	922,095	842,121	Near West, in Rebel Tank	FIELD MAPPING STATION GILA2 FROM (KCB, 2014b)											Appendix V	10.7	Appendix V			Appendix V		0.15	270
					SAND and GRAVEL, fine to coarse, some cobbles, some clay, well graded, max. particle size = 12 cm, angular to sub-angular clasts, reddish brown to yellow, variable lithology (quartz, quartz sandstone, schist, granodiorite, siltstone), clast supported, massive	moderate	R2	Strong, forms ledge																
					Silty SAND and GRAVEL, fine to coarse, some cobbles, well graded, max. particle size = 20 cm, sub-angular to angular, light brown/grey, various lithology (as L-1), clast (sand) supported, massive	none to weak	R1	Weak, cut back																
					Silty SAND and GRAVEL, fine to coarse, some cobbles, trace boulders, well graded, max. particle size = 40 cm, sub-angular to angular, light brown/grey, various lithology (as L-1), clast (sand) supported, massive	weak	R1	Stronger, forms sloping ledge																
					SILT, SAND and GRAVEL, fine to coarse, to gravelly, some cobbles, well graded, max. particle size = 30 cm, sub-angular to angular, light brown/grey, various lithology (as L-1), matrix supported in more eroded areas, clast supported in more resistant areas, massive	weak to moderate	R1	Weak, cut back																
					Clayey SAND, GRAVEL and COBBLES, fine to coarse, some boulders, well graded, max. particle size = 60 cm, angular to sub-rounded, brown, various lithology (as L-1) clast supported, massive	moderate	R1	Stronger, forms sloping ledge																
GILA 12	July 23, 2014	921,853	840,782	Near West, in Bear Tank Canyon	FIELD MAPPING STATION GILA1 FROM (KCB, 2014b)											Appendix V	11				Appendix V			316
					SAND and GRAVEL, fine to coarse, some fines, trace cobbles, well graded, max. particle size = 13 cm, angular to sub-angular clasts, brown to pink, various lithology (quartz, limestone, schist, tuff, granodiorite), clast supported, massive	moderate to strong	R1 to R2	Weak, cut back, soil like																
					Gravelly SAND (SW), fine to coarse, well graded, max. particle size = 6 cm, angular to sub-angular, white, variable lithology, clast supported, massive	strong	R3	Strongest, forms ledge																
					SAND and GRAVEL, fine to coarse, some fines, some cobbles, well graded, max. particle size = 25 cm, angular to sub-angular, pinkish brown, various lithology as L-1, clast supported, massive	moderate to strong	R2	Average																
					SAND, fine to coarse, some silt, trace gravel, max. particle size = 2 cm, angular to sub-angular, greyish white, various lithology (schist, quartz and tuff), clast (sand) supported, sub-horizontal laminations	moderate to strong	R2	Weakest, cut back along bottom of outcrop																
GILA 13	July 23, 2014	920,980	839,682	Near West, in Bear Tank Canyon	FIELD MAPPING STATION OBS24 FROM (KCB, 2014b)											Appendix V	10.5				Appendix V	Appendix V	2.3		4340
					SAND and GRAVEL (SW-GW), trace fines, well graded, max. particle size = 5 cm, angular to sub-rounded clasts, pink, various lithology (tuff, schist, quartz, sandstone, granodiorite, quartzite), clast supported (sand), massive	matrix - none to moderate	R5-R6 (exposure face) R3 (chunk of material)	Strong, forms overhang																
					SAND and GRAVEL (SW-GW), trace cobbles, trace fines, well graded, max. particle size = 10 cm, angular to sub-rounded clasts, pink, various lithology (tuff, schist, quartz, sandstone, granodiorite, quartzite), clast supported (sand), massive	matrix - moderate to strong	R3	Weakest, undercut below overhang																
					SILT, some fine grained sand, white, sub-horizontal laminations	strong	R0																	
					As 0.6m - 0.85m																			
					Gravelly SAND (SW), fine to coarse, some fines, well graded, max. particle size = 12 cm, angular to sub-angular clasts, pinkish brown, various lithology, matrix supported, massive	moderate to strong	R2 to R3	Average																
					SILT, some fine grained sand, whitish grey, dry, finely laminated	strong	R0	Weak, eroded away in some areas																
					SAND and GRAVEL, some cobbles, some fines, well graded, max. particle size = 30 cm, sub-rounded to sub-angular clasts, pinkish brown, various lithology, matrix to clast supported (some clasts touching). "soil like", massive	strong	R1	Average																
					SAND and GRAVEL, some fines, well graded, max. particle size = 12 cm, sub-rounded to angular, grey, various lithology, clast (sand) supported, massive	strong	R5 (exposure face) R3 (chunk of material)	Strong, forms ledge and extends out beyond foot of outcrop																

Table I-C-1 Summary of Laboratory Testing (Near West Site)

										ATL						ALS								
Sample Name	Date Sampled	Easting (Note 1)	Northing (Note 1)	Location	Description	Acid Reaction (Qualitative Field Assessment)	Rock Strength (Qualitative Field Assessment) (ISRM, 1977)	Field Notes	Water Content	Specific Gravity	Atterberg Limits			Gradation (Dry Sieve)	Gradation (Washed Sieve)	Modified Sobek ABA	NAG pH	Synthetic Precipitation Leaching Procedure (SPLP) (Liquid to Solids Ration of 4:1)	Toxicity Characteristic Leaching Procedure (TCLP)	Total Element Analysis (Ultra Trace - Four Acid Digestion)	Available Nutrients	Organic Matter	Total Organic Carbon	Paste Conductivity
		ft	ft						%		LL	PL	PI					mg/L	mg/L	ppm		%	%	µS/cm
GILA 14	July 23, 2014	919,038	839,146	Near West, in Bear Tank Canyon	FIELD MAPPING STATION CRK20 FROM (KCB, 2014b) Gravelly SAND (SW), some silt, trace cobbles, well graded, max. particle size = 20 cm, angular to sub-angular clasts, pink, various lithology (quartzite, tuff, schist, quartz), clast supported (sand), massive SAND, GRAVEL and COBBLES, well graded, max. particle size = 30 cm, angular to sub-angular clasts, pink, various lithology (quartzite, tuff, granodiorite, schist, quartz, quartz arenite, limestone), matrix supported in some areas and clast supported in others, massive Gravelly SAND (SW), some cobbles, trace silt, well graded, max. particle size = 20 cm, angular to sub-rounded clasts, pinkish brown, various lithology (quartzite, tuff, granodiorite, schist, quartz, quartz arenite, limestone), clast supported (sand), massive SAND and GRAVEL (SW-GW), some cobbles, trace silt, well graded, max. particle size = 15 cm, sub-angular to angular, brown, various lithology (quartzite, tuff, granodiorite, schist, quartz, quartz arenite, limestone), clast supported (sand), massive	matrix - none to moderate matrix and limestone clasts - moderate to strong matrix and limestone clasts - weak to strong matrix and limestone clasts - moderate to strong	R5-R6 (exposure face) R3 (chunk of material) R3 R3 R3	Strong, forms overhang Weakest, cut back below overhang Average Strong, forms ledge								Appendix V	10.7			Appendix V			334
GILA 15	July 23, 2014	926,358	843,674	Near West, in Bear Tank Canyon	CONGLOMERATE, massive with no apparent bedding, particles range from fines to cobbles, angular to sub-rounded clasts, max. particle size = 40 cm, variable lithology (dominated by red quartz sandstone (Yds and some schist), some small localized pockets of calcareous silt	None to Moderate (Calc-silt High)	R1	Outcrop in channel bank	3.5							Appendix V	8.7	Appendix V	Appendix V	Appendix V	Appendix V	2.1	0.11	318
GILA 16	July 23, 2014	925,516	844,802	Near West, on ridge between Rebel Tank and Bear Tank Canyon	Silty SAND and GRAVEL, fine to coarse, some cobbles, well graded, max. particle size = 10 cm, angular to sub-angular, dry, brown, variable lithology	None	N/A	Off the side of ridge road – samples collected at ~30 cm depth								Appendix V	8.5			Appendix V				306
GILA 17	July 23, 2014	926,540	847,766	Near West, on ridge between Rebel Tank and Bear Tank Canyon	CONGLOMERATE, massive, mixture of sand, gravel and cobbles, max. particle size = 10 cm, angular to sub-rounded clasts, variable lithology but dominated by red fine-grained sandstone (Yds)	Weak to Strong	R1	Exposed on the surface of the road								Appendix V	8.6			Appendix V				267
GILA 18	July 23, 2014	925,471	846,420	Near West, on ridge between Rebel Tank and Bear Tank Canyon	Silty SAND and GRAVEL, fine to coarse, some cobbles, well graded, max. particle size = 18 cm, angular to sub-rounded, brown, dry, white silty very hard carbonate rich layer intercepted at 30 cm depth (caliche?), white silty layer strongly reactive to acid	Moderate to Strong	N/A	Just off to the side of road – sampled collected at ~30 cm depth								Appendix V	10.9			Appendix V				317
GILA 19	July 23, 2014	924,386	844,660	Near West, on ridge between Rebel Tank and Bear Tank Canyon	Silty/Gravelly SAND, fine to coarse, some cobbles, well graded, max. particle size = 12 cm, angular to sub-rounded, dry, brown	None	N/A	The soil comes up in "chunks" that are easily broken down by hand. The chunks have the texture of the Gila only extremely weathered								Appendix V	8.4			Appendix V				316
GILA 20	July 23, 2014	923,474	843,708	Near West, on ridge between Rebel Tank and Bear Tank Canyon	Silty/Gravelly SAND, fine to coarse, some cobbles, well graded, max. particle size = 13 cm, angular to sub-rounded, dry, brown			The soil comes up in "chunks" that are easily broken down by hand. The chunks have the texture of the Gila only extremely weathered	4.4		33%	20%	13%			Appendix V	8.6	Appendix V	Appendix V	Appendix V	Appendix V	1.6	0.53	298
GILA 21	July 23, 2014	922,955	842,324	Near West, on ridge between Rebel Tank and Bear Tank Canyon	Sandy CLAY, some gravel, trace cobbles , sand is well graded, max. particle size = 10 cm, sub-rounded to angular grains, intermediate plasticity, below PL, red	Weak to Moderate	N/A	Flat, low lying area at the foot of the ridge			52%	20%	32%			Appendix V	8.5			Appendix V				748
GILA 22	July 24, 2014	919,640	837,354	Near West, Benson Spring	CONGLOMERATE, bedded ranging from cm to m scale, top bed is most weathering resistant and forms an overhang, typically Silty SAND, fine to coarse, some gravel to gravelly, trace cobbles, well graded, max. particle size = 15 cm, sub-rounded to angular clasts, variable lithology, the finer, siltier beds are most prone to weathering	Weak to Strong	R2/R3	Benson Spring	3.5	2.24				Appendix IV	Appendix IV	Appendix V	9.1	Appendix V	Appendix V	Appendix V	Appendix V	3.2	0.13	1285
GILA 23	July 24, 2014	923,699	839,142	Near West, Small Creek to the east of Bear Tank Canyon	CONGLOMERATE, beds range from 5 cm to 60 cm thick, typically Gravelly/Silty SAND to Silty SAND and GRAVEL, fine to coarse, some cobbles, well graded, max. particle size = 25 cm, sub-rounded to angular clasts, variable lithology	Weak to Moerate	R2/R3	Large drop-off in wash								Appendix V	10.7			Appendix V				272
GILA 24	July 24, 2014	924,258	839,774	Near West, Small Creek to the east of Bear Tank Canyon	CONGLOMERATE, beds range from cm's to 10's of cm scale, Silty SAND and GRAVEL, fine to coarse, some cobbles, well graded, max. particle size = 20 cm, angular to sub-rounded, variable lithology	Moderate to Strong	R2/R3	Small drop-off in wash		2.56				Appendix IV	Appendix IV	Appendix V	10.7	Appendix V		Appendix V			0.22	315
GILA 25	July 24, 2014	925,904	836,663	Along eastern ridge in Potts Canyon	Silty SAND and GRAVEL, fine to coarse, some cobbles, well graded, max. particle size = 10 cm, (large boulders on surface up to 1 m in dia.), sub-rounded to angular, dry, brown, variable lithology but dominated by felsic volcanics	None	N/A	Near center of Happy Camp SW borrow on top of ridge								Appendix V	8.6	Appendix V		Appendix V	Appendix V	1.8	0.72	365
GILA 26	July 24, 2014	925,637	837,234	Along eastern ridge in Potts Canyon	Silty SAND and GRAVEL, fine to coarse, some cobbles, well graded, max. particle size = 20 cm, (large boulders on surface up to 1 m in dia.), sub-rounded to angular, dry, brown, variable lithology but dominated by felsic volcanics	None	N/A	East edge of Happy Camp SW borrow on ridge	4.1							Appendix V	8.3	Appendix V		Appendix V			0.94	355
GILA 27	July 24, 2014	927,333	837,113	Along eastern ridge in Potts Canyon	Silty SAND and GRAVEL, fine to coarse, trace cobbles, well graded, max. particle size = 8 cm, sub-rounded to angular grains, dry, brown, variable lithology, top surface of hard/intact conglomerate reached at 30 cm depth (white silty SAND, some gravel) – refusal	None	N/A	Top of the lookout hill	6.3							Appendix V	8.2			Appendix V				361
GILA 28	July 24, 2014	926,846	837,929	Along eastern ridge in Potts Canyon	CONGLOMERATE, Silty SAND and GRAVEL, fine to coarse, some cobbles, well graded, max. particle size = 15 cm, sub-rounded to angular, matrix supported (gravel floating in silty sand)	Strong	R1	Exposed in bank of small wash at the NW corner of the SW Happy Camp borrow area								Appendix V	10.8			Appendix V				338
GILA 29	July 24, 2014	935,133	840,081	On ridge in Happy Camp	Silty SAND and GRAVEL, fine to coarse, some cobbles to cobbly, well graded, max. particle size = 30 cm (schist cobble intercepted in excavation), sub-angular to angular, dry, brown, variable lithology	None	N/A	On ridge in Happy Camp N borrow	6.1							Appendix V	8	Appendix V	Appendix V	Appendix V	Appendix V	2.2	0.15	308
GILA 30	July 25, 2014	935,318	838,838	On ridge in Happy Camp	Silty SAND and GRAVEL, fine to coarse, some cobbles, well graded, max. particle size = 10 cm, sub-rounded to angular, dry, brown, variable lithology	None	N/A	¾ up Road Access in Happy Camp N Borrow								Appendix V	8.3	Appendix V		Appendix V			0.17	321

Notes:

1. Coordinate system - Arizona State Plane; Datum - NAD83

Table I-C-2 Summary of Laboratory Testing (Superior Mine Site Stockpile Samples)

						ATL					GSA										
Sample Name	Date Sampled	Easting (Note 1)	Northing (Note 1)	Location	Description	Water Content	Specific Gravity	Gradation (Dry Sieve)	Gradation (Washed Sieve)	Standard Proctor Compaction Test	Specific Gravity	Particle Size Analysis (Dry Sieve and 200 wash)	Particle Size Analysis (3" Wet Sieve and Hydrometer)	Saturated Hydraulic Conductivity (Ksat) (2")	Saturated Hydraulic Conductivity (Ksat) (6")	Saturated Hydraulic Conductivity (Ksat) (12")	van Genuchten Modeling [van Genuchten, 1980; 1991]	Soil Moisture Retention Curve (2") with 2 additional points (>3bar) using water activity meter	Soil Moisture Retention Curve (6") with 2 additional points (>3bar) using water activity meter	Soil Moisture Retention Curve (12") with 2 additional points (>3bar) using water activity meter
		ft	ft			%								cm/s	cm/s	cm/s				
Superior Mine Site Stockpile	July 25, 2014	947,341	838,927	Superior Mine Site	16 sample buckets		2.64	Appendix IV	Appendix IV	Appendix IV		Appendix VI									
Superior Mine Site Stockpile (Coarse)	July 25, 2014	947,341	838,927	Superior Mine Site	Select sample buckets at ~ 10% passing #10 Mesh								Appendix VI			8.2E-01	Appendix VI			Appendix VI
Superior Mine Site Stockpile (Fine)	July 25, 2014	947,341	838,927	Superior Mine Site	Select sample buckets at ~ 24% passing #10 Mesh								Appendix VI			1.7E-01	Appendix VI			Appendix VI
Superior Mine Site Stockpile + Scavenger Tailings					Composite sample at 3:1 intermediate stockpile samples /scavenger tailings								Appendix VI		3.3E-03		Appendix VI		Appendix VI	
Scavenger Tailings					#1 RCM Metallurgical Inventory, #2 Tailings from test processing of composite ore sample (Holes P-2924AX, P-2924BA)						2.78		Appendix VI	2.3E-05			Appendix VI	Appendix VI		
Scavenger Tailings ("Slimes" gradation)					Wet Sieving and Recombining Fractions of Scavenger Tailings to target PSD									6.3E-07			Appendix VI	Appendix VI		
Scavenger Tailings ("Beach" gradation)					Wet Sieving and Recombining Fractions of Scavenger Tailings to target PSD									2.3E-04			Appendix VI	Appendix VI		
Cleaner Tailings					RCM Metallurgical Inventory						3.45		Appendix VI	7.5E-08			Appendix VI	Appendix VI		

Notes:

1. Coordinate system - Arizona State Plane; Datum - NAD83
2. Four paste conductivity tests were completed with values of 334, 345, 362, and 255 µS/cm.

Table I-C-2 Summary of Laboratory Testing (Superior Mine Site Stockpile Samples)

						ALS								
Sample Name	Date Sampled	Easting (Note 1)	Northing (Note 1)	Location	Description	Modified Sobek ABA	NAG pH	Synthetic Precipitation Leaching Procedure (SPLP) (Liquid to Solids Ration of 4:1)	Toxicity Characteristic Leaching Procedure (TCLP)	Total Element Analysis (Ultra Trace - Four Acid Digestion	Available Nutrients	Organic Matter	Total Organic Carbon	Paste Conductivity[2]
		ft	ft					mg/L	mg/L	ppm		%	%	µS/cm
Superior Mine Site Stockpile	July 25, 2014	947,341	838,927	Superior Mine Site	16 sample buckets	Appendix V	11	Appendix V	Appendix V	Appendix V	Appendix V	1.7	1.7	324
Superior Mine Site Stockpile (Coarse)	July 25, 2014	947,341	838,927	Superior Mine Site	Select sample buckets at ~ 10% passing #10 Mesh									
Superior Mine Site Stockpile (Fine)	July 25, 2014	947,341	838,927	Superior Mine Site	Select sample buckets at ~ 24% passing #10 Mesh									
Superior Mine Site Stockpile + Scavenger Tailings					Composite sample at 3:1 intermediate stockpile samples /scavenger tailings									
Scavenger Tailings					#1 RCM Metallurgical Inventory, #2 Tailings from test processing of composite ore sample (Holes P-2924AX, P-2924BA)									
Scavenger Tailings ("Slimes" gradation)					Wet Sieving and Recombining Fractions of Scavenger Tailings to target PSD									
Scavenger Tailings ("Beach" gradation)					Wet Sieving and Recombining Fractions of Scavenger Tailings to target PSD									
Cleaner Tailings					RCM Metallurgical Inventory									

Notes:

1. Coordinate system - Arizona State Plane; Datum - NAD83
2. Four paste conductivity tests were completed with values of 334, 345, 362, and 255 µS/cm.

Table I-C-3 Geochemical Parameters Analyzed

	Total Elemental Analysis [1]	SPLP[2]	TCLP[2]
Al	x	x	
Sb	x	x	x
As	x	x	x
Ba	x		x
Be	x	x	x
Bi	x	x	
B		x	
Cd	x	x	x
Ca	x	x	
Ce		x	
Cs		x	
Co	x	x	
Cr	x	x	x
Cu	x	x	
F		x	x
Fe	x	x	
Ga	x	x	
Ge		x	
Au		x	
In		x	
Hg	x		x
La	x	x	
Pb	x	x	x
Li		x	
Mg	x	x	
Mn	x	x	
Mo	x	x	
Ni	x	x	x
Nb		x	
K	x	x	
P	x		
Rb		x	
Sc	x		
Se		x	x
Ag	x	x	
Na	x		x
Sr	x		x
S	x		
Ta		x	
Tl	x	x	x
Th	x	x	
Sn		x	
Ti	x		
W	x	x	
U	x		
V	x		
Y		x	
Zn	x	x	
Zr		x	

1 Solid Samples
2 Liquid (Leachate) Samples

APPENDIX I-D

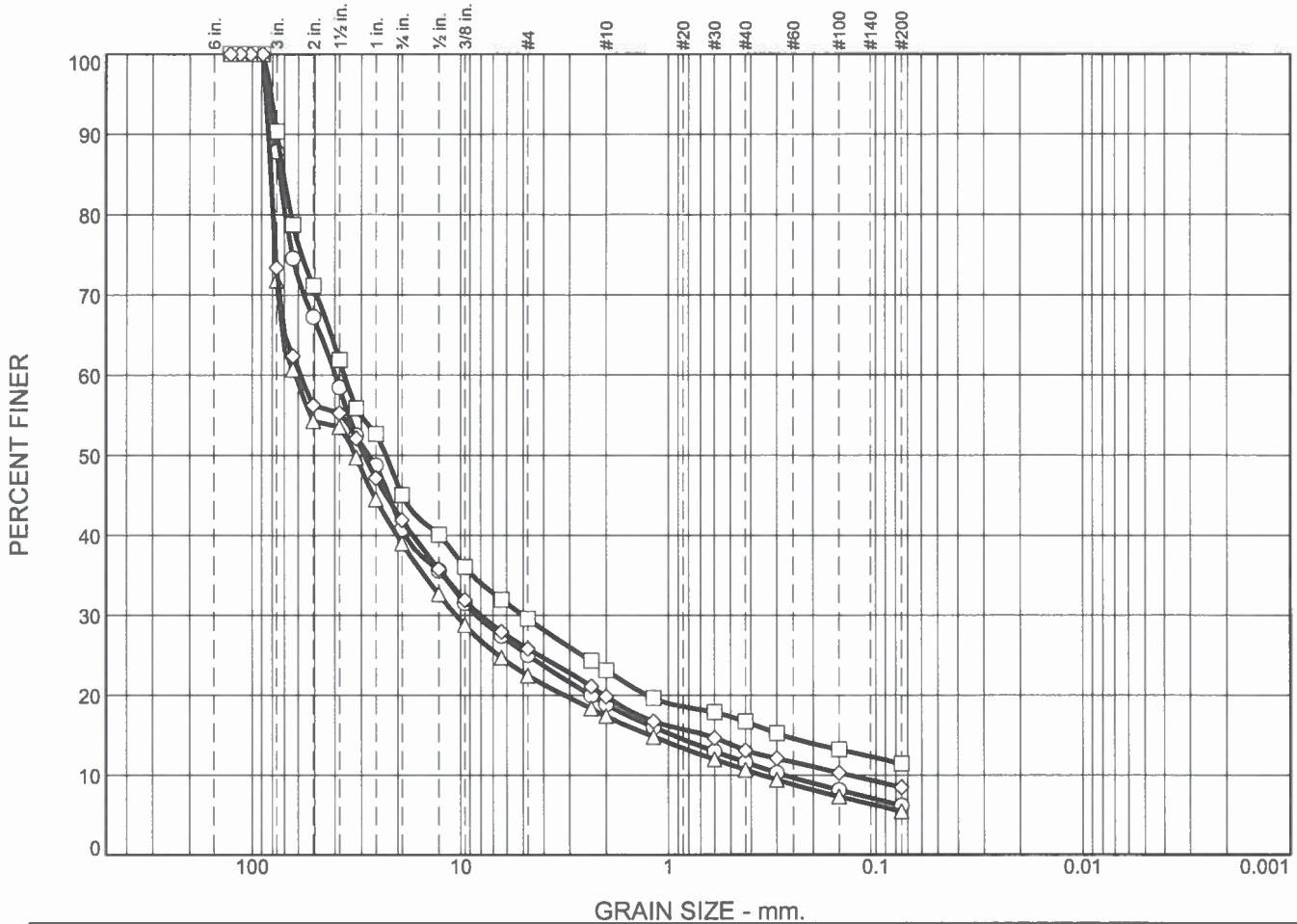
ATL Laboratory Results

I-D-1 – Particle Size Distribution Comparison
I-D-2 – Final Report

APPENDIX I-D-1

Particle Size Distribution Comparison

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	12	47	16	6	7	6	6	
□	10	45	15	7	6	6	11	
△	28	33	17	5	6	6	5	
◇	27	31	16	6	7	5	8	

SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○	Stockpile	14-0222		Sample 1 - Dry Gradation, ASTM C136	
□	Stockpile	14-0224		Sample 1 - Wet Gradation, ASTM C117 (Total Wash)	
△	Stockpile	14-0223		Sample 2 - Dry Gradation, ASTM C136	
◇	Stockpile	14-0225		Sample 2 - Wet Gradation, ASTM C117 (Total Wash)	

ATL, INC.

Phoenix, AZ

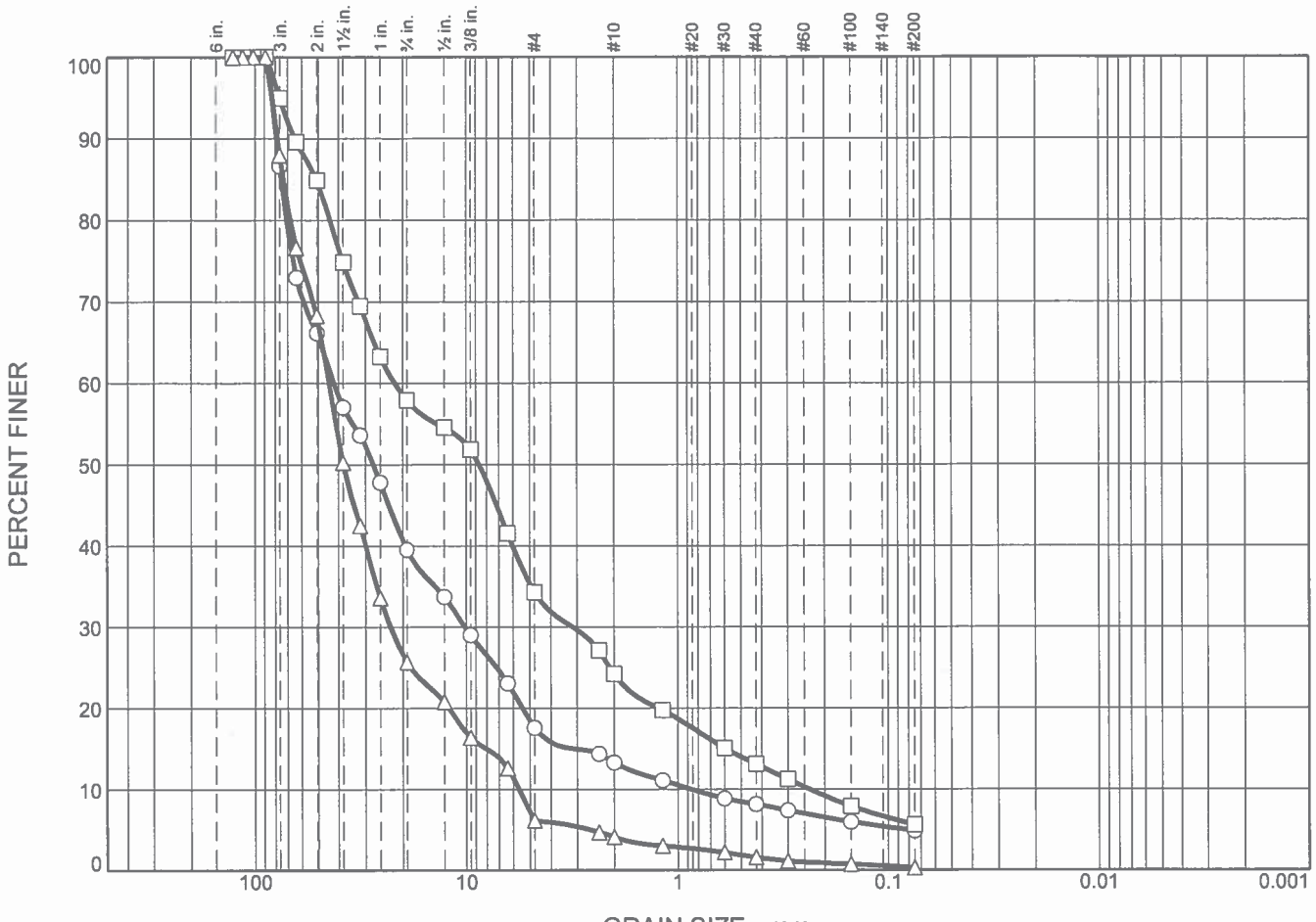
Client: Klohn Crippen Berger

Project: Resolution Project - Near West TSF Closure Cover Study

Project No.: 213023-01 **Figure**

Tested By: A. Capper **Checked By:** A. Capper

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	13	47	22	5	5	3	5	
□	5	37	24	10	11	7	6	
△	12	62	20	2	2	2	0	

SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○	Gila 22 - Dry	14-0231		Dry Gradation, ASTM C136	
□	Gila 22 - Wet	14-0233		Wet Gradation, ASTM C117 (Total Wash)	
△	Gila 22	14-0235		Dry Gradation, ASTM C136, No Mechanical Break Down	GW

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Phoenix, AZ

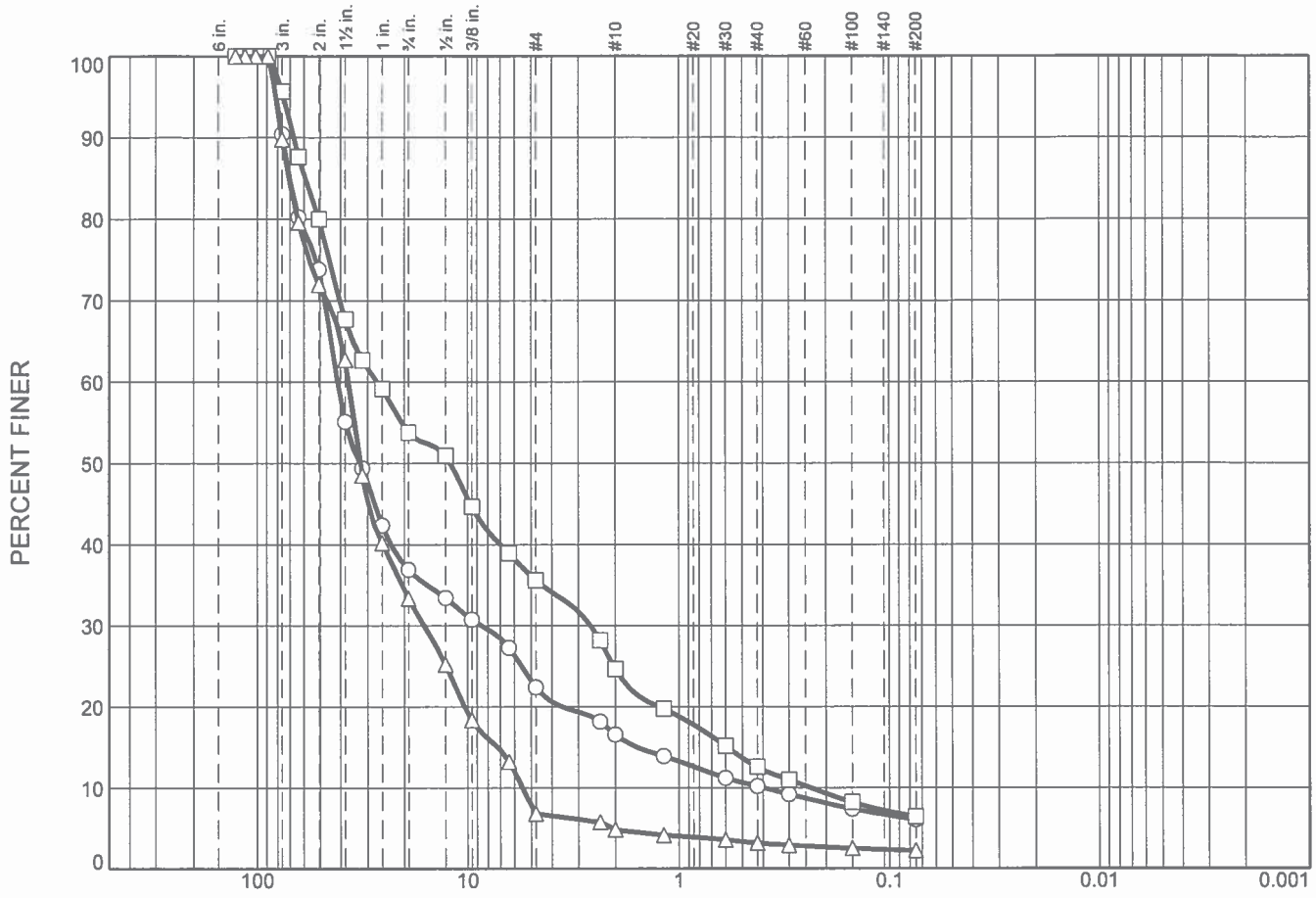
Client: Klohn Crippen Berger

Project: Resolution Project - Near West TSF Closure Cover Study

Project No.: 213023-01 **Figure**

Tested By: A. Capper **Checked By:** A. Capper

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	10	53	15	5	7	4	6	
□	4	42	18	11	12	7	6	
△	10	57	26	2	2	1	2	

SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○	Gila 24 - Dry	14-0232		Dry Gradation, ASTM C136	
□	Gila 24 - Wet	14-0234		Wet Gradation, ASTM 117 (Total Wash)	
△	Gila 24	14-0236		Dry Gradation, ASTM C136, No Mechanical Break Down	GW

ATL, INC.

Phoenix, AZ

Client: Klohn Crippen Berger

Project: Resolution Project - Near West TSF Closure Cover Study

Project No.: 213023-01 **Figure**

Tested By: A. Capper **Checked By:** A. Capper

APPENDIX I-D-2

Final Report

ATL, INC.
Excellence In Quality

Resolution Project – Near West TSF Closure Cover Study

Klohn Crippen Berger

ATL JOB NO. 213023-01

SPECIFIC GRAVITY OF COARSE AGGREGATES

LAB. NUMBER	SAMPLE	BULK SPECIFIC GRAVITY (OD)**	BULK SPECIFIC GRAVITY (SSD)**	APPARENT SPECIFIC GRAVITY**	ABSORPTION (%)**
14-0268	Gila 22	1.922	2.062	2.235	7.272
14-0269	Gila 24	2.285	2.393	2.562	4.733
14-0270	Stockpile #1	2.548	2.589	2.657	1.603
14-0271	Stockpile #2	2.453	2.519	2.626	2.688

Note:
-Revised 2/17/15
-Date sampled: July 2014
** Specific Gravity of Coarse Aggregates-ASTM C127

ATL, INC.
Excellence In Quality

Resolution Project – Near West TSF Closure Cover Study

Klohn Crippen Berger

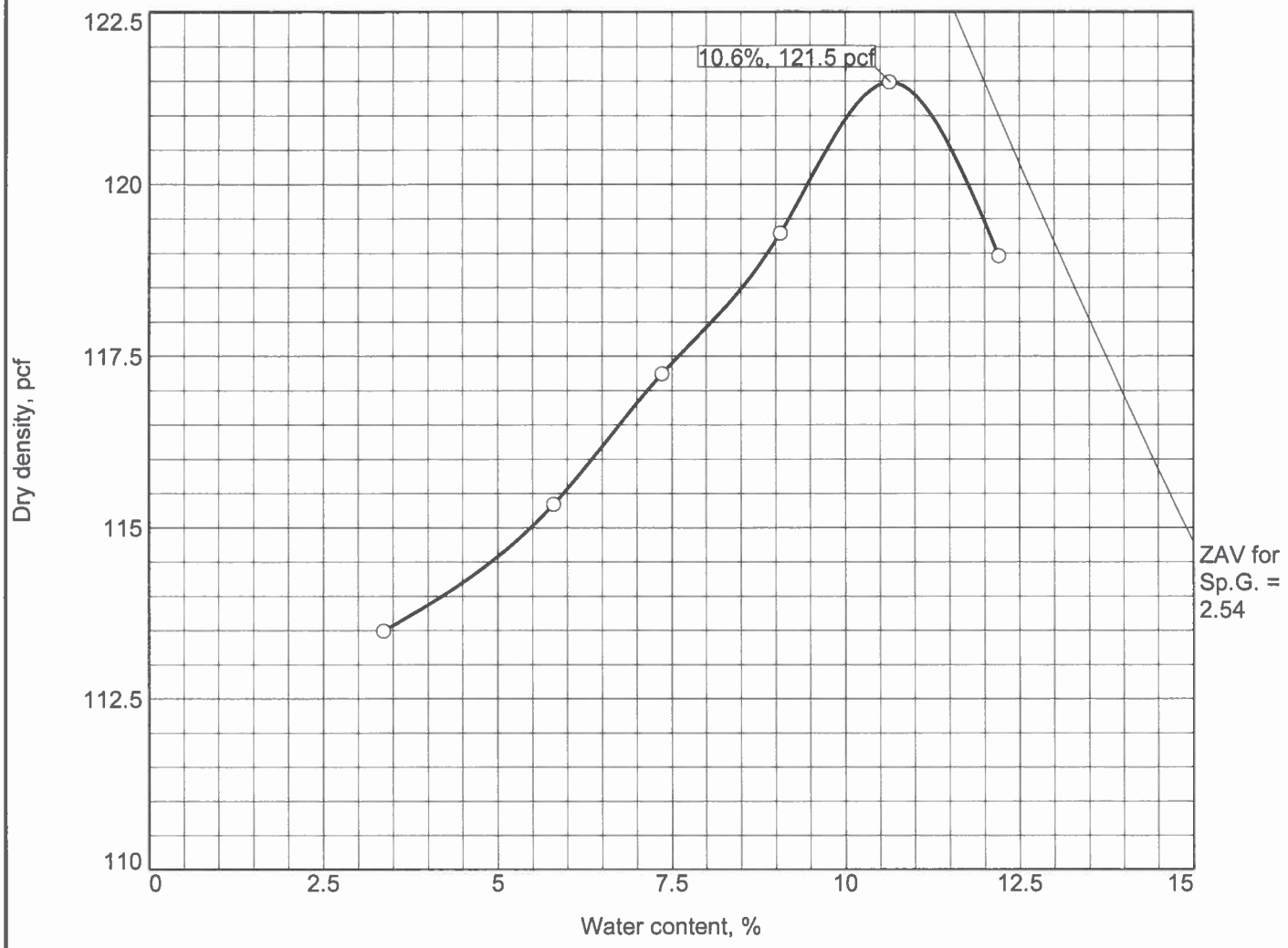
ATL JOB NO. 213023-01

IN SITU MOISTURE

Lab. No.	Sample ID	In-situ Moisture*
14-0294	Gila 02	6.8%
14-0295	Gila 04	5.0%
14-0296	Gila 05	3.2%
14-0297	Gila 08	2.8%
14-0298	Gila 15	3.5%
14-0299	Gila 20	4.4%
14-0300	Gila 22	3.5%
14-0301	Gila 26	4.1%
14-0302	Gila 27	6.1%
14-0303	Gila 29	6.3%

*ASTM 2216 – Method B

COMPACTION TEST REPORT



Test specification: ASTM D 698 Procedure A Standard

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > #4	% < No.200
	USCS	AASHTO						
				2.539				

TEST RESULTS	MATERIAL DESCRIPTION
Maximum dry density = 121.5 pcf Optimum moisture = 10.6 %	

Project No. 213023-01 **Client:** Klohn Crippen Berger

Project: Resolution Project - Near West TSF Closure Cover Study

○ **Source:** Stockpile_Combined with Broken Down Rock **Sample No.:** 14-0272

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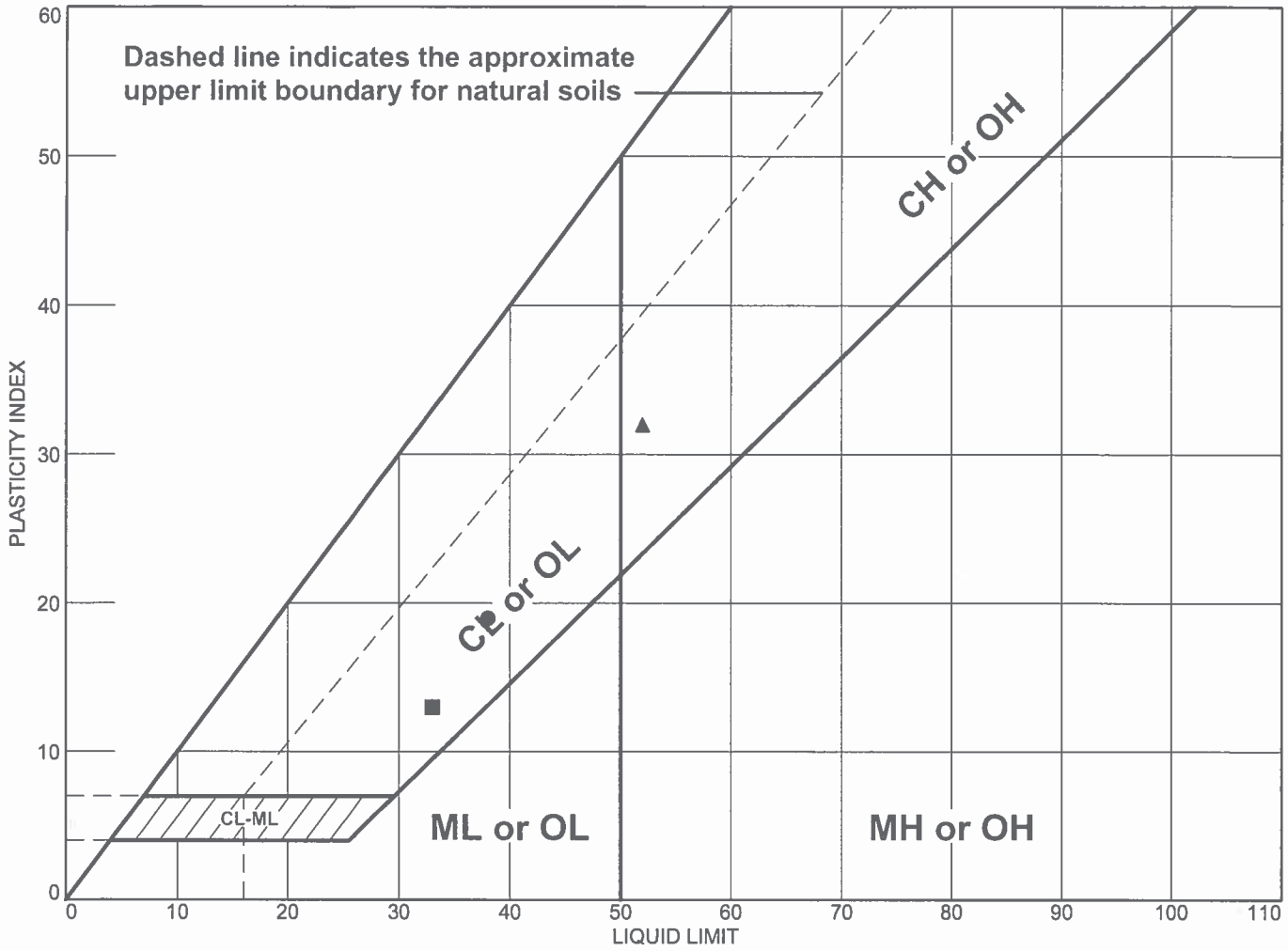
Remarks:

Rock was Crushed to passing 3/4" Screen.
Point #1 is the natural moisture content.

Figure

Tested By: A. Capper **Checked By:** A. Capper

LIQUID AND PLASTIC LIMITS TEST REPORT



	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	Gila 02	38	19	19			
■	Gila 20	33	20	13			
▲	Gila 21	52	20	32			

Project No. 213023-01 **Client:** Klohn Crippen Berger

Project: Resolution Project - Near West TSF Closure Cover Study

● **Source of Sample:** Gila 02 **Sample Number:** 14-0294

■ **Source of Sample:** Gila 20 **Sample Number:** 14-0299

▲ **Source of Sample:** Gila 21 **Sample Number:** 14-0304

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Remarks:

● ASTM D4318 - Dry Method, One Point Method (Method B)

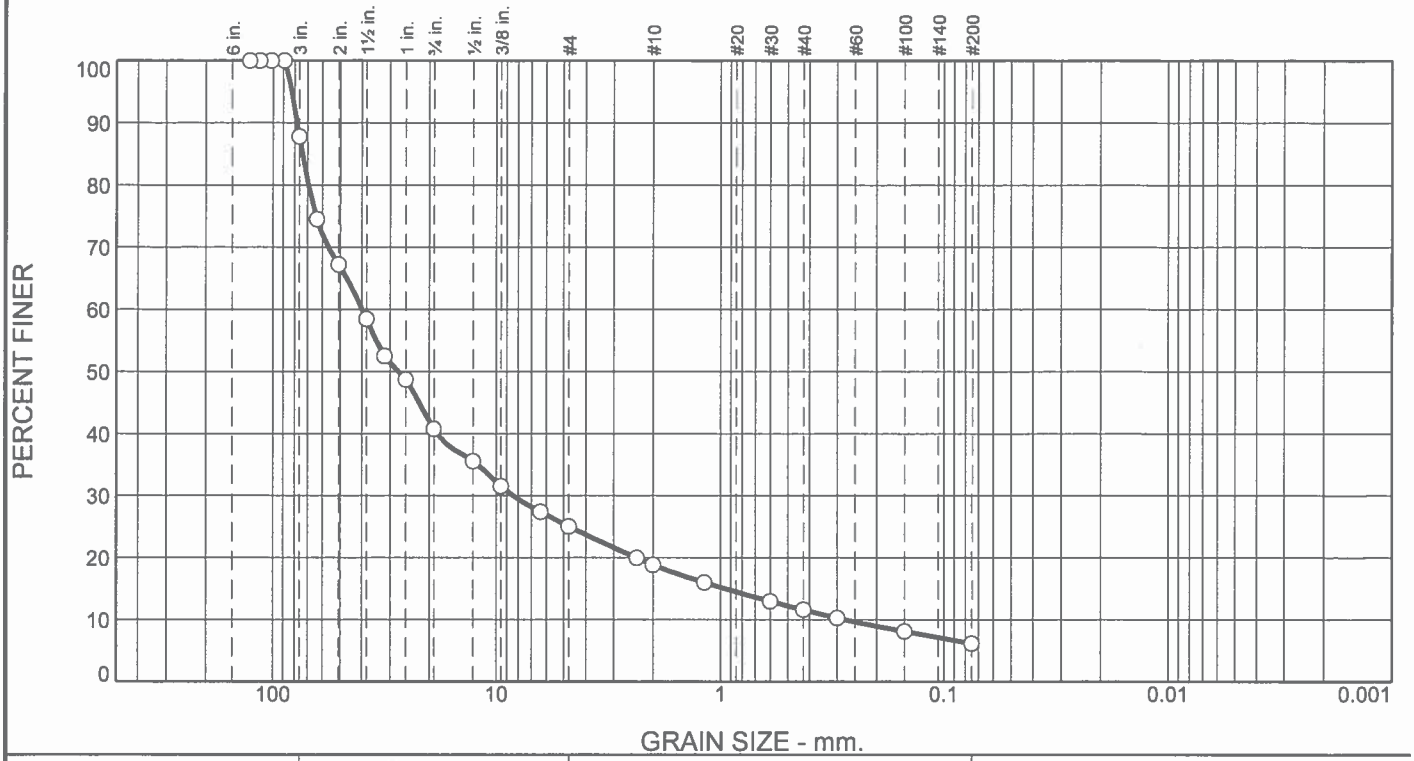
■ ASTM D4318 - Dry Method, One Point Method (Method B)

▲ ASTM D4318 - Dry Method, One Point Method (Method B)

Figure

Tested By: D. Mills **Checked By:** A. Capper

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
12	47	16	6	7	6	6	

TEST RESULTS

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
5"	100		
4.5"	100		
4"	100		
3.5"	100		
3"	88		
2.5"	75		
2"	67		
1.5"	59		
1.25"	53		
1"	49		
3/4"	41		
1/2"	36		
3/8"	32		
1/4"	27		
#4	25		
#8	20		
#10	19		
#16	16		
#30	13		
#40	12		
#50	10		
#100	8		
#200	6.2		

* (no specification provided)

Material Description

Sample 1 - Dry Gradation, ASTM C136

Atterberg Limits (ASTM D 4318)

PL= LL= PI=

Classification

USCS (D 2487)= AASHTO (M 145)=

Coefficients

D_{90}= 77.9681 D_{85}= 73.8244 D_{60}= 39.7557
D_{50}= 27.3390 D_{30}= 8.3694 D_{15}= 0.9465
D_{10}= 0.2750 C_u= 144.55 C_c= 6.41

Remarks

Date Received: 7-30-14 **Date Tested:** 8-7-14

Tested By: A. Capper

Checked By: A. Capper

Title: Lab Supervisor

Source of Sample: Stockpile **Date Sampled:** July 2014

Sample Number: 14-0222

ATL, INC.

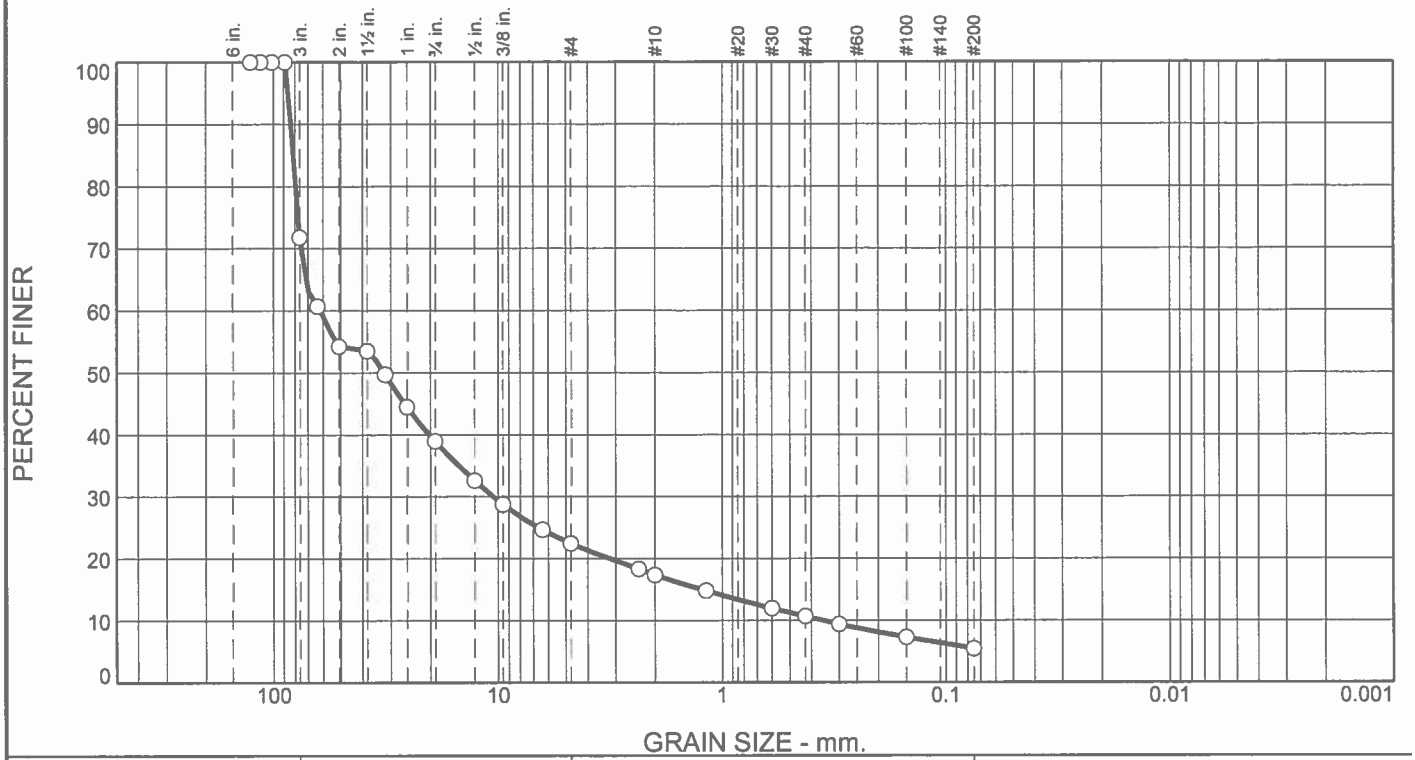
Phoenix, AZ

Client: Klohn Crippen Berger

Project: Resolution Project - Near West TSF Closure Cover Study

Project No: 213023-01 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
28	33	17	5	6	6	5	

TEST RESULTS			
Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
5"	100		
4.5"	100		
4"	100		
3.5"	100		
3"	72		
2.5"	61		
2"	54		
1.5"	54		
1.25"	50		
1"	45		
3/4"	39		
1/2"	33		
3/8"	29		
1/4"	25		
#4	22		
#8	18		
#10	17		
#16	15		
#30	12		
#40	11		
#50	9		
#100	7		
#200	5.5		

* (no specification provided)

Material Description

Sample 2 - Dry Gradation, ASTM C136

Atterberg Limits (ASTM D 4318)

PL= LL= PI=

Classification

USCS (D 2487)= AASHTO (M 145)=

Coefficients

D_{90}= 83.4675 D_{85}= 81.4919 D_{60}= 61.6840
D_{50}= 32.0776 D_{30}= 10.4679 D_{15}= 1.2261
D_{10}= 0.3521 C_u= 175.17 C_c= 5.04

Remarks

Date Received: 7-30-14 **Date Tested:** 8-7-14

Tested By: A. capper

Checked By: A. Capper

Title: Lab Supervisor

Source of Sample: Stockpile **Date Sampled:** July 2014

Sample Number: 14-0223

ATL, INC.

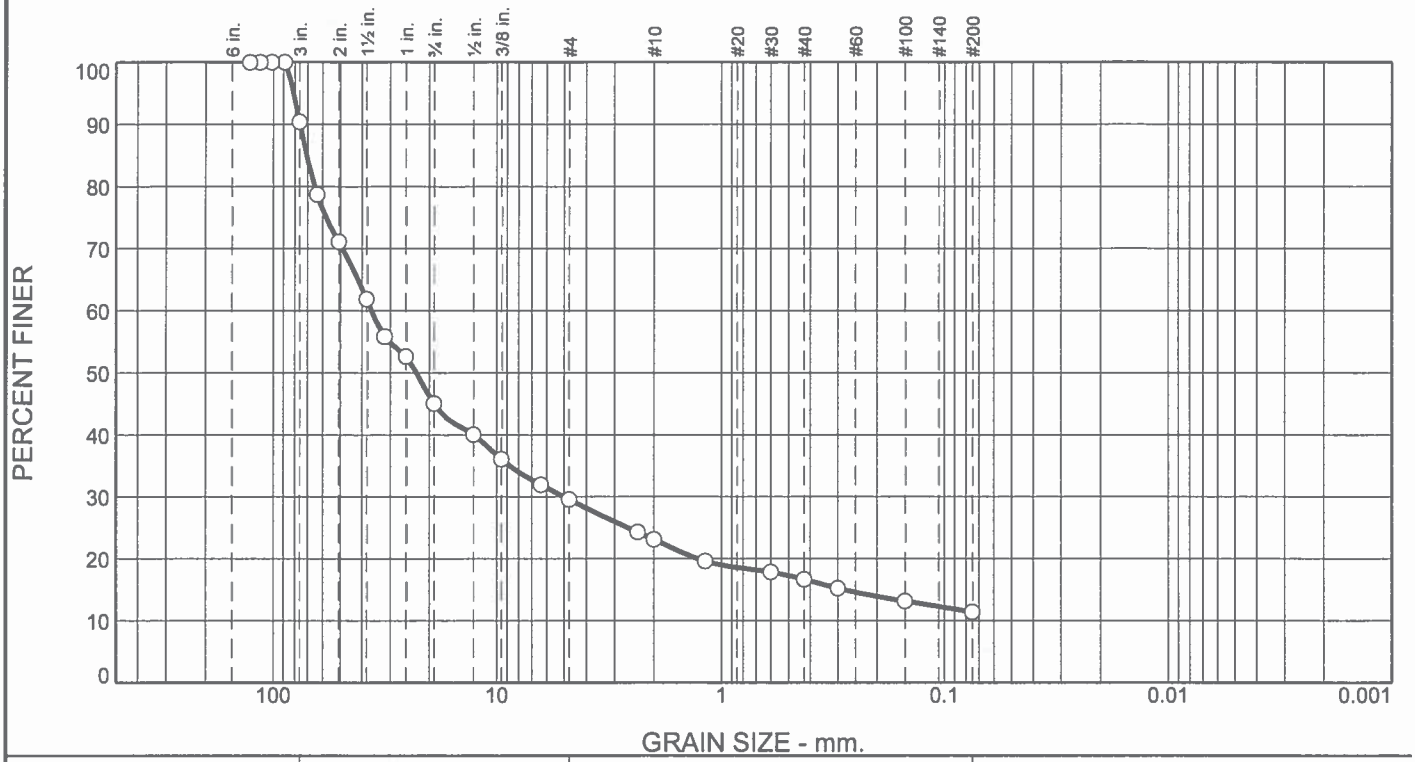
Phoenix, AZ

Client: Klohn Crippen Berger

Project: Resolution Project - Near West TSF Closure Cover Study

Project No: 213023-01 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
10	45	15	7	6	6	11	

TEST RESULTS

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
5"	100		
4.5"	100		
4"	100		
3.5"	100		
3"	90		
2.5"	79		
2"	71		
1.5"	62		
1.25"	56		
1"	53		
3/4"	45		
1/2"	40		
3/8"	36		
1/4"	32		
#4	30		
#8	24		
#10	23		
#16	20		
#30	18		
#40	17		
#50	15		
#100	13		
#200	11		

* (no specification provided)

Material Description

Sample 1 - Wet Gradation, ASTM C117 (Total Wash)

Atterberg Limits (ASTM D 4318)

PL= LL= PI=

Classification

USCS (D 2487)= AASHTO (M 145)=

Coefficients

D_{90}= 75.8216 D_{85}= 70.6962 D_{60}= 36.1760
D_{50}= 22.7152 D_{30}= 4.9944 D_{15}= 0.2812
D_{10}= C_u= C_c=

Remarks

Date Received: 7-30-14 **Date Tested:** 8-7-14

Tested By: A. capper

Checked By: A. Capper

Title: Lab Supervisor

Source of Sample: Stockpile **Date Sampled:** July 2014
Sample Number: 14-0224

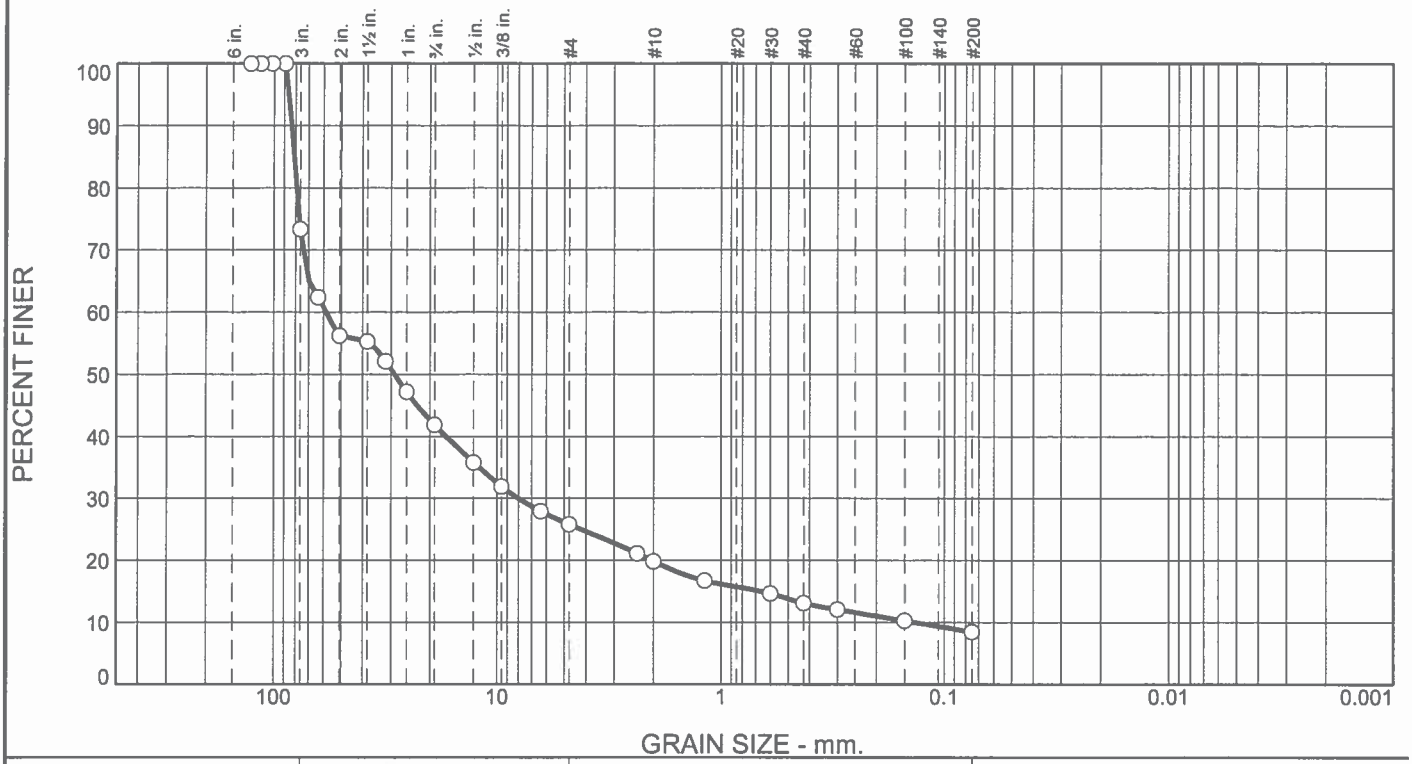
ATL, INC.

Phoenix, AZ

Client: Klohn Crippen Berger
Project: Resolution Project - Near West TSF Closure Cover Study

Project No: 213023-01 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
27	31	16	6	7	5	8	

TEST RESULTS			
Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
5"	100		
4.5"	100		
4"	100		
3.5"	100		
3"	73		
2.5"	62		
2"	56		
1.5"	55		
1.25"	52		
1"	47		
3/4"	42		
1/2"	36		
3/8"	32		
1/4"	28		
#4	26		
#8	21		
#10	20		
#16	17		
#30	15		
#40	13		
#50	12		
#100	10		
#200	8.5		

* (no specification provided)

Material Description

Sample 2 - Wet Gradation, ASTM C117 (Total Wash)

Atterberg Limits (ASTM D 4318)

PL= LL= PI=

Classification

USCS (D 2487)= AASHTO (M 145)=

Coefficients

D_{90}= 83.2115 D_{85}= 81.1388 D_{60}= 58.2602
D_{50}= 28.8971 D_{30}= 7.9826 D_{15}= 0.6534
D_{10}= 0.1341 C_u= 434.60 C_c= 8.16

Remarks

Date Received: 7-30-14 **Date Tested:** 8-7-14

Tested By: A. capper

Checked By: A. Capper

Title: Lab Supervisor

Source of Sample: Stockpile **Date Sampled:** July 2014

Sample Number: 14-0225

ATL, INC.

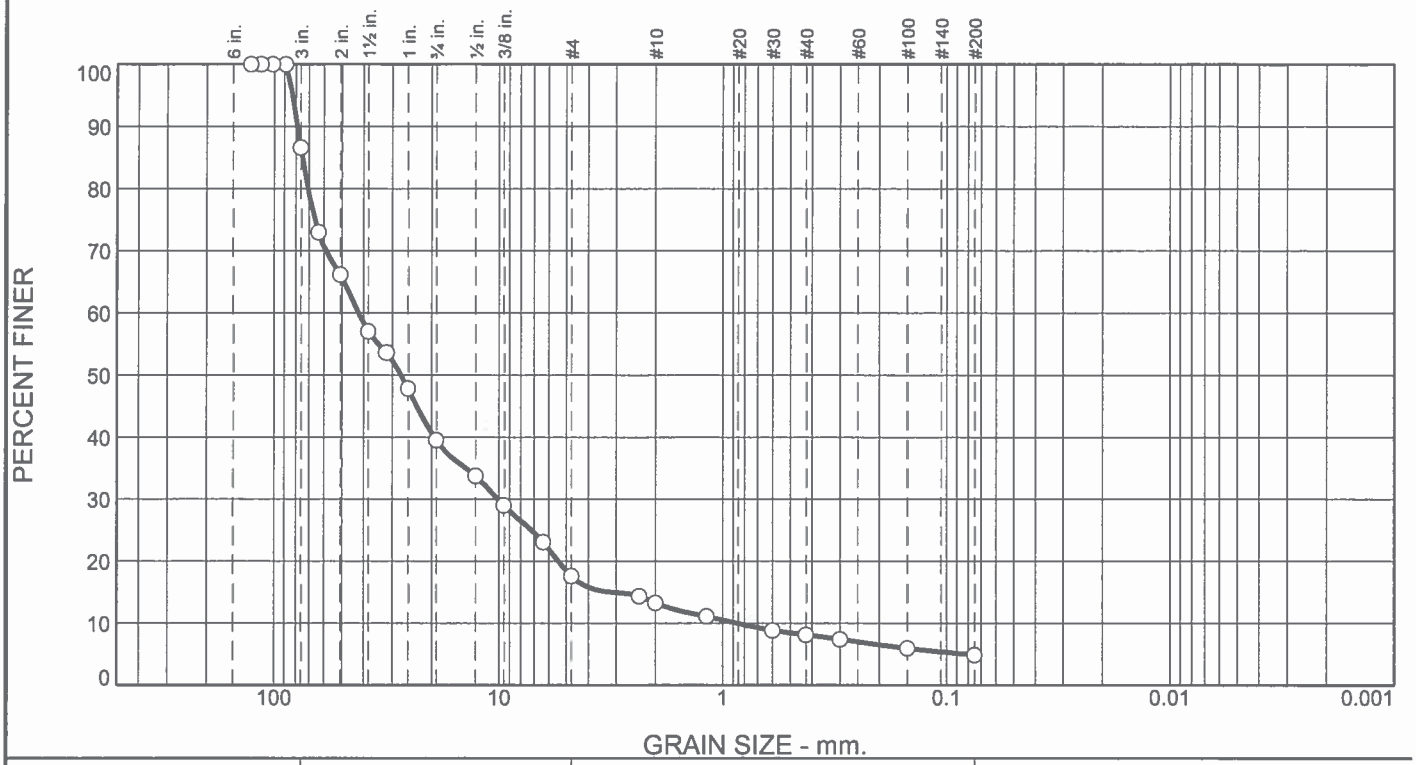
Phoenix, AZ

Client: Klohn Crippen Berger

Project: Resolution Project - Near West TSF Closure Cover Study

Project No: 213023-01 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
13	47	22	5	5	3	5	

TEST RESULTS

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
5"	100		
4.5"	100		
4"	100		
3.5"	100		
3"	87		
2.5"	73		
2"	66		
1.5"	57		
1.25"	54		
1"	48		
3/4"	40		
1/2"	34		
3/8"	29		
1/4"	23		
#4	18		
#8	14		
#10	13		
#16	11		
#30	9		
#40	8		
#50	7		
#100	6		
#200	4.9		

* (no specification provided)

Material Description

Dry Gradation, ASTM C136

Atterberg Limits (ASTM D 4318)

PL= LL= PI=

Classification

USCS (D 2487)= AASHTO (M 145)=

Coefficients

D_{90}= 78.7252 D_{85}= 74.9199 D_{60}= 42.0891
D_{50}= 27.3207 D_{30}= 10.1062 D_{15}= 3.0457
D_{10}= 0.8580 C_u= 49.05 C_c= 2.83

Remarks

Date Received: 7-30-14 **Date Tested:** 8-13-14

Tested By: A. Capper

Checked By: A. Capper

Title: Lab Supervisor

Source of Sample: Gila 22 - Dry **Date Sampled:** 7-21-14
Sample Number: 14-0231

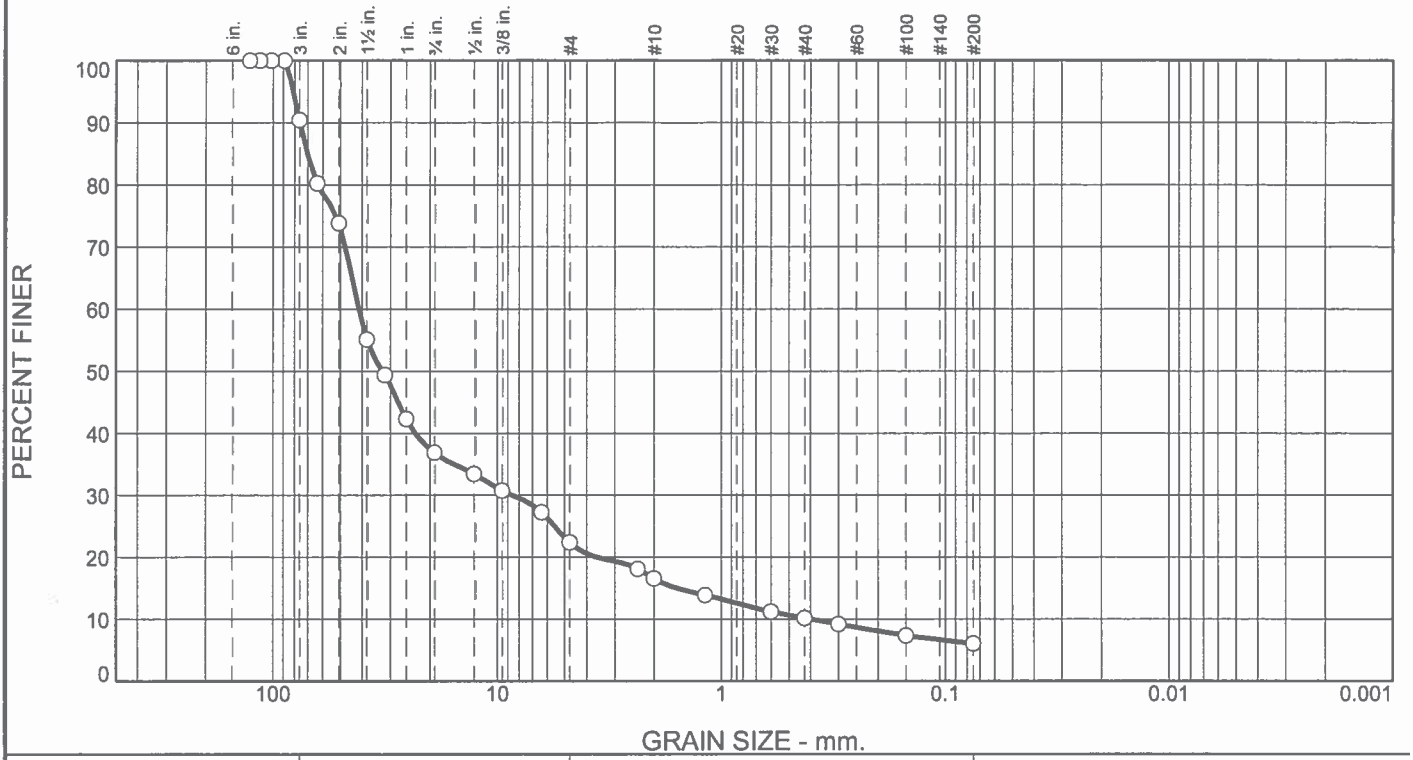
ATL, INC.

Phoenix, AZ

Client: Klohn Crippen Berger
Project: Resolution Project - Near West TSF Closure Cover Study

Project No: 213023-01 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
10	53	15	5	7	4	6	

TEST RESULTS

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
5"	100		
4.5"	100		
4"	100		
3.5"	100		
3"	90		
2.5"	80		
2"	74		
1.5"	55		
1.25"	49		
1"	42		
3/4"	37		
1/2"	33		
3/8"	31		
1/4"	27		
#4	22		
#8	18		
#10	17		
#16	14		
#30	11		
#40	10		
#50	9		
#100	7		
#200	6.1		

* (no specification provided)

Material Description

Dry Gradation, ASTM C136

Atterberg Limits (ASTM D 4318)

PL= LL= PI=

Classification

USCS (D 2487)= AASHTO (M 145)=

Coefficients

D_{90}= 75.7462 D_{85}= 70.1970 D_{60}= 41.2781
D_{50}= 32.4403 D_{30}= 8.5090 D_{15}= 1.5695
D_{10}= 0.3944 C_u= 104.65 C_c= 4.45

Remarks

Date Received: 7-30-14 **Date Tested:** 8-13-14

Tested By: A. Capper

Checked By: A. Capper

Title: Lab Supervisor

Source of Sample: Gila 24 - Dry **Date Sampled:** 7-21-14
Sample Number: 14-0232

ATL, INC.

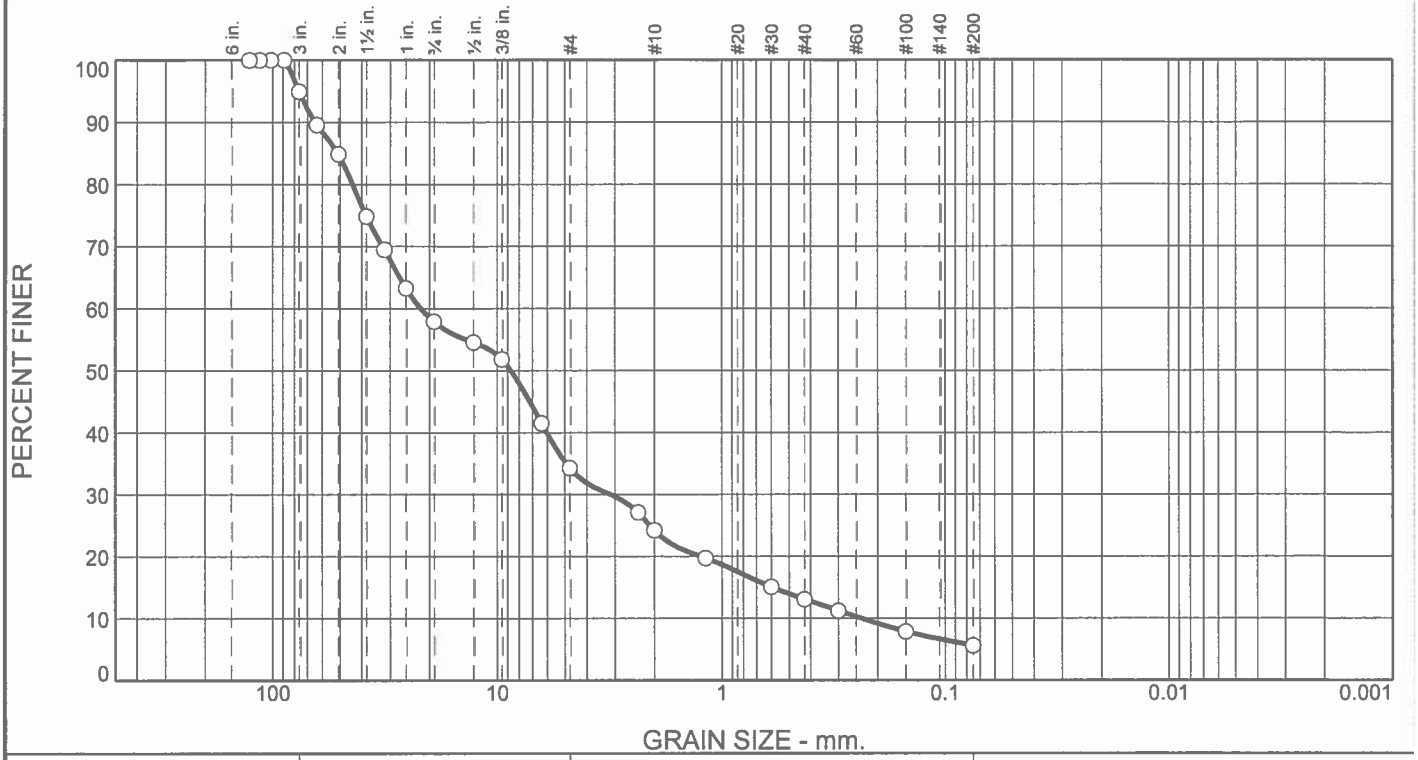
Phoenix, AZ

Client: Klohn Crippen Berger

Project: Resolution Project - Near West TSF Closure Cover Study

Project No: 213023-01 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
5	37	24	10	11	7	6	

TEST RESULTS

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
5"	100		
4.5"	100		
4"	100		
3.5"	100		
3"	95		
2.5"	90		
2"	85		
1.5"	75		
1.25"	69		
1"	63		
3/4"	58		
1/2"	55		
3/8"	52		
1/4"	42		
#4	34		
#8	27		
#10	24		
#16	20		
#30	15		
#40	13		
#50	11		
#100	8		
#200	5.6		

* (no specification provided)

Material Description

Wet Gradation, ASTM C117 (Total Wash)

Atterberg Limits (ASTM D 4318)

PL= LL= PI=

Classification

USCS (D 2487)= AASHTO (M 145)=

Coefficients

D_{90}= 64.6360 D_{85}= 50.9893 D_{60}= 21.7687
D_{50}= 8.6543 D_{30}= 3.1243 D_{15}= 0.5907
D_{10}= 0.2357 C_u= 92.38 C_c= 1.90

Remarks

Date Received: 7-30-14 **Date Tested:** 8-13-14

Tested By: A. Capper

Checked By: A. Capper

Title: Lab Supervisor

Source of Sample: Gila 22 - Wet **Date Sampled:** 7-21-14
Sample Number: 14-0233

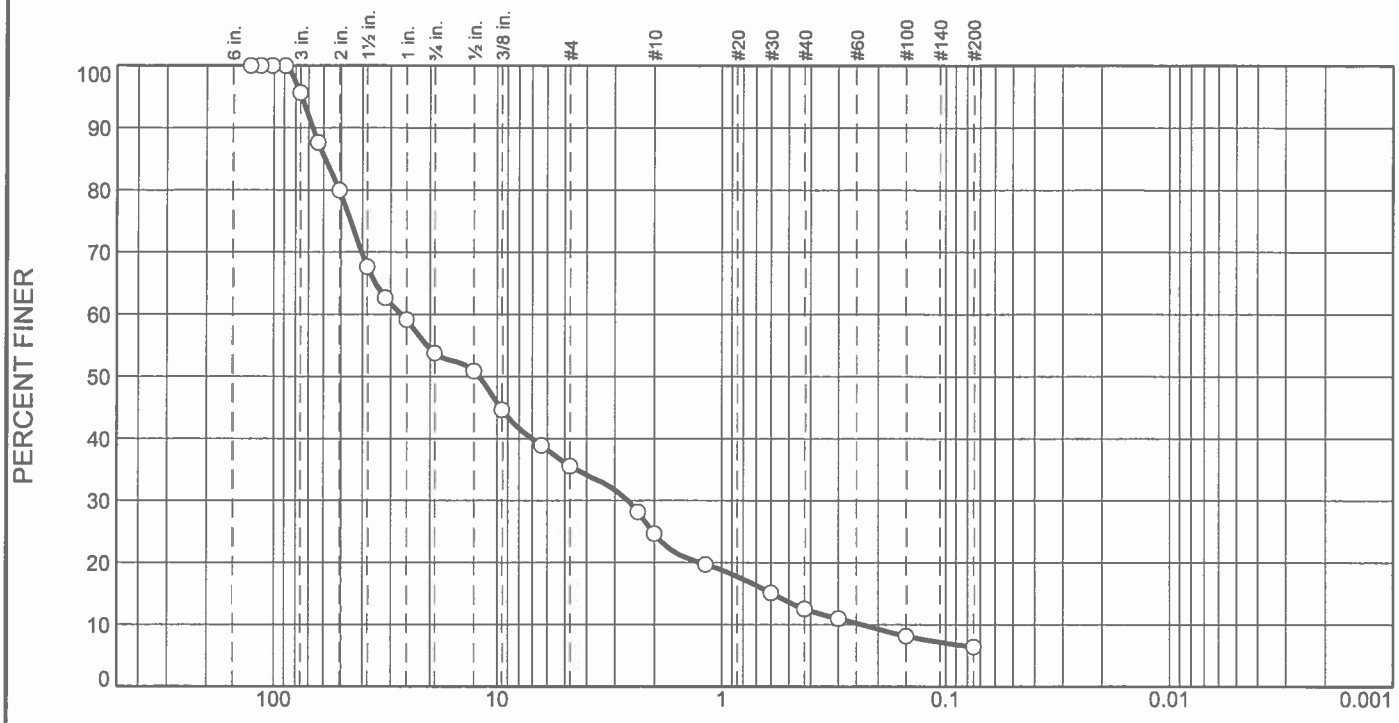
ATL, INC.

Phoenix, AZ

Client: Klohn Crippen Berger
Project: Resolution Project - Near West TSF Closure Cover Study

Project No: 213023-01 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
4	42	18	11	12	7	6	

TEST RESULTS			
Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
5"	100		
4.5"	100		
4"	100		
3.5"	100		
3"	96		
2.5"	88		
2"	80		
1.5"	68		
1.25"	63		
1"	59		
3/4"	54		
1/2"	51		
3/8"	45		
1/4"	39		
#4	36		
#8	28		
#10	25		
#16	20		
#30	15		
#40	13		
#50	11		
#100	8		
#200	6.4		

* (no specification provided)

Material Description

Wet Gradation, ASTM 117 (Total Wash)

Atterberg Limits (ASTM D 4318)

PL= LL= PI=

Classification

USCS (D 2487)= AASHTO (M 145)=

Coefficients

D_{90}= 67.1138 D_{85}= 58.9996 D_{60}= 26.7288
D_{50}= 12.0251 D_{30}= 2.6120 D_{15}= 0.5875
D_{10}= 0.2349 C_u= 113.77 C_c= 1.09

Remarks

Date Received: 7-30-14 **Date Tested:** 8-13-14

Tested By: A. Capper

Checked By: A. Capper

Title: Lab Supervisor

Source of Sample: Gila 24 - Wet **Date Sampled:** 7-21-14
Sample Number: 14-0234

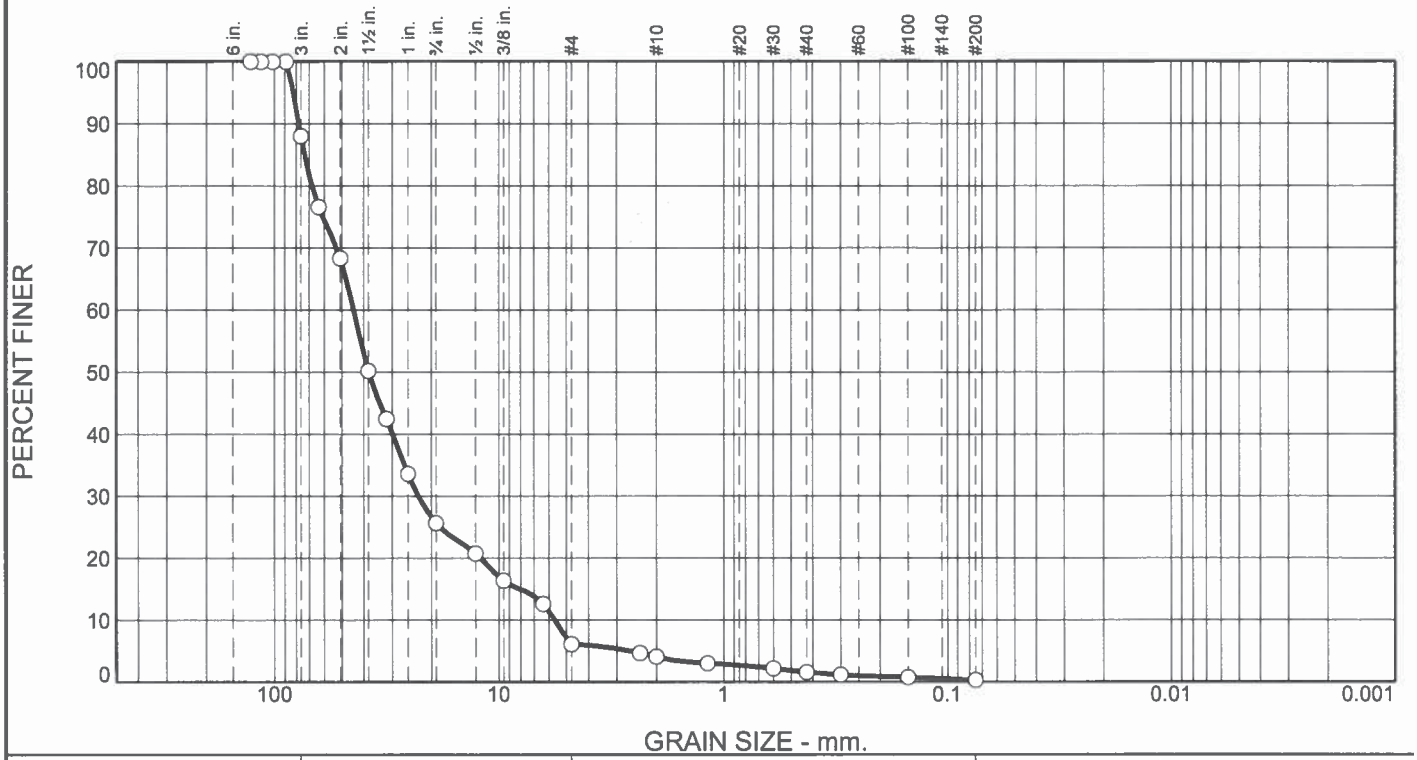
ATL, INC.

Phoenix, AZ

Client: Klohn Crippen Berger
Project: Resolution Project - Near West TSF Closure Cover Study

Project No: 213023-01 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
12	62	20	2	2	2	0	

TEST RESULTS

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
5"	100		
4.5"	100		
4"	100		
3.5"	100		
3"	88		
2.5"	77		
2"	68		
1.5"	50		
1.25"	42		
1"	34		
3/4"	26		
1/2"	21		
3/8"	16		
1/4"	13		
#4	6		
#8	5		
#10	4		
#16	3		
#30	2		
#40	2		
#50	1		
#100	1		
#200	0.3		

* (no specification provided)

Material Description

Dry Gradation, ASTM C136

Atterberg Limits (ASTM D 4318)

PL= LL= PI=

Classification

USCS (D 2487)= GW AASHTO (M 145)=

Coefficients

D_{90}= 77.9205 D_{85}= 73.4327 D_{60}= 44.3159
D_{50}= 37.9099 D_{30}= 22.7879 D_{15}= 8.0074
D_{10}= 5.6306 C_u= 7.87 C_c= 2.08

Remarks

Date Received: 7-30-14 **Date Tested:** 8-13-14

Tested By: A. Capper

Checked By: A. Capper

Title: Lab Supervisor

Source of Sample: Gila 22 - Dry, No Mechanical Break Down **Date Sampled:** 7-21-14

Sample Number: 14-0235

ATL, INC.

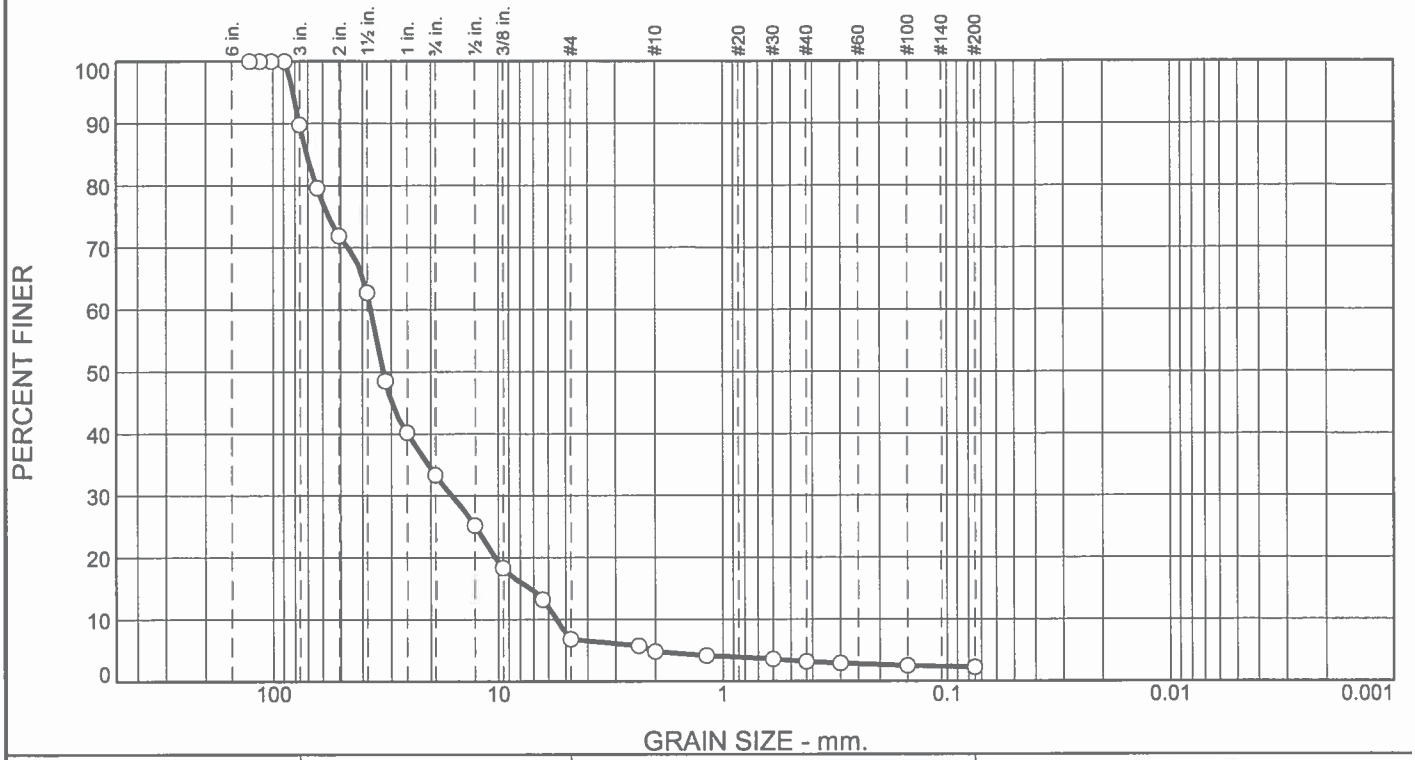
Phoenix, AZ

Client: Klohn Crippen Berger

Project: Resolution Project - Near West TSF Closure Cover Study

Project No: 213023-01 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
10	57	26	2	2	1	2	

TEST RESULTS

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
5"	100		
4.5"	100		
4"	100		
3.5"	100		
3"	90		
2.5"	80		
2"	72		
1.5"	63		
1.25"	49		
1"	40		
3/4"	33		
1/2"	25		
3/8"	18		
1/4"	13		
#4	7		
#8	6		
#10	5		
#16	4		
#30	4		
#40	3		
#50	3		
#100	3		
#200	2.2		

* (no specification provided)

Material Description

Dry Gradation, ASTM C136

Atterberg Limits (ASTM D 4318)

PL= LL= PI=

Classification

USCS (D 2487)= GW AASHTO (M 145)=

Coefficients

D_{90}= 76.4402 D_{85}= 70.8149 D_{60}= 36.6627
D_{50}= 32.4205 D_{30}= 16.0318 D_{15}= 7.1739
D_{10}= 5.4956 C_u= 6.67 C_c= 1.28

Remarks

Date Received: 7-30-14 **Date Tested:** 8-13-14

Tested By: A. Capper

Checked By: A. Capper

Title: Lab Supervisor

Source of Sample: Gila 24 - Dry, No Mechanical Break Down **Date Sampled:** 7-21-14

Sample Number: 14-0236

ATL, INC.

Phoenix, AZ

Client: Klohn Crippen Berger

Project: Resolution Project - Near West TSF Closure Cover Study

Project No: 213023-01 **Figure**

APPENDIX I-E

ALS Laboratory Results

Appendix I-E
Summary of Results

Table I-E-1 Elemental Abundance Summary

		Ag	Al	As	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu	Fe	Ga	Hg	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	S	Sb	Sc	Sr	Th	Ti	Tl	U	V	W	Zn
	Units	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	%	ppm	ppm	%	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm
3X Crustal Abundance*		*0.24*	*25.08*	*5.4*	*1170*	*6*	*0.02*	*14*	*7.8*	*87*	*366*	*204*	*18.7*	*57*	*0.260*	*5.52*	*104*	*8.3*	*3180*	*3.6*	*6.8*	*297*	*3360*	*39*	*0.01*	*0.6*	*75*	*1152*	*3.54*	*1.90*	*2.2*	*6.9*	*408*	*3.6*	*228*
Near West	Average	<0.5	7.22	<5	646	1.8	<2	1.8	<0.5	18	46	32	4.1	19	0.033	2.16	30	1.17	812	<1	1.01	27	599	16	<0.01	<5	13	282	<20	0.52	<10	<10	101	<10	75
	Max	<0.5	8.81	11	1180	2.5	3	4.2	<0.5	31	62	50	6.5	20	0.108	2.96	50	1.88	1060	2	1.36	39	1800	21	0.05	6	20	446	20	1.09	<10	<10	216	<10	92
	Min	<0.5	5.48	<5	490	1.2	<2	0.7	<0.5	7	24	16	2.0	10	0.007	1.76	20	0.73	439	<1	0.54	13	210	7	<0.01	<5	7	124	<20	0.22	<10	<10	40	<10	41
Superior Stockpile	Average	<0.5	4.85	7	520	1.1	<2	7.9	<0.5	10	15	23	2.8	10	0.016	1.91	23	1.70	678	<1	0.85	10	590	41	<0.01	<5	8	356	<20	0.34	<10	<10	61	<10	174
	Max	<0.5	5.26	9	590	1.2	2	9.8	0.7	12	17	24	3.2	10	0.017	2.12	30	1.92	821	1	0.88	14	710	51	0.01	5	9	372	<20	0.41	<10	<10	72	<10	195
	Min	<0.5	4.68	5	480	1.0	<2	6.4	<0.5	8	12	21	2.4	10	0.016	1.72	20	1.58	623	<1	0.79	6	500	34	<0.01	<5	7	334	<20	0.29	<10	<10	51	<10	143

* Ronov and Yaroshevsky, 1972
Bold text indicates exceedance of 3x Crustal abundance

Table I-E-2 SPLP Analysis Summary

	SPLP (mg/L)	Al	Sb	As	Ba	Be	Bi	B	Cd	Ca	Ce	Cs	Cr	Co	Cu	Ga	Ge	Au	In	Fe	La	Pb	Li	Mg
Near West	Average	19.9	0.0004	0.016	0.065	0.0010	0.0004	<0.5	<0.0001	19.3	0.05	0.0011	0.0111	0.00614	0.0358	0.007	<0.001	<0.0001	<0.0001	19.9	0.025	0.010	0.020	9.2
	Max	87.3	0.0009	0.041	0.178	0.0041	0.0027	<0.5	0.0003	51.9	0.18	0.0032	0.0313	0.01698	0.1453	0.02	<0.001	<0.0001	<0.0001	76.5	0.085	0.041	0.063	26.2
	Min	0.04	0.0002	0.0035	0.007	<0.00002	<0.0001	<0.5	<0.0001	7.3	<0.0005	<0.0001	0.0003	0.00014	0.0022	<0.0001	<0.001	<0.0001	<0.0001	<0.02	<0.0005	0.00005	<0.01	1.4
Superior Stockpile	Average	0.05	0.0005	0.011	0.008	<0.00002	<0.0001	<0.5	<0.0001	14.0	<0.0005	<0.0001	0.0003	0.00004	0.0018	<0.0001	<0.001	<0.0001	<0.0001	0.02	<0.0005	0.00006	<0.01	4.3
	Max	0.06	0.0006	0.012	0.010	<0.00002	<0.0001	<0.5	<0.0001	15.9	<0.0005	<0.0001	0.0003	0.00005	0.0019	<0.0001	<0.001	<0.0001	<0.0001	0.03	<0.0005	0.00008	<0.01	5.0
	Min	0.03	0.0005	0.010	0.006	<0.00002	<0.0001	<0.5	<0.0001	12.1	<0.0005	<0.0001	0.0002	0.00002	0.0016	<0.0001	<0.001	<0.0001	<0.0001	<0.02	<0.0005	0.00004	<0.01	3.6

	SPLP (mg/L)	Mn	Mo	Ni	Nb	K	Rb	Se	Ag	Na	Sr	Ta	Tl	Th	Sn	Ti	W	U	V	Y	Zn	Zr	TOC	F
Near West	Average	0.237	0.0016	0.0123	0.0004	3.5	0.0097	0.003	0.00013	22.692	0.08	<0.0005	3.85E-05	0.0063	0.0004	0.209	0.0004	0.00051	0.037	30	0.0258	0.006	0.37	0.29
	Max	0.785	0.0042	0.0325	0.001	14.6	0.0360	0.005	0.00051	58.000	0.15	0.0009	0.00014	0.0195	0.0015	0.575	0.0011	0.00115	0.068	0.0463	0.1058	0.015	0.94	0.43
	Min	0.001	0.0006	0.0006	<0.0001	<2	0.0005	<0.001	<0.0001	10.000	0.01	<0.0005	<0.00002	<0.005	<0.00005	0.002	<0.0001	0.00012	0.011	30	0.0007	<0.001	<0.1	<0.2
Superior Stockpile	Average	0.00091	0.0036	<0.0002	<0.0001	<2	0.0006	<0.001	<0.0001	15.000	0.05	<0.0005	<0.00002	<0.005	<0.00005	<0.001	0.0015	0.00045	0.017	4	0.0013	<0.001	0.16	<0.2
	Max	0.00109	0.0041	0.0002	<0.0001	2.8	0.0007	<0.001	<0.0001	15.000	0.06	<0.0005	<0.00002	<0.005	<0.00005	0.001	0.0015	0.00054	0.019	0.00025	0.0020	<0.001	0.17	<0.2
	Min	0.00073	0.0031	<0.0002	<0.0001	<2	0.0004	<0.001	<0.0001	15.000	0.04	<0.0005	<0.00002	<0.005	<0.00005	<0.001	0.0014	0.00035	0.015	4	0.0006	<0.001	0.15	<0.2

Table I-E-3 TCLP Analysis Summary

	mg/L	Sb	As	Ba	Be	Cd	Cr	Pb	Hg	Ni	Se	Tl	F
Near West	Average	<0.1	<0.05	0.12	<0.005	<0.005	<0.02	<0.05	<0.001	<0.02	<0.1	<0.05	<0.2
	Max	<0.1	<0.05	0.22	<0.005	<0.005	<0.02	<0.05	<0.001	<0.02	<0.1	<0.05	<0.2
	Min	<0.1	<0.05	0.05	<0.005	<0.005	<0.02	<0.05	<0.001	<0.02	<0.1	<0.05	<0.2

ALS Canada Ltd.
2103 Dollarton Hwy
North Vancouver BC V7H 0A7
Phone: 604 984 0221 Fax: 604 984 0218 www.alsglobal.com

To: KLOHN CRIPPEN BERGER LTD.
500- 2955 VIRTUAL WAY
VANCOUVER BC V5M 4X6

Finalized Date: 14- AUG- 2014
This copy reported on
28- AUG- 2014
Account: KOCRIB

CERTIFICATE TU14105837

P.O. No.: M02014- PO074

This report is for 34 Other samples submitted to our lab in Tucson, AZ, USA on 29- JUL- 2014.

The following have access to data associated with this certificate:

JIM CASEY	KATE PATTERSON	

SAMPLE PREPARATION

ALS CODE	DESCRIPTION
WEI- 21	Received Sample Weight
TRA- 21	Transfer sample
SPL- 22X	Crush split for send out
CRU- QC	Crushing QC Test
PUL- QC	Pulverizing QC Test
CRU- 22c	Crush entire sample > 70% - 19 mm
LOG- 22	Sample login - Rcd w/o BarCode
CRU- 31	Fine crushing - 70% < 2mm
SPL- 22Y	Split Sample - Boyd Rotary Splitter
PUL- 31	Pulverize split to 85% < 75 um

To: KLOHN CRIPPEN BERGER LTD.
ATTN: KATE PATTERSON
500- 2955 VIRTUAL WAY
VANCOUVER BC V5M 4X6

This is the Final Report and supersedes any preliminary report with this certificate number. Results apply to samples as submitted. All pages of this report have been checked and approved for release.

***** See Appendix Page for comments regarding this certificate *****

Signature:

Gael McGibbon, Director of Operations USA

Project Name:
Resolution Project - Near West Closure Cover Study

ALS Canada Ltd.
2103 Dollarton Hwy
North Vancouver BC V7H 0A7
Phone: 604 984 0221 Fax: 604 984 0218 www.alsglobal.com

To: KLOHN CRIPPEN BERGER LTD.
500- 2955 VIRTUAL WAY
VANCOUVER BC V5M 4X6

Finalized Date: 14- AUG- 2014
Account: KOCRIB

CERTIFICATE OF ANALYSIS TU14105837

Sample Description / Method / Analyte / Units / LOR	WEI- 21 Recvd Wt. kg 0.02
GILA01	3.37
GILA02	3.09
GILA03	3.36
GILA04	3.53
GILA05	2.33
GILA06	3.46
GILA07	4.03
GILA08	3.50
GILA09	3.65
GILA10	4.32
GILA11	3.47
GILA12	3.57
GILA13	3.39
GILA14	2.99
GILA15	4.12
GILA16	4.57
GILA17	3.76
GILA18	4.84
GILA19	4.08
GILA20	4.11
GILA21	3.73
GILA22	3.17
GILA23	3.27
GILA24	3.28
GILA25	4.00
GILA26	4.33
GILA27	3.72
GILA28	3.58
GILA29	4.12
GILA30	4.36
Stockpile #5	4.40
Stockpile #10	4.63
Stockpile #15	5.14
Stockpile #20	5.30

***** See Appendix Page for comments regarding this certificate *****

Project Name:
Resolution Project - Near West Closure Cover Study

ALS Canada Ltd.
2103 Dollarton Hwy
North Vancouver BC V7H 0A7
Phone: 604 984 0221 Fax: 604 984 0218 www.alsglobal.com

To: KLOHN CRIPPEN BERGER LTD.
500- 2955 VIRTUAL WAY
VANCOUVER BC V5M 4X6

Finalized Date: 14- AUG- 2014
Account: KOCRIB

CERTIFICATE OF ANALYSIS TU14105837

CERTIFICATE COMMENTS

LABORATORY ADDRESSES

Applies to Method: Processed at ALS Tucson, Arizona, USA

CRU- 22c	CRU- 31	CRU- QC	LOG- 22
PUL- 31	PUL- QC	SPL- 22X	SPL- 22Y
TRA- 21	WEI- 21		

Project Name:
Resolution Project - Near West Closure Cover Study

ALS Canada Ltd.
2103 Dollarton Hwy
North Vancouver BC V7H 0A7
Phone: 604 984 0221 Fax: 604 984 0218 www.alsglobal.com

To: KLOHN CRIPPEN BERGER LTD.
500- 2955 VIRTUAL WAY
VANCOUVER BC V5M 4X6

Finalized Date: 11- SEP- 2014
Account: KOCRIB

CERTIFICATE TU14120792

P.O. No.: MO2014- PO074

This report is for 34 Other samples submitted to our lab in Tucson, AZ, USA on 22- AUG- 2014.

The following have access to data associated with this certificate:

JIM CASEY	KATE PATTERSON	

SAMPLE PREPARATION

ALS CODE	DESCRIPTION
WEI- 21	Received Sample Weight

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	
OA- VOL11	Static Net Acid Generation	
ME- ICP61	33 element four acid ICP- AES	ICP- AES
Hg- MS42	Trace Hg by ICPMS	ICP- MS
OA- VOL08s	Siderite NP	
S- IR08	Total Sulphur (Leco)	LECO
OA- ELE07	Paste pH	
S- GRA06a	Sulfate Sulfur (HCl leachable)	WST- SEQ
S- CAL06	Sulfide Sulfur (calculated)	LECO
S- GRA06	Sulfate Sulfur- carbonate leach	WST- SEQ
C- GAS05	Inorganic Carbon (CO2)	

To: KLOHN CRIPPEN BERGER LTD.
ATTN: KATE PATTERSON
500- 2955 VIRTUAL WAY
VANCOUVER BC V5M 4X6

This is the Final Report and supersedes any preliminary report with this certificate number. Results apply to samples as submitted. All pages of this report have been checked and approved for release.

***** See Appendix Page for comments regarding this certificate *****

Signature:
Colin Ramshaw, Vancouver Laboratory Manager

Project Name:
Resolution Project - Near West Closure Cover Study

ALS Canada Ltd.
2103 Dollarton Hwy
North Vancouver BC V7H 0A7
Phone: 604 984 0221 Fax: 604 984 0218 www.alsglobal.com

To: KLOHN CRIPPEN BERGER LTD.
500- 2955 VIRTUAL WAY
VANCOUVER BC V5M 4X6

Finalized Date: 11- SEP- 2014
Account: KOCRIB

CERTIFICATE OF ANALYSIS TU14120792

Sample Description	Method Analyte Units LOR	WEI- 21 Recvd Wt. kg 0.02	OA- VOL08s MPA tCaCO3/1Kt 0.3	OA- VOL08s FIZZ RAT Unity 1	OA- VOL08s NNP tCaCO3/1Kt 1	OA- VOL08s NP tCaCO3/1Kt 1	OA- ELE07 pH Unity 0.1	OA- VOL08s Ratio (N Unity 0.01	S- IR08 S % 0.01	S- GRA06 S % 0.01	S- GRA06a S % 0.01	S- CAL06 S % 0.01	C- GAS05 C % 0.05	C- GAS05 CO2 % 0.2	OA- VOL11 NAGpH4.5 kg H2SO4/t 0.01	OA- VOL11 NAGpH7.0 kg H2SO4/t 0.01
GILA01		3.37	0.6	1	23	24	7.9	38.40	0.02	0.01	<0.01	0.01	<0.05	<0.2	<0.01	<0.01
GILA02		3.09	0.6	1	16	17	7.0	27.20	0.02	<0.01	<0.01	0.02	0.05	0.2	<0.01	<0.01
GILA03		3.36	0.9	1	15	16	7.6	17.07	0.03	<0.01	<0.01	0.03	0.06	0.2	<0.01	<0.01
GILA04		3.53	0.3	1	14	14	7.1	44.80	0.01	<0.01	<0.01	0.01	<0.05	<0.2	<0.01	<0.01
GILA05		2.33	0.3	1	31	31	7.8	99.20	0.01	<0.01	<0.01	0.01	0.19	0.7	<0.01	<0.01
GILA06		3.46	0.3	1	16	16	7.4	51.20	0.01	<0.01	<0.01	0.01	0.13	0.5	<0.01	<0.01
GILA07		4.03	<0.3	1	24	24	7.9	153.60	<0.01	<0.01	<0.01	<0.01	0.16	0.6	<0.01	<0.01
GILA08		3.50	0.3	1	24	24	8.2	76.80	0.01	<0.01	<0.01	0.01	0.05	0.2	<0.01	<0.01
GILA09		3.65	0.3	1	31	31	7.8	99.20	0.01	0.01	<0.01	<0.01	0.17	0.6	<0.01	<0.01
GILA10		4.32	0.3	1	18	18	8.2	57.60	0.01	0.01	<0.01	<0.01	0.11	0.4	<0.01	<0.01
GILA11		3.47	0.3	2	32	32	8.1	102.40	0.01	<0.01	0.02	0.01	0.19	0.7	<0.01	<0.01
GILA12		3.57	0.3	2	39	39	8.2	124.80	0.01	<0.01	0.02	0.01	0.26	1.0	<0.01	<0.01
GILA13		3.39	0.6	2	48	49	7.6	78.40	0.02	0.02	<0.01	<0.01	0.33	1.2	<0.01	<0.01
GILA14		2.99	0.3	2	48	48	8.0	153.60	0.01	<0.01	<0.01	0.01	0.35	1.3	<0.01	<0.01
GILA15		4.12	0.3	1	20	20	8.0	64.00	0.01	<0.01	<0.01	0.01	<0.05	<0.2	<0.01	<0.01
GILA16		4.57	0.3	1	14	14	7.5	44.80	0.01	<0.01	<0.01	0.01	<0.05	<0.2	<0.01	<0.01
GILA17		3.76	0.3	1	11	11	7.6	35.20	0.01	0.01	<0.01	<0.01	<0.05	<0.2	<0.01	<0.01
GILA18		4.84	0.3	2	85	85	8.0	272.00	0.01	<0.01	<0.01	0.01	0.90	3.3	<0.01	<0.01
GILA19		4.08	0.6	1	11	12	7.4	19.20	0.02	0.01	<0.01	0.01	<0.05	<0.2	<0.01	<0.01
GILA20		4.11	0.3	1	15	15	7.7	48.00	0.01	<0.01	<0.01	0.01	<0.05	<0.2	<0.01	<0.01
GILA21		3.73	0.3	1	23	23	7.5	73.60	0.01	<0.01	<0.01	0.01	0.05	0.2	<0.01	<0.01
GILA22		3.17	0.9	1	17	18	7.7	19.20	0.03	0.01	<0.01	0.02	0.05	0.2	<0.01	<0.01
GILA23		3.27	0.3	2	49	49	8.1	156.80	0.01	<0.01	<0.01	0.01	0.39	1.4	<0.01	<0.01
GILA24		3.28	0.3	2	46	46	7.9	147.20	0.01	<0.01	<0.01	0.01	0.38	1.4	<0.01	<0.01
GILA25		4.00	0.6	1	15	16	7.4	25.60	0.02	<0.01	0.02	0.02	<0.05	<0.2	<0.01	<0.01
GILA26		4.33	0.3	1	13	13	7.2	41.60	0.01	<0.01	0.01	0.01	<0.05	<0.2	<0.01	<0.01
GILA27		3.72	1.6	1	15	17	7.5	10.88	0.05	0.01	0.01	0.04	<0.05	<0.2	<0.01	<0.01
GILA28		3.58	0.3	2	51	51	8.0	163.20	0.01	0.01	0.02	<0.01	0.43	1.6	<0.01	<0.01
GILA29		4.12	0.6	1	14	15	7.2	24.00	0.02	<0.01	<0.01	0.02	<0.05	<0.2	<0.01	<0.01
GILA30		4.36	0.3	1	15	15	7.3	48.00	0.01	<0.01	<0.01	0.01	<0.05	<0.2	<0.01	<0.01
Stockpile #5		4.40	0.6	3	296	297	7.9	475.20	0.02	<0.01	<0.01	0.02	3.25	11.9	<0.01	<0.01
Stockpile #10		4.63	0.3	3	178	178	8.0	569.60	0.01	<0.01	<0.01	0.01	1.86	6.8		
Stockpile #15		5.14	0.3	3	235	235	7.9	752.00	0.01	<0.01	<0.01	0.01	2.60	9.5	<0.01	<0.01
Stockpile #20		5.30	0.3	3	216	216	7.8	691.20	0.01	0.01	<0.01	<0.01	2.40	8.8		

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VANCOUVER BC V5M 4X6

Finalized Date: 11- SEP- 2014
Account: KOCRIB

CERTIFICATE OF ANALYSIS TU14120792

Sample Description	Method	OA- VOL11	ME- ICP61	ME- ICP61	ME- ICP61	ME- ICP61	ME- ICP61	ME- ICP61	ME- ICP61	ME- ICP61	ME- ICP61	ME- ICP61	ME- ICP61	ME- ICP61	ME- ICP61	Hg- MS42
	Analyte	pH	Ag	Al	As	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu	Fe	Ga	Hg
	Units	Unity	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm
	LOR	0.1	0.5	0.01	5	10	0.5	2	0.01	0.5	1	1	1	0.01	10	0.005
GILA01		8.6	<0.5	6.98	6	490	1.2	2	2.90	<0.5	31	59	50	6.48	20	0.042
GILA02		8.3	<0.5	8.81	5	540	2.3	2	0.80	<0.5	17	52	34	4.24	20	0.033
GILA03		8.6	<0.5	7.69	<5	550	1.9	2	1.01	<0.5	15	38	29	3.46	20	0.021
GILA04		8.3	<0.5	8.68	<5	530	2.5	3	0.72	<0.5	19	47	33	4.00	20	0.037
GILA05		9.9	<0.5	6.37	<5	510	1.7	<2	2.58	<0.5	14	55	22	2.89	10	0.033
GILA06		8.0	<0.5	8.16	<5	630	2.0	2	1.07	<0.5	19	46	31	4.08	20	0.038
GILA07		8.6	<0.5	7.31	6	600	1.4	<2	2.03	<0.5	26	60	41	5.46	20	0.037
GILA08		8.9	<0.5	7.16	5	590	1.5	<2	2.06	<0.5	24	43	37	4.45	20	0.029
GILA09		10.4	<0.5	7.43	<5	660	1.8	2	1.88	<0.5	18	45	31	3.94	20	0.020
GILA10		10.3	<0.5	7.12	<5	510	2.2	<2	0.98	<0.5	16	53	20	3.64	20	0.016
GILA11		10.7	<0.5	7.71	<5	650	2.2	<2	2.23	<0.5	19	41	31	4.17	20	0.019
GILA12		11.0	<0.5	7.36	<5	730	1.9	<2	2.47	<0.5	16	37	22	3.54	20	0.019
GILA13		10.5	<0.5	6.88	<5	660	1.7	<2	2.74	<0.5	14	42	21	3.86	20	0.023
GILA14		10.7	<0.5	6.97	<5	660	1.5	<2	3.14	<0.5	21	46	32	4.50	20	0.018
GILA15		8.7	<0.5	6.55	5	600	1.2	2	2.48	<0.5	26	46	38	6.43	20	0.025
GILA16		8.5	<0.5	6.95	<5	520	1.5	2	1.05	<0.5	20	53	27	4.11	20	0.022
GILA17		8.6	<0.5	5.48	<5	510	1.6	<2	0.96	<0.5	7	33	16	2.00	10	0.007
GILA18		10.9	<0.5	6.85	<5	510	1.4	<2	4.20	<0.5	20	62	28	4.53	20	0.020
GILA19		8.4	<0.5	7.18	<5	560	1.9	3	0.82	<0.5	13	47	25	3.10	20	0.021
GILA20		8.6	<0.5	7.27	<5	550	1.7	3	0.96	<0.5	15	47	27	3.75	20	0.024
GILA21		8.5	<0.5	8.34	7	490	1.9	<2	1.00	<0.5	20	62	34	5.00	20	0.044
GILA22		9.1	<0.5	6.55	<5	540	2.0	<2	1.69	<0.5	7	24	19	2.27	20	0.020
GILA23		10.7	<0.5	7.35	<5	650	1.7	<2	2.78	<0.5	20	52	33	4.48	20	0.016
GILA24		10.7	<0.5	6.89	<5	620	1.6	3	2.79	<0.5	18	46	28	4.10	20	0.017
GILA25		8.6	<0.5	7.14	7	1040	1.8	<2	1.54	<0.5	16	43	41	4.13	20	0.069
GILA26		8.3	<0.5	7.08	9	1070	1.7	3	1.19	<0.5	14	42	46	3.74	20	0.034
GILA27		8.2	<0.5	7.46	8	1180	1.7	<2	1.62	<0.5	15	37	32	3.92	20	0.066
GILA28		10.8	<0.5	6.85	5	830	1.7	<2	3.07	<0.5	18	34	31	3.98	20	0.052
GILA29		8.0	<0.5	7.24	7	710	1.7	2	1.25	<0.5	18	51	37	4.42	20	0.067
GILA30		8.3	<0.5	6.64	11	690	1.7	<2	1.23	<0.5	17	41	50	3.88	20	0.108
Stockpile #5		11.1	<0.5	4.68	9	490	1.1	<2	9.83	<0.5	12	14	21	2.73	10	0.016
Stockpile #10			<0.5	5.26	8	590	1.2	2	6.38	0.5	12	17	24	3.21	10	0.017
Stockpile #15		10.9	<0.5	4.71	5	520	1.1	<2	7.85	<0.5	8	12	23	2.40	10	0.016
Stockpile #20			<0.5	4.74	6	480	1.0	<2	7.57	0.7	9	16	22	2.78	10	0.016

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Project Name:
Resolution Project - Near West Closure Cover Study

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To: KLOHN CRIPPEN BERGER LTD.
500- 2955 VIRTUAL WAY
VANCOUVER BC V5M 4X6

Finalized Date: 11- SEP- 2014
Account: KOCRIB

CERTIFICATE OF ANALYSIS TU14120792

Sample Description	Method Analyte Units LOR	ME- ICP61 K % 0.01	ME- ICP61 La ppm 10	ME- ICP61 Mg % 0.01	ME- ICP61 Mn ppm 5	ME- ICP61 Mo ppm 1	ME- ICP61 Na % 0.01	ME- ICP61 Ni ppm 1	ME- ICP61 P ppm 10	ME- ICP61 Pb ppm 2	ME- ICP61 S % 0.01	ME- ICP61 Sb ppm 5	ME- ICP61 Sc ppm 1	ME- ICP61 Sr ppm 1	ME- ICP61 Th ppm 20	ME- ICP61 Ti % 0.01
GILA01		2.00	20	1.88	1060	2	1.19	38	1000	12	<0.01	<5	20	419	<20	0.99
GILA02		1.85	30	0.92	811	1	0.80	30	250	19	0.01	<5	15	139	<20	0.44
GILA03		1.79	30	0.83	754	2	0.97	22	320	14	0.01	<5	12	188	<20	0.32
GILA04		2.00	30	0.88	889	<1	0.96	28	270	19	0.01	<5	15	124	<20	0.37
GILA05		1.95	30	1.37	707	1	0.74	39	700	16	<0.01	<5	9	347	<20	0.35
GILA06		2.19	30	0.97	820	1	0.98	28	320	17	<0.01	6	14	199	<20	0.48
GILA07		2.20	20	1.52	959	1	1.02	35	910	14	<0.01	<5	16	378	<20	0.86
GILA08		2.09	20	1.50	887	1	1.21	32	820	18	<0.01	<5	14	434	20	0.60
GILA09		2.20	30	1.34	870	1	1.05	29	730	16	0.01	<5	13	247	<20	0.45
GILA10		2.10	30	0.89	856	1	0.82	29	380	15	<0.01	<5	12	146	<20	0.27
GILA11		2.26	30	1.31	862	<1	1.09	26	630	18	<0.01	<5	14	245	<20	0.41
GILA12		2.06	30	1.11	823	<1	1.01	21	630	16	<0.01	6	11	437	<20	0.41
GILA13		1.95	30	1.22	763	1	1.30	21	680	13	0.02	5	11	311	20	0.56
GILA14		1.94	30	1.81	871	<1	1.03	30	830	15	<0.01	<5	13	407	20	0.70
GILA15		2.17	20	1.48	1055	1	1.10	28	1800	7	<0.01	<5	19	446	<20	1.09
GILA16		2.20	20	1.10	865	1	0.96	31	560	12	<0.01	<5	14	202	20	0.54
GILA17		2.65	30	0.73	439	1	0.54	15	380	21	<0.01	<5	7	350	<20	0.22
GILA18		2.49	20	1.19	824	1	0.89	32	620	13	0.01	<5	15	165	<20	0.61
GILA19		1.76	30	0.77	685	1	1.00	21	270	12	0.01	<5	11	210	<20	0.28
GILA20		2.16	30	0.91	782	1	0.99	27	360	16	0.01	<5	12	194	<20	0.44
GILA21		1.76	30	0.95	745	1	0.58	35	210	20	0.01	<5	16	151	20	0.65
GILA22		2.08	30	0.91	682	<1	0.81	13	410	21	0.02	<5	7	376	<20	0.23
GILA23		2.03	30	1.53	987	1	1.08	31	730	16	<0.01	6	13	275	20	0.61
GILA24		2.01	30	1.38	835	<1	1.14	28	730	14	<0.01	<5	12	326	<20	0.53
GILA25		2.52	40	1.03	723	1	1.12	24	500	18	0.01	<5	14	245	<20	0.49
GILA26		2.96	40	0.82	726	1	1.36	21	620	21	0.01	<5	11	275	20	0.55
GILA27		2.43	50	1.17	785	1	1.25	24	620	20	0.05	<5	13	388	20	0.60
GILA28		2.49	30	1.33	793	1	1.25	24	780	15	0.01	<5	13	331	<20	0.48
GILA29		2.05	40	1.09	788	1	0.97	30	450	15	0.01	<5	15	238	20	0.56
GILA30		2.31	30	1.06	704	1	1.06	23	460	16	0.01	<5	13	260	<20	0.48
Stockpile #5		1.72	20	1.92	623	<1	0.87	14	560	34	0.01	5	7	357	<20	0.31
Stockpile #10		2.12	30	1.58	821	1	0.86	10	710	51	0.01	<5	9	372	<20	0.41
Stockpile #15		1.89	20	1.69	640	1	0.88	6	500	43	0.01	<5	7	334	<20	0.29
Stockpile #20		1.90	20	1.60	628	<1	0.79	8	590	36	<0.01	<5	7	361	<20	0.33

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CERTIFICATE OF ANALYSIS TU14120792

Sample Description	Method Analyte Units LOR	ME- ICP61 Tl ppm 10	ME- ICP61 U ppm 10	ME- ICP61 V ppm 1	ME- ICP61 W ppm 10	ME- ICP61 Zn ppm 2
GILA01		<10	<10	216	<10	92
GILA02		<10	<10	97	<10	78
GILA03		<10	<10	70	<10	67
GILA04		<10	<10	86	<10	78
GILA05		<10	<10	67	<10	62
GILA06		<10	<10	93	<10	74
GILA07		<10	<10	161	<10	91
GILA08		<10	<10	116	<10	81
GILA09		<10	<10	88	<10	83
GILA10		<10	<10	62	<10	79
GILA11		<10	<10	98	<10	89
GILA12		<10	<10	78	<10	76
GILA13		<10	<10	95	<10	76
GILA14		<10	<10	120	<10	77
GILA15		<10	<10	194	<10	79
GILA16		<10	<10	98	<10	84
GILA17		<10	<10	40	<10	41
GILA18		<10	<10	118	<10	74
GILA19		<10	<10	64	<10	62
GILA20		<10	<10	92	<10	70
GILA21		<10	<10	134	<10	73
GILA22		<10	<10	49	<10	54
GILA23		<10	<10	114	<10	84
GILA24		<10	<10	104	<10	77
GILA25		<10	<10	95	<10	67
GILA26		<10	<10	89	<10	74
GILA27		<10	<10	96	<10	81
GILA28		<10	<10	99	<10	74
GILA29		<10	<10	110	<10	78
GILA30		<10	<10	90	<10	72
Stockpile #5		<10	<10	59	<10	171
Stockpile #10		<10	<10	72	<10	195
Stockpile #15		<10	<10	51	<10	186
Stockpile #20		<10	<10	60	<10	143

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CERTIFICATE COMMENTS

LABORATORY ADDRESSES

Applies to Method: Processed at ALS Vancouver located at 2103 Dollarton Hwy, North Vancouver, BC, Canada.

C- GAS05	Hg- MS42	ME- ICP61	OA- ELE07
OA- VOL08s	OA- VOL11	S- CAL06	S- GRA06
S- GRA06a	S- IR08		

Applies to Method: Processed at ALS Tucson, Arizona, USA
WEI- 21

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To: KLOHN CRIPPEN BERGER LTD.
500- 2955 VIRTUAL WAY
VANCOUVER BC V5M 4X6

Finalized Date: 11- SEP- 2014
Account: KOCRIB

QC CERTIFICATE TU14120792

P.O. No.: MO2014- PO074

This report is for 34 Other samples submitted to our lab in Tucson, AZ, USA on 22- AUG- 2014.

The following have access to data associated with this certificate:

JIM CASEY	KATE PATTERSON	

SAMPLE PREPARATION

ALS CODE	DESCRIPTION
WEI- 21	Received Sample Weight

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	
OA- VOL11	Static Net Acid Generation	
ME- ICP61	33 element four acid ICP- AES	ICP- AES
Hg- MS42	Trace Hg by ICPMS	ICP- MS
OA- VOL08s	Siderite NP	
S- IR08	Total Sulphur (Leco)	LECO
OA- ELE07	Paste pH	
S- GRA06a	Sulfate Sulfur (HCl leachable)	WST- SEQ
S- CAL06	Sulfide Sulfur (calculated)	LECO
S- GRA06	Sulfate Sulfur- carbonate leach	WST- SEQ
C- GAS05	Inorganic Carbon (CO2)	

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This is the Final Report and supersedes any preliminary report with this certificate number. Results apply to samples as submitted. All pages of this report have been checked and approved for release.

***** See Appendix Page for comments regarding this certificate *****

Signature:
Colin Ramshaw, Vancouver Laboratory Manager

Project Name:
Resolution Project - Near West Closure Cover Study

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QC CERTIFICATE OF ANALYSIS TU14120792

Sample Description	Method Analyte Units LOR	OA- VOL08s MPA tCaCO3/1Kt 0.3	OA- VOL08s FIZZ RAT Unity 1	OA- VOL08s NNP tCaCO3/1Kt 1	OA- VOL08s NP tCaCO3/1Kt 1	OA- ELE07 pH Unity 0.1	OA- VOL08s Ratio (N Unity 0.01	S- IR08 S % 0.01	S- GRA06 S % 0.01	S- GRA06a S % 0.01	C- GAS05 C % 0.05	C- GAS05 CO2 % 0.2	OA- VOL11 NAGpH4.5 kg H2SO4/t 0.01	OA- VOL11 NAGpH7.0 kg H2SO4/t 0.01	OA- VOL11 pH Unity 0.1	ME- ICP61 Ag ppm 0.5
STANDARDS																
Buffer pH6						6.0										
Buffer pH6						6.0										
Target Range - Lower Bound						5.3										
Upper Bound						6.7										
CO- ASSAY											0.53	1.9				
Target Range - Lower Bound											0.42	1.5				
Upper Bound											0.64	2.4				
GBM908- 10																
Target Range - Lower Bound																
Upper Bound																
GBM908- 10																2.8
Target Range - Lower Bound																1.9
Upper Bound																4.2
KZK- 1		25.0	2	33	58		2.32									
KZK- 1		25.0	2	32	57		2.28									
Target Range - Lower Bound		22.9	<1	30	54		2.18									
Upper Bound		27.1	2	38	64		2.54									
MA- 1b								1.21								
MA- 1b								1.18								
Target Range - Lower Bound								1.12								
Upper Bound								1.22								
MRGeo08																4.3
Target Range - Lower Bound																3.2
Upper Bound																5.7
NBM- 1		8.8	2	41	50		5.71									
NBM- 1		8.8	2	41	50		5.71									
Target Range - Lower Bound		7.8	<1	36	45		5.26									
Upper Bound		9.7	2	46	54		6.08									
OGGeo08																
Target Range - Lower Bound																
Upper Bound																
OGGeo08													4.23	30.6	3.3	
OGGeo08													4.02	30.9	3.3	
Target Range - Lower Bound													3.26	28.1	3.2	
Upper Bound													3.78	32.4	3.9	

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QC CERTIFICATE OF ANALYSIS TU14120792

Sample Description	Method Analyte Units LOR	ME- ICP61 Al % 0.01	ME- ICP61 As ppm 5	ME- ICP61 Ba ppm 10	ME- ICP61 Be ppm 0.5	ME- ICP61 Bi ppm 2	ME- ICP61 Ca % 0.01	ME- ICP61 Cd ppm 0.5	ME- ICP61 Co ppm 1	ME- ICP61 Cr ppm 1	ME- ICP61 Cu ppm 1	ME- ICP61 Fe % 0.01	ME- ICP61 Ga ppm 10	Hg- MS42 Hg ppm 0.005	ME- ICP61 K % 0.01	ME- ICP61 La ppm 10
STANDARDS																
Buffer pH6																
Buffer pH6																
Target Range - Lower Bound																
Upper Bound																
CO- ASSAY																
Target Range - Lower Bound																
Upper Bound																
GBM908- 10																
Target Range - Lower Bound														0.015		
Upper Bound																
GBM908- 10		6.53	53	1040	1.3	2	3.51	1.5	26	139	3510	5.21	20		1.93	40
Target Range - Lower Bound				980	<0.5											
Upper Bound				1220	2.5											
KZK- 1																
KZK- 1																
Target Range - Lower Bound																
Upper Bound																
MA- 1b																
MA- 1b																
Target Range - Lower Bound																
Upper Bound																
MRGeo08		7.20	32	1070	3.1	2	2.52	2.1	20	95	632	3.81	20		3.03	30
Target Range - Lower Bound																
Upper Bound																
NBM- 1																
NBM- 1																
Target Range - Lower Bound																
Upper Bound																
OGGeo08														0.476		
Target Range - Lower Bound																
Upper Bound																
OGGeo08																
OGGeo08																
Target Range - Lower Bound																
Upper Bound																

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QC CERTIFICATE OF ANALYSIS TU14120792

Sample Description	Method	ME- ICP61	ME- ICP61	ME- ICP61	ME- ICP61	ME- ICP61	ME- ICP61	ME- ICP61	ME- ICP61	ME- ICP61	ME- ICP61	ME- ICP61	ME- ICP61	ME- ICP61	ME- ICP61	ME- ICP61
	Analyte	Mg	Mn	Mo	Na	Ni	P	Pb	S	Sb	Sc	Sr	Th	Ti	Tl	U
	Units	%	ppm	ppm	%	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm
	LOR	0.01	5	1	0.01	1	10	2	0.01	5	1	1	20	0.01	10	10
STANDARDS																
Buffer pH6																
Buffer pH6																
Target Range - Lower Bound																
Upper Bound																
CO- ASSAY																
Target Range - Lower Bound																
Upper Bound																
GBM908- 10																
Target Range - Lower Bound																
Upper Bound																
GBM908- 10		1.67	772	56	2.03	2170	940	1975	0.35	5	16	278	20	0.61	<10	<10
Target Range - Lower Bound		1.61	715	57	1.93	2030	880	1860	0.33	<5	14	260	<20	0.59	<10	<10
Upper Bound		1.99	885	72	2.38	2480	1100	2280	0.43	12	20	320	60	0.74	20	20
KZK- 1																
KZK- 1																
Target Range - Lower Bound																
Upper Bound																
MA- 1b																
MA- 1b																
Target Range - Lower Bound																
Upper Bound																
MRGeo08		1.28	559	15	1.93	681	1040	1085	0.29	<5	11	305	20	0.47	<10	<10
Target Range - Lower Bound		1.17	497	12	1.76	621	930	969	0.27	<5	10	276	<20	0.45	<10	<10
Upper Bound		1.45	619	18	2.18	761	1160	1190	0.36	15	15	340	60	0.57	20	30
NBM- 1																
NBM- 1																
Target Range - Lower Bound																
Upper Bound																
OGGeo08																
Target Range - Lower Bound																
Upper Bound																
OGGeo08																
OGGeo08																
Target Range - Lower Bound																
Upper Bound																

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QC CERTIFICATE OF ANALYSIS TU14120792

Sample Description	Method / Analyte / Units / LOR	ME- ICP61 V ppm 1	ME- ICP61 W ppm 10	ME- ICP61 Zn ppm 2
		STANDARDS		
Buffer pH6				
Buffer pH6				
Target Range - Lower Bound				
Upper Bound				
CO- ASSAY				
Target Range - Lower Bound				
Upper Bound				
GBM908- 10				
Target Range - Lower Bound				
Upper Bound				
GBM908- 10		132	<10	1010
Target Range - Lower Bound		123	<10	939
Upper Bound		154	25	1155
KZK- 1				
KZK- 1				
Target Range - Lower Bound				
Upper Bound				
MA- 1b				
MA- 1b				
Target Range - Lower Bound				
Upper Bound				
MRGeo08		106	<10	789
Target Range - Lower Bound		97	<10	722
Upper Bound		121	30	886
NBM- 1				
NBM- 1				
Target Range - Lower Bound				
Upper Bound				
OGGeo08				
Target Range - Lower Bound				
Upper Bound				
OGGeo08				
OGGeo08				
Target Range - Lower Bound				
Upper Bound				

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QC CERTIFICATE OF ANALYSIS TU14120792

Sample Description	Method Analyte Units LOR	OA- VOL08s MPA tCaCO3/1Kt 0.3	OA- VOL08s FIZZ RAT Unity 1	OA- VOL08s NNP tCaCO3/1Kt 1	OA- VOL08s NP tCaCO3/1Kt 1	OA- ELE07 pH Unity 0.1	OA- VOL08s Ratio (N Unity 0.01	S- IR08 S % 0.01	S- GRA06 S % 0.01	S- GRA06a S % 0.01	C- GAS05 C % 0.05	C- GAS05 CO2 % 0.2	OA- VOL11 NAGpH4.5 kg H2SO4/t 0.01	OA- VOL11 NAGpH7.0 kg H2SO4/t 0.01	OA- VOL11 pH Unity 0.1	ME- ICP61 Ag ppm 0.5
STANDARDS																
PD- 1													<0.01	65.7	6.3	
PD- 1													<0.01	65.4	6.5	
Target Range - Lower Bound															[illegible]	
Upper Bound															[illegible]	
RTS- 1									1.35							
Target Range - Lower Bound									1.23							
Upper Bound									1.38							
RTS- 1										1.24						
RTS- 1										1.30						
Target Range - Lower Bound										1.14						
Upper Bound										1.34						
SY- 4											0.94	3.4				
Target Range - Lower Bound											[illegible]	[illegible]				
Upper Bound											[illegible]	[illegible]				
UTS- 1									0.92							
Target Range - Lower Bound									[illegible]							
Upper Bound									[illegible]							
UTS- 1										0.89						
UTS- 1										0.90						
Target Range - Lower Bound										[illegible]						
Upper Bound										[illegible]						
UTS- 1								0.96								
UTS- 1								1.00								
Target Range - Lower Bound								0.95								
Upper Bound								1.05								
BLANKS																
BLANK											<0.05	<0.2				
Target Range - Lower Bound											[illegible]	[illegible]				
Upper Bound											[illegible]	[illegible]				

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QC CERTIFICATE OF ANALYSIS TU14120792

Sample Description	Method	ME- ICP61	ME- ICP61	ME- ICP61	ME- ICP61	ME- ICP61	ME- ICP61	ME- ICP61	ME- ICP61	ME- ICP61	ME- ICP61	ME- ICP61	ME- ICP61	Hg- MS42	ME- ICP61	ME- ICP61
	Analyte	Al	As	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu	Fe	Ga	Hg	K	La
	Units	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm
	LOR	0.01	5	10	0.5	2	0.01	0.5	1	1	1	0.01	10	0.005	0.01	10
STANDARDS																
PD- 1																
PD- 1																
Target Range - Lower Bound																
Upper Bound																
RTS- 1																
Target Range - Lower Bound																
Upper Bound																
RTS- 1																
RTS- 1																
Target Range - Lower Bound																
Upper Bound																
SY- 4																
Target Range - Lower Bound																
Upper Bound																
UTS- 1																
Target Range - Lower Bound																
Upper Bound																
UTS- 1																
UTS- 1																
Target Range - Lower Bound																
Upper Bound																
UTS- 1																
UTS- 1																
Target Range - Lower Bound																
Upper Bound																
BLANKS																
BLANK																
Target Range - Lower Bound																
Upper Bound																

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QC CERTIFICATE OF ANALYSIS TU14120792

Sample Description	Method Analyte Units LOR	ME- ICP61 Mg % 0.01	ME- ICP61 Mn ppm 5	ME- ICP61 Mo ppm 1	ME- ICP61 Na % 0.01	ME- ICP61 Ni ppm 1	ME- ICP61 P ppm 10	ME- ICP61 Pb ppm 2	ME- ICP61 S % 0.01	ME- ICP61 Sb ppm 5	ME- ICP61 Sc ppm 1	ME- ICP61 Sr ppm 1	ME- ICP61 Th ppm 20	ME- ICP61 Ti % 0.01	ME- ICP61 Tl ppm 10	ME- ICP61 U ppm 10
STANDARDS																
PD- 1																
PD- 1																
Target Range -	Lower Bound															
	Upper Bound															
RTS- 1																
Target Range -	Lower Bound															
	Upper Bound															
RTS- 1																
RTS- 1																
Target Range -	Lower Bound															
	Upper Bound															
SY- 4																
Target Range -	Lower Bound															
	Upper Bound															
UTS- 1																
Target Range -	Lower Bound															
	Upper Bound															
UTS- 1																
UTS- 1																
Target Range -	Lower Bound															
	Upper Bound															
UTS- 1																
UTS- 1																
Target Range -	Lower Bound															
	Upper Bound															
BLANKS																
BLANK																
Target Range -	Lower Bound															
	Upper Bound															

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QC CERTIFICATE OF ANALYSIS TU14120792

Sample Description	Method / Analyte / Units / LOR	ME- ICP61 V ppm 1	ME- ICP61 W ppm 10	ME- ICP61 Zn ppm 2
		STANDARDS		
PD- 1				
PD- 1				
Target Range - Lower Bound				
Upper Bound				
RTS- 1				
Target Range - Lower Bound				
Upper Bound				
RTS- 1				
RTS- 1				
Target Range - Lower Bound				
Upper Bound				
SY- 4				
Target Range - Lower Bound				
Upper Bound				
UTS- 1				
Target Range - Lower Bound				
Upper Bound				
UTS- 1				
UTS- 1				
Target Range - Lower Bound				
Upper Bound				
UTS- 1				
UTS- 1				
Target Range - Lower Bound				
Upper Bound				
		BLANKS		
BLANK				
Target Range - Lower Bound				
Upper Bound				

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Sample Description	Method Analyte Units LOR	OA- VOL08s MPA tCaCO3/1Kt 0.3	OA- VOL08s FIZZ RAT Unity 1	OA- VOL08s NNP tCaCO3/1Kt 1	OA- VOL08s NP tCaCO3/1Kt 1	OA- ELE07 pH Unity 0.1	OA- VOL08s Ratio (N Unity 0.01	S- IR08 S % 0.01	S- GRA06 S % 0.01	S- GRA06a S % 0.01	C- GAS05 C % 0.05	C- GAS05 CO2 % 0.2	OA- VOL11 NAGpH4.5 kg H2SO4/t 0.01	OA- VOL11 NAGpH7.0 kg H2SO4/t 0.01	OA- VOL11 pH Unity 0.1	ME- ICP61 Ag ppm 0.5
BLANKS																
BLANK																<0.5
Target Range - Lower Bound																<0.5
Upper Bound																[illegible]
BLANK						6.1										
Target Range - Lower Bound						5.5										
Upper Bound						6.9										
BLANK									<0.01							
Target Range - Lower Bound									<0.01							
Upper Bound									0.02							
BLANK										<0.01						
BLANK										<0.01						
Target Range - Lower Bound										<0.01						
Upper Bound										0.02						
BLANK								0.01								
BLANK								0.01								
Target Range - Lower Bound								<0.01								
Upper Bound								0.02								
DUPLICATES																
ORIGINAL								0.02								
DUP								0.02								
Target Range - Lower Bound								<0.01								
Upper Bound								0.03								
GILA08																
DUP																
Target Range - Lower Bound																
Upper Bound																

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Sample Description	Method Analyte Units LOR	ME- ICP61 Al % 0.01	ME- ICP61 As ppm 5	ME- ICP61 Ba ppm 10	ME- ICP61 Be ppm 0.5	ME- ICP61 Bi ppm 2	ME- ICP61 Ca % 0.01	ME- ICP61 Cd ppm 0.5	ME- ICP61 Co ppm 1	ME- ICP61 Cr ppm 1	ME- ICP61 Cu ppm 1	ME- ICP61 Fe % 0.01	ME- ICP61 Ga ppm 10	Hg- MS42 Hg ppm 0.005	ME- ICP61 K % 0.01	ME- ICP61 La ppm 10
BLANKS																
BLANK														<0.005		
Target Range - Lower Bound														<0.005		
Upper Bound														0.010		
BLANK		<0.01	<5	<10	<0.5	2	<0.01	<0.5	<1	<1	<1	<0.01	<10		<0.01	<10
Target Range - Lower Bound		<0.01	<5	<10	<0.5	<2	<0.01	<0.5	<1	<1	<1	<0.01	<10		<0.01	<10
Upper Bound		0.02	10	20	1.0	4	0.02	1.0	2	2	2	0.02	20		0.02	20
BLANK																
Target Range - Lower Bound																
Upper Bound																
BLANK																
Target Range - Lower Bound																
Upper Bound																
BLANK																
BLANK																
Target Range - Lower Bound																
Upper Bound																
BLANK																
BLANK																
Target Range - Lower Bound																
Upper Bound																
DUPLICATES																
ORIGINAL																
DUP																
Target Range - Lower Bound																
Upper Bound																
GILA08														0.029		
DUP														0.032		
Target Range - Lower Bound														0.024		
Upper Bound														0.037		

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Sample Description	Method Analyte Units LOR	ME- ICP61 Mg % 0.01	ME- ICP61 Mn ppm 5	ME- ICP61 Mo ppm 1	ME- ICP61 Na % 0.01	ME- ICP61 Ni ppm 1	ME- ICP61 P ppm 10	ME- ICP61 Pb ppm 2	ME- ICP61 S % 0.01	ME- ICP61 Sb ppm 5	ME- ICP61 Sc ppm 1	ME- ICP61 Sr ppm 1	ME- ICP61 Th ppm 20	ME- ICP61 Ti % 0.01	ME- ICP61 Tl ppm 10	ME- ICP61 U ppm 10
BLANKS																
BLANK																
Target Range - Lower Bound																
Upper Bound																
BLANK		<0.01	<5	<1	<0.01	<1	<10	<2	<0.01	<5	<1	<1	<20	<0.01	<10	<10
Target Range - Lower Bound		<0.01	<5	<1	<0.01	<1	<10	<2	<0.01	<5	<1	<1	<20	<0.01	<10	<10
Upper Bound		0.02	10	2	0.02	2	20	4	0.02	10	2	2	40	0.02	20	20
BLANK																
Target Range - Lower Bound																
Upper Bound																
BLANK																
Target Range - Lower Bound																
Upper Bound																
BLANK																
BLANK																
Target Range - Lower Bound																
Upper Bound																
BLANK																
BLANK																
Target Range - Lower Bound																
Upper Bound																
DUPLICATES																
ORIGINAL																
DUP																
Target Range - Lower Bound																
Upper Bound																
GILA08																
DUP																
Target Range - Lower Bound																
Upper Bound																

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Sample Description	Method Analyte Units LOR	ME- ICP61 V ppm 1	ME- ICP61 W ppm 10	ME- ICP61 Zn ppm 2
BLANKS				
BLANK				
Target Range - Lower Bound				
Upper Bound				
BLANK		<1	<10	<2
Target Range - Lower Bound		<1	<10	<2
Upper Bound		2	20	4
BLANK				
Target Range - Lower Bound				
Upper Bound				
BLANK				
Target Range - Lower Bound				
Upper Bound				
BLANK				
BLANK				
Target Range - Lower Bound				
Upper Bound				
BLANK				
BLANK				
Target Range - Lower Bound				
Upper Bound				
DUPLICATES				
ORIGINAL				
DUP				
Target Range - Lower Bound				
Upper Bound				
GILA08				
DUP				
Target Range - Lower Bound				
Upper Bound				

***** See Appendix Page for comments regarding this certificate *****

Project Name:
Resolution Project - Near West Closure Cover Study

ALS Canada Ltd.
2103 Dollarton Hwy
North Vancouver BC V7H 0A7
Phone: 604 984 0221 Fax: 604 984 0218 www.alsglobal.com

To: KLOHN CRIPPEN BERGER LTD.
500- 2955 VIRTUAL WAY
VANCOUVER BC V5M 4X6

Finalized Date: 11- SEP- 2014
Account: KOCRIB

QC CERTIFICATE OF ANALYSIS TU14120792

Sample Description	Method Analyte Units LOR	OA- VOL08s MPA tCaCO3/1Kt 0.3	OA- VOL08s FIZZ RAT Unity 1	OA- VOL08s NNP tCaCO3/1Kt 1	OA- VOL08s NP tCaCO3/1Kt 1	OA- ELE07 pH Unity 0.1	OA- VOL08s Ratio (N Unity 0.01	S- IR08 S % 0.01	S- GRA06 S % 0.01	S- GRA06a S % 0.01	C- GAS05 C % 0.05	C- GAS05 CO2 % 0.2	OA- VOL11 NAGpH4.5 kg H2SO4/t 0.01	OA- VOL11 NAGpH7.0 kg H2SO4/t 0.01	OA- VOL11 pH Unity 0.1	ME- ICP61 Ag ppm 0.5
DUPLICATES																
GILA10		0.3	1	18	18	8.2	57.60		0.01	<0.01	0.11	0.4	<0.01	<0.01	10.3	<0.5
DUP		0.3	1	18	18	8.2	57.60		<0.01	<0.01	0.12	0.4	<0.01	<0.01	10.4	<0.5
Target Range -	Lower Bound	<0.3	<1	16	16	7.7	54.71		<0.01	<0.01	0.06	<0.2	<0.01	<0.01	9.7	<0.5
	Upper Bound	0.6	2	20	20	8.7	60.49		0.02	0.02	0.17	0.6	0.02	0.02	11.0	1.0
GILA12								0.01								
DUP								0.01								
Target Range -	Lower Bound							<0.01								
	Upper Bound							0.02								
GILA25										0.02						
DUP										0.02						
Target Range -	Lower Bound									<0.01						
	Upper Bound									0.03						
GILA27		1.6	1	15	17		10.88									
DUP		1.6	1	15	17		10.88									
Target Range -	Lower Bound	1.2	<1	13	15		10.33									
	Upper Bound	2.0	2	17	19		11.43									
Stockpile #15													<0.01	<0.01	10.9	
DUP													<0.01	<0.01	11.1	
Target Range -	Lower Bound												<0.01	<0.01	10.4	
	Upper Bound												0.02	0.02	11.7	

***** See Appendix Page for comments regarding this certificate *****

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Finalized Date: 11- SEP- 2014
Account: KOCRIB

QC CERTIFICATE OF ANALYSIS TU14120792

Sample Description	Method Analyte Units LOR	ME- ICP61 Al % 0.01	ME- ICP61 As ppm 5	ME- ICP61 Ba ppm 10	ME- ICP61 Be ppm 0.5	ME- ICP61 Bi ppm 2	ME- ICP61 Ca % 0.01	ME- ICP61 Cd ppm 0.5	ME- ICP61 Co ppm 1	ME- ICP61 Cr ppm 1	ME- ICP61 Cu ppm 1	ME- ICP61 Fe % 0.01	ME- ICP61 Ga ppm 10	Hg- MS42 Hg ppm 0.005	ME- ICP61 K % 0.01	ME- ICP61 La ppm 10
							DUPLICATES									
GILA10		7.12	<5	510	2.2	<2	0.98	<0.5	16	53	20	3.64	20		2.10	30
DUP		7.08	<5	510	2.2	3	0.99	<0.5	17	50	26	3.56	20		2.05	30
Target Range -	Lower Bound	6.74	<5	470	1.6	<2	0.93	<0.5	15	48	21	3.41	20		1.95	26
	Upper Bound	7.47	10	550	2.8	4	1.04	1.0	18	55	25	3.79	36		2.19	40
GILA12																
DUP																
Target Range -	Lower Bound															
	Upper Bound															
GILA25																
DUP																
Target Range -	Lower Bound															
	Upper Bound															
GILA27																
DUP																
Target Range -	Lower Bound															
	Upper Bound															
Stockpile #15																
DUP																
Target Range -	Lower Bound															
	Upper Bound															

***** See Appendix Page for comments regarding this certificate *****

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QC CERTIFICATE OF ANALYSIS TU14120792

Sample Description	Method / Analyte / Units / LOR	ME- ICP61 Mg % 0.01	ME- ICP61 Mn ppm 5	ME- ICP61 Mo ppm 1	ME- ICP61 Na % 0.01	ME- ICP61 Ni ppm 1	ME- ICP61 P ppm 10	ME- ICP61 Pb ppm 2	ME- ICP61 S % 0.01	ME- ICP61 Sb ppm 5	ME- ICP61 Sc ppm 1	ME- ICP61 Sr ppm 1	ME- ICP61 Th ppm 20	ME- ICP61 Ti % 0.01	ME- ICP61 Tl ppm 10	ME- ICP61 U ppm 10
		DUPLICATES														
GILA10		0.89	856	1	0.82	29	380	15	<0.01	<5	12	146	<20	0.27	<10	<10
DUP		0.88	848	<1	0.82	26	380	16	<0.01	<5	12	147	<20	0.28	<10	<10
Target Range -	Lower Bound	0.83	804	<1	0.77	25	350	13	<0.01	<5	10	136	<20	0.25	<10	<10
	Upper Bound	0.94	900	2	0.87	30	410	18	0.02	10	14	155	40	0.30	20	20
GILA12																
DUP																
Target Range -	Lower Bound															
	Upper Bound															
GILA25																
DUP																
Target Range -	Lower Bound															
	Upper Bound															
GILA27																
DUP																
Target Range -	Lower Bound															
	Upper Bound															
Stockpile #15																
DUP																
Target Range -	Lower Bound															
	Upper Bound															

***** See Appendix Page for comments regarding this certificate *****

Project Name:
Resolution Project - Near West Closure Cover Study

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Finalized Date: 11- SEP- 2014
Account: KOCRIB

QC CERTIFICATE OF ANALYSIS TU14120792

Sample Description / Method / Analyte / Units / LOR	ME- ICP61 V ppm 1	ME- ICP61 W ppm 10	ME- ICP61 Zn ppm 2
	DUPLICATES		
GILA10	62	<10	79
DUP	62	<10	79
Target Range - Lower Bound	58	<10	73
Upper Bound	66	20	85
GILA12			
DUP			
Target Range - Lower Bound			
Upper Bound			
GILA25			
DUP			
Target Range - Lower Bound			
Upper Bound			
GILA27			
DUP			
Target Range - Lower Bound			
Upper Bound			
Stockpile #15			
DUP			
Target Range - Lower Bound			
Upper Bound			

***** See Appendix Page for comments regarding this certificate *****

Project Name:
Resolution Project - Near West Closure Cover Study

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Finalized Date: 11- SEP- 2014
Account: KOCRIB

QC CERTIFICATE OF ANALYSIS TU14120792

CERTIFICATE COMMENTS

LABORATORY ADDRESSES

Applies to Method: Processed at ALS Vancouver located at 2103 Dollarton Hwy, North Vancouver, BC, Canada.

C- GAS05	Hg- MS42	ME- ICP61	OA- ELE07
OA- VOL08s	OA- VOL11	S- CAL06	S- GRA06
S- GRA06a	S- IR08		

Applies to Method: Processed at ALS Tucson, Arizona, USA
WEI- 21

Project Name:
Resolution Project - Near West Closure Cover Study

ALS Environmental
ALS Group USA, Corp.
1317 South 13th Avenue
Kelso, WA 98626
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www.alsglobal.com

October 2, 2014 Analytical Report for Service Request No: K1409440

Kate Patterson
Klohn Crippen Berger
500-2955 Virtual Way
Vancouver, BC V5M 4X6

CANADA

RE: SPLP - Modified/M09441A16.03.02.100

Dear Kate:

Enclosed are the results of the samples submitted to our laboratory on September 04, 2014. For your reference, these analyses have been assigned our service request number K1409440.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please call if you have any questions. My extension is 3316. You may also contact me via Email at Jeff.Christian@alsglobal.com.

Respectfully submitted,

ALS Group USA Corp. dba ALS Environmental

Jeff Christian
Director of Operations - Western U.S.A.

JC/kd

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Inorganic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated value.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.
H	The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

#	The control limit criteria is not applicable. See case narrative.
J	The result is an estimated value.
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
M	The duplicate injection precision was not met.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
S	The reported value was determined by the Method of Standard Additions (MSA).
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
+	The correlation coefficient for the MSA is less than 0.995.
Q	See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
A	A tentatively identified compound, a suspected aldol-condensation product.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
C	The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
D	The reported result is from a dilution.
E	The result is an estimated value.
J	The result is an estimated value.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
P	The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
Y	The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
Z	The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso
State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEC UST	http://dec.alaska.gov/applications/eh/ehllabreports/USTLabs.aspx	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L14-51
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	Not available	-
Idaho DHW	http://www.healthandwelfare.idaho.gov/Health/Labs/CertificationDrinkingWaterLabs/tabid/1833/Default.aspx	-
ISO 17025	http://www.pjlabs.com/	L14-50
Louisiana DEQ	http://www.deq.louisiana.gov/portal/DIVISIONS/PublicParticipationandPermitSupport/LouisianaLaboratoryAccreditationProgram.aspx	03016
Maine DHS	Not available	WA01276
Michigan DEQ	http://www.michigan.gov/deq/0,1607,7-135-3307_4131_4156---,00.html	9949
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Montana DPHHS	http://www.dphhs.mt.gov/publichealth/	CERT0047
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/oqa/	WA005
North Carolina DWQ	http://www.dwqlab.org/	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/envserv/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wisconsin DNR	http://dnr.wi.gov/	998386840
Wyoming (EPA Region 8)	http://www.epa.gov/region8/water/dwhome/wyomingdi.html	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.

ALS ENVIRONMENTAL

Client:	Klohn Crippen Berger	**Service Request No.:**	K1409440
Project:	SPLP - Modified/M09441A16.03.02.100	**Date Received:**	9/04/14-9/11/14
Sample Matrix:	Soil		

Case Narrative

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), Matrix Spike (MS), and Laboratory Control Sample (LCS).

Sample Receipt

Sixteen soil samples were received for analysis at ALS Environmental between 9/04/14 and 9/11/14. The samples were received in good condition and consistent with the accompanying chain of custody form, except where noted on the cooler receipt and preservation form included in this report. The samples were stored at room temperature upon receipt at the laboratory.

General Chemistry Parameters

Total Organic Carbon by EPA Method 9060:
The matrix spike recovery for sample GILA 07 was outside control criteria because of suspected matrix interference. As a result of the interference, the results for this analyte contained a potential high bias. No further corrective action was taken.

No other anomalies associated with the analysis of these samples were observed.

SPLP Metals

SPLP Extraction:
The SPLP extraction was carried out in accordance with EPA method 1312 with the extraction ratio modified to four parts extraction solution to one part soil.

Method Blank Exceptions:
The Method Blank contained Sodium above the Method Reporting Limit (MRL). In accordance with ALS QA/QC policy, all sample results less than twenty times the level found in the Method Blank were flagged as estimated. The extraction apparatus used to process the SPLP extraction (i.e. extraction vessels and pressure filtration unit) are typically used with extraction solutions containing high Sodium concentrations. As a result there is a certain Sodium background associated with the use of this apparatus. No additional corrective action was appropriate.

No other anomalies associated with the analysis of these samples were observed.

Approved by 

K1409440

Sample Name	Synthetic Precipitation Leaching Procedure (SPLP) (Liquid to Solids Ration of 4:1)	Available Nutrients	Organic Matter
Total Number of Tests	**15**	**9**	**9**
Stockpile 10+20	2	1	1
GILA 07	1	1	1
GILA 08	1		
GILA 09	1	1	1
GILA 10	1		
GILA 11	1		
GILA 15	1	1	1
GILA 20	1	1	1
GILA 22	1	1	1
GILA 24	1		
GILA 25	1	1	1
GILA 26	1		
GILA 29	1	1	1
GILA 30	1		

Kate Patterson, P.Eng., M.Eng.
Water Resources Engineer

Klohn Crippen Berger 500 - 2955 Virtual Way, Vancouver BC V5M 4X6 CANADA
D 604.251.8487 | T 604.669.3800 | F 604.669.3835 | kpatterson@klohn.com | www.klohn.com

If you have received this email in error, please delete the original message.

PC CHRISTIN

Cooler Receipt and Preservation Form

Client / Project: ALS Service Request *K14* 9440

Received: 9/4/14 Opened: 9/4/14 By: [illegible] Unloaded: 9/4/14 By: [illegible]

1. Samples were received via? *Mail* *Fed Ex* *UPS* *DHL* *PDX* *Courier* *Hand Delivered*
2. Samples were received in: (circle) *Cooler* *Box* *Envelope* *Other*_____ *NA*
3. Were custody seals on coolers? NA Y N If yes, how many and where?_____
   If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Raw Cooler Temp	Corrected. Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID NA	Tracking Number NA	Filed
N/A							1ZE1035003473120 3 7	

4. Packing material: *Inserts* *Baggies* *Bubble Wrap* *Gel Packs* *Wet Ice* *Dry Ice* *Sleeves* _____
5. Were custody papers properly filled out (ink, signed, etc.)? NA Y N
6. Did all bottles arrive in good condition (unbroken)? *Indicate in the table below.* NA Y N
7. Were all sample labels complete (i.e analysis, preservation, etc.)? NA Y N
8. Did all sample labels and tags agree with custody papers? *Indicate major discrepancies in the table on page 2.* NA Y N
9. Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N
10. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* NA Y N
11. Were VOA vials received without headspace? *Indicate in the table below.* NA Y N
12. Was C12/Res negative? NA Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count Bottle Type	Out of Temp	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, & Resolutions: DID NOT RECEIVE GILA 22.
RECEIVED STOCKPILE 10, STOCKPILE 15, AND STOCKPILE 20 (STOCKPILE 15 NOT LISTED, STOCKPILE 10+20 LISTED ON COC AS ONE)

Page ____ *of* ____

Project Name:
Resolution Project - Near West Closure Cover Study

Analytical Report

Client:	Klohn Crippen Berger	**Service Request:**	K1409440
Project:	SPLP - Modified/M09441A16.03.02.100	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	09/04/14 - 09/11/14
Analysis Method:	9060	**Units:**	Percent
Prep Method:	Method	**Basis:**	Dry, per Method

Carbon Organic (TOC)

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
GILA 07	K1409440-001	ND U	0.10	1	09/24/14 11:57	9/23/14	
GILA 08	K1409440-002	**0.11**	0.10	1	09/24/14 11:57	9/23/14	
GILA 09	K1409440-003	**0.14**	0.10	1	09/24/14 11:57	9/23/14	
GILA 10	K1409440-004	**0.11**	0.10	1	09/24/14 11:57	9/23/14	
GILA 11	K1409440-005	**0.15**	0.10	1	09/24/14 11:57	9/23/14	
GILA 15	K1409440-006	**0.11**	0.10	1	09/24/14 11:57	9/23/14	
GILA 20	K1409440-007	**0.53**	0.10	1	09/24/14 11:57	9/23/14	
GILA 22	K1409440-008	**0.13**	0.10	1	09/24/14 11:57	9/23/14	
GILA 24	K1409440-009	**0.22**	0.10	1	09/24/14 11:57	9/23/14	
GILA 25	K1409440-010	**0.72**	0.10	1	09/24/14 11:57	9/23/14	
GILA 26	K1409440-011	**0.94**	0.10	1	09/24/14 11:57	9/23/14	
GILA 29	K1409440-012	**0.67**	0.10	1	09/24/14 11:57	9/23/14	
GILA 30	K1409440-013	**0.94**	0.10	1	09/24/14 11:57	9/23/14	
Stockpile 10	K1409440-014	**0.15**	0.10	1	09/24/14 11:57	9/23/14	
Stockpile 20	K1409440-015	**0.17**	0.10	1	09/24/14 11:57	9/23/14	
Method Blank	K1409440-MB	ND U	0.10	1	09/24/14 11:57	9/23/14	

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client:	Klohn Crippen Berger	**Service Request:**	K1409440
Project	SPLP - Modified/M09441A16.03.02.100	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	09/04/14
		Date Analyzed:	09/24/14

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	GILA 07	**Units:**	Percent
Lab Code:	K1409440-001	**Basis:**	Dry, per Method

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample K1409440-001DUP Result	Average	RPD	RPD Limit
Carbon Organic (TOC)	9060	0.10	ND	ND	NC	NC	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client:	Klohn Crippen Berger	**Service Request:**	K1409440
Project:	SPLP - Modified/M09441A16.03.02.100	**Date Collected:**	N/A
Sample Matrix:	Soil	**Date Received:**	09/04/14
		Date Analyzed:	09/24/14
		Date Extracted:	09/23/14

Duplicate Matrix Spike Summary
Carbon Organic (TOC)

Sample Name:	GILA 07	**Units:**	Percent
Lab Code:	K1409440-001	**Basis:**	Dry, per Method
Analysis Method:	9060		
Prep Method:	Method		

		Matrix Spike			Duplicate Matrix Spike					
		K1409440-001MS			K1409440-001DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Carbon Organic (TOC)	ND U	3.00	2.38	126 *	2.80	2.39	117	70-122	7	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client:	Klohn Crippen Berger	**Service Request:**	K1409440
Project:	SPLP - Modified/M09441A16.03.02.100	**Date Analyzed:**	09/24/14
Sample Matrix:	Soil	**Date Extracted:**	09/23/14

Lab Control Sample Summary
Carbon Organic (TOC)

Analysis Method:	9060	**Units:**	Percent
Prep Method:	Method	**Basis:**	Dry, per Method
		Analysis Lot:	413131

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1409440-LCS	0.290	0.28	105	72-122

SPLP Metals

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INORGANIC ANALYSIS DATA PACKAGE

Client: Klohn Crippen Berger
Project No.: M09441A16.03.02.100
Project Name: SPLP - Modified
Matrix: SPLP

Service Request: K1409440
Date Collected:
Date Received: 09/04/14
Units: mg/L
Basis: NA

Sample Name: GILA 07
Lab Code: K1409440-001

Analyte	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Aluminum	6010C	0.02	1.0	09/16/14	09/17/14	0.72		
Antimony	6020A	0.00005	1.0	09/16/14	09/30/14	0.00023		
Arsenic	6020A	0.0005	1.0	09/16/14	09/30/14	0.0066		
Barium	6020A	0.00005	1.0	09/16/14	09/30/14	0.01139		
Beryllium	6020A	0.00002	1.0	09/16/14	09/30/14	0.00004		
Bismuth	6020A	0.0001	1.0	09/16/14	09/30/14	0.0001	U	
Boron	6010C	0.50	1.0	09/16/14	09/17/14	0.50	U	
Cadmium	6020A	0.00010	1.0	09/16/14	09/30/14	0.00010	U	
Calcium	6010C	1.00	1.0	09/16/14	09/17/14	9.83		
Cerium	6020A	0.0005	1.0	10/01/14	10/01/14	0.0024		
Cesium	6020A	0.0001	1.0	09/16/14	09/30/14	0.0001	U	
Chromium	6020A	0.0002	1.0	09/16/14	09/30/14	0.0009		
Cobalt	6020A	0.00002	1.0	09/16/14	09/30/14	0.00057		
Copper	6020A	0.0001	1.0	09/16/14	09/30/14	0.0022		
Gallium	6020A	0.0001	1.0	09/16/14	09/30/14	0.0004		
Germanium	6020A	0.0010	1.0	09/16/14	09/30/14	0.0010	U	
Gold	6020A	0.0001	1.0	09/16/14	09/30/14	0.0001	U	
Indium	6020A	0.0001	1.0	09/16/14	09/30/14	0.0001	U	
Iron	6010C	0.02	1.0	09/16/14	09/17/14	1.15		
Lanthanum	6020A	0.0005	1.0	10/01/14	10/01/14	0.0013		
Lead	6020A	0.00002	1.0	09/16/14	09/30/14	0.00065		
Lithium	6010C	0.010	1.0	09/16/14	09/17/14	0.010	U	
Magnesium	6010C	0.10	1.0	09/16/14	09/17/14	1.40		
Manganese	6020A	0.00005	1.0	09/16/14	09/30/14	0.02088		
Molybdenum	6020A	0.00005	1.0	09/16/14	09/30/14	0.00200		
Nickel	6020A	0.0002	1.0	09/16/14	09/30/14	0.0009		
Niobium	6020A	0.0001	1.0	09/16/14	09/30/14	0.0001	U	
Potassium	6010C	2.0	1.0	09/16/14	09/17/14	2.0	U	
Rubidium	6020A	0.0001	1.0	09/16/14	09/30/14	0.0007		
Selenium	6020A	0.001	1.0	09/16/14	09/30/14	0.001	U	

SPLP Metals

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INORGANIC ANALYSIS DATA PACKAGE

Client:	Klohn Crippen Berger	**Service Request:**	K1409440
Project No.:	M09441A16.03.02.100	**Date Collected:**	
Project Name:	SPLP - Modified	**Date Received:**	09/04/14
Matrix:	SPLP	**Units:**	mg/L
		Basis:	NA

Sample Name: GILA 07 **Lab Code:** K1409440-001

Analyte	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Silver	6020A	0.00010	1.0	09/16/14	09/30/14	0.00010	U	
Sodium	6010C	0.20	1.0	09/16/14	09/17/14	10		X
Strontium	6010C	0.01	1.0	09/16/14	09/17/14	0.03		
Tantalum	6020A	0.0005	1.0	10/01/14	10/01/14	0.0005	U	
Thallium	6020A	0.00002	1.0	09/16/14	09/30/14	0.00002	U	
Thorium	6020A	0.0050	1.0	10/01/14	10/01/14	0.0050	U	
Tin	6020A	0.00005	1.0	09/16/14	09/30/14	0.00005	U	
Titanium	6020A	0.0010	1.0	09/16/14	09/30/14	0.0261		
Tungsten	6020A	0.0001	1.0	09/16/14	09/30/14	0.0005		
Uranium	6020A	0.00002	1.0	09/16/14	09/30/14	0.00012		
Vanadium	6020A	0.001	1.0	09/16/14	09/30/14	0.021		
Yttrium	6020A	0.0005	1.0	10/01/14	10/01/14	0.0012		
Zinc	6020A	0.0005	1.0	09/16/14	09/30/14	0.0018		
Zirconium	6020A	0.0010	1.0	09/16/14	09/30/14	0.0010	U	

Comments:

SPLP Metals

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INORGANIC ANALYSIS DATA PACKAGE

Client: Klohn Crippen Berger
Project No.: M09441A16.03.02.100
Project Name: SPLP - Modified
Matrix: SPLP

Service Request: K1409440
Date Collected:
Date Received: 09/04/14
Units: mg/L
Basis: NA

Sample Name: GILA 08
Lab Code: K1409440-002

Analyte	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Aluminum	6010C	0.02	1.0	09/16/14	09/17/14	0.47		
Antimony	6020A	0.00005	1.0	09/16/14	09/30/14	0.00056		
Arsenic	6020A	0.0005	1.0	09/16/14	09/30/14	0.0114		
Barium	6020A	0.00005	1.0	09/16/14	09/30/14	0.00720		
Beryllium	6020A	0.00002	1.0	09/16/14	09/30/14	0.00002	U	
Bismuth	6020A	0.0001	1.0	09/16/14	09/30/14	0.0001	U	
Boron	6010C	0.50	1.0	09/16/14	09/17/14	0.50	U	
Cadmium	6020A	0.00010	1.0	09/16/14	09/30/14	0.00010	U	
Calcium	6010C	1.00	1.0	09/16/14	09/17/14	7.29		
Cerium	6020A	0.0005	1.0	10/01/14	10/01/14	0.0014		
Cesium	6020A	0.0001	1.0	09/16/14	09/30/14	0.0001	U	
Chromium	6020A	0.0002	1.0	09/16/14	09/30/14	0.0009		
Cobalt	6020A	0.00002	1.0	09/16/14	09/30/14	0.00054		
Copper	6020A	0.0001	1.0	09/16/14	09/30/14	0.0050		
Gallium	6020A	0.0001	1.0	09/16/14	09/30/14	0.0003		
Germanium	6020A	0.0010	1.0	09/16/14	09/30/14	0.0010	U	
Gold	6020A	0.0001	1.0	09/16/14	09/30/14	0.0001	U	
Indium	6020A	0.0001	1.0	09/16/14	09/30/14	0.0001	U	
Iron	6010C	0.02	1.0	09/16/14	09/17/14	0.68		
Lanthanum	6020A	0.0005	1.0	10/01/14	10/01/14	0.0007		
Lead	6020A	0.00002	1.0	09/16/14	09/30/14	0.00051		
Lithium	6010C	0.010	1.0	09/16/14	09/17/14	0.010	U	
Magnesium	6010C	0.10	1.0	09/16/14	09/17/14	1.97		
Manganese	6020A	0.00005	1.0	09/16/14	09/30/14	0.02115		
Molybdenum	6020A	0.00005	1.0	09/16/14	09/30/14	0.00118		
Nickel	6020A	0.0002	1.0	09/16/14	09/30/14	0.0016		
Niobium	6020A	0.0001	1.0	09/16/14	09/30/14	0.0002		
Potassium	6010C	2.0	1.0	09/16/14	09/17/14	2.0	U	
Rubidium	6020A	0.0001	1.0	09/16/14	09/30/14	0.0005		
Selenium	6020A	0.001	1.0	09/16/14	09/30/14	0.001	U	

SPLP Metals

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INORGANIC ANALYSIS DATA PACKAGE

Client:	Klohn Crippen Berger	**Service Request:**	K1409440
Project No.:	M09441A16.03.02.100	**Date Collected:**	
Project Name:	SPLP - Modified	**Date Received:**	09/04/14
Matrix:	SPLP	**Units:**	mg/L
		Basis:	NA

Sample Name: GILA 08 **Lab Code:** K1409440-002

Analyte	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Silver	6020A	0.00010	1.0	09/16/14	09/30/14	0.00010	U	
Sodium	6010C	0.20	1.0	09/16/14	09/17/14	35		X
Strontium	6010C	0.01	1.0	09/16/14	09/17/14	0.01		
Tantalum	6020A	0.0005	1.0	10/01/14	10/01/14	0.0005	U	
Thallium	6020A	0.00002	1.0	09/16/14	09/30/14	0.00002	U	
Thorium	6020A	0.0050	1.0	10/01/14	10/01/14	0.0050	U	
Tin	6020A	0.00005	1.0	09/16/14	09/30/14	0.00006		
Titanium	6020A	0.0010	1.0	09/16/14	09/30/14	0.0126		
Tungsten	6020A	0.0001	1.0	09/16/14	09/30/14	0.0011		
Uranium	6020A	0.00002	1.0	09/16/14	09/30/14	0.00054		
Vanadium	6020A	0.001	1.0	09/16/14	09/30/14	0.036		
Yttrium	6020A	0.0005	1.0	10/01/14	10/01/14	0.0005	U	
Zinc	6020A	0.0005	1.0	09/16/14	09/30/14	0.0017		
Zirconium	6020A	0.0010	1.0	09/16/14	09/30/14	0.0010	U	

Comments:

SPLP Metals

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INORGANIC ANALYSIS DATA PACKAGE

Client: Klohn Crippen Berger
Project No.: M09441A16.03.02.100
Project Name: SPLP - Modified
Matrix: SPLP

Service Request: K1409440
Date Collected:
Date Received: 09/04/14
Units: mg/L
Basis: NA

Sample Name: GILA 09
Lab Code: K1409440-003

Analyte	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Aluminum	6010C	0.02	1.0	09/16/14	09/17/14	0.07		
Antimony	6020A	0.00005	1.0	09/16/14	09/30/14	0.00024		
Arsenic	6020A	0.0005	1.0	09/16/14	09/30/14	0.0035		
Barium	6020A	0.00005	1.0	09/16/14	09/30/14	0.00836		
Beryllium	6020A	0.00002	1.0	09/16/14	09/30/14	0.00002	U	
Bismuth	6020A	0.0001	1.0	09/16/14	09/30/14	0.0001	U	
Boron	6010C	0.50	1.0	09/16/14	09/17/14	0.50	U	
Cadmium	6020A	0.00010	1.0	09/16/14	09/30/14	0.00010	U	
Calcium	6010C	1.00	1.0	09/16/14	09/17/14	26.5		
Cerium	6020A	0.0005	1.0	10/01/14	10/01/14	0.0006		
Cesium	6020A	0.0001	1.0	09/16/14	09/30/14	0.0001	U	
Chromium	6020A	0.0002	1.0	09/16/14	09/30/14	0.0004		
Cobalt	6020A	0.00002	1.0	09/16/14	09/30/14	0.00014		
Copper	6020A	0.0001	1.0	09/16/14	09/30/14	0.0033		
Gallium	6020A	0.0001	1.0	09/16/14	09/30/14	0.0001	U	
Germanium	6020A	0.0010	1.0	09/16/14	09/30/14	0.0010	U	
Gold	6020A	0.0001	1.0	09/16/14	09/30/14	0.0001	U	
Indium	6020A	0.0001	1.0	09/16/14	09/30/14	0.0001	U	
Iron	6010C	0.02	1.0	09/16/14	09/17/14	0.07		
Lanthanum	6020A	0.0005	1.0	10/01/14	10/01/14	0.0005	U	
Lead	6020A	0.00002	1.0	09/16/14	09/30/14	0.00013		
Lithium	6010C	0.010	1.0	09/16/14	09/17/14	0.010	U	
Magnesium	6010C	0.10	1.0	09/16/14	09/17/14	5.76		
Manganese	6020A	0.00005	1.0	09/16/14	09/30/14	0.00355		
Molybdenum	6020A	0.00005	1.0	09/16/14	09/30/14	0.00207		
Nickel	6020A	0.0002	1.0	09/16/14	09/30/14	0.0007		
Niobium	6020A	0.0001	1.0	09/16/14	09/30/14	0.0001	U	
Potassium	6010C	2.0	1.0	09/16/14	09/17/14	2.0	U	
Rubidium	6020A	0.0001	1.0	09/16/14	09/30/14	0.0007		
Selenium	6020A	0.001	1.0	09/16/14	09/30/14	0.001	U	

SPLP Metals

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INORGANIC ANALYSIS DATA PACKAGE

Client:	Klohn Crippen Berger	**Service Request:**	K1409440
Project No.:	M09441A16.03.02.100	**Date Collected:**	
Project Name:	SPLP - Modified	**Date Received:**	09/04/14
Matrix:	SPLP	**Units:**	mg/L
		Basis:	NA

Sample Name: GILA 09 **Lab Code:** K1409440-003

Analyte	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Silver	6020A	0.00010	1.0	09/16/14	09/30/14	0.00010	U	
Sodium	6010C	0.20	1.0	09/16/14	09/17/14	41		X
Strontium	6010C	0.01	1.0	09/16/14	09/17/14	0.03		
Tantalum	6020A	0.0005	1.0	10/01/14	10/01/14	0.0005	U	
Thallium	6020A	0.00002	1.0	09/16/14	09/30/14	0.00002	U	
Thorium	6020A	0.0050	1.0	10/01/14	10/01/14	0.0050	U	
Tin	6020A	0.00005	1.0	09/16/14	09/30/14	0.00005	U	
Titanium	6020A	0.0010	1.0	09/16/14	09/30/14	0.0026		
Tungsten	6020A	0.0001	1.0	09/16/14	09/30/14	0.0005		
Uranium	6020A	0.00002	1.0	09/16/14	09/30/14	0.00104		
Vanadium	6020A	0.001	1.0	09/16/14	09/30/14	0.012		
Yttrium	6020A	0.0005	1.0	10/01/14	10/01/14	0.0005	U	
Zinc	6020A	0.0005	1.0	09/16/14	09/30/14	0.0011		
Zirconium	6020A	0.0010	1.0	09/16/14	09/30/14	0.0010	U	

Comments:

SPLP Metals

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INORGANIC ANALYSIS DATA PACKAGE

Client: Klohn Crippen Berger
Project No.: M09441A16.03.02.100
Project Name: SPLP - Modified
Matrix: SPLP

Service Request: K1409440
Date Collected:
Date Received: 09/04/14
Units: mg/L
Basis: NA

Sample Name: GILA 10
Lab Code: K1409440-004

Analyte	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Aluminum	6010C	0.0	1.0	09/16/14	09/17/14	5.0		
Antimony	6020A	0.00005	1.0	09/16/14	09/30/14	0.00020		
Arsenic	6020A	0.0005	1.0	09/16/14	09/30/14	0.0098		
Barium	6020A	0.00005	1.0	09/16/14	09/30/14	0.03500		
Beryllium	6020A	0.00002	1.0	09/16/14	09/30/14	0.00028		
Bismuth	6020A	0.0001	1.0	09/16/14	09/30/14	0.0001		
Boron	6010C	0.50	1.0	09/16/14	09/17/14	0.50	U	
Cadmium	6020A	0.00010	1.0	09/16/14	09/30/14	0.00010	U	
Calcium	6010C	1.00	1.0	09/16/14	09/17/14	13.1		
Cerium	6020A	0.0005	1.0	10/01/14	10/01/14	0.0332		
Cesium	6020A	0.0001	1.0	09/16/14	09/30/14	0.0008		
Chromium	6020A	0.0002	1.0	09/16/14	09/30/14	0.0083		
Cobalt	6020A	0.00002	1.0	09/16/14	09/30/14	0.00245		
Copper	6020A	0.0001	1.0	09/16/14	09/30/14	0.0115		
Gallium	6020A	0.0001	1.0	09/16/14	09/30/14	0.0049		
Germanium	6020A	0.0010	1.0	09/16/14	09/30/14	0.0010	U	
Gold	6020A	0.0001	1.0	09/16/14	09/30/14	0.0001	U	
Indium	6020A	0.0001	1.0	09/16/14	09/30/14	0.0001	U	
Iron	6010C	0.02	1.0	09/16/14	09/17/14	6.91		
Lanthanum	6020A	0.0005	1.0	10/01/14	10/01/14	0.0180		
Lead	6020A	0.00002	1.0	09/16/14	09/30/14	0.00440		
Lithium	6010C	0.010	1.0	09/16/14	09/17/14	0.013		
Magnesium	6010C	0.10	1.0	09/16/14	09/17/14	4.09		
Manganese	6020A	0.00005	1.0	09/16/14	09/30/14	0.11828		
Molybdenum	6020A	0.00005	1.0	09/16/14	09/30/14	0.00066		
Nickel	6020A	0.0002	1.0	09/16/14	09/30/14	0.0051		
Niobium	6020A	0.0001	1.0	09/16/14	09/30/14	0.0002		
Potassium	6010C	2.0	1.0	09/16/14	09/17/14	2.0	U	
Rubidium	6020A	0.0001	1.0	09/16/14	09/30/14	0.0045		
Selenium	6020A	0.001	1.0	09/16/14	09/30/14	0.003		

SPLP Metals

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INORGANIC ANALYSIS DATA PACKAGE

Client: Klohn Crippen Berger
Project No.: M09441A16.03.02.100
Project Name: SPLP - Modified
Matrix: SPLP

Service Request: K1409440
Date Collected:
Date Received: 09/04/14
Units: mg/L
Basis: NA

Sample Name: GILA 10
Lab Code: K1409440-004

Analyte	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Silver	6020A	0.00010	1.0	09/16/14	09/30/14	0.00010	U	
Sodium	6010C	0.20	1.0	09/16/14	09/17/14	15		X
Strontium	6010C	0.01	1.0	09/16/14	09/17/14	0.05		
Tantalum	6020A	0.0005	1.0	10/01/14	10/01/14	0.0005	U	
Thallium	6020A	0.00002	1.0	09/16/14	09/30/14	0.00002		
Thorium	6020A	0.0050	1.0	10/01/14	10/01/14	0.0050	U	
Tin	6020A	0.00005	1.0	09/16/14	09/30/14	0.00019		
Titanium	6020A	0.0010	1.0	09/16/14	09/30/14	0.0920		
Tungsten	6020A	0.0001	1.0	09/16/14	09/30/14	0.0008		
Uranium	6020A	0.00002	1.0	09/16/14	09/30/14	0.00050		
Vanadium	6020A	0.001	1.0	09/16/14	09/30/14	0.050		
Yttrium	6020A	0.0005	1.0	10/01/14	10/01/14	0.0066		
Zinc	6020A	0.0005	1.0	09/16/14	09/30/14	0.0099		
Zirconium	6020A	0.0010	1.0	09/16/14	09/30/14	0.0025		

Comments:

SPLP Metals

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INORGANIC ANALYSIS DATA PACKAGE

Client: Klohn Crippen Berger
Project No.: M09441A16.03.02.100
Project Name: SPLP - Modified
Matrix: SPLP

Service Request: K1409440
Date Collected:
Date Received: 09/04/14
Units: mg/L
Basis: NA

Sample Name: GILA 11
Lab Code: K1409440-005

Analyte	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Aluminum	6010C	0.0	1.0	09/16/14	09/17/14	18.2		
Antimony	6020A	0.00005	1.0	09/16/14	09/30/14	0.00037		
Arsenic	6020A	0.0005	1.0	09/16/14	09/30/14	0.0135		
Barium	6020A	0.00005	1.0	09/16/14	09/30/14	0.10689		
Beryllium	6020A	0.00002	1.0	09/16/14	09/30/14	0.00064		
Bismuth	6020A	0.0001	1.0	09/16/14	09/30/14	0.0002		
Boron	6010C	0.50	1.0	09/16/14	09/17/14	0.50	U	
Cadmium	6020A	0.00010	1.0	09/16/14	09/30/14	0.00011		
Calcium	6010C	1.00	1.0	09/16/14	09/17/14	12.8		
Cerium	6020A	0.0005	1.0	10/01/14	10/01/14	0.0420		
Cesium	6020A	0.0001	1.0	09/16/14	09/30/14	0.0023		
Chromium	6020A	0.0002	1.0	09/16/14	09/30/14	0.0091		
Cobalt	6020A	0.00002	1.0	09/16/14	09/30/14	0.00985		
Copper	6020A	0.0001	1.0	09/16/14	09/30/14	0.0331		
Gallium	6020A	0.0001	1.0	09/16/14	09/30/14	0.0105		
Germanium	6020A	0.0010	1.0	09/16/14	09/30/14	0.0010	U	
Gold	6020A	0.0001	1.0	09/16/14	09/30/14	0.0001	U	
Indium	6020A	0.0001	1.0	09/16/14	09/30/14	0.0001	U	
Iron	6010C	0.02	1.0	09/16/14	09/17/14	18.2		
Lanthanum	6020A	0.0005	1.0	10/01/14	10/01/14	0.0174		
Lead	6020A	0.00002	1.0	09/16/14	09/30/14	0.01153		
Lithium	6010C	0.010	1.0	09/16/14	09/17/14	0.020		
Magnesium	6010C	0.10	1.0	09/16/14	09/17/14	9.70		
Manganese	6020A	0.00005	1.0	09/16/14	09/30/14	0.35975		
Molybdenum	6020A	0.00005	1.0	09/16/14	09/30/14	0.00118		
Nickel	6020A	0.0002	1.0	09/16/14	09/30/14	0.0167		
Niobium	6020A	0.0001	1.0	09/16/14	09/30/14	0.0009		
Potassium	6010C	2.0	1.0	09/16/14	09/17/14	3.5		
Rubidium	6020A	0.0001	1.0	09/16/14	09/30/14	0.0210		
Selenium	6020A	0.001	1.0	09/16/14	09/30/14	0.002		

SPLP Metals

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INORGANIC ANALYSIS DATA PACKAGE

Client:	Klohn Crippen Berger	**Service Request:**	K1409440
Project No.:	M09441A16.03.02.100	**Date Collected:**	
Project Name:	SPLP - Modified	**Date Received:**	09/04/14
Matrix:	SPLP	**Units:**	mg/L
		Basis:	NA

Sample Name: **GILA 11** **Lab Code:** **K1409440-005**

Analyte	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Silver	6020A	0.00010	1.0	09/16/14	09/30/14	0.00010	U	
Sodium	6010C	0.20	1.0	09/16/14	09/17/14	25		X
Strontium	6010C	0.01	1.0	09/16/14	09/17/14	0.04		
Tantalum	6020A	0.0005	1.0	10/01/14	10/01/14	0.0005	U	
Thallium	6020A	0.00002	1.0	09/16/14	09/30/14	0.00005		
Thorium	6020A	0.0050	1.0	10/01/14	10/01/14	0.0057		
Tin	6020A	0.00005	1.0	09/16/14	09/30/14	0.00082		
Titanium	6020A	0.0010	1.0	09/16/14	09/30/14	0.3476		
Tungsten	6020A	0.0001	1.0	09/16/14	09/30/14	0.0003		
Uranium	6020A	0.00002	1.0	09/16/14	09/30/14	0.00084		
Vanadium	6020A	0.001	1.0	09/16/14	09/30/14	0.034		
Yttrium	6020A	0.0005	1.0	10/01/14	10/01/14	0.0110		
Zinc	6020A	0.0005	1.0	09/16/14	09/30/14	0.0381		
Zirconium	6020A	0.0010	1.0	09/16/14	09/30/14	0.0154		

Comments:

SPLP Metals

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INORGANIC ANALYSIS DATA PACKAGE

Client: Klohn Crippen Berger
Project No.: M09441A16.03.02.100
Project Name: SPLP - Modified
Matrix: SPLP

Service Request: K1409440
Date Collected:
Date Received: 09/04/14
Units: mg/L
Basis: NA

Sample Name: GILA 15
Lab Code: K1409440-006

Analyte	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Aluminum	6010C	0.0	1.0	09/16/14	09/17/14	16.9		
Antimony	6020A	0.00005	1.0	09/16/14	09/30/14	0.00032		
Arsenic	6020A	0.0005	1.0	09/16/14	09/30/14	0.0130		
Barium	6020A	0.00005	1.0	09/16/14	09/30/14	0.06528		
Beryllium	6020A	0.00002	1.0	09/16/14	09/30/14	0.00065		
Bismuth	6020A	0.0001	1.0	09/16/14	09/30/14	0.0001	U	
Boron	6010C	0.50	1.0	09/16/14	09/17/14	0.50	U	
Cadmium	6020A	0.00010	1.0	09/16/14	09/30/14	0.00010	U	
Calcium	6010C	1.00	1.0	09/16/14	09/17/14	18.6		
Cerium	6020A	0.0005	1.0	10/01/14	10/01/14	0.0177		
Cesium	6020A	0.0001	1.0	09/16/14	09/30/14	0.0008		
Chromium	6020A	0.0002	1.0	09/16/14	09/30/14	0.0184		
Cobalt	6020A	0.00002	1.0	09/16/14	09/30/14	0.01175		
Copper	6020A	0.0001	1.0	09/16/14	09/30/14	0.0322		
Gallium	6020A	0.0001	1.0	09/16/14	09/30/14	0.0089		
Germanium	6020A	0.0010	1.0	09/16/14	09/30/14	0.0010	U	
Gold	6020A	0.0001	1.0	09/16/14	09/30/14	0.0001	U	
Indium	6020A	0.0001	1.0	09/16/14	09/30/14	0.0001	U	
Iron	6010C	0.02	1.0	09/16/14	09/17/14	26.2		
Lanthanum	6020A	0.0005	1.0	10/01/14	10/01/14	0.0127		
Lead	6020A	0.00002	1.0	09/16/14	09/30/14	0.00726		
Lithium	6010C	0.010	1.0	09/16/14	09/17/14	0.016		
Magnesium	6010C	0.10	1.0	09/16/14	09/17/14	8.38		
Manganese	6020A	0.00005	1.0	09/16/14	09/30/14	0.30664		
Molybdenum	6020A	0.00005	1.0	09/16/14	09/30/14	0.00100		
Nickel	6020A	0.0002	1.0	09/16/14	09/30/14	0.0190		
Niobium	6020A	0.0001	1.0	09/16/14	09/30/14	0.0003		
Potassium	6010C	2.0	1.0	09/16/14	09/17/14	3.0		
Rubidium	6020A	0.0001	1.0	09/16/14	09/30/14	0.0097		
Selenium	6020A	0.001	1.0	09/16/14	09/30/14	0.003		

SPLP Metals

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INORGANIC ANALYSIS DATA PACKAGE

Client:	Klohn Crippen Berger	**Service Request:**	K1409440
Project No.:	M09441A16.03.02.100	**Date Collected:**	
Project Name:	SPLP - Modified	**Date Received:**	09/04/14
Matrix:	SPLP	**Units:**	mg/L
		Basis:	NA

Sample Name: **GILA 15** **Lab Code:** **K1409440-006**

Analyte	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Silver	6020A	0.00010	1.0	09/16/14	09/30/14	0.00010	U	
Sodium	6010C	0.20	1.0	09/16/14	09/17/14	36		X
Strontium	6010C	0.01	1.0	09/16/14	09/17/14	0.09		
Tantalum	6020A	0.0005	1.0	10/01/14	10/01/14	0.0005	U	
Thallium	6020A	0.00002	1.0	09/16/14	09/30/14	0.00003		
Thorium	6020A	0.0050	1.0	10/01/14	10/01/14	0.0050	U	
Tin	6020A	0.00005	1.0	09/16/14	09/30/14	0.00041		
Titanium	6020A	0.0010	1.0	09/16/14	09/30/14	0.2905		
Tungsten	6020A	0.0001	1.0	09/16/14	09/30/14	0.0010		
Uranium	6020A	0.00002	1.0	09/16/14	09/30/14	0.00037		
Vanadium	6020A	0.001	1.0	09/16/14	09/30/14	0.068		
Yttrium	6020A	0.0005	1.0	10/01/14	10/01/14	0.0111		
Zinc	6020A	0.0005	1.0	09/16/14	09/30/14	0.0275		
Zirconium	6020A	0.0010	1.0	09/16/14	09/30/14	0.0084		

Comments:

SPLP Metals

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INORGANIC ANALYSIS DATA PACKAGE

Client: Klohn Crippen Berger
Project No.: M09441A16.03.02.100
Project Name: SPLP - Modified
Matrix: SPLP

Service Request: K1409440
Date Collected:
Date Received: 09/04/14
Units: mg/L
Basis: NA

Sample Name: GILA 20
Lab Code: K1409440-007

Analyte	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Aluminum	6010C	0.0	1.0	09/16/14	09/17/14	9.8		
Antimony	6020A	0.00005	1.0	09/16/14	09/30/14	0.00050		
Arsenic	6020A	0.0005	1.0	09/16/14	09/30/14	0.0094		
Barium	6020A	0.00005	1.0	09/16/14	09/30/14	0.06342		
Beryllium	6020A	0.00002	1.0	09/16/14	09/30/14	0.00055		
Bismuth	6020A	0.0001	1.0	09/16/14	09/30/14	0.0003		
Boron	6010C	0.50	1.0	09/16/14	09/17/14	0.50	U	
Cadmium	6020A	0.00010	1.0	09/16/14	09/30/14	0.00010	U	
Calcium	6010C	1.00	1.0	09/16/14	09/17/14	16.3		
Cerium	6020A	0.0005	1.0	10/01/14	10/01/14	0.0675		
Cesium	6020A	0.0001	1.0	09/16/14	09/30/14	0.0009		
Chromium	6020A	0.0002	1.0	09/16/14	09/30/14	0.0109		
Cobalt	6020A	0.00002	1.0	09/16/14	09/30/14	0.00646		
Copper	6020A	0.0001	1.0	09/16/14	09/30/14	0.0253		
Gallium	6020A	0.0001	1.0	09/16/14	09/30/14	0.0088		
Germanium	6020A	0.0010	1.0	09/16/14	09/30/14	0.0010	U	
Gold	6020A	0.0001	1.0	09/16/14	09/30/14	0.0001	U	
Indium	6020A	0.0001	1.0	09/16/14	09/30/14	0.0001	U	
Iron	6010C	0.02	1.0	09/16/14	09/17/14	11.2		
Lanthanum	6020A	0.0005	1.0	10/01/14	10/01/14	0.0316		
Lead	6020A	0.00002	1.0	09/16/14	09/30/14	0.01132		
Lithium	6010C	0.010	1.0	09/16/14	09/17/14	0.015		
Magnesium	6010C	0.10	1.0	09/16/14	09/17/14	5.50		
Manganese	6020A	0.00005	1.0	09/16/14	09/30/14	0.32266		
Molybdenum	6020A	0.00005	1.0	09/16/14	09/30/14	0.00201		
Nickel	6020A	0.0002	1.0	09/16/14	09/30/14	0.0123		
Niobium	6020A	0.0001	1.0	09/16/14	09/30/14	0.0004		
Potassium	6010C	2.0	1.0	09/16/14	09/17/14	2.0	U	
Rubidium	6020A	0.0001	1.0	09/16/14	09/30/14	0.0052		
Selenium	6020A	0.001	1.0	09/16/14	09/30/14	0.005		

SPLP Metals

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INORGANIC ANALYSIS DATA PACKAGE

Client:	Klohn Crippen Berger	**Service Request:**	K1409440
Project No.:	M09441A16.03.02.100	**Date Collected:**	
Project Name:	SPLP - Modified	**Date Received:**	09/04/14
Matrix:	SPLP	**Units:**	mg/L
		Basis:	NA

Sample Name: GILA 20 **Lab Code:** K1409440-007

Analyte	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Silver	6020A	0.00010	1.0	09/16/14	09/30/14	0.00010	U	
Sodium	6010C	0.20	1.0	09/16/14	09/17/14	11		X
Strontium	6010C	0.01	1.0	09/16/14	09/17/14	0.07		
Tantalum	6020A	0.0005	1.0	10/01/14	10/01/14	0.0005	U	
Thallium	6020A	0.00002	1.0	09/16/14	09/30/14	0.00002		
Thorium	6020A	0.0050	1.0	10/01/14	10/01/14	0.0050		
Tin	6020A	0.00005	1.0	09/16/14	09/30/14	0.00027		
Titanium	6020A	0.0010	1.0	09/16/14	09/30/14	0.1605		
Tungsten	6020A	0.0001	1.0	09/16/14	09/30/14	0.0001		
Uranium	6020A	0.00002	1.0	09/16/14	09/30/14	0.00029		
Vanadium	6020A	0.001	1.0	09/16/14	09/30/14	0.034		
Yttrium	6020A	0.0005	1.0	10/01/14	10/01/14	0.0206		
Zinc	6020A	0.0005	1.0	09/16/14	09/30/14	0.0168		
Zirconium	6020A	0.0010	1.0	09/16/14	09/30/14	0.0047		

Comments:

SPLP Metals

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INORGANIC ANALYSIS DATA PACKAGE

Client: Klohn Crippen Berger
Project No.: M09441A16.03.02.100
Project Name: SPLP - Modified
Matrix: SPLP

Service Request: K1409440
Date Collected:
Date Received: 09/11/14
Units: mg/L
Basis: NA

Sample Name: GILA 22
Lab Code: K1409440-008

Analyte	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Aluminum	6010C	0.02	1.0	09/16/14	09/17/14	0.04		
Antimony	6020A	0.00005	1.0	09/16/14	09/30/14	0.00061		
Arsenic	6020A	0.0005	1.0	09/16/14	09/30/14	0.0122		
Barium	6020A	0.00005	1.0	09/16/14	09/30/14	0.01082		
Beryllium	6020A	0.00002	1.0	09/16/14	09/30/14	0.00002	U	
Bismuth	6020A	0.0001	1.0	09/16/14	09/30/14	0.0001	U	
Boron	6010C	0.50	1.0	09/16/14	09/17/14	0.50	U	
Cadmium	6020A	0.00010	1.0	09/16/14	09/30/14	0.00010	U	
Calcium	6010C	1.00	1.0	09/16/14	09/17/14	51.9		
Cerium	6020A	0.0005	1.0	10/01/14	10/01/14	0.0005	U	
Cesium	6020A	0.0001	1.0	09/16/14	09/30/14	0.0001	U	
Chromium	6020A	0.0002	1.0	09/16/14	09/30/14	0.0003		
Cobalt	6020A	0.00002	1.0	09/16/14	09/30/14	0.00034		
Copper	6020A	0.0001	1.0	09/16/14	09/30/14	0.0042		
Gallium	6020A	0.0001	1.0	09/16/14	09/30/14	0.0001	U	
Germanium	6020A	0.0010	1.0	09/16/14	09/30/14	0.0010	U	
Gold	6020A	0.0001	1.0	09/16/14	09/30/14	0.0001	U	
Indium	6020A	0.0001	1.0	09/16/14	09/30/14	0.0001	U	
Iron	6010C	0.02	1.0	09/16/14	09/17/14	0.02	U	
Lanthanum	6020A	0.0005	1.0	10/01/14	10/01/14	0.0005	U	
Lead	6020A	0.00002	1.0	09/16/14	09/30/14	0.00005		
Lithium	6010C	0.010	1.0	09/16/14	09/17/14	0.018		
Magnesium	6010C	0.10	1.0	09/16/14	09/17/14	11.3		
Manganese	6020A	0.00005	1.0	09/16/14	09/30/14	0.00140		
Molybdenum	6020A	0.00005	1.0	09/16/14	09/30/14	0.00419		
Nickel	6020A	0.0002	1.0	09/16/14	09/30/14	0.0006		
Niobium	6020A	0.0001	1.0	09/16/14	09/30/14	0.0001	U	
Potassium	6010C	2.0	1.0	09/16/14	09/17/14	4.3		
Rubidium	6020A	0.0001	1.0	09/16/14	09/30/14	0.0018		
Selenium	6020A	0.001	1.0	09/16/14	09/30/14	0.002		

SPLP Metals

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INORGANIC ANALYSIS DATA PACKAGE

Client:	Klohn Crippen Berger	**Service Request:**	K1409440
Project No.:	M09441A16.03.02.100	**Date Collected:**	
Project Name:	SPLP - Modified	**Date Received:**	09/11/14
Matrix:	SPLP	**Units:**	mg/L
		Basis:	NA

Sample Name: **GILA 22** **Lab Code:** **K1409440-008**

Analyte	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Silver	6020A	0.00010	1.0	09/16/14	09/30/14	0.00010	U	
Sodium	6010C	0.20	1.0	09/16/14	09/17/14	58		X
Strontium	6010C	0.01	1.0	09/16/14	09/17/14	0.15		
Tantalum	6020A	0.0005	1.0	10/01/14	10/01/14	0.0005	U	
Thallium	6020A	0.00002	1.0	09/16/14	09/30/14	0.00002	U	
Thorium	6020A	0.0050	1.0	10/01/14	10/01/14	0.0050	U	
Tin	6020A	0.00005	1.0	09/16/14	09/30/14	0.00005	U	
Titanium	6020A	0.0010	1.0	09/16/14	09/30/14	0.0016		
Tungsten	6020A	0.0001	1.0	09/16/14	09/30/14	0.0006		
Uranium	6020A	0.00002	1.0	09/16/14	09/30/14	0.00115		
Vanadium	6020A	0.001	1.0	09/16/14	09/30/14	0.015		
Yttrium	6020A	0.0005	1.0	10/01/14	10/01/14	0.0005	U	
Zinc	6020A	0.0005	1.0	09/16/14	09/30/14	0.0007		
Zirconium	6020A	0.0010	1.0	09/16/14	09/30/14	0.0010	U	

Comments:

SPLP Metals

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INORGANIC ANALYSIS DATA PACKAGE

Client: Klohn Crippen Berger
Project No.: M09441A16.03.02.100
Project Name: SPLP - Modified
Matrix: SPLP

Service Request: K1409440
Date Collected:
Date Received: 09/04/14
Units: mg/L
Basis: NA

Sample Name: GILA 24
Lab Code: K1409440-009

Analyte	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Aluminum	6010C	0.02	1.0	09/16/14	09/17/14	1.85		
Antimony	6020A	0.00005	1.0	09/16/14	09/30/14	0.00049		
Arsenic	6020A	0.0005	1.0	09/16/14	09/30/14	0.0100		
Barium	6020A	0.00005	1.0	09/16/14	09/30/14	0.01905		
Beryllium	6020A	0.00002	1.0	09/16/14	09/30/14	0.00007		
Bismuth	6020A	0.0001	1.0	09/16/14	09/30/14	0.0001	U	
Boron	6010C	0.50	1.0	09/16/14	09/17/14	0.50	U	
Cadmium	6020A	0.00010	1.0	09/16/14	09/30/14	0.00010	U	
Calcium	6010C	1.00	1.0	09/16/14	09/17/14	15.0		
Cerium	6020A	0.0005	1.0	10/01/14	10/01/14	0.0019		
Cesium	6020A	0.0001	1.0	09/16/14	09/30/14	0.0002		
Chromium	6020A	0.0002	1.0	09/16/14	09/30/14	0.0012		
Cobalt	6020A	0.00002	1.0	09/16/14	09/30/14	0.00090		
Copper	6020A	0.0001	1.0	09/16/14	09/30/14	0.0101		
Gallium	6020A	0.0001	1.0	09/16/14	09/30/14	0.0009		
Germanium	6020A	0.0010	1.0	09/16/14	09/30/14	0.0010	U	
Gold	6020A	0.0001	1.0	09/16/14	09/30/14	0.0001	U	
Indium	6020A	0.0001	1.0	09/16/14	09/30/14	0.0001	U	
Iron	6010C	0.02	1.0	09/16/14	09/17/14	1.53		
Lanthanum	6020A	0.0005	1.0	10/01/14	10/01/14	0.0008		
Lead	6020A	0.00002	1.0	09/16/14	09/30/14	0.00097		
Lithium	6010C	0.010	1.0	09/16/14	09/17/14	0.010	U	
Magnesium	6010C	0.10	1.0	09/16/14	09/17/14	2.16		
Manganese	6020A	0.00005	1.0	09/16/14	09/30/14	0.02719		
Molybdenum	6020A	0.00005	1.0	09/16/14	09/30/14	0.00094		
Nickel	6020A	0.0002	1.0	09/16/14	09/30/14	0.0025		
Niobium	6020A	0.0001	1.0	09/16/14	09/30/14	0.0001	U	
Potassium	6010C	2.0	1.0	09/16/14	09/17/14	2.5		
Rubidium	6020A	0.0001	1.0	09/16/14	09/30/14	0.0025		
Selenium	6020A	0.001	1.0	09/16/14	09/30/14	0.001	U	

SPLP Metals

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INORGANIC ANALYSIS DATA PACKAGE

Client:	Klohn Crippen Berger	**Service Request:**	K1409440
Project No.:	M09441A16.03.02.100	**Date Collected:**	
Project Name:	SPLP - Modified	**Date Received:**	09/04/14
Matrix:	SPLP	**Units:**	mg/L
		Basis:	NA

Sample Name: GILA 24 **Lab Code:** K1409440-009

Analyte	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Silver	6020A	0.00010	1.0	09/16/14	09/30/14	0.00010	U	
Sodium	6010C	0.20	1.0	09/16/14	09/17/14	15		X
Strontium	6010C	0.01	1.0	09/16/14	09/17/14	0.03		
Tantalum	6020A	0.0005	1.0	10/01/14	10/01/14	0.0005	U	
Thallium	6020A	0.00002	1.0	09/16/14	09/30/14	0.00002	U	
Thorium	6020A	0.0050	1.0	10/01/14	10/01/14	0.0050	U	
Tin	6020A	0.00005	1.0	09/16/14	09/30/14	0.00006		
Titanium	6020A	0.0010	1.0	09/16/14	09/30/14	0.0396		
Tungsten	6020A	0.0001	1.0	09/16/14	09/30/14	0.0004		
Uranium	6020A	0.00002	1.0	09/16/14	09/30/14	0.00028		
Vanadium	6020A	0.001	1.0	09/16/14	09/30/14	0.011		
Yttrium	6020A	0.0005	1.0	10/01/14	10/01/14	0.0006		
Zinc	6020A	0.0005	1.0	09/16/14	09/30/14	0.0034		
Zirconium	6020A	0.0010	1.0	09/16/14	09/30/14	0.0017		

Comments:

SPLP Metals

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INORGANIC ANALYSIS DATA PACKAGE

Client: Klohn Crippen Berger
Project No.: M09441A16.03.02.100
Project Name: SPLP - Modified
Matrix: SPLP

Service Request: K1409440
Date Collected:
Date Received: 09/04/14
Units: mg/L
Basis: NA

Sample Name: GILA 25
Lab Code: K1409440-010

Analyte	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Aluminum	6010C	0.0	1.0	09/16/14	09/17/14	19.7		
Antimony	6020A	0.00005	1.0	09/16/14	09/30/14	0.00092		
Arsenic	6020A	0.0005	1.0	09/16/14	09/30/14	0.0257		
Barium	6020A	0.00005	1.0	09/16/14	09/30/14	0.12704		
Beryllium	6020A	0.00002	1.0	09/16/14	09/30/14	0.00125		
Bismuth	6020A	0.0001	1.0	09/16/14	09/30/14	0.0008		
Boron	6010C	0.50	1.0	09/16/14	09/17/14	0.50	U	
Cadmium	6020A	0.00010	1.0	09/16/14	09/30/14	0.00013		
Calcium	6010C	1.00	1.0	09/16/14	09/17/14	15.4		
Cerium	6020A	0.0005	1.0	10/01/14	10/01/14	0.0717		
Cesium	6020A	0.0001	1.0	09/16/14	09/30/14	0.0022		
Chromium	6020A	0.0002	1.0	09/16/14	09/30/14	0.0185		
Cobalt	6020A	0.00002	1.0	09/16/14	09/30/14	0.00859		
Copper	6020A	0.0001	1.0	09/16/14	09/30/14	0.0668		
Gallium	6020A	0.0001	1.0	09/16/14	09/30/14	0.0125		
Germanium	6020A	0.0010	1.0	09/16/14	09/30/14	0.0010	U	
Gold	6020A	0.0001	1.0	09/16/14	09/30/14	0.0001	U	
Indium	6020A	0.0001	1.0	09/16/14	09/30/14	0.0001	U	
Iron	6010C	0.02	1.0	09/16/14	09/17/14	18.6		
Lanthanum	6020A	0.0005	1.0	10/01/14	10/01/14	0.0333		
Lead	6020A	0.00002	1.0	09/16/14	09/30/14	0.01714		
Lithium	6010C	0.010	1.0	09/16/14	09/17/14	0.016		
Magnesium	6010C	0.10	1.0	09/16/14	09/17/14	8.28		
Manganese	6020A	0.00005	1.0	09/16/14	09/30/14	0.33893		
Molybdenum	6020A	0.00005	1.0	09/16/14	09/30/14	0.00222		
Nickel	6020A	0.0002	1.0	09/16/14	09/30/14	0.0196		
Niobium	6020A	0.0001	1.0	09/16/14	09/30/14	0.0010		
Potassium	6010C	2.0	1.0	09/16/14	09/17/14	2.8		
Rubidium	6020A	0.0001	1.0	09/16/14	09/30/14	0.0168		
Selenium	6020A	0.001	1.0	09/16/14	09/30/14	0.005		

SPLP Metals

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INORGANIC ANALYSIS DATA PACKAGE

Client:	Klohn Crippen Berger	**Service Request:**	K1409440
Project No.:	M09441A16.03.02.100	**Date Collected:**	
Project Name:	SPLP - Modified	**Date Received:**	09/04/14
Matrix:	SPLP	**Units:**	mg/L
		Basis:	NA

Sample Name: GILA 25 **Lab Code:** K1409440-010

Analyte	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Silver	6020A	0.00010	1.0	09/16/14	09/30/14	0.00022		
Sodium	6010C	0.20	1.0	09/16/14	09/17/14	12		X
Strontium	6010C	0.01	1.0	09/16/14	09/17/14	0.07		
Tantalum	6020A	0.0005	1.0	10/01/14	10/01/14	0.0005	U	
Thallium	6020A	0.00002	1.0	09/16/14	09/30/14	0.00007		
Thorium	6020A	0.0050	1.0	10/01/14	10/01/14	0.0064		
Tin	6020A	0.00005	1.0	09/16/14	09/30/14	0.00073		
Titanium	6020A	0.0010	1.0	09/16/14	09/30/14	0.2796		
Tungsten	6020A	0.0001	1.0	09/16/14	09/30/14	0.0001		
Uranium	6020A	0.00002	1.0	09/16/14	09/30/14	0.00031		
Vanadium	6020A	0.001	1.0	09/16/14	09/30/14	0.053		
Yttrium	6020A	0.0005	1.0	10/01/14	10/01/14	0.0195		
Zinc	6020A	0.0005	1.0	09/16/14	09/30/14	0.0431		
Zirconium	6020A	0.0010	1.0	09/16/14	09/30/14	0.0096		

Comments:

SPLP Metals

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INORGANIC ANALYSIS DATA PACKAGE

Client: Klohn Crippen Berger
Project No.: M09441A16.03.02.100
Project Name: SPLP - Modified
Matrix: SPLP

Service Request: K1409440
Date Collected:
Date Received: 09/04/14
Units: mg/L
Basis: NA

Sample Name: GILA 26
Lab Code: K1409440-011

Analyte	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Aluminum	6010C	0.0	1.0	09/16/14	09/17/14	87.3		
Antimony	6020A	0.00005	1.0	09/16/14	09/30/14	0.00038		
Arsenic	6020A	0.0005	1.0	09/16/14	09/30/14	0.0348		
Barium	6020A	0.00005	1.0	09/16/14	09/30/14	0.17764		
Beryllium	6020A	0.00010	5.0	09/16/14	09/30/14	0.00414		
Bismuth	6020A	0.0001	1.0	09/16/14	09/30/14	0.0027		
Boron	6010C	0.50	1.0	09/16/14	09/17/14	0.50	U	
Cadmium	6020A	0.00010	1.0	09/16/14	09/30/14	0.00034		
Calcium	6010C	1.00	1.0	09/16/14	09/17/14	25.5		
Cerium	6020A	0.0005	1.0	10/01/14	10/01/14	0.1568		
Cesium	6020A	0.0001	1.0	09/16/14	09/30/14	0.0032		
Chromium	6020A	0.0002	1.0	09/16/14	09/30/14	0.0305		
Cobalt	6020A	0.00002	1.0	09/16/14	09/30/14	0.01698		
Copper	6020A	0.0001	1.0	09/16/14	09/30/14	0.1453		
Gallium	6020A	0.0001	1.0	09/16/14	09/30/14	0.0200		
Germanium	6020A	0.0010	1.0	09/16/14	09/30/14	0.0010	U	
Gold	6020A	0.0001	1.0	09/16/14	09/30/14	0.0001	U	
Indium	6020A	0.0001	1.0	09/16/14	09/30/14	0.0001	U	
Iron	6010C	0.02	1.0	09/16/14	09/17/14	76.5		
Lanthanum	6020A	0.0005	1.0	10/01/14	10/01/14	0.0718		
Lead	6020A	0.00002	1.0	09/16/14	09/30/14	0.04081		
Lithium	6010C	0.010	1.0	09/16/14	09/17/14	0.063		
Magnesium	6010C	0.10	1.0	09/16/14	09/17/14	26.2		
Manganese	6020A	0.00005	1.0	09/16/14	09/30/14	0.78498		
Molybdenum	6020A	0.00005	1.0	09/16/14	09/30/14	0.00155		
Nickel	6020A	0.0002	1.0	09/16/14	09/30/14	0.0325		
Niobium	6020A	0.0001	1.0	09/16/14	09/30/14	0.0009		
Potassium	6010C	2.0	1.0	09/16/14	09/17/14	14.6		
Rubidium	6020A	0.0001	1.0	09/16/14	09/30/14	0.0360		
Selenium	6020A	0.001	1.0	09/16/14	09/30/14	0.005		

SPLP Metals

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INORGANIC ANALYSIS DATA PACKAGE

Client:	Klohn Crippen Berger	**Service Request:**	K1409440
Project No.:	M09441A16.03.02.100	**Date Collected:**	
Project Name:	SPLP - Modified	**Date Received:**	09/04/14
Matrix:	SPLP	**Units:**	mg/L
		Basis:	NA

Sample Name: **GILA 26** **Lab Code:** **K1409440-011**

Analyte	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Silver	6020A	0.00010	1.0	09/16/14	09/30/14	0.00051		
Sodium	6010C	0.20	1.0	09/16/14	09/17/14	14		X
Strontium	6010C	0.01	1.0	09/16/14	09/17/14	0.14		
Tantalum	6020A	0.0005	1.0	10/01/14	10/01/14	0.0009		
Thallium	6020A	0.00002	1.0	09/16/14	09/30/14	0.00014		
Thorium	6020A	0.0050	1.0	10/01/14	10/01/14	0.0195		
Tin	6020A	0.00005	1.0	09/16/14	09/30/14	0.00154		
Titanium	6020A	0.0050	5.0	09/16/14	09/30/14	0.5754		
Tungsten	6020A	0.0001	1.0	09/16/14	09/30/14	0.0001		
Uranium	6020A	0.00002	1.0	09/16/14	09/30/14	0.00047		
Vanadium	6020A	0.001	1.0	09/16/14	09/30/14	0.040		
Yttrium	6020A	0.0005	1.0	10/01/14	10/01/14	0.0457		
Zinc	6020A	0.0005	1.0	09/16/14	09/30/14	0.1058		
Zirconium	6020A	0.0010	1.0	09/16/14	09/30/14	0.0146		

Comments:

SPLP Metals

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INORGANIC ANALYSIS DATA PACKAGE

Client: Klohn Crippen Berger
Project No.: M09441A16.03.02.100
Project Name: SPLP - Modified
Matrix: SPLP

Service Request: K1409440
Date Collected:
Date Received: 09/04/14
Units: mg/L
Basis: NA

Sample Name: GILA 29
Lab Code: K1409440-012

Analyte	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Aluminum	6010C	0.0	1.0	09/16/14	09/17/14	63.8		
Antimony	6020A	0.00005	1.0	09/16/14	09/30/14	0.00022		
Arsenic	6020A	0.0005	1.0	09/16/14	09/30/14	0.0155		
Barium	6020A	0.00005	1.0	09/16/14	09/30/14	0.13022		
Beryllium	6020A	0.00010	5.0	09/16/14	09/30/14	0.00350		
Bismuth	6020A	0.0001	1.0	09/16/14	09/30/14	0.0004		
Boron	6010C	0.50	1.0	09/16/14	09/17/14	0.50	U	
Cadmium	6020A	0.00010	1.0	09/16/14	09/30/14	0.00011		
Calcium	6010C	1.00	1.0	09/16/14	09/17/14	21.6		
Cerium	6020A	0.0005	1.0	10/01/14	10/01/14	0.1791		
Cesium	6020A	0.0001	1.0	09/16/14	09/30/14	0.0025		
Chromium	6020A	0.0002	1.0	09/16/14	09/30/14	0.0313		
Cobalt	6020A	0.00002	1.0	09/16/14	09/30/14	0.01424		
Copper	6020A	0.0001	1.0	09/16/14	09/30/14	0.0604		
Gallium	6020A	0.0001	1.0	09/16/14	09/30/14	0.0179		
Germanium	6020A	0.0010	1.0	09/16/14	09/30/14	0.0010	U	
Gold	6020A	0.0001	1.0	09/16/14	09/30/14	0.0001	U	
Indium	6020A	0.0001	1.0	09/16/14	09/30/14	0.0001	U	
Iron	6010C	0.02	1.0	09/16/14	09/17/14	63.9		
Lanthanum	6020A	0.0005	1.0	10/01/14	10/01/14	0.0849		
Lead	6020A	0.00002	1.0	09/16/14	09/30/14	0.01904		
Lithium	6010C	0.010	1.0	09/16/14	09/17/14	0.048		
Magnesium	6010C	0.10	1.0	09/16/14	09/17/14	21.0		
Manganese	6020A	0.00005	1.0	09/16/14	09/30/14	0.48001		
Molybdenum	6020A	0.00005	1.0	09/16/14	09/30/14	0.00064		
Nickel	6020A	0.0002	1.0	09/16/14	09/30/14	0.0313		
Niobium	6020A	0.0001	1.0	09/16/14	09/30/14	0.0003		
Potassium	6010C	2.0	1.0	09/16/14	09/17/14	5.3		
Rubidium	6020A	0.0001	1.0	09/16/14	09/30/14	0.0167		
Selenium	6020A	0.001	1.0	09/16/14	09/30/14	0.005		

SPLP Metals

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INORGANIC ANALYSIS DATA PACKAGE

Client:	Klohn Crippen Berger	**Service Request:**	K1409440
Project No.:	M09441A16.03.02.100	**Date Collected:**	
Project Name:	SPLP - Modified	**Date Received:**	09/04/14
Matrix:	SPLP	**Units:**	mg/L
		Basis:	NA

Sample Name: GILA 29 **Lab Code:** K1409440-012

Analyte	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Silver	6020A	0.00010	1.0	09/16/14	09/30/14	0.00026		
Sodium	6010C	0.20	1.0	09/16/14	09/17/14	12		X
Strontium	6010C	0.01	1.0	09/16/14	09/17/14	0.15		
Tantalum	6020A	0.0005	1.0	10/01/14	10/01/14	0.0006		
Thallium	6020A	0.00002	1.0	09/16/14	09/30/14	0.00008		
Thorium	6020A	0.0050	1.0	10/01/14	10/01/14	0.0168		
Tin	6020A	0.00005	1.0	09/16/14	09/30/14	0.00085		
Titanium	6020A	0.0050	5.0	09/16/14	09/30/14	0.5669		
Tungsten	6020A	0.0001	1.0	09/16/14	09/30/14	0.0001	U	
Uranium	6020A	0.00002	1.0	09/16/14	09/30/14	0.00046		
Vanadium	6020A	0.001	1.0	09/16/14	09/30/14	0.068		
Yttrium	6020A	0.0005	1.0	10/01/14	10/01/14	0.0463		
Zinc	6020A	0.0005	1.0	09/16/14	09/30/14	0.0525		
Zirconium	6020A	0.0010	1.0	09/16/14	09/30/14	0.0077		

Comments:

SPLP Metals

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INORGANIC ANALYSIS DATA PACKAGE

Client: Klohn Crippen Berger
Project No.: M09441A16.03.02.100
Project Name: SPLP - Modified
Matrix: SPLP

Service Request: K1409440
Date Collected:
Date Received: 09/04/14
Units: mg/L
Basis: NA

Sample Name: GILA 30
Lab Code: K1409440-013

Analyte	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Aluminum	6010C	0.0	1.0	09/16/14	09/17/14	34.5		
Antimony	6020A	0.00005	1.0	09/16/14	09/30/14	0.00052		
Arsenic	6020A	0.0005	1.0	09/16/14	09/30/14	0.0408		
Barium	6020A	0.00005	1.0	09/16/14	09/30/14	0.07846		
Beryllium	6020A	0.00010	5.0	09/16/14	09/30/14	0.00201		
Bismuth	6020A	0.0001	1.0	09/16/14	09/30/14	0.0008		
Boron	6010C	0.50	1.0	09/16/14	09/17/14	0.50	U	
Cadmium	6020A	0.00010	1.0	09/16/14	09/30/14	0.00012		
Calcium	6010C	1.00	1.0	09/16/14	09/17/14	17.5		
Cerium	6020A	0.0005	1.0	10/01/14	10/01/14	0.0880		
Cesium	6020A	0.0001	1.0	09/16/14	09/30/14	0.0011		
Chromium	6020A	0.0002	1.0	09/16/14	09/30/14	0.0139		
Cobalt	6020A	0.00002	1.0	09/16/14	09/30/14	0.00707		
Copper	6020A	0.0001	1.0	09/16/14	09/30/14	0.0662		
Gallium	6020A	0.0001	1.0	09/16/14	09/30/14	0.0091		
Germanium	6020A	0.0010	1.0	09/16/14	09/30/14	0.0010	U	
Gold	6020A	0.0001	1.0	09/16/14	09/30/14	0.0001	U	
Indium	6020A	0.0001	1.0	09/16/14	09/30/14	0.0001	U	
Iron	6010C	0.02	1.0	09/16/14	09/17/14	33.6		
Lanthanum	6020A	0.0005	1.0	10/01/14	10/01/14	0.0515		
Lead	6020A	0.00002	1.0	09/16/14	09/30/14	0.01363		
Lithium	6010C	0.010	1.0	09/16/14	09/17/14	0.028		
Magnesium	6010C	0.10	1.0	09/16/14	09/17/14	14.4		
Manganese	6020A	0.00005	1.0	09/16/14	09/30/14	0.29656		
Molybdenum	6020A	0.00005	1.0	09/16/14	09/30/14	0.00119		
Nickel	6020A	0.0002	1.0	09/16/14	09/30/14	0.0173		
Niobium	6020A	0.0001	1.0	09/16/14	09/30/14	0.0004		
Potassium	6010C	2.0	1.0	09/16/14	09/17/14	5.1		
Rubidium	6020A	0.0001	1.0	09/16/14	09/30/14	0.0100		
Selenium	6020A	0.001	1.0	09/16/14	09/30/14	0.003		

SPLP Metals

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INORGANIC ANALYSIS DATA PACKAGE

Client:	Klohn Crippen Berger	**Service Request:**	K1409440
Project No.:	M09441A16.03.02.100	**Date Collected:**	
Project Name:	SPLP - Modified	**Date Received:**	09/04/14
Matrix:	SPLP	**Units:**	mg/L
		Basis:	NA

Sample Name: GILA 30 **Lab Code:** K1409440-013

Analyte	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Silver	6020A	0.00010	1.0	09/16/14	09/30/14	0.00019		
Sodium	6010C	0.20	1.0	09/16/14	09/17/14	11		X
Strontium	6010C	0.01	1.0	09/16/14	09/17/14	0.13		
Tantalum	6020A	0.0005	1.0	10/01/14	10/01/14	0.0005	U	
Thallium	6020A	0.00002	1.0	09/16/14	09/30/14	0.00004		
Thorium	6020A	0.0050	1.0	10/01/14	10/01/14	0.0109		
Tin	6020A	0.00005	1.0	09/16/14	09/30/14	0.00050		
Titanium	6020A	0.0050	5.0	09/16/14	09/30/14	0.3283		
Tungsten	6020A	0.0001	1.0	09/16/14	09/30/14	0.0001	U	
Uranium	6020A	0.00002	1.0	09/16/14	09/30/14	0.00027		
Vanadium	6020A	0.001	1.0	09/16/14	09/30/14	0.037		
Yttrium	6020A	0.0005	1.0	10/01/14	10/01/14	0.0261		
Zinc	6020A	0.0005	1.0	09/16/14	09/30/14	0.0335		
Zirconium	6020A	0.0010	1.0	09/16/14	09/30/14	0.0058		

Comments:

SPLP Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client: Klohn Crippen Berger
Project No.: M09441A16.03.02.100
Project Name: SPLP - Modified
Matrix: SPLP

Service Request: K1409440
Date Collected:
Date Received: 09/04/14
Units: mg/L
Basis: NA

Sample Name: Stockpile 10 **Lab Code:** K1409440-014

Analyte	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Aluminum	6010C	0.02	1.0	09/16/14	09/17/14	0.03		
Antimony	6020A	0.00005	1.0	09/16/14	09/30/14	0.00055		
Arsenic	6020A	0.0005	1.0	09/16/14	09/30/14	0.0100		
Barium	6020A	0.00005	1.0	09/16/14	09/30/14	0.00953		
Beryllium	6020A	0.00002	1.0	09/16/14	09/30/14	0.00002	U	
Bismuth	6020A	0.0001	1.0	09/16/14	09/30/14	0.0001	U	
Boron	6010C	0.50	1.0	09/16/14	09/17/14	0.50	U	
Cadmium	6020A	0.00010	1.0	09/16/14	09/30/14	0.00010	U	
Calcium	6010C	1.00	1.0	09/16/14	09/17/14	15.9		
Cerium	6020A	0.0005	1.0	10/01/14	10/01/14	0.0005	U	
Cesium	6020A	0.0001	1.0	09/16/14	09/30/14	0.0001	U	
Chromium	6020A	0.0002	1.0	09/16/14	09/30/14	0.0002		
Cobalt	6020A	0.00002	1.0	09/16/14	09/30/14	0.00005		
Copper	6020A	0.0001	1.0	09/16/14	09/30/14	0.0019		
Gallium	6020A	0.0001	1.0	09/16/14	09/30/14	0.0001	U	
Germanium	6020A	0.0010	1.0	09/16/14	09/30/14	0.0010	U	
Gold	6020A	0.0001	1.0	09/16/14	09/30/14	0.0001	U	
Indium	6020A	0.0001	1.0	09/16/14	09/30/14	0.0001	U	
Iron	6010C	0.02	1.0	09/16/14	09/17/14	0.02	U	
Lanthanum	6020A	0.0005	1.0	10/01/14	10/01/14	0.0005	U	
Lead	6020A	0.00002	1.0	09/16/14	09/30/14	0.00004		
Lithium	6010C	0.010	1.0	09/16/14	09/17/14	0.010	U	
Magnesium	6010C	0.10	1.0	09/16/14	09/17/14	5.00		
Manganese	6020A	0.00005	1.0	09/16/14	09/30/14	0.00073		
Molybdenum	6020A	0.00005	1.0	09/16/14	09/30/14	0.00408		
Nickel	6020A	0.0002	1.0	09/16/14	09/30/14	0.0002		
Niobium	6020A	0.0001	1.0	09/16/14	09/30/14	0.0001	U	
Potassium	6010C	2.0	1.0	09/16/14	09/17/14	2.8		
Rubidium	6020A	0.0001	1.0	09/16/14	09/30/14	0.0007		
Selenium	6020A	0.001	1.0	09/16/14	09/30/14	0.001	U	

SPLP Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	Klohn Crippen Berger	**Service Request:**	K1409440
Project No.:	M09441A16.03.02.100	**Date Collected:**	
Project Name:	SPLP - Modified	**Date Received:**	09/04/14
Matrix:	SPLP	**Units:**	mg/L
		Basis:	NA

Sample Name: **Stockpile 10** **Lab Code:** **K1409440-014**

Analyte	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Silver	6020A	0.00010	1.0	09/16/14	09/30/14	0.00010	U	
Sodium	6010C	0.20	1.0	09/16/14	09/17/14	15		X
Strontium	6010C	0.01	1.0	09/16/14	09/17/14	0.06		
Tantalum	6020A	0.0005	1.0	10/01/14	10/01/14	0.0005	U	
Thallium	6020A	0.00002	1.0	09/16/14	09/30/14	0.00002	U	
Thorium	6020A	0.0050	1.0	10/01/14	10/01/14	0.0050	U	
Tin	6020A	0.00005	1.0	09/16/14	09/30/14	0.00005	U	
Titanium	6020A	0.0010	1.0	09/16/14	09/30/14	0.0010	U	
Tungsten	6020A	0.0001	1.0	09/16/14	09/30/14	0.0015		
Uranium	6020A	0.00002	1.0	09/16/14	09/30/14	0.00035		
Vanadium	6020A	0.001	1.0	09/16/14	09/30/14	0.015		
Yttrium	6020A	0.0005	1.0	10/01/14	10/01/14	0.0005	U	
Zinc	6020A	0.0005	1.0	09/16/14	09/30/14	0.0006		
Zirconium	6020A	0.0010	1.0	09/16/14	09/30/14	0.0010	U	

Comments:

SPLP Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client: Klohn Crippen Berger
Project No.: M09441A16.03.02.100
Project Name: SPLP - Modified
Matrix: SPLP

Service Request: K1409440
Date Collected:
Date Received: 09/04/14
Units: mg/L
Basis: NA

Sample Name: Stockpile 20 **Lab Code:** K1409440-015

Analyte	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Aluminum	6010C	0.02	1.0	09/16/14	09/17/14	0.06		
Antimony	6020A	0.00005	1.0	09/16/14	09/30/14	0.00050		
Arsenic	6020A	0.0005	1.0	09/16/14	09/30/14	0.0118		
Barium	6020A	0.00005	1.0	09/16/14	09/30/14	0.00640		
Beryllium	6020A	0.00002	1.0	09/16/14	09/30/14	0.00002	U	
Bismuth	6020A	0.0001	1.0	09/16/14	09/30/14	0.0001	U	
Boron	6010C	0.50	1.0	09/16/14	09/17/14	0.50	U	
Cadmium	6020A	0.00010	1.0	09/16/14	09/30/14	0.00010	U	
Calcium	6010C	1.00	1.0	09/16/14	09/17/14	12.1		
Cerium	6020A	0.0005	1.0	10/01/14	10/01/14	0.0005	U	
Cesium	6020A	0.0001	1.0	09/16/14	09/30/14	0.0001	U	
Chromium	6020A	0.0002	1.0	09/16/14	09/30/14	0.0003		
Cobalt	6020A	0.00002	1.0	09/16/14	09/30/14	0.00002		
Copper	6020A	0.0001	1.0	09/16/14	09/30/14	0.0016		
Gallium	6020A	0.0001	1.0	09/16/14	09/30/14	0.0001	U	
Germanium	6020A	0.0010	1.0	09/16/14	09/30/14	0.0010	U	
Gold	6020A	0.0001	1.0	09/16/14	09/30/14	0.0001	U	
Indium	6020A	0.0001	1.0	09/16/14	09/30/14	0.0001	U	
Iron	6010C	0.02	1.0	09/16/14	09/17/14	0.03		
Lanthanum	6020A	0.0005	1.0	10/01/14	10/01/14	0.0005	U	
Lead	6020A	0.00002	1.0	09/16/14	09/30/14	0.00008		
Lithium	6010C	0.010	1.0	09/16/14	09/17/14	0.010	U	
Magnesium	6010C	0.10	1.0	09/16/14	09/17/14	3.63		
Manganese	6020A	0.00005	1.0	09/16/14	09/30/14	0.00109		
Molybdenum	6020A	0.00005	1.0	09/16/14	09/30/14	0.00309		
Nickel	6020A	0.0002	1.0	09/16/14	09/30/14	0.0002	U	
Niobium	6020A	0.0001	1.0	09/16/14	09/30/14	0.0001	U	
Potassium	6010C	2.0	1.0	09/16/14	09/17/14	2.0	U	
Rubidium	6020A	0.0001	1.0	09/16/14	09/30/14	0.0004		
Selenium	6020A	0.001	1.0	09/16/14	09/30/14	0.001	U	

SPLP Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client: Klohn Crippen Berger
Project No.: M09441A16.03.02.100
Project Name: SPLP - Modified
Matrix: SPLP

Service Request: K1409440
Date Collected:
Date Received: 09/04/14
Units: mg/L
Basis: NA

Sample Name: Stockpile 20 **Lab Code:** K1409440-015

Analyte	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Silver	6020A	0.00010	1.0	09/16/14	09/30/14	0.00010	U	
Sodium	6010C	0.20	1.0	09/16/14	09/17/14	15		X
Strontium	6010C	0.01	1.0	09/16/14	09/17/14	0.04		
Tantalum	6020A	0.0005	1.0	10/01/14	10/01/14	0.0005	U	
Thallium	6020A	0.00002	1.0	09/16/14	09/30/14	0.00002	U	
Thorium	6020A	0.0050	1.0	10/01/14	10/01/14	0.0050	U	
Tin	6020A	0.00005	1.0	09/16/14	09/30/14	0.00005	U	
Titanium	6020A	0.0010	1.0	09/16/14	09/30/14	0.0013		
Tungsten	6020A	0.0001	1.0	09/16/14	09/30/14	0.0014		
Uranium	6020A	0.00002	1.0	09/16/14	09/30/14	0.00054		
Vanadium	6020A	0.001	1.0	09/16/14	09/30/14	0.019		
Yttrium	6020A	0.0005	1.0	10/01/14	10/01/14	0.0005	U	
Zinc	6020A	0.0005	1.0	09/16/14	09/30/14	0.0020		
Zirconium	6020A	0.0010	1.0	09/16/14	09/30/14	0.0010	U	

Comments:

SPLP Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client: Klohn Crippen Berger
Project No.: M09441A16.03.02.100
Project Name: SPLP - Modified
Matrix: SPLP

Service Request: K1409440
Date Collected:
Date Received:
Units: mg/L
Basis: NA

Sample Name: Method Blank
Lab Code: K1409440-MB

Analyte	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Aluminum	6010C	0.02	1.0	09/16/14	09/17/14	0.02	U	
Antimony	6020A	0.00005	1.0	09/16/14	09/30/14	0.00005	U	
Arsenic	6020A	0.0005	1.0	09/16/14	09/30/14	0.0005	U	
Barium	6020A	0.00005	1.0	09/16/14	09/30/14	0.00005	U	
Beryllium	6020A	0.00002	1.0	09/16/14	09/30/14	0.00002	U	
Bismuth	6020A	0.0001	1.0	09/16/14	09/30/14	0.0001	U	
Boron	6010C	0.50	1.0	09/16/14	09/17/14	0.50	U	
Cadmium	6020A	0.00010	1.0	09/16/14	09/30/14	0.00010	U	
Calcium	6010C	1.00	1.0	09/16/14	09/17/14	1.00	U	
Cerium	6020A	0.0001	1.0	10/01/14	10/01/14	0.0001	U	
Cesium	6020A	0.0001	1.0	09/16/14	09/30/14	0.0001	U	
Chromium	6020A	0.0002	1.0	09/16/14	09/30/14	0.0002	U	
Cobalt	6020A	0.00002	1.0	09/16/14	09/30/14	0.00002	U	
Copper	6020A	0.0001	1.0	09/16/14	09/30/14	0.0001	U	
Gallium	6020A	0.0001	1.0	09/16/14	09/30/14	0.0001	U	
Germanium	6020A	0.0010	1.0	09/16/14	09/30/14	0.0010	U	
Gold	6020A	0.0001	1.0	09/16/14	09/30/14	0.0001	U	
Indium	6020A	0.0001	1.0	09/16/14	09/30/14	0.0001	U	
Iron	6010C	0.02	1.0	09/16/14	09/17/14	0.02	U	
Lanthanum	6020A	0.0001	1.0	10/01/14	10/01/14	0.0001	U	
Lead	6020A	0.00002	1.0	09/16/14	09/30/14	0.00002	U	
Lithium	6010C	0.010	1.0	09/16/14	09/17/14	0.010	U	
Magnesium	6010C	0.10	1.0	09/16/14	09/17/14	0.10	U	
Manganese	6020A	0.00005	1.0	09/16/14	09/30/14	0.00005	U	
Molybdenum	6020A	0.00005	1.0	09/16/14	09/30/14	0.00005	U	
Nickel	6020A	0.0002	1.0	09/16/14	09/30/14	0.0002	U	
Niobium	6020A	0.0001	1.0	09/16/14	09/30/14	0.0001	U	
Potassium	6010C	2.0	1.0	09/16/14	09/17/14	2.0	U	
Rubidium	6020A	0.0001	1.0	09/16/14	09/30/14	0.0001	U	
Selenium	6020A	0.001	1.0	09/16/14	09/30/14	0.001	U	

SPLP Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client: Klohn Crippen Berger
Service Request: K1409440
Project No.: M09441A16.03.02.100
Date Collected:
Project Name: SPLP - Modified
Date Received:
Matrix: SPLP
Units: mg/L
Basis: NA

Sample Name: Method Blank
Lab Code: K1409440-MB

Analyte	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Silver	6020A	0.00010	1.0	09/16/14	09/30/14	0.00010	U	
Sodium	6010C	0.20	1.0	09/16/14	09/17/14	8.1		X
Strontium	6010C	0.01	1.0	09/16/14	09/17/14	0.01	U	
Tantalum	6020A	0.0001	1.0	10/01/14	10/01/14	0.0001	U	
Thallium	6020A	0.00002	1.0	09/16/14	09/30/14	0.00002	U	
Thorium	6020A	0.0010	1.0	10/01/14	10/01/14	0.0010	U	
Tin	6020A	0.00005	1.0	09/16/14	09/30/14	0.00005	U	
Titanium	6020A	0.0010	1.0	09/16/14	09/30/14	0.0010	U	
Tungsten	6020A	0.0001	1.0	09/16/14	09/30/14	0.0001	U	
Uranium	6020A	0.00002	1.0	09/16/14	09/30/14	0.00002	U	
Vanadium	6020A	0.001	1.0	09/16/14	09/30/14	0.001	U	
Yttrium	6020A	0.0001	1.0	10/01/14	10/01/14	0.0001	U	
Zinc	6020A	0.0005	1.0	09/16/14	09/30/14	0.0005	U	
Zirconium	6020A	0.0010	1.0	09/16/14	09/30/14	0.0010	U	

Comments:

SPLP Metals
- 5A -
SPIKE SAMPLE RECOVERY

Client: Klohn Crippen Berger **Service Request:** K1409440

Project No.: M09441A16.03.02.100 **Units:** MG/L

Project Name: SPLP - Modified **Basis:** NA

Matrix: SPLP

Sample Name: GILA 07S **Lab Code:** K1409440-001S

Analyte	Control Limit %R	Spike Result	C	Sample Result	C	Spike Added	%R	Q	Method
Antimony	75 - 125	0.05469		0.00023		0.05000	108.9		6020A
Arsenic	75 - 125	0.0569		0.0066		0.0500	100.6		6020A
Barium	75 - 125	0.11710		0.01139		0.10000	105.7		6020A
Beryllium	75 - 125	0.00258		0.00004		0.00250	101.6		6020A
Bismuth	75 - 125	0.0193		0.0001	U	0.0200	96.5		6020A
Cadmium	75 - 125	0.02587		0.00010	U	0.02500	103.5		6020A
Cerium	75 - 125	0.1073		0.0024		0.1000	104.9		6020A
Cesium	75 - 125	0.0211		0.0001	U	0.0200	105.5		6020A
Chromium	75 - 125	0.0111		0.0009		0.0100	102.0		6020A
Cobalt	75 - 125	0.02520		0.00057		0.02500	98.5		6020A
Copper	75 - 125	0.0148		0.0022		0.0125	100.8		6020A
Germanium	75 - 125	0.0206		0.0010	U	0.0200	103.0		6020A
Gold	75 - 125	0.0191		0.0001	U	0.0200	95.5		6020A
Indium	75 - 125	0.0205		0.0001	U	0.0200	102.5		6020A
Lanthanum	75 - 125	0.1043		0.0013		0.1000	103.0		6020A
Lead	75 - 125	0.04901		0.00065		0.05000	96.7		6020A
Manganese	75 - 125	0.04370		0.02088		0.02500	91.3		6020A
Molybdenum	75 - 125	0.02246		0.00200		0.02000	102.3		6020A
Nickel	75 - 125	0.0256		0.0009		0.0250	98.8		6020A
Niobium	75 - 125	0.0195		0.0001	U	0.0200	97.5		6020A
Rubidium	75 - 125	0.0183		0.0007		0.0200	88.0		6020A
Selenium	75 - 125	0.049		0.001	U	0.050	98.0		6020A
Silver	75 - 125	0.012565		0.000100	U	0.01250	100.5		6020A
Tantalum	75 - 125	0.1062		0.0005	U	0.1000	106.2		6020A
Thallium	75 - 125	0.04828		0.00002	U	0.05000	96.6		6020A
Thorium	75 - 125	0.1037		0.0050	U	0.1000	103.7		6020A
Tin	75 - 125	0.02131		0.00005	U	0.02000	106.6		6020A
Titanium	75 - 125	0.0484		0.0261		0.0200	111.5		6020A
Tungsten	75 - 125	0.0199		0.0005		0.0200	97.0		6020A
Uranium	75 - 125	0.02032		0.00012		0.02000	101.0		6020A
Vanadium	75 - 125	0.048		0.021		0.025	108.0		6020A
Yttrium	75 - 125	0.1050		0.0012		0.1000	103.8		6020A

An empty field in the Control Limit column indicates the control limit is not applicable

SPLP Metals
- 5A -
SPIKE SAMPLE RECOVERY

Client: Klohn Crippen Berger
Service Request: K1409440
Project No.: M09441A16.03.02.100
Units: MG/L
Project Name: SPLP - Modified
Basis: NA
Matrix: SPLP

Sample Name: GILA 07S
Lab Code: K1409440-001S

Analyte	Control Limit %R	Spike Result	C	Sample Result	C	Spike Added	%R	Q	Method
Zinc	75 - 125	0.0262		0.0018		0.0250	97.6		6020A
Zirconium	75 - 125	0.0219		0.0010	U	0.0200	109.5		6020A

An empty field in the Control Limit column indicates the control limit is not applicable

SPLP Metals
- 5A -
SPIKE SAMPLE RECOVERY

Client: Klohn Crippen Berger
Service Request: K1409440
Project No.: M09441A16.03.02.100
Units: MG/L
Project Name: SPLP - Modified
Basis: NA
Matrix: SPLP

Sample Name: GILA 08S
Lab Code: K1409440-002S

Analyte	Control Limit %R	Spike Result	C	Sample Result	C	Spike Added	%R	Q	Method
Aluminum	75 - 125	2.2		0.5		2.00	85.0		6010C
Boron	75 - 125	0.94		0.50	U	1.00	94.0		6010C
Calcium	75 - 125	17.1		7.57		10.00	95.3		6010C
Iron	75 - 125	1.53		0.68		1.00	85.0		6010C
Lithium	75 - 125	9.800		0.010	U	10.00	98.0		6010C
Magnesium	75 - 125	11.5		1.97		10.00	95.3		6010C
Potassium	75 - 125	10.3		2.0	U	10.00	103.0		6010C
Sodium	70 - 130	45		35		10.00	100.0		6010C
Strontium	75 - 125	9.82		0.01		10.00	98.1		6010C

An empty field in the Control Limit column indicates the control limit is not applicable

SPLP Metals

- 6 -

DUPLICATES

Client: Klohn Crippen Berger **Service Request:** K1409440

Project No.: M09441A16.03.02.100 **Units:** MG/L

Project Name: SPLP - Modified **Basis:** NA

Matrix: SPLP

Sample Name: GILA 07D **Lab Code:** K1409440-001D

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	Method
Antimony		0.00023		0.00024		4.3		6020A
Arsenic	20	0.0066		0.0066		0.0		6020A
Barium	20	0.01139		0.01129		0.9		6020A
Beryllium		0.00004		0.00003		28.6		6020A
Bismuth		0.0001	U	0.0001	U			6020A
Cadmium		0.00010	U	0.00010	U			6020A
Cerium		0.0024		0.0023		4.3		6020A
Cesium		0.0001	U	0.0001	U			6020A
Chromium		0.0009		0.0010		10.5		6020A
Cobalt	20	0.00057		0.00058		1.7		6020A
Copper	20	0.0022		0.0022		0.0		6020A
Gallium		0.0004		0.0005		22.2		6020A
Germanium		0.0010	U	0.0010	U			6020A
Gold		0.0001	U	0.0001	U			6020A
Indium		0.0001	U	0.0001	U			6020A
Lanthanum		0.0013		0.0013		0.0		6020A
Lead	20	0.00065		0.00068		4.5		6020A
Manganese	20	0.02088		0.02057		1.5		6020A
Molybdenum	20	0.00200		0.00200		0.0		6020A
Nickel		0.0009		0.0010		10.5		6020A
Niobium		0.0001	U	0.0001	U			6020A
Rubidium	20	0.0007		0.0007		0.0		6020A
Selenium		0.001	U	0.001	U			6020A
Silver		0.00010	U	0.00010	U			6020A
Tantalum		0.0005	U	0.0005	U			6020A
Thallium		0.00002	U	0.00002	U			6020A
Thorium		0.0050	U	0.0050	U			6020A
Tin		0.0001	U	0.0001	U			6020A
Titanium	20	0.0261		0.0256		1.9		6020A
Tungsten	20	0.0005		0.0005		0.0		6020A
Uranium	20	0.00012		0.00013		8.0		6020A

An empty field in the Control Limit column indicates the control limit is not applicable.

SPLP Metals

- 6 -

DUPLICATES

Client: Klohn Crippen Berger **Service Request:** K1409440

Project No.: M09441A16.03.02.100 **Units:** MG/L

Project Name: SPLP - Modified **Basis:** NA

Matrix: SPLP

Sample Name: GILA 07D **Lab Code:** K1409440-001D

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	Method
Vanadium	20	0.021		0.021		0.0		6020A
Yttrium		0.0012		0.0010		18.2		6020A
Zinc		0.0018		0.0026		36.4		6020A
Zirconium		0.0010	U	0.0010	U			6020A

An empty field in the Control Limit column indicates the control limit is not applicable.

SPLP Metals

- 6 -

DUPLICATES

Client: Klohn Crippen Berger **Service Request:** K1409440

Project No.: M09441A16.03.02.100 **Units:** MG/L

Project Name: SPLP - Modified **Basis:** NA

Matrix: SPLP

Sample Name: GILA 08D **Lab Code:** K1409440-002D

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	Method
Aluminum	20	0.5		0.5		0.0		6010C
Boron		0.5	U	0.5	U			6010C
Calcium	20	7.29		7.76		6.2		6010C
Iron	20	0.68		0.69		1.5		6010C
Lithium		0.010	U	0.010	U			6010C
Magnesium	20	1.97		1.95		1.0		6010C
Potassium		2.0	U	2.0	U			6010C
Sodium	20	35		35		0.0		6010C
Strontium		0.0123		0.0119		3.3		6010C

An empty field in the Control Limit column indicates the control limit is not applicable.

SPLP Metals

- 7 -

LABORATORY CONTROL SAMPLE

Client: Klohn Crippen Berger **Service Request:** K1409440

Project No.: M09441A16.03.02.100

Project Name: SPLP - Modified

Aqueous LCS Source: **ALS MIXED** **Solid LCS Source:**

Analyte	Aqueous (ug/L)			Solid (mg/kg)				
	True	Found	%R	True	Found	C	Limits	%R
Aluminum	2	1.82	91.0					
Antimony	0.05	0.050	100.0					
Arsenic	0.05	0.045	90.0					
Barium	0.10	0.099	99.0					
Beryllium	0.0025	0.0024	96.0					
Bismuth	0.02	0.020	100.0					
Boron	1	0.93	93.0					
Cadmium	0.025	0.023	92.0					
Calcium	10	10.6	106.0					
Cerium	0.02	0.020	100.0					
Cesium	0.02	0.020	100.0					
Chromium	0.01	0.01	100.0					
Cobalt	0.025	0.025	100.0					
Copper	0.0125	0.0120	96.0					
Gallium	0.02	0.018	90.0					
Germanium	0.02	0.020	100.0					
Gold	0.02	0.018	90.0					
Indium	0.02	0.020	100.0					
Iron	1	0.98	98.0					
Lanthanum	0.02	0.021	105.0					
Lead	0.05	0.049	98.0					
Lithium	10	9.850	98.5					
Magnesium	10	9.71	97.1					
Manganese	0.025	0.022	88.0					
Molybdenum	0.02	0.020	100.0					
Nickel	0.025	0.025	100.0					
Niobium	0.02	0.019	95.0					
Potassium	10	9.9	99.0					
Rubidium	0.02	0.017	85.0					
Selenium	0.05	0.042	84.0					
Silver	0.0125	0.0124	99.2					
Sodium	10	9.8	98.0					

SPLP Metals

- 7 -

LABORATORY CONTROL SAMPLE

Client: Klohn Crippen Berger **Service Request:** K1409440

Project No.: M09441A16.03.02.100

Project Name: SPLP - Modified

Aqueous LCS Source: **ALS MIXED** **Solid LCS Source:**

Analyte	Aqueous (ug/L)			Solid (mg/kg)				
	True	Found	%R	True	Found	C	Limits	%R
Strontium	10	9.71	97.1					
Tantalum	0.02	0.021	105.0					
Thallium	0.05	0.049	98.0					
Thorium	0.02	0.020	100.0					
Tin	0.02	0.022	110.0					
Titanium	0.02	0.020	100.0					
Tungsten	0.02	0.019	95.0					
Uranium	0.02	0.019	95.0					
Vanadium	0.025	0.026	104.0					
Yttrium	0.02	0.021	105.0					
Zinc	0.025	0.021	84.0					
Zirconium	0.02	0.024	120.0					

K1409440

Sample Name	Synthetic Precipitation Leaching Procedure (SPLP) (Liquid to Solids Ration of 4:1)	Available Nutrients	Organic Matter
Total Number of Tests	**15**	**9**	**9**
Stockpile 10 + 20	2	1	1
GILA 07	1	1	1
GILA 08	1		
GILA 09	1	1	1
GILA 10	1		
GILA 11	1		
GILA 15	1	1	1
GILA 20	1	1	1
GILA 22	1	1	1
GILA 24	1		
GILA 25	1	1	1
GILA 26	1		
GILA 29	1	1	1
GILA 30	1		

Kate Patterson, P.Eng., M.Eng.
Water Resources Engineer

Klohn Crippen Berger 500 - 2955 Virtual Way, Vancouver BC V5M 4X6 CANADA
D 604.251.8487 | T 604.669.3800 | F 604.669.3835 | kpatterson@klohn.com | www.klohn.com

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PC CHRISTINA

Cooler Receipt and Preservation Form

Client / Project: ALS Service Request *K14* 9440

Received: 9/4/14 Opened: 9/4/14 By: 1 Unloaded: 9/4/14 By: 1

1. Samples were received via? *Mail* *Fed Ex* (*UPS*) *DHL* *PDX* *Courier* *Hand Delivered*
2. Samples were received in: (circle) *Cooler* (*Box*) *Envelope* *Other*_____ *NA*
3. Were custody seals on coolers? NA Y N If yes, how many and where?_____
   If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Raw Cooler Temp	Corrected. Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID NA	Tracking Number NA	Filed
N/A							1ZE1035003473120 3 7	

4. Packing material: *Inserts* *Baggies* *Bubble Wrap* *Gel Packs* *Wet Ice* *Dry Ice* *Sleeves* _____
5. Were custody papers properly filled out (ink, signed, etc.)? NA (Y) N
6. Did all bottles arrive in good condition (unbroken)? *Indicate in the table below.* NA (Y) N
7. Were all sample labels complete (i.e analysis, preservation, etc.)? NA (Y) N
8. Did all sample labels and tags agree with custody papers? *Indicate major discrepancies in the table on page 2.* NA Y N
9. Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N
10. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* NA Y N
11. Were VOA vials received without headspace? *Indicate in the table below.* NA Y N
12. Was C12/Res negative? NA Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count Bottle Type	Out of Temp	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, & Resolutions: DID NOT RECEIVE GILA 22.
RECEIVED STOCKPILE 10, STOCKPILE 15, AND STOCKPILE 20 (STOCKPILE 15 NOT LISTED, STOCKPILE 10+20 LISTED ON COC AS ONE)

Project Name:
Resolution Project - Near West Closure Cover Study

ALS Environmental
1317 South 13th Avenue
Kelso, WA 98626

Confirmation of Sample Receipt

To:	Kate Patterson	**From:**	Jeff Christian
Email:	kpatterson@klohn.com	**Email:**	Jeff.Christian@alsglobal.com
Fax:	604-669-3835	**Fax:**	360-636-1068
Phone:	604-251-8487	**Phone:**	360-577-7222 x3316

Samples for analysis have been received by ALS Environmental on 9/ 4 - 11/14 and assigned our Service Request number **K1409440**. **Please verify the following information and notify me of any corrections as soon as possible.**

The estimated completion date for this work is: **9/25/14**

Client: Klohn Crippen Berger
Project: SPLP - Modified/M09441A16.03.02.100

PO Number: M02014-PO095

EDD Required: No

Tier: II

Report To:
Kate Patterson
Klohn Crippen Berger
500-2955 Virtual Way
Vancouver, BC V5M 4X6
CANADA

Billing Address:
Kate Patterson
Klohn Crippen Berger
500-2955 Virtual Way
Vancouver, BC V5M 4X6
CANADA

Comments:

Thank you for your business!

Project Name:
Resolution Project - Near West Closure Cover Study

A - Test is Authorized H - Test is On Hold HP - Test is On Hold Pending Input P - Test is Authorized for Prep Only C - Test has been Cancelled * - Test has assigned QC

				6010C Metals SPLP	6020A Metals SPLP	9060 TOC	EPA 1312 SPLP
K1409440-001	GILA 07	Soil		A	A	A	A
K1409440-002	GILA 08	Soil		A	A	A	A
K1409440-003	GILA 09	Soil		A	A	A	A
K1409440-004	GILA 10	Soil		A	A	A	A
K1409440-005	GILA 11	Soil		A	A	A	A
K1409440-006	GILA 15	Soil		A	A	A	A
K1409440-007	GILA 20	Soil		A	A	A	A
K1409440-008	GILA 22	Soil		A	A	A	A
K1409440-009	GILA 24	Soil		A	A	A	A
K1409440-010	GILA 25	Soil		A	A	A	A
K1409440-011	GILA 26	Soil		A	A	A	A
K1409440-012	GILA 29	Soil		A	A	A	A
K1409440-013	GILA 30	Soil		A	A	A	A
K1409440-014	Stockpile 10	Soil		A	A	A	A

				6010C Metals SPLP	6020A Metals SPLP	9060 TOC	EPA 1312 SPLP
K1409440-015	Stockpile 20	Soil		A	A	A	A
K1409440-016	Stockpile 15	Soil		C	C	C	C

Test Comments:

Group	Test/Method	Samples	Comments
Metals	EPA 1312/SPLP	1-16	Use 4:1 solution to sample mass ratio.
Metals	6010C/Metals SPLP	1-16	Al,B,Ca,Fe,K,Li,Mg,Na,Sr
Metals	6020A/Metals SPLP	1-16	Ag,As,Au,Ba,Be,Bi,Cd,Ce,Co,Cr,Cs,Cu,Ga,Ge,In,La,Mn,Mo,Nb,Ni,Pb,Rb,Sb,Se,Sn,Ta,Th,Ti,Tl,U,V,W,Y,Zn,Zr

ALS Environmental
ALS Group USA, Corp
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Kelso, WA 98626
T: 1-360-577-7222
F: 1-360-636-1068
www.alsglobal.com

December 05, 2014

Analytical Report for Service Request No: K1412098

Kate Patterson
Klohn Crippen Berger
500-2955 Virtual Way
Vancouver, BC V5M 4X6
CANADA

RE: TCLP/Metals & Fluoride

Dear Kate:

Enclosed are the results of the sample(s) submitted to our laboratory on September 4, 2014. For your reference, these analyses have been assigned our service request number **K1412098**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Environmental is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3316. You may also contact me via email at Jeff.Christian@alsglobal.com.

Respectfully submitted,

ALS Group USA Corp. dba ALS Environmental

Jeff Christian
Director of Operations - Western USA

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Inorganic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated value.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.
H	The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

#	The control limit criteria is not applicable. See case narrative.
J	The result is an estimated value.
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
M	The duplicate injection precision was not met.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
S	The reported value was determined by the Method of Standard Additions (MSA).
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
+	The correlation coefficient for the MSA is less than 0.995.
Q	See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
A	A tentatively identified compound, a suspected aldol-condensation product.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
C	The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
D	The reported result is from a dilution.
E	The result is an estimated value.
J	The result is an estimated value.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
P	The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
Y	The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
Z	The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso
State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEC UST	http://dec.alaska.gov/applications/eh/ehllabreports/USTLabs.aspx	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L14-51
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	Not available	-
Idaho DHW	http://www.healthandwelfare.idaho.gov/Health/Labs/CertificationDrinkingWaterLabs/tabid/1833/Default.aspx	-
ISO 17025	http://www.pjlabs.com/	L14-50
Louisiana DEQ	http://www.deq.louisiana.gov/portal/DIVISIONS/PublicParticipationandPermitSupport/LouisianaLaboratoryAccreditationProgram.aspx	03016
Maine DHS	Not available	WA01276
Michigan DEQ	http://www.michigan.gov/deq/0,1607,7-135-3307_4131_4156---,00.html	9949
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Montana DPHHS	http://www.dphhs.mt.gov/publichealth/	CERT0047
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/oqa/	WA005
North Carolina DWQ	http://www.dwqlab.org/	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/envserv/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wisconsin DNR	http://dnr.wi.gov/	998386840
Wyoming (EPA Region 8)	http://www.epa.gov/region8/water/dwhome/wyomingdi.html	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.

ALS ENVIRONMENTAL

Client:	Klohn Crippen Berger	**Service Request No.:**	K1412098
Project:	TCLP/ Metals & Fluoride	**Date Received:**	09/04/14
Sample Matrix:	Soil		

Case Narrative

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), Matrix Spike (MS), and Matrix/Duplicate Matrix Spike (MS/DMS).

Sample Receipt

From the sixteen soil samples that were received for analysis at ALS Environmental between 9/04/14 and 9/11/14, five were selected by Klohn Crippen Berger for follow-up analysis The samples were received in good condition and consistent with the accompanying chain of custody form, except where noted on the cooler receipt and preservation form included in this report. The samples were stored at room temperature upon receipt at the laboratory. These five samples were re-issued from the original Service Request K1409440.

General Comments

The original samples were subjected to the USEPA Method 1311 procedure for TCLP extraction. In addition to the custom list of metals requested, fluoride was also determined in the TCLP extract. The TCLP procedure was performed as specified in the method.

Archived solutions from the original USEPA Method 1312 SPLP extraction (performed under K1409440) were analyzed for fluoride and included in this report. Note the SPLP extraction was performed using a modified formulation of 4 parts extraction solution to 1 part sample.

All values are reported as mg/L in the associated extract. Sample identifications were appended with “TCLP” or “SPLP”.

General Chemistry Parameters

All fluoride determinations were performed using EPA Method 340.2 (specific ion electrode). An attempt was made to analyze them using EPA Method 300.0 (ion chromatography), but the acetate (TCLP) and nitrate/chloride (SPLP) caused significant resolution issues. Thus, the analyses were moved to Method 340.2.

No other anomalies associated with the analysis of these samples were observed.

TCLP Metals

No anomalies associated with the analysis of these samples were observed.

Approved by 

~~K1409440~~

K1412098**

Sample Name	Synthetic Precipitation Leaching Procedure (SPLP) (Liquid to Solids Ration of 4:1)	Available Nutrients	Organic Matter
Total Number of Tests	15	9	9
Stockpile 10+20	2	1	1
GILA 07	1	1	1
GILA 08	1		
GILA 09	1	1	1
GILA 10	1		
GILA 11	1		
GILA 15	1	1	1
GILA 20	1	1	1
GILA 22	1	1	1
GILA 24	1		
GILA 25	1	1	1
GILA 26	1		
GILA 29	1	1	1
GILA 30	1		

Kate Patterson, P.Eng., M.Eng.
Water Resources Engineer

Klohn Crippen Berger 500 - 2955 Virtual Way, Vancouver BC V5M 4X6 CANADA
D 604.251.8487 | T 604.669.3800 | F 604.669.3835 | kpatterson@klohn.com | www.klohn.com

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** A.Juell 12/05/14

Project Name:
Resolution Project - Near West Closure Cover Study

PC CHRISTINA

Cooler Receipt and Preservation Form

Client / Project: ALS Service Request K14 12098** ~~9440~~

Received: 9/4/14 Opened: 9/4/14 By: 1 Unloaded: 9/4/14 By: 1

1. Samples were received via? *Mail* *Fed Ex* *UPS* *DHL* *PDX* *Courier* *Hand Delivered*
2. Samples were received in: (circle) *Cooler* *Box* *Envelope* *Other*_____ *NA*
3. Were custody seals on coolers? NA Y N If yes, how many and where?_____
   If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Raw Cooler Temp	Corrected Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID NA	Tracking Number NA	Filed
N/A							1ZE1035003473120 3 7	

4. Packing material: *Inserts* *Baggies* *Bubble Wrap* *Gel Packs* *Wet Ice* *Dry Ice* *Sleeves* _____
5. Were custody papers properly filled out (ink, signed, etc.)? NA Y N
6. Did all bottles arrive in good condition (unbroken)? *Indicate in the table below.* NA Y N
7. Were all sample labels complete (i.e analysis, preservation, etc.)? NA Y N
8. Did all sample labels and tags agree with custody papers? *Indicate major discrepancies in the table on page 2.* NA Y N
9. Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N
10. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* NA Y N
11. Were VOA vials received without headspace? *Indicate in the table below.* NA Y N
12. Was C12/Res negative? NA Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count Bottle Type	Out of Temp	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, & Resolutions: DID NOT RECEIVE GILA 22.
RECEIVED STOCKPILE 10, STOCKPILE 15, AND STOCKPILE 20 (STOCKPILE 15 NOT LISTED, STOCKPILE 10+20 LISTED ON COC AS ONE)

** A7Juell 12/05/14

Project Name: Resolution Project - Near West Closure Cover Study

ALS Group USA, Corp.
dba ALS Environmental
Analytical Report

Client:	Klohn Crippen Berger	**Service Request:**	K1412098
Project:	TCLP/Metals & Fluoride	**Date Collected:**	
Sample Matrix:	Liquid	**Date Received:**	9/4/2014

Fluoride

Prep Method:	NONE	Units:	mg/L (ppm)
Analysis Method:	340.2	Basis:	NA
Test Notes:			

Sample Name	Lab Code	MRL	Dilution Factor	Date Analyzed	Result	Result Notes
GILA 07-TCLP	K1412098-001	0.20	1	11/20/2014	ND	
GILA 15-TCLP	K1412098-002	0.20	1	11/20/2014	ND	
GILA 20-TCLP	K1412098-003	0.20	1	11/20/2014	ND	
GILA 22-TCLP	K1412098-004	0.20	1	11/20/2014	ND	
GILA 29-TCLP	K1412098-005	0.20	1	11/20/2014	ND	
GILA 07-SPLP	K1412098-006	0.20	1	12/4/2014	0.43	
GILA 15-SPLP	K1412098-007	0.20	1	12/4/2014	0.37	
GILA 20-SPLP	K1412098-008	0.20	1	12/4/2014	0.25	
GILA 22-SPLP	K1412098-009	0.20	1	12/4/2014	0.28	
GILA 29-SPLP	K1412098-010	0.20	1	12/4/2014	ND	
Method Blank	K1412098-MB	0.20	1	11/20/2014	ND	

ALS Group USA, Corp.
dba ALS Environmental
QA/QC Report

Client: Klohn Crippen Berger
Project: TCLP/Metals & Fluoride
Sample Matrix: Liquid

Service Request: K1412098
Date Collected: NA
Date Received: NA
Date Extracted: NA
Date Analyzed: 11/20/2014

Duplicate Summary
Inorganic Parameters

Sample Name: Batch QC
Lab Code: K1413451-001DUP
Test Notes:

Units: mg/L (ppm)
Basis: NA

Analyte	Prep Method	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Fluoride	NONE	340.2	0.20	19.1	19.0	19.05	< 1	

ALS Group USA, Corp.
dba ALS Environmental
QA/QC Report

Client:	Klohn Crippen Berger	**Service Request:**	K1412098
Project:	TCLP/Metals & Fluoride	**Date Collected:**	NA
Sample Matrix:	Liquid	**Date Received:**	NA
		Date Extracted:	NA
		Date Analyzed:	11/20/2014

Matrix Spike Summary
Inorganic Parameters

Sample Name:	Batch QC	Units:	mg/L (ppm)
Lab Code:	K1413451-001MS	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Spike Level	Sample Result	Spiked Sample Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Fluoride	NONE	340.2	0.20	25	19.1	43.2	96	75-125	

ALS Group USA, Corp.
dba ALS Environmental
QA/QC Report

Client:	Klohn Crippen Berger	**Service Request:**	K1412098
Project:	TCLP/Metals & Fluoride	**Date Collected:**	NA
LCS Matrix:	Liquid	**Date Received:**	NA
		Date Extracted:	NA
		Date Analyzed:	11/20/2014

Laboratory Control Sample Summary
Inorganic Parameters

Sample Name:	Lab Control Sample	Units:	mg/L (ppm)
Lab Code:	K1412098-LCS	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Fluoride	NONE	340.2	9.83	10.2	104	85-115	

ALS Group USA, Corp.
dba ALS Environmental
QA/QC Report

Client:	Klohn Crippen Berger	**Service Request:**	K1412098
Project:	TCLP/Metals & Fluoride	**Date Collected:**	NA
LCS Matrix:	Liquid	**Date Received:**	NA
		Date Extracted:	NA
		Date Analyzed:	12/4/2014

Laboratory Control Sample Summary
Inorganic Parameters

Sample Name:	Lab Control Sample	Units:	mg/L
Lab Code:	K1412098-LCS	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Fluoride	NONE	340.2	9.83	10.3	105	85-115	

ALS Group USA, Corp.
dba ALS Enviromental
Analytical Report

Client :	Klohn Crippen Berger	**Service Request :**	K1412098
Project Name :	TCLP/Metals & Fluoride	**Date Collected :**	NA
Project Number :	NA	**Date Received :**	09/04/14
Matrix :	Soil	**Date TCLP Performed :**	10/30/14
		Date Extracted :	10/31/14
		Date Analyzed :	11/05-11/14

Toxicity Characteristic Leaching Procedure (TCLP)
EPA Method 1311
Metals
Units: mg/L (ppm) in TCLP Extract

Sample Name : GILA 07-TCLP
Lab Code : K1412098-001

Analyte	EPA Method	MRL	Regulatory Limit *	Sample Result	Result Notes
Antimony	3010A/6010C	0.1	-	ND	
Arsenic	3010A/6010C	0.05	5	ND	
Barium	3010A/6010C	0.05	100	0.07	
Beryllium	3010A/6010C	0.005	-	ND	
Cadmium	3010A/6010C	0.005	1	ND	
Chromium	3010A/6010C	0.02	5	ND	
Lead	3010A/6010C	0.05	5	ND	
Mercury	7470A	0.001	0.2	ND	
Nickel	3010A/6010C	0.02	-	ND	
Selenium	3010A/6010C	0.1	1	ND	
Thallium	3010A/6010C	0.05	-	ND	

* From 40 CFR Part 261, et al., and Federal Register, March 29, 1990 and June 29, 1990.

ALS Group USA, Corp.
dba ALS Enviromental
Analytical Report

Client :	Klohn Crippen Berger	**Service Request :**	K1412098
Project Name :	TCLP/Metals & Fluoride	**Date Collected :**	NA
Project Number :	NA	**Date Received :**	09/04/14
Matrix :	Soil	**Date TCLP Performed :**	10/30/14
		Date Extracted :	10/31/14
		Date Analyzed :	11/05-11/14

Toxicity Characteristic Leaching Procedure (TCLP)
EPA Method 1311
Metals
Units: mg/L (ppm) in TCLP Extract

Sample Name : GILA 15-TCLP
Lab Code : K1412098-002

Analyte	EPA Method	MRL	Regulatory Limit *	Sample Result	Result Notes
Antimony	3010A/6010C	0.1	-	ND	
Arsenic	3010A/6010C	0.05	5	ND	
Barium	3010A/6010C	0.05	100	0.05	
Beryllium	3010A/6010C	0.005	-	ND	
Cadmium	3010A/6010C	0.005	1	ND	
Chromium	3010A/6010C	0.02	5	ND	
Lead	3010A/6010C	0.05	5	ND	
Mercury	7470A	0.001	0.2	ND	
Nickel	3010A/6010C	0.02	-	ND	
Selenium	3010A/6010C	0.1	1	ND	
Thallium	3010A/6010C	0.05	-	ND	

* From 40 CFR Part 261, et al., and Federal Register, March 29, 1990 and June 29, 1990.

ALS Group USA, Corp.
dba ALS Enviromental
Analytical Report

Client :	Klohn Crippen Berger	**Service Request :**	K1412098
Project Name :	TCLP/Metals & Fluoride	**Date Collected :**	NA
Project Number :	NA	**Date Received :**	09/04/14
Matrix :	Soil	**Date TCLP Performed :**	10/30/14
		Date Extracted :	10/31/14
		Date Analyzed :	11/05-11/14

Toxicity Characteristic Leaching Procedure (TCLP)
EPA Method 1311
Metals
Units: mg/L (ppm) in TCLP Extract

Sample Name : GILA 20-TCLP
Lab Code : K1412098-003

Analyte	EPA Method	MRL	Regulatory Limit *	Sample Result	Result Notes
Antimony	3010A/6010C	0.1	-	ND	
Arsenic	3010A/6010C	0.05	5	ND	
Barium	3010A/6010C	0.05	100	0.16	
Beryllium	3010A/6010C	0.005	-	ND	
Cadmium	3010A/6010C	0.005	1	ND	
Chromium	3010A/6010C	0.02	5	ND	
Lead	3010A/6010C	0.05	5	ND	
Mercury	7470A	0.001	0.2	ND	
Nickel	3010A/6010C	0.02	-	ND	
Selenium	3010A/6010C	0.1	1	ND	
Thallium	3010A/6010C	0.05	-	ND	

* From 40 CFR Part 261, et al., and Federal Register, March 29, 1990 and June 29, 1990.

ALS Group USA, Corp.
dba ALS Enviromental
Analytical Report

Client :	Klohn Crippen Berger	**Service Request :**	K1412098
Project Name :	TCLP/Metals & Fluoride	**Date Collected :**	NA
Project Number :	NA	**Date Received :**	09/04/14
Matrix :	Soil	**Date TCLP Performed :**	10/30/14
		Date Extracted :	10/31/14
		Date Analyzed :	11/05-11/14

Toxicity Characteristic Leaching Procedure (TCLP)
EPA Method 1311
Metals
Units: mg/L (ppm) in TCLP Extract

Sample Name : GILA 22-TCLP
Lab Code : K1412098-004

Analyte	EPA Method	MRL	Regulatory Limit *	Sample Result	Result Notes
Antimony	3010A/6010C	0.1	-	ND	
Arsenic	3010A/6010C	0.05	5	ND	
Barium	3010A/6010C	0.05	100	0.08	
Beryllium	3010A/6010C	0.005	-	ND	
Cadmium	3010A/6010C	0.005	1	ND	
Chromium	3010A/6010C	0.02	5	ND	
Lead	3010A/6010C	0.05	5	ND	
Mercury	7470A	0.001	0.2	ND	
Nickel	3010A/6010C	0.02	-	ND	
Selenium	3010A/6010C	0.1	1	ND	
Thallium	3010A/6010C	0.05	-	ND	

* From 40 CFR Part 261, et al., and Federal Register, March 29, 1990 and June 29, 1990.

ALS Group USA, Corp.
dba ALS Enviromental
Analytical Report

Client :	Klohn Crippen Berger	**Service Request :**	K1412098
Project Name :	TCLP/Metals & Fluoride	**Date Collected :**	NA
Project Number :	NA	**Date Received :**	09/04/14
Matrix :	Soil	**Date TCLP Performed :**	10/30/14
		Date Extracted :	10/31/14
		Date Analyzed :	11/05-11/14

Toxicity Characteristic Leaching Procedure (TCLP)
EPA Method 1311
Metals
Units: mg/L (ppm) in TCLP Extract

Sample Name : GILA 29-TCLP
Lab Code : K1412098-005

Analyte	EPA Method	MRL	Regulatory Limit *	Sample Result	Result Notes
Antimony	3010A/6010C	0.1	-	ND	
Arsenic	3010A/6010C	0.05	5	ND	
Barium	3010A/6010C	0.05	100	0.22	
Beryllium	3010A/6010C	0.005	-	ND	
Cadmium	3010A/6010C	0.005	1	ND	
Chromium	3010A/6010C	0.02	5	ND	
Lead	3010A/6010C	0.05	5	ND	
Mercury	7470A	0.001	0.2	ND	
Nickel	3010A/6010C	0.02	-	ND	
Selenium	3010A/6010C	0.1	1	ND	
Thallium	3010A/6010C	0.05	-	ND	

* From 40 CFR Part 261, et al., and Federal Register, March 29, 1990 and June 29, 1990.

ALS Group USA, Corp.
dba ALS Enviromental
Analytical Report

Client :	Klohn Crippen Berger	**Service Request :**	K1412098
Project Name :	TCLP/Metals & Fluoride	**Date Collected :**	NA
Project Number :	NA	**Date Received :**	NA
Matrix :	Soil	**Date TCLP Performed :**	10/30/14
		Date Extracted :	10/31/14
		Date Analyzed :	11/05-11/14

Toxicity Characteristic Leaching Procedure (TCLP)
EPA Method 1311
Metals
Units: mg/L (ppm) in TCLP Extract

Sample Name : Method Blank
Lab Code : K1412098-MB

Analyte	EPA Method	MRL	Regulatory Limit *	Sample Result	Result Notes
Antimony	3010A/6010C	0.1	-	ND	
Arsenic	3010A/6010C	0.05	5	ND	
Barium	3010A/6010C	0.05	100	ND	
Beryllium	3010A/6010C	0.005	-	ND	
Cadmium	3010A/6010C	0.005	1	ND	
Chromium	3010A/6010C	0.02	5	ND	
Lead	3010A/6010C	0.05	5	ND	
Mercury	7470A	0.001	0.2	ND	
Nickel	3010A/6010C	0.02	-	ND	
Selenium	3010A/6010C	0.1	1	ND	
Thallium	3010A/6010C	0.05	-	ND	

* From 40 CFR Part 261, et al., and Federal Register, March 29, 1990 and June 29, 1990.

ALS Group USA, Corp.
dba ALS Enviromental
QA/QC Report

Client :	Klohn Crippen Berger	**Service Request :**	K1412098
Project Name :	TCLP/Metals & Fluoride	**Date Collected :**	NA
Project Number :	NA	**Date Received :**	09/04/14
Matrix :	Soil	**Date TCLP Performed :**	10/30/14
		Date Extracted :	10/31/14
		Date Analyzed :	11/05-11/14

Matrix Spike Summary
Toxicity Characteristic Leaching Procedure (TCLP)
EPA Method 1311
Metals
Units: mg/L (ppm) in TCLP Extract

Sample Name : GILA 07-TCLP
Lab Code : K1412098-001S

Analyte	Spike Level	Sample Result	Spiked Sample Result	Percent Recovery*	Result Notes
Antimony	0.50	ND	0.4	80	
Arsenic	1.00	ND	0.98	98	
Barium	1.00	0.07	1.04	97	
Beryllium	0.050	ND	0.05	100	
Cadmium	0.050	ND	0.05	100	
Chromium	0.20	ND	0.19	95	
Lead	0.50	ND	0.45	90	
Mercury	0.0050	ND	0.005	100	
Nickel	0.50	ND	0.46	92	
Selenium	1.00	ND	0.88	88	
Thallium	1.00	ND	0.87	87	

* From 40 CFR Part 261, et al., and Federal Register, March 29, 1990 and June 29, 1990.

KLOHN CRIPPEN BERGER LTD.
ATTN: KATE PATTERSON
500 - 2955 Virtual Way
VANCOUVER BC V5M 4X6

Date Received: 08-OCT-14
Report Date: 16-OCT-14 13:34 (MT)
Version: FINAL

Client Phone: 604-669-3800

Certificate of Analysis

Lab Work Order #: L1529808

Project P.O. #: NOT SUBMITTED
Job Reference:
C of C Numbers:
Legal Site Desc:



Brian Morgan
Account Manager

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ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L1529808-1	L1529808-2	L1529808-3	L1529808-4	L1529808-5
	Description	PULP	PULP	PULP	PULP	PULP
	Sampled Date					
	Sampled Time					
	Client ID	GILA 07	GILA 09	GILA 13	GILA 15	GILA 20
Grouping	**Analyte**					
SOIL						
Physical Tests	Loss on Ignition @ 375 C (%)	2.5	1.9	2.6	2.4	1.7
	Organic Matter (%)	2.2	1.8	2.3	2.1	1.6
Anions and Nutrients	Total Nitrogen by LECO (%)	<0.020	<0.020	<0.020	<0.020	<0.020
Metals	Phosphorus (P) (mg/kg)	623	517	418	1220	234
	Potassium (K) (mg/kg)	2520	2330	2670	4720	2010
	Sulfur (S)-Total (mg/kg)	<500	<500	<500	<500	<500

ALS ENVIRONMENTAL ANALYTICAL REPORT

Grouping	Analyte	Sample ID: L1529808-6	L1529808-7	L1529808-8	L1529808-9	
		Description: PULP	PULP	PULP	PULP	
		Sampled Date:				
		Sampled Time:				
		Client ID: GILA 22	GILA 25	GILA 29	STOCKPILE #10	
SOIL						
Physical Tests	Loss on Ignition @ 375 C (%)	3.7	2.0	2.4	1.9	
	Organic Matter (%)	3.2	1.8	2.2	1.7	
Anions and Nutrients	Total Nitrogen by LECO (%)	<0.020	0.025	0.028	<0.020	
Metals	Phosphorus (P) (mg/kg)	245	313	283	508	
	Potassium (K) (mg/kg)	4390	2070	2100	3030	
	Sulfur (S)-Total (mg/kg)	<500	<500	<500	<500	

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
K-SALM-ICP-SK	Soil	Strong Acid Leachable Potassium	EPA 200.2

This analysis is carried out using procedures from CSR Analytical Method: "Strong Acid Leachable Metals (SALM) in Soil", BC Ministry of Environment, 26 June 2009, and procedures adapted from EPA Method 200.2. The sample is dried at 40 C, then ground to < 2 mm particle size using a stainless steel flail grinder. A representative portion is digested with concentrated nitric and hydrochloric acids for 2 hours in an open vessel digestor at 95 degrees. Instrumental analysis of the digested extract is by ICP-OES.

N-TOT-LECO-SK	Soil	Total Nitrogen by combustion method	SSSA (1996) P. 973-974

The sample is ignited in a combustion analyzer where nitrogen in the reduced nitrous oxide gas is determined using a thermal conductivity detector.

OM-LOI-SK	Soil	Organic Matter by LOI at 375 deg C.	CSSS (1978) p. 160

The dry-ash method involves the removal of organic matter by combustion at 375 degrees C for a minimum of 16 hours. Samples are dried prior to combustion.

Reference: McKeague, J.A. Soil Sampling and Methods of Analysis. Can. Soc. Soil Sci.(1978) method 4.23

P-SALM-ICP-SK	Soil	Strong Acid Leachable Phosphorus	EPA 200.2/APHA 3120B

This analysis is carried out using procedures from CSR Analytical Method: "Strong Acid Leachable Metals (SALM) in Soil", BC Ministry of Environment, 26 June 2009, and procedures adapted from EPA Method 200.2. The sample is dried at 40 C, then ground to < 2 mm particle size using a stainless steel flail grinder. A representative portion is digested with concentrated nitric and hydrochloric acids for 2 hours in an open vessel digestor at 95 degrees. Instrumental analysis of the digested extract is by ICP-OES.

S-TOT-LECO-SK	Soil	Total Sulphur by combustion method	ISO 15178:2000

The sample is ignited in a combustion analyzer where sulfur in the reduced SO2 gas is determined using a thermal conductivity detector.

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
SK	ALS ENVIRONMENTAL - SASKATOON, SASKATCHEWAN, CANADA

Chain of Custody Numbers:

GLOSSARY OF REPORT TERMS

Surrogate - A compound that is similar in behaviour to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.
mg/kg - milligrams per kilogram based on dry weight of sample.
mg/kg wwt - milligrams per kilogram based on wet weight of sample.
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight of sample.
mg/L - milligrams per litre.
< - Less than.
D.L. - The reported Detection Limit, also known as the Limit of Reporting (LOR).
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

L1529808-COFC

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here (lab use only)

COC Number: 14 - 423115

Page ____ of ____

Report To	Howard.Shafer@alsglobal.com
Company:	
Contact:	
Address:	
Phone:	

Report Format / Distribution

Select Report Format: ☐ PDF ☐ EXCEL ☐ EDD (DIGITAL)
Quality Control (QC) Report with Report ☐ Yes ☐ No
☐ Criteria on Report - provide details below if box checked
Select Distribution: ☐ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax
Email 2

Select Service Level Below (Rush Turnaround Time (TAT) is not available for all tests)

- R ☑ Regular (Standard TAT if received by 3pm)
- P ☐ Priority (2-4 business days if received by 3pm)
- E ☐ Emergency (1-2 business days if received by 3pm)
- E2 ☐ Same day or weekend emergency if received by 10am – contact ALS for surcharge.

Specify Date Required for E2,E or P:

Invoice To	Same as Report To ☐ Yes ☐ No
	Copy of Invoice with Report ☐ Yes ☐ No
Company:	
Contact:	

Invoice Distribution

Select Invoice Distribution: ☐ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax
Email 2

Project Information	
ALS Quote #:	
Job #:	ALS180
PO / AFE:	
LSD:	

Oil and Gas Required Fields (client use)

Approver ID:	Cost Center:
GL Account:	Routing Code:
Activity Code:	
Location:	

ALS Lab Work Order # (lab use only)

ALS Contact:

Sampler:

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NPK-S-IOT-SK	OM-IOT-SK	Number of Containers
1	GILA 07			pulp pwp	X	X	
2	GILA 09				X	X	
3	GILA 13				X	X	
4	GILA 15				X	X	
5	GILA 20				X	X	
6	GILA 22				X	X	
7	GILA 25				X	X	
8	GILA 29				X	X	
9	GILA 32				X	X	

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ Yes ☐ No

Are samples for human drinking water use? ☐ Yes ☐ No

Special Instructions / Specify Criteria to add on report (client Use)

No COC or sublet sheet. From ALS minerals. Samples dry & ground.
(9) 1 x bag

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen	☐	SIF Observations	Yes ☐ No ☐
Ice packs	Yes ☐ No ☐	Custody seal intact	Yes ☐ No ☐
Cooling Initiated	☐		

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
19°C							

SHIPMENT RELEASE (client use)		
Released by:	Date:	Time:

INITIAL SHIPMENT RECEPTION (lab use only)		
Received by: AD	Date: Oct 7	Time: 3pm

FINAL SHIPMENT RECEPTION (lab use only)		
Received by: AD	Date: Oct 7	Time: 3pm

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

NA-FM-0326a v08 Front/03 October 2013

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

Project Name:
Resolution Project - Near West Closure Cover Study

ALS Canada Ltd.
2103 Dollarton Hwy
North Vancouver BC V7H 0A7
Phone: 604 984 0221 Fax: 604 984 0218 www.alsglobal.com

To: KLOHN CRIPPEN BERGER LTD.
500- 2955 VIRTUAL WAY
VANCOUVER BC V5M 4X6

Finalized Date: 6- FEB- 2015
Account: KOCRIB

CERTIFICATE TU15011730

P.O. No.: MO2014- PO074

This report is for 34 Other samples submitted to our lab in Tucson, AZ, USA on 22- JAN- 2015.

The following have access to data associated with this certificate:

JIM CASEY	KATE PATTERSON	

SAMPLE PREPARATION

ALS CODE	DESCRIPTION
FND- 02	Find Sample for Addn Analysis

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION
OA- ELE17	Paste conductivity

To: KLOHN CRIPPEN BERGER LTD.
ATTN: KATE PATTERSON
500- 2955 VIRTUAL WAY
VANCOUVER BC V5M 4X6

This is the Final Report and supersedes any preliminary report with this certificate number. Results apply to samples as submitted. All pages of this report have been checked and approved for release.

***** See Appendix Page for comments regarding this certificate *****

Signature:
Colin Ramshaw, Vancouver Laboratory Manager

ALS Canada Ltd.
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North Vancouver BC V7H 0A7
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VANCOUVER BC V5M 4X6

Finalized Date: 6- FEB- 2015
Account: KOCRIB

CERTIFICATE OF ANALYSIS TU15011730

Sample Description	Method Analyte Units LOR	OA- ELE17 Conducti uS/cm 1
GILA01		303
GILA02		487
GILA03		240
GILA04		269
GILA05		462
GILA06		271
GILA07		372
GILA08		304
GILA09		1020
GILA10		273
GILA11		270
GILA12		316
GILA13		4340
GILA14		334
GILA15		318
GILA16		306
GILA17		267
GILA18		317
GILA19		316
GILA20		298
GILA21		748
GILA22		1285
GILA23		272
GILA24		315
GILA25		365
GILA26		355
GILA27		361
GILA28		338
GILA29		308
GILA30		321
Stockpile #5		334
Stockpile #10		345
Stockpile #15		362
Stockpile #20		255

***** See Appendix Page for comments regarding this certificate *****

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To: KLOHN CRIPPEN BERGER LTD.
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VANCOUVER BC V5M 4X6

Finalized Date: 6- FEB- 2015
Account: KOCRIB

CERTIFICATE OF ANALYSIS TU15011730

	CERTIFICATE COMMENTS
	LABORATORY ADDRESSES
Applies to Method:	Processed at ALS Vancouver located at 2103 Dollarton Hwy, North Vancouver, BC, Canada. OA- ELE17

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North Vancouver BC V7H 0A7
Phone: 604 984 0221 Fax: 604 984 0218 www.alsglobal.com

To: KLOHN CRIPPEN BERGER LTD.
500- 2955 VIRTUAL WAY
VANCOUVER BC V5M 4X6

Finalized Date: 6- FEB- 2015
Account: KOCRIB

QC CERTIFICATE TU15011730

P.O. No.: MO2014- PO074
This report is for 34 Other samples submitted to our lab in Tucson, AZ, USA on 22- JAN- 2015.
The following have access to data associated with this certificate:

JIM CASEY	KATE PATTERSON	

SAMPLE PREPARATION

ALS CODE	DESCRIPTION
FND- 02	Find Sample for Addn Analysis

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION
OA- ELE17	Paste conductivity

To: KLOHN CRIPPEN BERGER LTD.
ATTN: KATE PATTERSON
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This is the Final Report and supersedes any preliminary report with this certificate number. Results apply to samples as submitted. All pages of this report have been checked and approved for release.

***** See Appendix Page for comments regarding this certificate *****

Signature:
Colin Ramshaw, Vancouver Laboratory Manager

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To: KLOHN CRIPPEN BERGER LTD.
500- 2955 VIRTUAL WAY
VANCOUVER BC V5M 4X6

Finalized Date: 6- FEB- 2015
Account: KOCRIB

QC CERTIFICATE OF ANALYSIS TU15011730

Sample Description	Method Analyte Units LOR	OA- ELE17 Conducti uS/cm 1
STANDARDS		
0.002M KCl		297
Target Range -	Lower Bound	291
	Upper Bound	315
447uS/cm		444
Target Range -	Lower Bound	430
	Upper Bound	464
BLANKS		
BLANK		1
Target Range -	Lower Bound	<1
	Upper Bound	4
DUPLICATES		
GILA10		273
DUP		270
Target Range -	Lower Bound	264
	Upper Bound	279

***** See Appendix Page for comments regarding this certificate *****

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To: KLOHN CRIPPEN BERGER LTD.
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VANCOUVER BC V5M 4X6

Finalized Date: 6- FEB- 2015
Account: KOCRIB

QC CERTIFICATE OF ANALYSIS TU15011730

	CERTIFICATE COMMENTS
	LABORATORY ADDRESSES
Applies to Method:	Processed at ALS Vancouver located at 2103 Dollarton Hwy, North Vancouver, BC, Canada. OA- ELE17

APPENDIX I-F

GSA Laboratory Results

I-F-1 – Preliminary Sieve Analyses
I-F-2 – Final Report
I-F-3 – Methodology and Results of Manufactured Scavenger Tailings

APPENDIX I-F-1

Preliminary Sieve Analyses

Pre-Sieve Split Datasheet

General Check-In Information

Client: Klohn Crippen Berger (KCB) Date: 9/3/2014

Project Number: 91400b Technician: AMC

Samples

Sample Name	Sample Mass in Container (kg)	Container Tare (kg)	Sample Mass Minus Container (kg)	Sample Above 2" (#2) (kg)	Container Tare Above 2" (kg)	Sample Above 2" Minus Tare (kg)	Sample Between 2" & #10 (kg)	Container Tare <2" and >#10 (kg)	Sample Between 2" & #10 (kg) Minus Tare	Sample Below #10 (kg)	Container Tare <#10	Sample Below #10 (kg) Minus Tare	Notes
Stockpile #4	29.26	0.80	**28.46**	10.1	0.8	**9.3**	14.88	0.8	**14.08**	5.78	0.8	**4.98**	
Stockpile #5	24.12	0.80	**23.32**	6.02	0.76	**5.26**	13.26	0.84	**12.42**	6.44	0.9	**5.54**	
Stockpile #6	27.42	0.80	**26.62**	10.74	0.8	**9.94**	13.12	0.76	**12.36**	5.3	1.06	**4.24**	
Stockpile #8	30.40	0.82	**29.58**	8.36	0.74	**7.62**	16.46	0.76	**15.7**	6.95	0.8	**6.15**	
Stockpile #11	27.18	0.82	**26.36**	16.42	0.74	**15.68**	8.56	0.8	**7.76**	3.64	0.76	**2.88**	
Stockpile #12	28.46	0.74	**27.72**	19.94	0.8	**19.14**	7.1	0.98	**6.12**	3.1	0.76	**2.34**	
Stockpile #14	28.48	0.80	**27.68**	7	0.8	**6.2**	14.26	0.76	**13.5**	8.76	0.9	**7.86**	
Stockpile #15	25.96	0.74	**25.22**	13.19	0.76	**12.43**	9.5	0.8	**8.7**	4.82	0.8	**4.02**	
Stockpile #16	29.08	0.82	**28.26**	13.82	0.84	**12.98**	12.62	0.76	**11.86**	4.18	0.88	**3.3**	
Stockpile #17	27.64	0.74	**26.90**	8.94	0.8	**8.14**	14.76	0.8	**13.96**	5.5	0.8	**4.7**	
Stockpile #18	28.36	0.74	**27.62**	5.34	0.74	**4.6**	18.64	0.83	**17.81**	5.96	0.8	**5.16**	
Stockpile #19	26.72	0.80	**25.92**	13.72	0.82	**12.9**	11.34	0.78	**10.56**	3.32	0.76	**2.56**	
Stockpile #21	30.06	0.80	**29.26**	15.02	0.8	**14.22**	12.14	0.8	**11.34**	4.42	0.8	**3.62**	
Stockpile #23	27.26	0.80	**26.46**	12.9	0.74	**12.16**	12.46	0.82	**11.64**	3.34	0.76	**2.58**	
Stockpile #24	30.18	0.80	**29.38**	7.06	0.74	**6.32**	16.7	0.84	**15.86**	7.94	0.88	**7.06**	
Stockpile #25	27.86	0.82	**27.04**	8.56	0.82	**7.74**	15.08	0.8	**14.28**	5.8	0.9	**4.9**	

NOTES: 2" sieve is #2 sieve

Proposed Fines (Passing #10) Divisions

* assumed .02 GWC

Dry above #10	Dry below #10	% above #10	% Passing #10
23.38	4.88	0.83	0.17
17.68	5.43	0.76	0.24
22.30	4.16	0.84	0.16
23.32	6.03	0.79	0.21
23.44	2.82	0.89	0.11
25.26	2.29	0.92	0.08
19.70	7.71	0.72	0.28
21.13	3.94	0.84	0.16
24.84	3.24	0.88	0.12
22.10	4.61	0.83	0.17
22.41	5.06	0.82	0.18
23.46	2.51	0.90	0.10
25.56	3.55	0.88	0.12
23.80	2.53	0.90	0.10
22.18	6.92	0.76	0.24
22.02	4.80	0.82	0.18

	0.16	overall average
coarse	0.10	average of red
intermediate	0.17	average of yellow
Fine	0.24	average of green

APPENDIX I-F-2

Final Report

GeoSystems Analysis, Inc.
Innovations in Hydrology

3393 N Dodge Blvd
Tucson, AZ 85716
520-628-9330
Fax: 520-628-1122
www.gsanalysis.com

DATE: February 2, 2015
Project # **GSA 91400b**
Project Name **Resolution Project – Near West Closure Cover Study**
TO: Klohn Crippen Berger
500 - 2955 Virtual Way
Vancouver BC V5M 4X6 CANADA
Project Contact Kate Patterson
Enclosed are results for: Tailings and Gila Conglomerate Physical and Hydraulic Properties Testing Analysis

Test	*Method*	*Qty*
Specific Gravity of Soils	ASTM D 854 - 02	2
Particle Size Analysis with Hydrometer	ASTM D 422 - 63 / ASTM C136	11
Saturated Hydraulic Conductivity	ASTM 2434 - 68 / MOSA Part 4, Method 3.4.2.2	7
Moisture Retention Characteristic Curve	ASTM D 6836 - 02	7
van Genuchten Hydraulic Parameters	USEPA 600/2-91/065	7

Thank you for choosing GeoSystems Analysis for your material testing needs. We look forward to working with you again. If you have any questions or require additional information, please contact us at 1-520-628-9330

Sincerely,

Prepared By: Philip Calabrese
Laboratory Project Manager

Reviewed By: Mike Yao
Laboratory Technical Director

GeoSystems Analysis, Inc.
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Laboratory Test Results - Soil Specific Gravity

Date: February 2, 2015
Job No: **GSA 91400b**
Job Name: **Resolution Project – Near West Closure Cover Study**
Job Description: Tailings and Gila Conglomerate Physical and Hydraulic Properties Testing Analysis
Company: Klohn Crippen Berger

Sample ID	Specific Gravity (g/cm^3)
Cleaner Tailings	3.45
Scavenger Tailings	2.78

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www.gsanalysis.com

Laboratory Test Results - Soil Particle Size Distribution with Hydrometer

Date: February 2, 2015
Job No: **GSA 91400b**
Job Name: **Resolution Project – Near West Closure Cover Study**
Job Description: Tailings and Gila Conglomerate Physical and Hydraulic Properties Testing Analysis
Company: Klohn Crippen Berger

Tailings Samples PSD						
Mesh (mm)	Sieve	Sample ID				
		Cleaner Tailings	Scavenger Tailings	Scavenger Tailings #2	Beach Scavenger Tailings	Slimes Scavenger Tailings
		Percent Passing				
152	6"	100	100	100	100	100
100	4"	100	100	100	100	100
75	3"	100	100	100	100	100
50.8	2"	100	100	100	100	100
38.1	1.5"	100	100	100	100	100
25.4	1"	100	100	100	100	100
19.05	3/4"	100	100	100	100	100
12.7	1/2"	100	100	100	100	100
9.525	3/8"	100	100	100	100	100
6.4	0.25"	100	100	100	100	100
4.75	#4	100	100	100	100	100
2.36	#8	100	100	100	100	100
2	#10	100	100	100	100	100
1.18	#16	100	100	100	100	100
0.6	#30	100	100	100	100	100
0.425	#40	100	100	100	100	100
0.3	#50	100	99	98	100	100
0.15	#100	100	68	70	64	100
0.075	#200	97.6	52.4	47.2	24.8	94.1
0.05	Hydrometer	83.7	45.6	39.2	20.9	79.1
0.025		60.7	33.7	27.6	15.0	56.5
0.02		53.8	29.8	24.3	13.4	50.1
0.01		34.2	18.9	15.6	8.8	32.7
0.005		18.8	10.2	9.2	5.2	19.1
0.002		7.2	4.6	3.9	2.0	7.2

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Laboratory Test Results - Soil Particle Size Distribution with Hydrometer

Date: February 2, 2015
Job No: **GSA 91400b**
Job Name: **Resolution Project – Near West Closure Cover Study**
Job Description: Tailings and Gila Conglomerate Physical and Hydraulic Properties Testing Analysis
Company: Klohn Crippen Berger

Pre-Test PSD				
Mesh (mm)	Sieve	Sample ID		
		Pre-Test Fine Gila Conglomerat	Pre-Test Coarse Gila Conglomerat	Pre-Test Gila Conglomerate /Tailings Mix
		Percent Passing		
152	6"	100	100	100
100	4"	100	100	100
75	3"	100	66	88
50.8	2"	91	66	85
38.1	1.5"	79	50	75
25.4	1"	68	39	71
19.05	3/4"	60	36	65
12.7	1/2"	54	32	62
9.525	3/8"	46	26	55
6.4	0.25"	42	23	52
4.75	#4	37	20	47
2.36	#8	34	18	45
2	#10	28	15	40
1.18	#16	24	13	39
0.6	#30	19	10	37
0.425	#40	17	9	36
0.3	#50	15	8	35
0.15	#100	11	6	25
0.075	#200	8.8	4.7	17.7
0.05	Hydrometer	7.9	4.3	14.9
0.025		6.4	3.4	10.7
0.02		5.8	3.1	9.5
0.01		4.2	2.3	6.5
0.005		2.9	1.5	4.2
0.002		1.9	1.0	2.4

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Laboratory Test Results - Soil Particle Size Distribution with Hydrometer

Date: February 2, 2015

Job No: **GSA 91400b**

Job Name: **Resolution Project – Near West Closure Cover Study**

Job Description: Tailings and Gila Conglomerate Physical and Hydraulic Properties Testing Analysis

Company: Klohn Crippen Berger

Post-Test PSD				
		Sample ID		
Mesh (mm)	Sieve	Post-Test Fine Gila Conglomerat	Post-Test Coarse Gila Conglomerat	Post-Test Gila Conglomerate /Tailings Mix
		Percent Passing		
152	6"	100	100	100
100	4"	100	100	100
75	3"	100	67	89
50.8	2"	91	67	86
38.1	1.5"	79	53	77
25.4	1"	75	43	71
19.05	3/4"	67	34	64
12.7	1/2"	61	29	59
9.525	3/8"	51	24	53
6.4	0.25"	45	21	50
4.75	#4	38	18	46
2.36	#8	33	16	44
2	#10	25	13	39
1.18	#16	23	12	37
0.6	#30	19	10	35
0.425	#40	17	9	34
0.3	#50	15	8	33
0.15	#100	12	6	24
0.075	#200	9.0	5.0	17.0
0.05	Hydrometer	8.1	4.3	14.2
0.025		6.5	3.3	10.2
0.02		5.9	3.0	9.1
0.01		4.2	2.2	6.3
0.005		2.8	1.6	4.1
0.002		1.7	1.0	2.3

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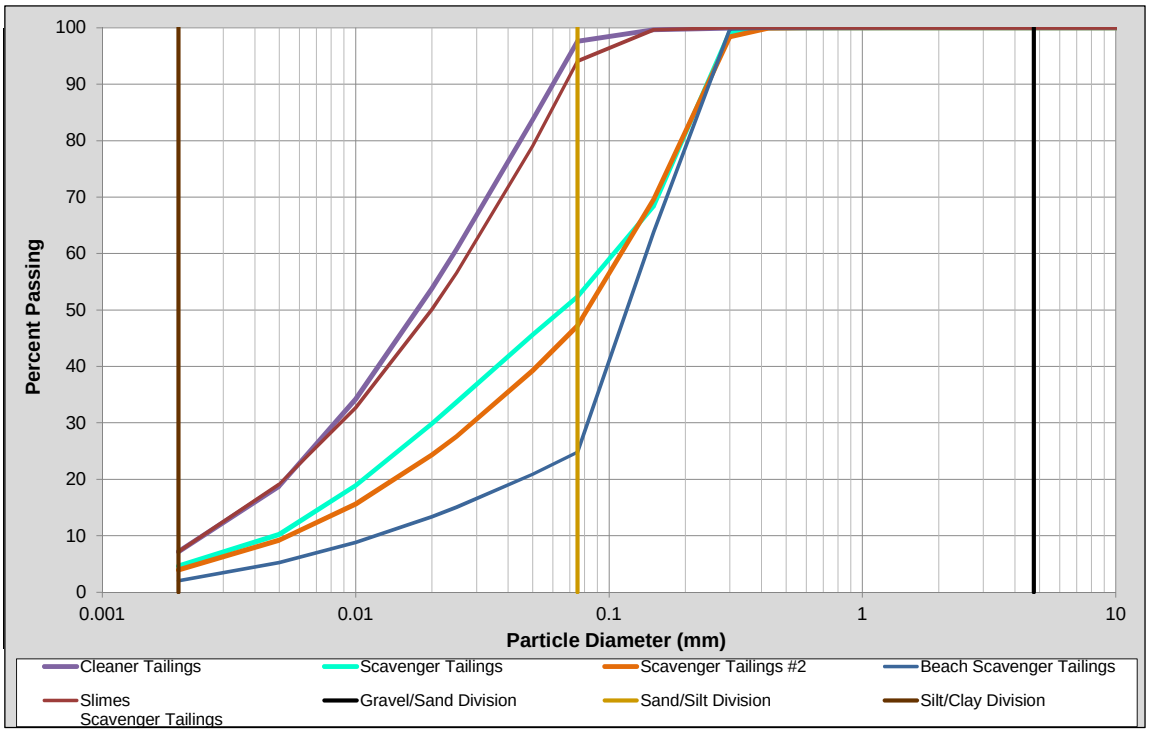
Laboratory Test Results - Soil Particle Size Distribution with Hydrometer

Date: February 2, 2015
Job No: **GSA 91400b**
Job Name: **Resolution Project – Near West Closure Cover Study**
Job Description: Tailings and Gila Conglomerate Physical and Hydraulic Properties Testing Analysis
Company: Klohn Crippen Berger



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Laboratory Test Results - Soil Particle Size Distribution with Hydrometer

Date: February 2, 2015
Job No: **GSA 91400b**
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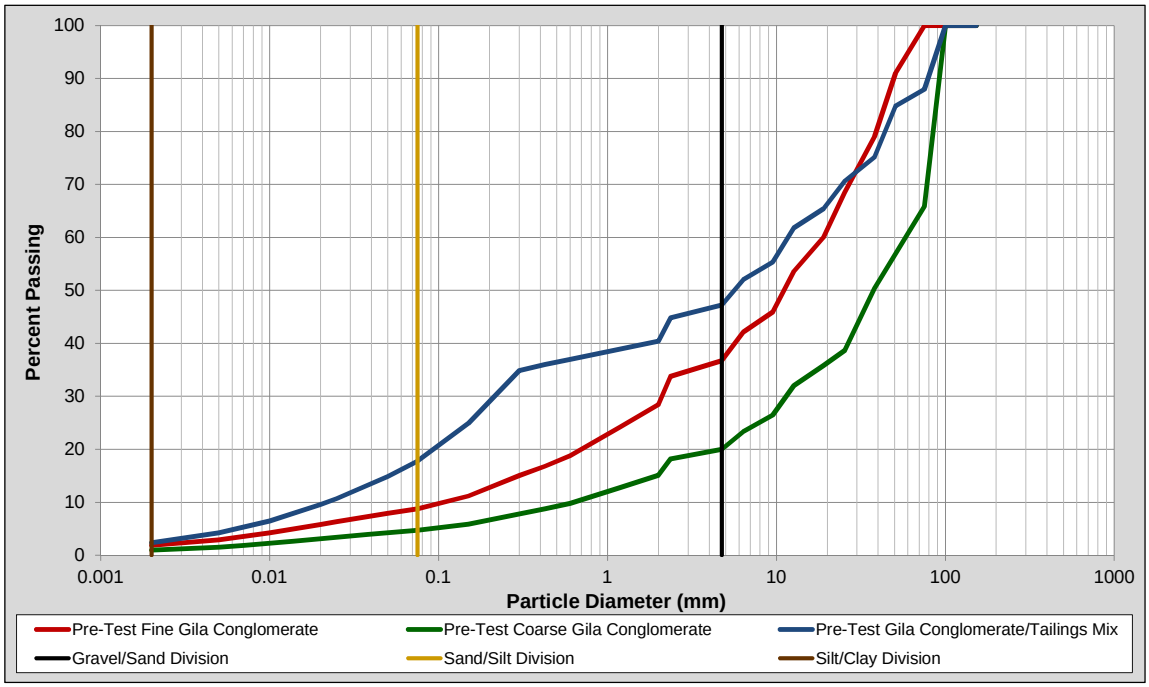
Job Description: Tailings and Gila Conglomerate Physical and Hydraulic Properties Testing Analysis
Company: Klohn Crippen Berger



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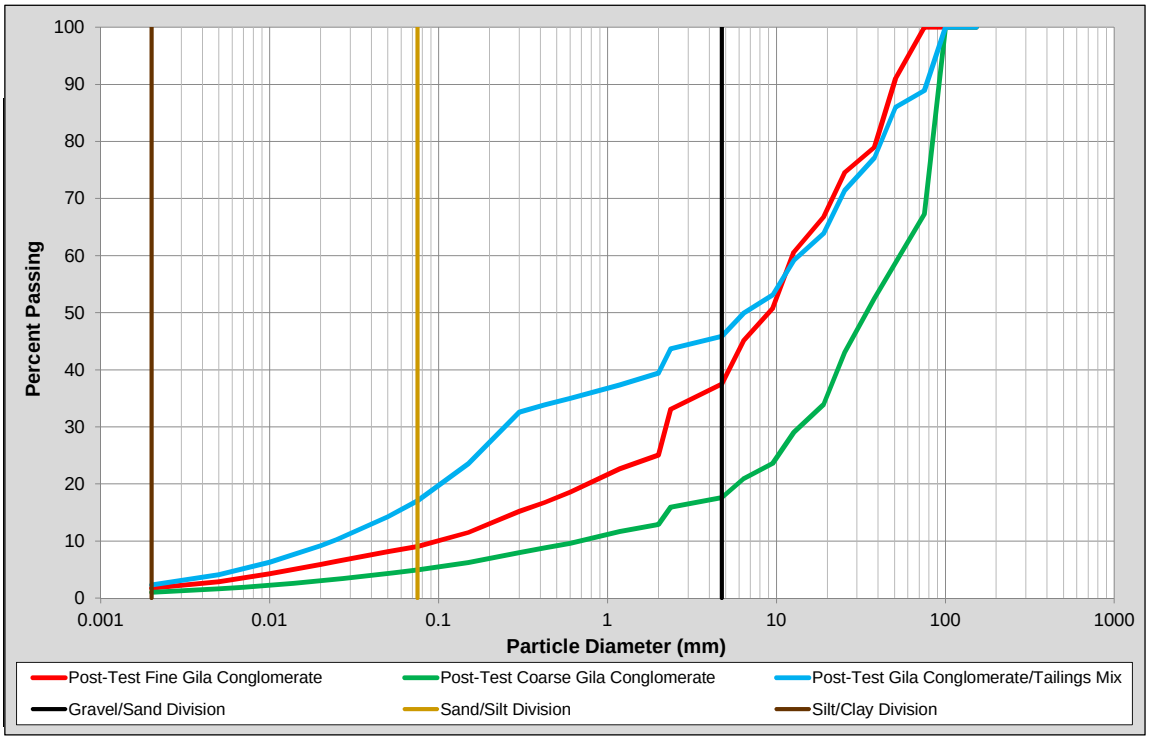
Laboratory Test Results - Soil Particle Size Distribution with Hydrometer

Date: February 2, 2015
Job No: **GSA 91400b**
Job Name: **Resolution Project – Near West Closure Cover Study**
Job Description: Tailings and Gila Conglomerate Physical and Hydraulic Properties Testing Analysis
Company: Klohn Crippen Berger



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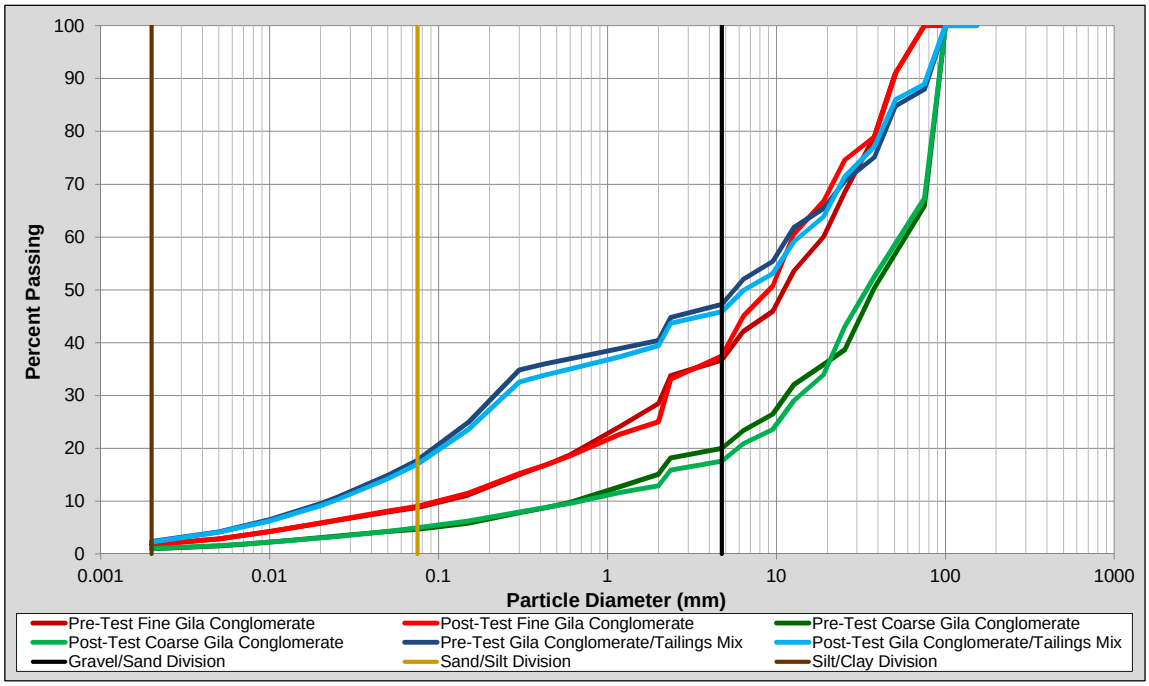
Laboratory Test Results - Soil Particle Size Distribution with Hydrometer

Date: February 2, 2015
Job No: **GSA 91400b**
Job Name: **Resolution Project – Near West Closure Cover Study**
Job Description: Tailings and Gila Conglomerate Physical and Hydraulic Properties Testing Analysis
Company: Klohn Crippen Berger



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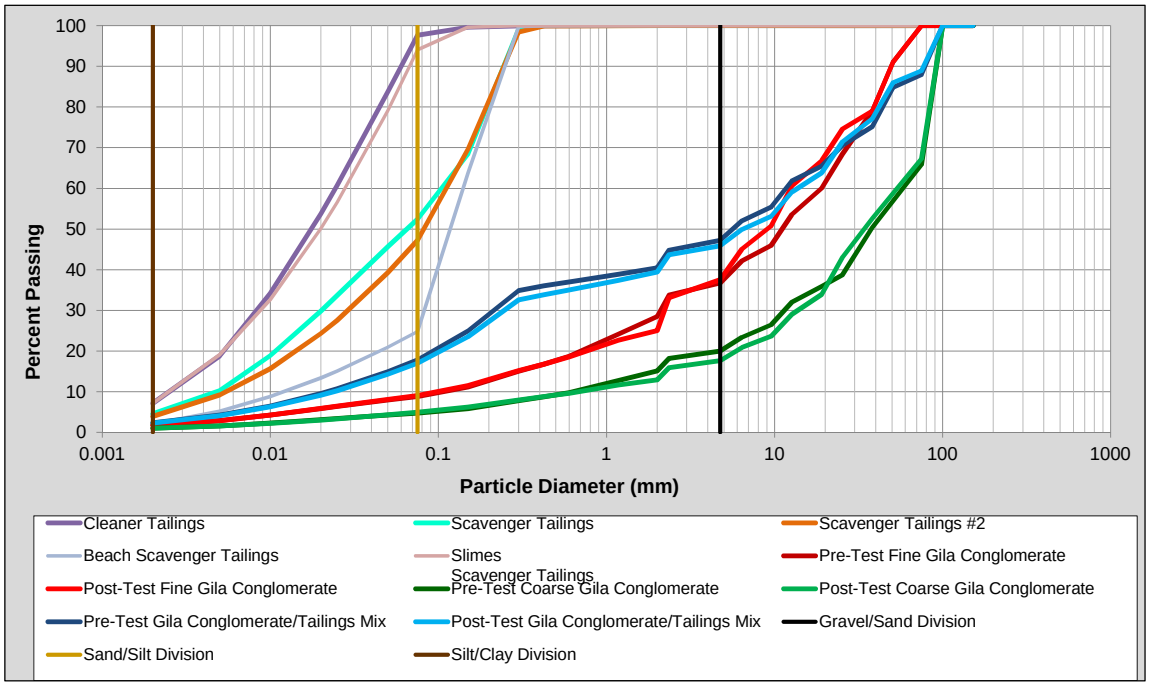
Laboratory Test Results - Soil Particle Size Distribution with Hydrometer

Date: February 2, 2015
Job No: **GSA 91400b**
Job Name: **Resolution Project – Near West Closure Cover Study**
Job Description: Tailings and Gila Conglomerate Physical and Hydraulic Properties Testing Analysis
Company: Klohn Crippen Berger



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www.gsanalysis.com

Laboratory Test Results - Rigid Wall Saturated Hydraulic Conductivity

Date: February 2, 2015
Job No: **GSA 91400b**
Job Name: **Resolution Project – Near West Closure Cover Study**
Job Description: Tailings and Gila Conglomerate Physical and Hydraulic Properties Testing Analysis
Company: Klohn Crippen Berger

Sample ID	Bulk Density (g/cm^3)	Est Total Porosity (cm^3/cm^3)	Saturated Hydraulic Conductivity (cm/s)
Cleaner Tailings	1.73	0.500	7.47E-08
Scavenger Tailings	1.55	0.442	2.33E-05
Beach Scavenger Tailings	1.55	0.442	2.34E-04
Slimes Scavenger Tailings	1.55	0.442	6.30E-07
Coarse Gila Conglomerate	1.83	0.322	8.16E-01
Fine Gila Conglomerate	1.66	0.385	1.71E-01
Gila Conglomerate/Tailings Mix	1.80	0.338	3.27E-03

GSA GeoSystems Analysis, Inc.
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520-628-9330
Fax: 520-628-1122
www.gsanalysis.com

Laboratory Test Results - Moisture Retention Characteristic Curve

Date: February 2, 2015
Job No: **GSA 91400b**
Job Name: **Resolution Project – Near West Closure Cover Study**
Job Description: Tailings and Gila Conglomerate Physical and Hydraulic Properties Testing Analysis
Company: Klohn Crippen Berger

Sample ID	Bulk Density (g/cm^3)	Particle Density (g/cm^3)	Estimated Total Porosity (cm^3/cm^3)	Soil Water Potential (-cm)	Volumetric Water Content (cm^3/cm^3)
Cleaner Tailings	1.73	3.46	0.500	0	0.500
				10	0.500
				30	0.500
				60	0.500
				133	0.500
				333	0.464
				600	0.434
				900	0.390
				3250	0.154
				1343650	0.006
Scavenger Tailings	1.55	2.78	0.442	0	0.442
				10	0.442
				30	0.442
				60	0.442
				133	0.352
				333	0.267
				600	0.225
				900	0.188
				4267	0.083
				1337100	0.006
Beach Scavenger Tailings	1.55	2.78	0.442	0	0.442
				10	0.442
				30	0.442
				60	0.323
				133	0.204
				333	0.146
				600	0.130
				900	0.111
				1291	0.070
				2025800	0.006
Slimes Scavenger Tailings	1.55	2.78	0.442	0	0.442
				10	0.442
				30	0.442
				60	0.442
				133	0.442
				333	0.417
				600	0.378
				900	0.331
				7567	0.123
				1293800	0.011

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Laboratory Test Results - Moisture Retention Characteristic Curve

Date: February 2, 2015
Job No: **GSA 91400b**
Job Name: **Resolution Project – Near West Closure Cover Study**
Job Description: Tailings and Gila Conglomerate Physical and Hydraulic Properties Testing Analysis
Company: Klohn Crippen Berger

Sample ID	Bulk Density (g/cm^3)	Particle Density (g/cm^3)	Estimated Total Porosity (cm^3/cm^3)	Soil Water Potential (-cm)	Volumetric Water Content (cm^3/cm^3)
Coarse Gila Conglomerate	1.83	2.70	0.322	0	0.322
				3	0.186
				5	0.166
				10	0.150
				30	0.123
				60	0.113
				125	0.103
				5213	0.042
				304667	0.031
Fine Gila Conglomerate	1.66	2.70	0.385	0	0.385
				3	0.237
				5	0.225
				10	0.216
				30	0.196
				60	0.176
				125	0.155
				5657	0.037
				441200	0.027
Gila Conglomerate/Tailings Mix	1.80	2.72	0.338	0	0.338
				5	0.230
				10	0.220
				30	0.210
				60	0.190
				125	0.170
				333	0.140
				32450	0.025
				1400400	0.019

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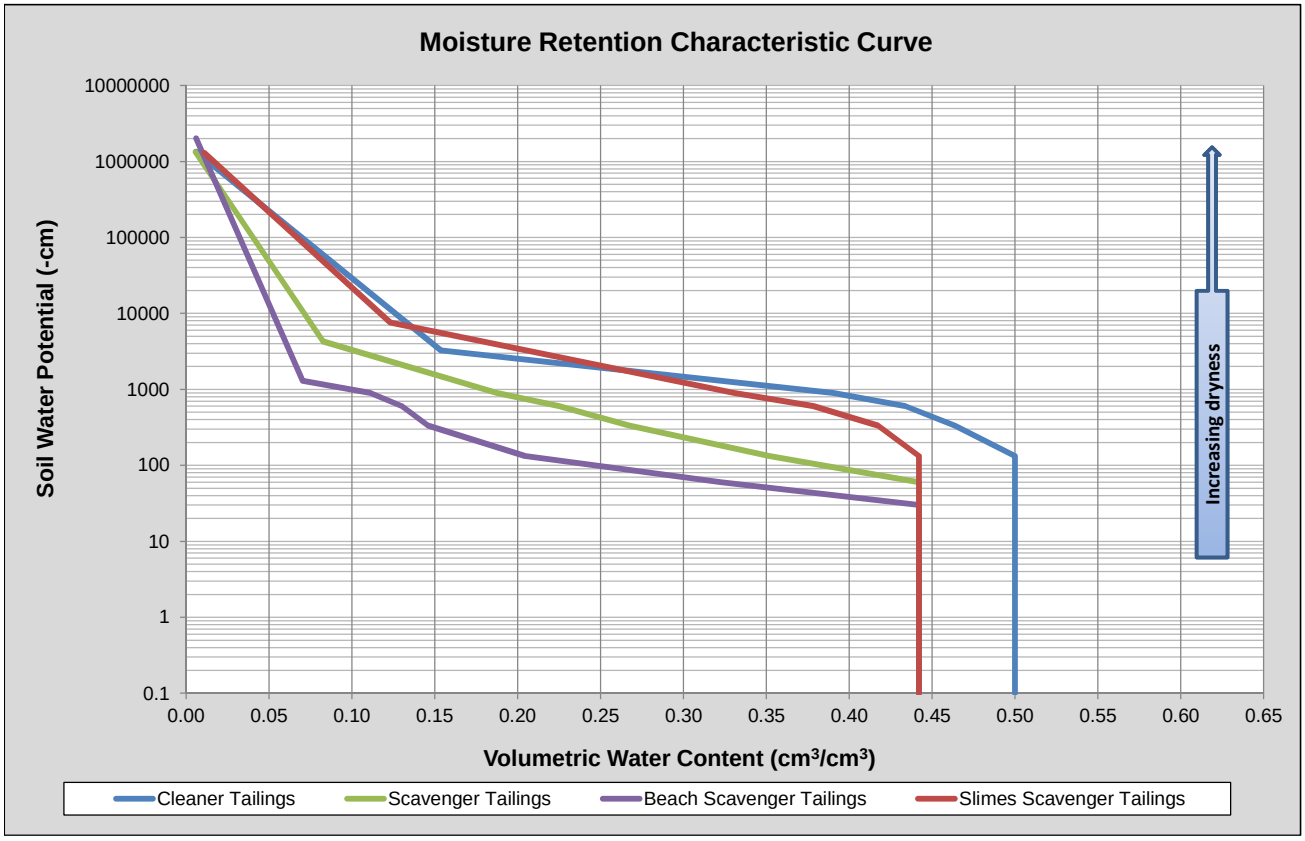

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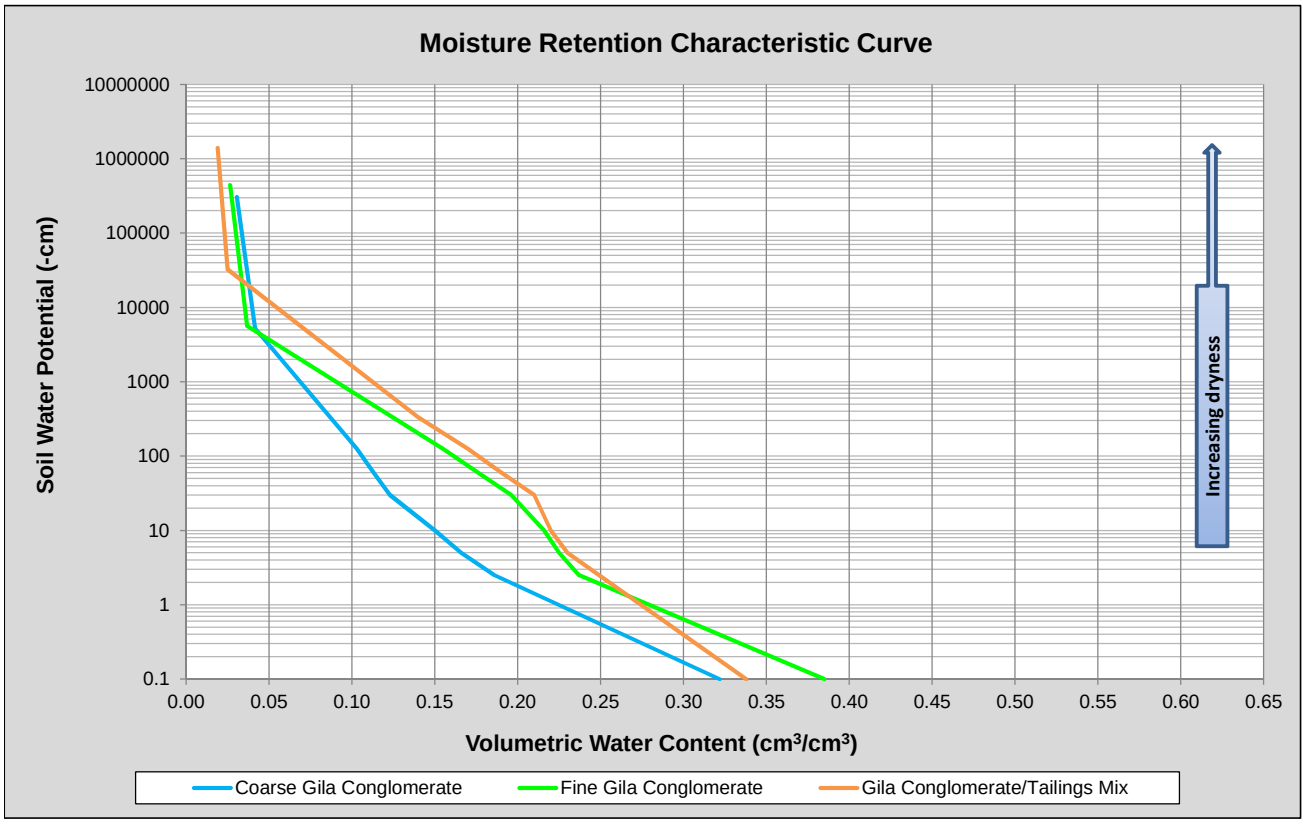

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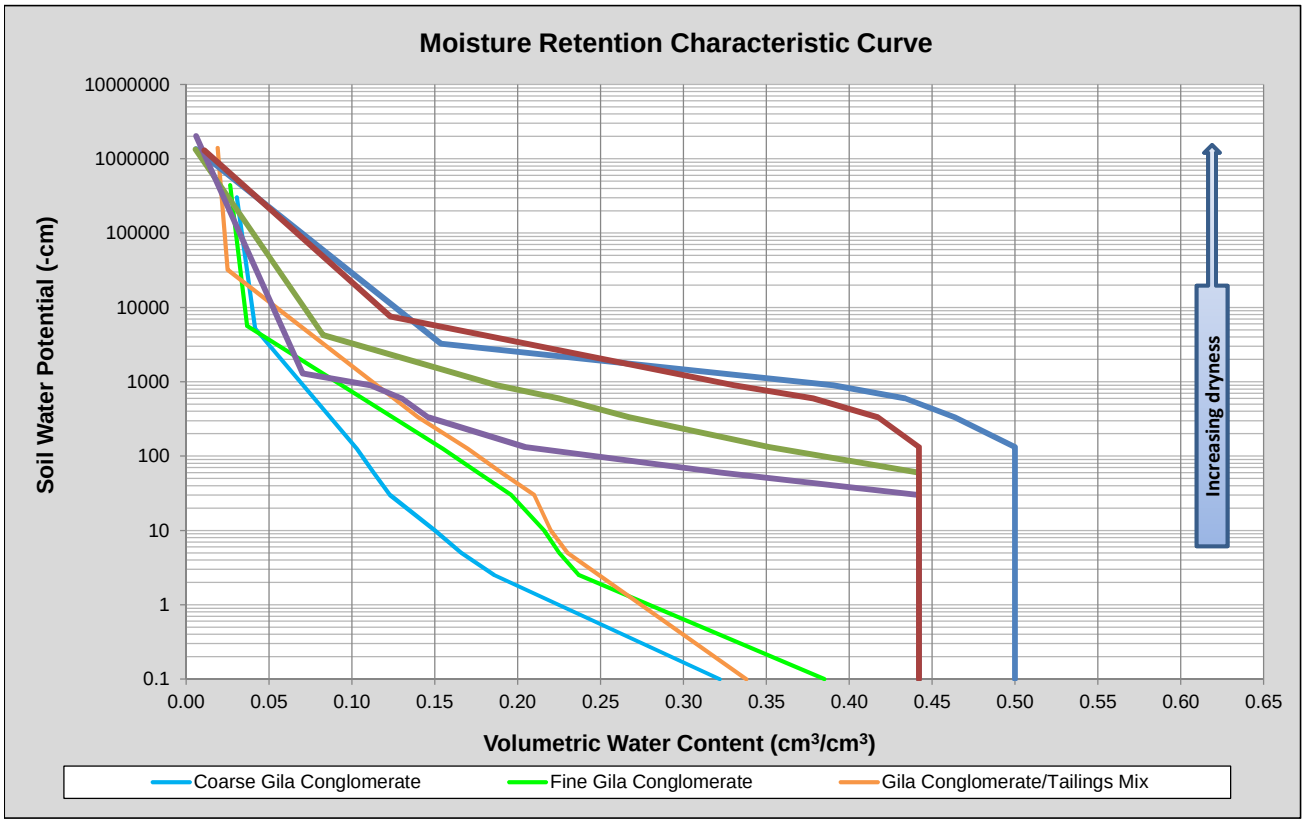

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Laboratory Test Results - van Genuchten Fitted Moisture Retention Characteristics and Hydraulic Conductivity

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Sample	Unsaturated Hydraulic Parameters					Saturated Hydraulic Conductivity (cm/sec)[b]
	Residual Water (cm^3/cm^3)[a]	Saturated Water (cm^3/cm^3)[b]	alpha (1/cm)[a]	N (-)[a]	L (-)[c]	
Cleaner Tailings	0.001	0.500	9.3E-04	1.999	-1.000	7.47E-08
Scavenger Tailings	0.003	0.442	6.1E-03	1.513	-1.000	2.33E-05
Beach Scavenger Tailings	0.010	0.442	1.2E-02	1.803	-1.000	2.34E-04
Slimes Scavenger Tailings	0.001	0.442	1.2E-03	1.591	-1.000	6.30E-07
Coarse Gila Conglomerate	0.003	0.322	7.8E+00	1.177	-1.000	8.16E-01
Fine Gila Conglomerate	0.000	0.385	4.4E+00	1.160	-1.000	1.71E-01
Gila Conglomerate/Tailings Mix	0.000	0.338	7.5E-01	1.180	-1.000	3.27E-03

a - fitted
b - measured
c - referenced value - Schaap and Leij, 2000
M = 1-1/N

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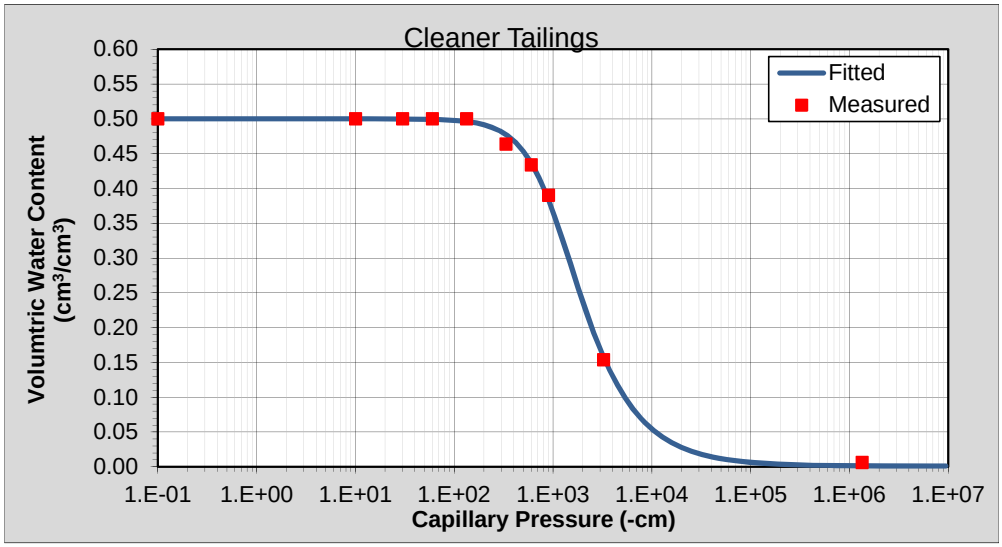

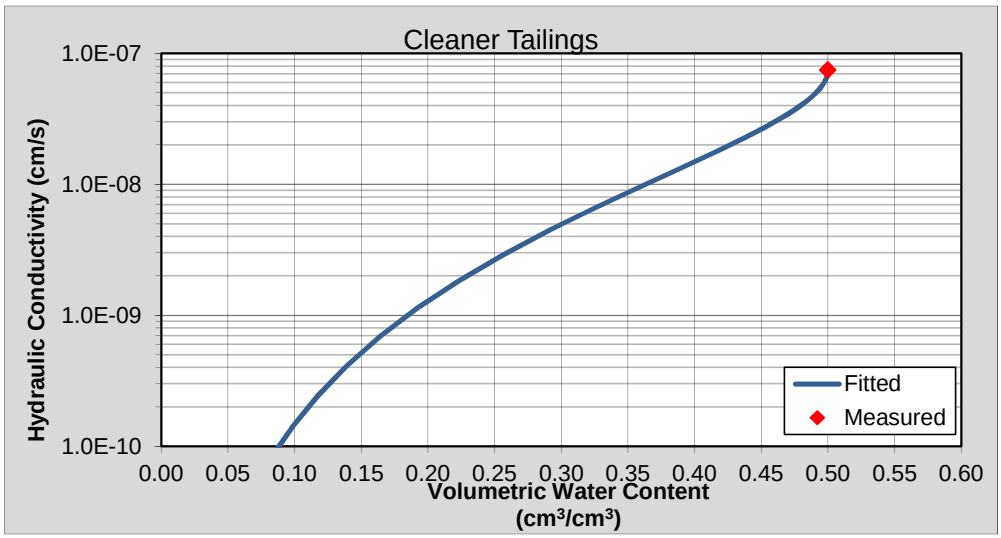

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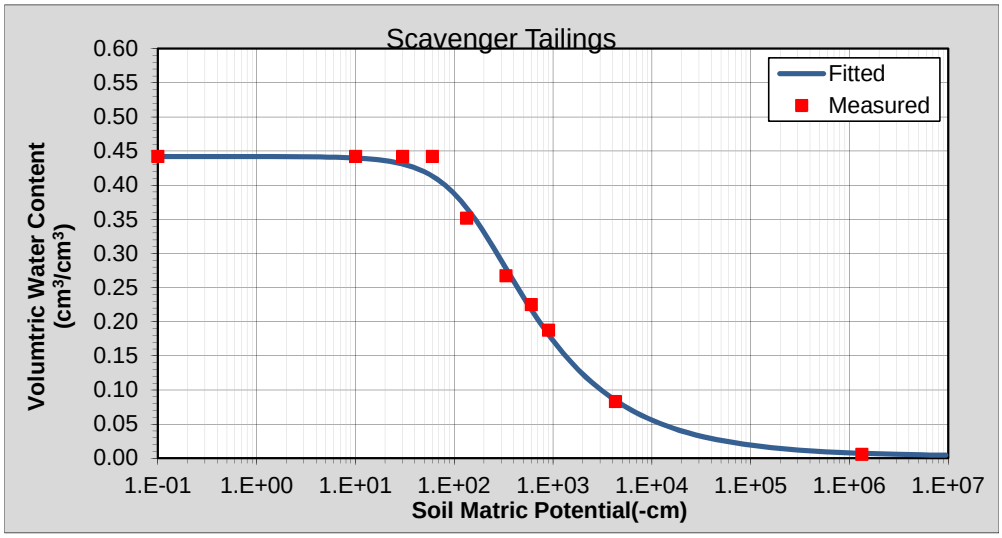

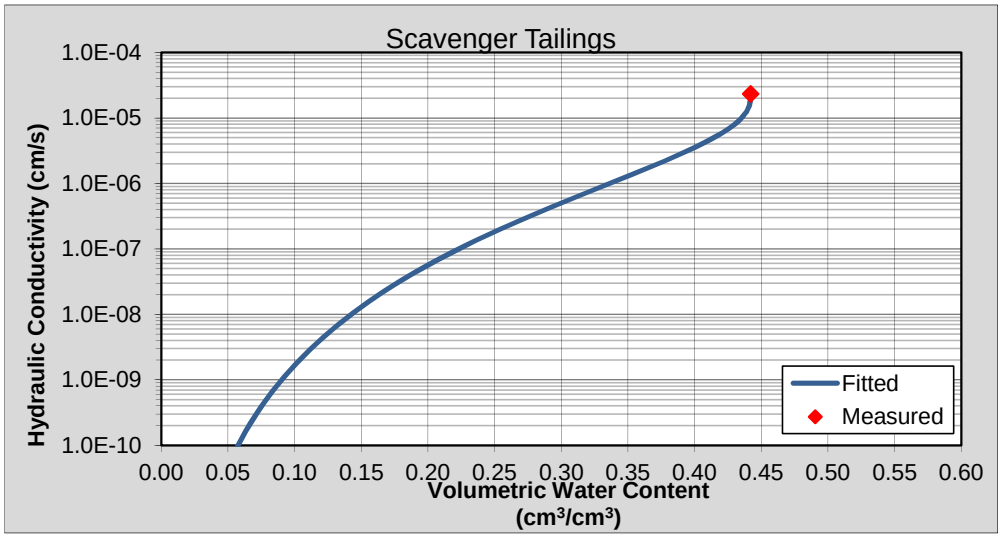

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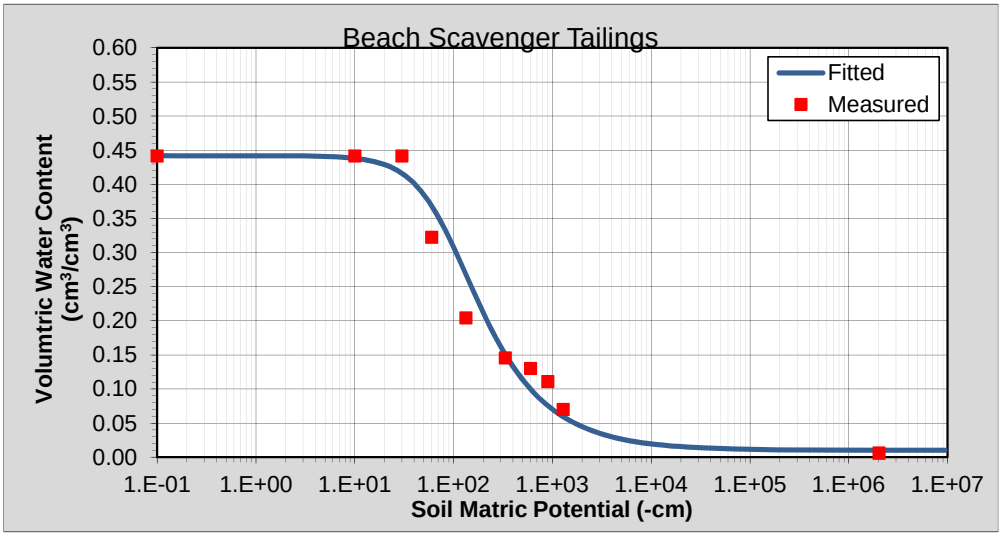

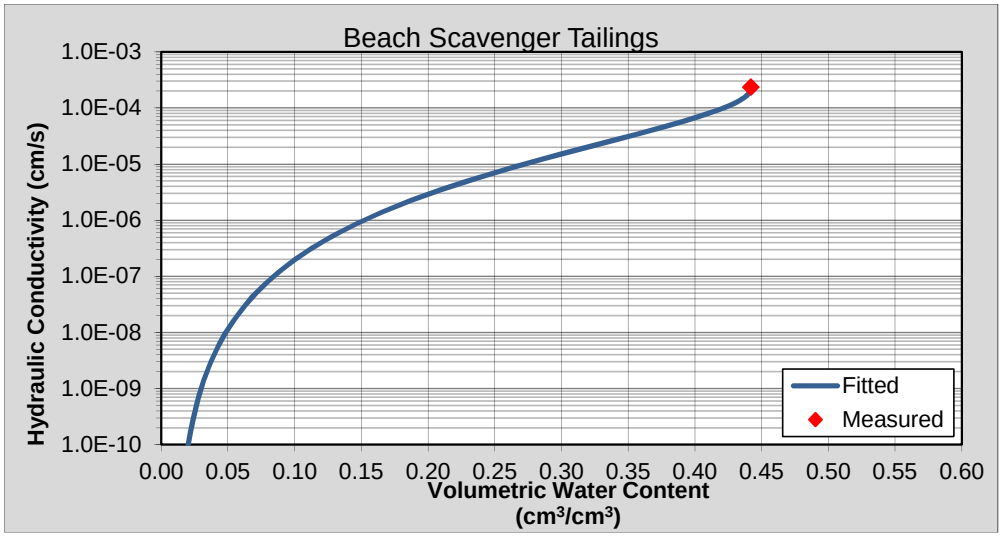

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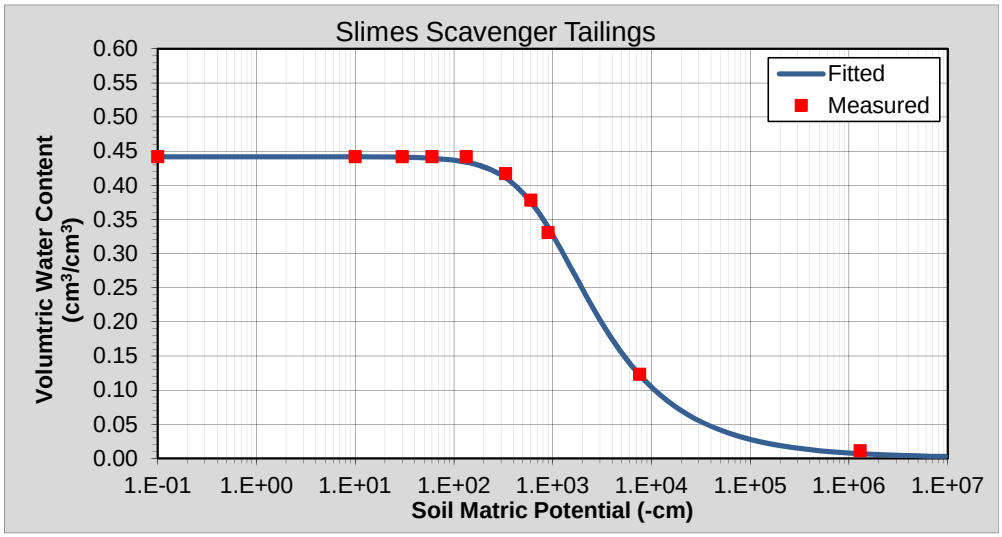

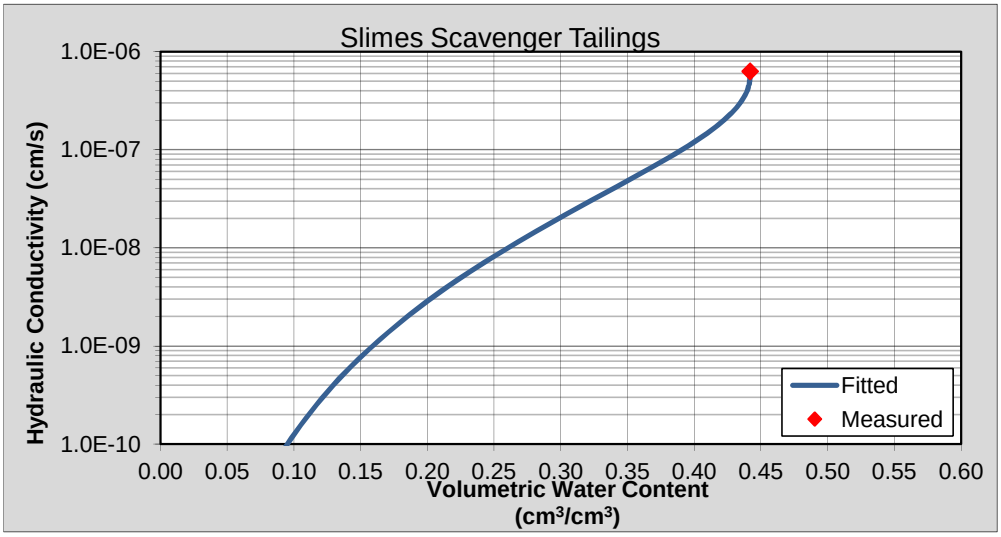

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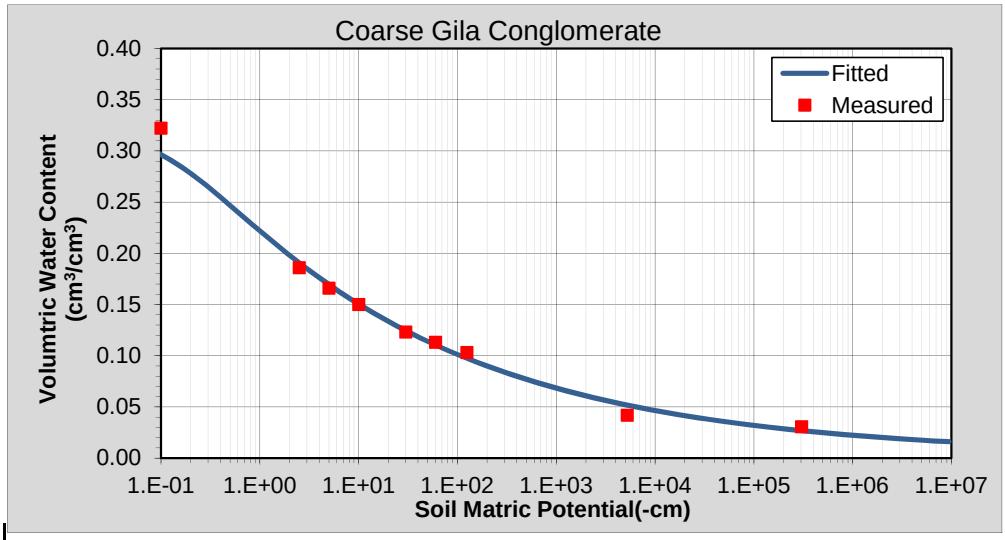

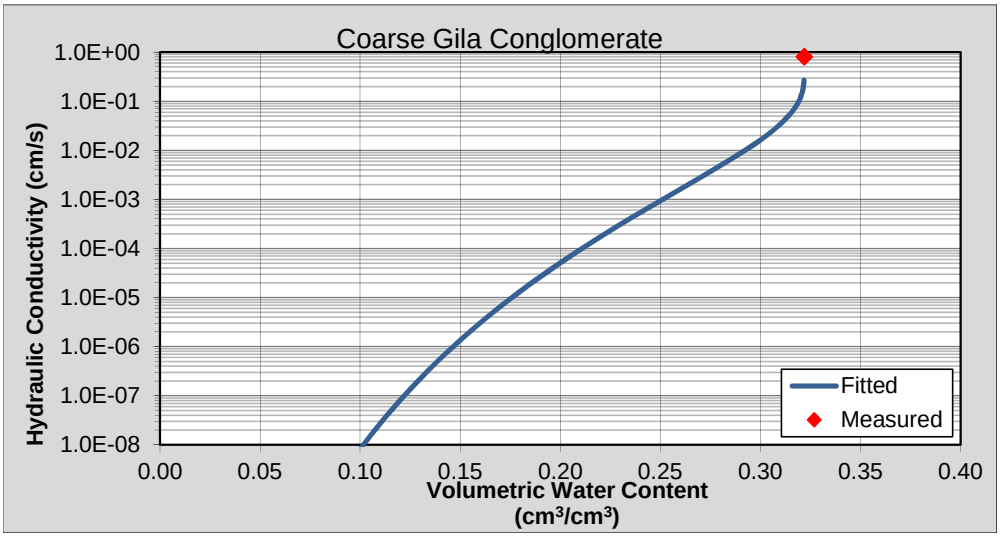

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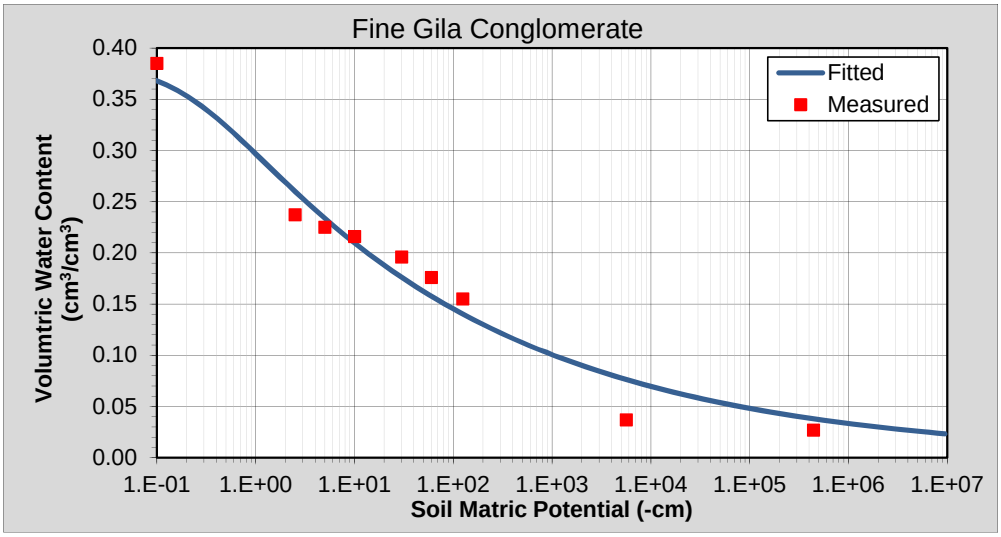

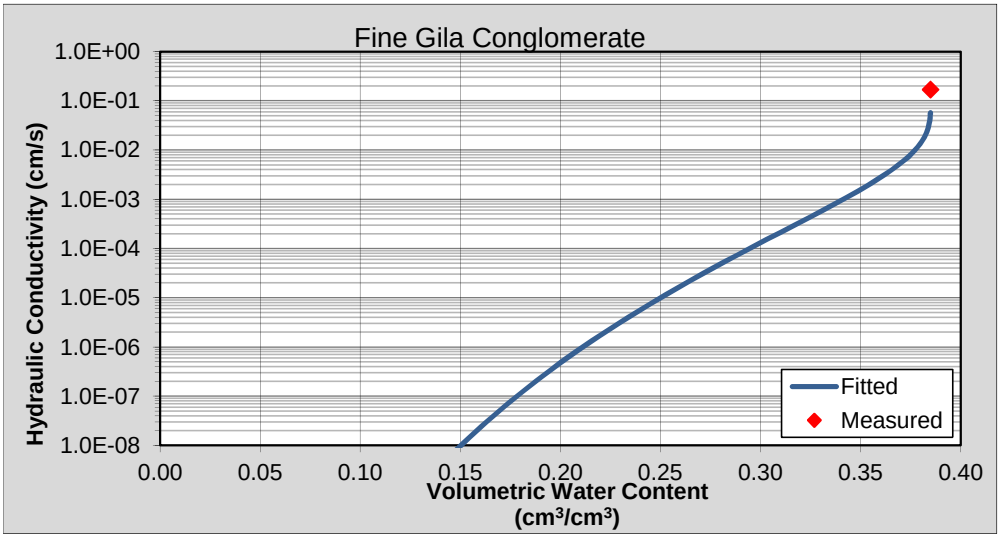

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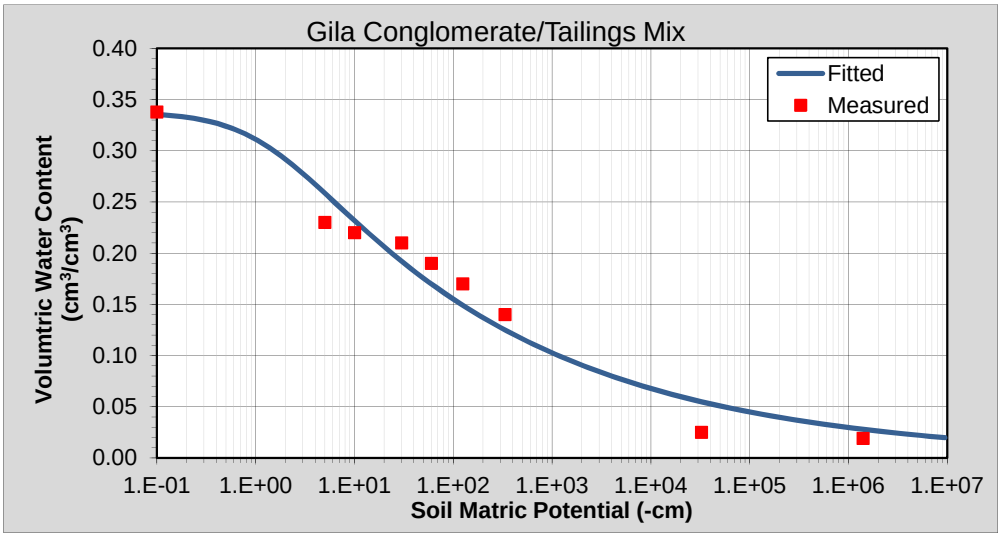
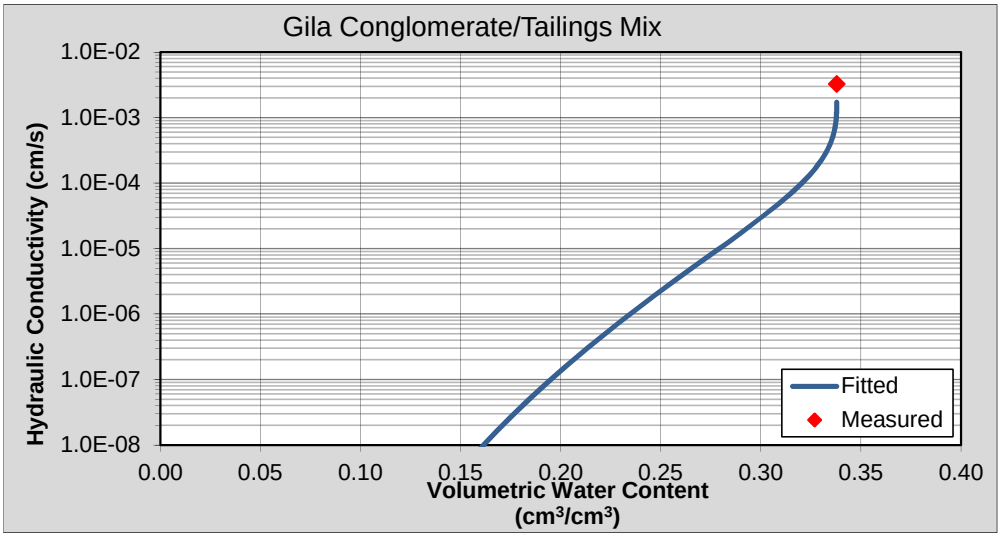




APPENDIX I-F-3

Methodology and Results of Manufactured Scavenger Tailings

1400b – KCB Gradation of Tailings Samples Protocol

Objective

The following steps were taken in order to perform the gradation of the Scavenger Tailings sample. Two separate tailings samples were prepared from the fraction sizes obtained.

Procedure

- KCB provided a graph of the target particle size distribution needed for the Slimes and Beach samples of the Scavenger sample. The following % passing was obtained from the graph.

Table 1. The target particle size and passing % of Beach and Slimes tailing samples

Sieve #	Beach	Slimes
	% Passing	% Passing
10	100	100
20	100	100
40	100	100
60	97	100
100	60	100
200	25	94

- In order to separate the fraction sizes the Scavenger Sample was wet sieved using a #60, #100, and #200 sieve. Fines passing through the #200 were collected in a reservoir. All fraction sizes were then air dried.
- Using the % passing found from previous step, the fraction sizes were then weighed out in order to reconstitute 1200g samples of Beach and Slimes samples. Table 2 is an example from the calculation and preparation 1200g of the Beach Sample.

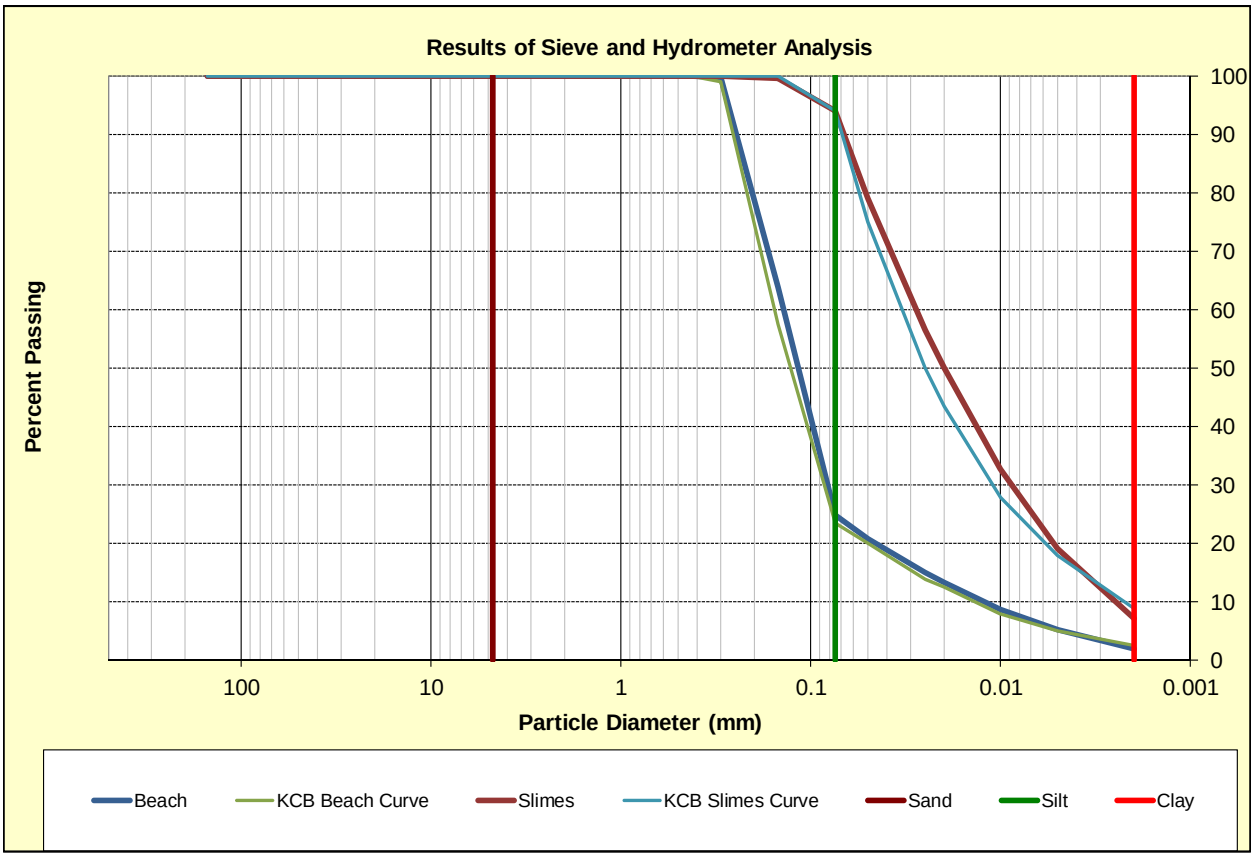
Table 2. Sample weight Breakdown for preparing 1200 g Beach sample

Fraction Size Between		Amount [g]
Above 10		0
10	20	0
20	40	0
40	60	36
60	100	444
100	200	420
Below 200		300

- GWC's of all fraction sizes were taken before weighing out the sample in order to maintain an exact fraction size
- Samples were combined in a mixing bowl until well mixed.
- When subsampling a small 0.25" riffle splitter was used.

PSD Comparison

The prepared Slimes and Beach tailing samples show very close PSD to the KCB provided PSD target curves.



APPENDIX II

Climate Analysis

Appendix II
Climate Analysis

II-1 INTRODUCTION

Analysis of the performance of a reclamation cover to reduce net infiltration into the tailings depends on the properties of the cover materials and underlying tailings and on local climate conditions. Water balance simulations using numerical modeling require a high quality, detailed, internally consistent data set that represents short and long term climate variability. Required data include precipitation and parameters required to compute potential evapotranspiration (PET). This appendix presents the climate analyses to support the water balance evaluation of covers for the Near West Tailings Storage Facility (TSF).

PET was estimated using Hydrus1D (Šimůnek et al. 2009) employing the Food and Agriculture Organization of the United Nations (FAO) recommended Penman-Monteith combination equation. The required inputs for this method are maximum temperature, minimum temperature, net solar radiation, relative humidity, and wind speed. Hydrus1D was used to compute net radiation using the site's latitude and longitude, measured total solar radiation, and air temperature from the climate dataset for the West Plant Site. A summary of the computed PET and discussion on how it influences the cover performance can be found in the main report and in Appendix III.

The Near West TSF is located approximately 5 miles west of the town of Superior in a semi-arid climate zone. There are four climate stations that have been or are being operated and maintained by the National Oceanic and Atmospheric Administration (NOAA) near the site: Superior (ID: 028348), Superior 2 ENE (ID: 028349), Superior Smelter (ID: 028351) and Miami (ID: 025512). The West Plant climate station is located at the Superior Mine Site and is currently operated and maintained by Resolution Copper Mining Ltd. (RCML). The climate stations are shown on Figure II-1. A summary of the five climate stations is presented in Table II-1.

Table II-1 Climate Stations near the Resolution Near West TSF Site

Station	Station ID	Location		Elevation (ft)	Distance from TSF Site (miles)	Years of Record (Recording Frequency)	Correlation to Superior
		Latitude (°)	Longitude (°)				
Superior	028348	33.300	-111.097	3,302	5.6	1920-07-12 to 2006-08-31 (daily)	-
Superior 2 ENE	028349	33.305	-111.067	4,167	7.2	1974-01-01 to 1996-07-31 (daily)	1:1
Superior Smelter	028351	33.300	-111.100	2,792	5.4	1948-09-01 to 1953-09-30 (daily)	1:1
Miami	025512	33.4044	-110.870	3,560	19.9	1914-02-01 to present (daily)	Based on monthly precipitation and temperature relationships
West Plant	N/A	33.299	-111.102	2,949	5.3	2002-07-12 to 2007-04-11 (hourly) 2012-02-02 to present (15-min, hourly)	1:1

Based on elevation and proximity to the site, the recorded values at the Superior Station were considered to be applicable to the Near West TSF site. Gaps in the Superior data set were patched when necessary using data from the regional climate stations.

Data are presented using the convention of water years (WY) beginning October 1. For example, WY 2015 is composed of data from October 2014 through September 2015, inclusive.

II-2 AVAILABLE DATA

II-2.1 National Oceanic and Atmospheric Administration (NOAA)

Daily precipitation and temperature data for Superior, Superior Smelter (Smelter) and Superior 2 ENE (2 ENE) were obtained from the National Climatic Data Center (NCDC) (NOAA 2015a). Figure II-2 shows the available precipitation data for all three climate stations. Figure II-3 shows the available daily temperature data for the Superior and Smelter climate stations (temperature at 2 ENE was not required for data patching). The daily temperature is the average of the recorded daily maximum and minimum temperatures.

Daily precipitation and temperature data for Miami were obtained from the NCDC. Recorded daily precipitation and temperature values are shown in Figure II-4 and Figure II-5, respectively.

II-2.2 West Plant

The West Plant climate station, also known as “KC2” and “KC2W”, is located at the Superior Mine site. The station has been managed by three consultants:

- Golder Associates Inc.: 2002 to 2007.
- Applied Environmental Consultants: 2009 to 2011.
- Air Sciences Inc.: 2012 to present.

The climate station records the following every 15 minutes:

- Precipitation;
- Pan Evaporation;
- Barometric pressure;
- Relative humidity;
- Total solar radiation (not corrected to net solar radiation);
- Air temperature at 2 m and 10 m; and
- Wind speed at 10 m.

Data were provided to KCB by RCML. The periods on record and data gaps are summarized in Table II-2. A photograph of the climate station is shown in Figure II-8.

Table II-2 West Plant Periods on Record and Data Gaps

Period on Record	Data Gaps
July 2002 – April 2007	May 2007 – March 2009
April 2009 – November 2011	December 2011 – January 2012
February 2012 – present	

Since 2012, the climate station has been calibrated once a year. Recorded data have not been corrected based on the calibration as it was deemed unnecessary. Data collected between 2009 and 2011 were discarded from further analyses because the climate station was not maintained during this time and the data quality can not be verified. The precipitation values on record are shown in Figure II-6.

II-3 DATA PATCHING

The Superior daily precipitation and temperature data set from January 1, 1951 to December 31, 2006 was patched using data from the other stations when necessary. The percentage of precipitation and temperature data that required patching for this period was 3% and 8%, respectively. The Smelter, 2 ENE and West Plant stations were assumed to have a 1:1 correlation with Superior based on the good correlation between overlapping data.

For small data gaps where no data were available from other nearby stations, the gaps were patched assuming a linear trend between the two bounding values. The Miami station data were used when data from nearby stations were unavailable. A relationship was estimated for the Miami station and Superior station by comparing monthly precipitation and temperature over the same time periods (over 12 years). The Miami precipitation and temperature data were then adjusted by a factor of 0.7 to 2 based on the monthly correlation relationship between the Miami station and the Superior station. The adjustment factor for precipitation is calculated separately from the factor for temperature.

The Superior data gaps and sources of patched data are given in Table II-3.

Table II-3 Superior Data Gaps and Sources of Patch Data

Period	Missing Superior Data	No. of Patched Days for Precipitation	No. of Patched Days for Temperature	Source of Patch Data
1950 – 1953	Precipitation, Temperature	0[(1)]	1,217	Smelter
1954 – 1980	Precipitation, Temperature	31	31	Miami[(2)]
1981 – 1992	Precipitation, Temperature	121	0[(3)]	2 ENE
1993	Precipitation, Temperature	3	22	Miami
1994 – 1995	Precipitation, Temperature	292	310	2 ENE, Miami

Period	Missing Superior Data	No. of Patched Days for Precipitation	No. of Patched Days for Temperature	Source of Patch Data
1996 – 2006	Precipitation, Temperature	179	214	West Plant
Percentage of patched data over 1951 - 2006		3%	8%	

1. No data were available at Smelter for patching.
2. No data were available at 2 ENE for period of data gap (July 1, 1980 to July 31, 1980).
3. Temperature gaps were one to three days in length and were filled by linear interpolation.

II-4 PRECIPITATION AND PET

II-4.1 Monthly Average

The average measured monthly precipitation and calculated PET is given in Table II-4 shown on Figure II-7.

Table II-4 Average Monthly Precipitation and calculated Evapotranspiration (ETo) for the Near West TSF Site

(in inches)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Precipitation[1]	2.0	2.0	2.0	0.8	0.3	0.3	1.9	2.8	1.5	1.2	1.4	2.1	18.2
Evapotranspiration for reference surface/crop (ETo) [2]	2.9	3.4	5.0	6.6	8.5	9.2	9.0	8.0	7.0	5.8	3.8	3.1	72.3

1. Values shown are based on data collected at the Superior climate station (ID: 028348) with gaps filled using data from the regional climate stations.
2. Calculated using the Penman-Monteith combined equation in Hydrus1D based on the generated Superior climate data set and reference vegetation parameters described in Appendix III.

II-4.2 Extreme Events

Frequency analysis was done for the Superior and West Plant stations to determine the Average Recurrence Interval (ARI) for precipitation (based on water years) recorded at Superior. It was also used to determine if the year was “wet” or “dry”. The Generalized Extreme Value (GEV) probability distribution was chosen based on a visual fit with the Superior data set. Given that West Plant have a 1:1 correlation with Superior based on the overlapping records, the GEV fit parameters (k, μ, σ) calculated based on the Superior data were used for the West Plant data as well.

Data from 1920 to 2014 were analyzed to determine the ARI for:

- The total water year precipitation;
- The 7-day wet precipitation (winter and summer);
- The 14-day wet precipitation (winter and summer); and
- The 30-day wet precipitation (winter and summer).

Winter was defined as October to March, inclusive. Summer was defined as April to September, inclusive, foe the purposes of this analysis. The results of the frequency analysis are presented in Table II-5 and Figure II-9 to Figure II-15. Years that experienced precipitation amounts similar to the 50, 100, or 200-year wet events are given in Table II-5.

Table II-5 Precipitation Frequency Analyses Results

	Average (inch)	50-year Wet (inch)	100-year Wet (inch)	200-year Wet (inch)
Annual (Water Year)	18.2	32.5 *(32.8 in in 1993)*	35.1 *(36.2 in in 1941, 36.6 in in 1992)*	37.4
7-day Winter	3.1	6.7 *(6.9 in in 1993)*	7.5	8.3 *(9.3 in in 1968)*
7-day Summer	2.4	5.9 *(5.7 in in 1931)*	6.9	8.1 *(8.8 in in 1990)*[1]
14-day Winter	3.8	8.4 *(8.4 in in 1966)*	9.5 *(10.0 in in 1968, 10.7 in in 1993)*	10.8
14-day Summer	3.1	7.0 *(6.8 in in 1931)*	8.0 *(8.4 in in 1963)*	9.0 *(9.2 in in 1990)*[1]
30-day Winter	5.0	11.2 *(10.4 in 1966)*	12.7 *(12.1 in in 1968, 13.6 in in 1993)*	14.4
30-day Summer	4.5	9.3	10.4 *(11.0 in in 1963, 10.1 in in 1990*[1]*)*	11.5

1. Tropical Depression Diana.
2. Winter is defined as October through March; Summer is defined as April through September
3. Years shown are in water years.

II-4.3 Historic Storm Events

Arizona experiences three types of precipitation events seasonally and very little precipitation occurring from April through June (Applied Weather Associates 2013). Typically, July and August are the wettest months and April to June are the driest. The three types of precipitation seasons are:

1. **Winter Storms (October through March)**

   Large-scale frontal systems which often bring moderate low-intensity rainfall for multiple days.

2. **Tropical Storms (August through October)**

   High moisture episodic storms that come from the coast and have lost their tropical characteristics. These storms obtain their energy source from the Gulf of California and the eastern tropical Pacific. Although they will have lost many of its tropical characteristics by the time they reach Arizona, high residual levels of moisture are associated with these storms;

thereby enabling them to produce some of the largest rainfalls on record throughout Arizona (Applied Weather Associates 2013).

3. **Local Storms (June through September)**

   Local Convective Storms (late June through September). Episodic, localized, and often intense thunderstorms that are an almost daily occurrence during the North American Monsoon (NAM) season (late June/early July to September). Most of the storms have a life cycle of less than 3 hours.

   Mesoscale Convective Systems (late June through September, most common mid-July through mid-August). Storms that produce extreme amounts of precipitation over a short duration and small area which also occur during the NAM months.

The occurrences of winter storms are noted in Figure II-9 to Figure II-15. The wettest summer storm on record occurred in August 1990 which was Tropical Depression Diana. The wettest winter storms on record occurred in December 1967 and January 1993.

The Superior Station data set also includes historic tropical storm events. The noted historic storm events in Arizona within the period of record for analysis (1951 to 2006) are given in Table II-6 below. This summary is not a comprehensive list of all tropical storm events within the period of record for analysis.

Table II-6 Summary of Historic Tropical Storm Events Recorded at Superior Station

Date	Storm	Estimated Total Precipitation and Duration Superior Station	Maximum Daily Precipitation Recorded at Superior Station[1] (in)
1951-08-03	Unnamed Tropical Storm	0.68 in over 3 days	0.62
1958-10-06	Unnamed Tropical Storm	1.92 in over 2 days	1.80
1962-09-25	Hurricane Claudia	0.83 in over 5 days	0.31
1967-08-29	Hurricane Katrina	0.00[2]	0.00[2]
1972-10-04	Hurricane Joanne	1.85 in over 3 days	1.02
1976-09-10	Hurricane Kathleen	0.21 in over 1 day	0.21
1977-08-13	Hurricane Doreen	1.58 in over 3 days 2.57 in over 8 days	0.86
1983-09-28	Hurricane Octave	3.97 in over 3 days	1.95
1990-08-12	Tropical Depression Diana	8.8 in over 5 days	3.80
1992-08-22	Hurricane Lester	3.25 in over 4 days	1.99
1997-09-25	Hurricane Nora	0.00[2]	0.00[2]

1. Maximum daily precipitation over the seven day period around the day of the storm.
2. Miami Station record over the seven day period around the day of the storm, there was no recorded precipitation for the Superior Station over this time.

II-4.4 Oceanic Nino Index

Arizona climate is also influenced by the El Niño and La Niña, which are part of the El Niño–Southern Oscillation (ENSO), a natural variation in oceanic sea surface temperatures and surface air pressure between the east and west tropical Pacific Ocean. The combined effect of changes in the jet stream and storms from El Niño events often results in wetter winters and increased rain to Arizona. La Niña events, on the other hand, often bring dry conditions to Arizona. These cycles were identified in this anlaysis and represented in the climate data set for Superior for use in the water balance modeling.

The Oceanic Nino Index (ONI) is a standard of measure characterized by a 3-month running mean of Sea Surface Temperature (SST) anomalies in the Nino 3.4 region that is above/below the threshold of ±0.5°C for five consecutive 3-month periods (NOAA 2015b). The ONI can be compared to 3-month running mean of precipitation values to correlate the trends observed in precipitation (see Figure II-16).

In general, the precipitation trends observed at the Superior climate station follow those observed for the ONI. Periods that included large tropical storms, such as Hurricane Doreen in 1977 and Hurricane Lester in 1992, may show precipitation trends that deviate from the ONI. These deviations are part of expected climate trends in the area and are included in the climate set used in the Hydrus1D modeling.

II-5 DATA SET FOR MODELING

A continuous long-term daily precipitation and temperature data set was created for January 1, 1951 to December 31, 2006 for use in the water balance modeling (Appendix III). Earlier data wasn't included due to lack of temperature data and discontinuous precipitation data. The 56 year data set includes a wide range of climatic conditions expected at the site, including wetter than average events (termed "wet") listed below (return periods are approximate, and years are water years, see Figure II-9 to Figure II-15):

- A 100-year wet year in 1992;
- A 50-year 7-day wet winter event in 1993;
- A 200-year 7-day and 14-day wet summer event in 1990 (Tropical depression Diana);
- A 100-year 14-day wet winter event in 1968 and 1993;
- A 100-year 30-day wet winter event in 1993; and
- A 100-year 30-day wet summer event in 1963.

The climate set also includes the following drier than average years (termed "dry") (return periods are approximate, and years are water years):

- A 15-year dry year in 1961 and 1997; and
- A 500-year dry year in 2000 and 2002.

Average, wet and dry years (water years) were identified to assess predicted cover performance for a range of conditions. Predicted net infiltration at the surface for the base case model with scavenger tailings beach (BC 1) was used to identify typical average, wet (high infiltration) and dry (low infiltration) water year as well as the 10 wettest years (highest infiltration). These years do not necessarily correspond to the average, wet and dry water year precipitation. The following water years were chosen for reporting of results:

- Average conditions: 1980. The annual rainfall is 20.3 inches.
- Wet conditions: 1992. The annual rainfall is 36.6 inches.
- Dry conditions: 2000. The annual rainfall is 5.5 inches.
- Long-term wet conditions (highest infiltration): 1983 to 1992 (water years). The average annual rainfall is 22.7 inches (ranging from 11.7 inches to 36.6 inches).

The 56 year Superior daily measured climate set January 1, 1951 to December 31, 2006 was discretized to and hourly dataset using the available measured hourly data from the West Plant station based on the following approach and used for Hydrus1D closure cover modeling (Appendix III). Hourly climate data are preferred to daily for numerical modeling of the soil-atmosphere interface to more precisely compute potential evapotranspiration (PET, computed using Hydrus1D) and to better represent runoff resulting during periods of intense precipitation. In order to generate an hourly climate dataset, a comprehensive continuous daily climate data set was first developed using data from Superior and nearby stations. Long term daily total precipitation and temperatures are available from the Superior Station. Hourly precipitation, temperature, solar radiation, relative humidity and wind speed (all required to estimate PET) are available from the West Plant Station for a shorter period or record.

The daily data were subdivided into hourly data using a correlation between data collected at Superior and West Plant. Complete hourly records from the West Plant Station were matched for each daily record from the Superior Station based on time of year ($\pm$ 21 Julian days), daily precipitation total, whether the precipitation was part of a multiday precipitation event, and minimum and maximum air temperature. The match was selected by using an objective function comprised of the weighted relative percent difference (RPD) for the shared parameters, with the greatest weight given to time of year and precipitation total. The day from the hourly record with the minimum weighted RPD was selected to represent hourly records for the corresponding day.

Precipitation amounts for the matched hourly records were scaled to the measured Superior Station. For approximately 20 days where precipitation was recorded by the Superior Station but not the corresponding day at the West Plant Site, a randomly timed one-hour precipitation event was generated. All other meteorological records were passed from the unscaled hourly records. The result was a complete hourly climate record with a full meteorological suite for the period 1951 to 2006, or approximately 0.5 million hourly values.

The RPDs for total precipitation (1951 to 2006), average daily precipitation, and average daily temperature are shown in Table II-7. As discussed in Section II-2.2, data collected at West Plant Station between 2009 and 2011 were discarded from analysis.

Table II-7 Relative Percent Difference for Synthetic Data Set

Parameter	RPD
Total Precipitation	0.08%
Average Daily Precipitation	0.08%
Average Daily Temperature	0.09%

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FIGURES

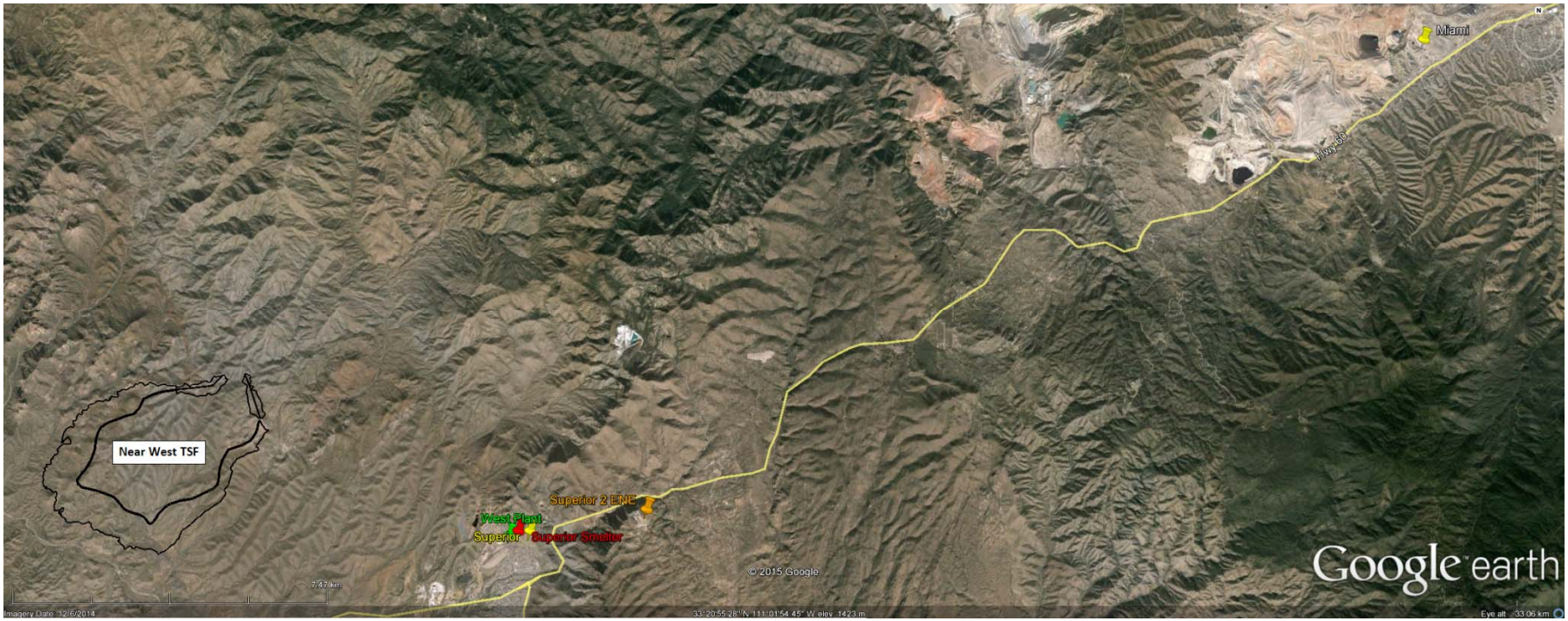


Figure II-1 Climate Station Locations

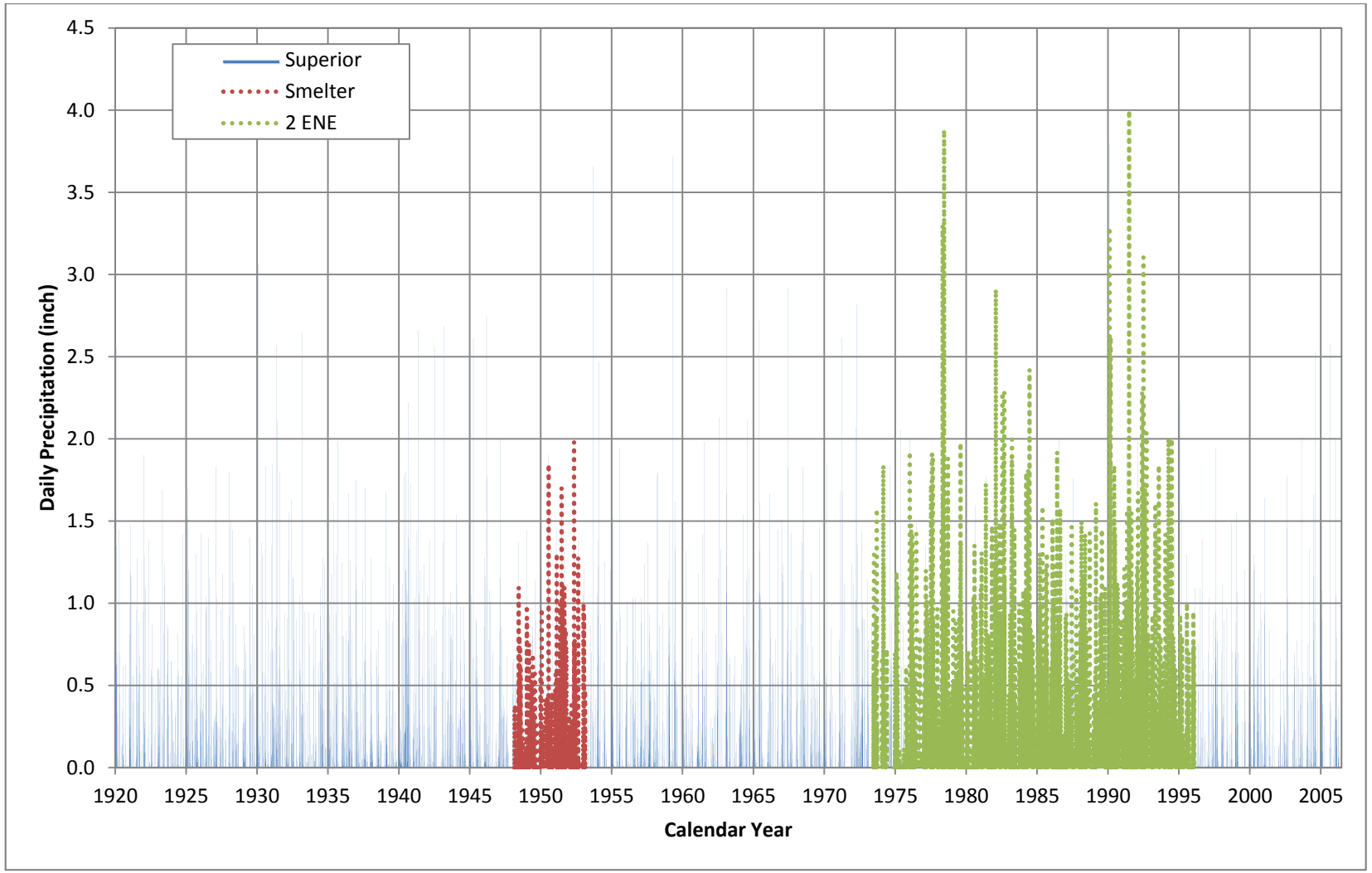


Figure II-2 Daily Precipitation - Superior, Smelter, and 2 ENE (Calendar Years Shown)

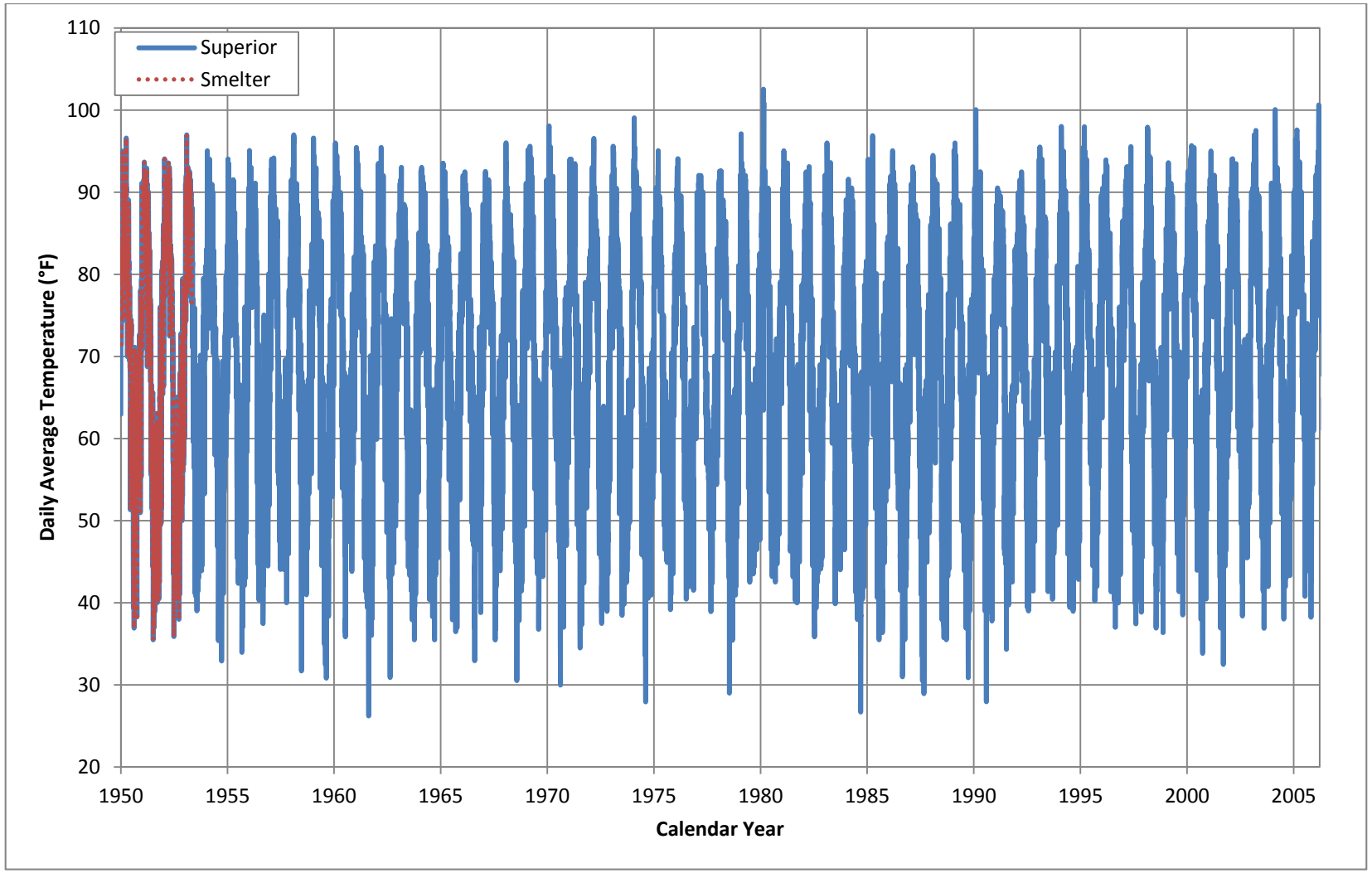


Figure II-3 Daily Temperature - Superior, and Smelter (Calendar Years Shown)

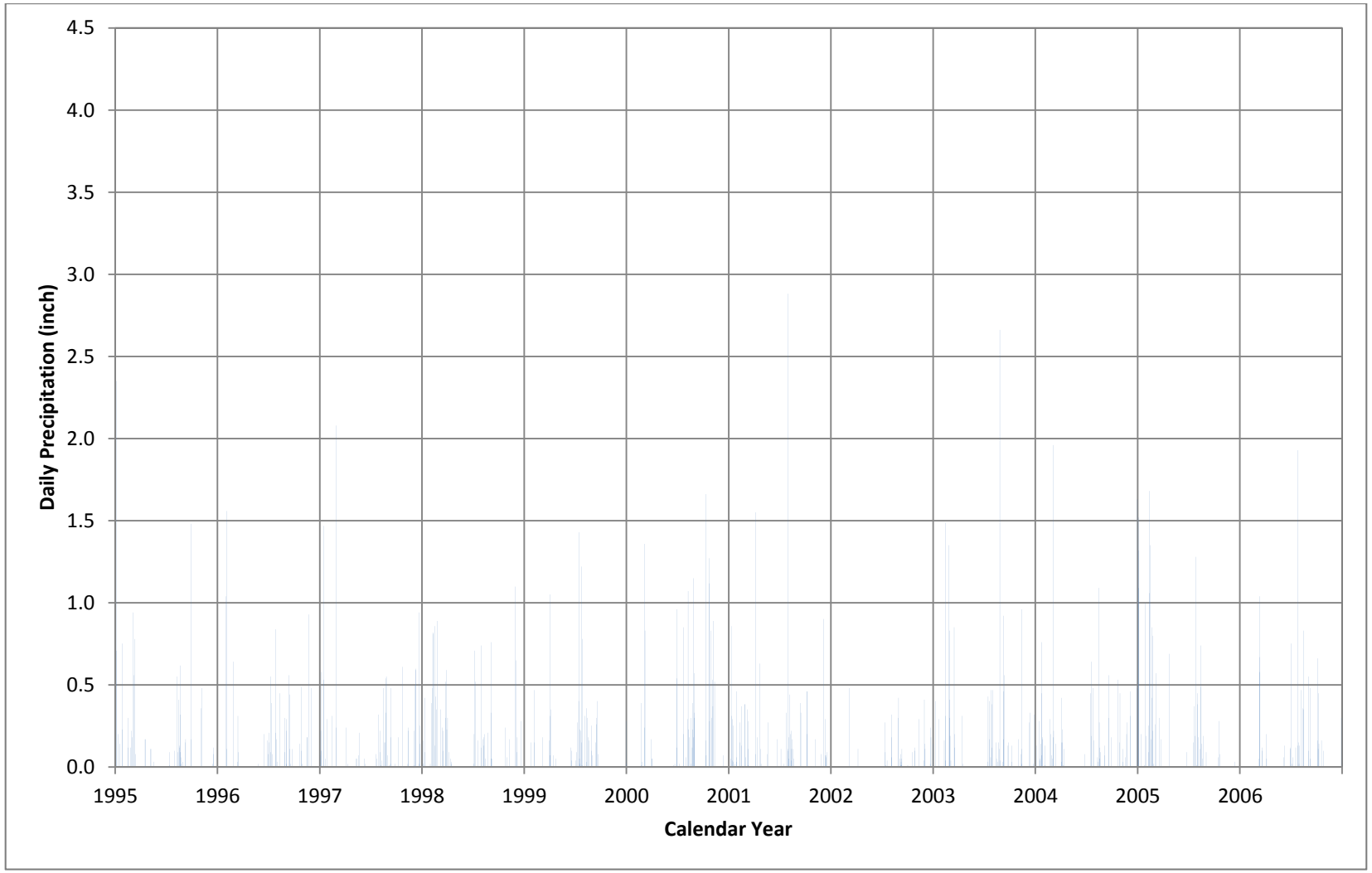


Figure II-4 Daily Precipitation – Miami (Calendar Years Shown)

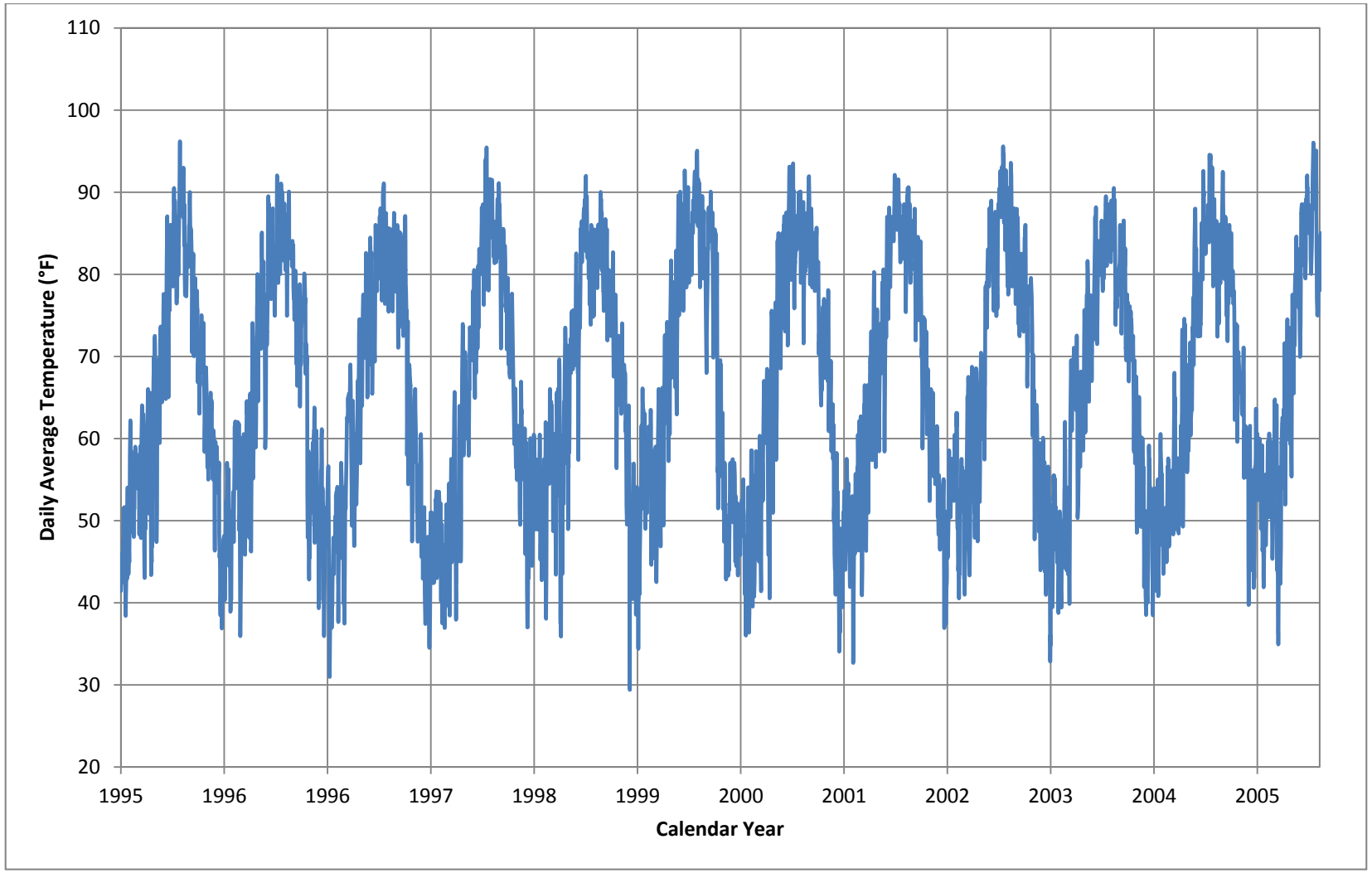


Figure II-5 Daily Temperature – Miami (Calendar Year Shown)

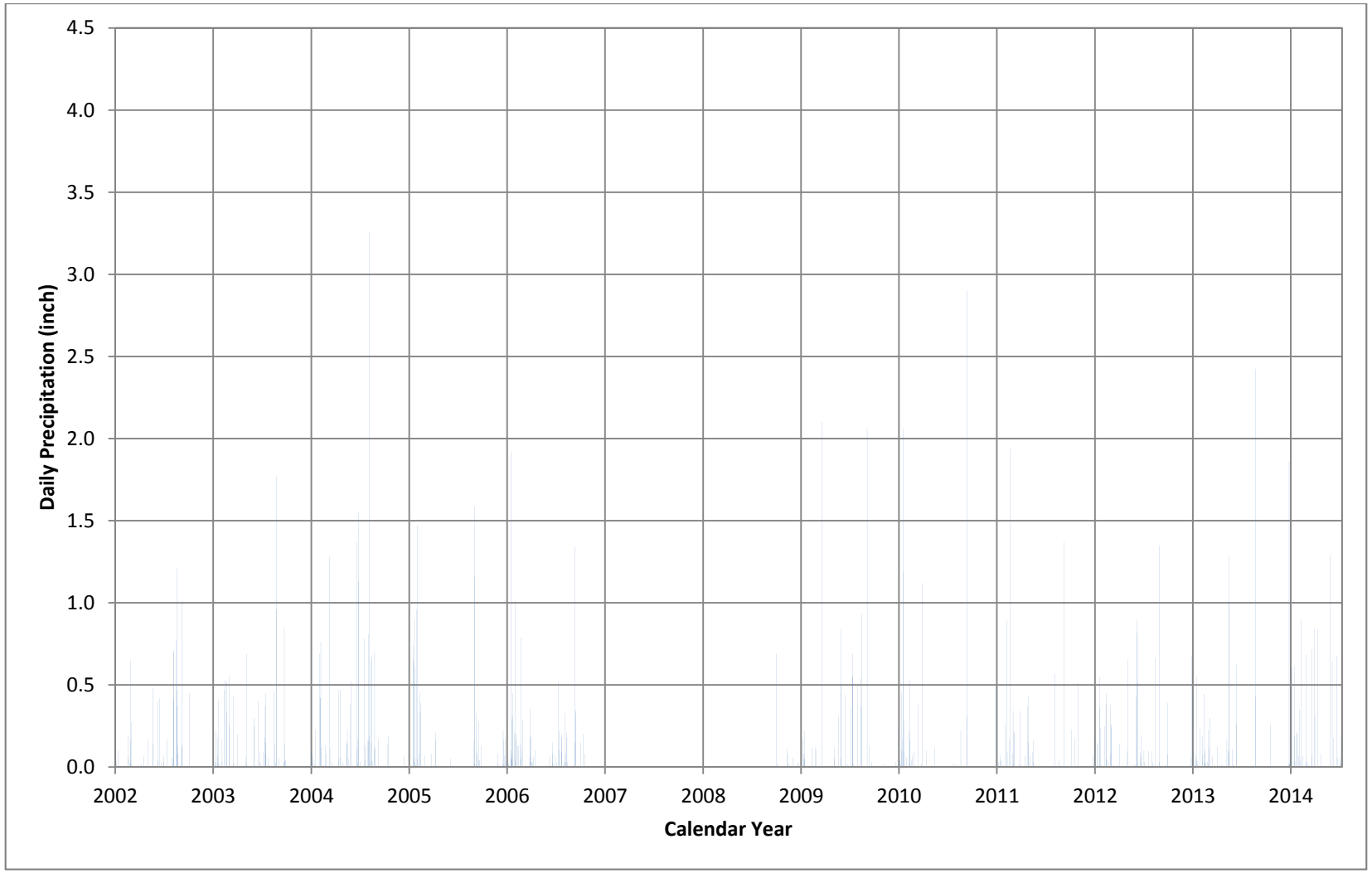
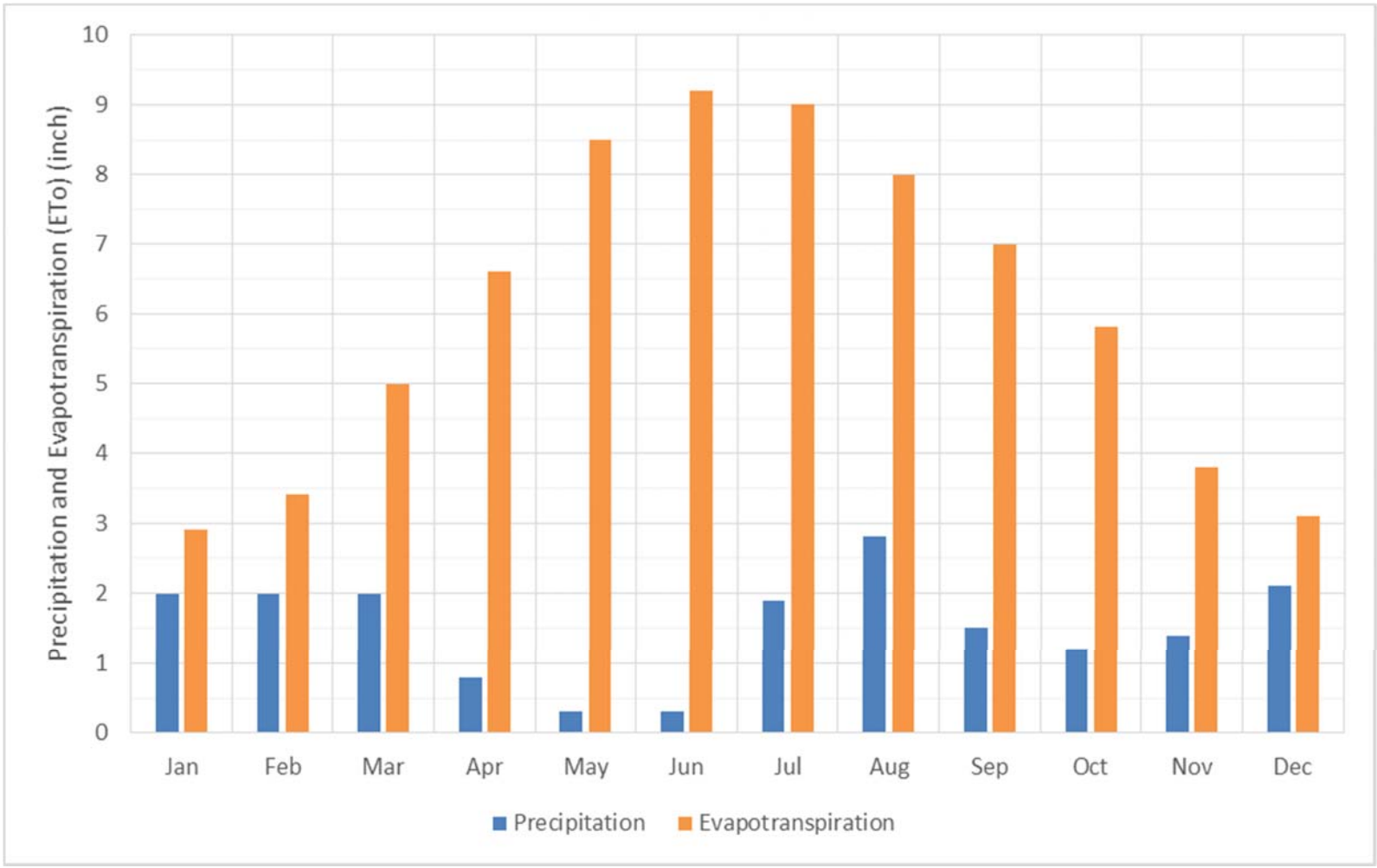


Figure II-6 Daily Precipitation - West Plant (Calendar Years Shown)

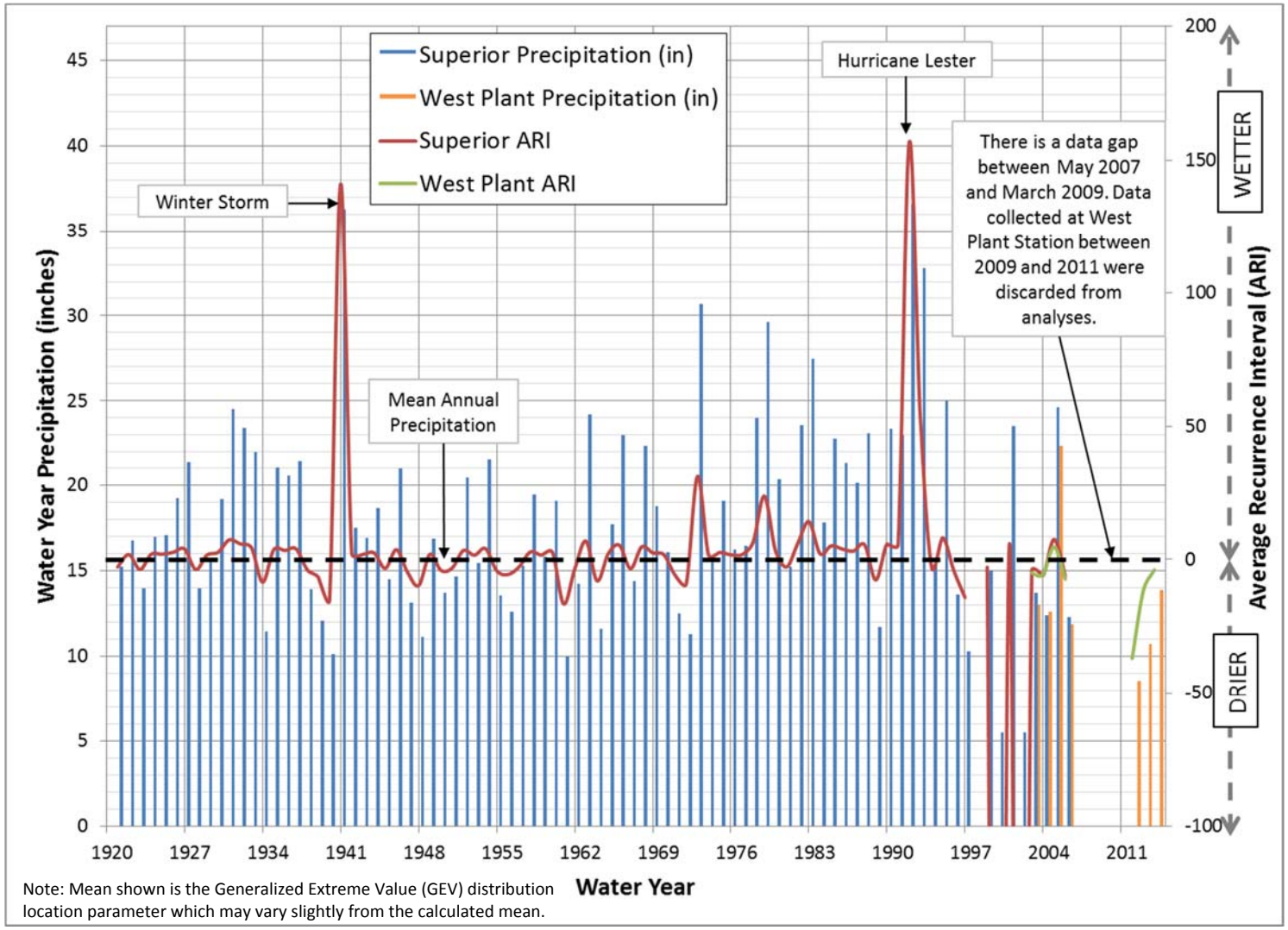


Note: Evapotranspiration (ETo) is calculated using the Penman-Monteith combined equation in Hydrus1D based on the generated Superior climate data set and reference surface and vegetation parameters (see Appendix III).

Figure II-7 Monthly Average Evapotranspiration (ETo) at Superior



Figure II-8 West Plant Climate Station



Note: Mean shown is the Generalized Extreme Value (GEV) distribution location parameter which may vary slightly from the calculated mean.

Figure II-9 Average Water Year Precipitation and ARI

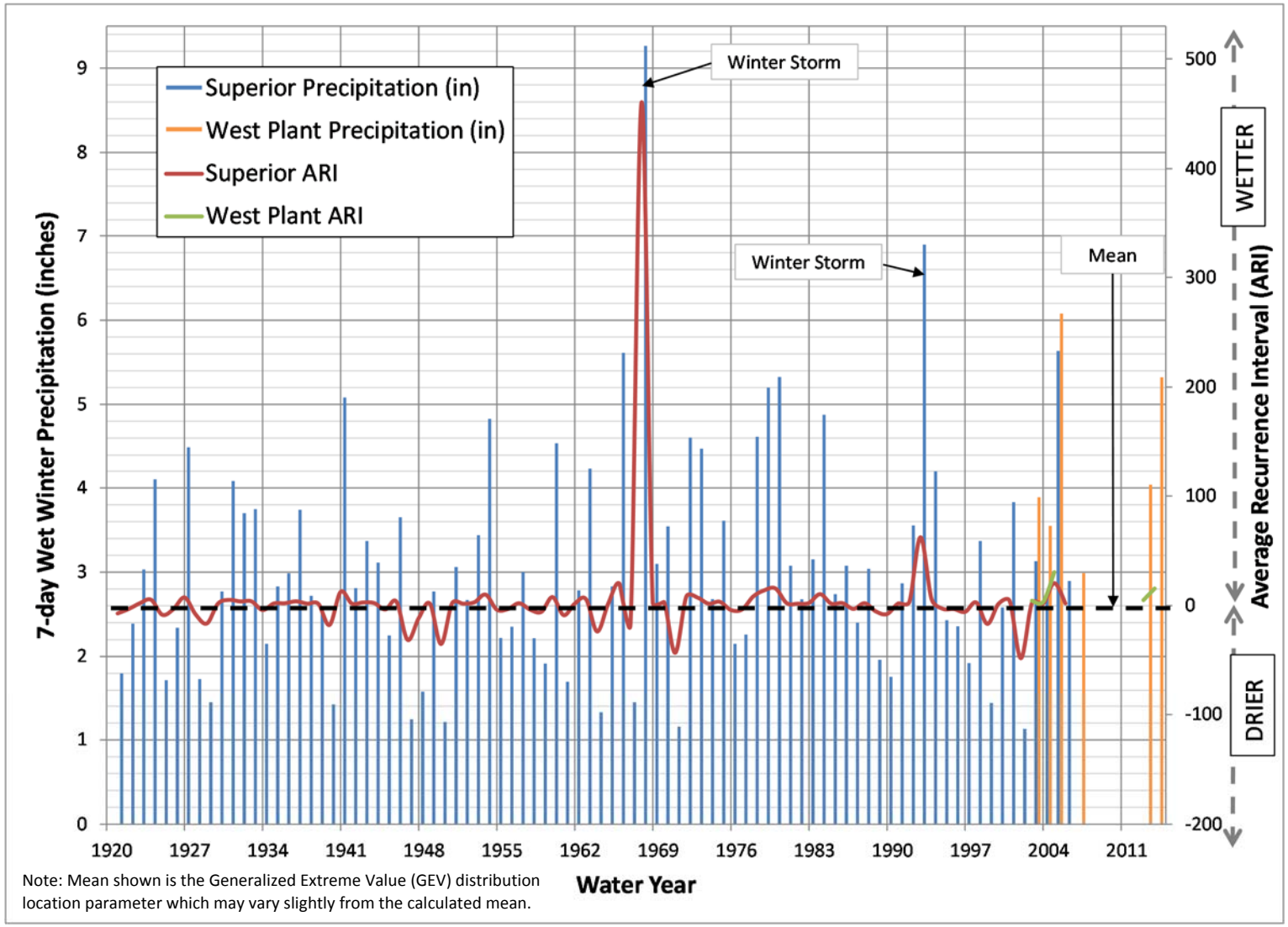
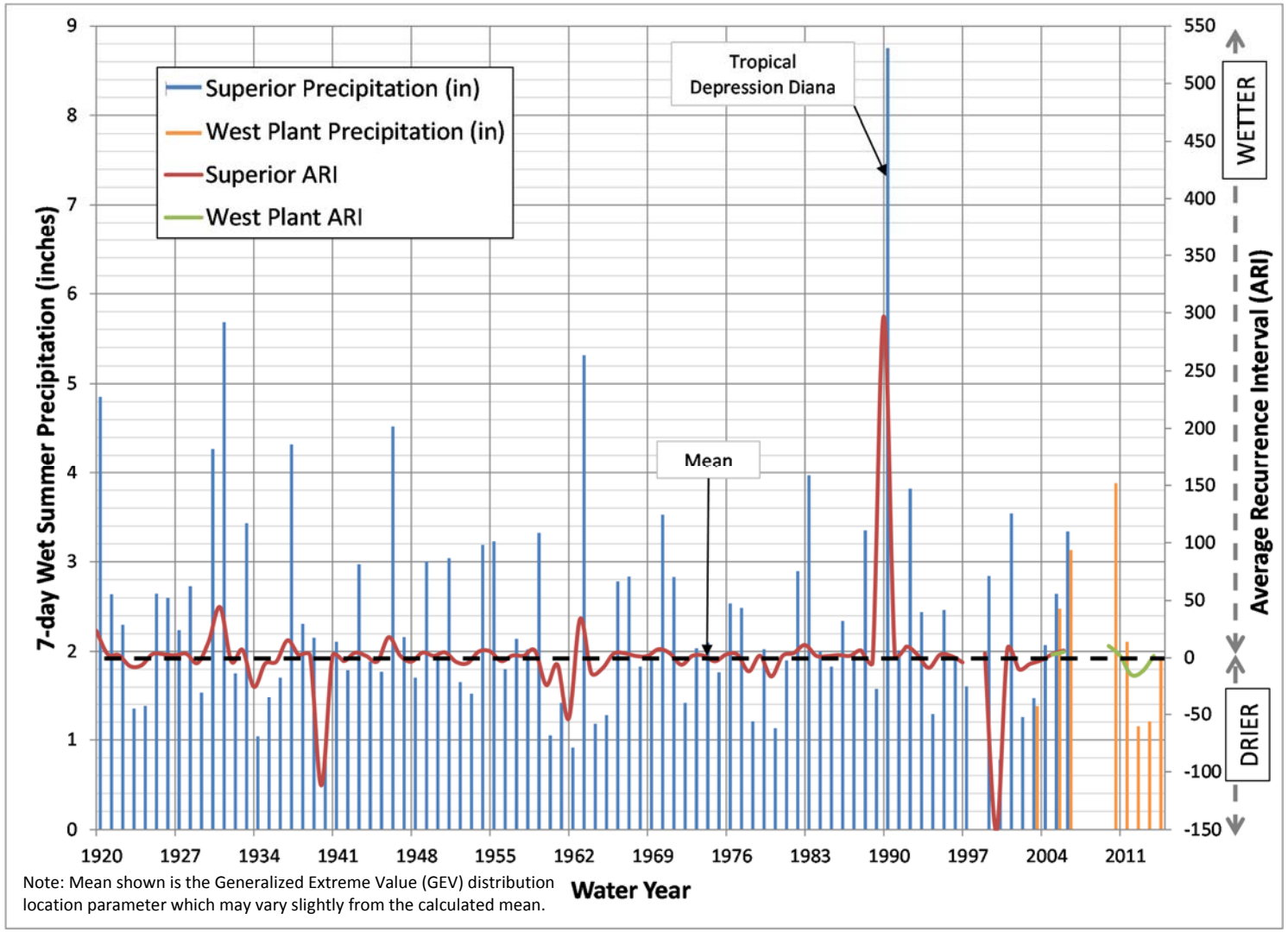
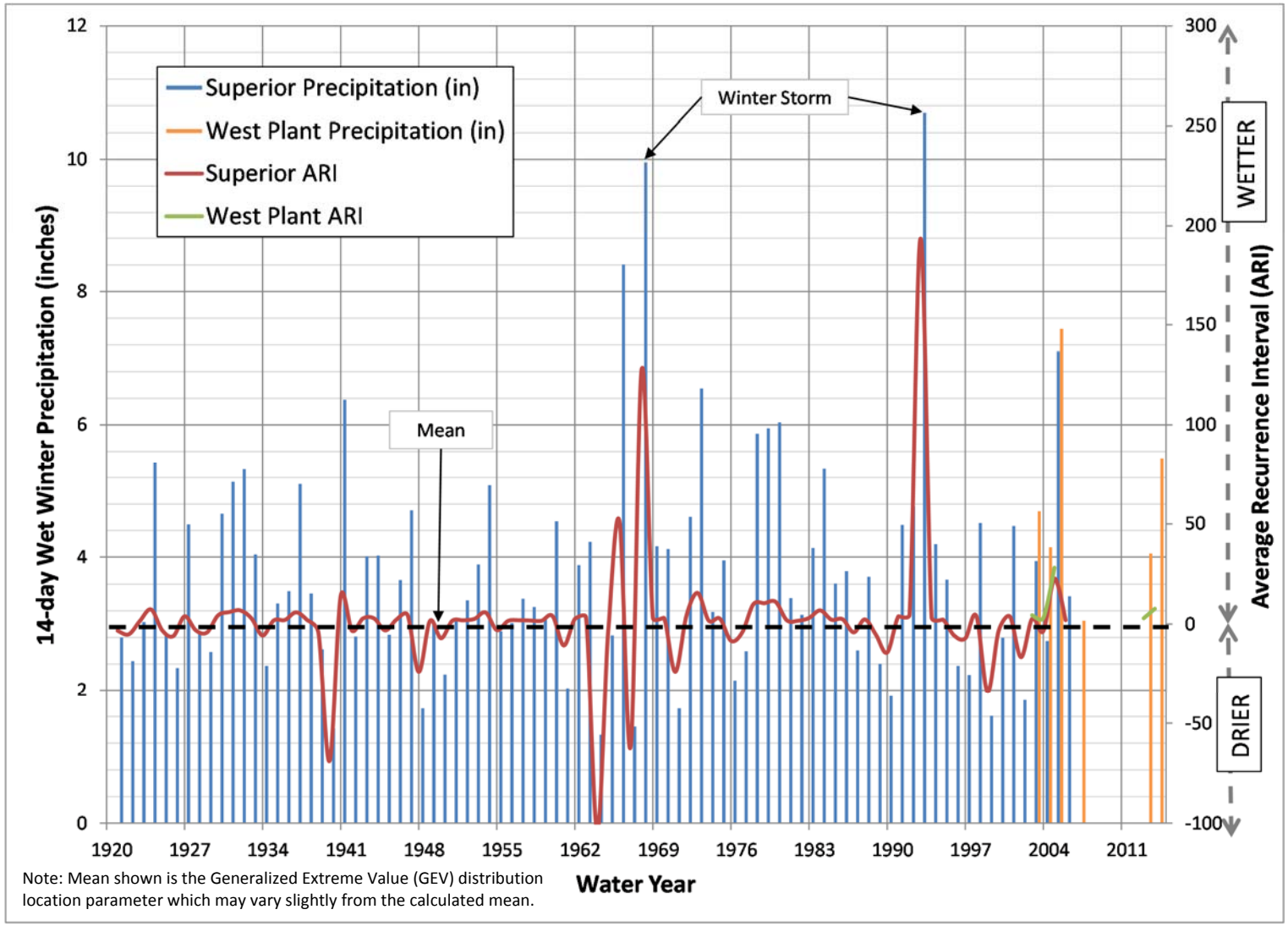


Figure II-10 7-day Wet Winter Precipitation and ARI (Water Years Shown)



Note: Mean shown is the Generalized Extreme Value (GEV) distribution location parameter which may vary slightly from the calculated mean.

Figure II-11 7-day Wet Summer Precipitation and ARI (Water Years Shown)



Note: Mean shown is the Generalized Extreme Value (GEV) distribution location parameter which may vary slightly from the calculated mean.

Figure II-12 14-day Wet Winter Precipitation and ARI (Water Years Shown)

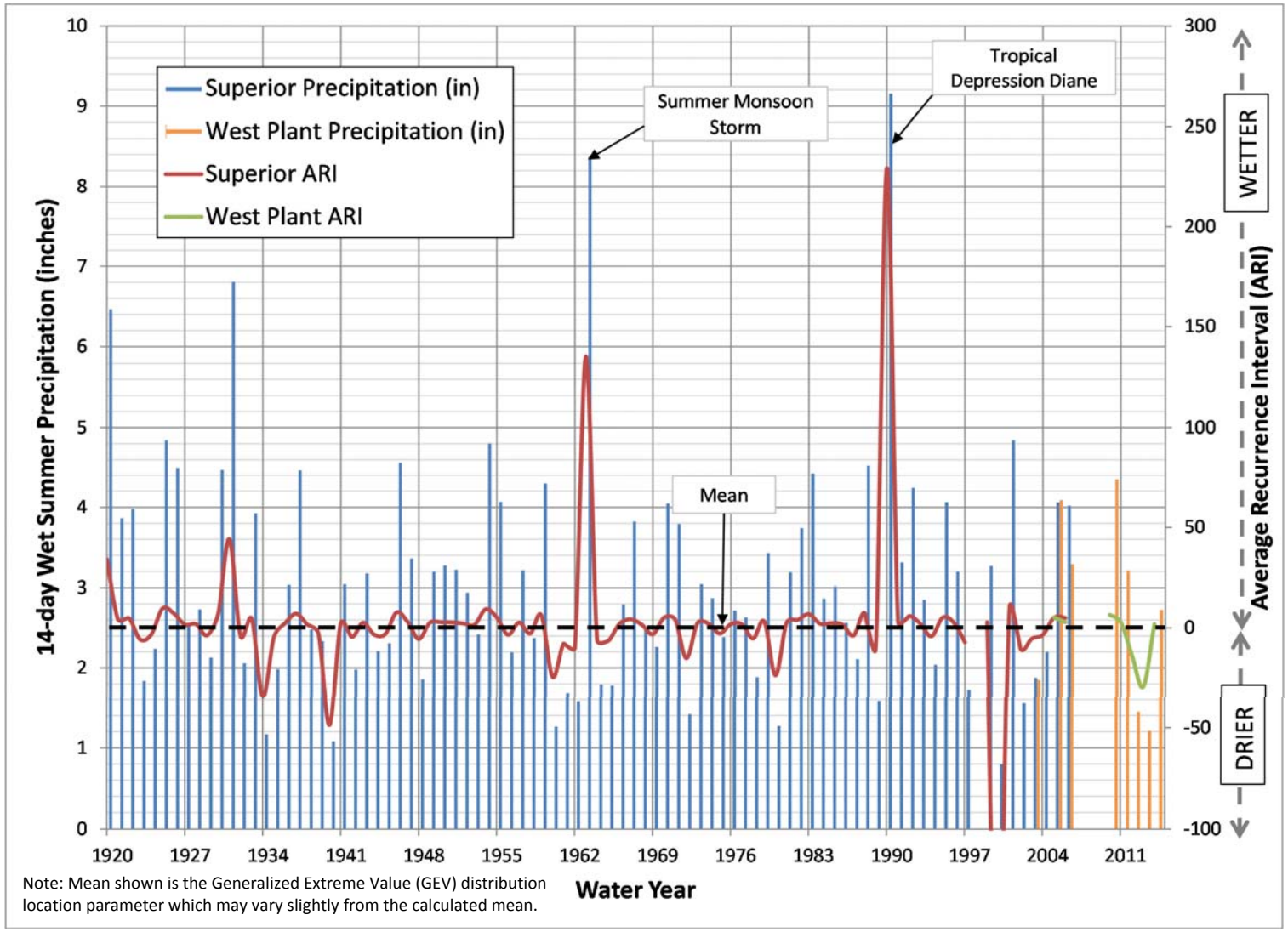
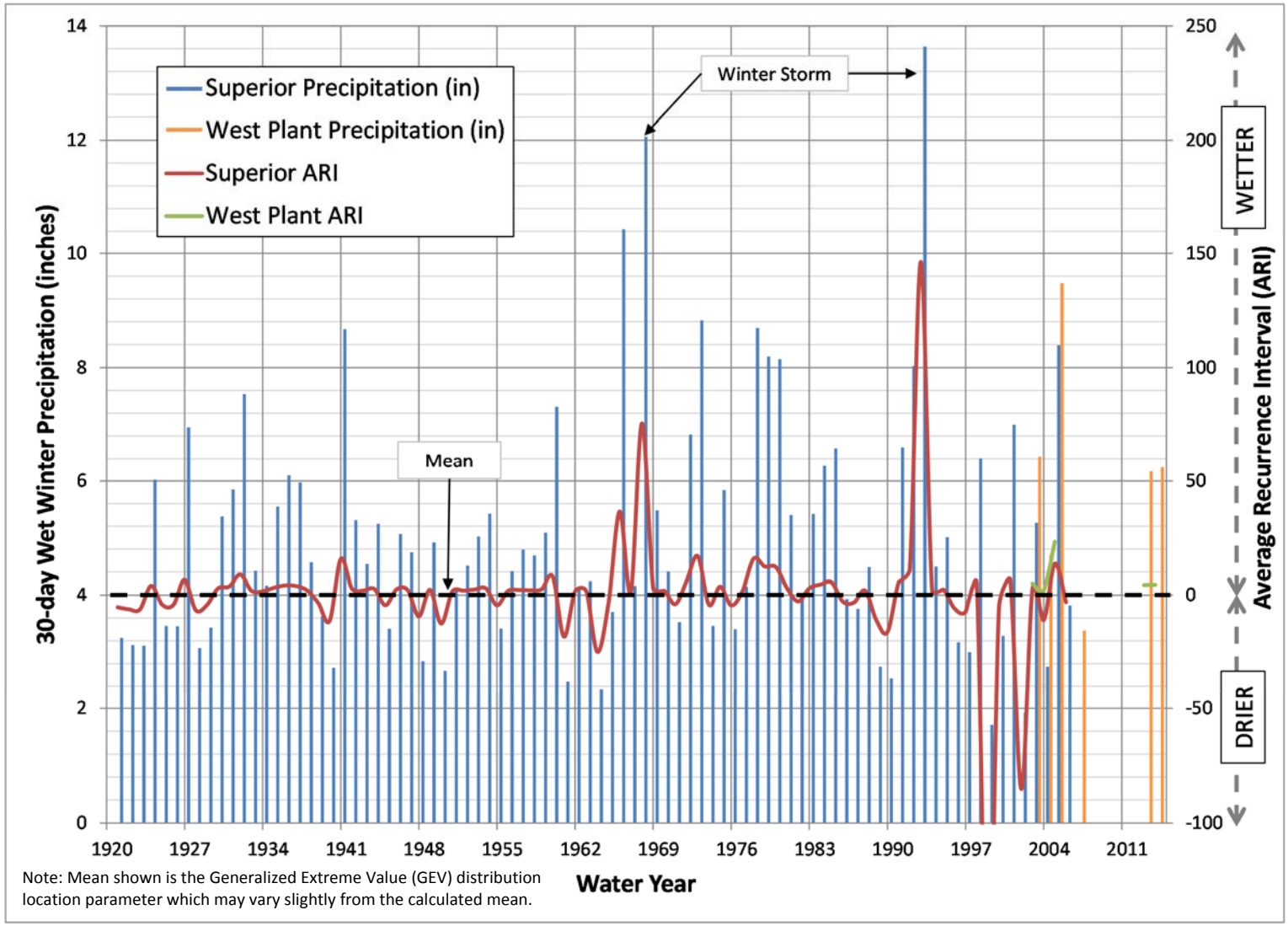


Figure II-13 14-day Wet Summer Precipitation and ARI (Water Years Shown)



Note: Mean shown is the Generalized Extreme Value (GEV) distribution location parameter which may vary slightly from the calculated mean.

Figure II-14 30-day Wet Winter Precipitation and ARI (Water Years Shown)

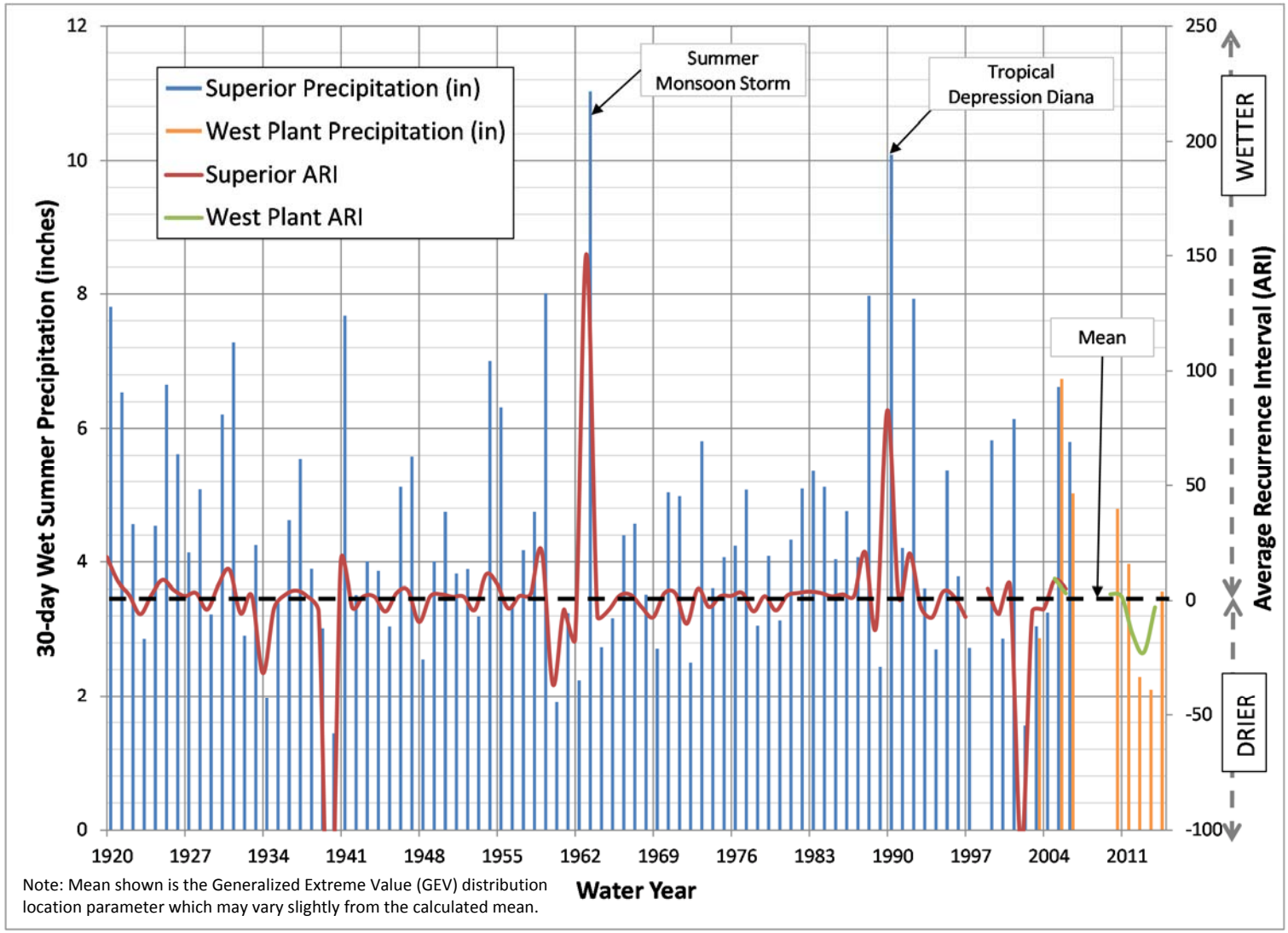


Figure II-15 30-day Wet Summer Precipitation and ARI (Water Years Shown)

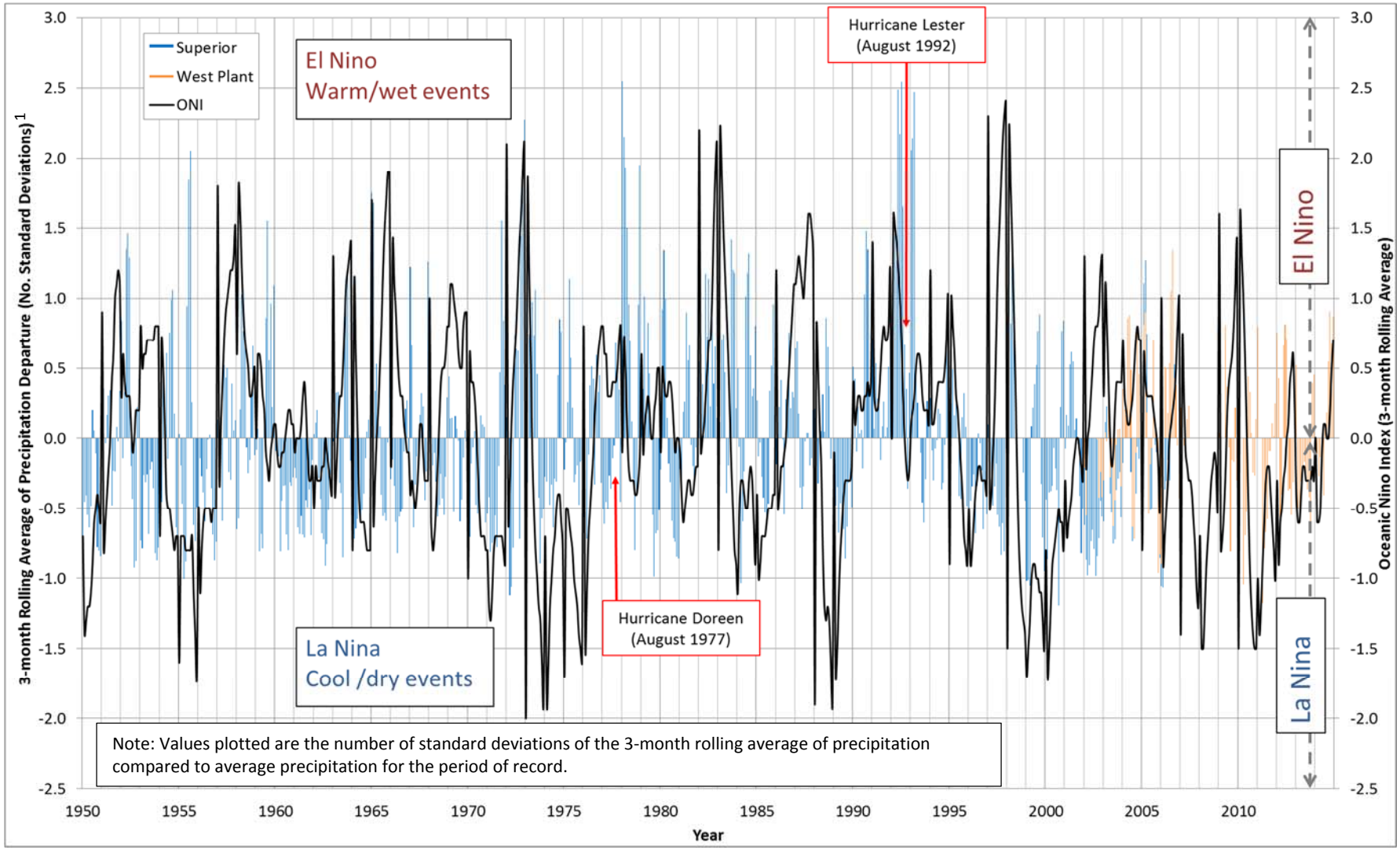


Figure II-16 Correlation Between Precipitation Recorded at Superior/West Plant and Oceanic Nino Index (Calendar Years Shown)

APPENDIX III

Closure Cover Predictions

Appendix III
Closure Cover Water Balance Predictions

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III-1 INTRODUCTION AND OBJECTIVES

This appendix presents the development and application of numerical water balance (or near surface soil-atmosphere) modeling for conceptual closure cover options for the Near West TSF. Closure cover options for the scavenger tailings embankment, scavenger beach tailings, cleaner tailings within the main impoundment and cleaner tailings in the separate cell were assessed. Gila Conglomerate and scavenger tailings were assessed as potential cover materials.

Soil-atmosphere modeling was used to predict the various near surface water balance components for uncovered and covered tailings. The modeling uses detailed climate inputs, materials properties, and vegetation properties to simulate evaporation, plant transpiration, runoff, infiltration, and moisture redistribution within the tailings and cover materials for various conditions and cover designs. The predicted water balance is then used to assess the hydraulic performance of the cover, specifically the ability of a cover to limit net infiltration (that portion of infiltration of precipitation that is not subsequently lost to evaporation, transpiration, or storage) and maintain high moisture contents in cleaner tailings to control oxygen ingress.

The objective of the modeling is to predict:

- the tailings cover water balance;
- the moisture and saturation profiles within the near surface tailings; and
- the relative hydraulic performance for base case (no cover) conditions and closure cover options.

This appendix includes the following sections:

- **Section III-1** – Introduction, provides objectives;
- **Section III-2** – Approach, describes the numerical model and cover scenarios;
- **Section III-3** – Design Basis, summarizes the climate input, boundary conditions and input properties for the tailings, Gila Conglomerate, and vegetation; and
- **Section III-4** – Predictions, summarizes the results of the modeling.

III-2 APPROACH

III-2.1 Model Code

The modeling was conducted using the software program Hydrus1D (Šimůnek et al. 2009). Hydrus1D simulates liquid and vapor flow in a one-dimensional (vertical) column based on a modified Richard's equation, a physics based equation representing water redistribution in unsaturated materials, and convection-dispersion equation, respectively. This code and modeling approach is widely accepted for use in assessing closure cover performance, though some challenges persist with the calculation of unsaturated flow in blended soil types (i.e. tailings, composite cover materials, etc.). The model has been used in this assessment to provide a means to compare expected hydraulic performance between cover options.

The model is a one dimensional column, 9.8 ft (3 m) deep, with a vertical grid spacing of 0.5 cm. The model was run on a maximum hourly time step for 56 year long (1951 to 2006) hourly climate record described in Appendix II.

III-2.2 Cover Scenarios

Three main modelling scenarios were assessed:

- Base Case Scenarios, comprised of uncovered tailings only configurations;
- Scavenger Tailings Cover Scenarios; and,
- Cleaner Tailings Cover Scenarios.

Scenarios are presented graphically in Figure III-1 to Figure III-4 and detailed in Table III-2. For simplification, scenario names are strings of abbreviations in the ascending order of material within the model column. Abbreviations are summarized in Table III-1.

The scavenger tailings gradation is expected to vary along the length of the deposited beach. Coarser particles will settle out from the depositional stream closer to the point of origin, near the embankment crest. This coarser fraction is referred to as scavenger beach tailings in this report. Finer particles "slimes" will settle once the slurry velocity decreases, which is expected in the vicinity of the reclaim pond.

Table III-1 Scenario Name Abbreviations

Abbreviated Name	Explanation
Cleaner	Cleaner Tailings
Total S	Total Scavenger Tailings
S Slimes	Scavenger Slimes Tailings
S Beach	Scavenger Beach Tailings
Coarse Gila	Coarse Gila Conglomerate

Abbreviated Name	Explanation
Fine Gila	Fine Gila Conglomerate
25%/75% Lab Composite	Gila Conglomerate and scavenger tailings composite tested in the laboratory (see Appendix I). The mixture is 75% Gila Conglomerate and 25% total scavenger tailings.
30%/70% Composite	Composite of 30% scavenger tailings and 70% Gila Conglomerate. Saturated permeability and moisture content were interpolated from the laboratory results for total scavenger tailings and Gila Conglomerate as discussed in Section III-3.3.
50%/50% Composite	Composite of 50% scavenger tailings and 50% Gila Conglomerate. Saturated permeability and moisture content were interpolated from the laboratory results for total scavenger tailings and Gila Conglomerate as discussed in Section III-3.3.
65%/35% Composite	Composite of 65% scavenger tailings and 35% Gila Conglomerate. Saturated permeability and moisture content were interpolated from the laboratory results for total scavenger tailings and Gila Conglomerate as discussed in Section III-3.3.
Veg	Indicates the run includes the effects of vegetation (plant root uptake)
Slope	Indicates the run is representing the embankment slope (no ponding allowed)

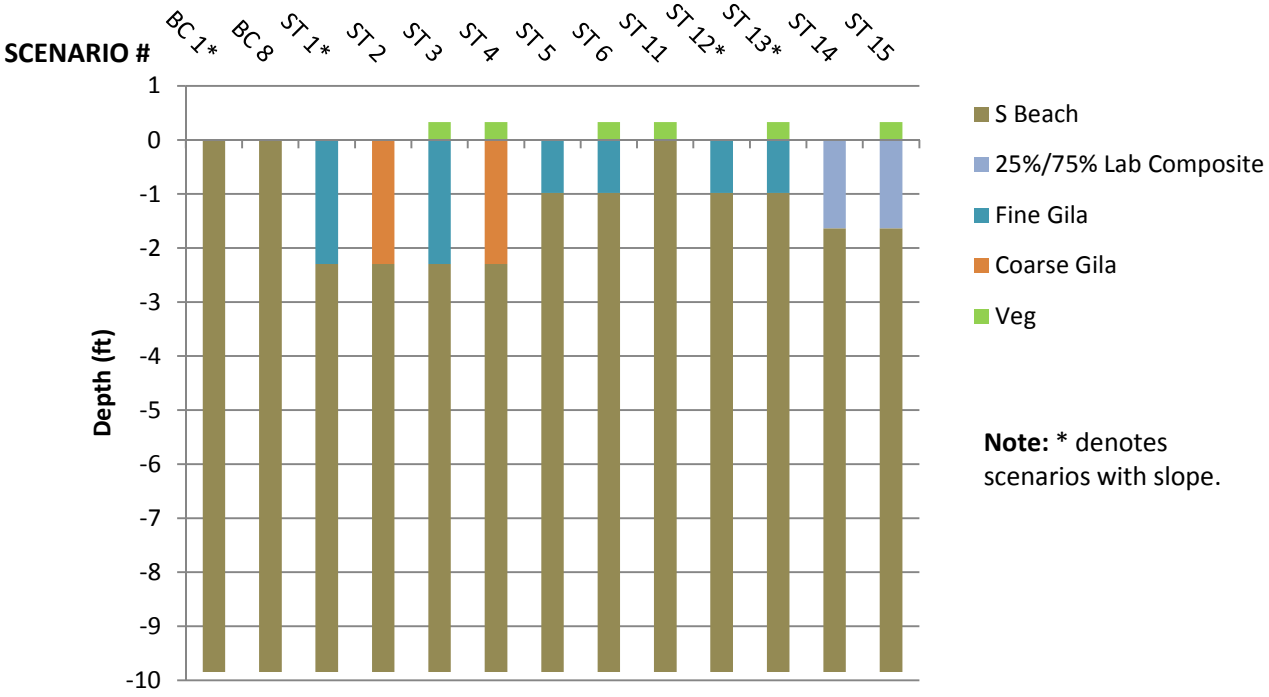


Figure III-1 Scavenger Beach Tailings Closure Cover Scenarios

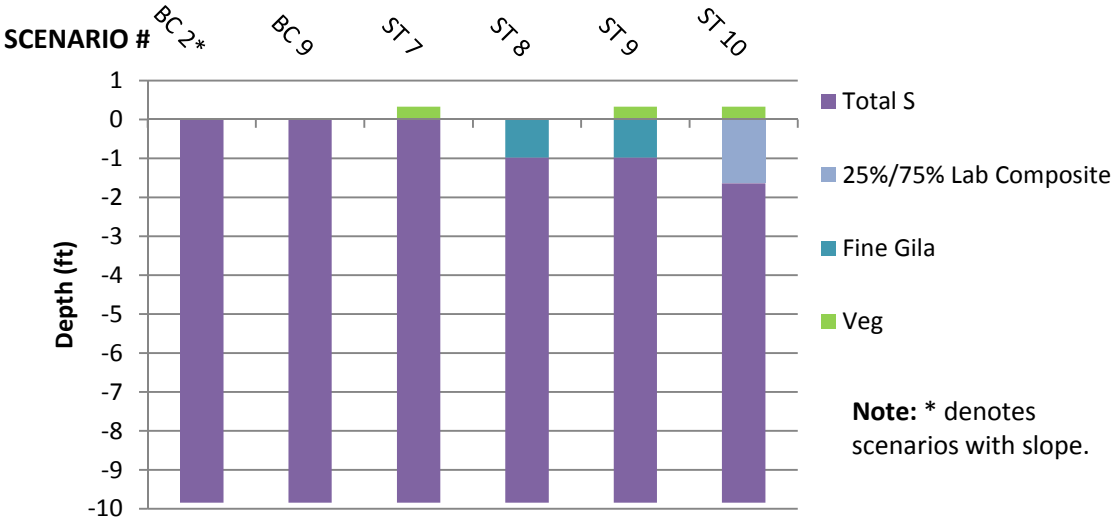


Figure III-2 **Total Scavenger Tailings Closure Cover Scenarios**

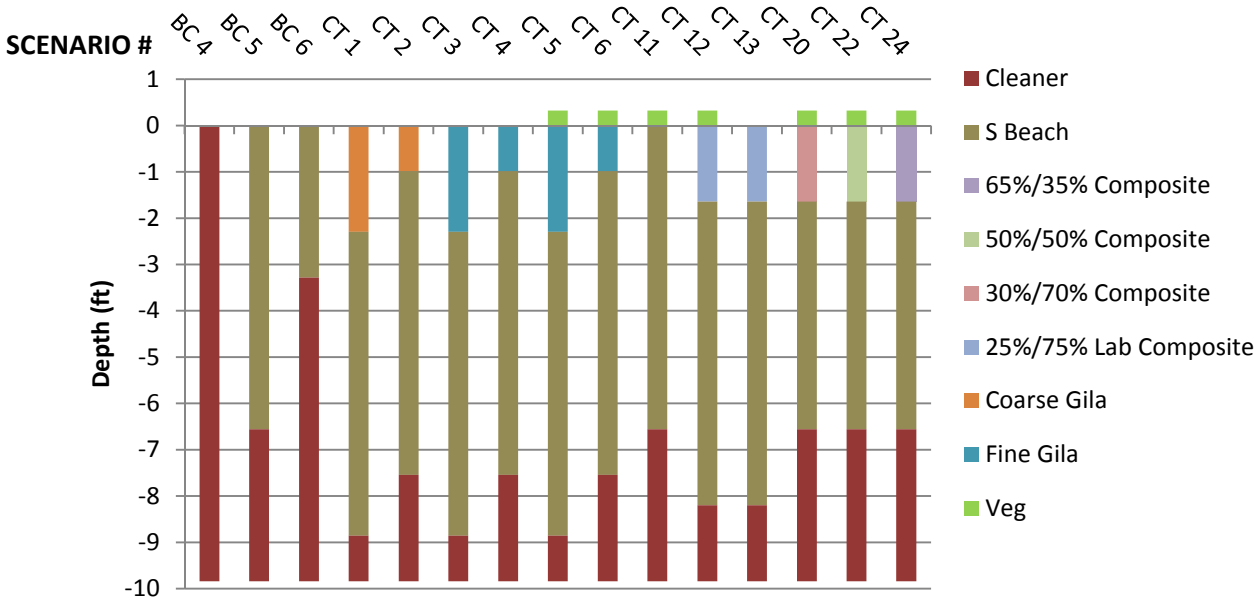


Figure III-3 **Cleaner Tailings Closure Cover Scenarios (Overlain by Scavenger Beach Tailings)**

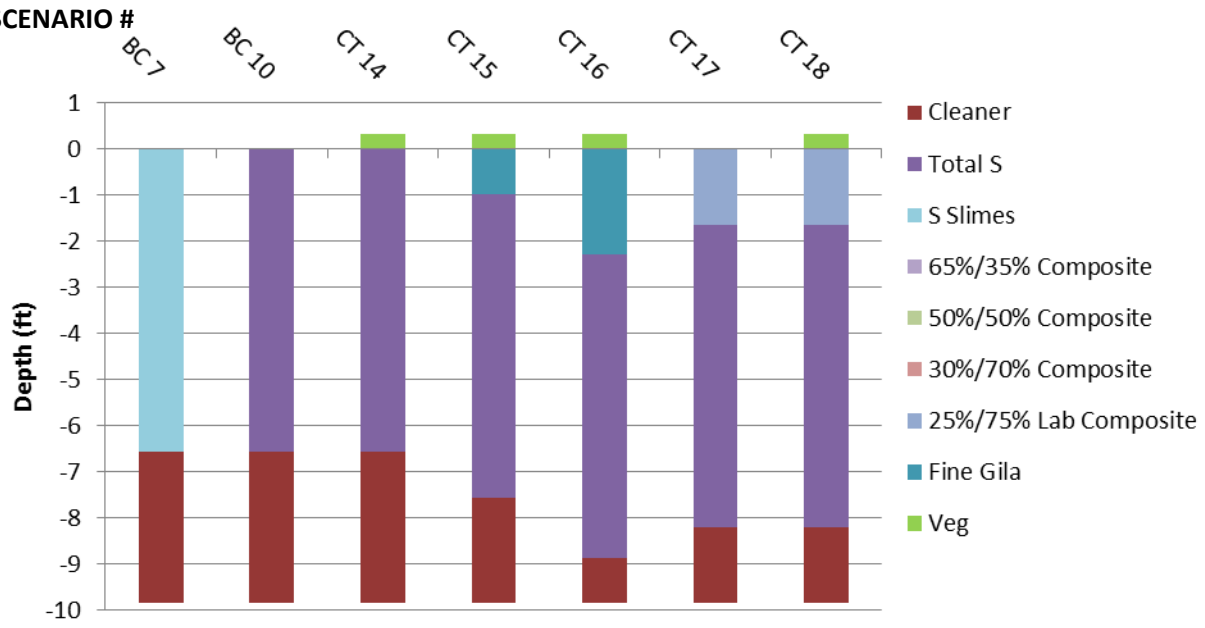


Figure III-4 **Cleaner Tailings Closure Cover Scenarios (Overlain by Scavenger Slimes or Total Scavenger Tailings)**

Table III-2 Modelled Scenarios

Scenario #	Profile (see Table III-1)	Objective
Scavenger (S) Beach Tailings		
BC 1*	9.8 ft S Beach/Slope	Base Case, uncovered tailings
BC 8	9.8 ft S Beach	Base Case, uncovered tailings
ST 1*	9.8 ft S Beach/2.3 ft Fine Gila/Slope	Model sensitivity between fine and coarse Gila Conglomerate cover material
ST 2	9.8 ft S Beach/2.3 ft Coarse Gila	
ST 3	9.8 ft S Beach/2.3 ft Fine Gila/Veg	Model sensitivity between fine and coarse Gila Conglomerate vegetated cover material
ST 4	9.8 ft S Beach/2.3 ft Coarse Gila/Veg	
ST 5	8.6 ft S Beach/1 ft Fine Gila	Sensitivity of Gila Conglomerate cover depth and vegetation
ST 6	8.6 ft S Beach/1 ft Fine Gila/Veg	
ST 11	9.8 ft S Beach/Veg	Direct vegetation of scavenger beach tailings, comparison to Scenario BC 1
ST 12*	8.6 ft S Beach/1 ft Fine Gila/Slope	Represents embankment scenario (no allowance for ponding on the surface)
ST 13*	8.6 ft S Beach/1 ft Fine Gila/Veg/Slope	
ST 14	8.2 ft S Beach/1.6 ft 25%/75% Lab Composite	Simulate alternate options for growth medium for erosion protection and vegetation support
ST 15	8.2 ft S Beach/1.6 ft 25%/75% Lab Composite/Veg	
Total Scavenger (Total S) Tailings		
BC 2*	9.8 ft Total S /Slope	Base Case, uncovered tailings
BC 9	9.8 ft Total S	Base Case, uncovered tailings
ST 7	9.8 ft Total S/Veg	Direct revegetation of total scavenger tailings, compare to Scenario BC9.
ST 8	8.6 ft Total S /1 ft Fine Gila	Represents total scavenger tailings within the impoundment
ST 9	8.6 ft Total S /1 ft Fine Gila/Veg	
ST 10	8.2 ft Total S /1.6 ft 25%/75% Lab Composite/Veg	Represents a cover to provide erosion protection and vegetation support
Scavenger Slimes (S Slimes) Tailings		
BC 3	9.8 ft S Slimes	Base Case
Cleaner Tailings Covered with Scavenger Beach (S Beach) Tailings		
BC 4	9.8 ft Cleaner	Base Case, uncovered tailings
BC 5	3.3 ft Cleaner/6.6 ft S Beach	Base Case, uncovered tailings
BC 6	3.3 ft Cleaner/3.3 ft S Beach	Base Case, uncovered tailings
CT 1	1 ft Cleaner/6.6 ft S Beach/2.3 ft Coarse Gila	Model sensitivity between fine and coarse Gila Conglomerate cover material
CT 2	2.3 ft Cleaner/6.6 ft S Beach/1 ft Coarse Gila	
CT 3	1 ft Cleaner/6.6 ft S Beach/2.3 ft Fine Gila	Model sensitivity of Gila Conglomerate cover depth
CT 4	2.3 ft Cleaner/6.6 ft S Beach/1 ft Fine Gila	
CT 5	1 ft Cleaner/6.6 ft S Beach/2.3 ft Fine Gila/Veg	Model sensitivity of Gila Conglomerate cover depth with vegetation
CT 6	2.3 ft Cleaner/6.6 ft S Beach/1 ft Fine Gila/Veg	
CT 11	3.3 ft Cleaner/6.6 ft S Beach/Veg	Direct revegetation of scavenger beach tailings, compare to Scenario BC 5
CT 12	1.6 ft Cleaner/6.6 ft S Beach/1.6 ft 25%/75% Lab Composite/Veg	Simulate alternate options for growth medium for erosion protection and vegetation support
CT 13	1.6 ft Cleaner/6.6 ft S Beach/1.6 ft 25%/75% Lab Composite	

Scenario #	Profile (see Table III-1)	Objective
CT 20	1.6 ft Cleaner/6.6 ft S Beach/1.6 ft 30%/70% Composite/Veg	Additional alternate options for growth medium
CT 22	1.6 ft Cleaner/6.6 ft S Beach/1.6 ft 65%/35% Composite/Veg	
CT 24	1.6 ft Cleaner/6.6 ft S Beach/1.6 ft 50%/50% Composite/Veg	
Cleaner Tailings Covered with Total Scavenger Tailings		
BC 7	3.3 ft Cleaner/6.6 ft S Slimes	Base Case. uncovered
BC 10	3.3 ft Cleaner/6.6 ft Total S	Base Case, uncovered
CT 14	3.3 ft Cleaner/6.6 ft Total S/Veg	Direct revegetation of total scavenger tailings, compare to Scenario BC 10
CT 15	2.3 ft Cleaner/6.6 ft Total S/1 ft Fine Gila/Veg	Model sensitivity of Gila Conglomerate cover depth with vegetation
CT16	1 ft Cleaner/6.6 ft Total S/2.3 ft Fine Gila/Veg	
CT 17	1.6 ft Cleaner/6.6 ft Total S/1.6 ft 25%/75% Lab Composite/Veg	Simulate alternate options for growth medium for erosion protection and vegetation support
CT 18	1.6 ft Cleaner/6.6 ft Total S/1.6 ft 25%/75% Lab Composite	

* Modelled to represent the embankment slope. This assumes water cannot pond and whatever does not infiltrate in a given time step will runoff.

III-3 MODEL INPUTS

III-3.1 Climate Inputs

The required climatic parameters for Hydrus1D are precipitation and potential evapotranspiration. Potential evapotranspiration was estimated within Hydrus1D using the FAO recommended Penman-Monteith combination equation (Monteith 1981; Monteith and Unsworth 1990; FAO 1990, Allen et al. 1998). The required inputs for estimating potential evapotranspiration are maximum temperature, minimum temperature, net solar radiation, relative humidity and wind speed. Hydrus1D was used to compute net radiation using the site's latitude and longitude, measured total solar radiation and air temperature from the climate dataset.

An hourly climate set was generated for the site for use in the Hydrus1D model. Details on the available climate data and the hourly discretization are provided in Appendix I.

The Superior climate dataset (56 years) wetter than average events (termed "wet") listed below (return periods are approximate, and years are water years):

- a 100-year wet year in 1992;
- a 50-year 7-day wet winter event in 1993;
- a 200-year 7-day and 14-day wet summer event in 1990 (Tropical depression Diana);
- a 100-year 14-day wet winter event in 1968 and 1993;
- a 100-year 30-day wet winter event in 1993; and
- a 100-year 30-day wet summer event in 1963.

The climate set also includes the following drier than average years (termed "dry") (return periods are approximate, and years are water years):

- a 15-year dry year in 1961 and 1997; and
- a 500-year dry year in 2000 and 2002.

Average, wet and dry years (water years) were identified to assess predicted cover performance for a range of conditions. Infiltration at the surface for the base case model with scavenger tailings beach (BC 1) was used to select a typical average, wet (high infiltration) and dry (low infiltration) water year as well as the 10 wettest years (high infiltration). These years do not necessarily correspond to the average, wet and dry water year precipitation. The following water years were chosen for reporting of results:

- Average conditions: 1980. The annual rainfall is 20.3 inches.
- Wet conditions: 1992. The annual rainfall is 36.6 inches.
- Dry conditions: 2000. The annual rainfall is 5.5 inches.
- Long-term wet conditions (highest infiltration): 1983 to 1992 (water years). The average annual rainfall is 22.7 inches (ranging from 11.7 inches to 36.6 inches).

III-3.2 Vegetation Parameters

The required vegetation inputs to Hydrus1D are Leaf Area Index (LAI), Root Density Function and moisture uptake function. LAI is used to estimate potential transpiration. The Root Density Function represents the relationship between root biomass and depth of roots. The moisture uptake function relates the volume of water removed by vegetation versus soil suction, accounting for decreased root-water uptake from vegetation when the soil moisture is under high suction stresses.

III-3.2.1 Leaf Area Index

The LAI values used in the Hydrus 1D modeling were based on existing native conditions at the Near West site. This target vegetation community for TSF reclamation is similar to native conditions. The anticipated soil cover physical properties, will likely be better at holding water and allow for greater root penetration (over native soils which can be hard and dry). These factors will likely result in more favorable conditions for the establishment of vegetation and yield higher transpiration rates than represented by the native LAI's. Given that the target vegetation communities at closure have not been determined, the native LAI's are the most appropriate representation of the future conditions, albeit conservative.

The National Aeronautics and Space Administration (NASA) has estimated LAIs using data from the Moderate Resolution Imaging Spectroradiometer (MODIS) on board the Earth observation system satellite using imagery collected every 8 days since February 2000. The LAI for the Near West site were sourced from the Land Processes Distributed Active Archive Center (LP DAAC) for January 2000 to December 2014 on a 1 km by 1 km grid spacing. The calculated monthly average LAI values from the MODIS data are given in Table III-3 and were used in the Hydrus1D modeling.

Table III-3 Monthly Leaf Area Index

Month	LAI[(1)]
January	0.35
February	0.44
March	0.57
April	0.57
May	0.49
June	0.44
July	0.42
August	0.49
September	0.45
October	0.41
November	0.31
December	0.31

1. LAIs were based on NASA MODIS (Moderate Resolution Imaging Spectroradiometer) for January 2000 to December 2014 (NASA 2015).

A literature review was conducted for LAI in semi-arid desert environments, findings are summarized in Table III-4. The MODIS monthly LAIs are within the range presented in Table III-4; therefore, the values given in Table III-3 were deemed reasonable for the Hydrus1D modeling.

Table III-4 Leaf Area Index – Literature Review

Location	Land Type	LAI	Based On	Reference
Sonoran Desert	Semi-desert	0.1 to 2.5	Outputs from the Mapped Atmosphere-Plant-Soil System (MAPSS) model	(USDI 2012)
Sonoran Desert	Semi-desert	0.5 to 6.0 (accounts for seasonal variation)	Land type as recommended in the manual for the National Center for Atmospheric Research Community Climate Model Version 2 (CCM2)	(Unland et al. 1995)
Sonoran Desert	Semi-desert	1.0	Adjusted from recommended values from CCM2 based on advice from a local ecologist	(Unland et al. 1995)
Chihuahuan Desert	Semi-desert	0.2 to 0.4 (sampling took place from May 22 to May 24, 1997)	Field sampling using: Digital imagery Radiation transmittance with LAI-2000 Plant Canopy Analyzer Radiation transmittance with Ceptometer quantum line sensor Airborne laser altimetry Destructive sampling with LI-3000 leaf area meter and photographic analysis	(White et al. 1999)

III-3.2.2 Root Density Function

The Root Density Function is an input to Hydrus1D model. Gale and Grigal (1987) proposed the following equation to calculate cumulative fraction of roots, Y, from the surface to any depth, d, (Equation 1).

Equation 1 Cumulative Root Density Function based on Gale and Grigal (1987)

$$Y = 1 - \beta^d$$

Where Y: cumulative root fraction from the surface to soil depth, d
d: soil depth (in cm)
β: depth coefficient based on function fit with data for different biomes

From Jackson et al. (1996), the β depth coefficient is 0.975 for desert biomes. The cumulative root density distribution was normalized for input to Hydrus1D and assumed to be truncated at a depth of 3.3 ft, or 1 meter (Figure III-5). Based on Schenk and Jackson (2002), the maximum root depth for desert/semi-desert land type is between 3.3 ft to 6.6 ft. No adjustments were made to this distribution based on material layering or predicted moisture profiles.

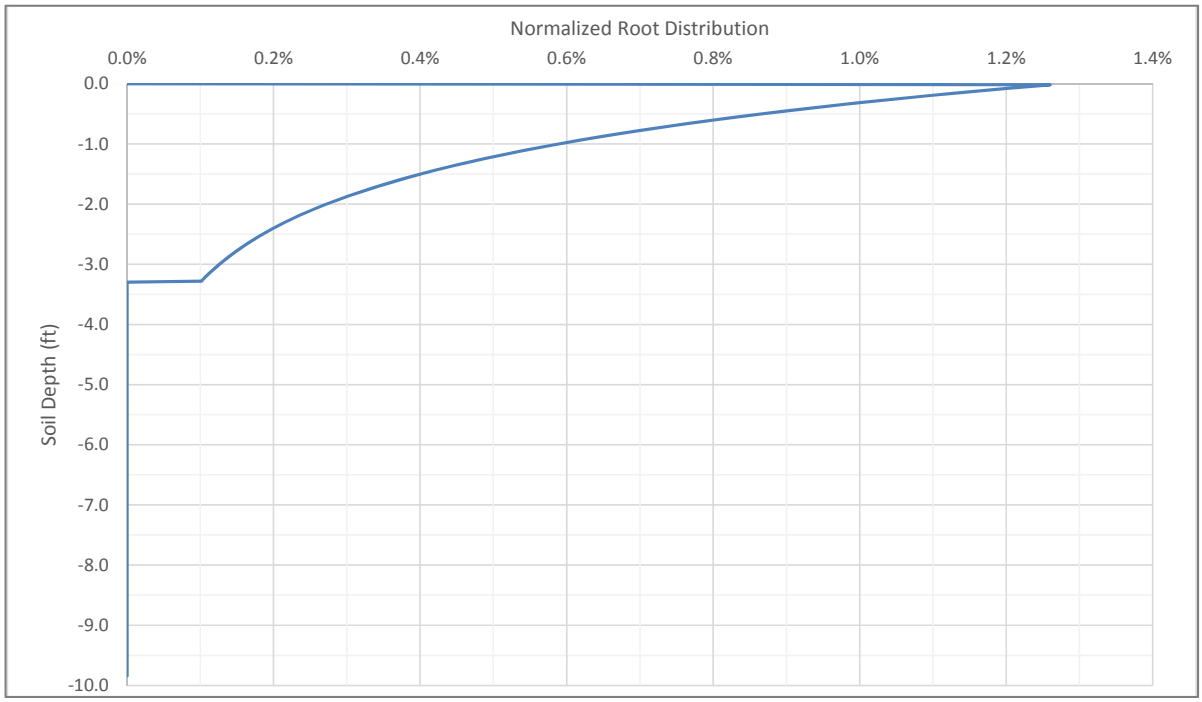
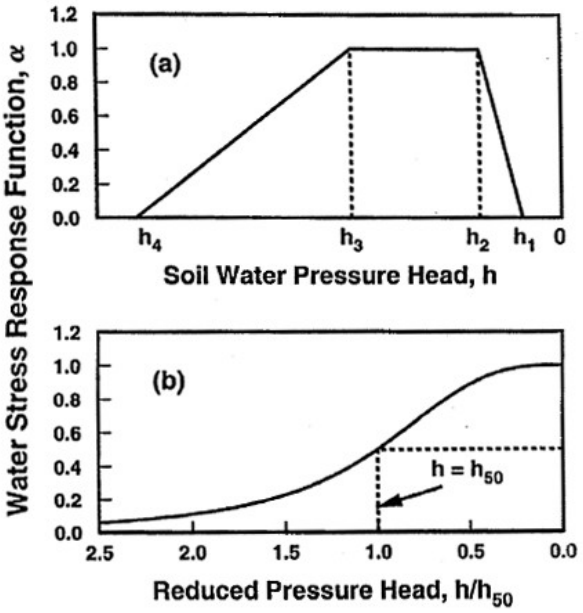


Figure III-5 Normalized Root Density Function based on Gale and Grigal (1987)

III-3.2.3 Root Water Uptake Function

The moisture uptake in the Hydrus1D model is calculated based on the Feddes et al. (1978) methodology (shown in Figure III-6) where rooting depth does not vary with time.



Schematic of the plant water stress response function, $\alpha(h)$, as used by a) *Feddes et al*. [1978] and b) *van Genuchten* [1987].

Figure III-6 Root Water Uptake Function (Feddes et al. 1978)

The Feddes et al. (1978) methodology requires the following:

- h4 - Wilting Point, suction head below which plant wilt and stop transpiring
- h3 - Dry Conditions, suction head below which plant decrease transpiration
- h2 - Wet conditions, suction head above which transpiration decreases due to anaerobiosis
- h1 - Anaerobiosis, suction head above which transpiration stops due to anaerobiosis

The inputs used for this analysis are summarized in Table III-5. Values are based on similar desert vegetation species used for the Tyrone Mine closure studies (Golder 2005), and are considered appropriate for this analysis.

Table III-5 Hydrus1D Inputs for Moisture Uptake Function

Parameter	Value
h4 - Wilting point, suction head below which plant cease transpiration	7,874 inches (20,000 cm)
h3 – Dry Condition, suction head below which plant decreases transpiration	1,180 inches (3,000 cm)
h2, h1	Not required as a Hydrus1D input

III-3.3 Material Hydraulic Properties

Materials represented in the modelling assessment include cleaner and scavenger tailings, Gila Conglomerate, and proposed scavenger tailings and Gila Conglomerate composites. Gila Conglomerate samples were collected for laboratory testing by KCB from the proposed Near West TSF site and the Superior Mine Stockpile. Details of the sample collection, laboratory testing, and results are presented in Appendix I of the main report. The material properties used in the infiltration modeling are summarized in Table III-6. The soil moisture retention characteristic curves for each are represented in Hydrus1D using the fitted van Genuchten parameters given in Table III-6.

The Gila Conglomerate and scavenger tailings composite tested in the laboratory has a ratio of 25% scavenger tailings and 75% Gila Conglomerate. Sensitivities were completed on the ratio of tailings to Gila Conglomerate. Three other composite ratios were developed to assess other options for a blended material cover:

- 30% scavenger tailings and 70% Gila Conglomerate;
- 50% scavenger tailings and 50% Gila Conglomerate; and
- 65% scavenger tailings and 35% Gila Conglomerate.

Blends of Gila Conglomerate and scavenger tailings were considered in this analysis. The concept for the blending is to strike a balance between the erosion resistance afforded by the Gila Conglomerate and increased AWHC afforded by the scavenger tailings. To this end, a range of blends were represented, the parameters for each developed based on the 25%/75% blend laboratory analysis.

Table III-6 Material Hydraulic Properties

Material	Saturated Hydraulic Conductivity K_{sat} cm/s	Residual Water Content Θ_r cm^3/cm^3	Saturated Water Content Θ_s cm^3/cm^3	van Genutchen Parameters	
				α 1/cm	N
Cleaner Tailings	$7.5x10^{-8}$	0.001	0.500	$9.3x10^{-4}$	1.999
Total Scavenger Tailings	$2.3x10^{-5}$	0.003	0.442	$6.1x10^{-3}$	1.513
Scavenger Beach Tailings	$2.3x10^{-4}$	0.010	0.442	$1.2x10^{-2}$	1.803
Scavenger Slimes Tailings	$6.3x10^{-7}$	0.001	0.442	$1.2x10^{-3}$	1.591
Coarse Gila Conglomerate	$8.2x10^{-1}$	0.003	0.322	7.8	1.177
Fine Gila Conglomerate	$1.7x10^{-1}$	0.000	0.385	4.4	1.160
Scavenger Tailings and Gila Conglomerate Laboratory Composite (25%/75%)	$3.3x10^{-3}$	0.000	0.338	0.75	1.180
Scavenger Tailings and Gila Conglomerate Interpolated Composite (30%/70%)	$9.0x10^{-4}$	0.002	0.379	0.096	1.269
Scavenger Tailings and Gila Conglomerate Interpolated Composite (50%/50%)	$1.8x10^{-4}$	0.003	0.397	0.030	1.334
Scavenger Tailings and Gila Conglomerate Interpolated Composite (65%/35%)	$7.3x10^{-5}$	0.004	0.410	0.015	1.400

III-3.4 Boundary Conditions

The following conditions were assumed for the Hydrus1D model:

- free draining (unit hydraulic gradient) at the bottom;
- atmospheric conditions at the surface with a maximum allowable surface soil suction (HCritA) of -200,000 cm;
- water is allowed to pond on the surface (unless otherwise noted for assumed sloped areas (HCritS >0 inch). The HCritS ranges from 0.8 inches to 2.8 inches depending on the model scenario, these are variable due to numerical convergence requirements with certain scenarios. The ponding water depth modeled did not have a large influence on predicted net infiltration for site conditions;
- root water uptake within the root zone for vegetation scenarios.

Model sensitivity to initial moisture conditions were assessed and found that scenarios with fine tailings close to the surface were sensitive (cleaner and scavenger slimes tailings), the remaining scenarios were not. Cleaner tailings and scavenger slimes tailings will be deposited within the reclaim pond and kept saturated until closure. Therefore, an initial saturation of 95% was assumed for these scenarios.

III-4 PREDICTIONS

A total of 56 years of hourly water balance information was recorded for each model simulation. Based on a review of the available data and the objectives of the assessment, the prediction results presented here represent the following:

- annual water balance results by water year (from October 1 – September 30);
- annual water balance results (monthly) for 9 consecutive years with high predicted rates of infiltration (1983 to 1991);
- Winter season water balance results (November-March); and
- Monsoon season water balance results (July-November).

Key results are presented within this section. More detailed results for selected scenarios are included in Appendix III-A to Appendix III-I. Predicted soil moisture content, suction head, and saturation profiles presented represent approximate average hydrologic year (1980), dry year (2000), and wet year (1992) scenario for February, June, and August of that year.

III-4.1 Calculated Potential Evapotranspiration

Evapotranspiration (ETo) for a reference surface and crop is calculated in Hydrus1D using the Penman-Monteith combined equation, the annual ETo is shown in Figure III-7.

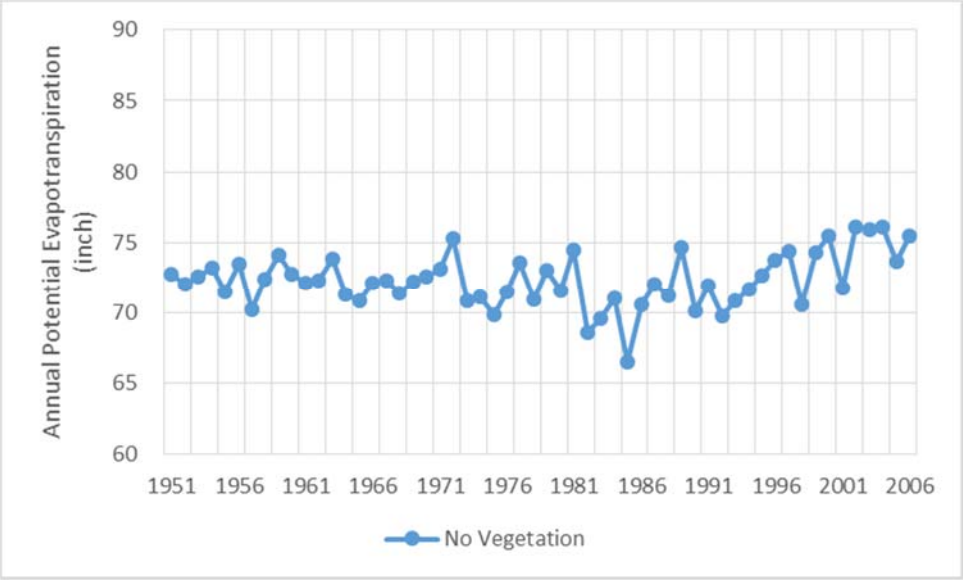


Figure III-7 Calculated Potential Evapotranspiration ETo (water years)

The actual evaporation and transpiration in each scenario ranges based on the material properties and vegetation presence.

III-4.2 Simulation Water Balance Error

The water balance errors reported by Hydrus1D in each modelled scenario ranges are small, less than 0.05% for scenarios without vegetation to between 0.25% and 0.8% for scenarios with vegetation. This level of error is low and considered acceptable for the modelling objectives.

III-4.3 Scavenger Beach Tailings

Covers over scavenger beach tailings were assessed to estimate net infiltration to the scavenger tailings on the embankment and along the beaches.

In the Base Case tailings scenario without a cover, predicted net infiltration is on average about 16% of precipitation. Predicted net infiltration on the embankment slope and on the tailings beach are similar. If vegetation is established directly on the tailings, the predicted net infiltration decreases to on average 1.4% of precipitation (Figure III-8).

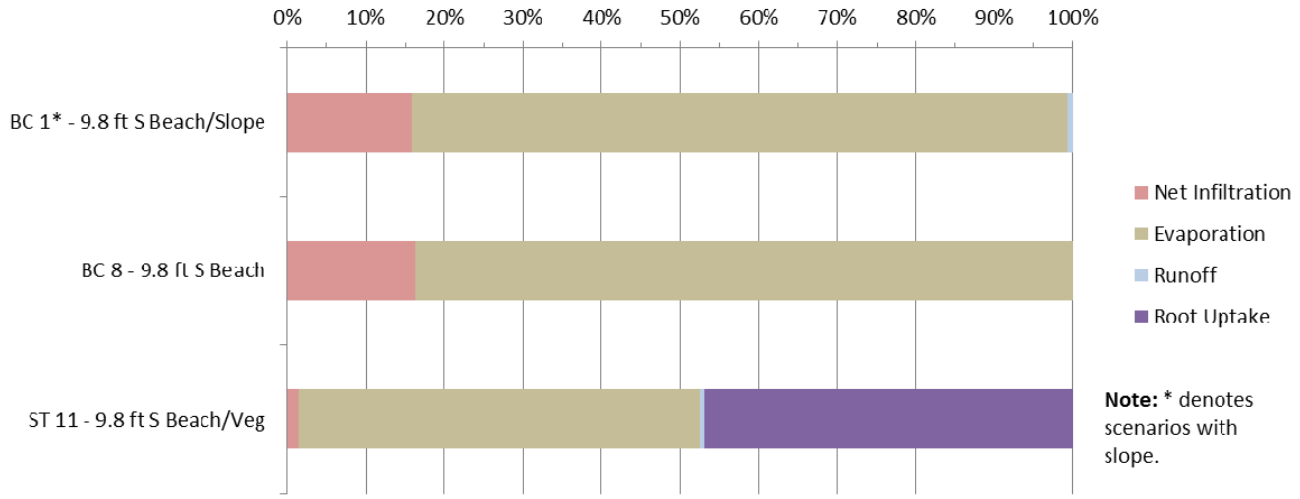


Figure III-8 Scavenger Beach Tailings Water Balance Results, Including Direct Revegetation

The model predicts higher net infiltration for covers of coarse and fine Gila Conglomerate and Gila Conglomerate-scavenger tailings blends, with rates over 60% of precipitation on average as the cover thickness increases (Figure III-9). The net infiltration increases with increasing Gila Conglomerate thickness because the Gila Conglomerate has a significantly higher hydraulic conductivity and a lower AWHC than tailings.

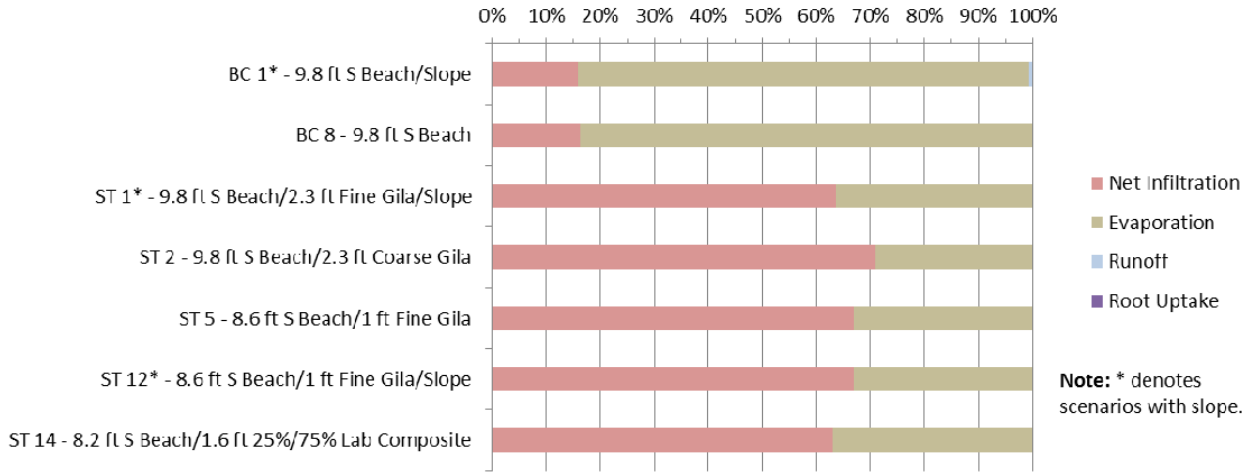


Figure III-9 Scavenger Beach Tailings Water Balance Results, Including Unvegetated Gila Conglomerate Covers

When the Gila Conglomerate covers are vegetated, predicted net infiltration decreases to between 7% and 14% on average of precipitation (Figure III-10).

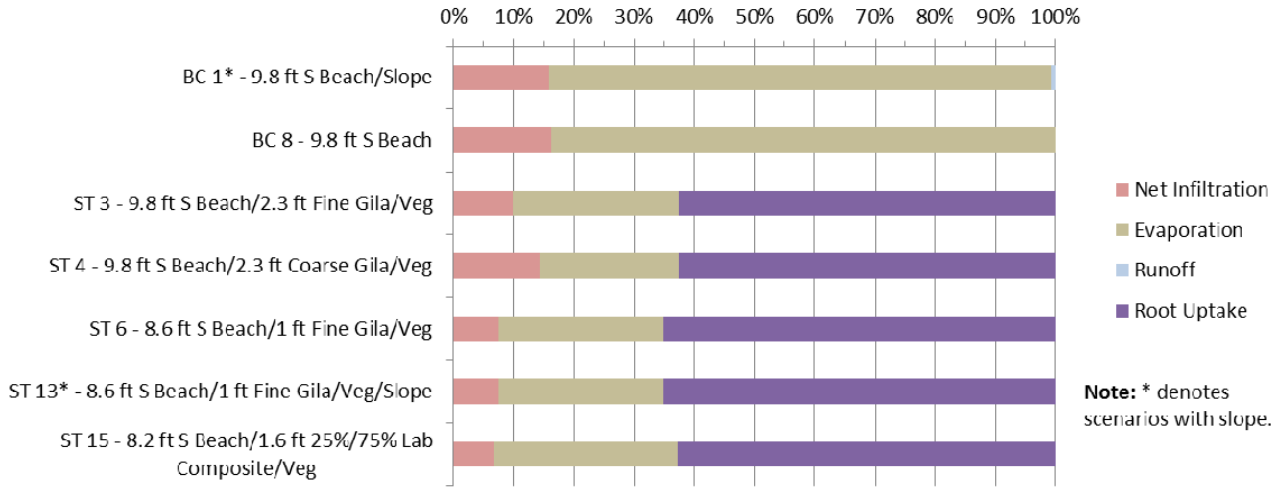


Figure III-10 Scavenger Beach Tailings Cover Water Balance Results, Including Vegetated Gila Conglomerate Covers

The influence of the cover properties on net infiltration for scavenger beach tailings is presented in Figure III-11. The black line represents the base case scenario (BC 8).

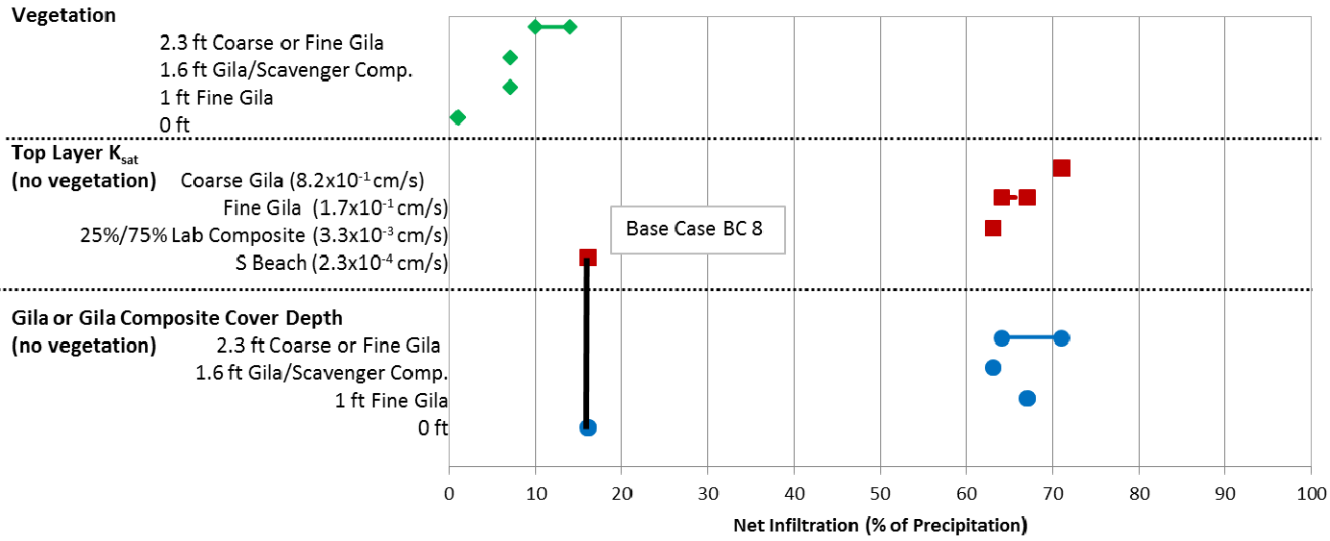


Figure III-11 Scavenger Beach Tailings Covers – Sensitivity Plot

III-4.4 Total Scavenger Tailings

Covers over total scavenger tailings beaches (the medium grain size fraction of tailings generally found between the interface of the coarse beach tailings and the slimes tailings located close to the reclaim pond) were assessed to estimate net infiltration to the scavenger tailings along the middle areas of the beach. These tailings have a lower overall hydraulic conductivity than the scavenger beach tailings discussed above.

Net water balance results for the total scavenger tailings scenarios over the simulated 56 year period are presented in Figure III-12.

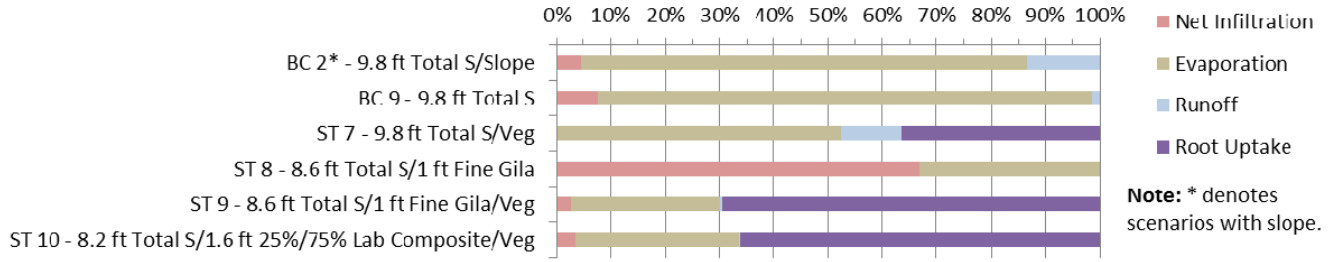


Figure III-12 Total Scavenger Tailings Water Balance Results

The results indicate that predicted net infiltration into the uncovered total scavenger tailings is 8%, decreasing to less than 0.1% with vegetation. Predicted net infiltration increases substantially with a fine Gila Conglomerate cover of 1 ft (67 %). Net infiltration is decreased below the base case to 3% to 4% with established vegetation.

III-4.5 Scavenger Slimes Tailings

Covers over scavenger slimes tailings (the fine grain size fraction of tailings generally deposited in the reclaim pond) were not assessed. The scavenger slimes tailings have similar properties as cleaner tailings, therefore no sensitivities were completed assuming that the conclusions from the cleaner tailings can be applied to the scavenger slimes tailings.

Net water balance results for the base case scavenger slimes tailings with no cover over the simulated 56 year period are presented in Figure III-13. The low hydraulic conductivity of the scavenger slimes tailings limits the predicted net infiltration to approximately 1%.

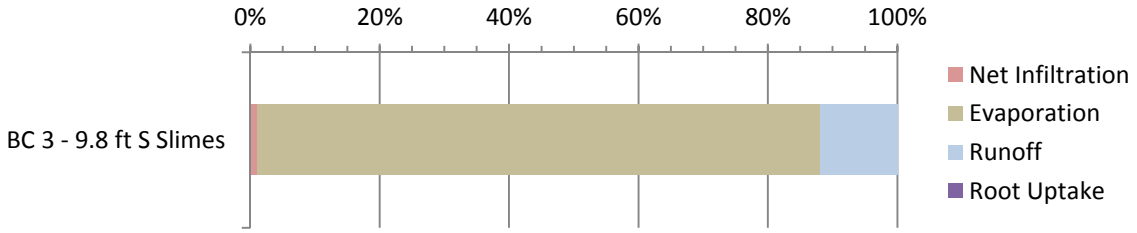


Figure III-13 Scavenger Slimes Tailings Water Balance Results

III-4.6 Cleaner Tailings

Sulfides are concentrated in the cleaner tailings during processing, and therefore they pose a potential risk of forming acid rock drainage and metal leaching (ARD/ML) if exposed to oxygen and water for extended periods. Several closure cover scenarios have been assessed with the objectives of minimizing net infiltration into the cleaner tailings and minimizing oxygen ingress. Oxygen diffusion rapidly decreases by 3 to 4 orders of magnitude as the degree of saturation increases above 85% (INAP 2009).

Cleaner tailings will be covered at closure. Two groups of scenarios were assessed for the cleaner tailings where they are either overlain by scavenger beach tailings or total scavenger tailings prior to cover construction. This approach is employed for constructability and will also provide additional depth of material over the cleaner tailings.

Net Infiltration

Net water balance results for the cleaner tailings scenarios over the simulated period are presented in Figure III-14 for cleaner tailings covered with scavenger beach tailings and Figure III-15 for cleaner tailings covered with total scavenger tailings. The influence of the cover properties on predicted net infiltration is presented in Figure III-16.

For all cover scenarios modelled, predicted net infiltration to the cleaner tailings is low at less than 6% of incident precipitation. The low hydraulic conductivity of the cleaner tailings is the dominant factor for limiting net infiltration. Cover variations have little influence on the overall net water balance because of this (see Figure III-16). The base case (BC 4) is shown as the black line in Figure III-16.

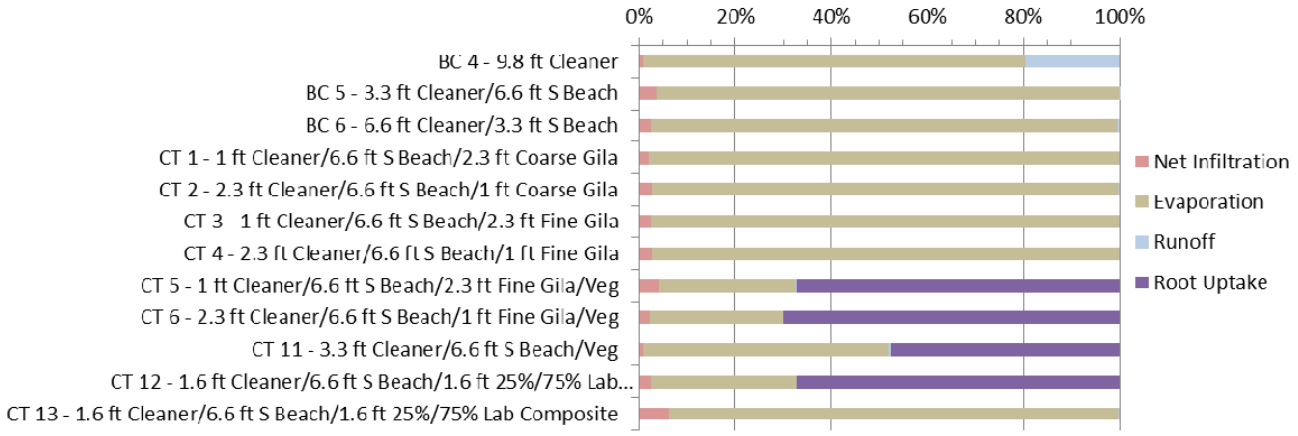


Figure III-14 Cleaner Tailings with Scavenger Beach Tailings Water Balance Results

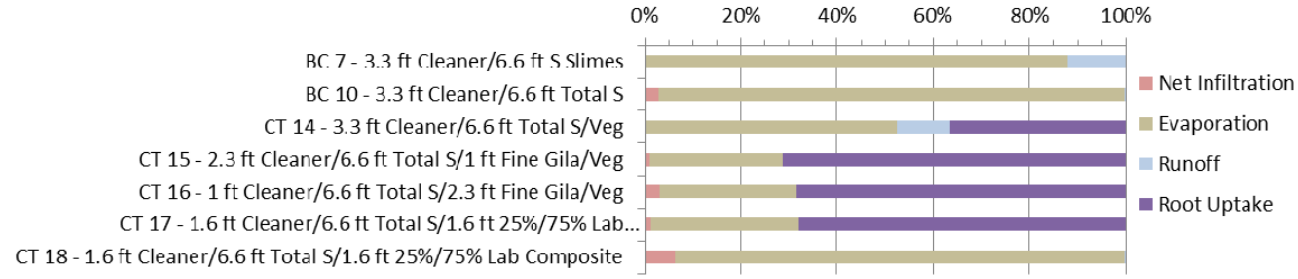


Figure III-15 Cleaner Tailings with Total Scavenger Tailings Water Balance Results

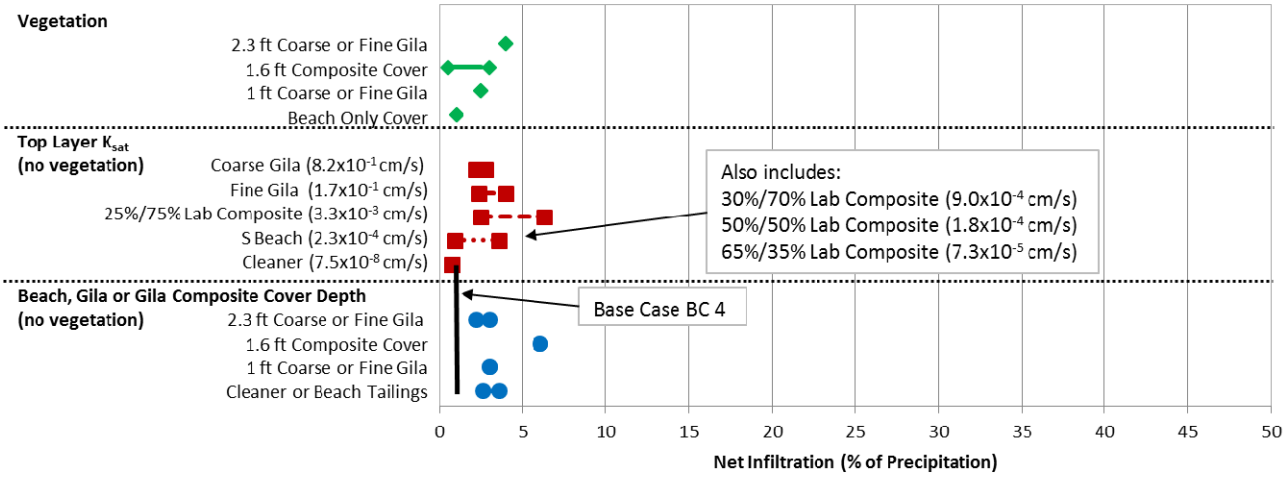


Figure III-16 Cleaner Tailings Covers – Infiltration Sensitivity Plot

Saturation

Saturation profiles for selected cleaner tailings cover scenarios are presented in Figure III-17 to Figure III-20. Daily saturation profiles from an approximately 500-year dry-year (2000) in the month of June (May is typically the driest month of the year) were selected to show the approximate lower bound results of the scenarios.

Net infiltration over the run (1951 to 2006) is plotted against the minimum saturation at 4 inches depth below the top of the cleaner tailings during the 500-year dry-year June (2000) in Figure III-21 and Figure III-22. The influence of the cover variables on saturation is presented in Figure III-23. The base case (BC 4) is shown as the black line in Figure III-23.

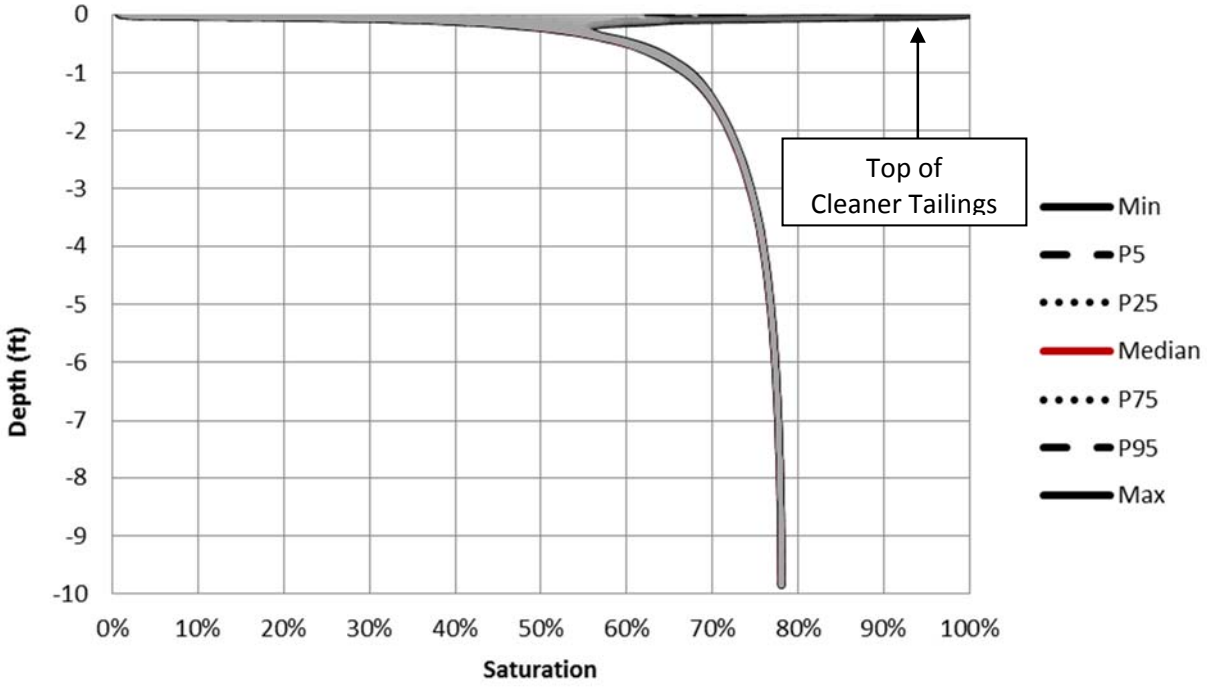


Figure III-17 Saturation Profile BC 4 - 9.8 ft Cleaner (June – 500-year Dry Year (2000)) – No Cover (included for comparison purposes only)

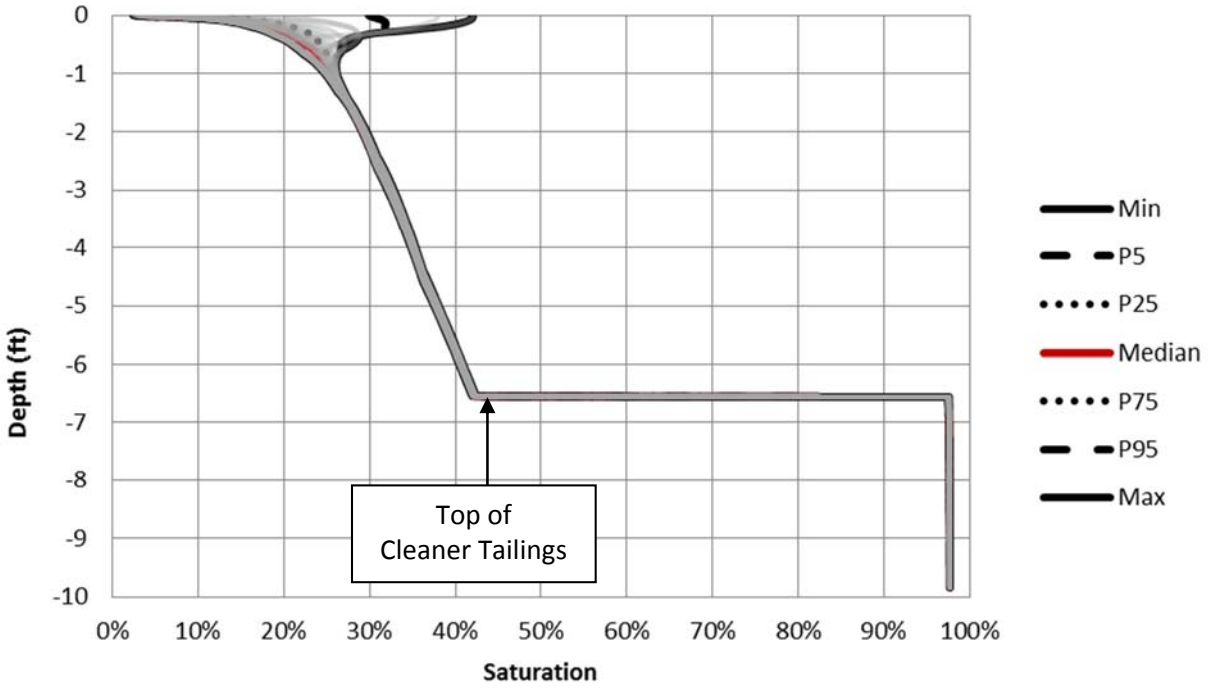


Figure III-18 **Saturation Profile BC 5 – 3.3 ft Cleaner /6.6 ft S Beach (June – 500-year Dry Year (2000))**

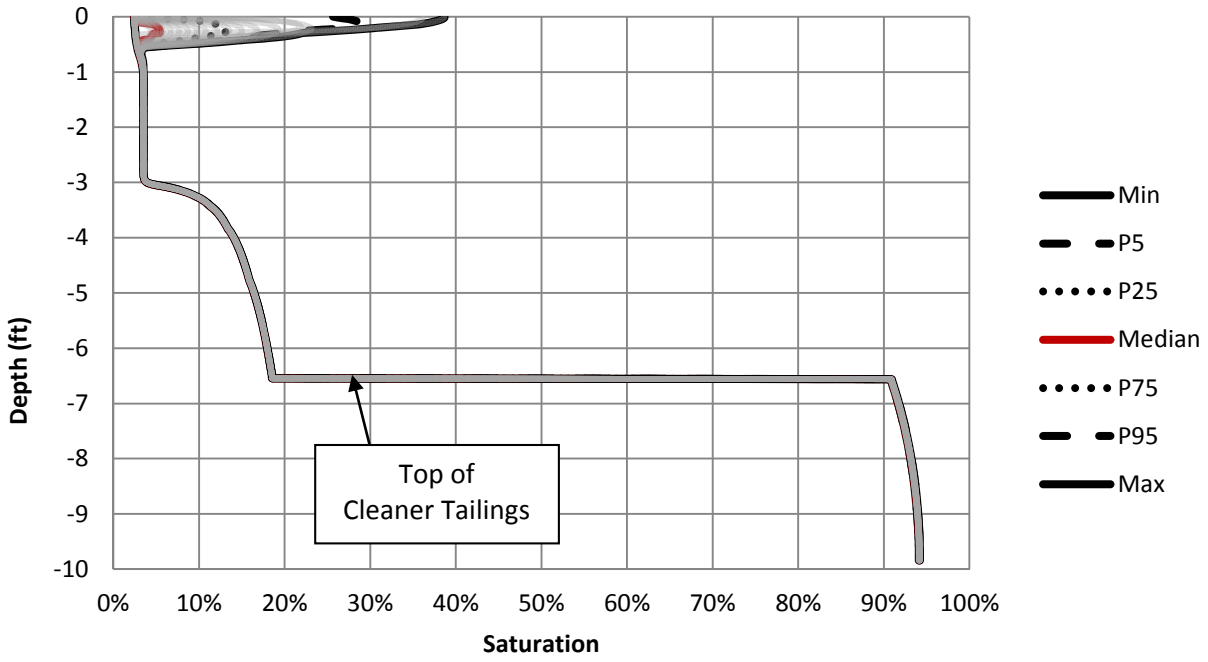


Figure III-19 **Saturation Profile CT 11 – 3.3 ft Cleaner /6.6 ft S Beach/Veg (June – 500-year Dry Year (2000))**

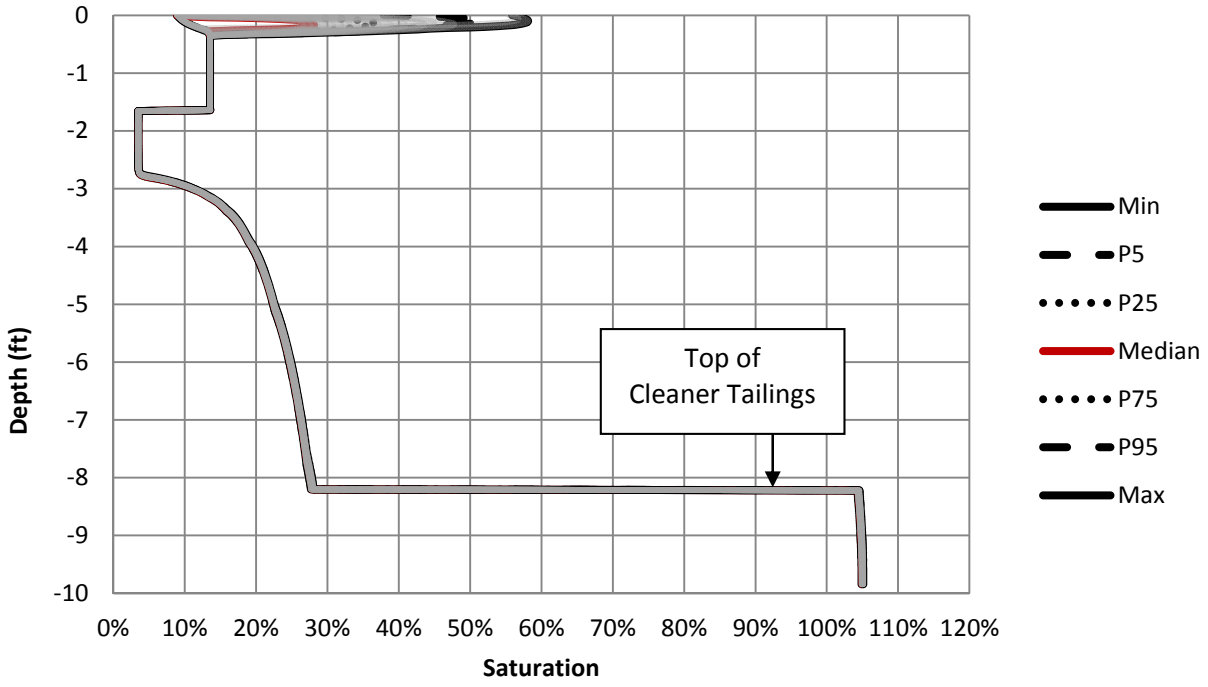


Figure III-20 **Saturation Profile CT 12 – 1.6 ft Cleaner/6.6 ft S Beach/1.6 ft 25%/75% Lab Composite/Veg (June – 500-year Dry Year (2000))**

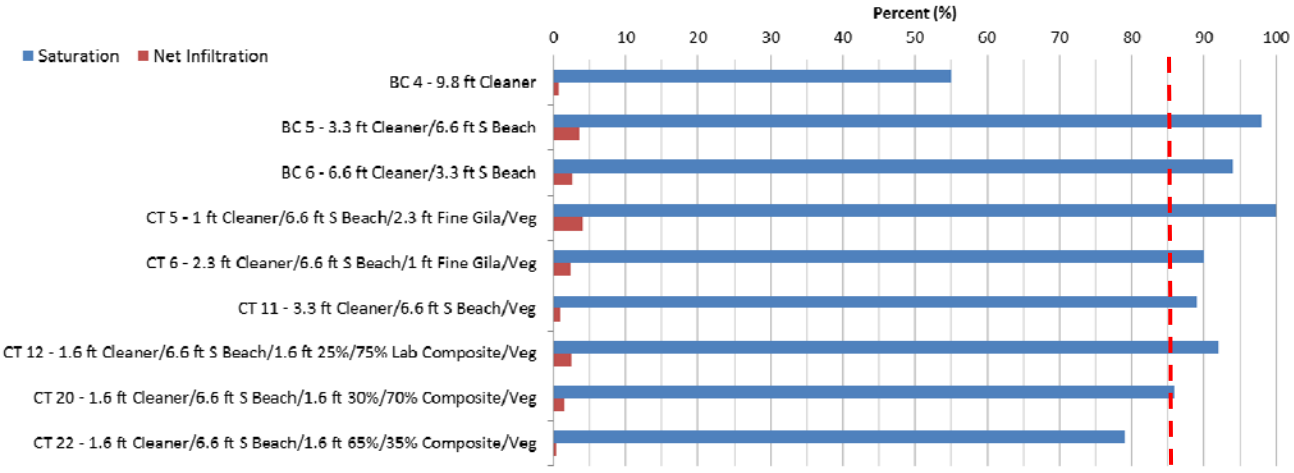


Figure III-21 **Net Infiltration and Minimum Saturation of the Cleaner Tailings at 0.3 ft Depth Below Top of Cleaner Tailings for June of a Dry Year (500-year 2000) (Overlain by Scavenger Beach Tailings)**

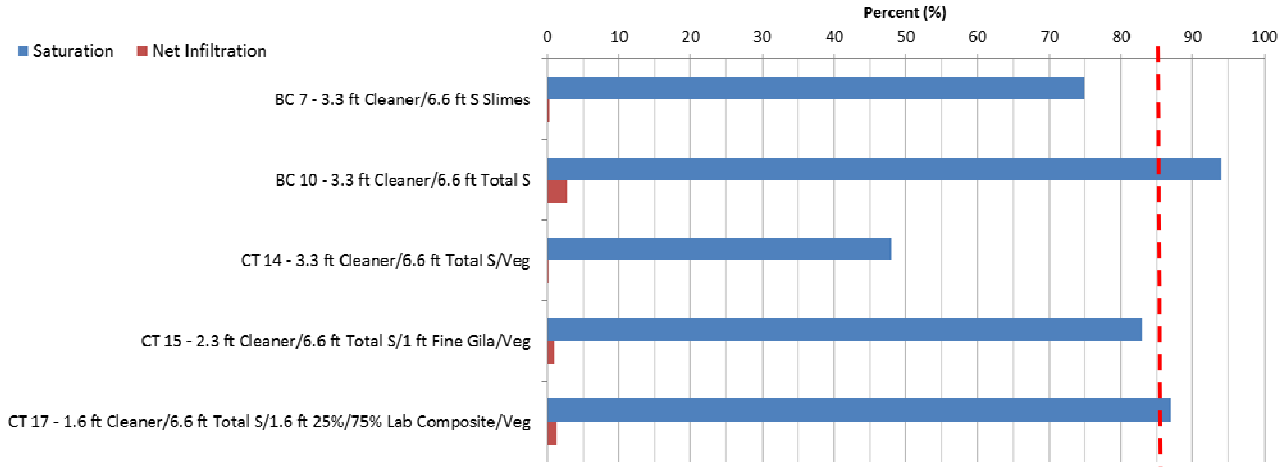


Figure III-22 Net Infiltration and Minimum Saturation of the Cleaner Tailings at 0.3 ft Depth Below Top of Cleaner Tailings for June of a Dry Year (500-year 2000) (Overlain by Total Scavenger Tailings)

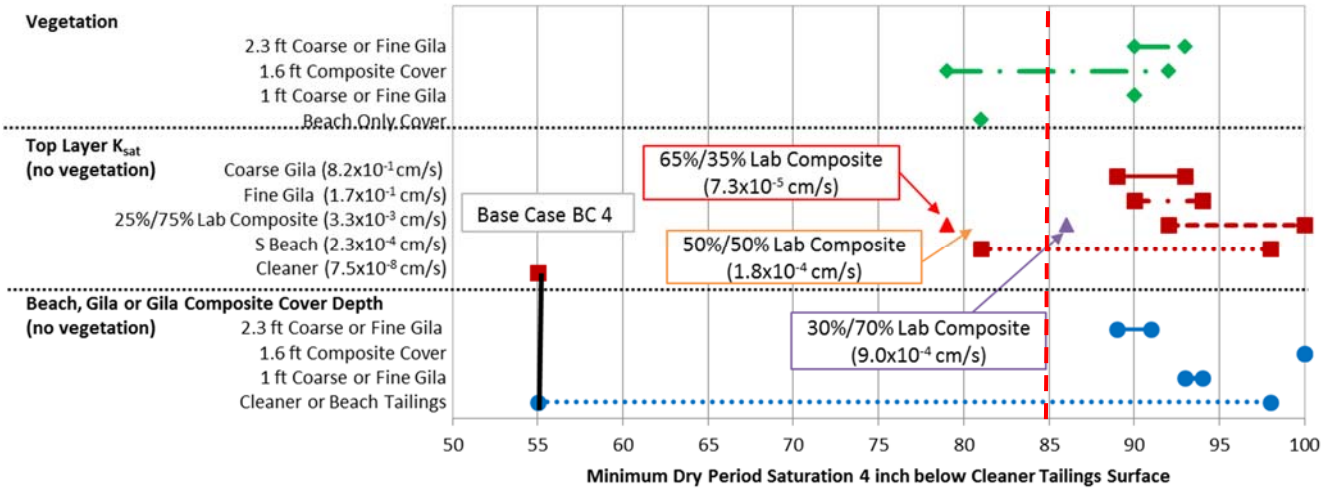


Figure III-23 Cleaner Covers – Saturation Sensitivity Plot

Scenarios that predicted low net infiltration while maintaining a high saturation level in the cleaner tailings (above 85%) include the following:

- 6.6 ft scavenger beach tailings, 2.3 ft of fine Gila Conglomerate and vegetation (net infiltration = 4%);
- 6.6 ft scavenger beach tailings, 1 ft of fine Gila Conglomerate and vegetation (net infiltration = 2%);

- 6.6 ft scavenger beach tailings, 1.6 ft of Gila Conglomerate/scavenger tailings composite (30%/70% mixtures) and vegetation (net infiltration = 2%); and
- 6.6 ft total scavenger tailings, 1.6 ft of Gila Conglomerate/scavenger tailings composite (25%/75% mixtures) and vegetation (net infiltration = 1%).

These results demonstrate that the cleaner tailings can be reclaimed in a manner that minimizes net infiltration while maintaining a high degree of saturation in the cleaner tailings. Other scenarios not considered here, with less thickness of scavenger tailings overlying cleaner tailings, may perform equally well.

III-4.7 Influence of Winter Storms and Monsoon Season

Water balance information for the winter storm period (November-March) and monsoon period (July-October) were extracted from the results to assess the difference between these seasons on net infiltration. Average results are given in Table III-7. Annual results for selected scenarios are given in the appendices.

Net infiltration as a percentage of precipitation is similar during the winter season and the monsoon season for most scenarios. While the average winter storm season precipitation (8.7 inches or 1.7 inches/month) is higher than the average monsoon season (7.2 inches or 1.5 inches/month), the actual evapotranspiration during the winter storm period is also higher than the monsoon seasons. The infiltration in the cleaner tailings and the scavenger slimes tailings is dominated by hydraulic conductivity rather than precipitation and modelled evapotranspiration.

Table III-7 Average Net Infiltration

Scenario #	Profile	Winter Net Infiltration November to March		Monsoon Season Net Infiltration July to October	
		inch/month	% of Precipitation	inch/month	% of Precipitation
Scavenger Beach Tailings					
BC 1*	9.8 ft S Beach/Slope	0.20	11%	0.23	16%
BC 8	9.8 ft S Beach	0.21	12%	0.23	16%
ST 1*	9.8 ft S Beach/2.3 ft Fine Gila/Slope	1.07	61%	0.81	56%
ST 2	9.8 ft S Beach/2.3 ft Coarse Gila	1.16	66%	0.87	60%
ST 3	9.8 ft S Beach/2.3 ft Fine Gila/Veg	0.49	28%	0.46	32%
ST 4	9.8 ft S Beach/2.3 ft Coarse Gila/Veg	0.60	34%	0.51	36%
ST 5	8.6 ft S Beach/1 ft Fine Gila	1.05	60%	0.83	58%
ST 6	8.6 ft S Beach/1 ft Fine Gila/Veg	0.08	4%	0.10	7%
ST 11	9.8 ft S Beach/Veg	0.08	5%	0.09	7%
ST 12*	8.6 ft S Beach/1 ft Fine Gila/Slope	1.05	60%	0.83	57%
ST 13*	8.6 ft S Beach/1 ft Fine Gila/Veg/Slope	0.08	5%	0.09	7%
ST 14	8.2 ft S Beach/1.6 ft 25%/75% Lab Composite	0.98	56%	0.77	54%
ST 15	8.2 ft S Beach/1.6 ft 25%/75% Lab Composite/Veg	0.07	11%	0.09	7%

Scenario #	Profile	Winter Net Infiltration November to March		Monsoon Season Net Infiltration July to October	
		inch/month	% of Precipitation	inch/month	% of Precipitation
Total Scavenger Tailings					
BC 2*	9.8 ft Total S/Slope	0.06	3%	0.07	5%
BC 9	9.8 ft Total S	0.10	5%	0.11	8%
ST 7	9.8 ft Total S/Veg	0.03	2%	0.04	2%
ST 8	8.6 ft Total S/1 ft Fine Gila	1.03	59%	0.85	59%
ST 9	8.6 ft Total S/1 ft Fine Gila/Veg	0.03	2%	0.05	3%
ST 10	8.2 ft Total S/1.6 ft 25%/75% Lab Composite/Veg	0.04	2%	0.04	3%
Scavenger Slimes Tailings					
BC 3	9.8 ft S Slimes	0.02	1%	0.02	2%
Cleaner Tailings Covered with Total Scavenger Tailings					
BC 4	9.8 ft Cleaner	0.01	1%	0.01	1%
BC 5	3.3 ft Cleaner/6.6 ft S Beach	0.05	3%	0.05	4%
BC 6	3.3 ft Cleaner/3.3 ft S Beach	0.03	2%	0.04	2%
CT 1	1 ft Cleaner/6.6 ft S Beach/2.3 ft Coarse Gila	0.03	2%	0.03	2%
CT 2	2.3 ft Cleaner/6.6 ft S Beach/1 ft Coarse Gila	0.04	2%	0.04	3%
CT 3	1 ft Cleaner/6.6 ft S Beach/2.3 ft Fine Gila	0.04	2%	0.04	3%
CT 4	2.3 ft Cleaner/6.6 ft S Beach/1 ft Fine Gila	0.04	2%	0.04	3%
CT 5	1 ft Cleaner/6.6 ft S Beach/2.3 ft Fine Gila/Veg	0.06	3%	0.06	4%
CT 6	2.3 ft Cleaner/6.6 ft S Beach/1 ft Fine Gila/Veg	0.04	2%	0.03	3%
CT 11	3.3 ft Cleaner/6.6 ft S Beach/Veg	0.04	2%	0.04	3%
CT 12	1.6 ft Cleaner/6.6 ft S Beach/1.6 ft 25%/75% Lab Composite/Veg	0.04	2%	0.04	3%
CT 13	1.6 ft Cleaner/6.6 ft Beach/1.6 ft 25%/75% Lab Composite	0.08	5%	0.08	6%
CT 20	1.6 ft Cleaner/6.6 ft S Beach/1.6 ft 30%/70% Composite/Veg	0.02	1%	0.02	2%
CT 22	1.6 ft Cleaner/6.6 ft S Beach/1.6 ft 65%/35% Composite/Veg	0.01	1%	0.01	1%
CT 24	1.6 ft Cleaner/6.6 ft S Beach/1.6 ft 50%/50% Composite/Veg	0.01	1%	0.01	1%
Cleaner Tailings Covered with Total Scavenger Tailings					
BC 7	3.3 ft Cleaner/6.6 ft S Slimes	0.00	0%	0.00	0%
BC10	3.3 ft Cleaner/6.6 ft Total S	0.04	2%	0.04	3%
CT 14	3.3 ft Cleaner/6.6 ft Total S/Veg	0.01	0%	0.01	1%
CT 15	2.3 ft Cleaner/6.6 ft Total S/1 ft Fine Gila/Veg	0.01	1%	0.01	1%
CT 16	1 ft Cleaner/6.6 ft Total S/2.3 ft Fine Gila/Veg	0.05	3%	0.05	3%
CT 17	1.6 ft Cleaner/6.6 ft Total S/1.6 ft 25%/75% Lab Composite/Veg	0.02	1%	0.02	1%
CT 18	1.6 ft Cleaner/6.6 ft Total S/1.6 ft 25%/75% Lab Composite	0.08	5%	0.08	6%

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APPENDIX III-A

BC 8 Results

Table III-A.1 BC 8 Annual Water Balance

Water Year	Result Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
		(in)	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
1951	10/1/1951	14.21	46.45	(0.22)	-	(5.93)	-	14.21	14.00	60.66
1952	10/1/1952	20.48	51.78	(1.64)	-	(3.16)	-	20.48	18.84	72.26
1953	10/1/1953	15.47	56.84	(2.33)	-	(2.61)	-	15.47	13.14	72.27
1954	10/1/1954	21.56	50.53	(4.06)	-	(1.90)	-	21.56	17.50	72.10
1955	10/1/1955	13.57	58.63	(0.69)	-	(2.43)	-	13.57	12.87	72.22
1956	10/1/1956	12.67	61.57	(0.53)	-	(1.87)	-	12.67	12.15	74.23
1957	10/1/1957	15.23	56.20	(1.30)	-	(1.33)	-	15.23	13.93	71.46
1958	10/1/1958	19.46	51.33	(2.31)	-	(1.30)	-	19.46	17.15	70.83
1959	10/1/1959	15.80	59.06	(1.03)	-	(1.34)	-	15.80	14.78	74.82
1960	10/1/1960	19.09	53.70	(4.55)	-	(4.15)	-	19.09	14.54	72.75
1961	10/1/1961	9.95	63.07	0.02	-	(1.91)	-	9.95	9.98	72.91
1962	10/1/1962	14.25	56.81	(1.98)	-	(1.20)	-	14.25	12.28	71.21
1963	10/1/1963	24.16	49.17	(5.98)	-	(1.52)	-	24.16	18.22	73.26
1964	10/1/1964	11.60	59.96	1.06	-	(3.03)	-	11.60	12.66	71.57
1965	10/1/1965	17.70	53.58	(1.81)	-	(1.71)	-	17.70	15.90	71.35
1966	10/1/1966	22.97	49.09	(8.13)	-	(5.89)	-	22.97	14.85	72.14
1967	10/1/1967	14.42	58.66	(0.17)	-	(2.28)	-	14.42	14.24	72.79
1968	10/1/1968	22.33	49.09	(6.90)	-	(5.57)	-	22.33	15.44	71.52
1969	10/1/1969	18.74	53.31	(2.73)	-	(3.10)	-	18.74	16.02	72.01
1970	10/1/1970	16.07	56.42	(2.00)	-	(2.03)	-	16.07	14.07	72.65
1971	10/1/1971	12.48	60.98	(2.45)	-	(1.44)	-	12.48	10.02	73.39
1972	10/1/1972	11.29	65.08	1.05	-	(1.69)	-	11.29	12.34	76.19
1973	10/1/1973	30.69	38.74	(6.22)	-	(3.80)	-	30.69	24.46	69.32
1974	10/1/1974	15.59	56.06	(1.56)	-	(2.43)	-	15.59	14.05	71.82
1975	10/1/1975	19.09	50.16	(1.84)	-	(1.93)	-	19.09	17.27	69.16
1976	10/1/1976	16.22	56.02	(2.35)	-	(1.74)	-	16.22	13.87	72.40
1977	10/1/1977	16.46	56.26	(1.07)	-	(1.33)	-	16.46	15.36	72.72
1978	10/1/1978	23.94	47.95	(5.65)	-	(4.81)	-	23.94	18.31	71.67
1979	10/1/1979	29.61	41.97	(9.46)	-	(9.70)	-	29.61	20.16	71.67
1980	10/1/1980	20.31	51.54	(3.91)	-	(4.09)	-	20.31	16.42	71.66
1981	10/1/1981	15.24	60.08	(1.59)	-	(2.30)	-	15.24	13.62	75.36
1982	10/1/1982	23.54	46.18	(3.29)	-	(1.72)	-	23.54	20.31	69.86
1983	10/1/1983	27.44	42.28	(6.57)	-	(3.02)	-	27.44	20.87	69.77
1984	10/1/1984	17.80	53.15	0.76	-	(3.61)	-	17.80	18.58	70.94
1985	10/1/1985	22.76	44.29	(4.37)	-	(3.39)	-	22.76	18.35	66.86
1986	10/1/1986	21.30	49.06	(2.08)	-	(2.48)	-	21.30	19.25	70.66
1987	10/1/1987	20.16	50.59	(2.01)	-	(2.59)	-	20.16	18.15	70.34
1988	10/1/1988	23.07	48.78	(3.54)	-	(2.53)	-	23.07	19.53	71.67
1989	10/1/1989	11.73	62.44	(0.00)	-	(2.41)	-	11.73	11.73	74.11
1990	10/1/1990	23.27	47.72	(6.58)	-	(1.31)	-	23.27	16.77	71.03
1991	10/1/1991	22.95	48.46	(2.54)	-	(5.43)	-	22.95	20.43	71.44
1992	10/1/1992	36.57	34.25	(8.66)	-	(6.28)	-	36.57	27.91	70.56
1993	10/1/1993	32.76	37.64	(13.60)	-	(15.78)	-	32.76	19.21	70.40
1994	10/1/1994	15.39	57.48	(1.42)	-	(3.20)	-	15.39	13.98	72.86
1995	10/1/1995	24.96	46.18	(4.99)	-	(2.65)	-	24.96	19.96	71.32
1996	10/1/1996	13.58	60.04	0.37	-	(2.20)	-	13.58	13.98	73.81
1997	10/1/1997	10.24	65.12	0.08	-	(1.28)	-	10.24	10.31	74.80
1998	10/1/1998	20.55	49.21	(3.50)	-	(1.45)	-	20.55	17.09	69.87
1999	10/1/1999	15.00	58.54	(1.11)	-	(1.70)	-	15.00	13.90	73.55
2000	10/1/2000	5.47	72.01	0.87	-	(1.18)	-	5.47	6.34	77.40
2001	10/1/2001	23.46	47.87	(4.35)	-	(1.52)	-	23.46	19.13	71.51
2002	10/1/2002	5.47	70.00	0.87	-	(1.71)	-	5.47	6.34	75.20
2003	10/1/2003	13.27	62.48	(1.68)	-	(0.98)	-	13.27	11.57	75.89
2004	10/1/2004	12.40	64.80	(0.93)	-	(0.99)	-	12.40	11.50	77.18
2005	10/1/2005	24.17	48.46	(6.52)	-	(3.30)	-	24.17	17.72	72.60
2006	10/1/2006	12.24	62.91	(0.78)	-	(2.44)	-	12.24	11.50	75.07

Table III-A.2 BC 8 Monthly Water Balance 9 Wet Years (1983 to 1991)

Month	Result Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
		[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
Nov-82	11/30/1982	2.52	5.59	(0.22)	-	(0.30)	-	2.52	2.28	8.89
Dec-82	12/30/1982	2.48	0.12	(0.41)	-	(0.17)	-	2.48	2.09	2.77
Jan-83	1/29/1983	0.67	2.60	0.09	-	(0.18)	-	0.67	0.75	3.06
Feb-83	2/28/1983	3.54	(0.08)	(1.42)	-	(0.19)	-	3.54	2.13	2.98
Mar-83	3/30/1983	5.39	(1.38)	(2.28)	-	(0.20)	-	5.39	3.15	4.12
Apr-83	4/29/1983	0.83	5.28	1.18	-	(0.22)	-	0.83	1.97	5.35
May-83	5/29/1983	-	8.43	0.52	-	(0.31)	-	-	0.55	7.89
Jun-83	6/28/1983	0.04	9.41	0.33	-	(0.39)	-	0.04	0.31	9.32
Jul-83	7/28/1983	2.13	6.77	(0.60)	-	(0.38)	-	2.13	1.54	9.37
Aug-83	8/27/1983	3.94	3.46	(0.31)	-	(0.34)	-	3.94	3.66	7.44
Sep-83	9/26/1983	1.93	5.20	0.16	-	(0.29)	-	1.93	2.09	7.60
Oct-83	10/26/1983	5.12	(0.39)	(2.33)	-	(0.26)	-	5.12	2.76	5.16
Nov-83	11/25/1983	1.61	2.13	(0.59)	-	(0.26)	-	1.61	1.02	4.12
Dec-83	12/25/1983	1.89	0.83	0.11	-	(0.32)	-	1.89	2.01	2.65
Jan-84	1/24/1984	1.50	1.22	0.12	-	(0.37)	-	1.50	1.61	2.73
Feb-84	2/23/1984	-	4.06	0.45	-	(0.39)	-	-	0.47	3.75
Mar-84	3/24/1984	-	5.63	0.30	-	(0.39)	-	-	0.28	4.96
Apr-84	4/23/1984	0.87	5.75	0.01	-	(0.36)	-	0.87	0.87	6.46
May-84	5/23/1984	0.67	7.28	0.19	-	(0.31)	-	0.67	0.87	7.47
Jun-84	6/22/1984	0.04	9.25	0.23	-	(0.26)	-	0.04	0.28	9.21
Jul-84	7/22/1984	3.62	4.21	(1.08)	-	(0.24)	-	3.62	2.52	8.57
Aug-84	8/21/1984	4.02	3.23	(0.29)	-	(0.22)	-	4.02	3.74	7.28
Sep-84	9/20/1984	1.22	6.02	0.47	-	(0.20)	-	1.22	1.69	7.00
Oct-84	10/20/1984	2.60	2.56	(0.33)	-	(0.19)	-	2.60	2.24	5.89
Nov-84	11/19/1984	-	4.37	0.42	-	(0.18)	-	-	0.43	4.30
Dec-84	12/19/1984	4.76	(2.24)	(2.96)	-	(0.17)	-	4.76	1.85	3.19
Jan-85	1/18/1985	3.94	(1.50)	(1.52)	-	(0.16)	-	3.94	2.40	2.32
Feb-85	2/17/1985	2.87	(0.35)	(0.72)	-	(0.17)	-	2.87	2.17	2.29
Mar-85	3/19/1985	1.69	2.17	0.31	-	(0.24)	-	1.69	1.97	3.62
Apr-85	4/18/1985	0.43	5.79	0.72	-	(0.39)	-	0.43	1.18	5.44
May-85	5/18/1985	0.47	6.46	0.31	-	(0.45)	-	0.47	0.75	6.63
Jun-85	6/17/1985	-	8.58	0.29	-	(0.43)	-	-	0.28	8.41
Jul-85	7/17/1985	0.24	8.15	0.03	-	(0.38)	-	0.24	0.28	8.33
Aug-85	8/16/1985	2.13	5.67	(0.27)	-	(0.32)	-	2.13	1.89	7.75
Sep-85	9/15/1985	2.28	4.88	(0.29)	-	(0.27)	-	2.28	1.97	7.99
Oct-85	10/15/1985	3.27	1.97	(0.54)	-	(0.24)	-	3.27	2.72	5.79
Nov-85	11/14/1985	1.42	2.48	(0.31)	-	(0.22)	-	1.42	1.14	3.97
Dec-85	12/14/1985	2.76	0.12	(0.89)	-	(0.20)	-	2.76	1.81	3.10
Jan-86	1/13/1986	-	3.35	1.10	-	(0.20)	-	-	1.10	3.34
Feb-86	2/12/1986	2.32	0.87	(1.48)	-	(0.19)	-	2.32	0.87	3.59
Mar-86	3/14/1986	1.93	2.68	0.04	-	(0.19)	-	1.93	1.97	3.80
Apr-86	4/13/1986	3.07	2.44	(0.44)	-	(0.19)	-	3.07	2.64	4.91
May-86	5/13/1986	-	7.76	0.56	-	(0.19)	-	-	0.55	7.34
Jun-86	6/12/1986	0.04	9.33	0.33	-	(0.20)	-	0.04	0.35	8.91
Jul-86	7/12/1986	2.17	6.89	(0.65)	-	(0.22)	-	2.17	1.54	9.33
Aug-86	8/11/1986	2.83	4.61	(0.23)	-	(0.22)	-	2.83	2.60	7.51
Sep-86	9/10/1986	3.11	3.94	(0.85)	-	(0.21)	-	3.11	2.28	7.42
Oct-86	10/10/1986	0.94	4.92	0.80	-	(0.20)	-	0.94	1.73	6.24
Nov-86	11/9/1986	2.76	1.30	(0.76)	-	(0.20)	-	2.76	2.01	4.77
Dec-86	12/9/1986	2.60	0.63	(1.54)	-	(0.20)	-	2.60	1.06	3.33
Jan-87	1/8/1987	1.50	1.30	0.59	-	(0.19)	-	1.50	2.05	2.79
Feb-87	2/7/1987	3.11	(0.12)	(0.71)	-	(0.19)	-	3.11	2.40	2.96
Mar-87	3/9/1987	2.28	1.93	(0.39)	-	(0.19)	-	2.28	1.89	3.42
Apr-87	4/8/1987	0.94	4.41	0.56	-	(0.21)	-	0.94	1.50	4.98
May-87	5/8/1987	-	7.09	0.42	-	(0.22)	-	-	0.43	6.69
Jun-87	6/7/1987	0.31	8.07	0.27	-	(0.24)	-	0.31	0.59	8.06
Jul-87	7/7/1987	0.20	9.06	0.20	-	(0.24)	-	0.20	0.39	9.33
Aug-87	8/6/1987	3.11	5.43	(1.34)	-	(0.23)	-	3.11	1.81	8.93
Sep-87	9/5/1987	2.48	5.04	(0.15)	-	(0.22)	-	2.48	2.32	7.51
Oct-87	10/5/1987	0.87	5.71	0.67	-	(0.21)	-	0.87	1.50	6.87
Nov-87	11/4/1987	1.38	3.78	(0.58)	-	(0.20)	-	1.38	0.83	5.99
Dec-87	12/4/1987	0.71	3.07	0.62	-	(0.19)	-	0.71	1.30	3.90

Table III-A.2 BC 8 Monthly Water Balance 9 Wet Years (1983 to 1991)

Month	Result Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	11/2/1936	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
Jan-88	1/3/1988	4.02	(1.34)	(2.21)	-	(0.18)	-	4.02	1.81	3.02
Feb-88	2/2/1988	3.58	(0.87)	(1.24)	-	(0.17)	-	3.58	2.36	2.40
Mar-88	3/3/1988	0.75	3.58	0.70	-	(0.16)	-	0.75	1.42	3.71
Apr-88	4/2/1988	0.12	5.83	0.45	-	(0.19)	-	0.12	0.59	5.55
May-88	5/2/1988	2.44	3.78	(0.52)	-	(0.23)	-	2.44	1.93	6.16
Jun-88	6/1/1988	-	8.54	0.56	-	(0.24)	-	-	0.55	7.83
Jul-88	7/1/1988	0.12	8.66	0.28	-	(0.25)	-	0.12	0.39	8.90
Aug-88	7/31/1988	2.48	5.79	(1.01)	-	(0.24)	-	2.48	1.46	8.57
Sep-88	8/30/1988	6.97	0.39	(1.93)	-	(0.23)	-	6.97	5.04	7.48
Oct-88	10/29/1988	2.01	10.04	1.13	-	(0.42)	-	2.01	3.15	12.97
Nov-88	11/28/1988	1.73	1.85	(0.93)	-	(0.21)	-	1.73	0.79	4.03
Dec-88	12/28/1988	1.10	1.81	0.51	-	(0.22)	-	1.10	1.65	3.11
Jan-89	1/27/1989	1.97	0.83	(0.22)	-	(0.21)	-	1.97	1.73	2.51
Feb-89	2/26/1989	0.55	3.35	0.41	-	(0.21)	-	0.55	0.94	3.39
Mar-89	3/28/1989	1.69	4.09	(1.09)	-	(0.21)	-	1.69	0.59	5.28
Apr-89	4/27/1989	-	7.60	1.13	-	(0.20)	-	-	1.14	6.90
May-89	5/27/1989	0.16	8.19	0.27	-	(0.20)	-	0.16	0.43	8.12
Jun-89	6/26/1989	-	9.25	0.21	-	(0.19)	-	-	0.20	9.10
Jul-89	7/26/1989	0.08	8.74	0.16	-	(0.19)	-	0.08	0.24	8.98
Aug-89	8/25/1989	1.38	6.14	(0.12)	-	(0.17)	-	1.38	1.26	8.10
Sep-89	9/24/1989	1.57	5.71	(0.30)	-	(0.16)	-	1.57	1.30	7.35
Oct-89	10/24/1989	1.06	4.65	0.00	-	(0.15)	-	1.06	1.06	6.27
Nov-89	11/23/1989	0.28	3.82	0.09	-	(0.14)	-	0.28	0.39	4.65
Dec-89	12/23/1989	-	3.27	0.35	-	(0.13)	-	-	0.35	3.46
Jan-90	1/22/1990	2.17	0.51	(0.74)	-	(0.12)	-	2.17	1.38	2.86
Feb-90	2/21/1990	2.52	0.43	(0.70)	-	(0.11)	-	2.52	1.85	2.57
Mar-90	3/23/1990	0.83	3.90	0.33	-	(0.10)	-	0.83	1.14	4.21
Apr-90	4/22/1990	1.02	5.79	0.20	-	(0.10)	-	1.02	1.22	5.97
May-90	5/22/1990	1.06	6.81	(0.00)	-	(0.10)	-	1.06	1.06	7.60
Jun-90	6/21/1990	0.39	8.78	0.19	-	(0.09)	-	0.39	0.59	8.85
Jul-90	7/21/1990	0.94	7.36	(0.01)	-	(0.09)	-	0.94	0.94	8.67
Aug-90	8/20/1990	10.00	(2.87)	(7.57)	-	(0.09)	-	10.00	2.52	7.84
Sep-90	9/19/1990	2.60	4.69	0.30	-	(0.09)	-	2.60	2.87	7.23
Oct-90	10/19/1990	0.43	5.04	1.68	-	(0.14)	-	0.43	2.13	6.15
Nov-90	11/18/1990	1.54	2.68	(0.11)	-	(0.32)	-	1.54	1.42	4.34
Dec-90	12/18/1990	2.76	0.39	(1.24)	-	(0.43)	-	2.76	1.54	3.54
Jan-91	1/17/1991	4.69	(2.24)	(2.24)	-	(0.43)	-	4.69	2.44	2.39
Feb-91	2/16/1991	0.16	3.54	1.20	-	(0.43)	-	0.16	1.34	3.37
Mar-91	3/18/1991	3.58	0.94	(1.33)	-	(0.54)	-	3.58	2.28	4.39
Apr-91	4/17/1991	3.23	2.52	(0.12)	-	(0.56)	-	3.23	3.11	4.87
May-91	5/17/1991	-	7.80	0.66	-	(0.55)	-	-	0.67	7.37
Jun-91	6/16/1991	0.71	8.27	0.25	-	(0.55)	-	0.71	0.94	8.56
Jul-91	7/16/1991	0.47	8.78	0.28	-	(0.51)	-	0.47	0.71	9.34
Aug-91	8/15/1991	3.46	4.57	(1.00)	-	(0.44)	-	3.46	2.48	8.34
Sep-91	9/14/1991	2.09	4.96	0.14	-	(0.38)	-	2.09	2.24	7.62
Oct-91	10/1/1991	0.24	3.27	0.37	-	(0.19)	-	0.24	0.59	3.60

Table III-A.3 BC 8 Monsoon Period Water Balance

Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
6/1/1951	8.65	18.41	0.68	-	(4.25)	-	8.65	9.33	27.06
7/1/1951	-	9.29	0.31	-	(0.52)	-	-	0.31	9.29
8/1/1951	1.05	8.41	(0.02)	-	(0.46)	-	1.05	1.03	9.46
9/1/1951	3.83	4.16	(2.13)	-	(0.39)	-	3.83	1.69	7.99
10/1/1951	0.68	6.17	0.95	-	(0.31)	-	0.68	1.64	6.86
11/1/1951	1.64	3.94	(0.57)	-	(0.27)	-	1.64	1.07	5.58
1951	7.20	31.98	(1.47)	-	(1.95)	-	7.20	5.73	39.18
6/1/1952	16.44	16.65	(1.93)	-	(1.66)	-	16.44	14.51	33.08
7/1/1952	0.63	8.76	0.35	-	(0.31)	-	0.63	0.98	9.40
8/1/1952	0.56	8.46	0.21	-	(0.34)	-	0.56	0.77	9.02
9/1/1952	0.47	7.57	0.23	-	(0.32)	-	0.47	0.71	8.05
10/1/1952	0.74	6.39	0.06	-	(0.27)	-	0.74	0.80	7.13
11/1/1952	-	6.05	0.26	-	(0.25)	-	-	0.26	6.05
1952	2.40	37.24	1.11	-	(1.49)	-	2.40	3.51	39.64
6/1/1953	10.86	22.70	(2.38)	-	(1.47)	-	10.86	8.48	33.41
7/1/1953	-	9.20	0.23	-	(0.23)	-	-	0.23	9.18
8/1/1953	2.71	5.80	(1.27)	-	(0.23)	-	2.71	1.45	8.78
9/1/1953	1.90	6.13	0.14	-	(0.22)	-	1.90	2.04	7.87
10/1/1953	-	6.96	0.68	-	(0.20)	-	-	0.68	6.94
11/1/1953	0.01	5.62	0.27	-	(0.20)	-	0.01	0.29	5.69
1953	4.63	33.71	0.06	-	(1.08)	-	4.63	4.69	38.46
6/1/1954	10.05	25.53	(2.15)	-	(1.04)	-	10.05	7.90	35.46
7/1/1954	0.13	8.81	0.33	-	(0.14)	-	0.13	0.46	8.93
8/1/1954	4.46	3.30	(1.31)	-	(0.17)	-	4.46	3.15	7.84
9/1/1954	5.56	1.82	(1.69)	-	(0.18)	-	5.56	3.87	7.42
10/1/1954	1.35	5.44	0.49	-	(0.18)	-	1.35	1.84	6.76
11/1/1954	-	5.77	0.62	-	(0.20)	-	-	0.62	5.85
1954	11.50	25.15	(1.57)	-	(0.86)	-	11.50	9.93	36.80
6/1/1955	4.09	31.20	0.33	-	(1.53)	-	4.09	4.42	35.16
7/1/1955	2.06	7.00	(0.59)	-	(0.19)	-	2.06	1.46	9.07
8/1/1955	4.46	3.43	(1.93)	-	(0.19)	-	4.46	2.53	7.90
9/1/1955	2.83	4.29	0.30	-	(0.17)	-	2.83	3.13	7.26
10/1/1955	0.13	6.93	0.57	-	(0.16)	-	0.13	0.70	6.99
11/1/1955	0.02	5.94	0.32	-	(0.16)	-	0.02	0.34	6.02
1955	9.50	27.61	(1.32)	-	(0.86)	-	9.50	8.17	37.23
6/1/1956	7.73	27.53	(0.64)	-	(1.10)	-	7.73	7.09	35.11
7/1/1956	0.24	9.13	0.07	-	(0.15)	-	0.24	0.31	9.35
8/1/1956	2.77	6.11	(0.64)	-	(0.16)	-	2.77	2.13	8.97
9/1/1956	1.84	5.88	0.08	-	(0.15)	-	1.84	1.93	7.71
10/1/1956	0.07	6.97	0.29	-	(0.14)	-	0.07	0.36	7.06
11/1/1956	0.53	4.66	0.02	-	(0.13)	-	0.53	0.55	5.31
1956	5.46	32.76	(0.18)	-	(0.74)	-	5.46	5.28	38.40
6/1/1957	9.41	24.23	(1.23)	-	(0.75)	-	9.41	8.17	33.29
7/1/1957	0.03	9.31	0.30	-	(0.11)	-	0.03	0.33	9.31
8/1/1957	1.09	7.44	(0.10)	-	(0.11)	-	1.09	0.99	8.60
9/1/1957	3.57	4.29	(0.69)	-	(0.11)	-	3.57	2.88	8.06
10/1/1957	0.60	6.28	0.41	-	(0.11)	-	0.60	1.01	6.85
11/1/1957	3.23	1.30	(1.70)	-	(0.11)	-	3.23	1.52	4.73
1957	8.52	28.61	(1.79)	-	(0.55)	-	8.52	6.73	37.55
6/1/1958	10.68	22.91	0.22	-	(0.72)	-	10.68	10.91	33.18
7/1/1958	0.70	8.50	0.07	-	(0.11)	-	0.70	0.78	9.22
8/1/1958	0.78	8.11	0.03	-	(0.12)	-	0.78	0.81	9.02
9/1/1958	0.89	7.28	0.23	-	(0.13)	-	0.89	1.12	8.15
10/1/1958	3.17	3.23	(1.16)	-	(0.12)	-	3.17	2.01	6.54
11/1/1958	1.92	3.39	(0.00)	-	(0.13)	-	1.92	1.91	5.45
1958	7.47	30.51	(0.84)	-	(0.60)	-	7.47	6.63	38.37
6/1/1959	3.43	33.19	0.79	-	(0.80)	-	3.43	4.22	36.23
7/1/1959	1.03	8.19	(0.12)	-	(0.11)	-	1.03	0.91	9.11
8/1/1959	3.79	5.71	(1.61)	-	(0.11)	-	3.79	2.18	9.61
9/1/1959	5.58	1.73	(0.78)	-	(0.10)	-	5.58	4.81	7.34
10/1/1959	0.05	6.85	0.69	-	(0.10)	-	0.05	0.74	7.07
11/1/1959	4.79	0.55	(3.86)	-	(0.10)	-	4.79	0.93	5.57
1959	15.25	23.03	(5.68)	-	(0.51)	-	15.25	9.57	38.71

Table III-A.3 BC 8 Monsoon Period Water Balance

Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
6/1/1960	11.66	22.52	(1.21)	-	(2.52)	-	11.66	10.45	33.73
7/1/1960	-	9.25	0.26	-	(0.48)	-	-	0.26	9.18
8/1/1960	0.74	8.31	0.02	-	(0.42)	-	0.74	0.76	9.13
9/1/1960	1.62	6.38	(0.01)	-	(0.35)	-	1.62	1.61	8.08
10/1/1960	0.28	6.69	0.26	-	(0.27)	-	0.28	0.54	7.06
11/1/1960	2.06	2.95	(0.51)	-	(0.25)	-	2.06	1.55	5.12
1960	4.70	33.58	0.01	-	(1.78)	-	4.70	4.71	38.57
6/1/1961	3.57	31.61	0.86	-	(1.22)	-	3.57	4.43	34.79
7/1/1961	-	9.37	0.13	-	(0.12)	-	-	0.13	9.29
8/1/1961	0.67	8.03	(0.02)	-	(0.11)	-	0.67	0.65	8.97
9/1/1961	3.13	4.92	(1.46)	-	(0.11)	-	3.13	1.67	8.11
10/1/1961	0.52	6.18	1.03	-	(0.10)	-	0.52	1.56	6.61
11/1/1961	0.45	4.65	(0.06)	-	(0.10)	-	0.45	0.40	5.57
1961	4.78	33.15	(0.38)	-	(0.53)	-	4.78	4.39	38.54
6/1/1962	11.37	21.69	(2.15)	-	(0.61)	-	11.37	9.22	32.42
7/1/1962	-	9.09	0.22	-	(0.11)	-	-	0.22	9.06
8/1/1962	0.61	8.27	0.09	-	(0.13)	-	0.61	0.70	8.95
9/1/1962	0.52	7.87	0.11	-	(0.14)	-	0.52	0.63	8.46
10/1/1962	1.29	5.24	(0.20)	-	(0.13)	-	1.29	1.10	6.75
11/1/1962	0.87	4.29	0.07	-	(0.13)	-	0.87	0.94	5.31
1962	3.30	34.76	0.30	-	(0.63)	-	3.30	3.60	38.53
6/1/1963	11.13	24.41	(2.24)	-	(0.75)	-	11.13	8.88	35.08
7/1/1963	-	9.17	0.26	-	(0.14)	-	-	0.26	9.10
8/1/1963	0.08	9.21	0.20	-	(0.16)	-	0.08	0.28	9.41
9/1/1963	10.97	(3.70)	(6.32)	-	(0.17)	-	10.97	4.70	7.52
10/1/1963	1.10	5.79	2.05	-	(0.16)	-	1.10	3.15	6.84
11/1/1963	0.67	5.16	0.46	-	(0.20)	-	0.67	1.13	6.03
1963	12.82	25.63	(3.35)	-	(0.83)	-	12.82	9.52	38.91
6/1/1964	5.50	28.43	0.86	-	(2.06)	-	5.50	6.36	33.51
7/1/1964	-	9.29	0.18	-	(0.21)	-	-	0.18	9.29
8/1/1964	1.48	7.05	(0.28)	-	(0.20)	-	1.48	1.20	8.72
9/1/1964	2.29	5.47	(0.17)	-	(0.19)	-	2.29	2.12	7.70
10/1/1964	1.66	4.57	0.02	-	(0.17)	-	1.66	1.68	6.32
11/1/1964	1.54	4.29	(0.31)	-	(0.16)	-	1.54	1.23	5.96
1964	6.97	30.67	(0.56)	-	(0.93)	-	6.97	6.41	37.99
6/1/1965	12.57	20.79	(1.85)	-	(0.85)	-	12.57	10.73	32.82
7/1/1965	0.10	8.82	0.26	-	(0.16)	-	0.10	0.36	8.88
8/1/1965	1.44	7.01	(0.10)	-	(0.18)	-	1.44	1.34	8.75
9/1/1965	0.95	7.17	0.15	-	(0.18)	-	0.95	1.10	8.13
10/1/1965	1.09	5.51	0.05	-	(0.17)	-	1.09	1.14	6.75
11/1/1965	0.46	5.16	0.11	-	(0.17)	-	0.46	0.57	5.83
1965	4.05	33.66	0.47	-	(0.87)	-	4.05	4.52	38.34
6/1/1966	16.99	17.40	(7.48)	-	(3.99)	-	16.99	9.51	33.72
7/1/1966	0.18	8.70	0.22	-	(0.55)	-	0.18	0.40	9.19
8/1/1966	0.84	7.64	0.05	-	(0.48)	-	0.84	0.89	8.38
9/1/1966	1.69	6.46	(0.36)	-	(0.39)	-	1.69	1.33	8.28
10/1/1966	2.81	3.74	(0.67)	-	(0.31)	-	2.81	2.15	6.74
11/1/1966	1.36	4.02	0.22	-	(0.26)	-	1.36	1.58	5.34
1966	6.89	30.55	(0.54)	-	(1.99)	-	6.89	6.35	37.93
6/1/1967	5.79	29.80	0.45	-	(1.44)	-	5.79	6.24	35.13
7/1/1967	0.08	8.98	0.19	-	(0.16)	-	0.08	0.26	9.02
8/1/1967	3.96	4.33	(1.11)	-	(0.15)	-	3.96	2.85	8.51
9/1/1967	2.64	5.51	(0.27)	-	(0.14)	-	2.64	2.37	7.99
10/1/1967	0.58	6.02	0.34	-	(0.13)	-	0.58	0.93	6.81
11/1/1967	0.42	4.96	0.25	-	(0.12)	-	0.42	0.67	5.83
1967	7.69	29.80	(0.60)	-	(0.70)	-	7.69	7.09	38.16
6/1/1968	17.34	16.54	(7.32)	-	(3.72)	-	17.34	10.02	33.17
7/1/1968	-	9.29	0.27	-	(0.53)	-	-	0.27	9.23
8/1/1968	1.85	6.93	(0.48)	-	(0.48)	-	1.85	1.37	8.89
9/1/1968	2.67	4.57	(0.03)	-	(0.40)	-	2.67	2.64	7.37
10/1/1968	0.05	6.81	0.41	-	(0.31)	-	0.05	0.46	7.03
11/1/1968	0.39	4.76	0.19	-	(0.27)	-	0.39	0.58	5.25
1968	4.96	32.36	0.37	-	(1.99)	-	4.96	5.33	37.76

Table III-A.3 BC 8 Monsoon Period Water Balance

Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
6/1/1969	14.00	19.84	(3.02)	-	(1.72)	-	14.00	10.98	33.18
7/1/1969	-	9.29	0.31	-	(0.31)	-	-	0.31	9.37
8/1/1969	0.33	8.23	0.20	-	(0.30)	-	0.33	0.54	8.72
9/1/1969	2.71	5.67	(0.46)	-	(0.26)	-	2.71	2.25	8.42
10/1/1969	1.31	5.51	0.04	-	(0.24)	-	1.31	1.35	7.03
11/1/1969	0.83	4.21	0.03	-	(0.22)	-	0.83	0.86	5.36
1969	5.18	32.91	0.13	-	(1.33)	-	5.18	5.31	38.91
6/1/1970	8.79	25.63	(0.87)	-	(1.19)	-	8.79	7.92	33.63
7/1/1970	0.08	9.13	0.22	-	(0.15)	-	0.08	0.30	9.10
8/1/1970	1.04	7.72	0.04	-	(0.16)	-	1.04	1.08	9.11
9/1/1970	1.81	6.50	(0.26)	-	(0.16)	-	1.81	1.56	8.23
10/1/1970	3.52	3.23	(1.16)	-	(0.15)	-	3.52	2.37	7.23
11/1/1970	-	5.28	0.46	-	(0.14)	-	-	0.46	5.40
1970	6.45	31.85	(0.70)	-	(0.76)	-	6.45	5.76	39.07
6/1/1971	3.94	31.38	0.56	-	(0.89)	-	3.94	4.49	34.64
7/1/1971	-	9.17	0.13	-	(0.11)	-	-	0.13	9.02
8/1/1971	0.39	8.78	0.05	-	(0.11)	-	0.39	0.44	9.32
9/1/1971	4.92	2.68	(1.57)	-	(0.11)	-	4.92	3.36	7.82
10/1/1971	3.23	3.70	(2.07)	-	(0.09)	-	3.23	1.15	7.19
11/1/1971	4.21	0.75	(0.59)	-	(0.10)	-	4.21	3.62	5.32
1971	12.75	25.08	(4.05)	-	(0.51)	-	12.75	8.70	38.67
6/1/1972	2.33	35.24	1.82	-	(1.00)	-	2.33	4.15	36.63
7/1/1972	1.68	7.72	(0.45)	-	(0.16)	-	1.68	1.23	9.32
8/1/1972	0.27	9.17	0.34	-	(0.16)	-	0.27	0.61	9.38
9/1/1972	2.10	6.02	(0.37)	-	(0.15)	-	2.10	1.73	8.53
10/1/1972	0.70	6.18	0.30	-	(0.13)	-	0.70	1.00	7.00
11/1/1972	8.68	(3.98)	(5.03)	-	(0.12)	-	8.68	3.65	5.15
1972	13.43	25.12	(5.22)	-	(0.72)	-	13.43	8.22	39.39
6/1/1973	16.91	15.04	(1.60)	-	(2.02)	-	16.91	15.31	30.97
7/1/1973	0.87	8.23	0.28	-	(0.46)	-	0.87	1.15	8.97
8/1/1973	2.72	5.79	(0.94)	-	(0.45)	-	2.72	1.77	8.87
9/1/1973	1.50	6.93	0.67	-	(0.40)	-	1.50	2.18	8.49
10/1/1973	-	6.73	0.40	-	(0.33)	-	-	0.40	6.83
11/1/1973	-	5.28	0.25	-	(0.30)	-	-	0.26	5.81
1973	5.09	32.95	0.66	-	(1.94)	-	5.09	5.76	38.97
6/1/1974	8.11	25.79	(0.83)	-	(1.46)	-	8.11	7.30	32.90
7/1/1974	-	9.37	0.20	-	(0.17)	-	-	0.20	9.27
8/1/1974	2.48	6.14	(0.51)	-	(0.18)	-	2.48	1.94	8.69
9/1/1974	1.46	6.50	0.13	-	(0.17)	-	1.46	1.59	8.36
10/1/1974	3.54	2.99	(0.81)	-	(0.15)	-	3.54	2.76	6.81
11/1/1974	3.43	1.50	(1.91)	-	(0.15)	-	3.43	1.48	5.46
1974	10.91	26.50	(2.90)	-	(0.82)	-	10.91	7.98	38.58
6/1/1975	10.43	21.38	(0.15)	-	(0.97)	-	10.43	10.31	30.71
7/1/1975	-	9.53	0.31	-	(0.19)	-	-	0.30	9.45
8/1/1975	2.20	5.75	(0.22)	-	(0.21)	-	2.20	1.99	8.50
9/1/1975	2.09	6.26	(0.12)	-	(0.21)	-	2.09	1.98	8.11
10/1/1975	0.94	5.75	0.25	-	(0.20)	-	0.94	1.20	6.93
11/1/1975	0.28	5.04	0.23	-	(0.20)	-	0.28	0.49	5.62
1975	5.51	32.32	0.45	-	(1.01)	-	5.51	5.96	38.61
6/1/1976	8.11	26.61	(0.53)	-	(1.08)	-	8.11	7.56	33.85
7/1/1976	-	9.61	0.24	-	(0.12)	-	-	0.23	9.48
8/1/1976	2.76	5.39	(0.94)	-	(0.12)	-	2.76	1.83	8.64
9/1/1976	0.87	7.44	0.21	-	(0.11)	-	0.87	1.11	8.23
10/1/1976	4.21	1.93	(1.55)	-	(0.10)	-	4.21	2.65	6.59
11/1/1976	0.91	3.94	0.58	-	(0.11)	-	0.91	1.48	5.22
1976	8.74	28.31	(1.47)	-	(0.57)	-	8.74	7.30	38.16
6/1/1977	6.73	28.31	0.05	-	(0.75)	-	6.73	6.79	33.92
7/1/1977	0.08	9.53	0.19	-	(0.12)	-	0.08	0.24	9.42
8/1/1977	2.52	6.42	(0.74)	-	(0.12)	-	2.52	1.81	9.27
9/1/1977	2.56	5.59	(0.30)	-	(0.12)	-	2.56	2.24	8.28
10/1/1977	3.66	2.48	(0.85)	-	(0.11)	-	3.66	2.80	6.57
11/1/1977	1.30	4.09	0.28	-	(0.11)	-	1.30	1.61	5.73
1977	10.12	28.11	(1.41)	-	(0.58)	-	10.12	8.70	39.27

Table III-A.3 BC 8 Monsoon Period Water Balance

Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
6/1/1978	19.61	14.29	(6.63)	-	(2.35)	-	19.61	12.95	32.69
7/1/1978	0.51	8.74	0.14	-	(0.80)	-	0.51	0.67	9.34
8/1/1978	0.98	7.95	0.02	-	(0.61)	-	0.98	1.02	9.40
9/1/1978	1.10	6.65	0.33	-	(0.52)	-	1.10	1.42	7.63
10/1/1978	0.43	6.22	0.21	-	(0.42)	-	0.43	0.63	6.88
11/1/1978	1.93	3.78	(0.74)	-	(0.36)	-	1.93	1.18	6.24
1978	4.96	33.35	(0.04)	-	(2.72)	-	4.96	4.92	39.49
6/1/1979	25.43	7.44	(9.66)	-	(7.06)	-	25.43	15.79	31.82
7/1/1979	0.35	9.02	0.41	-	(0.77)	-	0.35	0.79	9.08
8/1/1979	0.16	8.86	0.27	-	(0.60)	-	0.16	0.39	9.33
9/1/1979	1.61	6.10	(0.02)	-	(0.50)	-	1.61	1.61	7.89
10/1/1979	0.12	6.77	0.28	-	(0.41)	-	0.12	0.39	7.30
11/1/1979	0.67	5.08	(0.01)	-	(0.35)	-	0.67	0.67	6.05
1979	2.91	35.83	0.94	-	(2.63)	-	2.91	3.86	39.65
6/1/1980	15.55	17.48	(4.38)	-	(2.03)	-	15.55	11.18	32.16
7/1/1980	0.16	9.02	0.20	-	(0.51)	-	0.16	0.35	9.02
8/1/1980	1.93	6.77	(0.29)	-	(0.47)	-	1.93	1.65	9.09
9/1/1980	1.38	6.81	0.34	-	(0.41)	-	1.38	1.73	8.13
10/1/1980	0.63	6.38	0.22	-	(0.33)	-	0.63	0.83	7.22
11/1/1980	0.04	5.47	0.24	-	(0.28)	-	0.04	0.28	6.06
1980	4.13	34.45	0.72	-	(2.00)	-	4.13	4.84	39.52
6/1/1981	9.61	26.50	(1.60)	-	(1.35)	-	9.61	7.99	34.89
7/1/1981	0.12	9.17	0.35	-	(0.16)	-	0.12	0.51	9.28
8/1/1981	2.17	6.73	(0.97)	-	(0.17)	-	2.17	1.18	9.31
9/1/1981	2.76	5.59	0.19	-	(0.17)	-	2.76	2.95	8.06
10/1/1981	0.55	6.61	0.20	-	(0.16)	-	0.55	0.71	7.71
11/1/1981	0.94	3.86	0.22	-	(0.16)	-	0.94	1.18	5.40
1981	6.54	31.97	(0.01)	-	(0.83)	-	6.54	6.54	39.77
6/1/1982	12.68	21.06	(1.75)	-	(0.97)	-	12.68	10.98	32.58
7/1/1982	0.08	9.17	0.31	-	(0.14)	-	0.08	0.35	9.04
8/1/1982	2.64	5.71	(0.62)	-	(0.15)	-	2.64	2.05	8.84
9/1/1982	4.02	3.23	(0.84)	-	(0.15)	-	4.02	3.19	7.25
10/1/1982	3.19	3.15	(0.61)	-	(0.15)	-	3.19	2.56	6.75
11/1/1982	-	5.16	0.59	-	(0.15)	-	-	0.59	5.56
1982	9.92	26.42	(1.17)	-	(0.75)	-	9.92	8.74	37.44
6/1/1983	15.47	16.30	(3.11)	-	(1.46)	-	15.47	12.36	30.41
7/1/1983	-	9.49	0.31	-	(0.39)	-	-	0.31	9.37
8/1/1983	2.80	6.10	(0.80)	-	(0.39)	-	2.80	2.01	9.36
9/1/1983	3.82	3.94	(0.54)	-	(0.35)	-	3.82	3.27	7.71
10/1/1983	5.35	1.30	(3.04)	-	(0.29)	-	5.35	2.32	7.36
11/1/1983	1.14	3.43	1.48	-	(0.26)	-	1.14	2.64	5.06
1983	13.11	24.25	(2.58)	-	(1.67)	-	13.11	10.55	38.86
6/1/1984	6.54	28.90	0.45	-	(2.43)	-	6.54	7.01	33.99
7/1/1984	1.34	7.76	(0.57)	-	(0.26)	-	1.34	0.75	9.23
8/1/1984	3.35	4.69	(0.18)	-	(0.24)	-	3.35	3.15	8.03
9/1/1984	3.43	3.62	(0.18)	-	(0.22)	-	3.43	3.27	7.54
10/1/1984	2.01	4.76	(0.25)	-	(0.20)	-	2.01	1.77	7.10
11/1/1984	1.38	3.39	0.30	-	(0.19)	-	1.38	1.65	5.11
1984	11.50	24.21	(0.87)	-	(1.11)	-	11.50	10.59	37.00
6/1/1985	14.17	17.05	(3.52)	-	(1.88)	-	14.17	10.67	29.78
7/1/1985	-	8.23	0.25	-	(0.41)	-	-	0.24	8.55
8/1/1985	1.22	7.40	(0.40)	-	(0.36)	-	1.22	0.87	8.52
9/1/1985	2.24	5.83	(0.22)	-	(0.30)	-	2.24	1.97	8.21
10/1/1985	3.74	2.40	(0.79)	-	(0.25)	-	3.74	2.95	6.65
11/1/1985	1.22	3.15	0.53	-	(0.24)	-	1.22	1.81	4.69
1985	8.43	27.01	(0.62)	-	(1.56)	-	8.43	7.83	36.62
6/1/1986	10.98	23.86	(1.52)	-	(1.38)	-	10.98	9.45	33.41
7/1/1986	0.04	9.25	0.27	-	(0.21)	-	0.04	0.28	9.24
8/1/1986	4.76	3.11	(1.17)	-	(0.22)	-	4.76	3.58	8.46
9/1/1986	2.13	5.59	(0.14)	-	(0.22)	-	2.13	2.01	8.15
10/1/1986	2.17	4.09	(0.04)	-	(0.20)	-	2.17	2.13	6.71
11/1/1986	1.77	3.19	(0.09)	-	(0.21)	-	1.77	1.69	4.98
1986	10.87	25.24	(1.18)	-	(1.08)	-	10.87	9.69	37.53

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Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
6/1/1987	11.73	21.18	(1.26)	-	(1.44)	-	11.73	10.47	31.84
7/1/1987	0.20	9.17	0.20	-	(0.24)	-	0.20	0.39	9.07
8/1/1987	2.09	6.97	(0.66)	-	(0.25)	-	2.09	1.42	9.13
9/1/1987	3.03	4.76	(0.40)	-	(0.23)	-	3.03	2.64	8.12
10/1/1987	1.34	5.31	0.19	-	(0.21)	-	1.34	1.54	7.21
11/1/1987	0.31	5.47	0.33	-	(0.20)	-	0.31	0.67	6.33
1987	6.97	31.69	(0.33)	-	(1.13)	-	6.97	6.65	39.85
6/1/1988	12.68	21.85	(2.46)	-	(1.38)	-	12.68	10.20	32.93
7/1/1988	0.12	8.66	0.28	-	(0.25)	-	0.12	0.39	8.90
8/1/1988	3.39	4.96	(1.81)	-	(0.25)	-	3.39	1.57	8.79
9/1/1988	6.26	1.50	(0.96)	-	(0.24)	-	6.26	5.28	7.68
10/1/1988	0.31	6.34	1.09	-	(0.21)	-	0.31	1.42	7.04
11/1/1988	1.50	3.78	(0.04)	-	(0.22)	-	1.50	1.46	5.93
1988	11.57	25.24	(1.46)	-	(1.16)	-	11.57	10.12	38.34
6/1/1989	7.20	28.86	0.04	-	(1.48)	-	7.20	7.24	34.41
7/1/1989	-	9.41	0.20	-	(0.19)	-	-	0.20	9.23
8/1/1989	0.51	8.23	0.02	-	(0.19)	-	0.51	0.51	9.27
9/1/1989	0.94	6.89	0.07	-	(0.18)	-	0.94	1.06	7.83
10/1/1989	1.57	5.28	(0.30)	-	(0.16)	-	1.57	1.26	7.39
11/1/1989	1.06	4.29	0.06	-	(0.16)	-	1.06	1.14	6.10
1989	4.09	34.09	0.06	-	(0.88)	-	4.09	4.17	39.83
6/1/1990	8.11	26.18	(0.60)	-	(0.78)	-	8.11	7.48	32.69
7/1/1990	0.28	8.90	0.16	-	(0.09)	-	0.28	0.43	9.17
8/1/1990	1.46	6.65	(0.13)	-	(0.09)	-	1.46	1.38	8.57
9/1/1990	9.37	(1.77)	(5.85)	-	(0.09)	-	9.37	3.58	7.54
10/1/1990	2.99	3.46	(0.22)	-	(0.09)	-	2.99	2.76	6.97
11/1/1990	0.24	4.80	0.83	-	(0.22)	-	0.24	1.10	5.53
1990	14.33	22.05	(5.20)	-	(0.59)	-	14.33	9.25	37.78
6/1/1991	15.87	18.11	(3.21)	-	(3.42)	-	15.87	12.64	32.63
7/1/1991	0.59	8.70	0.28	-	(0.54)	-	0.59	0.91	9.12
8/1/1991	1.69	6.97	(0.49)	-	(0.49)	-	1.69	1.18	9.27
9/1/1991	2.91	5.08	(0.05)	-	(0.43)	-	2.91	2.87	8.22
10/1/1991	1.65	4.80	0.09	-	(0.35)	-	1.65	1.73	6.67
11/1/1991	1.22	4.69	(0.54)	-	(0.30)	-	1.22	0.67	6.71
1991	8.07	30.24	(0.71)	-	(2.09)	-	8.07	7.36	39.99
6/1/1992	24.29	8.23	(6.89)	-	(3.30)	-	24.29	17.40	31.04
7/1/1992	1.30	7.83	0.48	-	(0.93)	-	1.30	1.77	8.76
8/1/1992	3.31	5.47	(1.31)	-	(0.71)	-	3.31	2.01	9.27
9/1/1992	5.55	1.97	(1.24)	-	(0.57)	-	5.55	4.29	7.88
10/1/1992	0.91	6.06	0.85	-	(0.48)	-	0.91	1.77	6.92
11/1/1992	1.22	4.33	(0.11)	-	(0.49)	-	1.22	1.10	6.43
1992	12.28	25.67	(1.35)	-	(3.18)	-	12.28	10.94	39.24
6/1/1993	27.52	5.04	(14.07)	-	(12.69)	-	27.52	13.50	30.70
7/1/1993	-	9.25	0.47	-	(0.93)	-	-	0.43	9.24
8/1/1993	0.28	8.50	0.29	-	(0.68)	-	0.28	0.55	8.92
9/1/1993	3.58	4.06	(1.03)	-	(0.55)	-	3.58	2.60	8.48
10/1/1993	0.16	6.46	0.85	-	(0.44)	-	0.16	1.02	6.58
11/1/1993	0.83	4.61	0.19	-	(0.38)	-	0.83	0.98	6.15
1993	4.84	32.87	0.78	-	(2.98)	-	4.84	5.59	39.37
6/1/1994	9.96	25.00	(1.57)	-	(1.93)	-	9.96	8.39	33.52
7/1/1994	0.35	8.62	0.24	-	(0.24)	-	0.35	0.63	8.95
8/1/1994	1.46	7.32	(0.81)	-	(0.24)	-	1.46	0.67	8.96
9/1/1994	0.75	7.48	0.79	-	(0.22)	-	0.75	1.50	8.57
10/1/1994	2.05	4.45	(0.26)	-	(0.20)	-	2.05	1.81	6.71
11/1/1994	1.85	2.87	(0.54)	-	(0.19)	-	1.85	1.30	5.47
1994	6.46	30.75	(0.59)	-	(1.08)	-	6.46	5.91	38.65
6/1/1995	16.10	16.89	(2.78)	-	(1.35)	-	16.10	13.35	31.52
7/1/1995	-	9.29	0.30	-	(0.31)	-	-	0.28	8.95
8/1/1995	0.04	9.13	0.22	-	(0.30)	-	0.04	0.28	9.25
9/1/1995	4.06	4.13	(1.23)	-	(0.27)	-	4.06	2.83	8.81
10/1/1995	2.91	3.86	(0.96)	-	(0.24)	-	2.91	1.93	7.32
11/1/1995	-	5.39	1.11	-	(0.23)	-	-	1.10	6.01
1995	7.01	31.81	(0.56)	-	(1.35)	-	7.01	6.42	40.34
6/1/1996	6.34	30.12	0.02	-	(1.35)	-	6.34	6.38	34.72
7/1/1996	0.39	8.66	0.04	-	(0.16)	-	0.39	0.43	9.04
8/1/1996	2.36	6.42	(0.35)	-	(0.16)	-	2.36	2.01	8.94
9/1/1996	1.30	6.57	-	-	(0.16)	-	1.30	1.30	8.17
10/1/1996	3.19	2.87	(0.45)	-	(0.14)	-	3.19	2.76	6.92
11/1/1996	0.43	5.31	0.29	-	(0.13)	-	0.43	0.71	6.28
1996	7.68	29.84	(0.48)	-	(0.75)	-	7.68	7.20	39.36

Table III-A.3 BC 8 Monsoon Period Water Balance

Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
6/1/1997	6.97	28.74	(0.30)	-	(0.75)	-	6.97	6.69	33.74
7/1/1997	-	9.13	0.19	-	(0.10)	-	-	0.20	8.97
8/1/1997	0.12	9.25	0.13	-	(0.10)	-	0.12	0.24	9.78
9/1/1997	2.72	5.43	(0.57)	-	(0.10)	-	2.72	2.17	8.55
10/1/1997	-	7.24	0.33	-	(0.10)	-	-	0.31	7.43
11/1/1997	0.75	4.37	(0.04)	-	(0.09)	-	0.75	0.71	6.32
1997	3.58	35.43	0.05	-	(0.50)	-	3.58	3.62	41.04
6/1/1998	14.13	17.56	(3.54)	-	(0.62)	-	14.13	10.63	29.68
7/1/1998	-	9.29	0.31	-	(0.15)	-	-	0.31	9.10
8/1/1998	1.73	7.17	(0.12)	-	(0.19)	-	1.73	1.57	9.26
9/1/1998	2.52	5.35	(0.16)	-	(0.21)	-	2.52	2.40	8.31
10/1/1998	1.42	5.47	0.05	-	(0.20)	-	1.42	1.46	7.21
11/1/1998	-	5.59	0.30	-	(0.20)	-	-	0.28	6.53
1998	5.67	32.87	0.37	-	(0.94)	-	5.67	6.02	40.41
6/1/1999	5.04	31.26	(0.20)	-	(1.08)	-	5.04	4.88	34.31
7/1/1999	-	9.17	0.20	-	(0.11)	-	-	0.20	9.13
8/1/1999	5.83	2.17	(2.11)	-	(0.11)	-	5.83	3.70	8.72
9/1/1999	2.99	4.80	(0.17)	-	(0.11)	-	2.99	2.83	7.85
10/1/1999	1.14	5.55	0.87	-	(0.10)	-	1.14	2.01	7.01
11/1/1999	-	5.63	0.39	-	(0.10)	-	-	0.39	6.39
1999	9.96	27.32	(0.82)	-	(0.53)	-	9.96	9.13	39.10
6/1/2000	3.90	34.41	0.09	-	(0.71)	-	3.90	3.98	36.33
7/1/2000	0.79	8.39	(0.03)	-	(0.09)	-	0.79	0.79	9.38
8/1/2000	0.08	9.49	0.20	-	(0.09)	-	0.08	0.28	9.47
9/1/2000	0.71	7.01	0.06	-	(0.09)	-	0.71	0.75	8.83
10/1/2000	-	7.09	0.17	-	(0.09)	-	-	0.16	6.99
11/1/2000	5.31	(0.67)	(3.66)	-	(0.09)	-	5.31	1.65	6.07
2000	6.89	31.30	(3.26)	-	(0.45)	-	6.89	3.62	40.74
6/1/2001	11.77	22.32	(0.02)	-	(0.74)	-	11.77	11.77	31.56
7/1/2001	0.04	9.33	0.29	-	(0.17)	-	0.04	0.31	9.18
8/1/2001	2.68	6.26	(1.67)	-	(0.18)	-	2.68	1.02	9.61
9/1/2001	3.54	4.13	0.22	-	(0.18)	-	3.54	3.78	7.70
10/1/2001	0.12	6.50	0.49	-	(0.17)	-	0.12	0.59	7.34
11/1/2001	0.39	4.69	0.24	-	(0.17)	-	0.39	0.63	5.69
2001	6.77	30.91	(0.44)	-	(0.87)	-	6.77	6.34	39.52
6/1/2002	3.03	34.02	0.61	-	(1.09)	-	3.03	3.62	35.28
7/1/2002	-	9.41	0.11	-	(0.12)	-	-	0.12	9.15
8/1/2002	0.31	8.90	0.06	-	(0.11)	-	0.31	0.39	9.59
9/1/2002	0.47	7.52	(0.04)	-	(0.11)	-	0.47	0.43	8.30
10/1/2002	1.26	5.47	(0.11)	-	(0.10)	-	1.26	1.14	7.20
11/1/2002	0.12	5.12	0.17	-	(0.10)	-	0.12	0.24	6.24
2002	2.17	36.42	0.19	-	(0.54)	-	2.17	2.32	40.48
6/1/2003	9.29	26.77	(1.92)	-	(0.56)	-	9.29	7.40	33.89
7/1/2003	-	9.96	0.22	-	(0.07)	-	-	0.24	9.64
8/1/2003	0.47	8.82	0.12	-	(0.08)	-	0.47	0.59	10.06
9/1/2003	1.38	6.89	(0.19)	-	(0.09)	-	1.38	1.18	8.63
10/1/2003	2.01	4.92	(0.08)	-	(0.08)	-	2.01	1.93	7.42
11/1/2003	0.08	5.75	0.30	-	(0.09)	-	0.08	0.39	6.23
2003	3.94	36.34	0.37	-	(0.41)	-	3.94	4.33	41.99
6/1/2004	7.95	28.50	(0.88)	-	(0.59)	-	7.95	7.05	34.81
7/1/2004	-	9.92	0.20	-	(0.07)	-	-	0.24	9.68
8/1/2004	0.55	8.78	0.07	-	(0.08)	-	0.55	0.63	9.72
9/1/2004	2.20	6.14	(0.32)	-	(0.08)	-	2.20	1.85	8.74
10/1/2004	1.61	5.71	(0.30)	-	(0.08)	-	1.61	1.34	7.98
11/1/2004	1.22	4.09	(0.15)	-	(0.09)	-	1.22	1.02	6.49
2004	5.59	34.65	(0.50)	-	(0.40)	-	5.59	5.08	42.62
6/1/2005	16.42	17.32	(5.94)	-	(1.40)	-	16.42	10.59	31.29
7/1/2005	0.08	9.69	0.30	-	(0.55)	-	0.08	0.39	9.40
8/1/2005	1.38	7.91	(0.39)	-	(0.50)	-	1.38	0.98	10.42
9/1/2005	4.96	2.64	(0.91)	-	(0.42)	-	4.96	4.06	7.43
10/1/2005	0.12	6.81	0.57	-	(0.34)	-	0.12	0.67	7.53
11/1/2005	0.39	5.04	0.24	-	(0.31)	-	0.39	0.63	6.43
2005	6.93	32.09	(0.19)	-	(2.12)	-	6.93	6.73	41.21
6/1/2006	3.94	33.66	0.09	-	(1.54)	-	3.94	4.02	35.16
7/1/2006	0.51	9.06	0.04	-	(0.16)	-	0.51	0.55	9.80
8/1/2006	3.19	4.88	(2.00)	-	(0.16)	-	3.19	1.18	9.24
9/1/2006	3.03	4.84	0.63	-	(0.15)	-	3.03	3.70	7.44
10/1/2006	1.18	5.43	0.23	-	(0.13)	-	1.18	1.42	7.00
11/1/2006	1.06	4.13	0.18	-	(0.13)	-	1.06	1.22	6.12
2006	8.98	28.35	(0.92)	-	(0.72)	-	8.98	8.07	39.59

Table III-A.4 BC 8 Winter Storm Period Water Balance

Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
10/1/1951	14.21	46.45	(0.22)	-	(5.93)	-	14.21	14.00	60.66
11/1/1951	1.64	3.94	(0.57)	-	(0.27)	-	1.64	1.07	5.58
12/1/1951	1.71	2.03	0.38	-	(0.24)	-	1.71	2.09	3.74
1/1/1952	3.02	(0.25)	(1.46)	-	(0.24)	-	3.02	1.56	2.77
2/1/1952	2.79	0.07	(0.23)	-	(0.23)	-	2.79	2.56	2.86
3/1/1952	0.50	3.30	0.71	-	(0.21)	-	0.50	1.21	3.81
1952	9.66	9.10	(1.17)	-	(1.19)	-	9.66	8.49	18.76
10/1/1952	10.82	42.69	(0.48)	-	(1.97)	-	10.82	10.35	53.51
11/1/1952	-	6.05	0.26	-	(0.25)	-	-	0.26	6.05
12/1/1952	4.31	(1.07)	(2.81)	-	(0.23)	-	4.31	1.50	3.24
1/1/1953	1.98	0.64	0.11	-	(0.22)	-	1.98	2.09	2.68
2/1/1953	0.74	2.65	0.58	-	(0.20)	-	0.74	1.32	3.30
3/1/1953	0.60	3.23	0.10	-	(0.18)	-	0.60	0.70	3.80
1953	7.63	11.51	(1.76)	-	(1.08)	-	7.63	5.86	19.06
10/1/1953	7.85	45.33	(0.57)	-	(1.53)	-	7.85	7.28	53.09
11/1/1953	0.01	5.62	0.27	-	(0.20)	-	0.01	0.29	5.69
12/1/1953	0.56	3.23	0.00	-	(0.18)	-	0.56	0.56	3.84
1/1/1954	0.19	2.66	0.22	-	(0.17)	-	0.19	0.41	2.90
2/1/1954	2.41	0.88	(0.95)	-	(0.16)	-	2.41	1.46	3.21
3/1/1954	0.72	3.49	0.29	-	(0.14)	-	0.72	1.01	4.22
1954	3.89	15.88	(0.17)	-	(0.84)	-	3.89	3.73	19.87
10/1/1954	17.67	34.65	(3.89)	-	(1.05)	-	17.67	13.77	52.23
11/1/1954	-	5.77	0.62	-	(0.20)	-	-	0.62	5.85
12/1/1954	0.09	4.04	0.26	-	(0.22)	-	0.09	0.35	4.18
1/1/1955	0.29	3.27	0.24	-	(0.24)	-	0.29	0.54	3.55
2/1/1955	3.41	(1.01)	(1.57)	-	(0.24)	-	3.41	1.84	2.41
3/1/1955	0.28	3.37	0.62	-	(0.21)	-	0.28	0.90	3.60
1955	4.07	15.44	0.17	-	(1.10)	-	4.07	4.24	19.59
10/1/1955	9.49	43.19	(0.86)	-	(1.33)	-	9.49	8.63	52.63
11/1/1955	0.02	5.94	0.32	-	(0.16)	-	0.02	0.34	6.02
12/1/1955	0.96	2.63	(0.11)	-	(0.16)	-	0.96	0.85	3.66
1/1/1956	1.37	1.78	(0.21)	-	(0.17)	-	1.37	1.16	3.12
2/1/1956	2.62	0.95	(1.62)	-	(0.17)	-	2.62	1.00	3.56
3/1/1956	2.00	1.25	0.26	-	(0.15)	-	2.00	2.27	3.17
1956	6.97	12.56	(1.35)	-	(0.80)	-	6.97	5.63	19.53
10/1/1956	5.70	49.02	0.82	-	(1.06)	-	5.70	6.52	54.69
11/1/1956	0.53	4.66	0.02	-	(0.13)	-	0.53	0.55	5.31
12/1/1956	-	3.75	0.34	-	(0.12)	-	-	0.34	3.75
1/1/1957	0.47	2.66	0.04	-	(0.12)	-	0.47	0.51	3.11
2/1/1957	4.79	(2.24)	(3.04)	-	(0.11)	-	4.79	1.75	2.68
3/1/1957	0.73	2.92	1.06	-	(0.10)	-	0.73	1.79	3.40
1957	6.52	11.75	(1.58)	-	(0.58)	-	6.52	4.94	18.25
10/1/1957	8.71	44.45	0.27	-	(0.75)	-	8.71	8.98	53.11
11/1/1957	3.23	1.30	(1.70)	-	(0.11)	-	3.23	1.52	4.73
12/1/1957	0.61	2.54	0.95	-	(0.10)	-	0.61	1.56	3.10
1/1/1958	1.06	2.11	0.09	-	(0.11)	-	1.06	1.15	3.20
2/1/1958	0.01	3.42	0.31	-	(0.10)	-	0.01	0.32	3.36
3/1/1958	2.52	0.70	(0.90)	-	(0.09)	-	2.52	1.62	3.23
1958	7.43	10.07	(1.25)	-	(0.52)	-	7.43	6.19	17.63
10/1/1958	12.03	41.27	(1.06)	-	(0.78)	-	12.03	10.96	53.20
11/1/1958	1.92	3.39	(0.00)	-	(0.13)	-	1.92	1.91	5.45
12/1/1958	1.53	2.01	(0.30)	-	(0.12)	-	1.53	1.23	3.55
1/1/1959	-	3.54	0.48	-	(0.11)	-	-	0.48	3.59
2/1/1959	0.21	3.35	0.24	-	(0.11)	-	0.21	0.45	3.44
3/1/1959	1.42	1.93	(0.29)	-	(0.11)	-	1.42	1.13	3.39
1959	5.07	14.21	0.13	-	(0.58)	-	5.07	5.20	19.42
10/1/1959	10.73	44.84	(1.16)	-	(0.77)	-	10.73	9.57	55.40
11/1/1959	4.79	0.55	(3.86)	-	(0.10)	-	4.79	0.93	5.57
12/1/1959	0.38	3.35	1.81	-	(0.10)	-	0.38	2.19	3.65
1/1/1960	5.24	(2.64)	(3.40)	-	(0.10)	-	5.24	1.83	2.67
2/1/1960	4.16	(1.57)	(1.62)	-	(0.14)	-	4.16	2.54	2.56
3/1/1960	0.87	2.52	0.90	-	(0.27)	-	0.87	1.77	3.39
1960	15.43	2.20	(6.18)	-	(0.71)	-	15.43	9.25	17.84

Table III-A.4 BC 8 Winter Storm Period Water Balance

Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
10/1/1960	3.66	51.50	1.63	-	(3.44)	-	3.66	5.29	54.90
11/1/1960	2.06	2.95	(0.51)	-	(0.25)	-	2.06	1.55	5.12
12/1/1960	0.48	3.07	0.28	-	(0.22)	-	0.48	0.76	3.66
1/1/1961	0.47	2.72	0.12	-	(0.21)	-	0.47	0.59	3.27
2/1/1961	0.70	2.48	(0.12)	-	(0.19)	-	0.70	0.58	3.21
3/1/1961	0.23	3.82	0.32	-	(0.16)	-	0.23	0.55	3.72
1961	3.94	15.04	0.10	-	(1.03)	-	3.94	4.04	18.97
10/1/1961	6.02	48.03	(0.07)	-	(0.88)	-	6.02	5.94	53.85
11/1/1961	0.45	4.65	(0.06)	-	(0.10)	-	0.45	0.40	5.57
12/1/1961	0.31	2.87	0.31	-	(0.09)	-	0.31	0.63	3.11
1/1/1962	3.88	(1.22)	(2.11)	-	(0.09)	-	3.88	1.77	2.66
2/1/1962	3.21	(0.39)	(1.66)	-	(0.09)	-	3.21	1.56	2.76
3/1/1962	1.67	1.46	0.06	-	(0.08)	-	1.67	1.72	3.20
1962	9.52	7.36	(3.45)	-	(0.44)	-	9.52	6.08	17.30
10/1/1962	4.72	49.45	1.47	-	(0.76)	-	4.72	6.20	53.91
11/1/1962	0.87	4.29	0.07	-	(0.13)	-	0.87	0.94	5.31
12/1/1962	0.83	3.03	(0.05)	-	(0.12)	-	0.83	0.78	3.83
1/1/1963	1.81	1.30	(0.59)	-	(0.11)	-	1.81	1.22	3.25
2/1/1963	2.09	1.06	(0.25)	-	(0.11)	-	2.09	1.84	3.04
3/1/1963	4.23	(0.31)	(2.35)	-	(0.09)	-	4.23	1.88	3.77
1963	9.83	9.37	(3.17)	-	(0.57)	-	9.83	6.67	19.20
10/1/1963	14.32	39.80	(2.82)	-	(0.95)	-	14.32	11.56	54.06
11/1/1963	0.67	5.16	0.46	-	(0.20)	-	0.67	1.13	6.03
12/1/1963	2.35	1.18	(0.43)	-	(0.29)	-	2.35	1.92	3.60
1/1/1964	0.34	2.91	0.59	-	(0.36)	-	0.34	0.93	3.33
2/1/1964	0.57	2.48	0.13	-	(0.35)	-	0.57	0.70	3.00
3/1/1964	-	3.66	0.34	-	(0.30)	-	-	0.33	3.58
1964	3.93	15.39	1.08	-	(1.49)	-	3.93	5.01	19.55
10/1/1964	7.67	44.57	(0.02)	-	(1.54)	-	7.67	7.65	52.02
11/1/1964	1.54	4.29	(0.31)	-	(0.16)	-	1.54	1.23	5.96
12/1/1964	1.38	2.05	(0.24)	-	(0.14)	-	1.38	1.14	3.53
1/1/1965	1.69	1.34	(0.55)	-	(0.13)	-	1.69	1.15	3.36
2/1/1965	2.88	-	(0.64)	-	(0.12)	-	2.88	2.24	2.60
3/1/1965	2.83	0.83	(0.98)	-	(0.10)	-	2.83	1.85	3.44
1965	10.32	8.50	(2.72)	-	(0.64)	-	10.32	7.60	18.90
10/1/1965	7.38	45.08	0.92	-	(1.07)	-	7.38	8.30	52.37
11/1/1965	0.46	5.16	0.11	-	(0.17)	-	0.46	0.57	5.83
12/1/1965	2.35	1.46	(1.49)	-	(0.15)	-	2.35	0.86	3.89
1/1/1966	10.43	(7.87)	(8.57)	-	(0.15)	-	10.43	1.87	2.74
2/1/1966	1.83	0.94	0.80	-	(0.18)	-	1.83	2.63	2.77
3/1/1966	2.03	1.30	0.24	-	(0.75)	-	2.03	2.27	3.16
1966	17.10	0.98	(8.90)	-	(1.40)	-	17.10	8.20	18.38
10/1/1966	5.87	48.11	0.77	-	(4.48)	-	5.87	6.64	53.75
11/1/1966	1.36	4.02	0.22	-	(0.26)	-	1.36	1.58	5.34
12/1/1966	0.88	2.87	0.09	-	(0.24)	-	0.88	0.96	4.02
1/1/1967	1.25	1.73	(0.15)	-	(0.23)	-	1.25	1.10	3.10
2/1/1967	0.79	2.36	0.08	-	(0.22)	-	0.79	0.87	2.94
3/1/1967	-	4.02	0.37	-	(0.19)	-	-	0.37	3.97
1967	4.28	15.00	0.61	-	(1.14)	-	4.28	4.89	19.37
10/1/1967	10.14	43.66	(0.78)	-	(1.13)	-	10.14	9.35	53.43
11/1/1967	0.42	4.96	0.25	-	(0.12)	-	0.42	0.67	5.83
12/1/1967	2.10	1.50	(1.32)	-	(0.11)	-	2.10	0.78	3.84
1/1/1968	10.01	(7.56)	(8.06)	-	(0.11)	-	10.01	1.95	2.34
2/1/1968	0.63	2.48	1.40	-	(0.26)	-	0.63	2.02	3.04
3/1/1968	1.94	1.81	(0.04)	-	(0.91)	-	1.94	1.91	3.44
1968	15.10	3.19	(7.77)	-	(1.51)	-	15.10	7.34	18.49
10/1/1968	7.23	45.91	0.87	-	(4.06)	-	7.23	8.10	53.03
11/1/1968	0.39	4.76	0.19	-	(0.27)	-	0.39	0.58	5.25
12/1/1968	2.54	0.91	(0.89)	-	(0.24)	-	2.54	1.65	3.78
1/1/1969	3.27	(0.35)	(1.92)	-	(0.23)	-	3.27	1.35	2.98
2/1/1969	4.16	(1.38)	(1.90)	-	(0.21)	-	4.16	2.26	2.65
3/1/1969	1.35	1.93	0.94	-	(0.18)	-	1.35	2.29	3.09
1969	11.71	5.87	(3.57)	-	(1.14)	-	11.71	8.14	17.75

Table III-A.4 BC 8 Winter Storm Period Water Balance

Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
10/1/1969	7.04	47.44	0.84	-	(1.96)	-	7.04	7.87	54.16
11/1/1969	0.83	4.21	0.03	-	(0.22)	-	0.83	0.86	5.36
12/1/1969	2.12	1.18	(0.50)	-	(0.20)	-	2.12	1.62	3.52
1/1/1970	1.32	1.89	(0.16)	-	(0.19)	-	1.32	1.16	3.44
2/1/1970	0.50	2.80	0.45	-	(0.18)	-	0.50	0.95	2.95
3/1/1970	0.41	3.35	0.22	-	(0.15)	-	0.41	0.63	3.67
1970	5.17	13.43	0.04	-	(0.96)	-	5.17	5.22	18.94
10/1/1970	10.90	42.99	(2.04)	-	(1.07)	-	10.90	8.86	53.71
11/1/1970	-	5.28	0.46	-	(0.14)	-	-	0.46	5.40
12/1/1970	0.65	3.03	(0.20)	-	(0.13)	-	0.65	0.45	3.89
1/1/1971	1.21	1.65	0.02	-	(0.13)	-	1.21	1.22	3.00
2/1/1971	0.85	2.68	0.16	-	(0.13)	-	0.85	1.01	3.08
3/1/1971	0.82	2.99	(0.05)	-	(0.12)	-	0.82	0.77	4.03
1971	3.53	15.63	0.39	-	(0.66)	-	3.53	3.91	19.41
10/1/1971	8.95	45.35	(2.84)	-	(0.78)	-	8.95	6.11	53.98
11/1/1971	4.21	0.75	(0.59)	-	(0.10)	-	4.21	3.62	5.32
12/1/1971	0.04	3.62	0.85	-	(0.09)	-	0.04	0.89	3.73
1/1/1972	2.12	0.83	(0.43)	-	(0.10)	-	2.12	1.69	3.01
2/1/1972	-	3.27	0.63	-	(0.13)	-	-	0.63	3.14
3/1/1972	-	4.65	0.28	-	(0.15)	-	-	0.28	4.07
1972	6.37	13.11	0.74	-	(0.57)	-	6.37	7.11	19.26
10/1/1972	4.92	51.97	0.31	-	(1.12)	-	4.92	5.23	56.93
11/1/1972	8.68	(3.98)	(5.03)	-	(0.12)	-	8.68	3.65	5.15
12/1/1972	2.83	0.28	(0.18)	-	(0.11)	-	2.83	2.65	3.19
1/1/1973	2.97	(0.31)	(1.21)	-	(0.13)	-	2.97	1.76	2.90
2/1/1973	0.74	2.09	1.17	-	(0.23)	-	0.74	1.91	2.66
3/1/1973	3.17	0.12	(0.97)	-	(0.31)	-	3.17	2.20	2.84
1973	18.39	(1.81)	(6.22)	-	(0.89)	-	18.39	12.18	16.75
10/1/1973	12.29	40.55	-	-	(2.90)	-	12.29	12.29	52.48
11/1/1973	-	5.28	0.25	-	(0.30)	-	-	0.26	5.81
12/1/1973	1.77	1.73	(0.67)	-	(0.25)	-	1.77	1.10	3.83
1/1/1974	0.08	3.23	0.54	-	(0.24)	-	0.08	0.63	3.27
2/1/1974	3.43	(0.59)	(1.30)	-	(0.22)	-	3.43	2.10	2.84
3/1/1974	0.12	3.58	0.50	-	(0.19)	-	0.12	0.65	3.33
1974	5.39	13.23	(0.68)	-	(1.19)	-	5.39	4.73	19.08
10/1/1974	10.20	42.83	(0.88)	-	(1.23)	-	10.20	9.32	52.74
11/1/1974	3.43	1.50	(1.91)	-	(0.15)	-	3.43	1.48	5.46
12/1/1974	0.12	3.58	1.46	-	(0.13)	-	0.12	1.57	3.62
1/1/1975	0.75	2.05	0.20	-	(0.13)	-	0.75	0.95	3.12
2/1/1975	0.39	2.36	0.15	-	(0.13)	-	0.39	0.56	2.63
3/1/1975	3.94	(0.35)	(2.03)	-	(0.12)	-	3.94	1.92	3.09
1975	8.62	9.13	(2.13)	-	(0.67)	-	8.62	6.48	17.92
10/1/1975	10.47	41.02	0.30	-	(1.26)	-	10.47	10.78	51.24
11/1/1975	0.28	5.04	0.23	-	(0.20)	-	0.28	0.49	5.62
12/1/1975	2.17	1.77	(1.75)	-	(0.18)	-	2.17	0.39	4.23
1/1/1976	1.22	1.77	0.73	-	(0.18)	-	1.22	1.98	3.10
2/1/1976	0.24	2.80	0.45	-	(0.17)	-	0.24	0.68	2.92
3/1/1976	1.61	2.24	(0.21)	-	(0.14)	-	1.61	1.40	3.41
1976	5.51	13.62	(0.55)	-	(0.86)	-	5.51	4.94	19.27
10/1/1976	10.71	42.40	(1.80)	-	(0.88)	-	10.71	8.93	53.13
11/1/1976	0.91	3.94	0.58	-	(0.11)	-	0.91	1.48	5.22
12/1/1976	0.55	3.11	0.25	-	(0.10)	-	0.55	0.80	3.88
1/1/1977	1.85	1.14	(1.17)	-	(0.11)	-	1.85	0.67	3.08
2/1/1977	1.89	0.94	0.20	-	(0.11)	-	1.89	2.09	2.53
3/1/1977	0.08	4.29	0.50	-	(0.09)	-	0.08	0.58	4.21
1977	5.28	13.43	0.36	-	(0.52)	-	5.28	5.61	18.91
10/1/1977	11.18	42.83	(1.43)	-	(0.81)	-	11.18	9.74	53.71
11/1/1977	1.30	4.09	0.28	-	(0.11)	-	1.30	1.61	5.73
12/1/1977	0.35	3.43	0.46	-	(0.10)	-	0.35	0.79	3.90
1/1/1978	0.67	2.48	(0.10)	-	(0.11)	-	0.67	0.55	3.49
2/1/1978	6.38	(3.74)	(4.47)	-	(0.11)	-	6.38	1.97	2.45
3/1/1978	5.47	(2.20)	(2.57)	-	(0.10)	-	5.47	2.91	2.98
1978	14.17	4.06	(6.40)	-	(0.52)	-	14.17	7.83	18.55

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Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
10/1/1978	9.76	43.90	0.75	-	(4.28)	-	9.76	10.47	53.12
11/1/1978	1.93	3.78	(0.74)	-	(0.36)	-	1.93	1.18	6.24
12/1/1978	5.59	(2.44)	(3.57)	-	(0.29)	-	5.59	2.05	3.63
1/1/1979	6.57	(3.90)	(4.02)	-	(0.26)	-	6.57	2.56	2.54
2/1/1979	6.02	(3.74)	(3.76)	-	(0.44)	-	6.02	2.28	2.29
3/1/1979	1.26	2.80	1.25	-	(1.59)	-	1.26	2.48	3.40
1979	21.38	(3.50)	(10.84)	-	(2.94)	-	21.38	10.55	18.10
10/1/1979	8.23	45.47	1.39	-	(6.76)	-	8.23	9.61	53.57
11/1/1979	0.67	5.08	(0.01)	-	(0.35)	-	0.67	0.67	6.05
12/1/1979	0.67	3.07	0.13	-	(0.27)	-	0.67	0.83	4.03
1/1/1980	0.71	2.76	(0.09)	-	(0.25)	-	0.71	0.59	3.67
2/1/1980	4.09	(1.65)	(2.26)	-	(0.22)	-	4.09	1.85	2.50
3/1/1980	6.02	(2.83)	(3.67)	-	(0.20)	-	6.02	2.36	2.53
1980	12.17	6.42	(5.90)	-	(1.30)	-	12.17	6.30	18.77
10/1/1980	8.15	45.12	1.99	-	(2.80)	-	8.15	10.12	52.89
11/1/1980	0.04	5.47	0.24	-	(0.28)	-	0.04	0.28	6.06
12/1/1980	-	4.06	0.18	-	(0.24)	-	-	0.20	4.29
1/1/1981	0.55	3.11	0.05	-	(0.23)	-	0.55	0.59	3.46
2/1/1981	1.30	2.01	(0.36)	-	(0.21)	-	1.30	0.98	3.49
3/1/1981	2.68	1.26	(1.12)	-	(0.17)	-	2.68	1.54	3.62
1981	4.57	15.91	(1.00)	-	(1.14)	-	4.57	3.58	20.93
10/1/1981	10.67	44.17	(0.59)	-	(1.16)	-	10.67	10.04	54.33
11/1/1981	0.94	3.86	0.22	-	(0.16)	-	0.94	1.18	5.40
12/1/1981	2.32	1.57	(1.96)	-	(0.15)	-	2.32	0.39	4.36
1/1/1982	-	3.43	1.33	-	(0.15)	-	-	1.34	3.25
2/1/1982	2.72	0.08	(0.63)	-	(0.14)	-	2.72	2.09	2.78
3/1/1982	1.81	1.73	(0.09)	-	(0.13)	-	1.81	1.73	3.15
1982	7.80	10.67	(1.13)	-	(0.73)	-	7.80	6.73	18.94
10/1/1982	15.75	35.51	(2.16)	-	(1.00)	-	15.75	13.58	50.92
11/1/1982	-	5.16	0.59	-	(0.15)	-	-	0.59	5.56
12/1/1982	3.31	(0.35)	(1.59)	-	(0.15)	-	3.31	1.69	3.47
1/1/1983	1.69	1.06	0.47	-	(0.18)	-	1.69	2.17	2.72
2/1/1983	1.89	1.42	(1.06)	-	(0.19)	-	1.89	0.87	3.26
3/1/1983	2.32	1.02	(0.35)	-	(0.18)	-	2.32	1.97	2.85
1983	9.21	8.31	(1.94)	-	(0.85)	-	9.21	7.28	17.87
10/1/1983	18.23	33.98	(4.64)	-	(2.17)	-	18.23	13.58	51.90
11/1/1983	1.14	3.43	1.48	-	(0.26)	-	1.14	2.64	5.06
12/1/1983	2.01	1.54	(0.69)	-	(0.26)	-	2.01	1.34	3.76
1/1/1984	2.52	0.16	(0.55)	-	(0.35)	-	2.52	1.93	2.79
2/1/1984	0.47	2.80	0.81	-	(0.39)	-	0.47	1.30	2.85
3/1/1984	-	4.02	0.38	-	(0.38)	-	-	0.39	3.91
1984	6.14	11.93	1.43	-	(1.64)	-	6.14	7.60	18.37
10/1/1984	11.65	41.22	(0.67)	-	(1.97)	-	11.65	10.98	52.57
11/1/1984	1.38	3.39	0.30	-	(0.19)	-	1.38	1.65	5.11
12/1/1984	2.05	1.65	(1.26)	-	(0.17)	-	2.05	0.83	4.20
1/1/1985	5.79	(3.23)	(3.56)	-	(0.17)	-	5.79	2.20	2.53
2/1/1985	2.68	(0.35)	(0.46)	-	(0.17)	-	2.68	2.20	2.51
3/1/1985	1.69	1.22	0.53	-	(0.17)	-	1.69	2.20	2.51
1985	13.58	2.68	(4.46)	-	(0.87)	-	13.58	9.09	16.86
10/1/1985	9.17	41.61	0.09	-	(2.52)	-	9.17	9.25	49.90
11/1/1985	1.22	3.15	0.53	-	(0.24)	-	1.22	1.81	4.69
12/1/1985	2.76	0.39	(1.58)	-	(0.21)	-	2.76	1.14	3.88
1/1/1986	0.91	2.52	0.97	-	(0.20)	-	0.91	1.85	3.06
2/1/1986	0.08	3.70	0.33	-	(0.20)	-	0.08	0.43	3.57
3/1/1986	3.07	0.20	(0.97)	-	(0.18)	-	3.07	2.13	2.94
1986	8.03	9.96	(0.72)	-	(1.03)	-	8.03	7.36	18.14
10/1/1986	13.27	39.09	(1.36)	-	(1.45)	-	13.27	11.89	52.52
11/1/1986	1.77	3.19	(0.09)	-	(0.21)	-	1.77	1.69	4.98
12/1/1986	1.42	1.85	0.11	-	(0.20)	-	1.42	1.50	3.69
1/1/1987	2.99	(0.08)	(1.11)	-	(0.20)	-	2.99	1.93	2.93
2/1/1987	3.39	(0.35)	(1.19)	-	(0.20)	-	3.39	2.17	2.87
3/1/1987	2.68	0.59	(1.15)	-	(0.18)	-	2.68	1.54	3.47
1987	12.24	5.20	(3.42)	-	(0.98)	-	12.24	8.82	17.93
10/1/1987	7.91	45.39	1.41	-	(1.61)	-	7.91	9.33	52.41
11/1/1987	0.31	5.47	0.33	-	(0.20)	-	0.31	0.67	6.33
12/1/1987	1.77	1.93	(0.26)	-	(0.19)	-	1.77	1.50	3.85
1/1/1988	4.02	(1.14)	(2.35)	-	(0.18)	-	4.02	1.65	3.16
2/1/1988	3.58	(0.79)	(1.11)	-	(0.18)	-	3.58	2.48	2.57
3/1/1988	0.75	3.35	0.73	-	(0.16)	-	0.75	1.46	3.48
1988	10.43	8.82	(2.66)	-	(0.91)	-	10.43	7.76	19.38

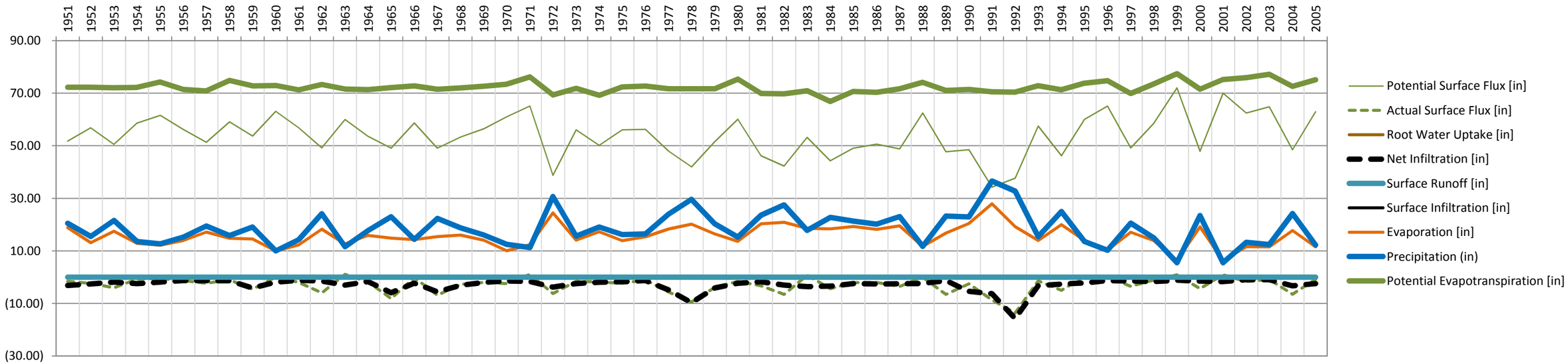
Table III-A.4 BC 8 Winter Storm Period Water Balance

Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
10/1/1988	12.64	39.96	(0.88)	-	(1.62)	-	12.64	11.77	52.29
11/1/1988	1.50	3.78	(0.04)	-	(0.22)	-	1.50	1.46	5.93
12/1/1988	1.73	1.85	(0.63)	-	(0.21)	-	1.73	1.10	3.92
1/1/1989	1.10	1.81	0.41	-	(0.22)	-	1.10	1.54	3.13
2/1/1989	2.20	0.67	(0.48)	-	(0.22)	-	2.20	1.69	2.74
3/1/1989	0.31	3.66	0.43	-	(0.19)	-	0.31	0.75	3.17
1989	6.85	11.77	(0.31)	-	(1.06)	-	6.85	6.54	18.90
10/1/1989	4.88	50.67	0.31	-	(1.35)	-	4.88	5.20	55.10
11/1/1989	1.06	4.29	0.06	-	(0.16)	-	1.06	1.14	6.10
12/1/1989	0.28	3.50	0.14	-	(0.13)	-	0.28	0.43	4.24
1/1/1990	0.91	2.48	(0.51)	-	(0.13)	-	0.91	0.35	3.34
2/1/1990	1.26	1.50	0.15	-	(0.11)	-	1.26	1.42	2.75
3/1/1990	2.52	0.71	(0.59)	-	(0.10)	-	2.52	1.97	2.72
1990	6.02	12.48	(0.74)	-	(0.63)	-	6.02	5.31	19.15
10/1/1990	17.24	35.24	(5.83)	-	(0.68)	-	17.24	11.46	51.88
11/1/1990	0.24	4.80	0.83	-	(0.22)	-	0.24	1.10	5.53
12/1/1990	2.20	1.50	(0.19)	-	(0.39)	-	2.20	1.97	4.25
1/1/1991	4.80	(2.24)	(3.40)	-	(0.45)	-	4.80	1.46	3.05
2/1/1991	1.81	1.34	0.60	-	(0.43)	-	1.81	2.36	2.71
3/1/1991	0.94	3.31	0.26	-	(0.44)	-	0.94	1.22	3.38
1991	10.00	8.70	(1.89)	-	(1.93)	-	10.00	8.11	18.91
10/1/1991	12.95	39.76	(0.65)	-	(3.51)	-	12.95	12.32	52.53
11/1/1991	1.22	4.69	(0.54)	-	(0.30)	-	1.22	0.67	6.71
12/1/1991	3.27	0.12	(1.38)	-	(0.25)	-	3.27	1.89	3.62
1/1/1992	3.98	(1.30)	(1.53)	-	(0.25)	-	3.98	2.44	3.00
2/1/1992	2.99	(0.16)	(0.62)	-	(0.23)	-	2.99	2.36	2.27
3/1/1992	2.76	0.59	(0.64)	-	(0.27)	-	2.76	2.13	3.02
1992	14.21	3.94	(4.72)	-	(1.30)	-	14.21	9.49	18.62
10/1/1992	22.36	30.31	(3.94)	-	(4.98)	-	22.36	18.43	51.95
11/1/1992	1.22	4.33	(0.11)	-	(0.49)	-	1.22	1.10	6.43
12/1/1992	0.51	2.80	0.66	-	(0.47)	-	0.51	1.18	3.72
1/1/1993	6.34	(3.98)	(4.33)	-	(0.44)	-	6.34	2.01	2.48
2/1/1993	11.26	(8.94)	(8.97)	-	(0.71)	-	11.26	2.32	2.00
3/1/1993	6.02	(3.46)	(3.60)	-	(4.12)	-	6.02	2.40	2.71
1993	25.35	(9.25)	(16.35)	-	(6.23)	-	25.35	9.02	17.35
10/1/1993	7.40	46.89	2.75	-	(9.54)	-	7.40	10.20	52.94
11/1/1993	0.83	4.61	0.19	-	(0.38)	-	0.83	0.98	6.15
12/1/1993	4.17	(0.83)	(2.53)	-	(0.31)	-	4.17	1.65	3.67
1/1/1994	0.28	2.76	0.77	-	(0.27)	-	0.28	1.06	3.39
2/1/1994	0.28	3.19	0.33	-	(0.27)	-	0.28	0.59	3.34
3/1/1994	2.64	0.67	(0.83)	-	(0.27)	-	2.64	1.81	3.03
1994	8.19	10.39	(2.06)	-	(1.50)	-	8.19	6.10	19.58
10/1/1994	7.20	47.09	0.64	-	(1.70)	-	7.20	7.87	53.28
11/1/1994	1.85	2.87	(0.54)	-	(0.19)	-	1.85	1.30	5.47
12/1/1994	3.39	(0.35)	(1.10)	-	(0.17)	-	3.39	2.24	3.53
1/1/1995	2.64	0.04	(0.82)	-	(0.16)	-	2.64	1.85	3.00
2/1/1995	3.66	(0.71)	(1.05)	-	(0.15)	-	3.66	2.64	2.57
3/1/1995	2.72	0.79	(0.75)	-	(0.15)	-	2.72	1.93	3.16
1995	14.25	2.64	(4.27)	-	(0.81)	-	14.25	9.96	17.72
10/1/1995	10.71	43.54	(0.72)	-	(1.84)	-	10.71	10.00	53.60
11/1/1995	-	5.39	1.11	-	(0.23)	-	-	1.10	6.01
12/1/1995	1.30	2.24	(0.03)	-	(0.21)	-	1.30	1.30	3.82
1/1/1996	0.91	2.28	(0.02)	-	(0.21)	-	0.91	0.87	3.49
2/1/1996	-	3.54	0.35	-	(0.20)	-	-	0.39	3.30
3/1/1996	3.19	0.55	(1.37)	-	(0.19)	-	3.19	1.77	3.58
1996	5.39	14.02	0.04	-	(1.04)	-	5.39	5.43	20.20
10/1/1996	8.19	46.02	0.33	-	(1.16)	-	8.19	8.54	53.61
11/1/1996	0.43	5.31	0.29	-	(0.13)	-	0.43	0.71	6.28
12/1/1996	1.22	2.36	(0.46)	-	(0.12)	-	1.22	0.75	3.80
1/1/1997	0.04	3.11	0.66	-	(0.11)	-	0.04	0.71	3.27
2/1/1997	2.83	(0.04)	(1.19)	-	(0.11)	-	2.83	1.65	2.68
3/1/1997	1.65	2.20	(0.85)	-	(0.09)	-	1.65	0.83	3.51
1997	6.18	12.95	(1.56)	-	(0.57)	-	6.18	4.65	19.55
10/1/1997	4.06	52.17	1.63	-	(0.71)	-	4.06	5.67	55.15
11/1/1997	0.75	4.37	(0.04)	-	(0.09)	-	0.75	0.71	6.32
12/1/1997	0.83	2.60	(0.03)	-	(0.09)	-	0.83	0.79	3.63
1/1/1998	2.68	-	(1.02)	-	(0.09)	-	2.68	1.69	3.14
2/1/1998	0.39	2.68	0.53	-	(0.09)	-	0.39	0.91	2.47
3/1/1998	6.38	(3.82)	(4.16)	-	(0.08)	-	6.38	2.24	2.90
1998	11.02	5.83	(4.71)	-	(0.44)	-	11.02	6.34	18.46

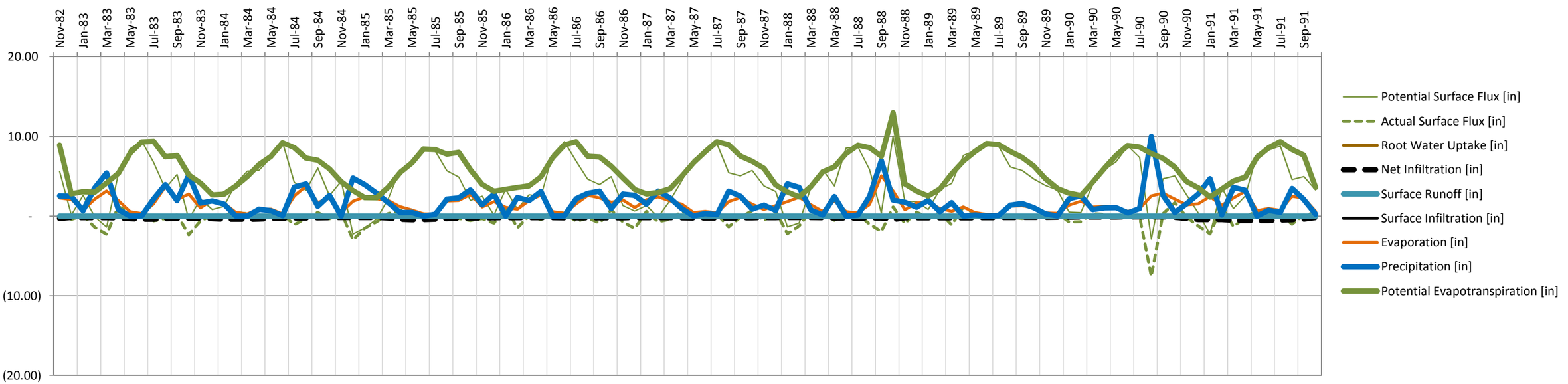
Table III-A.4 BC 8 Winter Storm Period Water Balance

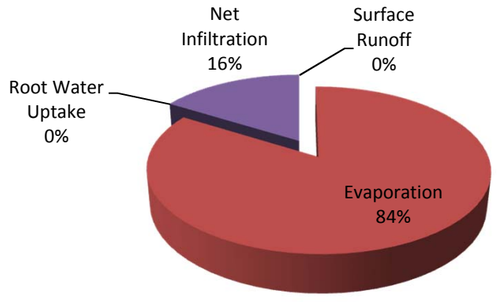
Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
10/1/1998	9.53	43.39	1.21	-	(1.01)	-	9.53	10.75	51.41
11/1/1998	-	5.59	0.30	-	(0.20)	-	-	0.28	6.53
12/1/1998	1.06	2.68	(0.66)	-	(0.19)	-	1.06	0.39	3.98
1/1/1999	0.75	2.52	0.55	-	(0.18)	-	0.75	1.30	3.32
2/1/1999	0.04	3.50	0.25	-	(0.17)	-	0.04	0.31	3.55
3/1/1999	0.20	4.25	0.14	-	(0.15)	-	0.20	0.31	3.65
1999	2.05	18.54	0.58	-	(0.87)	-	2.05	2.60	21.04
10/1/1999	12.95	40.00	(1.69)	-	(0.83)	-	12.95	11.30	52.51
11/1/1999	-	5.63	0.39	-	(0.10)	-	-	0.39	6.39
12/1/1999	-	4.13	0.23	-	(0.10)	-	-	0.24	4.53
1/1/2000	0.04	3.31	0.14	-	(0.11)	-	0.04	0.20	3.66
2/1/2000	0.31	3.58	0.13	-	(0.11)	-	0.31	0.39	3.42
3/1/2000	0.67	3.46	(0.06)	-	(0.10)	-	0.67	0.63	4.03
2000	1.02	20.12	0.83	-	(0.51)	-	1.02	1.85	22.03
9/30/2000	4.45	51.65	0.04	-	(0.66)	-	4.45	4.49	55.12
11/1/2000	5.31	(0.43)	(3.66)	-	(0.09)	-	5.31	1.65	6.32
12/1/2000	2.13	1.14	0.19	-	(0.08)	-	2.13	2.32	2.99
1/1/2001	0.08	3.35	0.62	-	(0.09)	-	0.08	0.71	3.73
2/1/2001	3.39	(0.55)	(1.63)	-	(0.09)	-	3.39	1.77	3.07
3/1/2001	1.73	1.69	0.31	-	(0.09)	-	1.73	2.05	2.85
2001	12.64	5.20	(4.18)	-	(0.44)	-	12.64	8.50	18.95
9/30/2001	10.83	42.72	(0.19)	-	(1.08)	-	10.83	10.63	52.47
11/1/2001	0.39	4.88	0.26	-	(0.18)	-	0.39	0.63	5.95
12/1/2001	0.28	3.54	0.19	-	(0.17)	-	0.28	0.47	4.62
1/1/2002	1.85	0.98	(0.48)	-	(0.18)	-	1.85	1.38	2.85
2/1/2002	0.24	3.07	0.21	-	(0.17)	-	0.24	0.43	3.16
3/1/2002	-	4.33	0.31	-	(0.15)	-	-	0.31	3.41
2002	2.76	16.81	0.49	-	(0.84)	-	2.76	3.23	19.99
9/30/2002	2.72	53.19	0.39	-	(0.87)	-	2.72	3.11	55.27
11/1/2002	0.12	5.31	0.17	-	(0.10)	-	0.12	0.24	6.46
12/1/2002	0.87	3.03	(0.51)	-	(0.09)	-	0.87	0.35	4.40
1/1/2003	0.98	2.05	0.20	-	(0.09)	-	0.98	1.22	3.40
2/1/2003	0.35	3.54	0.22	-	(0.09)	-	0.35	0.59	3.08
3/1/2003	4.92	(1.57)	(3.65)	-	(0.07)	-	4.92	1.30	3.63
2003	7.24	12.36	(3.56)	-	(0.44)	-	7.24	3.70	20.96
9/30/2003	6.02	50.08	1.87	-	(0.54)	-	6.02	7.87	54.87
11/1/2003	0.08	5.98	0.32	-	(0.09)	-	0.08	0.39	6.50
12/1/2003	0.87	2.52	(0.13)	-	(0.09)	-	0.87	0.75	4.04
1/1/2004	0.98	2.36	(0.09)	-	(0.09)	-	0.98	0.87	3.83
2/1/2004	1.46	1.54	(0.37)	-	(0.09)	-	1.46	1.06	3.15
3/1/2004	0.67	2.83	0.19	-	(0.09)	-	0.67	0.91	3.13
2004	4.06	15.24	(0.08)	-	(0.44)	-	4.06	3.98	20.65
9/30/2004	8.35	49.57	(0.86)	-	(0.55)	-	8.35	7.48	56.56
11/1/2004	1.22	4.33	(0.13)	-	(0.09)	-	1.22	1.06	6.73
12/1/2004	0.63	2.44	0.22	-	(0.07)	-	0.63	0.87	3.63
1/1/2005	2.76	0.47	(1.58)	-	(0.07)	-	2.76	1.18	3.03
2/1/2005	4.21	(1.46)	(2.07)	-	(0.07)	-	4.21	2.17	2.76
3/1/2005	7.28	(4.49)	(4.86)	-	(0.07)	-	7.28	2.48	2.77
2005	16.10	1.30	(8.43)	-	(0.38)	-	16.10	7.76	18.92
9/30/2005	8.07	47.17	1.91	-	(2.91)	-	8.07	9.96	53.56
11/1/2005	0.39	5.28	0.25	-	(0.32)	-	0.39	0.67	6.70
12/1/2005	-	4.02	0.27	-	(0.27)	-	-	0.28	4.40
1/1/2006	-	3.31	0.20	-	(0.26)	-	-	0.20	3.50
2/1/2006	-	4.17	0.17	-	(0.24)	-	-	0.20	3.79
3/1/2006	0.12	4.25	0.12	-	(0.20)	-	0.12	0.24	4.22
2006	0.51	21.02	1.02	-	(1.29)	-	0.51	1.57	22.62
9/30/2006	11.73	41.89	(1.79)	-	(1.16)	-	11.73	9.92	52.48

Annual Water Balance - 56-Year Simulated Period (Results on October 1)



Monthly Water Balance - 9 Wet Years (1983 - 1991)





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CLIENT: Resolution Copper Mining

Klohn Crippen Berger

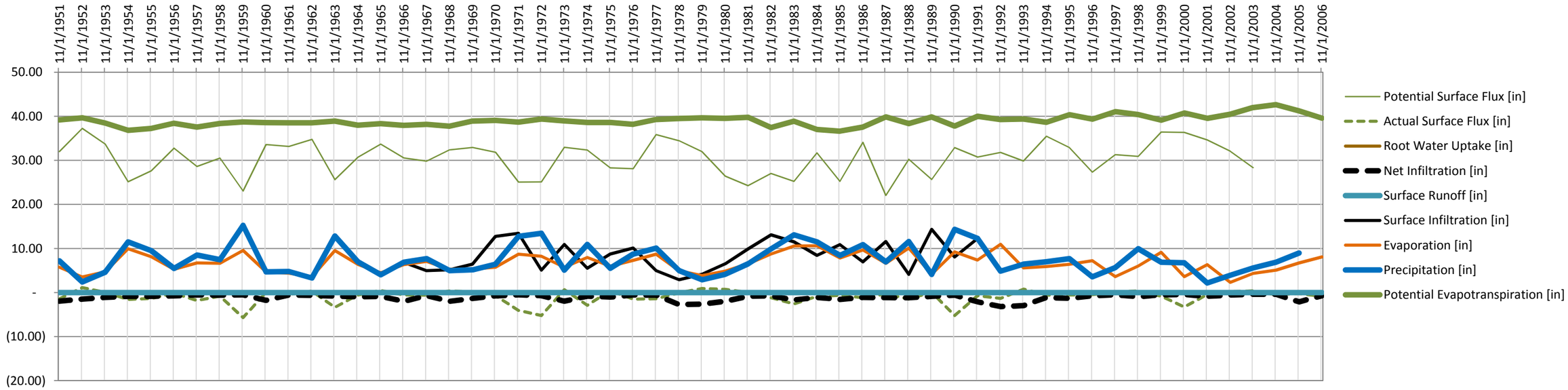
PROJECT: RESOLUTION PROJECT
NEAR WEST TAILINGS STORAGE FACILITY CLOSURE COVER STUDY - CLOSURE COVER PREDICTIONS

TITLE: BC8 - 9.8ft Beach
Water Balance Results

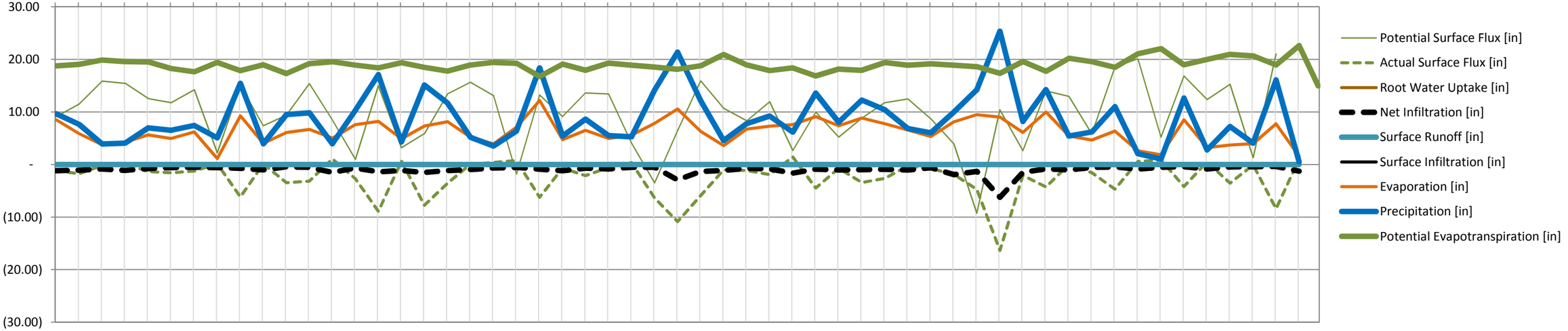
PROJECT No. M09441A16

FIG. No. III-A.1

Monsoon Season Water Balance - 56-Year Simulated Period (July-November)



Winter Storm Season Water Balance - 56-Year Simulated Period (November-March)



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CLIENT

Resolution Copper Mining

Klohn Crippen Berger

PROJECT

RESOLUTION PROJECT
NEAR WEST TAILINGS STORAGE FACILITY CLOSURE
COVER STUDY - CLOSURE COVER PREDICTIONS

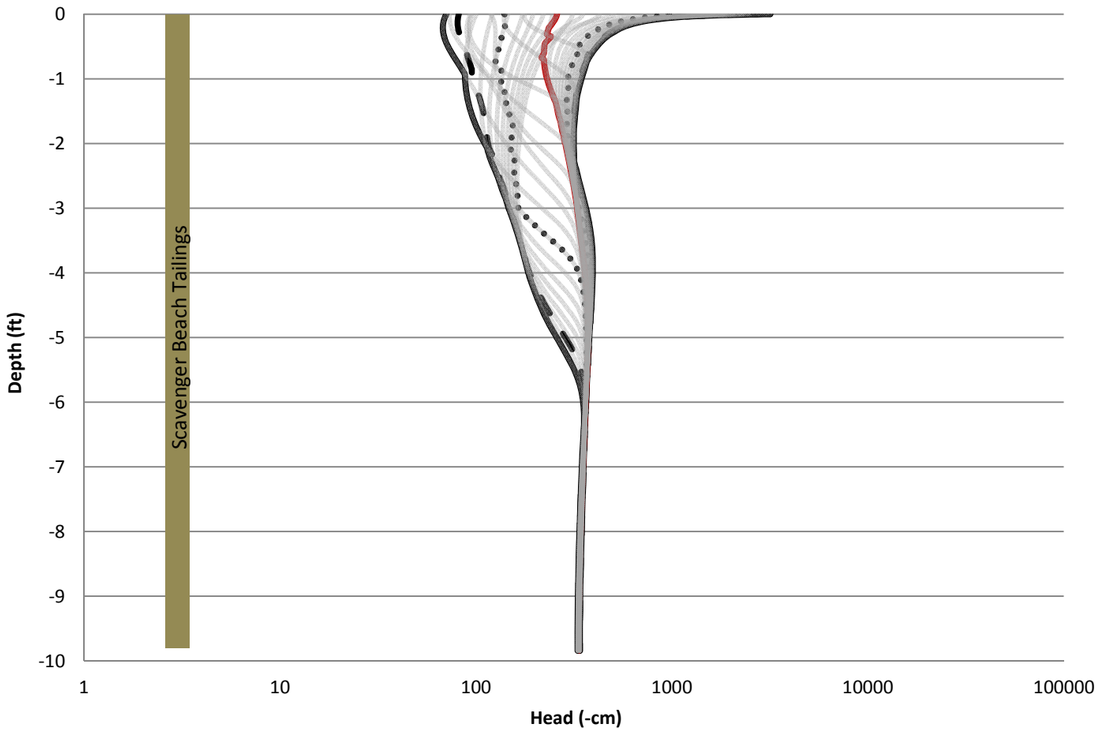
TITLE

BC8 - 9.8ft Beach
Water Balance Results

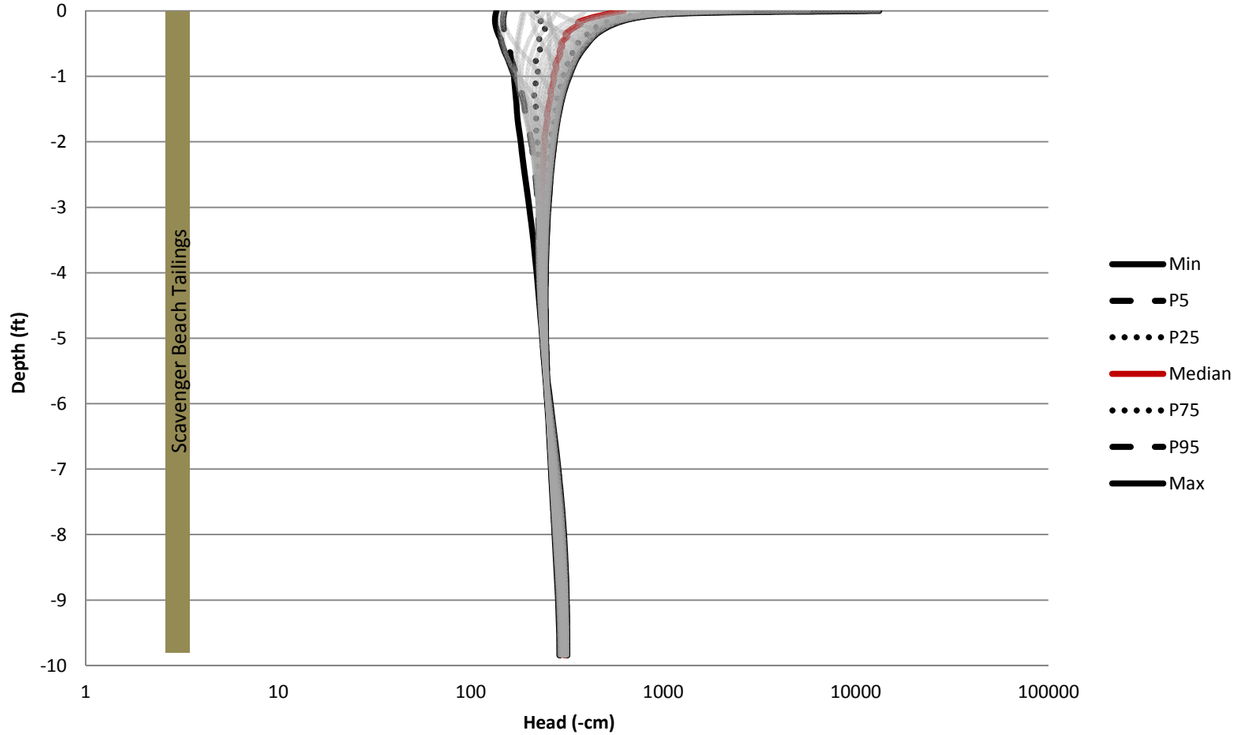
PROJECT No. M09441A16

FIG. No. III-A.2

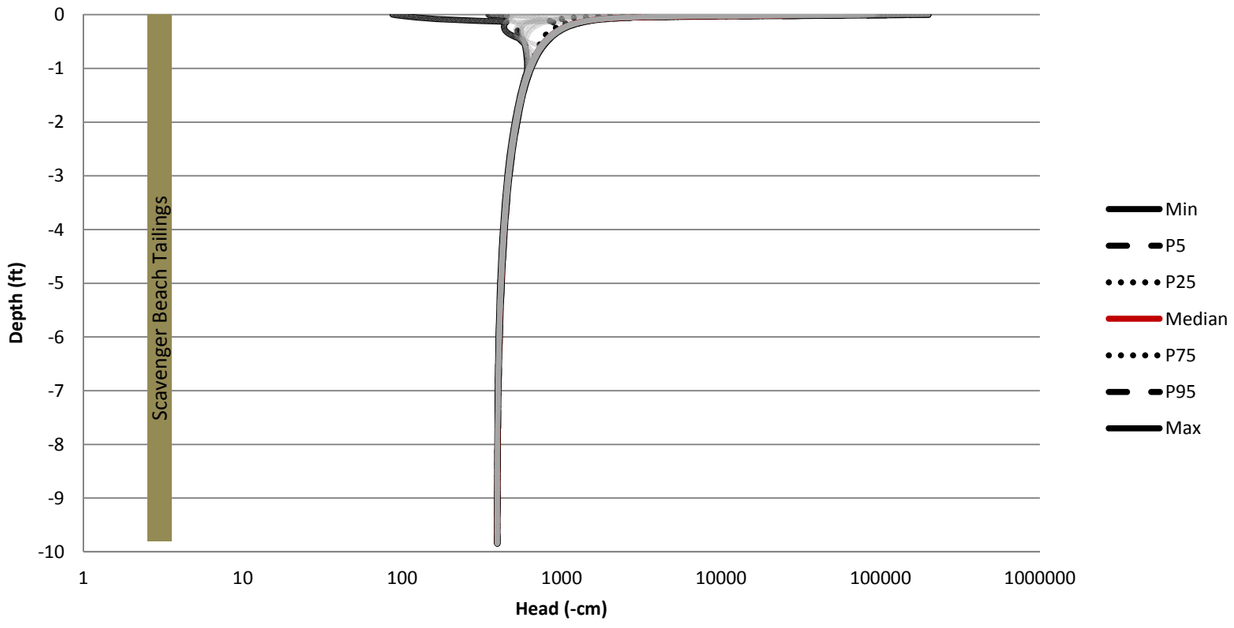
February Average Year (1980) - Daily Suction Head



February Wet Year (1992) - Daily Suction Head



February Dry Year (2000) - Daily Suction Head



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CLIENT

Resolution Copper Mining

Klohn Crippen Berger

PROJECT

RESOLUTION PROJECT
NEAR WEST TAILINGS STORAGE FACILITY CLOSURE COVER STUDY - CLOSURE COVER PREDICTIONS

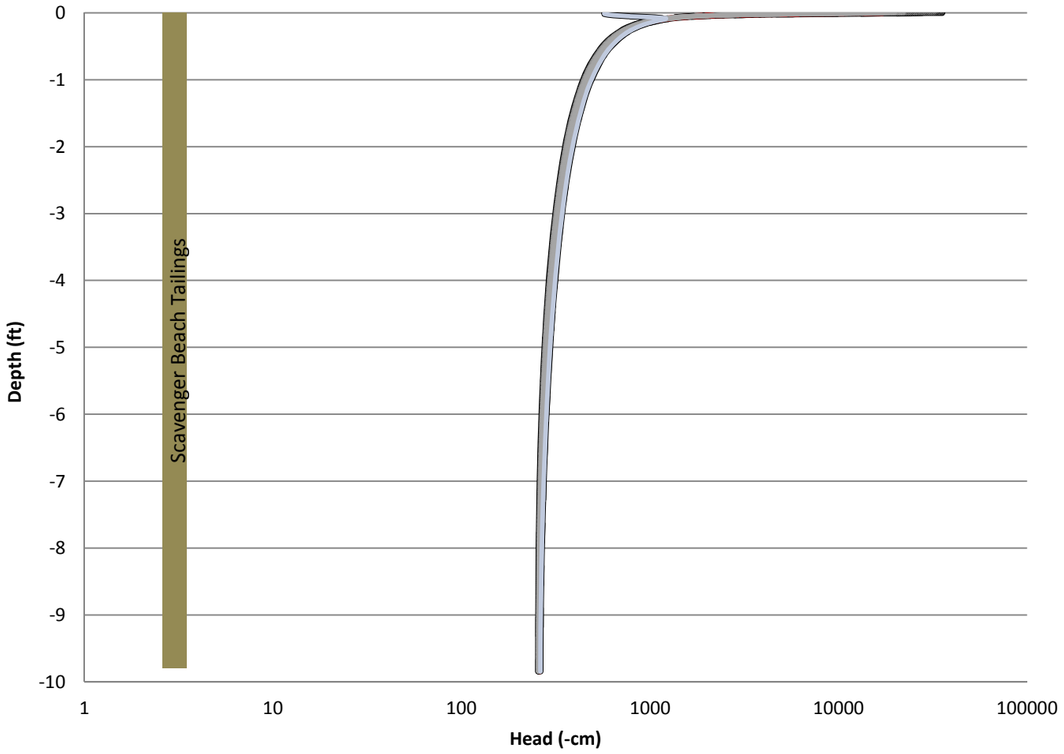
TITLE

BC8 - 9.8ft Beach
Suction Profiles - Winter (February)

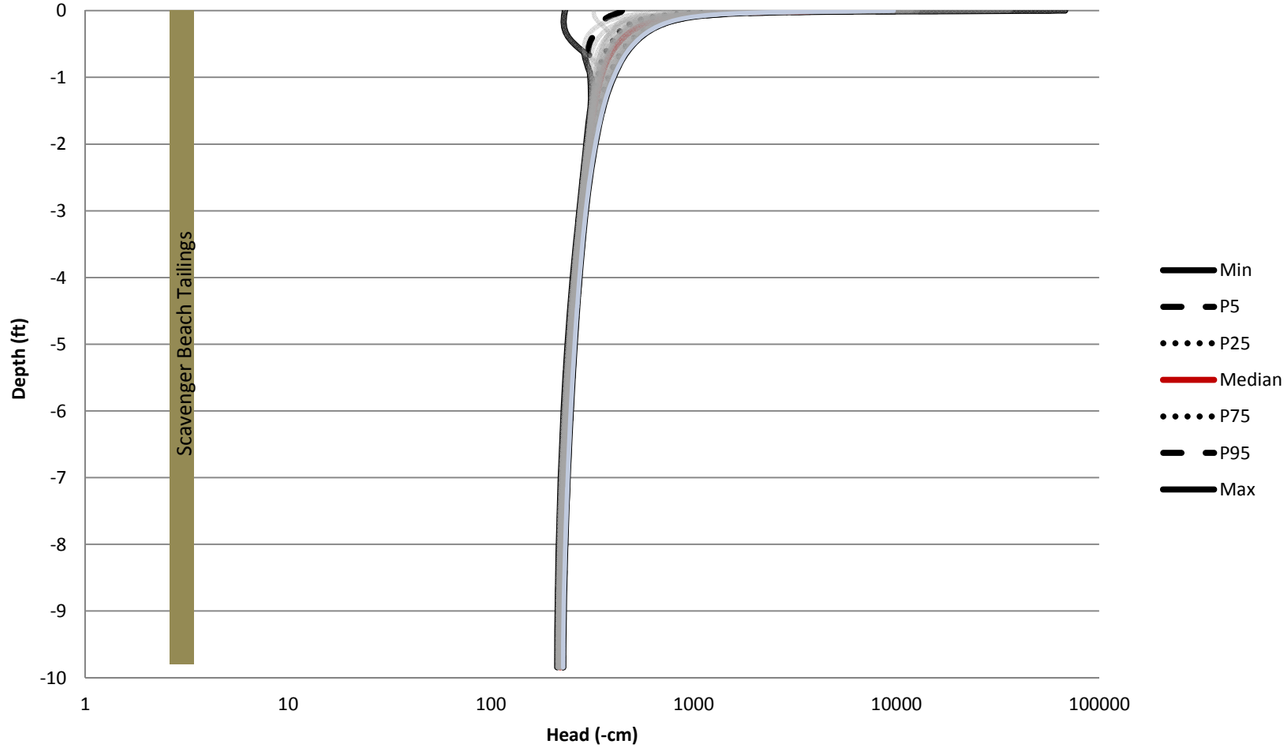
PROJECT No. M09441A16

FIG. No. III-A-3

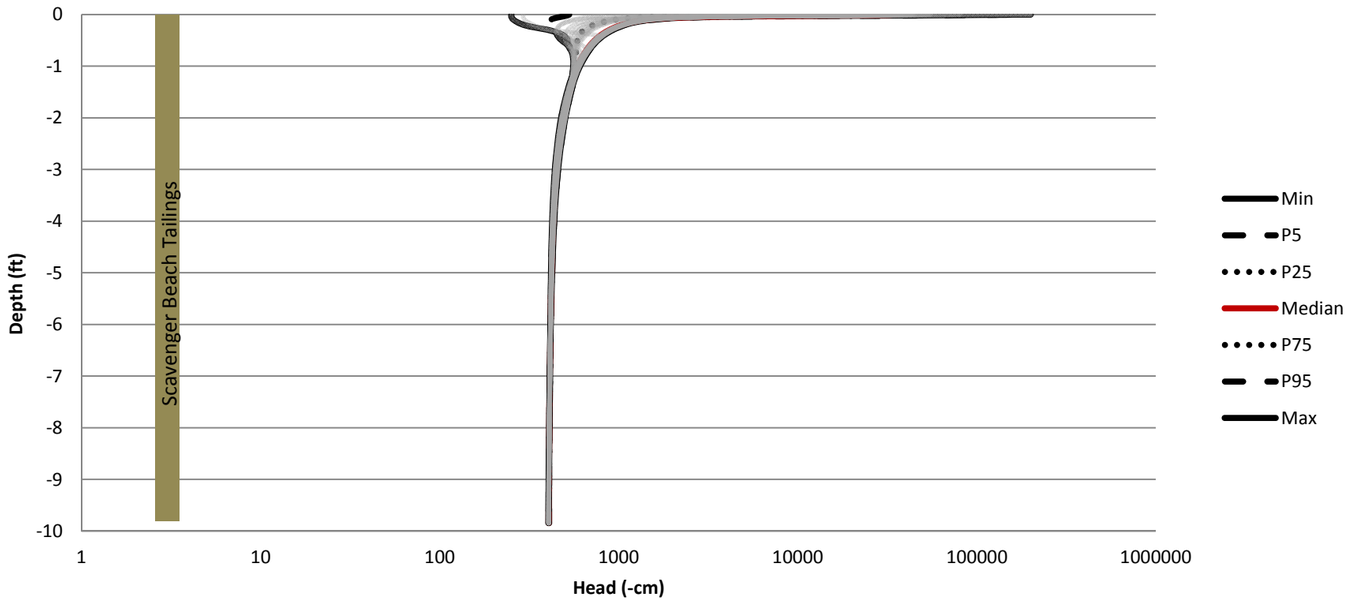
June Average Year (1980) - Daily Suction Head



June Wet Year (1992) - Daily Suction Head



June Dry Year (2000) - Daily Suction Head



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CLIENT: Resolution Copper Mining

Klohn Crippen Berger

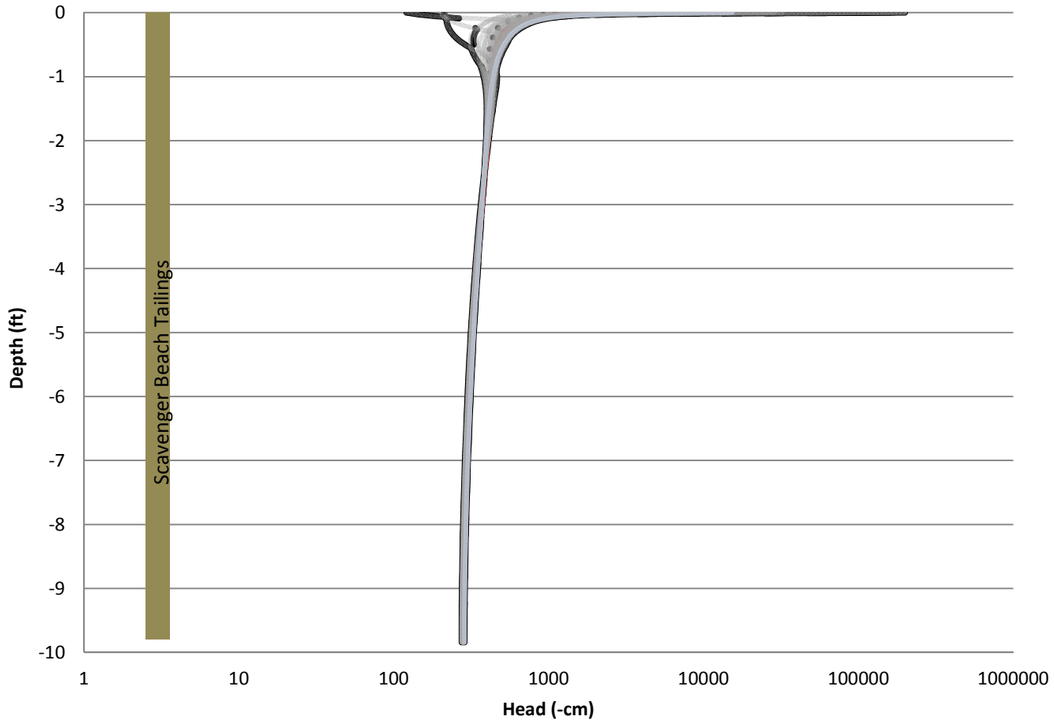
PROJECT: RESOLUTION PROJECT
NEAR WEST TAILINGS STORAGE FACILITY CLOSURE COVER STUDY - CLOSURE COVER PREDICTIONS

TITLE: BC8 - 9.8ft Beach
Suction Profiles - Dry Season (June)

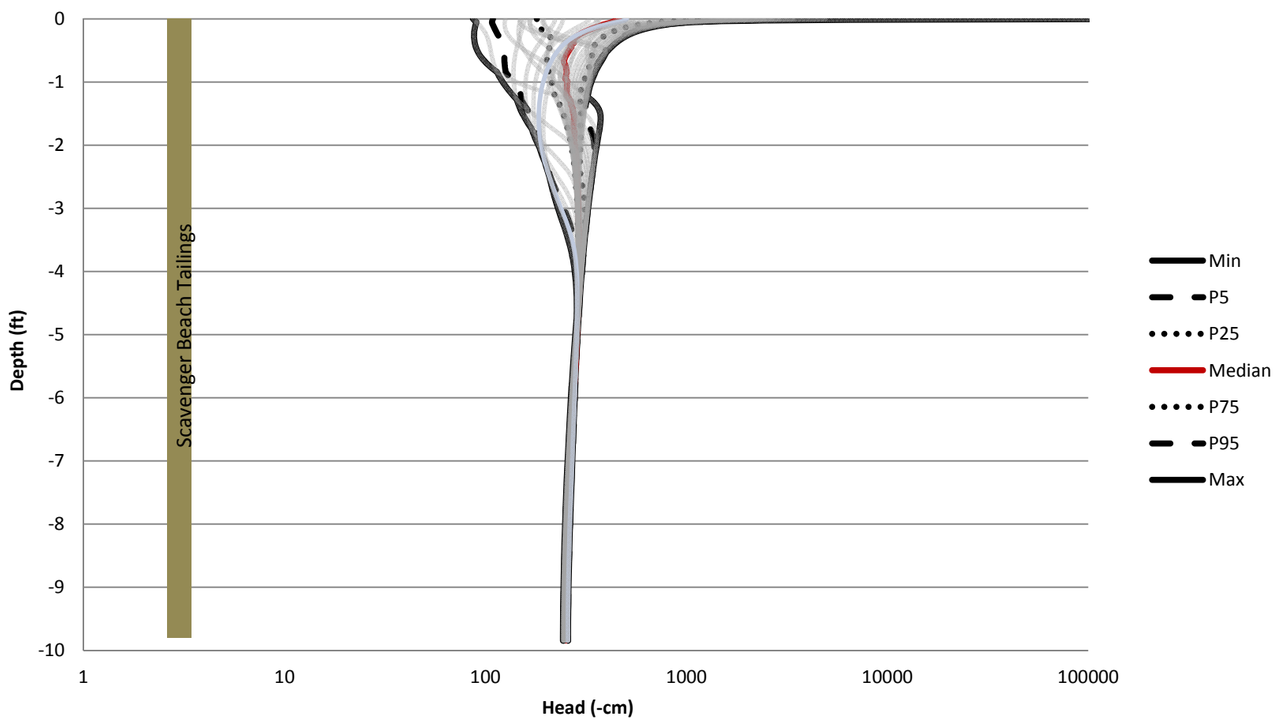
PROJECT No. M09441A16

FIG. No. III-A.4

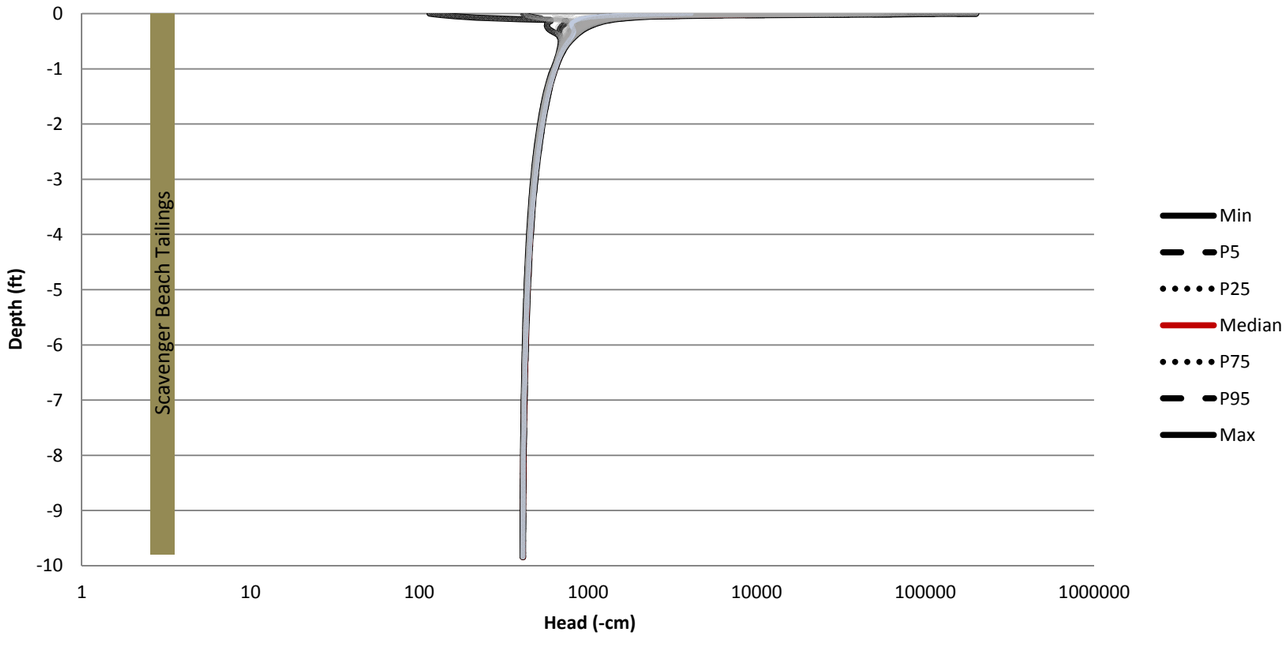
August Average Year (1980) - Daily Suction Head



August Wet Year (1992) - Daily Suction Head



August Dry Year (2000) - Daily Suction Head



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CLIENT

Resolution Copper Mining

Klohn Crippen Berger

PROJECT

RESOLUTION PROJECT

NEAR WEST TAILINGS STORAGE FACILITY CLOSURE COVER STUDY - CLOSURE COVER PREDICTIONS

TITLE

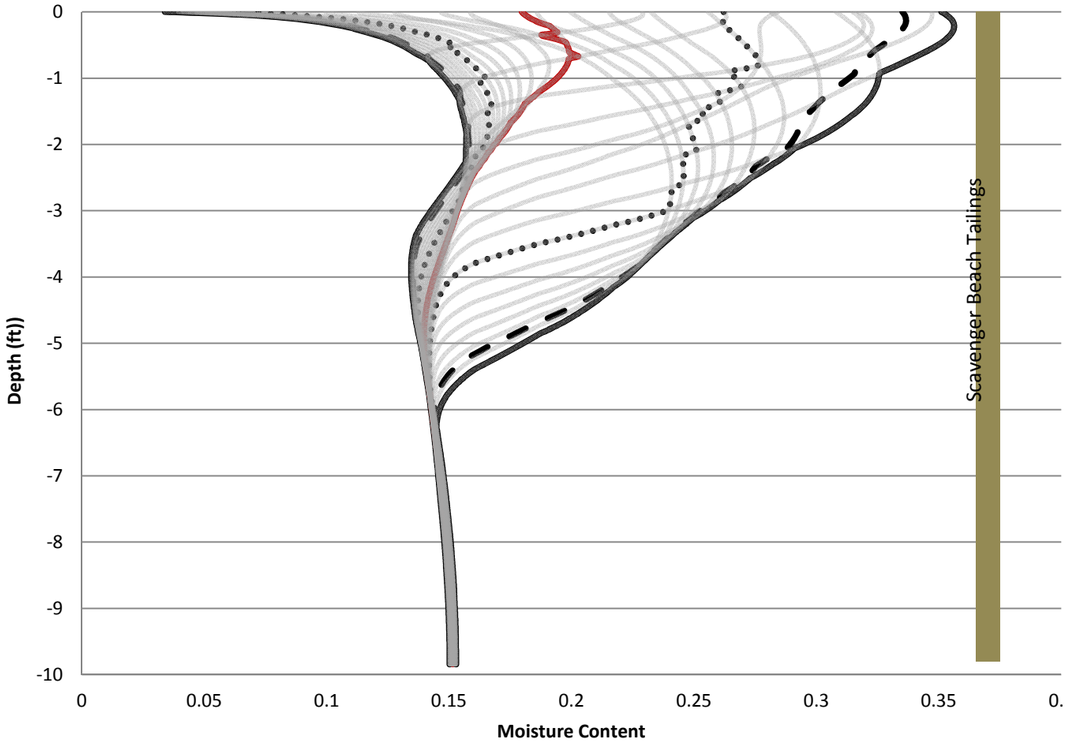
BC8 - 9.8ft Beach

Suction Profiles - Summer Monsoon (August)

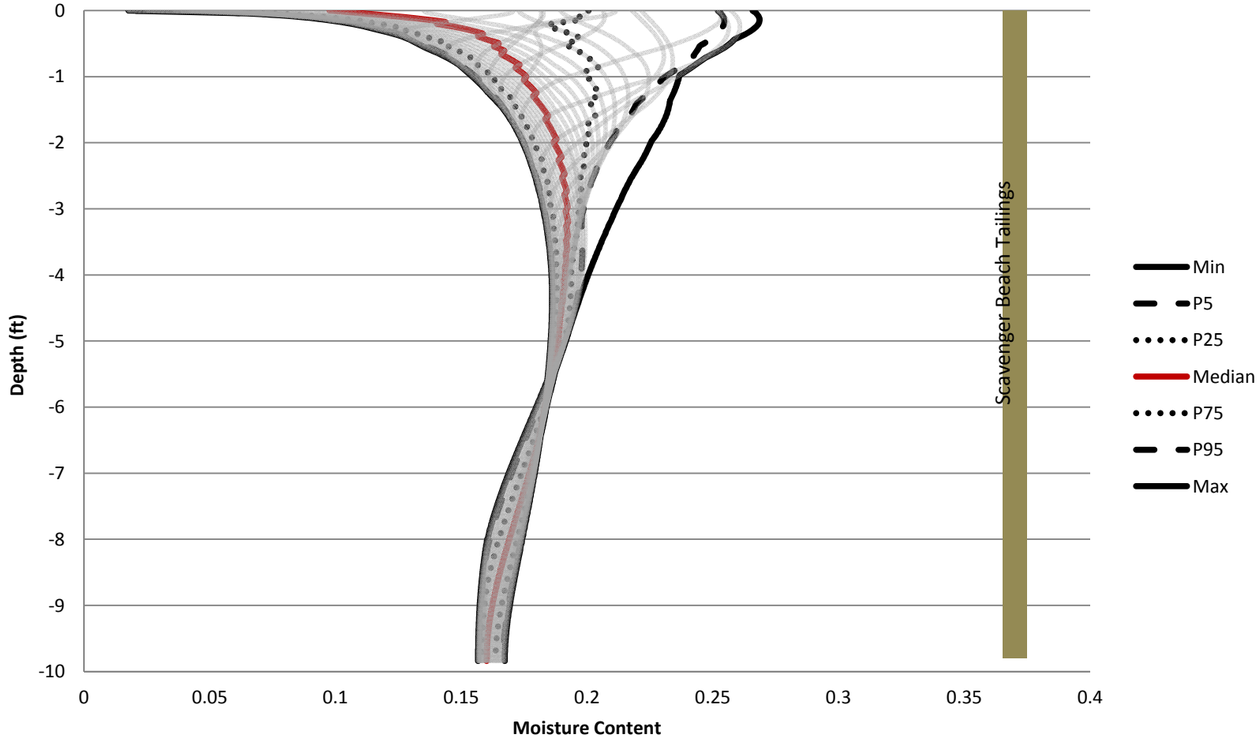
PROJECT No. M09441A16

FIG. No. III-A.5

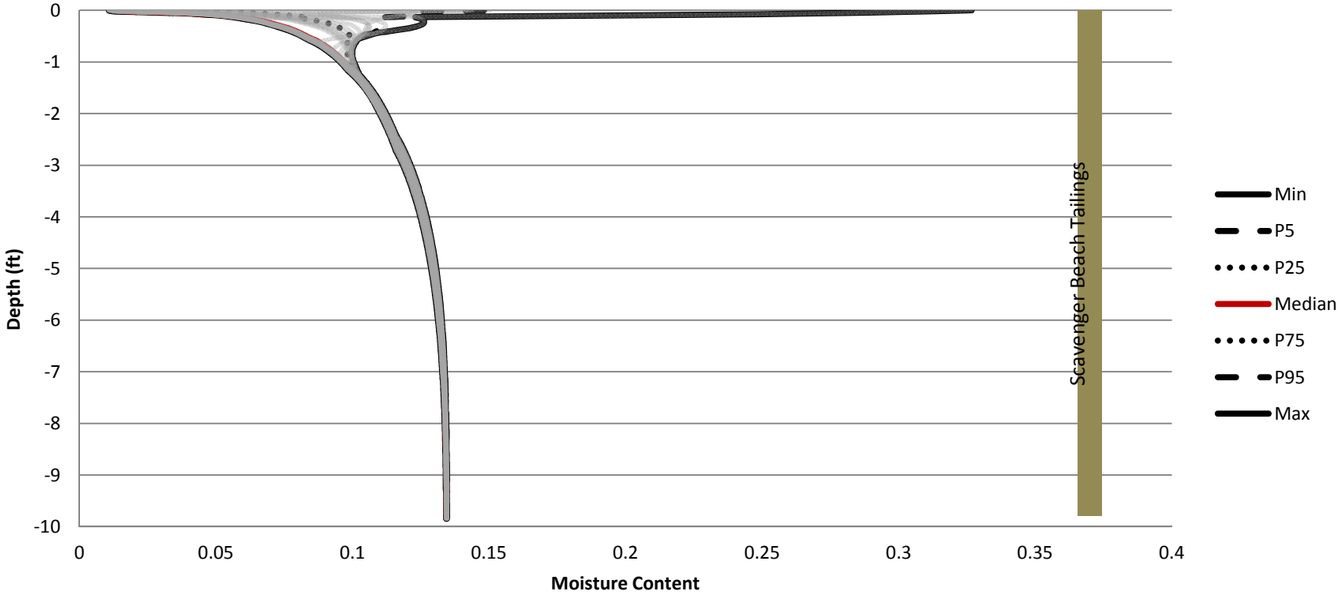
February Average Year (1980) - Daily Moisture Content



February Wet Year (1992) - Daily Moisture Content



February Dry Year (2000) - Daily Moisture Content



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CLIENT: Resolution Copper Mining

Klohn Crippen Berger

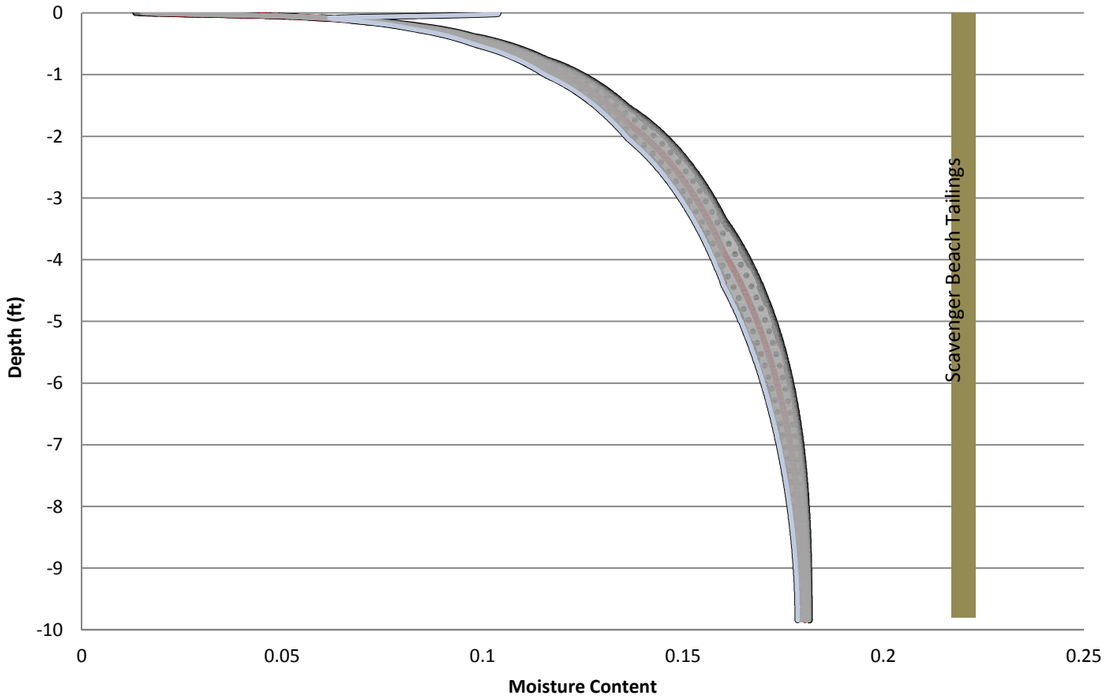
PROJECT: RESOLUTION PROJECT
NEAR WEST TAILINGS STORAGE FACILITY CLOSURE COVER STUDY - CLOSURE COVER PREDICTIONS

TITLE: BC8 - 9.8ft Beach
Moisture Content - Winter (February)

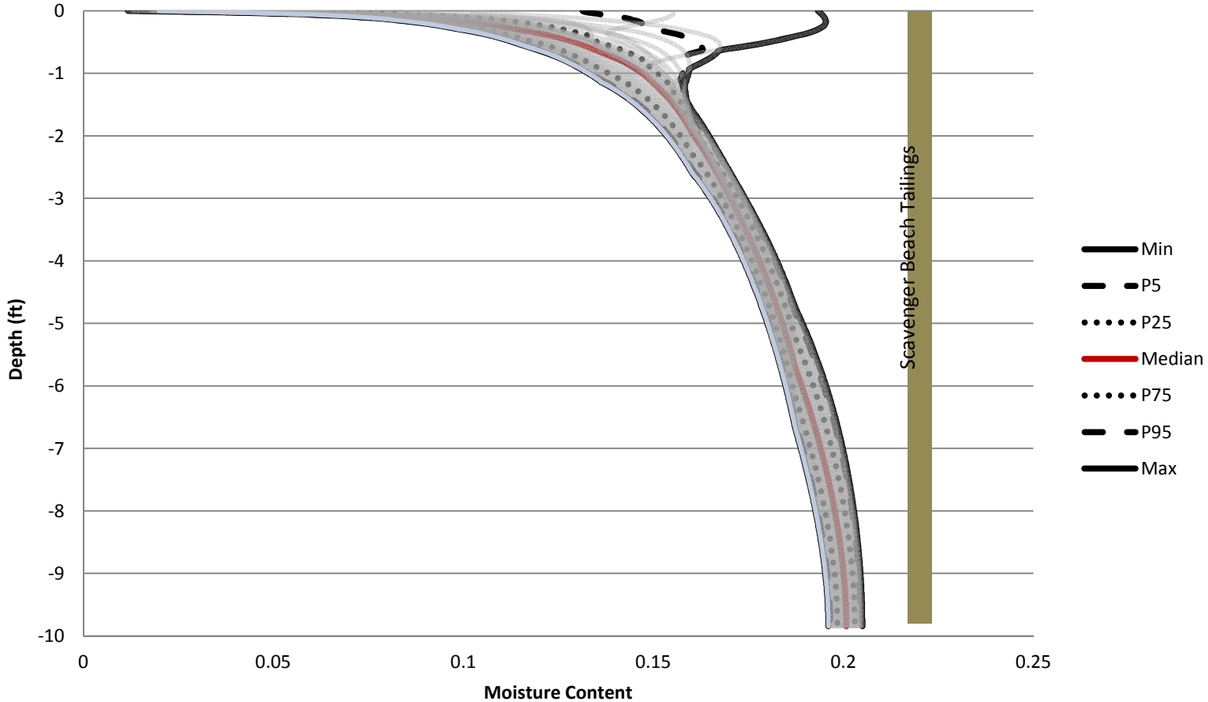
PROJECT No.: M09441A16

FIG. No.: III-A.6

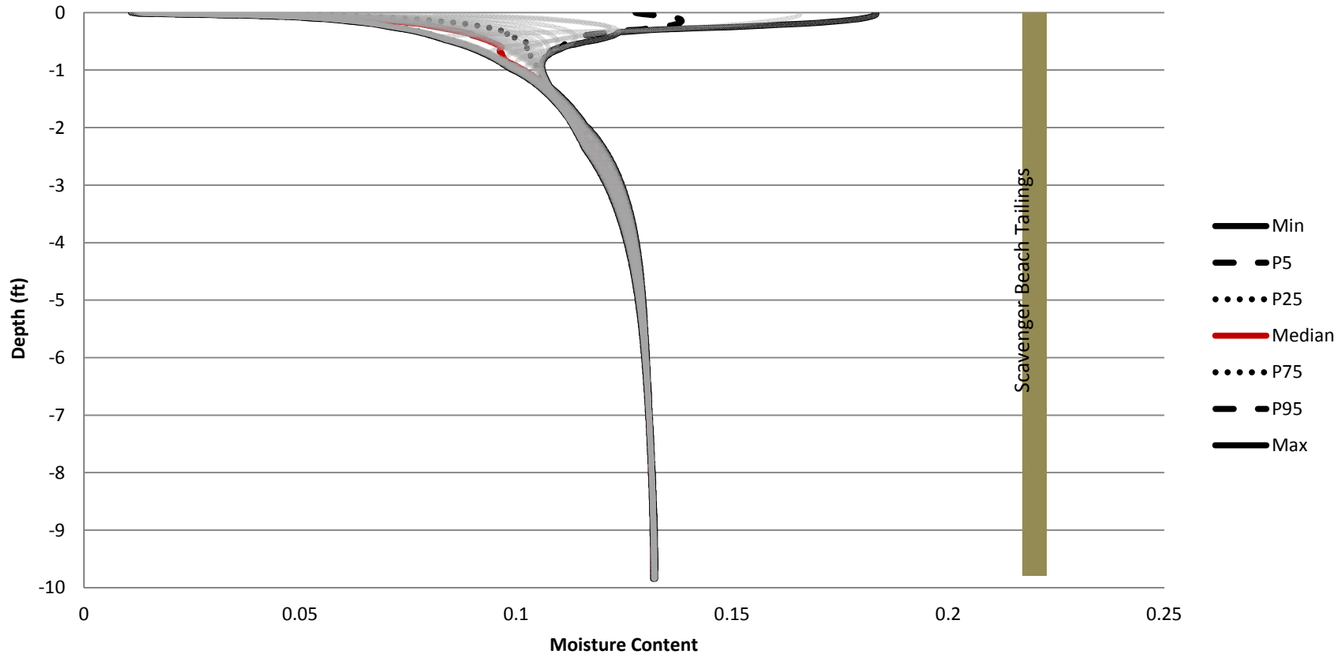
June Average Year (1980) - Daily Moisture Content



June Wet Year (1992) - Daily Moisture Content



June Dry Year (2000) - Daily Moisture Content



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CLIENT

Resolution Copper Mining

Klohn Crippen Berger

PROJECT

RESOLUTION PROJECT
NEAR WEST TAILINGS STORAGE FACILITY CLOSURE
COVER STUDY - CLOSURE COVER PREDICTIONS

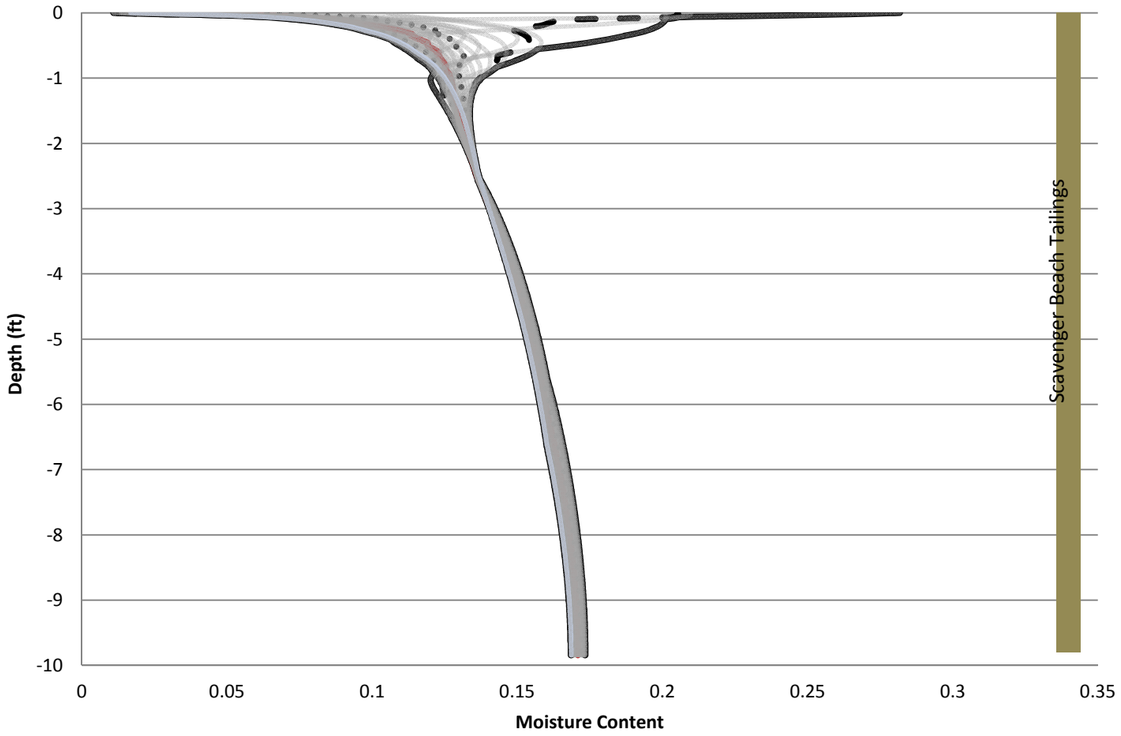
TITLE

BC8 - 9.8ft Beach
Moisture Content - Dry Season(June)

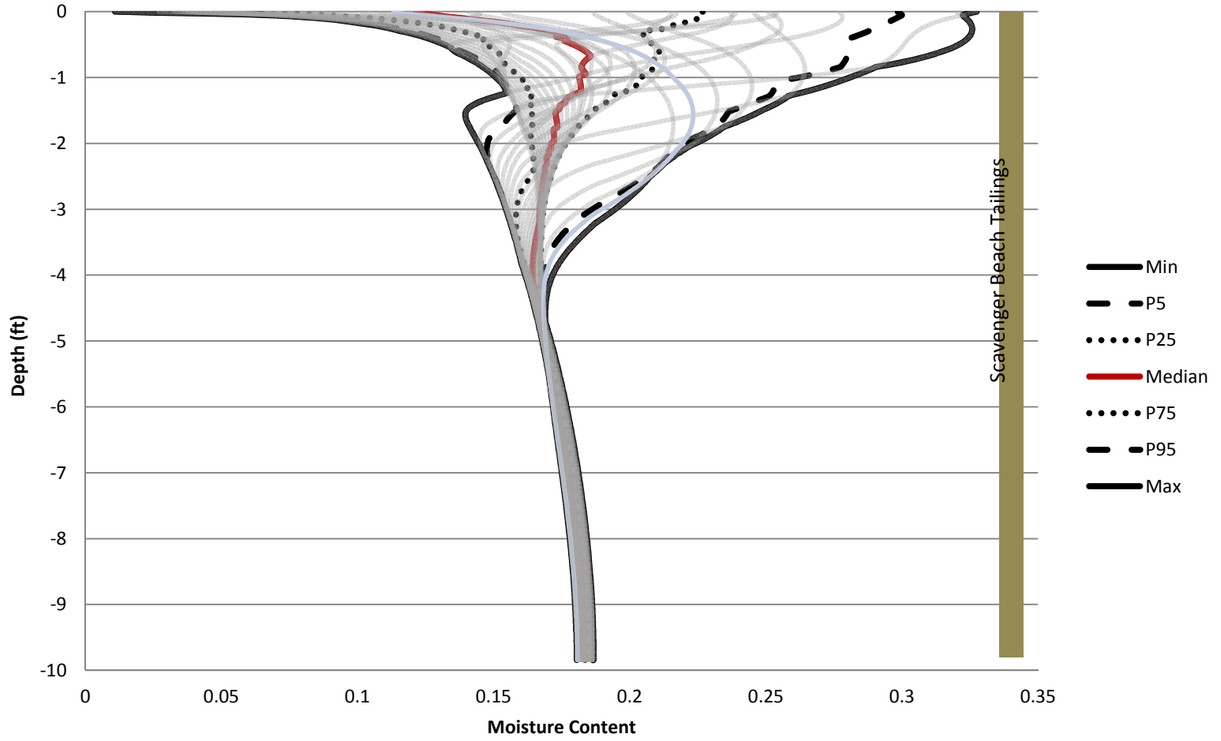
PROJECT No. M09441A16

FIG. No. III-A.7

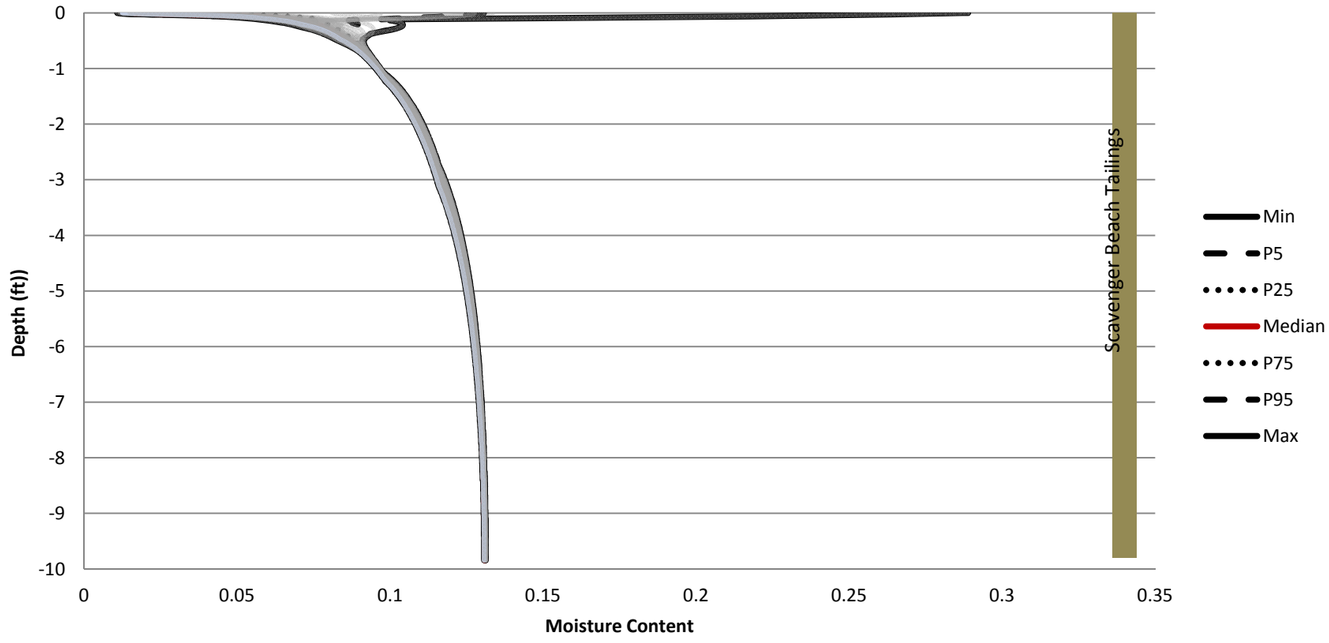
August Average Year (1980) - Daily Moisture Content



August Wet Year (1992) - Daily Moisture Content



August Dry Year (2000) - Daily Moisture Content



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CLIENT

Resolution Copper Mining

Klohn Crippen Berger

PROJECT

RESOLUTION PROJECT
NEAR WEST TAILINGS STORAGE FACILITY CLOSURE COVER STUDY - CLOSURE COVER PREDICTIONS

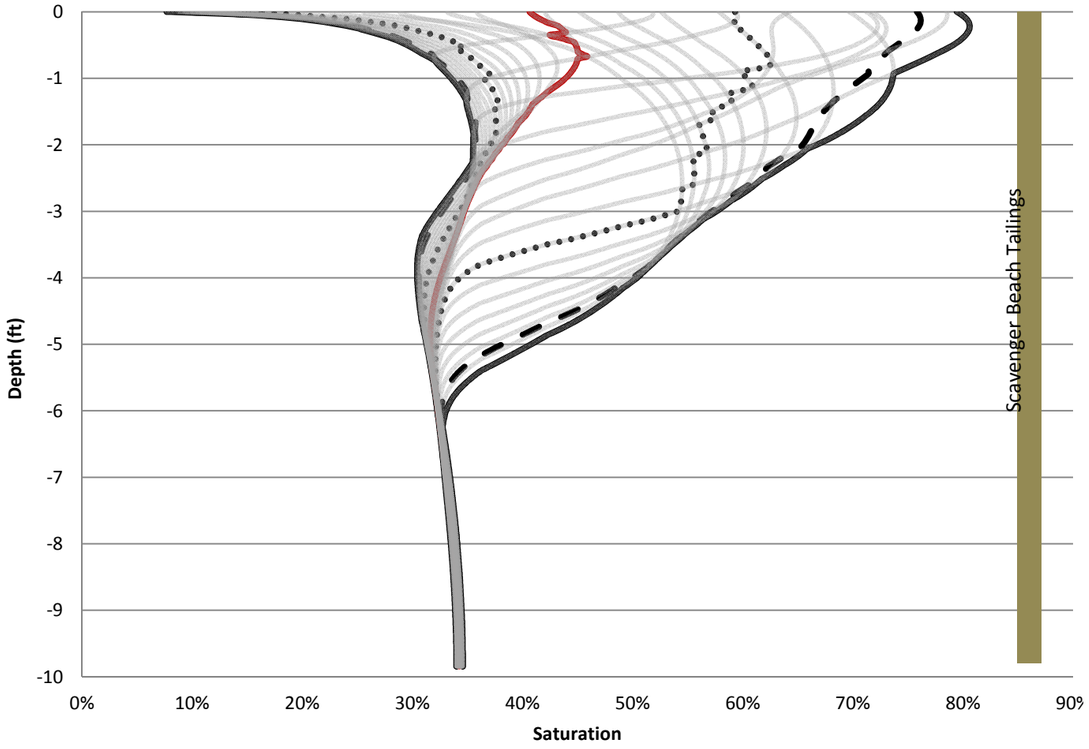
TITLE

BC8 - 9.8ft Beach
Moisture Content - Summer Monsoon (August)

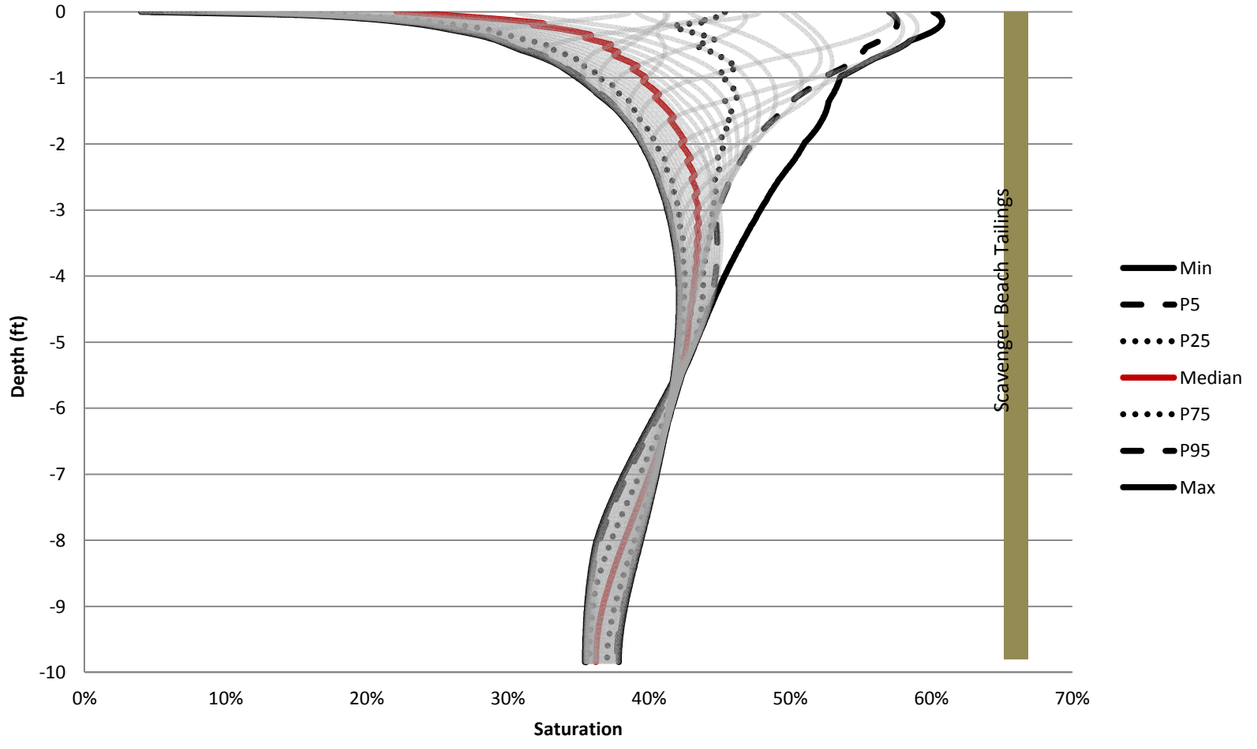
PROJECT No. M09441A16

FIG. No. III-A.8

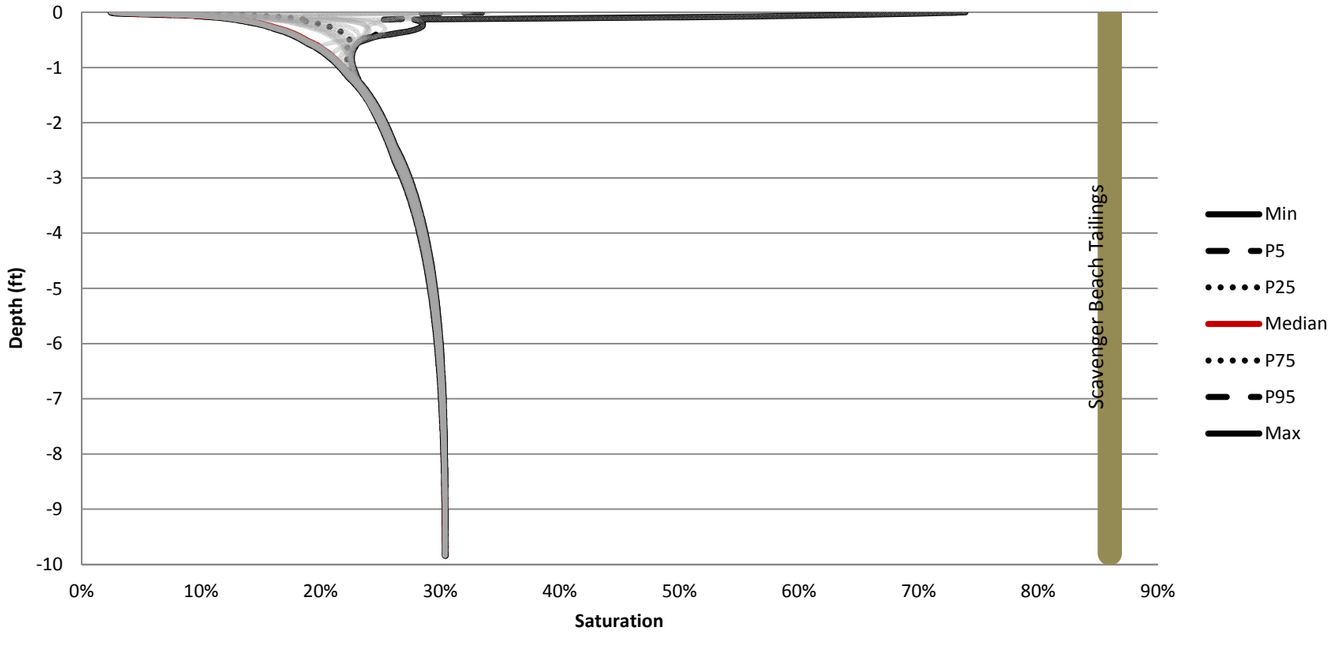
February Average Year (1980) - Daily Saturation



February Wet Year (1992) - Daily Saturation



February Dry Year (2000) - Daily Saturation



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Klohn Crippen Berger

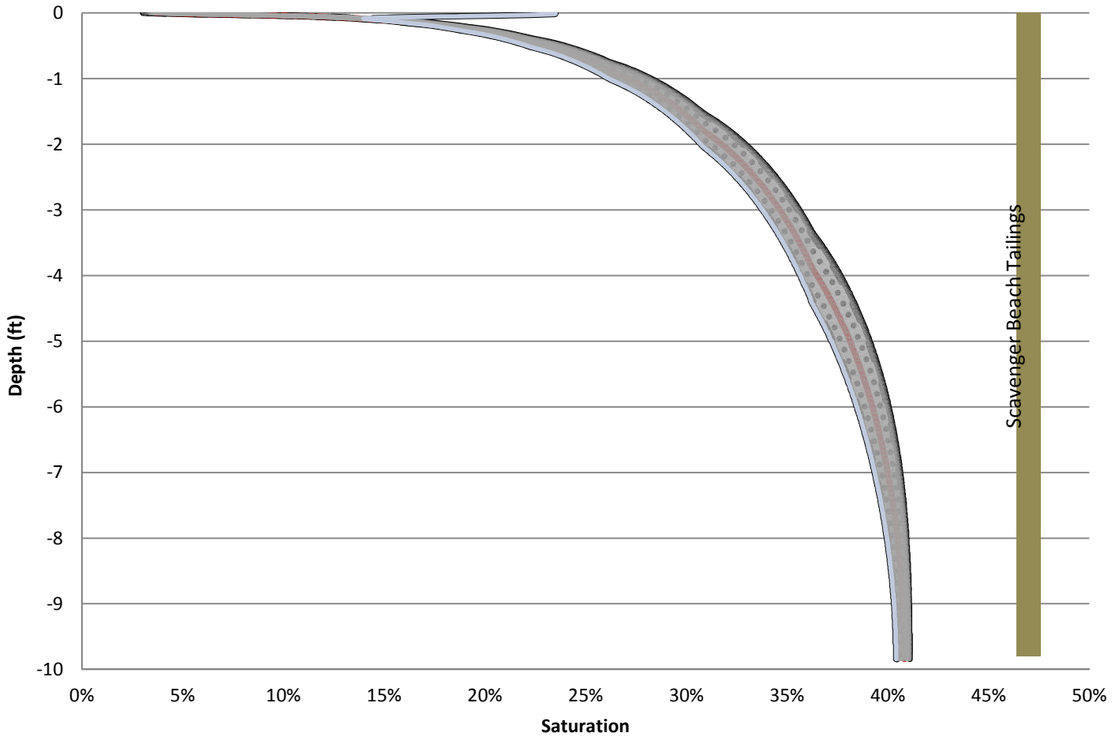
PROJECT: RESOLUTION PROJECT
NEAR WEST TAILINGS STORAGE FACILITY CLOSURE
COVER STUDY - CLOSURE COVER PREDICTIONS

TITLE: BC8 - 9.8ft Beach
Saturation - Winter (February)

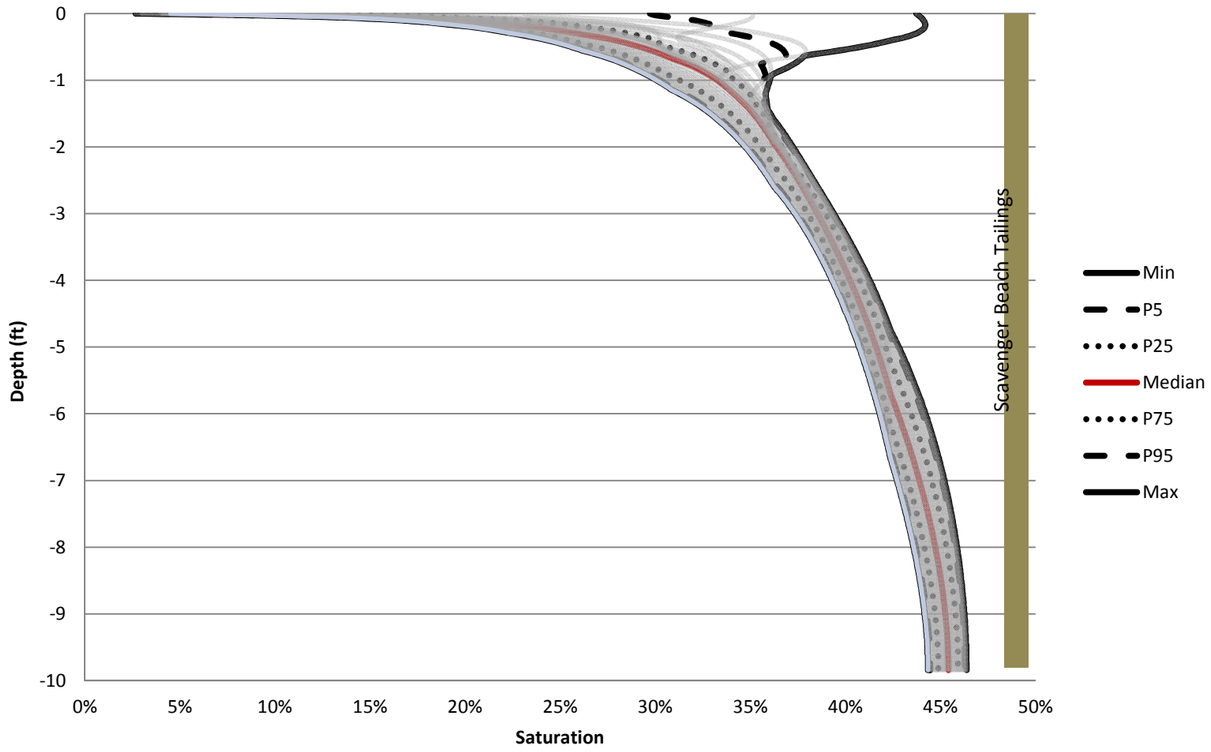
PROJECT No. M09441A16

FIG. No. III-A.9

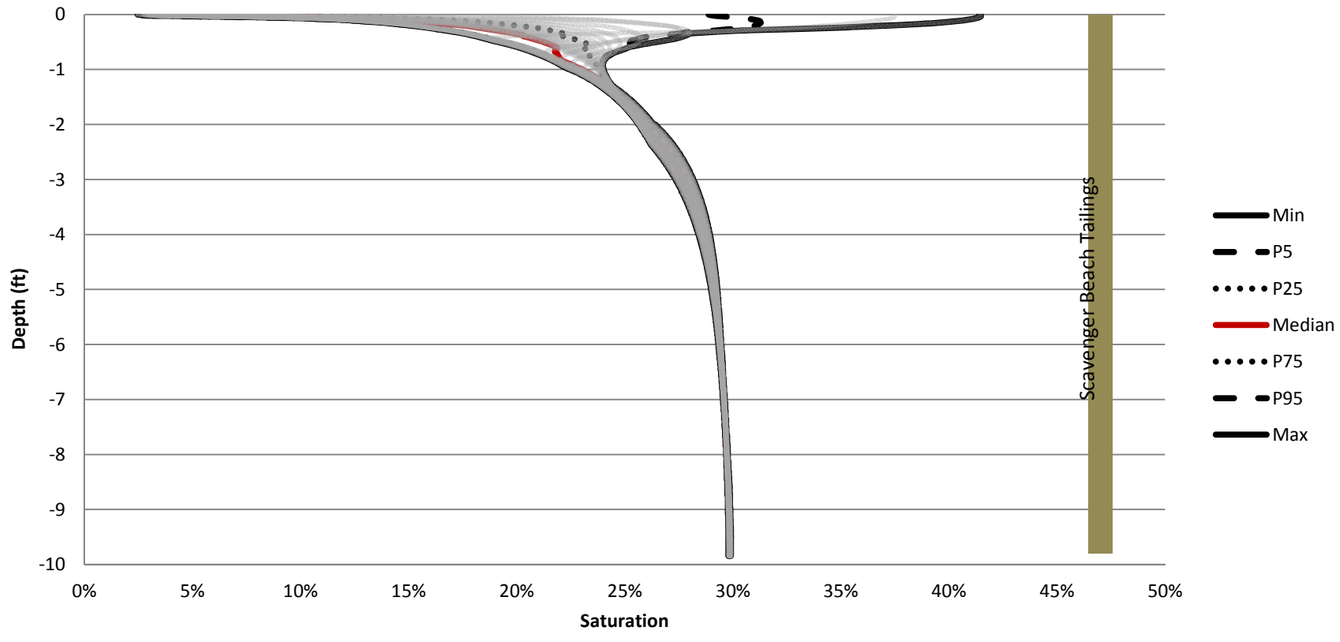
June Average Year (1980) - Daily Saturation



June Wet Year (1992) - Daily Saturation



June Dry Year (2000)- Daily Saturation



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CLIENT: Resolution Copper Mining

Klohn Crippen Berger

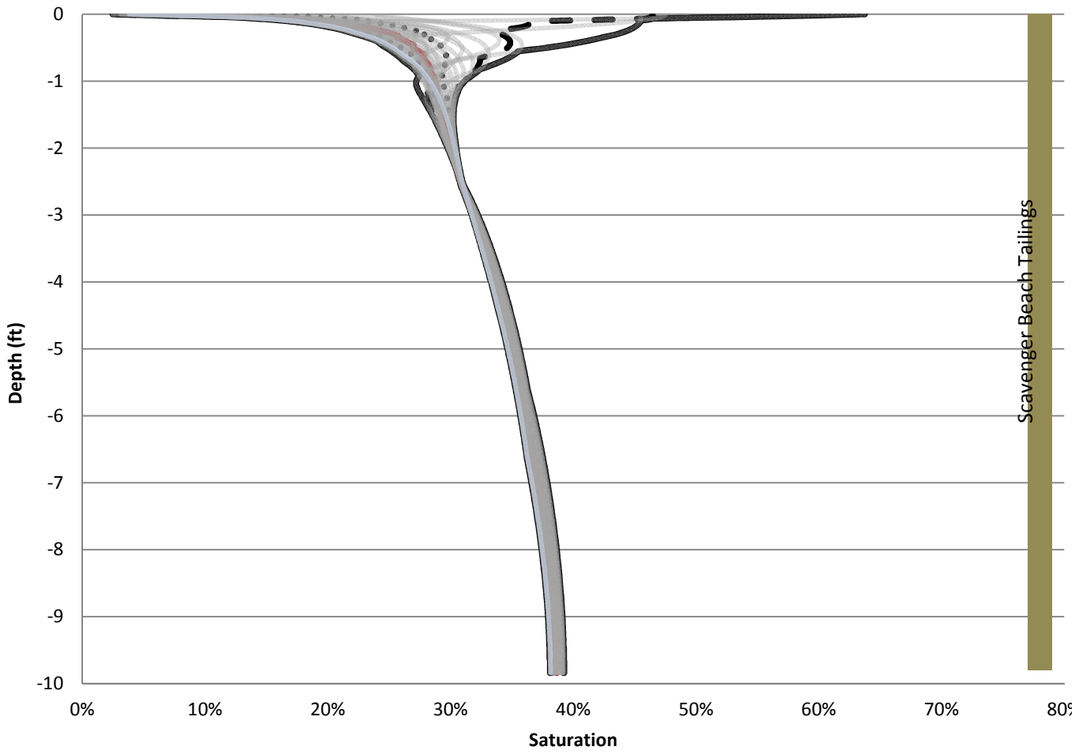
PROJECT: RESOLUTION PROJECT
NEAR WEST TAILINGS STORAGE FACILITY CLOSURE
COVER STUDY - CLOSURE COVER PREDICTIONS

TITLE: BC8 - 9.8ft Beach
Saturation - Dry Season (June)

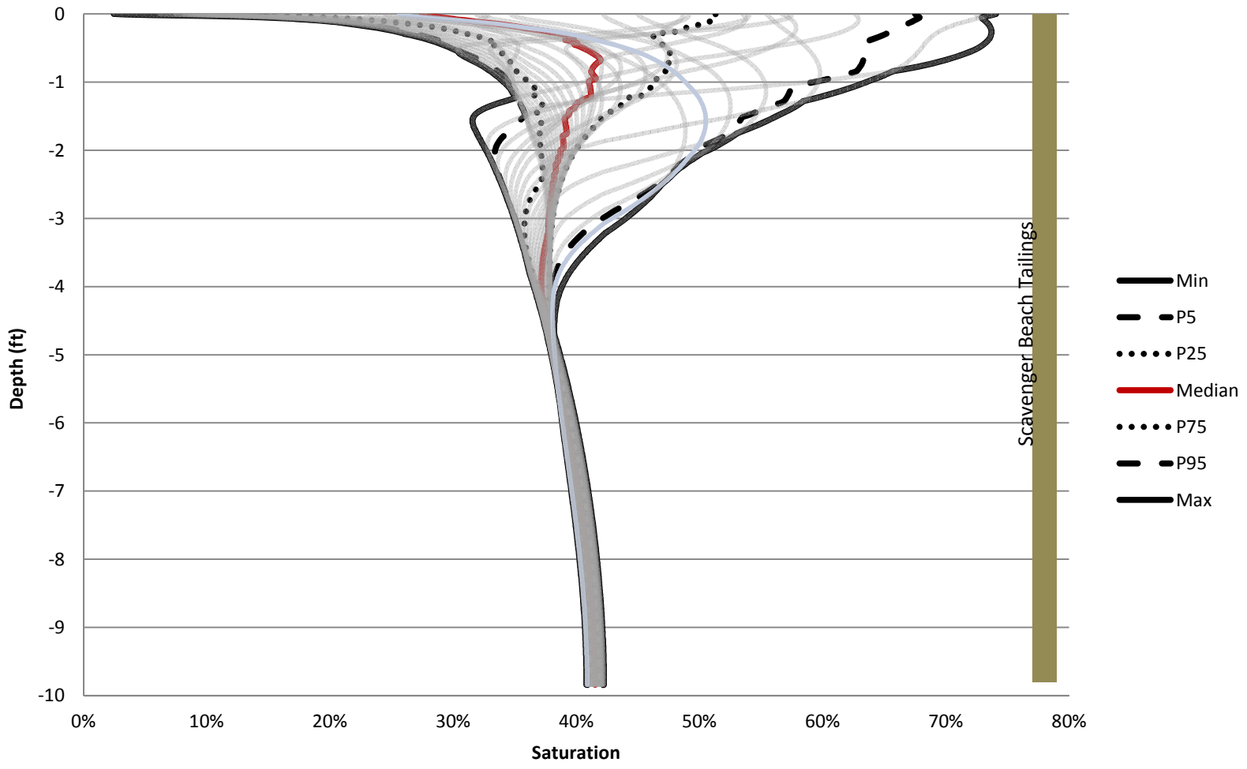
PROJECT No. M09441A16

FIG. No. III-A.10

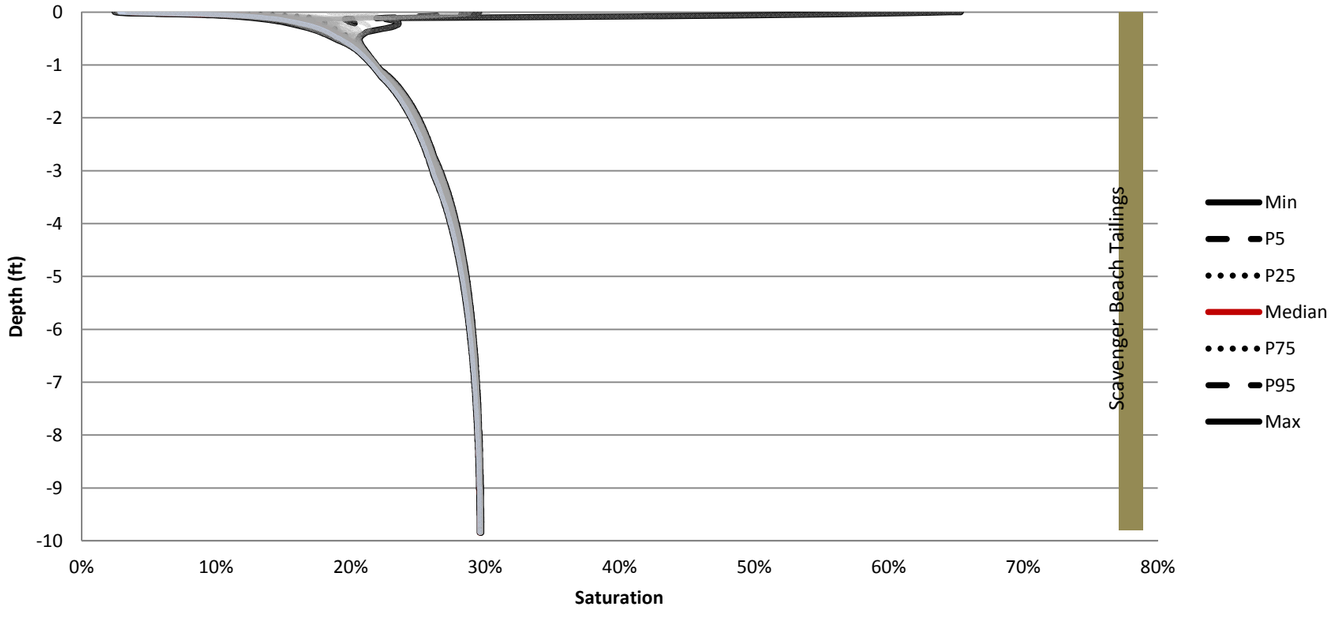
August Average Year (1980) - Daily Saturation



August Wet Year (1992) - Daily Saturation



August Dry Year (2000) - Daily Saturation



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Klohn Crippen Berger

PROJECT: RESOLUTION PROJECT
NEAR WEST TAILINGS STORAGE FACILITY CLOSURE COVER STUDY - CLOSURE COVER PREDICTIONS

TITLE: BC8 - 9.8ft Beach
Saturation - Summer Monsoon (August)

PROJECT No. M09441A16

FIG. No. III-A.11

APPENDIX III-B

ST 6 Results

Table III-B.1 ST 6 - Annual Water Balance

Water Year	Result Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
		[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
1951	10/1/1951	14.21	90.07	(9.63)	14.71	(6.34)	-	14.21	4.59	33.65
1952	10/1/1952	20.54	101.44	(14.33)	14.56	(1.62)	-	20.54	6.21	38.81
1953	10/1/1953	15.47	106.44	(11.63)	12.63	(1.01)	-	15.47	3.84	38.74
1954	10/1/1954	21.57	99.33	(16.46)	15.55	(0.56)	-	21.57	5.11	38.63
1955	10/1/1955	13.57	103.43	(9.94)	13.00	(0.31)	-	13.57	3.66	37.42
1956	10/1/1956	12.67	109.92	(8.84)	9.45	(0.20)	-	12.67	3.86	40.00
1957	10/1/1957	15.21	98.50	(10.17)	10.57	(0.14)	-	15.21	5.05	37.21
1958	10/1/1958	19.46	95.59	(12.93)	11.91	(0.10)	-	19.46	6.55	37.74
1959	10/1/1959	15.85	106.22	(11.60)	12.31	(0.07)	-	15.85	4.28	39.88
1960	10/1/1960	19.18	101.65	(14.85)	11.93	(0.34)	-	19.18	4.41	39.62
1961	10/1/1961	9.95	105.63	(5.55)	6.17	(0.68)	-	9.95	4.48	38.30
1962	10/1/1962	14.25	100.71	(9.87)	9.55	(0.34)	-	14.25	4.43	38.46
1963	10/1/1963	24.20	92.24	(19.17)	13.94	(0.25)	-	24.20	5.08	38.66
1964	10/1/1964	11.60	98.11	(6.45)	10.47	(0.40)	-	11.60	5.20	36.66
1965	10/1/1965	17.60	93.27	(12.48)	12.61	(0.35)	-	17.60	5.17	36.91
1966	10/1/1966	23.01	92.13	(18.62)	11.58	(2.81)	-	23.01	4.44	38.93
1967	10/1/1967	14.53	95.43	(10.32)	13.49	(1.26)	-	14.53	4.28	36.92
1968	10/1/1968	22.33	86.97	(18.02)	13.07	(2.37)	-	22.33	4.47	37.38
1969	10/1/1969	18.78	93.98	(13.89)	12.73	(1.62)	-	18.78	5.05	38.25
1970	10/1/1970	16.07	94.65	(11.10)	11.03	(0.90)	-	16.07	5.12	38.53
1971	10/1/1971	12.48	98.58	(9.04)	8.49	(0.40)	-	12.48	3.61	37.96
1972	10/1/1972	11.29	105.94	(7.68)	10.16	(0.22)	-	11.29	3.76	40.53
1973	10/1/1973	30.94	73.39	(23.46)	16.64	(2.11)	-	30.94	7.59	35.99
1974	10/1/1974	15.91	90.87	(11.21)	11.11	(1.48)	-	15.91	4.73	36.84
1975	10/1/1975	19.09	83.66	(13.04)	14.32	(0.52)	-	19.09	6.15	35.44
1976	10/1/1976	16.46	90.12	(11.78)	9.77	(0.30)	-	16.46	4.81	37.84
1977	10/1/1977	16.42	90.75	(11.65)	12.61	(0.25)	-	16.42	4.86	37.86
1978	10/1/1978	23.98	84.02	(18.50)	14.56	(1.12)	-	23.98	5.60	38.30
1979	10/1/1979	29.61	77.17	(23.23)	13.40	(8.75)	-	29.61	6.50	38.53
1980	10/1/1980	20.31	86.06	(14.82)	12.51	(2.74)	-	20.31	5.61	38.22
1981	10/1/1981	15.24	97.13	(11.25)	12.09	(1.29)	-	15.24	4.10	40.87
1982	10/1/1982	23.58	77.80	(16.77)	14.98	(0.48)	-	23.58	7.02	36.58
1983	10/1/1983	27.44	72.52	(20.94)	16.44	(0.32)	-	27.44	6.72	36.00
1984	10/1/1984	17.80	84.53	(11.42)	14.13	(0.54)	-	17.80	6.65	37.32
1985	10/1/1985	22.76	69.02	(16.54)	12.24	(1.01)	-	22.76	6.43	34.11
1986	10/1/1986	21.30	79.06	(15.31)	15.91	(1.00)	-	21.30	6.27	37.61
1987	10/1/1987	20.16	77.20	(14.92)	14.41	(0.63)	-	20.16	5.48	36.00
1988	10/1/1988	23.07	76.93	(17.36)	14.61	(0.75)	-	23.07	6.01	37.38
1989	10/1/1989	11.73	97.68	(8.19)	10.59	(0.63)	-	11.73	3.81	40.88
1990	10/1/1990	23.35	76.38	(17.64)	11.30	(0.37)	-	23.35	5.95	37.63
1991	10/1/1991	22.99	75.00	(17.05)	16.73	(1.75)	-	22.99	6.07	37.08
1992	10/1/1992	36.57	60.75	(28.15)	18.98	(5.73)	-	36.57	8.56	37.66
1993	10/1/1993	32.76	65.00	(27.28)	15.35	(14.39)	-	32.76	5.61	37.29
1994	10/1/1994	15.39	85.31	(10.98)	11.26	(1.65)	-	15.39	4.57	38.98
1995	10/1/1995	24.92	70.47	(19.21)	14.25	(1.38)	-	24.92	5.90	37.33
1996	10/1/1996	13.58	90.16	(9.37)	11.02	(1.07)	-	13.58	4.43	40.43
1997	10/1/1997	10.28	92.91	(7.01)	8.62	(0.52)	-	10.28	3.37	40.01
1998	10/1/1998	20.51	73.23	(14.57)	12.17	(0.08)	-	20.51	6.13	36.85
1999	10/1/1999	15.04	81.89	(10.55)	10.35	(0.46)	-	15.04	4.61	38.14
2000	10/1/2000	5.47	103.54	(3.66)	4.61	(0.01)	-	5.47	1.95	42.81
2001	10/1/2001	23.46	73.62	(17.72)	15.20	-	-	23.46	5.96	38.65
2002	10/1/2002	5.47	99.21	(3.23)	3.70	-	-	5.47	2.43	42.03
2003	10/1/2003	13.27	86.22	(9.17)	8.46	-	-	13.27	4.30	40.74
2004	10/1/2004	12.40	84.65	(8.39)	8.07	-	-	12.40	4.20	41.68
2005	10/1/2005	24.21	68.11	(19.37)	13.74	(0.80)	-	24.21	4.98	37.59
2006	10/1/2006	12.28	83.07	(8.86)	9.53	(1.09)	-	12.28	3.52	39.59

Table III-B.2 ST 6 - Monthly Water Balance 9 Wet Years (1983 to 1991)

Month	Result Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
		[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
Nov-82	11/30/1982	2.48	9.76	(1.89)	2.19	(0.05)	-	2.48	0.67	4.79
Dec-82	12/30/1982	2.52	0.12	(1.77)	0.39	(0.02)	-	2.52	0.75	1.04
Jan-83	1/29/1983	0.67	2.87	(0.51)	0.59	(0.02)	-	0.67	0.19	1.12
Feb-83	2/28/1983	3.54	0.43	(2.99)	0.79	(0.02)	-	3.54	0.56	1.07
Mar-83	3/30/1983	5.39	(0.59)	(4.33)	1.22	(0.02)	-	5.39	1.09	1.71
Apr-83	4/29/1983	0.83	6.81	(0.20)	2.28	(0.02)	-	0.83	0.62	2.34
May-83	5/29/1983	-	11.54	-	2.20	(0.02)	-	-	0.04	3.88
Jun-83	6/28/1983	-	14.06	-	1.06	(0.02)	-	-	0.01	5.42
Jul-83	7/28/1983	2.13	12.05	(1.61)	0.91	(0.02)	-	2.13	0.53	5.48
Aug-83	8/27/1983	3.98	7.52	(2.72)	1.97	(0.03)	-	3.98	1.26	4.09
Sep-83	9/26/1983	1.93	10.39	(1.18)	2.64	(0.04)	-	1.93	0.77	4.50
Oct-83	10/26/1983	5.12	2.68	(4.37)	1.57	(0.04)	-	5.12	0.74	2.93
Nov-83	11/25/1983	1.57	3.94	(1.34)	1.06	(0.04)	-	1.57	0.30	2.15
Dec-83	12/25/1983	1.89	0.87	(1.46)	0.43	(0.04)	-	1.89	0.46	1.00
Jan-84	1/24/1984	1.54	1.42	(0.94)	0.47	(0.04)	-	1.54	0.57	0.96
Feb-84	2/23/1984	-	4.72	0.04	0.87	(0.04)	-	-	0.07	1.48
Mar-84	3/24/1984	-	7.17	-	1.57	(0.04)	-	-	0.01	2.09
Apr-84	4/23/1984	0.87	7.44	(0.59)	1.46	(0.04)	-	0.87	0.30	2.95
May-84	5/23/1984	0.67	10.91	(0.31)	1.10	(0.04)	-	0.67	0.39	4.08
Jun-84	6/22/1984	0.04	14.17	-	0.31	(0.05)	-	0.04	0.06	5.37
Jul-84	7/22/1984	3.62	8.54	(2.44)	0.94	(0.05)	-	3.62	1.22	5.03
Aug-84	8/21/1984	4.02	6.97	(2.40)	1.77	(0.05)	-	4.02	1.62	3.99
Sep-84	9/20/1984	1.22	11.34	(0.47)	2.48	(0.05)	-	1.22	0.78	4.18
Oct-84	10/20/1984	2.56	5.16	(1.65)	0.87	(0.05)	-	2.56	0.94	3.50
Nov-84	11/19/1984	-	5.51	0.04	0.71	(0.05)	-	-	0.07	2.00
Dec-84	12/19/1984	4.80	(2.17)	(4.17)	0.31	(0.04)	-	4.80	0.64	1.28
Jan-85	1/18/1985	3.94	(1.61)	(3.31)	0.35	(0.04)	-	3.94	0.66	0.74
Feb-85	2/17/1985	2.87	(0.28)	(2.17)	0.47	(0.04)	-	2.87	0.70	0.72
Mar-85	3/19/1985	1.69	2.72	(0.83)	1.02	(0.04)	-	1.69	0.83	1.47
Apr-85	4/18/1985	0.43	7.28	(0.04)	2.24	(0.05)	-	0.43	0.45	2.35
May-85	5/18/1985	0.47	8.58	(0.28)	2.01	(0.09)	-	0.47	0.23	3.46
Jun-85	6/17/1985	-	11.89	-	0.87	(0.13)	-	-	-	4.21
Jul-85	7/17/1985	0.24	12.64	(0.20)	0.47	(0.14)	-	0.24	0.03	5.06
Aug-85	8/16/1985	2.13	9.17	(1.46)	0.94	(0.15)	-	2.13	0.71	4.31
Sep-85	9/15/1985	2.28	9.45	(1.38)	1.42	(0.13)	-	2.28	0.93	4.83
Oct-85	10/15/1985	3.27	4.80	(2.40)	1.42	(0.13)	-	3.27	0.89	3.24
Nov-85	11/14/1985	1.42	4.37	(0.98)	1.06	(0.11)	-	1.42	0.46	2.00
Dec-85	12/14/1985	2.72	0.20	(2.01)	0.47	(0.11)	-	2.72	0.72	1.26
Jan-86	1/13/1986	-	3.62	0.16	0.55	(0.09)	-	-	0.22	1.25
Feb-86	2/12/1986	2.36	1.34	(1.85)	0.63	(0.09)	-	2.36	0.51	1.59
Mar-86	3/14/1986	1.89	4.21	(1.46)	1.34	(0.09)	-	1.89	0.50	1.67
Apr-86	4/13/1986	3.11	4.49	(2.40)	2.20	(0.07)	-	3.11	0.72	2.60
May-86	5/13/1986	-	11.02	-	2.40	(0.07)	-	-	0.03	3.91
Jun-86	6/12/1986	0.04	13.58	-	1.02	(0.07)	-	0.04	0.01	4.91
Jul-86	7/12/1986	2.17	11.89	(1.81)	0.75	(0.07)	-	2.17	0.37	5.74
Aug-86	8/11/1986	2.83	8.03	(1.85)	1.97	(0.06)	-	2.83	0.98	3.77
Sep-86	9/10/1986	3.11	8.50	(2.13)	2.01	(0.06)	-	3.11	1.04	4.48
Oct-86	10/10/1986	0.94	8.11	(0.55)	1.26	(0.06)	-	0.94	0.45	3.68
Nov-86	11/9/1986	2.76	2.99	(2.09)	1.02	(0.06)	-	2.76	0.69	2.41
Dec-86	12/9/1986	2.60	1.14	(2.20)	0.59	(0.05)	-	2.60	0.38	1.46
Jan-87	1/8/1987	1.50	1.22	(0.75)	0.43	(0.05)	-	1.50	0.75	1.01
Feb-87	2/7/1987	3.11	0.20	(2.40)	0.55	(0.05)	-	3.11	0.72	1.05
Mar-87	3/9/1987	2.28	2.36	(1.81)	0.98	(0.05)	-	2.28	0.48	1.32
Apr-87	4/8/1987	0.94	5.35	(0.47)	1.73	(0.04)	-	0.94	0.47	2.15
May-87	5/8/1987	-	7.60	(0.04)	2.05	(0.04)	-	-	0.05	2.78
Jun-87	6/7/1987	0.31	11.85	(0.08)	1.34	(0.05)	-	0.31	0.24	4.46
Jul-87	7/7/1987	0.20	14.61	(0.12)	0.67	(0.05)	-	0.20	0.11	5.51
Aug-87	8/6/1987	3.11	10.08	(2.68)	1.26	(0.06)	-	3.11	0.46	5.35
Sep-87	9/5/1987	2.48	9.57	(2.01)	2.09	(0.07)	-	2.48	0.51	4.21
Oct-87	10/5/1987	0.87	9.06	(0.28)	1.50	(0.07)	-	0.87	0.61	3.95
Nov-87	11/4/1987	1.38	6.61	(1.02)	0.67	(0.07)	-	1.38	0.40	3.49
Dec-87	12/4/1987	0.71	3.27	(0.35)	0.31	(0.06)	-	0.71	0.34	1.83

Table III-B.2 ST 6 - Monthly Water Balance 9 Wet Years (1983 to 1991)

Month	Result Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
		[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
Jan-88	1/3/1988	4.02	(1.34)	(3.23)	0.31	(0.06)	-	4.02	0.80	1.08
Feb-88	2/2/1988	3.58	(1.26)	(3.07)	0.39	(0.05)	-	3.58	0.55	0.72
Mar-88	3/3/1988	0.71	4.37	(0.43)	1.02	(0.05)	-	0.71	0.30	1.35
Apr-88	4/2/1988	0.16	6.54	(0.04)	1.73	(0.05)	-	0.16	0.13	2.27
May-88	5/2/1988	2.44	6.14	(1.65)	1.93	(0.05)	-	2.44	0.80	3.34
Jun-88	6/1/1988	-	12.44	0.04	2.01	(0.05)	-	-	0.07	4.25
Jul-88	7/1/1988	0.12	13.58	(0.04)	0.43	(0.07)	-	0.12	0.12	5.30
Aug-88	7/31/1988	2.44	10.12	(1.81)	0.43	(0.07)	-	2.44	0.65	5.01
Sep-88	8/30/1988	7.01	4.29	(5.55)	2.44	(0.08)	-	7.01	1.43	4.21
Oct-88	10/29/1988	2.01	17.52	(1.26)	4.29	(0.15)	-	2.01	0.83	7.40
Nov-88	11/28/1988	1.73	3.31	(1.46)	0.75	(0.07)	-	1.73	0.30	2.23
Dec-88	12/28/1988	1.10	1.77	(0.63)	0.43	(0.07)	-	1.10	0.50	1.11
Jan-89	1/27/1989	1.97	0.87	(1.42)	0.47	(0.06)	-	1.97	0.57	0.75
Feb-89	2/26/1989	0.55	3.70	(0.12)	0.83	(0.06)	-	0.55	0.42	1.22
Mar-89	3/28/1989	1.69	6.42	(1.50)	1.85	(0.05)	-	1.69	0.27	2.66
Apr-89	4/27/1989	-	11.57	0.12	2.28	(0.04)	-	-	0.14	3.89
May-89	5/27/1989	0.16	12.09	(0.04)	0.31	(0.04)	-	0.16	0.13	4.76
Jun-89	6/26/1989	-	14.13	-	0.16	(0.04)	-	-	-	5.32
Jul-89	7/26/1989	0.08	13.82	(0.04)	0.12	(0.04)	-	0.08	0.06	5.71
Aug-89	8/25/1989	1.38	10.16	(0.71)	0.43	(0.04)	-	1.38	0.68	4.57
Sep-89	9/24/1989	1.57	10.31	(1.34)	1.10	(0.04)	-	1.57	0.30	4.34
Oct-89	10/24/1989	1.06	8.07	(0.63)	0.83	(0.04)	-	1.06	0.47	3.84
Nov-89	11/23/1989	0.28	5.47	(0.20)	0.28	(0.04)	-	0.28	0.15	2.30
Dec-89	12/23/1989	-	3.35	0.08	0.12	(0.04)	-	-	0.09	1.42
Jan-90	1/22/1990	2.17	0.51	(1.46)	0.16	(0.04)	-	2.17	0.68	1.02
Feb-90	2/21/1990	2.52	0.51	(1.69)	0.43	(0.04)	-	2.52	0.84	0.94
Mar-90	3/23/1990	0.83	5.00	(0.43)	1.30	(0.03)	-	0.83	0.38	1.77
Apr-90	4/22/1990	1.02	8.50	(0.55)	2.13	(0.02)	-	1.02	0.50	2.98
May-90	5/22/1990	1.06	9.33	(0.87)	1.18	(0.02)	-	1.06	0.24	4.15
Jun-90	6/21/1990	0.39	13.62	(0.24)	0.31	(0.02)	-	0.39	0.19	5.09
Jul-90	7/21/1990	0.94	11.97	(0.55)	0.31	(0.02)	-	0.94	0.41	5.37
Aug-90	8/20/1990	10.08	0.71	(8.94)	0.87	(0.02)	-	10.08	1.16	4.21
Sep-90	9/19/1990	2.60	9.02	(2.17)	2.87	(0.02)	-	2.60	0.48	4.00
Oct-90	10/19/1990	0.47	8.03	0.04	1.93	(0.02)	-	0.47	0.48	3.61
Nov-90	11/18/1990	1.54	4.53	(1.10)	1.22	(0.02)	-	1.54	0.46	2.52
Dec-90	12/18/1990	2.76	0.59	(2.09)	0.51	(0.02)	-	2.76	0.69	1.52
Jan-91	1/17/1991	4.69	(2.52)	(3.82)	0.35	(0.02)	-	4.69	0.85	0.89
Feb-91	2/16/1991	0.12	3.78	0.04	0.71	(0.02)	-	0.12	0.18	1.11
Mar-91	3/18/1991	3.62	1.34	(2.87)	1.14	(0.04)	-	3.62	0.75	1.80
Apr-91	4/17/1991	3.23	3.94	(2.48)	2.09	(0.07)	-	3.23	0.73	2.09
May-91	5/17/1991	-	9.84	-	2.24	(0.16)	-	-	0.00	3.68
Jun-91	6/16/1991	0.71	12.20	(0.31)	1.73	(0.30)	-	0.71	0.42	4.71
Jul-91	7/16/1991	0.43	12.87	(0.28)	1.10	(0.34)	-	0.43	0.19	5.29
Aug-91	8/15/1991	3.46	8.43	(2.68)	1.10	(0.31)	-	3.46	0.80	4.66
Sep-91	9/14/1991	2.13	9.45	(1.42)	2.40	(0.28)	-	2.13	0.71	4.57
Oct-91	10/1/1991	0.24	5.67	(0.08)	1.02	(0.14)	-	0.24	0.18	2.19

Table III-B.3 ST 6 - Monsoon Period Water Balance

Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
6/1/1951	8.65	32.06	(5.50)	9.04	(4.81)	-	8.65	3.15	13.29
7/1/1951	-	16.19	0.02	0.71	(0.55)	-	-	0.02	5.25
8/1/1951	1.05	16.82	(0.63)	0.76	(0.40)	-	1.05	0.42	5.79
9/1/1951	3.83	11.41	(3.14)	1.32	(0.32)	-	3.83	0.69	4.84
10/1/1951	0.68	13.59	(0.37)	2.87	(0.26)	-	0.68	0.31	4.49
11/1/1951	1.64	8.59	(1.27)	0.49	(0.22)	-	1.64	0.37	3.15
1951	7.20	66.60	(5.39)	6.16	(1.76)	-	7.20	1.81	23.52
6/1/1952	16.50	32.08	(12.14)	10.95	(0.88)	-	16.50	4.36	15.54
7/1/1952	0.63	15.60	(0.21)	1.50	(0.12)	-	0.63	0.42	5.28
8/1/1952	0.56	15.71	(0.19)	0.58	(0.14)	-	0.56	0.36	5.19
9/1/1952	0.47	15.41	(0.14)	0.58	(0.14)	-	0.47	0.33	5.09
10/1/1952	0.74	14.05	(0.37)	0.47	(0.13)	-	0.74	0.37	4.56
11/1/1952	-	11.74	0.05	0.37	(0.12)	-	-	0.05	3.81
1952	2.40	72.51	(0.87)	3.49	(0.65)	-	2.40	1.53	23.93
6/1/1953	10.86	36.80	(8.46)	7.75	(0.61)	-	10.86	2.40	14.82
7/1/1953	-	16.78	0.02	0.53	(0.07)	-	-	0.01	5.51
8/1/1953	2.71	12.80	(2.16)	0.75	(0.07)	-	2.71	0.56	5.21
9/1/1953	1.90	13.28	(1.14)	1.92	(0.07)	-	1.90	0.76	4.71
10/1/1953	-	15.06	0.06	1.32	(0.07)	-	-	0.06	4.63
11/1/1953	0.01	10.29	0.02	0.10	(0.06)	-	0.01	0.03	3.39
1953	4.63	68.20	(3.20)	4.61	(0.33)	-	4.63	1.42	23.46
6/1/1954	10.05	44.58	(7.57)	7.78	(0.34)	-	10.05	2.48	17.36
7/1/1954	0.13	15.40	(0.01)	0.40	(0.04)	-	0.13	0.12	5.13
8/1/1954	4.46	9.72	(3.45)	1.30	(0.04)	-	4.46	1.01	4.63
9/1/1954	5.56	7.26	(4.63)	2.89	(0.04)	-	5.56	0.92	3.93
10/1/1954	1.35	12.07	(0.81)	3.07	(0.03)	-	1.35	0.55	4.18
11/1/1954	-	10.94	0.06	1.50	(0.03)	-	-	0.06	3.47
1954	11.50	55.40	(8.84)	9.17	(0.19)	-	11.50	2.66	21.36
6/1/1955	4.09	46.57	(2.71)	3.78	(0.19)	-	4.09	1.40	16.02
7/1/1955	2.06	13.31	(1.78)	1.16	(0.02)	-	2.06	0.29	5.17
8/1/1955	4.46	9.17	(3.63)	1.28	(0.02)	-	4.46	0.82	4.39
9/1/1955	2.83	9.69	(1.87)	2.74	(0.02)	-	2.83	0.97	3.95
10/1/1955	0.13	13.74	(0.01)	2.55	(0.02)	-	0.13	0.12	4.43
11/1/1955	0.02	11.26	0.02	0.05	(0.02)	-	0.02	0.04	3.54
1955	9.50	57.17	(7.26)	7.77	(0.10)	-	9.50	2.24	21.47
6/1/1956	7.73	43.70	(5.48)	5.83	(0.12)	-	7.73	2.26	16.91
7/1/1956	0.24	16.73	(0.17)	0.07	(0.02)	-	0.24	0.09	5.79
8/1/1956	2.77	11.85	(1.92)	0.59	(0.02)	-	2.77	0.85	4.84
9/1/1956	1.84	11.85	(1.26)	1.86	(0.02)	-	1.84	0.58	4.30
10/1/1956	0.07	14.53	(0.04)	1.05	(0.01)	-	0.07	0.03	4.61
11/1/1956	0.53	8.94	(0.28)	0.06	(0.01)	-	0.53	0.25	3.03
1956	5.45	63.90	(3.67)	3.62	(0.08)	-	5.45	1.81	22.58
6/1/1957	9.38	37.13	(6.41)	6.59	(0.08)	-	9.38	2.97	14.94
7/1/1957	0.03	16.30	0.02	0.43	(0.01)	-	0.03	0.06	5.53
8/1/1957	1.09	13.50	(0.61)	0.21	(0.01)	-	1.09	0.49	4.97
9/1/1957	3.57	10.24	(2.58)	1.33	(0.01)	-	3.57	0.99	4.44
10/1/1957	0.60	12.40	(0.31)	1.96	(0.01)	-	0.60	0.29	4.26
11/1/1957	3.23	4.69	(2.44)	0.46	(0.01)	-	3.23	0.79	2.60
1957	8.52	57.13	(5.91)	4.38	(0.06)	-	8.52	2.61	21.80
6/1/1958	10.68	36.73	(6.76)	9.10	(0.07)	-	10.68	3.93	15.40
7/1/1958	0.70	15.79	(0.48)	0.37	(0.01)	-	0.70	0.24	5.50
8/1/1958	0.78	15.08	(0.42)	0.37	(0.01)	-	0.78	0.36	5.44
9/1/1958	0.89	14.17	(0.35)	0.59	(0.01)	-	0.89	0.54	4.68
10/1/1958	3.17	9.13	(2.48)	1.00	(0.01)	-	3.17	0.69	4.12
11/1/1958	1.92	7.64	(1.54)	1.68	(0.01)	-	1.92	0.37	3.06
1958	7.46	61.81	(5.28)	4.03	(0.03)	-	7.46	2.20	22.80
6/1/1959	3.43	50.47	(2.11)	3.90	(0.04)	-	3.43	1.34	17.30
7/1/1959	1.03	15.35	(0.67)	0.42	(0.01)	-	1.03	0.37	5.64
8/1/1959	3.79	12.87	(3.13)	1.09	(0.01)	-	3.79	0.66	5.64
9/1/1959	5.62	7.09	(4.17)	2.61	(0.01)	-	5.62	1.45	3.94
10/1/1959	0.05	12.80	0.03	2.61	(0.01)	-	0.05	0.09	4.31
11/1/1959	4.87	4.72	(4.50)	1.10	(0.01)	-	4.87	0.38	3.20
1959	15.37	52.83	(12.44)	7.83	(0.03)	-	15.37	2.95	22.73

Table III-B.3 ST 6 - Monsoon Period Water Balance

Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
6/1/1960	11.66	38.50	(8.98)	8.26	(0.06)	-	11.66	2.73	16.20
7/1/1960	-	17.13	-	0.49	(0.05)	-	-	0.02	5.76
8/1/1960	0.74	15.16	(0.48)	0.47	(0.07)	-	0.74	0.28	5.41
9/1/1960	1.62	12.48	(0.84)	0.97	(0.08)	-	1.62	0.78	4.54
10/1/1960	0.28	13.66	(0.07)	0.63	(0.08)	-	0.28	0.22	4.52
11/1/1960	2.06	6.42	(1.40)	0.50	(0.08)	-	2.06	0.66	2.80
1960	4.70	64.84	(2.78)	3.06	(0.37)	-	4.70	1.96	23.02
6/1/1961	3.57	46.69	(1.58)	3.26	(0.42)	-	3.57	2.04	16.32
7/1/1961	-	16.69	0.00	0.09	(0.04)	-	-	0.02	5.66
8/1/1961	0.67	14.65	(0.30)	0.18	(0.04)	-	0.67	0.38	5.34
9/1/1961	3.13	10.71	(2.31)	0.80	(0.04)	-	3.13	0.82	4.51
10/1/1961	0.52	10.47	0.04	1.33	(0.04)	-	0.52	0.56	3.65
11/1/1961	0.45	8.86	(0.30)	0.49	(0.04)	-	0.45	0.15	3.23
1961	4.78	61.38	(2.86)	2.90	(0.21)	-	4.78	1.93	22.38
6/1/1962	11.37	35.55	(8.46)	7.58	(0.21)	-	11.37	2.95	15.23
7/1/1962	-	15.39	-	0.38	(0.02)	-	-	-	5.29
8/1/1962	0.61	14.72	(0.26)	0.38	(0.02)	-	0.61	0.34	5.26
9/1/1962	0.52	15.12	(0.23)	0.37	(0.02)	-	0.52	0.29	5.21
10/1/1962	1.30	11.06	(0.61)	0.35	(0.02)	-	1.30	0.69	4.26
11/1/1962	0.87	8.27	(0.35)	0.48	(0.02)	-	0.87	0.52	2.98
1962	3.30	64.57	(1.46)	1.96	(0.11)	-	3.30	1.84	22.98
6/1/1963	11.13	40.55	(8.89)	8.23	(0.15)	-	11.13	2.28	17.00
7/1/1963	-	14.72	0.00	0.31	(0.02)	-	-	-	4.97
8/1/1963	0.08	15.94	(0.02)	0.22	(0.02)	-	0.08	0.07	5.61
9/1/1963	11.02	1.14	(9.39)	1.62	(0.02)	-	11.02	1.63	3.97
10/1/1963	1.10	11.61	(0.52)	3.09	(0.02)	-	1.10	0.59	4.13
11/1/1963	0.67	9.37	(0.44)	1.96	(0.02)	-	0.67	0.24	3.50
1963	12.87	52.80	(10.37)	7.20	(0.10)	-	12.87	2.52	22.18
6/1/1964	5.50	40.91	(3.17)	5.98	(0.22)	-	5.50	2.36	15.18
7/1/1964	-	14.69	-	0.15	(0.04)	-	-	0.00	4.97
8/1/1964	1.48	13.54	(0.79)	0.33	(0.04)	-	1.48	0.70	5.15
9/1/1964	2.29	10.87	(1.31)	1.11	(0.04)	-	2.29	0.98	4.25
10/1/1964	1.65	8.74	(0.74)	0.94	(0.04)	-	1.65	0.93	3.61
11/1/1964	1.54	8.98	(1.24)	0.92	(0.04)	-	1.54	0.30	3.51
1964	6.97	56.81	(4.07)	3.45	(0.19)	-	6.97	2.90	21.49
6/1/1965	12.47	33.35	(9.32)	8.90	(0.21)	-	12.47	3.19	14.85
7/1/1965	0.10	13.74	(0.01)	0.44	(0.02)	-	0.10	0.10	4.83
8/1/1965	1.44	12.87	(0.78)	0.52	(0.02)	-	1.44	0.67	4.98
9/1/1965	0.95	13.35	(0.48)	0.93	(0.03)	-	0.95	0.48	4.70
10/1/1965	1.09	10.98	(0.66)	0.91	(0.03)	-	1.09	0.43	4.01
11/1/1965	0.46	9.92	(0.28)	0.38	(0.03)	-	0.46	0.19	3.38
1965	4.04	60.87	(2.20)	3.17	(0.13)	-	4.04	1.87	21.90
6/1/1966	17.03	32.28	(14.37)	7.30	(1.46)	-	17.03	2.68	16.33
7/1/1966	0.18	14.92	(0.06)	0.61	(0.44)	-	0.18	0.13	5.46
8/1/1966	0.84	13.74	(0.42)	0.58	(0.35)	-	0.84	0.43	4.96
9/1/1966	1.69	12.40	(1.17)	0.83	(0.29)	-	1.69	0.52	4.76
10/1/1966	2.81	8.86	(2.31)	1.89	(0.24)	-	2.81	0.50	4.04
11/1/1966	1.36	7.44	(0.95)	1.76	(0.20)	-	1.36	0.41	2.86
1966	6.89	57.36	(4.92)	5.67	(1.52)	-	6.89	1.98	22.08
6/1/1967	5.79	42.20	(3.73)	5.75	(0.80)	-	5.79	2.10	15.89
7/1/1967	0.08	14.13	(0.02)	0.13	(0.08)	-	0.08	0.08	4.81
8/1/1967	4.05	9.37	(3.24)	1.24	(0.07)	-	4.05	0.81	4.76
9/1/1967	2.67	11.42	(2.13)	2.89	(0.06)	-	2.67	0.55	4.46
10/1/1967	0.58	10.87	(0.26)	1.72	(0.06)	-	0.58	0.34	4.14
11/1/1967	0.42	9.25	(0.22)	0.34	(0.05)	-	0.42	0.21	3.39
1967	7.80	55.04	(5.87)	6.32	(0.31)	-	7.80	1.99	21.57
6/1/1968	17.35	29.61	(14.78)	7.98	(1.12)	-	17.35	2.66	15.70
7/1/1968	-	15.79	-	0.78	(0.36)	-	-	0.00	5.56
8/1/1968	1.82	11.77	(1.25)	0.66	(0.33)	-	1.82	0.58	4.91
9/1/1968	2.69	8.94	(1.78)	1.88	(0.28)	-	2.69	0.92	3.78
10/1/1968	0.05	11.61	0.01	1.43	(0.23)	-	0.05	0.09	4.04
11/1/1968	0.39	8.86	(0.20)	0.34	(0.20)	-	0.39	0.20	2.90
1968	4.96	56.97	(3.23)	5.09	(1.41)	-	4.96	1.80	21.19

Table III-B.3 ST 6 - Monsoon Period Water Balance

Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
6/1/1969	14.04	32.68	(10.88)	8.85	(0.86)	-	14.04	3.26	15.41
7/1/1969	-	14.41	-	0.49	(0.14)	-	-	0.01	5.23
8/1/1969	0.33	14.37	(0.09)	0.37	(0.15)	-	0.33	0.24	5.28
9/1/1969	2.71	12.44	(1.86)	1.35	(0.14)	-	2.71	0.86	5.07
10/1/1969	1.31	11.22	(0.86)	1.34	(0.13)	-	1.31	0.47	4.33
11/1/1969	0.83	7.76	(0.56)	0.67	(0.12)	-	0.83	0.29	3.11
1969	5.18	60.20	(3.37)	4.21	(0.68)	-	5.18	1.88	23.01
6/1/1970	8.79	37.72	(5.90)	6.98	(0.58)	-	8.79	2.97	15.36
7/1/1970	0.08	15.12	(0.00)	0.17	(0.05)	-	0.08	0.09	5.33
8/1/1970	1.04	13.94	(0.53)	0.52	(0.05)	-	1.04	0.51	5.56
9/1/1970	1.81	12.20	(1.05)	0.59	(0.05)	-	1.81	0.77	4.73
10/1/1970	3.53	7.91	(3.06)	2.09	(0.05)	-	3.53	0.48	4.45
11/1/1970	-	8.39	-	1.50	(0.05)	-	-	0.04	2.87
1970	6.46	57.56	(4.64)	4.88	(0.24)	-	6.46	1.89	22.93
6/1/1971	3.93	43.43	(2.37)	2.86	(0.25)	-	3.93	1.67	15.85
7/1/1971	-	14.84	-	0.06	(0.03)	-	-	-	5.06
8/1/1971	0.39	15.47	(0.18)	0.13	(0.02)	-	0.39	0.22	5.59
9/1/1971	4.93	7.32	(3.68)	1.53	(0.02)	-	4.93	1.26	4.19
10/1/1971	3.23	9.13	(2.81)	2.43	(0.02)	-	3.23	0.43	4.40
11/1/1971	4.20	3.15	(3.35)	1.57	(0.02)	-	4.20	0.85	2.80
1971	12.75	49.92	(10.02)	5.71	(0.12)	-	12.75	2.76	22.04
6/1/1972	2.33	49.69	(1.25)	5.28	(0.14)	-	2.33	1.16	17.30
7/1/1972	1.68	13.86	(1.28)	0.60	(0.02)	-	1.68	0.42	5.44
8/1/1972	0.27	16.06	(0.13)	0.97	(0.01)	-	0.27	0.18	5.69
9/1/1972	2.10	11.57	(1.43)	0.93	(0.01)	-	2.10	0.67	4.93
10/1/1972	0.70	11.61	(0.24)	0.80	(0.01)	-	0.70	0.48	4.37
11/1/1972	8.96	(1.77)	(7.83)	1.08	(0.01)	-	8.96	1.13	2.78
1972	13.71	51.34	(10.91)	4.38	(0.07)	-	13.71	2.89	23.21
6/1/1973	16.91	23.43	(12.21)	9.44	(0.52)	-	16.91	4.75	13.27
7/1/1973	0.87	14.65	(0.50)	1.81	(0.51)	-	0.87	0.40	5.37
8/1/1973	2.72	11.18	(2.15)	1.09	(0.44)	-	2.72	0.57	5.31
9/1/1973	1.48	13.19	(0.78)	2.10	(0.35)	-	1.48	0.72	4.93
10/1/1973	-	12.72	0.01	1.11	(0.29)	-	-	0.02	4.31
11/1/1973	-	8.66	-	0.17	(0.25)	-	-	0.00	3.27
1973	5.07	60.39	(3.42)	6.29	(1.83)	-	5.07	1.72	23.18
6/1/1974	8.15	33.94	(5.81)	6.52	(0.93)	-	8.15	2.35	13.59
7/1/1974	-	16.61	-	0.25	(0.09)	-	-	-	5.69
8/1/1974	2.44	11.57	(1.71)	0.80	(0.08)	-	2.44	0.73	5.16
9/1/1974	1.46	12.56	(0.83)	1.67	(0.07)	-	1.46	0.66	4.88
10/1/1974	3.86	7.52	(2.86)	1.70	(0.06)	-	3.86	0.99	4.26
11/1/1974	3.39	4.84	(2.70)	1.28	(0.06)	-	3.39	0.69	3.10
1974	11.14	53.11	(8.10)	5.70	(0.36)	-	11.14	3.07	23.08
6/1/1975	10.47	29.45	(7.46)	8.71	(0.31)	-	10.47	3.06	13.03
7/1/1975	-	15.20	-	0.92	(0.04)	-	-	-	5.27
8/1/1975	2.17	10.63	(1.10)	0.77	(0.04)	-	2.17	1.11	4.96
9/1/1975	2.13	12.17	(1.42)	1.46	(0.04)	-	2.13	0.68	4.65
10/1/1975	0.94	11.38	(0.35)	1.19	(0.04)	-	0.94	0.62	4.44
11/1/1975	0.24	8.39	(0.08)	0.19	(0.04)	-	0.24	0.18	3.43
1975	5.47	57.76	(2.95)	4.52	(0.19)	-	5.47	2.59	22.75
6/1/1976	8.11	36.38	(5.31)	5.66	(0.17)	-	8.11	2.84	15.22
7/1/1976	-	15.75	0.00	0.14	(0.02)	-	-	0.01	5.28
8/1/1976	2.76	10.31	(2.13)	0.67	(0.02)	-	2.76	0.64	5.23
9/1/1976	0.91	13.46	(0.62)	1.69	(0.02)	-	0.91	0.30	4.63
10/1/1976	4.45	5.83	(3.64)	1.42	(0.02)	-	4.45	0.83	4.06
11/1/1976	0.91	6.38	(0.52)	1.44	(0.02)	-	0.91	0.39	2.68
1976	9.02	51.73	(6.90)	5.37	(0.12)	-	9.02	2.17	21.87
6/1/1977	6.73	37.83	(4.45)	6.39	(0.14)	-	6.73	2.34	15.05
7/1/1977	0.08	15.71	(0.02)	0.04	(0.02)	-	0.08	0.04	5.46
8/1/1977	2.52	12.56	(1.97)	0.55	(0.02)	-	2.52	0.57	5.62
9/1/1977	2.56	11.50	(1.99)	2.10	(0.02)	-	2.56	0.58	4.92
10/1/1977	3.62	6.77	(2.71)	2.09	(0.02)	-	3.62	0.94	4.09
11/1/1977	1.34	7.76	(0.91)	1.59	(0.02)	-	1.34	0.42	3.39
1977	10.12	54.29	(7.59)	6.37	(0.10)	-	10.12	2.55	23.49

Table III-B.3 ST 6 - Monsoon Period Water Balance

Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
6/1/1978	19.61	24.21	(15.73)	9.04	(0.19)	-	19.61	3.94	14.90
7/1/1978	0.51	15.12	(0.41)	1.11	(0.21)	-	0.51	0.13	5.55
8/1/1978	0.98	14.37	(0.60)	0.91	(0.26)	-	0.98	0.39	5.90
9/1/1978	1.14	11.69	(0.66)	1.37	(0.24)	-	1.14	0.47	4.26
10/1/1978	0.39	10.87	(0.19)	0.54	(0.21)	-	0.39	0.24	4.30
11/1/1978	1.93	7.48	(1.52)	0.37	(0.18)	-	1.93	0.42	4.04
1978	4.96	59.53	(3.38)	4.30	(1.09)	-	4.96	1.65	24.05
6/1/1979	25.43	15.63	(20.76)	9.19	(6.43)	-	25.43	4.74	14.22
7/1/1979	0.35	14.61	(0.03)	1.55	(0.79)	-	0.35	0.33	5.17
8/1/1979	0.16	14.92	(0.06)	0.66	(0.61)	-	0.16	0.11	5.76
9/1/1979	1.61	11.22	(0.84)	0.96	(0.42)	-	1.61	0.78	4.49
10/1/1979	0.12	13.31	(0.02)	0.67	(0.32)	-	0.12	0.12	4.85
11/1/1979	0.67	9.06	(0.48)	0.31	(0.28)	-	0.67	0.20	3.81
1979	2.91	63.11	(1.42)	4.14	(2.42)	-	2.91	1.54	24.08
6/1/1980	15.55	25.98	(11.91)	7.78	(1.26)	-	15.55	3.73	14.55
7/1/1980	0.16	15.24	(0.11)	0.99	(0.34)	-	0.16	0.04	5.23
8/1/1980	1.93	11.81	(1.20)	0.90	(0.33)	-	1.93	0.76	5.39
9/1/1980	1.38	12.17	(0.76)	1.45	(0.29)	-	1.38	0.61	4.74
10/1/1980	0.63	11.81	(0.37)	1.09	(0.24)	-	0.63	0.26	4.50
11/1/1980	0.04	9.13	(0.00)	0.21	(0.21)	-	0.04	0.04	3.67
1980	4.13	60.16	(2.44)	4.64	(1.40)	-	4.13	1.72	23.53
6/1/1981	9.61	37.80	(7.15)	7.15	(0.81)	-	9.61	2.54	16.76
7/1/1981	0.12	15.59	-	0.52	(0.07)	-	0.12	0.12	5.53
8/1/1981	2.17	11.69	(1.77)	0.48	(0.07)	-	2.17	0.42	5.49
9/1/1981	2.76	11.30	(2.01)	2.47	(0.07)	-	2.76	0.77	4.55
10/1/1981	0.55	11.61	(0.31)	1.26	(0.06)	-	0.55	0.22	4.84
11/1/1981	0.94	6.77	(0.51)	0.52	(0.05)	-	0.94	0.47	3.07
1981	6.54	56.97	(4.61)	5.26	(0.31)	-	6.54	2.00	23.48
6/1/1982	12.72	30.98	(8.98)	8.72	(0.30)	-	12.72	3.87	15.04
7/1/1982	0.08	13.90	(0.04)	0.46	(0.04)	-	0.08	0.02	5.04
8/1/1982	2.64	10.08	(1.77)	0.61	(0.04)	-	2.64	0.89	4.94
9/1/1982	4.02	8.11	(3.03)	2.13	(0.02)	-	4.02	1.01	4.25
10/1/1982	3.19	7.95	(2.44)	2.54	(0.02)	-	3.19	0.75	4.25
11/1/1982	-	8.43	-	1.68	(0.02)	-	-	0.04	3.10
1982	9.92	48.46	(7.28)	7.41	(0.15)	-	9.92	2.72	21.57
6/1/1983	15.43	23.98	(11.69)	8.19	(0.17)	-	15.43	3.88	13.33
7/1/1983	-	13.94	-	0.94	(0.03)	-	-	-	5.53
8/1/1983	2.83	11.54	(2.13)	0.98	(0.02)	-	2.83	0.71	5.41
9/1/1983	3.82	8.35	(2.76)	2.32	(0.04)	-	3.82	1.09	4.18
10/1/1983	5.35	6.30	(4.37)	2.32	(0.04)	-	5.35	1.00	4.46
11/1/1983	1.14	6.46	(0.59)	1.65	(0.04)	-	1.14	0.54	2.89
1983	13.15	46.57	(9.84)	8.23	(0.17)	-	13.15	3.33	22.47
6/1/1984	6.54	39.72	(4.65)	6.81	(0.31)	-	6.54	2.11	15.78
7/1/1984	1.34	12.52	(0.98)	0.31	(0.05)	-	1.34	0.36	5.38
8/1/1984	3.35	8.54	(1.97)	1.38	(0.05)	-	3.35	1.37	4.65
9/1/1984	3.43	7.95	(1.93)	2.13	(0.05)	-	3.43	1.56	4.09
10/1/1984	2.01	9.33	(1.30)	1.85	(0.05)	-	2.01	0.70	4.53
11/1/1984	1.34	5.55	(0.75)	0.94	(0.05)	-	1.34	0.62	2.68
1984	11.46	43.90	(6.93)	6.61	(0.24)	-	11.46	4.63	21.33
6/1/1985	14.21	22.72	(10.79)	7.24	(0.39)	-	14.21	3.54	13.20
7/1/1985	-	12.01	-	0.63	(0.14)	-	-	-	4.69
8/1/1985	1.22	11.93	(0.91)	0.51	(0.15)	-	1.22	0.35	4.91
9/1/1985	2.24	10.59	(1.50)	1.57	(0.14)	-	2.24	0.76	4.57
10/1/1985	3.74	6.22	(2.60)	1.34	(0.13)	-	3.74	1.16	4.02
11/1/1985	1.22	5.47	(0.63)	1.34	(0.12)	-	1.22	0.65	2.40
1985	8.43	46.22	(5.63)	5.39	(0.69)	-	8.43	2.92	20.60
6/1/1986	10.98	34.53	(8.35)	8.70	(0.61)	-	10.98	2.81	16.29
7/1/1986	0.04	14.84	-	0.55	(0.07)	-	0.04	0.01	5.54
8/1/1986	4.76	5.91	(3.50)	1.50	(0.07)	-	4.76	1.24	4.60
9/1/1986	2.13	10.47	(1.38)	2.52	(0.07)	-	2.13	0.83	4.71
10/1/1986	2.17	7.83	(1.46)	1.30	(0.06)	-	2.17	0.72	4.07
11/1/1986	1.77	5.47	(1.38)	1.18	(0.06)	-	1.77	0.41	2.44
1986	10.87	44.53	(7.72)	7.05	(0.33)	-	10.87	3.21	21.36

Table III-B.3 ST 6 - Monsoon Period Water Balance

Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
6/1/1987	11.73	27.05	(8.46)	7.72	(0.33)	-	11.73	3.41	14.14
7/1/1987	0.20	14.37	(0.12)	0.71	(0.05)	-	0.20	0.11	5.17
8/1/1987	2.09	11.97	(1.77)	1.10	(0.06)	-	2.09	0.31	5.50
9/1/1987	3.03	9.45	(2.40)	2.05	(0.06)	-	3.03	0.65	4.63
10/1/1987	1.34	8.90	(0.79)	1.65	(0.07)	-	1.34	0.60	4.13
11/1/1987	0.31	8.58	(0.12)	0.79	(0.07)	-	0.31	0.24	3.69
1987	6.97	53.27	(5.20)	6.30	(0.31)	-	6.97	1.91	23.12
6/1/1988	12.68	29.53	(9.65)	7.76	(0.37)	-	12.68	3.17	15.00
7/1/1988	0.12	13.58	(0.04)	0.43	(0.07)	-	0.12	0.12	5.30
8/1/1988	3.39	9.37	(2.72)	0.43	(0.08)	-	3.39	0.69	5.15
9/1/1988	6.26	5.59	(4.76)	2.64	(0.08)	-	6.26	1.48	4.27
10/1/1988	0.31	10.28	(0.08)	2.56	(0.08)	-	0.31	0.30	3.96
11/1/1988	1.50	7.32	(1.06)	1.65	(0.07)	-	1.50	0.45	3.45
1988	11.57	46.14	(8.66)	7.72	(0.38)	-	11.57	3.04	22.14
6/1/1989	7.20	41.30	(5.04)	6.85	(0.38)	-	7.20	2.31	17.29
7/1/1989	-	14.37	-	0.16	(0.04)	-	-	-	5.55
8/1/1989	0.51	13.19	(0.28)	0.16	(0.04)	-	0.51	0.22	5.73
9/1/1989	0.94	11.46	(0.47)	0.51	(0.04)	-	0.94	0.54	4.32
10/1/1989	1.57	10.04	(1.34)	1.26	(0.04)	-	1.57	0.29	4.51
11/1/1989	1.06	6.77	(0.59)	0.59	(0.05)	-	1.06	0.50	3.57
1989	4.09	55.83	(2.68)	2.68	(0.22)	-	4.09	1.55	23.69
6/1/1990	8.07	35.35	(5.31)	5.67	(0.23)	-	8.07	2.90	15.31
7/1/1990	0.28	14.69	(0.16)	0.20	(0.02)	-	0.28	0.12	5.40
8/1/1990	1.50	10.35	(0.87)	0.51	(0.02)	-	1.50	0.67	5.16
9/1/1990	9.45	2.13	(8.50)	1.89	(0.02)	-	9.45	0.95	4.02
10/1/1990	2.99	7.09	(2.20)	2.44	(0.02)	-	2.99	0.81	4.17
11/1/1990	0.28	7.83	(0.08)	1.77	(0.02)	-	0.28	0.21	3.23
1990	14.49	42.09	(11.81)	6.81	(0.12)	-	14.49	2.76	21.98
6/1/1991	15.83	24.76	(12.24)	8.50	(0.50)	-	15.83	3.63	14.73
7/1/1991	0.63	12.52	(0.28)	1.42	(0.33)	-	0.63	0.38	5.21
8/1/1991	1.69	11.22	(1.26)	0.91	(0.34)	-	1.69	0.44	5.17
9/1/1991	2.91	9.69	(2.09)	2.17	(0.30)	-	2.91	0.84	4.65
10/1/1991	1.65	8.98	(1.10)	1.97	(0.26)	-	1.65	0.57	4.09
11/1/1991	1.22	7.99	(0.98)	0.83	(0.22)	-	1.22	0.25	3.99
1991	8.11	50.39	(5.71)	7.28	(1.45)	-	8.11	2.48	23.12
6/1/1992	24.25	15.28	(18.74)	8.74	(2.98)	-	24.25	5.56	14.72
7/1/1992	1.30	11.73	(0.71)	2.72	(0.96)	-	1.30	0.64	4.97
8/1/1992	3.31	9.61	(2.60)	1.38	(0.72)	-	3.31	0.72	5.44
9/1/1992	5.55	5.79	(4.45)	2.64	(0.50)	-	5.55	1.12	4.49
10/1/1992	0.94	10.35	(0.67)	2.68	(0.35)	-	0.94	0.27	4.06
11/1/1992	1.22	7.28	(0.91)	1.57	(0.31)	-	1.22	0.33	3.90
1992	12.32	44.76	(9.33)	10.98	(2.83)	-	12.32	3.07	22.85
6/1/1993	27.52	12.68	(23.82)	8.94	(11.91)	-	27.52	3.74	14.30
7/1/1993	-	13.74	-	1.38	(0.81)	-	-	0.00	5.07
8/1/1993	0.24	12.60	(0.16)	0.67	(0.62)	-	0.24	0.11	5.27
9/1/1993	3.62	8.19	(2.40)	0.94	(0.42)	-	3.62	1.21	4.95
10/1/1993	0.16	10.51	-	1.85	(0.32)	-	0.16	0.21	3.76
11/1/1993	0.79	7.13	(0.35)	0.59	(0.28)	-	0.79	0.43	3.67
1993	4.80	52.17	(2.91)	5.43	(2.45)	-	4.80	1.98	22.72
6/1/1994	9.96	31.65	(7.56)	7.28	(1.02)	-	9.96	2.52	15.17
7/1/1994	0.39	13.39	(0.24)	0.71	(0.09)	-	0.39	0.17	5.35
8/1/1994	1.46	12.17	(1.22)	0.35	(0.09)	-	1.46	0.24	5.54
9/1/1994	0.75	12.52	(0.24)	1.18	(0.09)	-	0.75	0.52	5.03
10/1/1994	2.05	8.46	(1.38)	1.14	(0.08)	-	2.05	0.69	4.23
11/1/1994	1.85	5.12	(1.54)	0.87	(0.09)	-	1.85	0.33	3.25
1994	6.50	51.65	(4.61)	4.25	(0.44)	-	6.50	1.94	23.40
6/1/1995	16.10	21.65	(12.09)	8.07	(0.48)	-	16.10	4.15	14.05
7/1/1995	-	12.99	-	0.98	(0.20)	-	-	0.00	4.73
8/1/1995	0.04	13.78	-	0.51	(0.23)	-	0.04	0.04	5.36
9/1/1995	4.06	8.66	(3.19)	1.50	(0.20)	-	4.06	0.86	5.39
10/1/1995	2.87	8.27	(2.40)	2.32	(0.17)	-	2.87	0.53	4.56
11/1/1995	-	9.06	0.08	1.61	(0.15)	-	-	0.09	3.61
1995	6.97	52.76	(5.51)	6.93	(0.96)	-	6.97	1.52	23.64
6/1/1996	6.34	39.76	(4.69)	5.91	(0.72)	-	6.34	1.76	17.23
7/1/1996	0.39	13.78	(0.24)	0.16	(0.06)	-	0.39	0.15	5.47
8/1/1996	2.36	11.02	(1.54)	0.87	(0.05)	-	2.36	0.86	5.32
9/1/1996	1.30	10.63	(0.79)	1.10	(0.05)	-	1.30	0.52	4.79
10/1/1996	3.19	5.91	(2.20)	1.38	(0.05)	-	3.19	1.05	4.01
11/1/1996	0.43	7.87	(0.16)	1.30	(0.05)	-	0.43	0.25	3.85
1996	7.68	49.21	(4.92)	4.80	(0.26)	-	7.68	2.84	23.44

Table III-B.3 ST 6 - Monsoon Period Water Balance

Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
6/1/1997	6.97	37.40	(4.84)	5.28	(0.32)	-	6.97	2.24	15.88
7/1/1997	0.04	12.99	-	0.04	(0.04)	-	0.04	0.02	5.13
8/1/1997	0.12	13.39	(0.08)	0.04	(0.04)	-	0.12	0.07	5.89
9/1/1997	2.72	9.45	(1.97)	0.98	(0.04)	-	2.72	0.77	4.66
10/1/1997	-	11.81	0.04	0.98	(0.04)	-	-	0.02	4.56
11/1/1997	0.71	6.30	(0.47)	0.12	(0.04)	-	0.71	0.28	3.74
1997	3.58	53.94	(2.48)	2.17	(0.19)	-	3.58	1.16	23.98
6/1/1998	14.17	22.83	(10.39)	7.09	(0.04)	-	14.17	3.81	13.06
7/1/1998	-	12.60	-	0.94	-	-	-	0.00	4.83
8/1/1998	1.69	11.81	(1.14)	1.14	-	-	1.69	0.58	5.67
9/1/1998	2.56	9.84	(1.57)	1.54	-	-	2.56	0.98	4.73
10/1/1998	1.38	9.84	(0.98)	1.34	(0.00)	-	1.38	0.47	4.82
11/1/1998	-	7.48	-	0.47	(0.04)	-	-	-	3.85
1998	5.63	51.57	(3.70)	5.43	(0.04)	-	5.63	2.04	23.90
6/1/1999	5.08	38.19	(3.50)	3.82	(0.27)	-	5.08	1.63	15.57
7/1/1999	-	13.39	-	0.04	(0.04)	-	-	-	5.00
8/1/1999	5.79	5.12	(4.61)	1.18	(0.04)	-	5.79	1.26	5.16
9/1/1999	2.99	8.66	(2.01)	2.60	(0.04)	-	2.99	0.96	4.31
10/1/1999	1.18	9.06	(0.43)	2.24	(0.04)	-	1.18	0.76	4.25
11/1/1999	-	9.45	-	0.94	(0.01)	-	-	0.01	3.82
1999	9.96	45.67	(7.05)	7.01	(0.16)	-	9.96	2.99	22.54
6/1/2000	3.86	44.49	(2.83)	2.87	-	-	3.86	1.12	17.87
7/1/2000	0.83	12.60	(0.47)	0.24	-	-	0.83	0.32	5.86
8/1/2000	0.08	14.17	(0.04)	0.24	-	-	0.08	0.05	5.52
9/1/2000	0.71	11.02	(0.31)	0.24	-	-	0.71	0.43	5.25
10/1/2000	-	11.81	-	0.08	-	-	-	0.02	4.50
11/1/2000	5.28	1.18	(4.45)	0.28	-	-	5.28	0.85	3.66
2000	6.89	50.79	(5.28)	1.06	-	-	6.89	1.67	24.78
6/1/2001	11.81	28.35	(8.15)	9.25	-	-	11.81	3.77	14.56
7/1/2001	-	14.57	-	0.51	-	-	-	0.02	5.59
8/1/2001	2.72	9.84	(2.40)	0.35	-	-	2.72	0.32	5.87
9/1/2001	3.54	8.27	(2.68)	2.68	-	-	3.54	0.89	4.15
10/1/2001	0.12	11.42	(0.04)	2.13	-	-	0.12	0.10	4.79
11/1/2001	0.39	7.87	(0.20)	0.47	-	-	0.39	0.19	3.65
2001	6.77	51.97	(5.31)	6.14	-	-	6.77	1.53	24.04
6/1/2002	2.99	41.73	(1.93)	2.36	-	-	2.99	1.20	17.09
7/1/2002	-	14.96	-	0.04	-	-	-	-	5.57
8/1/2002	0.35	13.39	(0.16)	0.12	-	-	0.35	0.22	6.27
9/1/2002	0.47	11.81	(0.24)	0.12	-	-	0.47	0.25	4.90
10/1/2002	1.26	9.45	(0.71)	0.59	-	-	1.26	0.57	4.56
11/1/2002	0.08	7.48	(0.04)	0.28	-	-	0.08	0.07	3.72
2002	2.17	57.09	(1.14)	1.14	-	-	2.17	1.10	25.02
6/1/2003	9.29	32.68	(6.93)	6.18	-	-	9.29	2.46	15.60
7/1/2003	-	13.78	-	0.31	-	-	-	-	6.03
8/1/2003	0.47	12.60	(0.12)	0.16	-	-	0.47	0.39	6.11
9/1/2003	1.38	10.63	(0.91)	0.47	-	-	1.38	0.48	4.94
10/1/2003	2.05	9.06	(1.18)	1.06	-	-	2.05	0.89	4.33
11/1/2003	0.08	8.66	-	0.63	-	-	0.08	0.10	3.92
2003	3.98	54.72	(2.20)	2.64	-	-	3.98	1.87	25.33
6/1/2004	7.95	32.28	(5.63)	5.63	-	-	7.95	2.45	16.89
7/1/2004	-	13.39	-	0.04	-	-	-	-	5.46
8/1/2004	0.55	12.20	(0.24)	0.08	-	-	0.55	0.35	5.62
9/1/2004	2.20	9.45	(1.34)	0.75	-	-	2.20	0.87	4.93
10/1/2004	1.61	8.66	(1.18)	0.94	-	-	1.61	0.44	4.87
11/1/2004	1.18	5.12	(0.83)	0.59	-	-	1.18	0.39	3.51
2004	5.55	48.82	(3.58)	2.40	-	-	5.55	2.05	24.39
6/1/2005	16.54	22.44	(13.58)	7.17	(0.06)	-	16.54	3.00	13.86
7/1/2005	0.08	12.60	(0.04)	0.75	(0.16)	-	0.08	0.05	5.14
8/1/2005	1.38	11.81	(1.10)	0.55	(0.21)	-	1.38	0.28	6.50
9/1/2005	4.96	5.91	(3.82)	2.36	(0.20)	-	4.96	1.15	3.98
10/1/2005	0.08	10.24	-	2.32	(0.17)	-	0.08	0.11	4.57
11/1/2005	0.43	7.48	(0.28)	0.59	(0.15)	-	0.43	0.17	3.81
2005	6.93	48.03	(5.24)	6.57	(0.88)	-	6.93	1.75	23.99
6/1/2006	3.94	39.37	(3.07)	4.13	(0.72)	-	3.94	0.88	16.77
7/1/2006	0.51	12.99	(0.28)	0.12	(0.08)	-	0.51	0.26	5.71
8/1/2006	3.19	7.87	(2.48)	0.43	(0.05)	-	3.19	0.70	5.46
9/1/2006	3.03	7.87	(2.01)	2.20	(0.05)	-	3.03	1.08	4.04
10/1/2006	1.18	7.48	(0.75)	2.05	(0.05)	-	1.18	0.43	3.80
11/1/2006	1.02	5.51	(0.47)	0.94	(0.05)	-	1.02	0.59	3.31
2006	8.94	41.73	(5.98)	5.75	(0.27)	-	8.94	3.06	22.33

Table III-B.4 ST 6 - Winter Storm Period Water Balance

Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
10/1/1951	14.21	90.07	(9.63)	14.71	(6.34)	-	14.21	4.59	33.65
11/1/1951	1.64	8.59	(1.27)	0.49	(0.22)	-	1.64	0.37	3.15
12/1/1951	1.71	3.44	(1.11)	0.53	(0.18)	-	1.71	0.60	1.66
1/1/1952	3.02	0.52	(2.42)	0.50	(0.15)	-	3.02	0.60	1.05
2/1/1952	2.79	0.81	(2.04)	0.61	(0.13)	-	2.79	0.75	1.08
3/1/1952	0.50	4.29	(0.14)	0.96	(0.11)	-	0.50	0.36	1.31
1952	9.66	17.65	(6.98)	3.08	(0.78)	-	9.66	2.68	8.25
10/1/1952	10.88	83.79	(7.35)	11.48	(0.84)	-	10.88	3.53	30.56
11/1/1952	-	11.74	0.05	0.37	(0.12)	-	-	0.05	3.81
12/1/1952	4.31	0.74	(3.74)	0.26	(0.11)	-	4.31	0.57	1.47
1/1/1953	1.98	1.22	(1.33)	0.50	(0.11)	-	1.98	0.64	0.96
2/1/1953	0.74	3.65	(0.35)	0.74	(0.10)	-	0.74	0.39	1.27
3/1/1953	0.60	4.11	(0.32)	0.92	(0.08)	-	0.60	0.28	1.36
1953	7.62	21.45	(5.69)	2.77	(0.52)	-	7.62	1.93	8.87
10/1/1953	7.85	84.99	(5.94)	9.86	(0.49)	-	7.85	1.91	29.79
11/1/1953	0.01	10.29	0.02	0.10	(0.06)	-	0.01	0.03	3.39
12/1/1953	0.56	5.66	(0.36)	0.11	(0.06)	-	0.56	0.20	1.91
1/1/1954	0.19	3.36	0.00	0.13	(0.05)	-	0.19	0.20	1.06
2/1/1954	2.41	1.96	(1.85)	0.34	(0.05)	-	2.41	0.56	1.27
3/1/1954	0.72	5.40	(0.39)	0.98	(0.05)	-	0.72	0.34	1.83
1954	3.90	26.67	(2.57)	1.66	(0.28)	-	3.90	1.32	9.46
10/1/1954	17.67	72.65	(13.89)	13.89	(0.28)	-	17.67	3.78	29.17
11/1/1954	-	10.94	0.06	1.50	(0.03)	-	-	0.06	3.47
12/1/1954	0.09	6.69	(0.06)	0.24	(0.03)	-	0.09	0.04	2.01
1/1/1955	0.29	3.74	(0.09)	0.13	(0.03)	-	0.29	0.20	1.30
2/1/1955	3.41	(0.55)	(2.63)	0.34	(0.03)	-	3.41	0.78	0.83
3/1/1955	0.28	4.13	(0.01)	0.88	(0.03)	-	0.28	0.27	1.29
1955	4.07	24.96	(2.72)	3.09	(0.15)	-	4.07	1.36	8.90
10/1/1955	9.49	78.46	(7.22)	9.91	(0.16)	-	9.49	2.30	28.52
11/1/1955	0.02	11.26	0.02	0.05	(0.02)	-	0.02	0.04	3.54
12/1/1955	0.96	4.37	(0.68)	0.13	(0.02)	-	0.96	0.29	1.72
1/1/1956	1.37	2.76	(1.05)	0.41	(0.02)	-	1.37	0.32	1.30
2/1/1956	2.62	1.57	(2.15)	0.48	(0.02)	-	2.62	0.47	1.38
3/1/1956	2.00	1.69	(1.28)	0.72	(0.02)	-	2.00	0.72	1.07
1956	6.98	21.65	(5.14)	1.78	(0.09)	-	6.98	1.85	9.01
10/1/1956	5.70	88.27	(3.70)	7.67	(0.12)	-	5.70	2.01	30.99
11/1/1956	0.53	8.94	(0.28)	0.06	(0.01)	-	0.53	0.25	3.03
12/1/1956	-	5.24	0.09	0.14	(0.01)	-	-	0.09	1.61
1/1/1957	0.47	3.39	(0.25)	0.11	(0.01)	-	0.47	0.22	1.13
2/1/1957	4.77	(1.89)	(4.11)	0.33	(0.01)	-	4.77	0.66	0.96
3/1/1957	0.73	4.69	(0.11)	1.07	(0.01)	-	0.73	0.62	1.51
1957	6.50	20.35	(4.66)	1.71	(0.06)	-	6.50	1.84	8.24
10/1/1957	8.71	78.15	(5.50)	8.87	(0.08)	-	8.71	3.21	28.90
11/1/1957	3.23	4.69	(2.44)	0.46	(0.01)	-	3.23	0.79	2.60
12/1/1957	0.61	3.62	(0.14)	0.60	(0.01)	-	0.61	0.47	1.36
1/1/1958	1.06	2.80	(0.61)	0.53	(0.01)	-	1.06	0.45	1.23
2/1/1958	0.01	4.25	0.07	0.63	(0.01)	-	0.01	0.08	1.22
3/1/1958	2.52	1.97	(1.91)	0.78	(0.01)	-	2.52	0.61	1.34
1958	7.43	17.32	(5.02)	3.00	(0.06)	-	7.43	2.41	7.74
10/1/1958	12.02	78.27	(7.90)	8.91	(0.05)	-	12.02	4.14	30.00
11/1/1958	1.92	7.64	(1.54)	1.68	(0.01)	-	1.92	0.37	3.06
12/1/1958	1.53	3.98	(1.20)	0.91	(0.01)	-	1.53	0.33	1.61
1/1/1959	-	4.76	0.08	0.66	(0.01)	-	-	0.08	1.56
2/1/1959	0.21	4.29	(0.05)	0.64	(0.01)	-	0.21	0.17	1.30
3/1/1959	1.42	2.80	(0.91)	0.53	(0.01)	-	1.42	0.51	1.23
1959	5.08	23.46	(3.63)	4.42	(0.03)	-	5.08	1.45	8.76
10/1/1959	10.77	82.76	(7.97)	7.89	(0.04)	-	10.77	2.83	31.12
11/1/1959	4.87	4.72	(4.50)	1.10	(0.01)	-	4.87	0.38	3.20
12/1/1959	0.38	4.80	0.06	0.95	(0.01)	-	0.38	0.44	1.62
1/1/1960	5.23	(2.01)	(4.59)	0.50	(0.01)	-	5.23	0.64	1.00
2/1/1960	4.17	(1.26)	(3.53)	0.49	(0.01)	-	4.17	0.64	0.85
3/1/1960	0.87	3.07	(0.40)	0.78	(0.01)	-	0.87	0.47	1.18
1960	15.52	9.33	(12.96)	3.81	(0.03)	-	15.52	2.57	7.86

Table III-B.4 ST 6 - Winter Storm Period Water Balance

Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
10/1/1960	3.66	92.32	(1.89)	8.11	(0.31)	-	3.66	1.84	31.77
11/1/1960	2.06	6.42	(1.40)	0.50	(0.08)	-	2.06	0.66	2.80
12/1/1960	0.48	4.76	(0.21)	0.49	(0.08)	-	0.48	0.28	1.70
1/1/1961	0.47	3.27	(0.18)	0.30	(0.07)	-	0.47	0.29	1.25
2/1/1961	0.70	3.15	(0.33)	0.32	(0.07)	-	0.70	0.37	1.27
3/1/1961	0.23	4.92	0.01	0.44	(0.05)	-	0.23	0.24	1.46
1961	3.94	22.52	(2.12)	2.06	(0.35)	-	3.94	1.84	8.48
10/1/1961	6.02	83.11	(3.43)	4.11	(0.32)	-	6.02	2.64	29.75
11/1/1961	0.45	8.86	(0.30)	0.49	(0.04)	-	0.45	0.15	3.23
12/1/1961	0.32	3.90	0.00	0.11	(0.04)	-	0.32	0.33	1.27
1/1/1962	3.88	(0.87)	(3.27)	0.28	(0.03)	-	3.88	0.62	0.99
2/1/1962	3.21	(0.08)	(2.70)	0.52	(0.03)	-	3.21	0.52	0.93
3/1/1962	1.67	2.44	(1.04)	0.81	(0.03)	-	1.67	0.63	1.29
1962	9.52	14.25	(7.30)	2.20	(0.17)	-	9.52	2.24	7.71
10/1/1962	4.73	86.46	(2.57)	7.34	(0.17)	-	4.73	2.19	30.75
11/1/1962	0.87	8.27	(0.35)	0.48	(0.02)	-	0.87	0.52	2.98
12/1/1962	0.83	5.35	(0.56)	0.33	(0.02)	-	0.83	0.28	2.04
1/1/1963	1.81	2.01	(1.18)	0.23	(0.02)	-	1.81	0.63	1.37
2/1/1963	2.09	1.42	(1.58)	0.52	(0.02)	-	2.09	0.52	1.00
3/1/1963	4.23	0.87	(3.90)	1.00	(0.02)	-	4.23	0.33	1.61
1963	9.83	17.91	(7.57)	2.56	(0.11)	-	9.83	2.26	9.00
10/1/1963	14.37	74.33	(11.60)	11.39	(0.14)	-	14.37	2.81	29.66
11/1/1963	0.67	9.37	(0.44)	1.96	(0.02)	-	0.67	0.24	3.50
12/1/1963	2.35	2.52	(1.61)	0.78	(0.02)	-	2.35	0.74	1.61
1/1/1964	0.34	3.46	(0.06)	0.59	(0.02)	-	0.34	0.28	1.28
2/1/1964	0.58	2.91	(0.33)	0.57	(0.03)	-	0.58	0.25	1.02
3/1/1964	-	4.41	0.07	0.87	(0.03)	-	-	0.08	1.28
1964	3.93	22.68	(2.37)	4.78	(0.13)	-	3.93	1.58	8.69
10/1/1964	7.67	75.43	(4.08)	5.69	(0.27)	-	7.67	3.62	27.97
11/1/1964	1.54	8.98	(1.24)	0.92	(0.04)	-	1.54	0.30	3.51
12/1/1964	1.38	3.35	(1.00)	0.49	(0.03)	-	1.38	0.39	1.60
1/1/1965	1.57	1.65	(1.18)	0.38	(0.03)	-	1.57	0.39	1.21
2/1/1965	2.89	0.59	(2.26)	0.56	(0.03)	-	2.89	0.65	1.00
3/1/1965	2.83	1.61	(2.44)	0.90	(0.03)	-	2.83	0.40	1.23
1965	10.22	16.18	(8.11)	3.24	(0.17)	-	10.22	2.12	8.54
10/1/1965	7.38	77.09	(4.37)	9.37	(0.18)	-	7.38	3.04	28.31
11/1/1965	0.46	9.92	(0.28)	0.38	(0.03)	-	0.46	0.19	3.38
12/1/1965	2.35	3.27	(1.97)	0.20	(0.03)	-	2.35	0.39	2.08
1/1/1966	10.47	(7.87)	(9.61)	0.36	(0.03)	-	10.47	0.87	0.93
2/1/1966	1.83	1.30	(1.35)	0.52	(0.03)	-	1.83	0.49	0.95
3/1/1966	2.03	1.65	(1.46)	0.74	(0.03)	-	2.03	0.57	1.04
1966	17.14	8.27	(14.67)	2.20	(0.16)	-	17.14	2.50	8.38
10/1/1966	5.87	83.86	(3.96)	9.38	(2.65)	-	5.87	1.94	30.55
11/1/1966	1.36	7.44	(0.95)	1.76	(0.20)	-	1.36	0.41	2.86
12/1/1966	0.88	4.80	(0.61)	0.86	(0.16)	-	0.88	0.27	2.01
1/1/1967	1.25	2.09	(0.78)	0.32	(0.14)	-	1.25	0.48	1.22
2/1/1967	0.79	2.91	(0.49)	0.41	(0.12)	-	0.79	0.31	0.96
3/1/1967	-	4.69	0.09	0.70	(0.10)	-	-	0.09	1.54
1967	4.28	21.93	(2.75)	4.04	(0.73)	-	4.28	1.55	8.58
10/1/1967	10.25	73.50	(7.57)	9.45	(0.54)	-	10.25	2.73	28.34
11/1/1967	0.42	9.25	(0.22)	0.34	(0.05)	-	0.42	0.21	3.39
12/1/1967	2.11	3.50	(1.70)	0.09	(0.05)	-	2.11	0.43	2.04
1/1/1968	10.00	(7.36)	(9.42)	0.31	(0.04)	-	10.00	0.59	0.80
2/1/1968	0.63	3.23	(0.29)	0.64	(0.04)	-	0.63	0.35	1.18
3/1/1968	1.94	3.07	(1.41)	1.02	(0.06)	-	1.94	0.54	1.44
1968	15.11	11.69	(13.04)	2.40	(0.25)	-	15.11	2.13	8.85
10/1/1968	7.23	75.28	(4.98)	10.67	(2.13)	-	7.23	2.34	28.53
11/1/1968	0.39	8.86	(0.20)	0.34	(0.20)	-	0.39	0.20	2.90
12/1/1968	2.54	2.28	(2.02)	0.40	(0.15)	-	2.54	0.54	1.81
1/1/1969	3.30	(0.39)	(2.77)	0.40	(0.14)	-	3.30	0.54	1.04
2/1/1969	4.16	(0.94)	(3.49)	0.53	(0.12)	-	4.16	0.68	0.96
3/1/1969	1.36	2.32	(0.64)	0.74	(0.10)	-	1.36	0.72	1.04
1969	11.75	12.13	(9.13)	2.41	(0.71)	-	11.75	2.68	7.75

Table III-B.4 ST 6 - Winter Storm Period Water Balance

Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
10/1/1969	7.03	81.85	(4.77)	10.32	(0.91)	-	7.03	2.37	30.43
11/1/1969	0.83	7.76	(0.56)	0.67	(0.12)	-	0.83	0.29	3.11
12/1/1969	2.12	2.52	(1.50)	0.40	(0.11)	-	2.12	0.63	1.64
1/1/1970	1.32	2.20	(0.76)	0.44	(0.10)	-	1.32	0.57	1.32
2/1/1970	0.50	2.91	(0.11)	0.51	(0.09)	-	0.50	0.39	0.94
3/1/1970	0.41	4.57	(0.04)	0.89	(0.08)	-	0.41	0.37	1.48
1970	5.17	19.96	(2.97)	2.91	(0.50)	-	5.17	2.26	8.49
10/1/1970	10.90	74.69	(8.13)	8.12	(0.40)	-	10.90	2.85	30.04
11/1/1970	-	8.39	-	1.50	(0.05)	-	-	0.04	2.87
12/1/1970	0.65	4.76	(0.54)	0.25	(0.05)	-	0.65	0.11	1.96
1/1/1971	1.20	1.85	(0.61)	0.13	(0.04)	-	1.20	0.61	1.09
2/1/1971	0.85	3.19	(0.57)	0.45	(0.03)	-	0.85	0.28	1.08
3/1/1971	0.82	3.74	(0.50)	0.62	(0.03)	-	0.82	0.35	1.55
1971	3.52	21.93	(2.22)	2.94	(0.19)	-	3.52	1.38	8.55
10/1/1971	8.95	76.65	(6.83)	5.55	(0.20)	-	8.95	2.23	29.41
11/1/1971	4.20	3.15	(3.35)	1.57	(0.02)	-	4.20	0.85	2.80
12/1/1971	0.04	4.84	0.08	0.90	(0.02)	-	0.04	0.13	1.64
1/1/1972	2.12	0.75	(1.42)	0.44	(0.02)	-	2.12	0.71	0.99
2/1/1972	-	4.06	0.14	0.67	(0.02)	-	-	0.15	1.25
3/1/1972	-	5.63	0.01	1.10	(0.02)	-	-	0.04	1.56
1972	6.36	18.43	(4.55)	4.69	(0.11)	-	6.36	1.88	8.23
10/1/1972	4.93	87.52	(3.13)	5.47	(0.11)	-	4.93	1.89	32.29
11/1/1972	8.96	(1.77)	(7.83)	1.08	(0.01)	-	8.96	1.13	2.78
12/1/1972	2.83	0.71	(2.12)	0.65	(0.01)	-	2.83	0.71	1.35
1/1/1973	2.98	(0.12)	(2.41)	0.44	(0.01)	-	2.98	0.57	0.98
2/1/1973	0.74	2.13	(0.03)	0.48	(0.01)	-	0.74	0.71	0.87
3/1/1973	3.17	0.35	(2.31)	0.71	(0.01)	-	3.17	0.86	0.94
1973	18.67	1.30	(14.70)	3.36	(0.06)	-	18.67	3.99	6.92
10/1/1973	12.27	72.09	(8.76)	13.28	(2.05)	-	12.27	3.60	29.00
11/1/1973	-	8.66	-	0.17	(0.25)	-	-	0.00	3.27
12/1/1973	1.77	3.35	(1.24)	0.16	(0.20)	-	1.77	0.54	1.88
1/1/1974	0.12	3.50	0.07	0.30	(0.17)	-	0.12	0.16	1.16
2/1/1974	3.39	(0.28)	(2.69)	0.48	(0.14)	-	3.39	0.72	1.02
3/1/1974	0.16	3.90	0.03	0.81	(0.12)	-	0.16	0.19	1.10
1974	5.43	19.13	(3.81)	1.92	(0.87)	-	5.43	1.61	8.42
10/1/1974	10.47	71.73	(7.39)	9.19	(0.61)	-	10.47	3.12	28.42
11/1/1974	3.39	4.84	(2.70)	1.28	(0.06)	-	3.39	0.69	3.10
12/1/1974	0.12	5.04	0.21	0.84	(0.05)	-	0.12	0.34	1.70
1/1/1975	0.75	2.24	(0.40)	0.46	(0.05)	-	0.75	0.36	1.18
2/1/1975	0.39	2.40	(0.12)	0.46	(0.04)	-	0.39	0.29	0.88
3/1/1975	3.98	0.20	(3.37)	0.83	(0.04)	-	3.98	0.58	1.04
1975	8.62	14.72	(6.39)	3.87	(0.24)	-	8.62	2.26	7.90
10/1/1975	10.47	68.94	(6.65)	10.45	(0.29)	-	10.47	3.89	27.54
11/1/1975	0.24	8.39	(0.08)	0.19	(0.04)	-	0.24	0.18	3.43
12/1/1975	2.17	2.99	(1.98)	0.07	(0.02)	-	2.17	0.19	2.12
1/1/1976	1.26	2.09	(0.67)	0.39	(0.02)	-	1.26	0.60	1.14
2/1/1976	0.24	2.80	0.02	0.47	(0.02)	-	0.24	0.24	0.98
3/1/1976	1.57	2.64	(1.00)	0.83	(0.02)	-	1.57	0.62	1.13
1976	5.47	18.90	(3.70)	1.95	(0.13)	-	5.47	1.83	8.80
10/1/1976	10.98	71.22	(8.08)	7.82	(0.17)	-	10.98	2.98	29.04
11/1/1976	0.91	6.38	(0.52)	1.44	(0.02)	-	0.91	0.39	2.68
12/1/1976	0.55	4.57	(0.23)	0.87	(0.02)	-	0.55	0.31	1.80
1/1/1977	1.85	1.38	(1.55)	0.43	(0.02)	-	1.85	0.28	1.15
2/1/1977	1.89	0.67	(1.09)	0.39	(0.02)	-	1.89	0.81	0.77
3/1/1977	0.08	5.16	0.04	1.02	(0.02)	-	0.08	0.13	1.64
1977	5.28	18.15	(3.35)	4.15	(0.11)	-	5.28	1.93	8.04
10/1/1977	11.14	72.60	(8.31)	8.46	(0.14)	-	11.14	2.93	29.75
11/1/1977	1.34	7.76	(0.91)	1.59	(0.02)	-	1.34	0.42	3.39
12/1/1977	0.35	5.08	(0.07)	0.65	(0.02)	-	0.35	0.29	1.96
1/1/1978	0.63	3.07	(0.46)	0.26	(0.02)	-	0.63	0.22	1.41
2/1/1978	6.42	(3.74)	(5.72)	0.31	(0.02)	-	6.42	0.69	0.82
3/1/1978	5.47	(2.28)	(4.56)	0.65	(0.02)	-	5.47	0.91	0.95
1978	14.21	9.88	(11.71)	3.46	(0.09)	-	14.21	2.54	8.53

Table III-B.4 ST 6 - Winter Storm Period Water Balance

Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
10/1/1978	9.76	74.13	(6.79)	11.09	(1.02)	-	9.76	3.07	29.77
11/1/1978	1.93	7.48	(1.52)	0.37	(0.18)	-	1.93	0.42	4.04
12/1/1978	5.63	(1.54)	(4.97)	0.58	(0.14)	-	5.63	0.66	1.63
1/1/1979	6.54	(3.70)	(5.90)	0.44	(0.13)	-	6.54	0.67	0.93
2/1/1979	6.02	(4.09)	(4.93)	0.31	(0.14)	-	6.02	1.09	0.71
3/1/1979	1.26	3.23	(0.78)	0.91	(1.16)	-	1.26	0.48	1.27
1979	21.38	1.38	(18.10)	2.62	(1.75)	-	21.38	3.31	8.59
10/1/1979	8.23	75.79	(5.13)	10.78	(6.99)	-	8.23	3.19	29.94
11/1/1979	0.67	9.06	(0.48)	0.31	(0.28)	-	0.67	0.20	3.81
12/1/1979	0.67	3.78	(0.28)	0.29	(0.22)	-	0.67	0.39	1.80
1/1/1980	0.71	3.15	(0.41)	0.22	(0.19)	-	0.71	0.32	1.40
2/1/1980	4.09	(1.46)	(3.30)	0.30	(0.15)	-	4.09	0.81	0.94
3/1/1980	6.06	(2.01)	(5.47)	0.80	(0.12)	-	6.06	0.57	1.00
1980	12.20	12.52	(9.94)	1.92	(0.96)	-	12.20	2.30	8.95
10/1/1980	8.11	73.54	(4.88)	10.59	(1.78)	-	8.11	3.31	29.27
11/1/1980	0.04	9.13	(0.00)	0.21	(0.21)	-	0.04	0.04	3.67
12/1/1980	-	5.35	-	0.08	(0.16)	-	-	-	2.08
1/1/1981	0.55	3.86	(0.27)	0.14	(0.13)	-	0.55	0.30	1.38
2/1/1981	1.34	2.36	(0.99)	0.26	(0.13)	-	1.34	0.35	1.43
3/1/1981	2.56	2.20	(2.14)	0.83	(0.10)	-	2.56	0.45	1.43
1981	4.49	22.91	(3.41)	1.53	(0.73)	-	4.49	1.14	10.00
10/1/1981	10.75	74.21	(7.84)	10.57	(0.56)	-	10.75	2.96	30.81
11/1/1981	0.94	6.77	(0.51)	0.52	(0.05)	-	0.94	0.47	3.07
12/1/1981	2.32	3.46	(2.20)	0.26	(0.04)	-	2.32	0.13	2.27
1/1/1982	-	3.90	0.16	0.49	(0.04)	-	-	0.19	1.37
2/1/1982	2.76	0.35	(1.85)	0.46	(0.04)	-	2.76	0.90	0.96
3/1/1982	1.81	2.28	(1.06)	0.82	(0.04)	-	1.81	0.73	1.14
1982	7.83	16.77	(5.47)	2.55	(0.22)	-	7.83	2.43	8.81
10/1/1982	15.75	61.02	(11.30)	12.43	(0.26)	-	15.75	4.59	27.78
11/1/1982	-	8.43	-	1.68	(0.02)	-	-	0.04	3.10
12/1/1982	3.31	0.55	(2.68)	0.51	(0.02)	-	3.31	0.64	1.75
1/1/1983	1.69	1.02	(0.98)	0.43	(0.02)	-	1.69	0.75	1.04
2/1/1983	1.89	1.69	(1.57)	0.59	(0.03)	-	1.89	0.31	1.14
3/1/1983	2.32	1.65	(1.93)	0.79	(0.02)	-	2.32	0.43	1.04
1983	9.21	13.35	(7.17)	4.00	(0.12)	-	9.21	2.17	8.07
10/1/1983	18.23	59.17	(13.78)	12.44	(0.20)	-	18.23	4.55	27.94
11/1/1983	1.14	6.46	(0.59)	1.65	(0.04)	-	1.14	0.54	2.89
12/1/1983	2.01	2.64	(1.61)	0.87	(0.04)	-	2.01	0.46	1.87
1/1/1984	2.52	0.31	(2.05)	0.43	(0.04)	-	2.52	0.48	1.00
2/1/1984	0.47	3.11	(0.08)	0.59	(0.05)	-	0.47	0.40	0.98
3/1/1984	-	4.76	-	0.94	(0.04)	-	-	0.05	1.53
1984	6.14	17.28	(4.33)	4.49	(0.22)	-	6.14	1.93	8.27
10/1/1984	11.65	67.24	(7.09)	9.65	(0.33)	-	11.65	4.73	29.05
11/1/1984	1.34	5.55	(0.75)	0.94	(0.05)	-	1.34	0.62	2.68
12/1/1984	2.09	2.17	(1.85)	0.43	(0.04)	-	2.09	0.27	1.84
1/1/1985	5.79	(3.27)	(5.04)	0.35	(0.04)	-	5.79	0.77	0.90
2/1/1985	2.68	(0.31)	(1.93)	0.39	(0.05)	-	2.68	0.74	0.80
3/1/1985	1.69	1.54	(1.10)	0.63	(0.04)	-	1.69	0.58	0.94
1985	13.58	5.67	(10.67)	2.76	(0.22)	-	13.58	2.98	7.17
10/1/1985	9.17	63.35	(5.87)	9.49	(0.78)	-	9.17	3.45	26.87
11/1/1985	1.22	5.47	(0.63)	1.34	(0.12)	-	1.22	0.65	2.40
12/1/1985	2.76	0.98	(2.28)	0.59	(0.11)	-	2.76	0.47	1.90
1/1/1986	0.87	2.64	(0.35)	0.55	(0.11)	-	0.87	0.54	1.10
2/1/1986	0.12	4.25	(0.08)	0.71	(0.09)	-	0.12	0.07	1.51
3/1/1986	3.07	0.87	(2.32)	0.83	(0.09)	-	3.07	0.78	1.18
1986	8.03	14.21	(5.67)	4.02	(0.52)	-	8.03	2.51	8.09
10/1/1986	13.27	64.84	(9.65)	11.89	(0.48)	-	13.27	3.76	29.52
11/1/1986	1.77	5.47	(1.38)	1.18	(0.06)	-	1.77	0.41	2.44
12/1/1986	1.42	2.52	(0.79)	0.67	(0.05)	-	1.42	0.63	1.76
1/1/1987	2.99	(0.12)	(2.36)	0.43	(0.05)	-	2.99	0.67	1.13
2/1/1987	3.39	(0.12)	(2.68)	0.55	(0.05)	-	3.39	0.70	0.98
3/1/1987	2.68	0.87	(2.13)	0.67	(0.04)	-	2.68	0.56	1.41
1987	12.24	8.62	(9.33)	3.50	(0.25)	-	12.24	2.97	7.71
10/1/1987	7.91	68.58	(5.59)	10.91	(0.38)	-	7.91	2.51	28.29
11/1/1987	0.31	8.58	(0.12)	0.79	(0.07)	-	0.31	0.24	3.69
12/1/1987	1.77	2.40	(1.26)	0.35	(0.06)	-	1.77	0.51	1.83
1/1/1988	4.02	(1.22)	(3.27)	0.28	(0.06)	-	4.02	0.80	1.17
2/1/1988	3.58	(1.26)	(3.03)	0.39	(0.05)	-	3.58	0.56	0.76
3/1/1988	0.71	4.09	(0.43)	0.98	(0.05)	-	0.71	0.30	1.24
1988	10.39	12.60	(8.11)	2.80	(0.29)	-	10.39	2.41	8.69

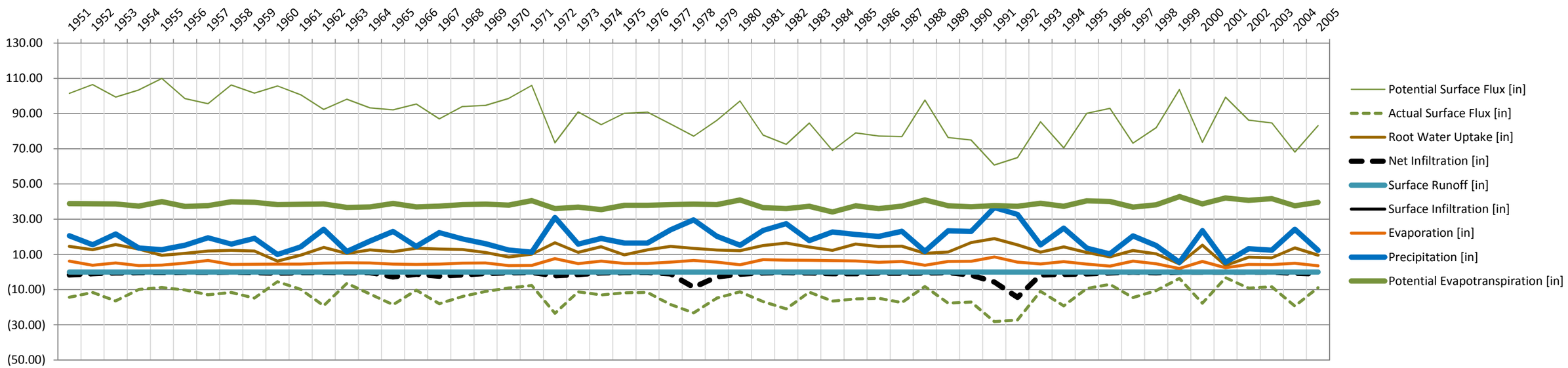
Table III-B.4 ST 6 - Winter Storm Period Water Balance

Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
10/1/1988	12.68	64.33	(9.25)	11.81	(0.46)	-	12.68	3.59	28.69
11/1/1988	1.50	7.32	(1.06)	1.65	(0.07)	-	1.50	0.45	3.45
12/1/1988	1.73	2.95	(1.42)	0.67	(0.07)	-	1.73	0.36	2.12
1/1/1989	1.10	1.77	(0.55)	0.43	(0.07)	-	1.10	0.56	1.10
2/1/1989	2.20	0.79	(1.61)	0.51	(0.06)	-	2.20	0.58	0.89
3/1/1989	0.31	4.37	(0.04)	0.94	(0.05)	-	0.31	0.28	1.16
1989	6.85	17.20	(4.69)	4.21	(0.31)	-	6.85	2.22	8.72
10/1/1989	4.88	80.47	(3.50)	6.38	(0.31)	-	4.88	1.59	32.08
11/1/1989	1.06	6.77	(0.59)	0.59	(0.05)	-	1.06	0.50	3.57
12/1/1989	0.28	4.92	(0.16)	0.24	(0.04)	-	0.28	0.17	2.06
1/1/1990	0.87	2.36	(0.71)	0.08	(0.04)	-	0.87	0.19	1.21
2/1/1990	1.30	1.61	(0.67)	0.28	(0.04)	-	1.30	0.59	1.04
3/1/1990	2.52	0.98	(1.69)	0.63	(0.03)	-	2.52	0.84	0.96
1990	6.02	16.65	(3.82)	1.81	(0.20)	-	6.02	2.29	8.85
10/1/1990	17.32	59.72	(13.82)	9.49	(0.17)	-	17.32	3.66	28.78
11/1/1990	0.28	7.83	(0.08)	1.77	(0.02)	-	0.28	0.21	3.23
12/1/1990	2.17	2.36	(1.38)	0.83	(0.02)	-	2.17	0.77	2.20
1/1/1991	4.84	(2.28)	(4.09)	0.39	(0.02)	-	4.84	0.74	1.16
2/1/1991	1.77	1.02	(1.34)	0.47	(0.03)	-	1.77	0.45	0.89
3/1/1991	0.94	3.82	(0.51)	0.94	(0.03)	-	0.94	0.46	1.35
1991	10.00	12.76	(7.40)	4.41	(0.13)	-	10.00	2.64	8.82
10/1/1991	12.99	62.24	(9.65)	12.32	(1.63)	-	12.99	3.43	28.26
11/1/1991	1.22	7.99	(0.98)	0.83	(0.22)	-	1.22	0.25	3.99
12/1/1991	3.23	0.75	(2.76)	0.43	(0.17)	-	3.23	0.48	1.66
1/1/1992	3.98	(1.57)	(3.15)	0.39	(0.15)	-	3.98	0.82	1.07
2/1/1992	2.99	(0.20)	(2.09)	0.47	(0.13)	-	2.99	0.91	0.75
3/1/1992	2.76	1.06	(2.09)	0.79	(0.11)	-	2.76	0.70	1.13
1992	14.17	8.03	(11.06)	2.91	(0.78)	-	14.17	3.17	8.60
10/1/1992	22.40	52.72	(17.09)	16.06	(4.95)	-	22.40	5.38	29.06
11/1/1992	1.22	7.28	(0.91)	1.57	(0.31)	-	1.22	0.33	3.90
12/1/1992	0.47	3.19	(0.16)	0.55	(0.26)	-	0.47	0.31	1.68
1/1/1993	6.34	(4.02)	(5.51)	0.35	(0.23)	-	6.34	0.86	0.78
2/1/1993	11.30	(8.90)	(10.47)	0.39	(0.23)	-	11.30	0.80	0.67
3/1/1993	5.98	(3.39)	(5.08)	0.51	(3.41)	-	5.98	0.94	1.04
1993	25.31	(5.83)	(22.13)	3.39	(4.43)	-	25.31	3.24	8.07
10/1/1993	7.44	70.83	(5.16)	11.97	(9.96)	-	7.44	2.37	29.14
11/1/1993	0.79	7.13	(0.35)	0.59	(0.28)	-	0.79	0.43	3.67
12/1/1993	4.21	(0.43)	(3.86)	0.39	(0.22)	-	4.21	0.33	1.76
1/1/1994	0.28	2.76	(0.08)	0.47	(0.19)	-	0.28	0.24	1.29
2/1/1994	0.28	3.35	(0.12)	0.63	(0.15)	-	0.28	0.17	1.22
3/1/1994	2.60	0.75	(2.09)	0.67	(0.12)	-	2.60	0.55	1.10
1994	8.15	13.54	(6.50)	2.76	(0.96)	-	8.15	1.72	9.05
10/1/1994	7.24	71.77	(4.49)	8.50	(0.69)	-	7.24	2.85	29.94
11/1/1994	1.85	5.12	(1.54)	0.87	(0.09)	-	1.85	0.33	3.25
12/1/1994	3.35	-	(2.64)	0.51	(0.08)	-	3.35	0.74	1.76
1/1/1995	2.68	-	(2.09)	0.43	(0.05)	-	2.68	0.59	1.10
2/1/1995	3.66	(0.79)	(2.91)	0.43	(0.05)	-	3.66	0.76	0.86
3/1/1995	2.68	1.57	(2.20)	0.87	(0.04)	-	2.68	0.52	1.22
1995	14.21	5.91	(11.38)	3.11	(0.32)	-	14.21	2.93	8.20
10/1/1995	10.71	64.57	(7.83)	11.14	(1.06)	-	10.71	2.97	29.13
11/1/1995	-	9.06	0.08	1.61	(0.15)	-	-	0.09	3.61
12/1/1995	1.34	3.15	(0.94)	0.63	(0.13)	-	1.34	0.39	2.00
1/1/1996	0.87	2.76	(0.71)	0.31	(0.14)	-	0.87	0.23	1.52
2/1/1996	0.04	3.54	0.04	0.43	(0.10)	-	0.04	0.08	1.28
3/1/1996	3.15	1.18	(2.64)	0.83	(0.08)	-	3.15	0.52	1.45
1996	5.39	19.69	(4.17)	3.82	(0.60)	-	5.39	1.30	9.86
10/1/1996	8.19	70.47	(5.20)	7.20	(0.47)	-	8.19	3.13	30.57
11/1/1996	0.43	7.87	(0.16)	1.30	(0.05)	-	0.43	0.25	3.85
12/1/1996	1.22	2.76	(0.94)	0.24	(0.05)	-	1.22	0.29	1.67
1/1/1997	0.04	3.15	0.16	0.20	(0.05)	-	0.04	0.23	1.24
2/1/1997	2.83	-	(2.17)	0.31	(0.05)	-	2.83	0.66	1.02
3/1/1997	1.65	2.76	(1.38)	0.79	(0.04)	-	1.65	0.30	1.27
1997	6.18	16.54	(4.49)	2.83	(0.24)	-	6.18	1.73	9.04
10/1/1997	4.09	76.38	(2.52)	5.79	(0.29)	-	4.09	1.65	30.90
11/1/1997	0.71	6.30	(0.47)	0.12	(0.04)	-	0.71	0.28	3.74
12/1/1997	0.83	3.54	(0.47)	0.20	(0.03)	-	0.83	0.36	1.79
1/1/1998	2.68	-	(1.93)	0.20	(0.00)	-	2.68	0.78	1.21
2/1/1998	0.39	2.76	(0.04)	0.51	-	-	0.39	0.37	0.93
3/1/1998	6.42	(3.94)	(5.39)	0.47	-	-	6.42	1.00	1.05
1998	11.02	8.66	(8.31)	1.50	(0.07)	-	11.02	2.78	8.73

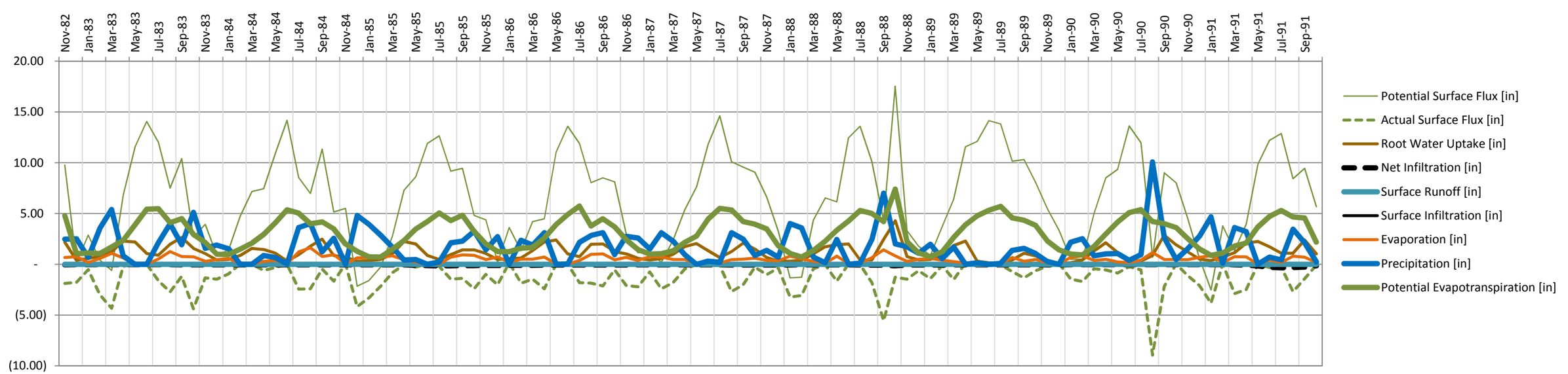
Table III-B.4 ST 6 - Winter Storm Period Water Balance

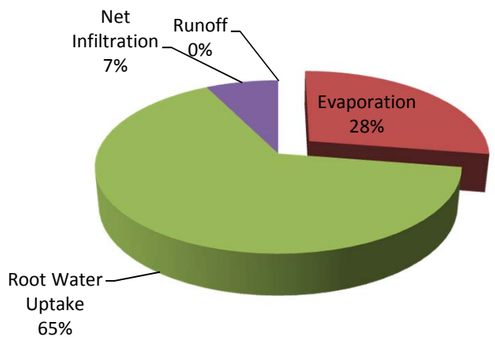
Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
10/1/1998	9.49	64.57	(6.26)	10.67	(0.00)	-	9.49	3.35	28.12
11/1/1998	-	7.48	-	0.47	(0.04)	-	-	-	3.85
12/1/1998	1.06	3.54	(0.91)	0.04	(0.04)	-	1.06	0.17	1.81
1/1/1999	0.75	2.36	(0.20)	0.20	(0.04)	-	0.75	0.53	1.30
2/1/1999	0.04	3.54	-	0.31	(0.04)	-	0.04	0.07	1.38
3/1/1999	0.20	4.72	(0.12)	0.47	(0.04)	-	0.20	0.13	1.38
1999	2.05	21.65	(1.22)	1.50	(0.19)	-	2.05	0.91	9.71
10/1/1999	12.99	60.24	(9.33)	8.86	(0.27)	-	12.99	3.70	28.42
11/1/1999	-	9.45	-	0.94	(0.01)	-	-	0.01	3.82
12/1/1999	-	6.30	-	0.08	-	-	-	0.00	2.67
1/1/2000	0.04	3.15	(0.04)	-	-	-	0.04	-	1.49
2/1/2000	0.28	3.94	(0.16)	0.08	-	-	0.28	0.15	1.32
3/1/2000	0.71	3.54	(0.35)	0.08	-	-	0.71	0.35	1.69
2000	1.02	26.38	(0.55)	1.18	(0.01)	-	1.02	0.52	11.00
9/30/2000	4.45	76.77	(3.11)	3.43	-	-	4.45	1.43	31.65
11/1/2000	5.28	1.57	(4.45)	0.28	-	-	5.28	0.85	3.82
12/1/2000	2.13	0.79	(1.54)	0.51	-	-	2.13	0.59	1.12
1/1/2001	0.12	3.54	(0.04)	0.55	-	-	0.12	0.12	1.48
2/1/2001	3.39	(1.18)	(2.60)	0.39	-	-	3.39	0.78	1.09
3/1/2001	1.73	1.97	(1.06)	0.67	-	-	1.73	0.69	1.01
2001	12.64	6.69	(9.69)	2.40	-	-	12.64	3.04	8.52
9/30/2001	10.83	66.93	(8.03)	12.76	-	-	10.83	2.92	30.06
11/1/2001	0.39	8.27	(0.20)	0.51	-	-	0.39	0.19	3.82
12/1/2001	0.28	4.72	(0.12)	0.16	-	-	0.28	0.18	2.65
1/1/2002	1.85	0.79	(1.34)	0.16	-	-	1.85	0.52	1.07
2/1/2002	0.20	3.15	(0.12)	0.35	-	-	0.20	0.14	1.22
3/1/2002	-	4.72	0.04	0.59	-	-	-	0.08	1.25
2002	2.72	21.65	(1.73)	1.77	-	-	2.72	1.11	10.00
9/30/2002	2.76	77.56	(1.50)	1.97	-	-	2.76	1.31	32.03
11/1/2002	0.08	7.87	(0.04)	0.28	-	-	0.08	0.07	3.90
12/1/2002	0.87	3.94	(0.71)	0.04	-	-	0.87	0.18	2.19
1/1/2003	0.98	1.97	(0.43)	0.12	-	-	0.98	0.56	1.34
2/1/2003	0.39	3.54	(0.04)	0.28	-	-	0.39	0.34	1.19
3/1/2003	4.92	(1.18)	(4.45)	0.43	-	-	4.92	0.50	1.50
2003	7.24	16.14	(5.67)	1.14	-	-	7.24	1.65	10.12
9/30/2003	6.02	69.69	(3.50)	7.28	-	-	6.02	2.65	30.64
11/1/2003	0.08	9.45	-	0.67	-	-	0.08	0.10	4.07
12/1/2003	0.87	2.76	(0.63)	0.12	-	-	0.87	0.26	2.31
1/1/2004	0.98	1.97	(0.59)	0.16	-	-	0.98	0.40	1.52
2/1/2004	1.42	1.18	(0.91)	0.20	-	-	1.42	0.56	1.21
3/1/2004	0.71	2.76	(0.24)	0.43	-	-	0.71	0.45	1.06
2004	4.06	18.11	(2.36)	1.57	-	-	4.06	1.77	10.16
9/30/2004	8.35	66.93	(6.02)	6.54	-	-	8.35	2.44	31.52
11/1/2004	1.18	5.51	(0.83)	0.59	-	-	1.18	0.40	3.66
12/1/2004	0.67	2.36	(0.31)	0.24	-	-	0.67	0.35	1.48
1/1/2005	2.76	-	(2.28)	0.28	-	-	2.76	0.48	1.02
2/1/2005	4.21	(1.57)	(3.66)	0.43	-	-	4.21	0.57	1.02
3/1/2005	7.36	(4.72)	(6.42)	0.47	-	-	7.36	0.94	0.94
2005	16.18	1.57	(13.50)	2.01	-	-	16.18	2.74	8.12
9/30/2005	8.03	66.54	(5.87)	11.69	(0.79)	-	8.03	2.24	29.40
11/1/2005	0.43	7.87	(0.28)	0.63	(0.15)	-	0.43	0.17	3.96
12/1/2005	-	4.72	-	0.24	(0.13)	-	-	0.00	2.27
1/1/2006	-	3.54	-	0.08	(0.14)	-	-	0.00	1.53
2/1/2006	-	3.94	-	0.08	(0.10)	-	-	-	1.56
3/1/2006	0.12	4.33	(0.04)	0.16	(0.08)	-	0.12	0.08	1.67
2006	0.55	24.41	(0.31)	1.18	(0.61)	-	0.55	0.25	10.98
9/30/2006	11.73	58.66	(8.54)	8.31	(0.48)	-	11.73	3.27	28.65

Annual Water Balance - 56-Year Simulated Period (Results on October 1)



Monthly Water Balance - 9 Wet Years (1983 - 1991)





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CLIENT: Resolution Copper Mining

Klohn Crippen Berger

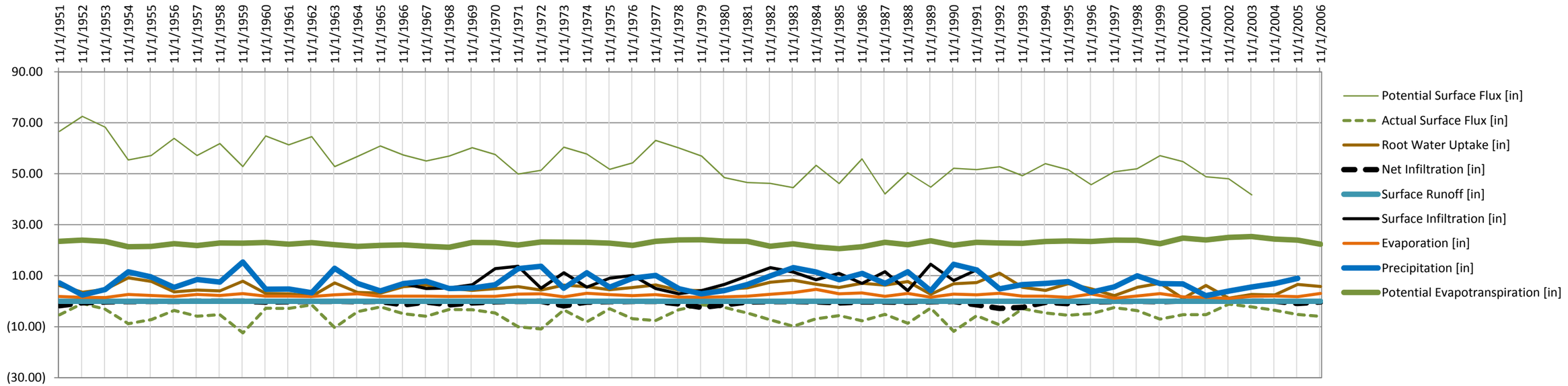
PROJECT: RESOLUTION PROJECT
NEAR WEST TAILINGS STORAGE FACILITY CLOSURE COVER STUDY - CLOSURE COVER PREDICTIONS

TITLE: ST6 - 8.6ft Beach / 1ft Fine Gila / Veg Water Balance Results

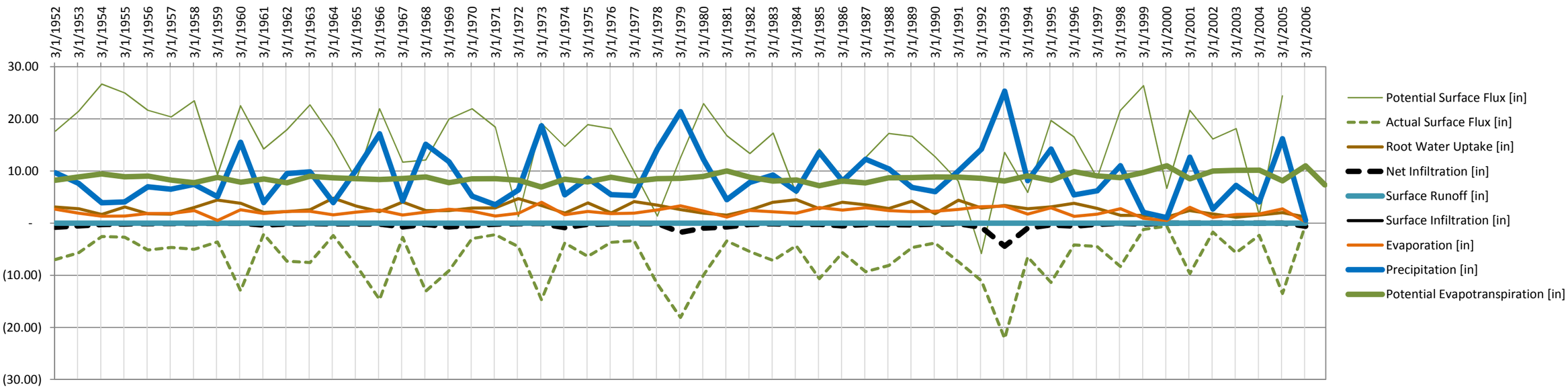
PROJECT No. M09441A16

FIG. No. III-B.1

Monsoon Season Water Balance - 56-Year Simulated Period (July-November)



Winter Storm Season Water Balance - 56-Year Simulated Period (November-March)



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Klohn Crippen Berger

PROJECT

RESOLUTION PROJECT
NEAR WEST TAILINGS STORAGE FACILITY CLOSURE
COVER STUDY - CLOSURE COVER PREDICTIONS

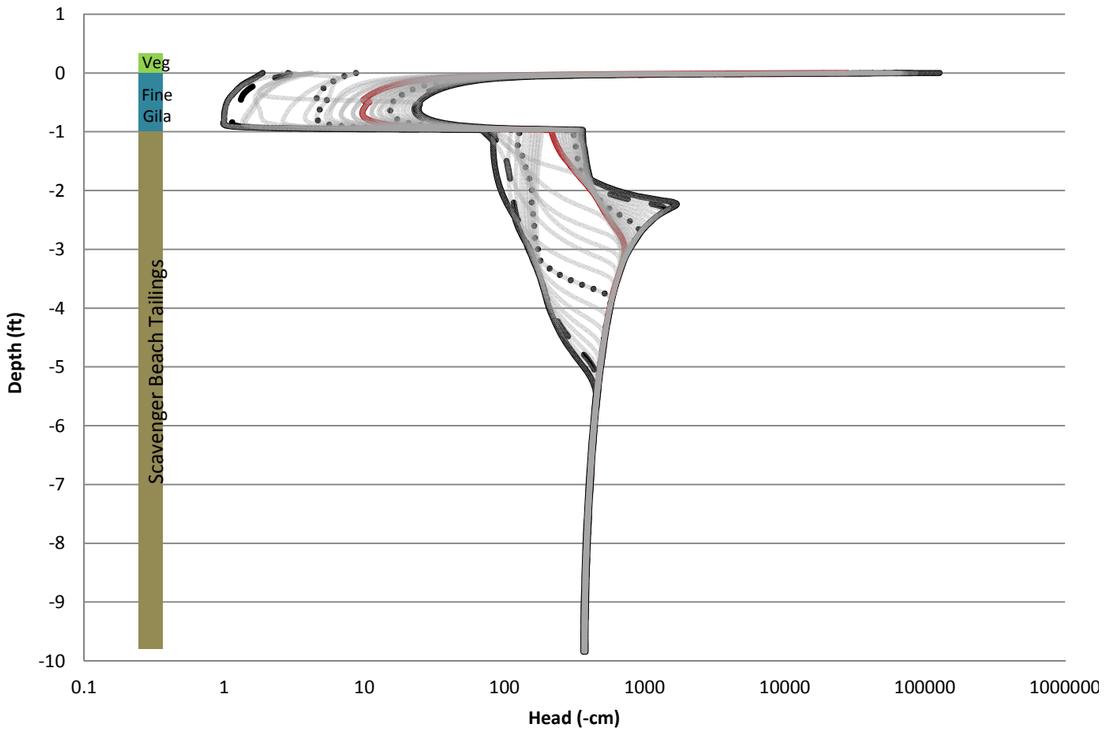
TITLE

ST6 - 8.6ft Beach / 1ft Fine Gila / Veg
Water Balance Results

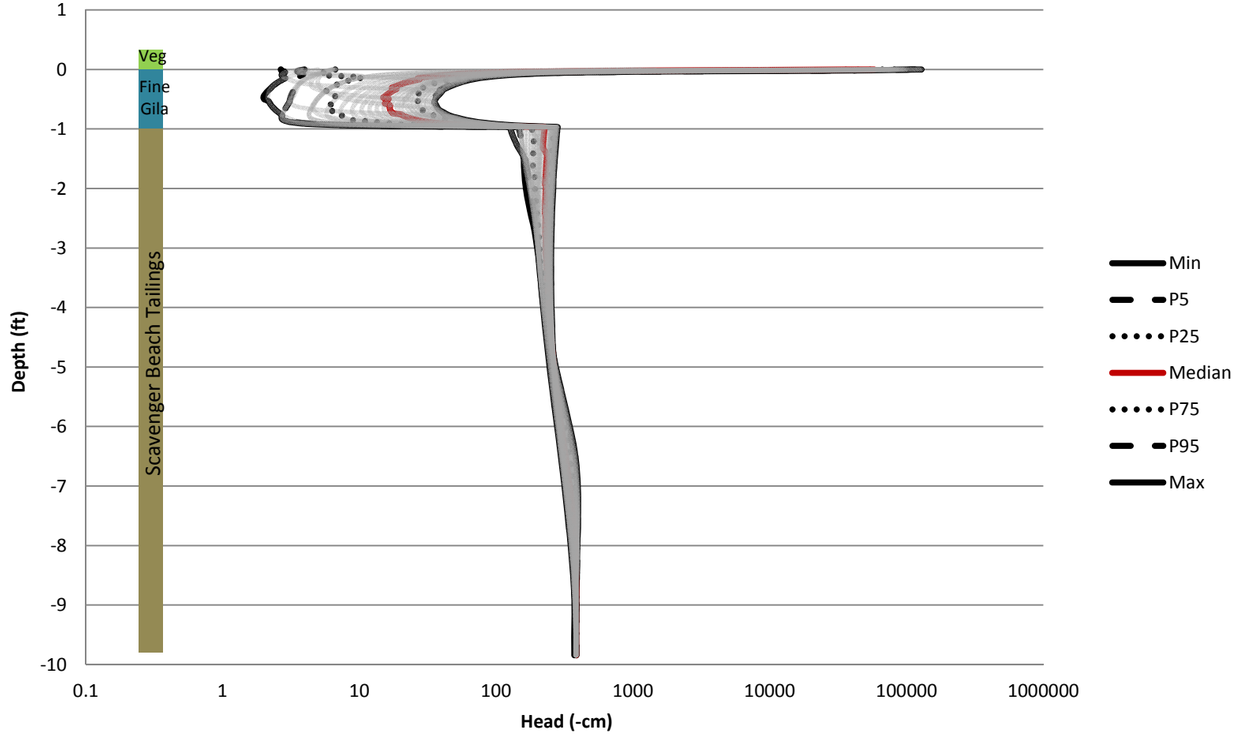
PROJECT No. M09441A16

FIG. No. III-B.2

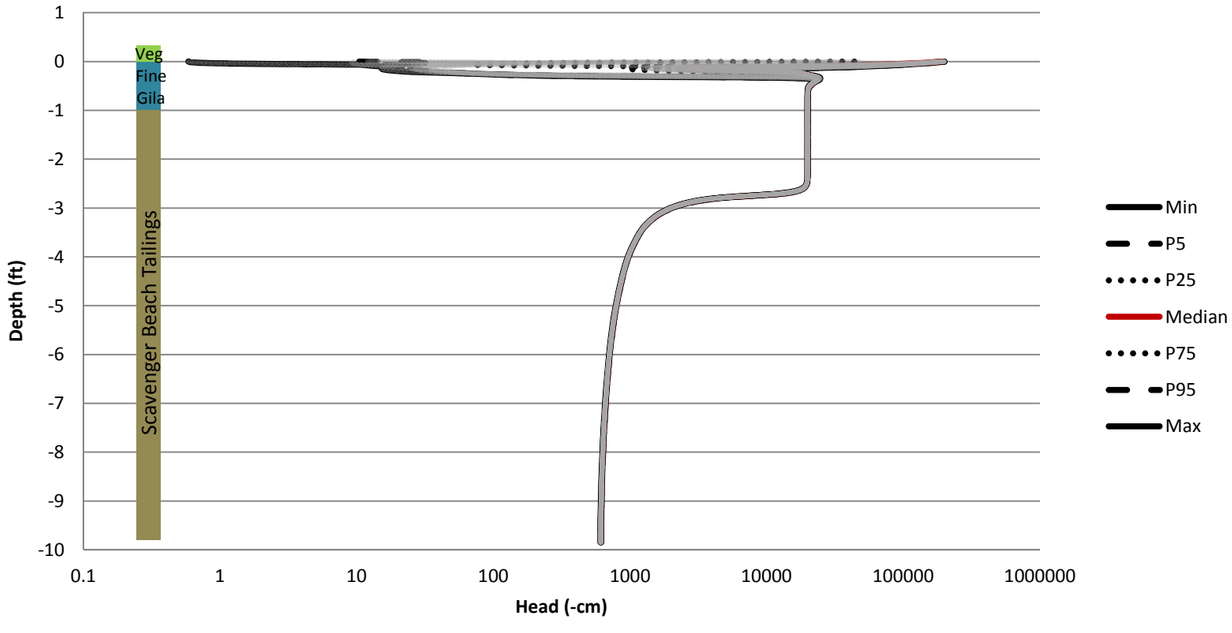
February Average Year (1980) - Daily Suction Head



February Wet Year (1992) - Daily Suction Head



February Dry Year (2000) - Daily Suction Head



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CLIENT

Resolution Copper Mining

Klohn Crippen Berger

PROJECT

RESOLUTION PROJECT
NEAR WEST TAILINGS STORAGE FACILITY CLOSURE COVER STUDY - CLOSURE COVER PREDICTIONS

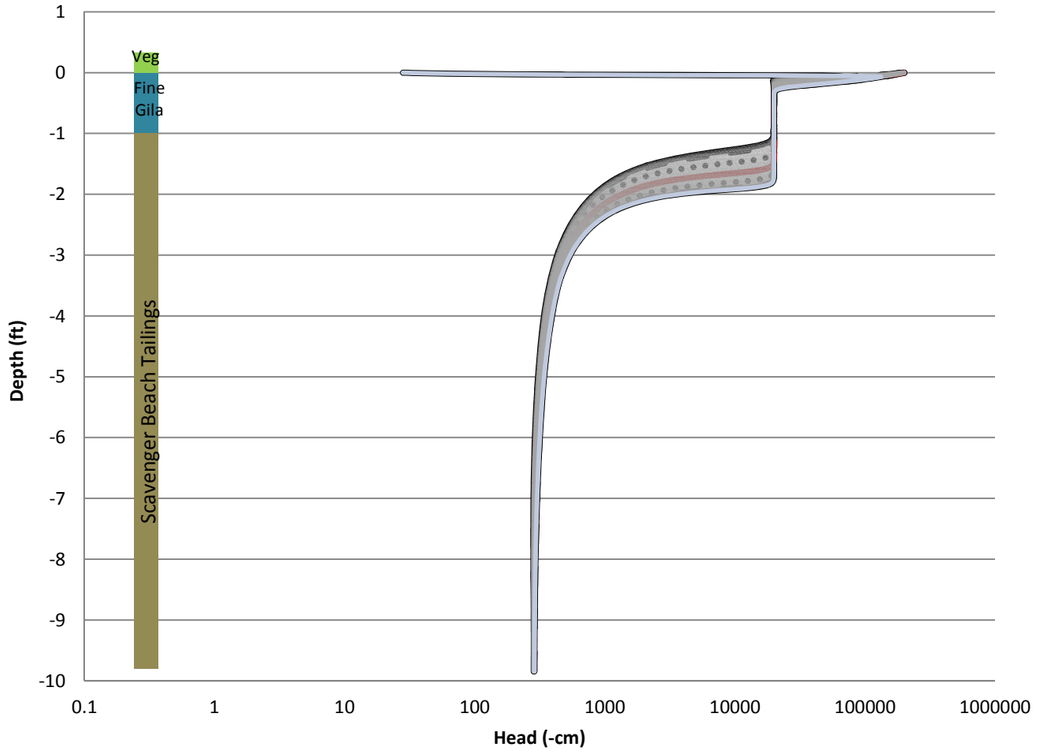
TITLE

ST6 - 8.6ft Beach / 1ft Fine Gila / Veg
Suction Profiles - Winter (February)

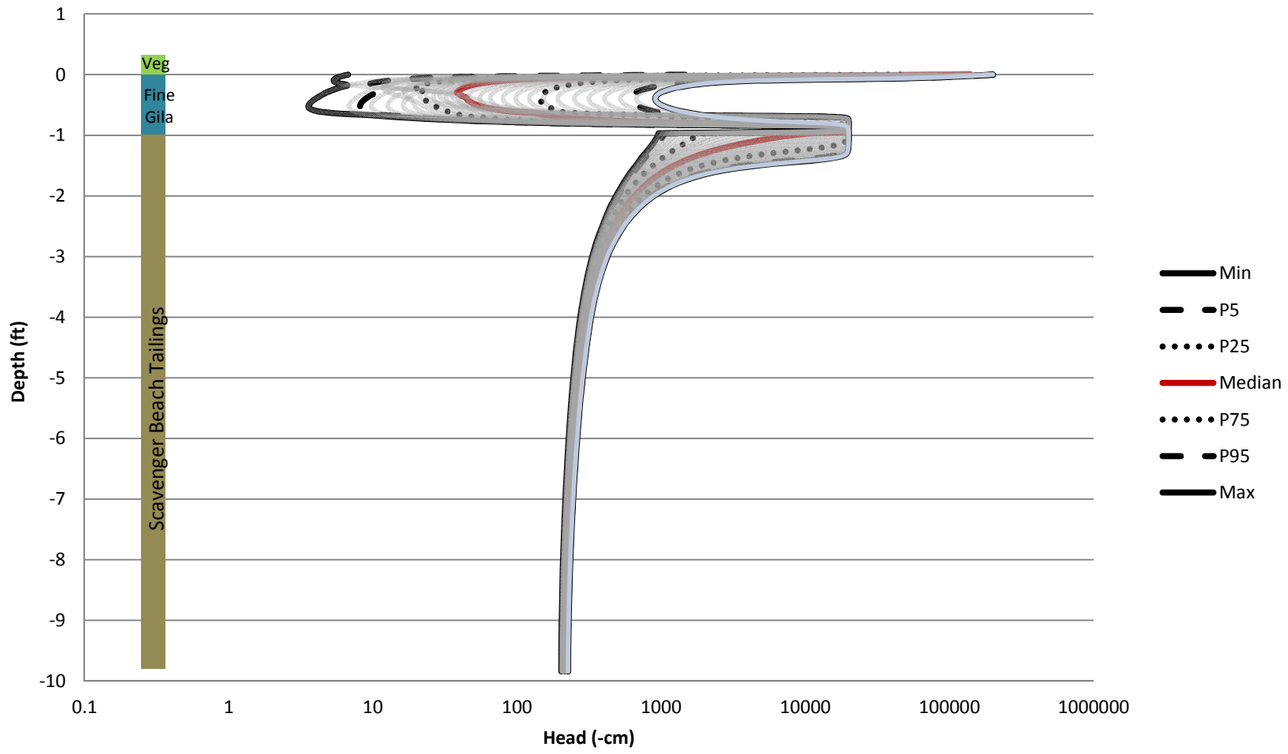
PROJECT No. M09441A16

FIG. No. III-B.3

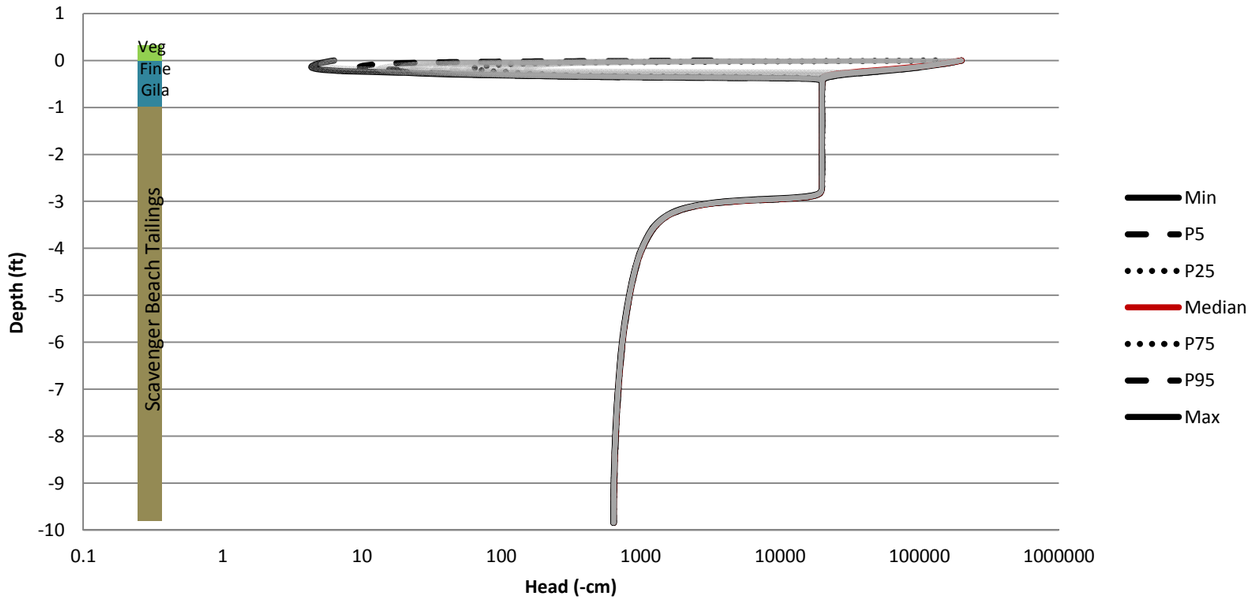
June Average Year (1980) - Daily Suction Head



June Wet Year (1992) - Daily Suction Head



June Dry Year (2000) - Daily Suction Head



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CLIENT

Resolution Copper Mining

Klohn Crippen Berger

PROJECT

RESOLUTION PROJECT
NEAR WEST TAILINGS STORAGE FACILITY CLOSURE
COVER STUDY - CLOSURE COVER PREDICTIONS

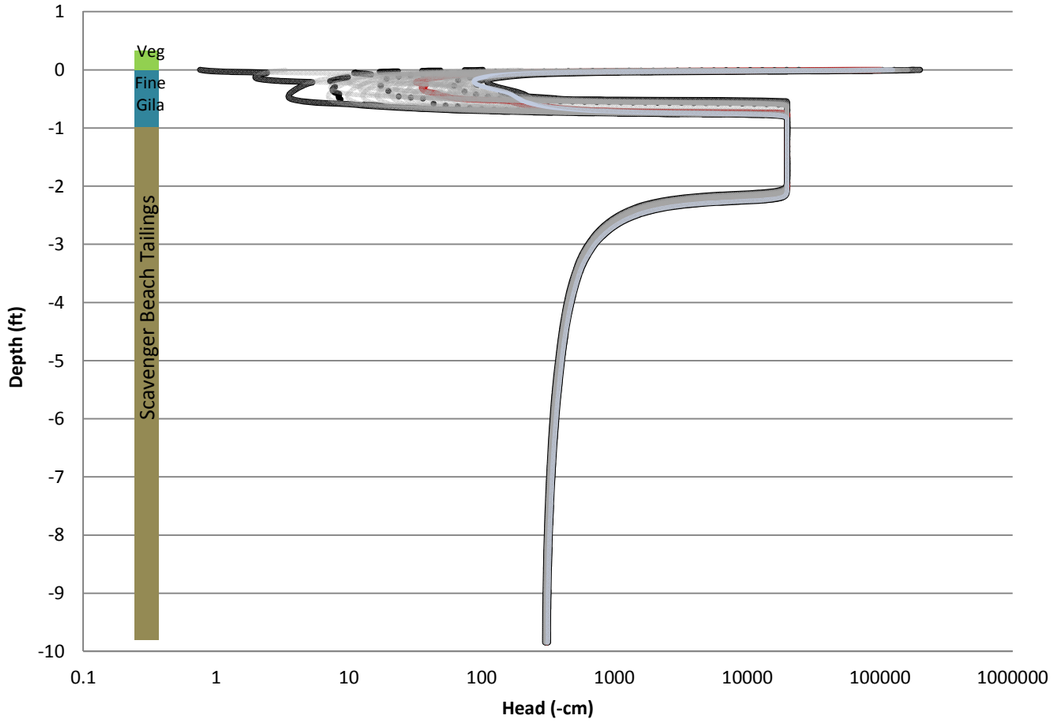
TITLE

ST6 - 8.6ft Beach / 1ft Fine Gila / Veg
Suction Profiles - Dry Season (June)

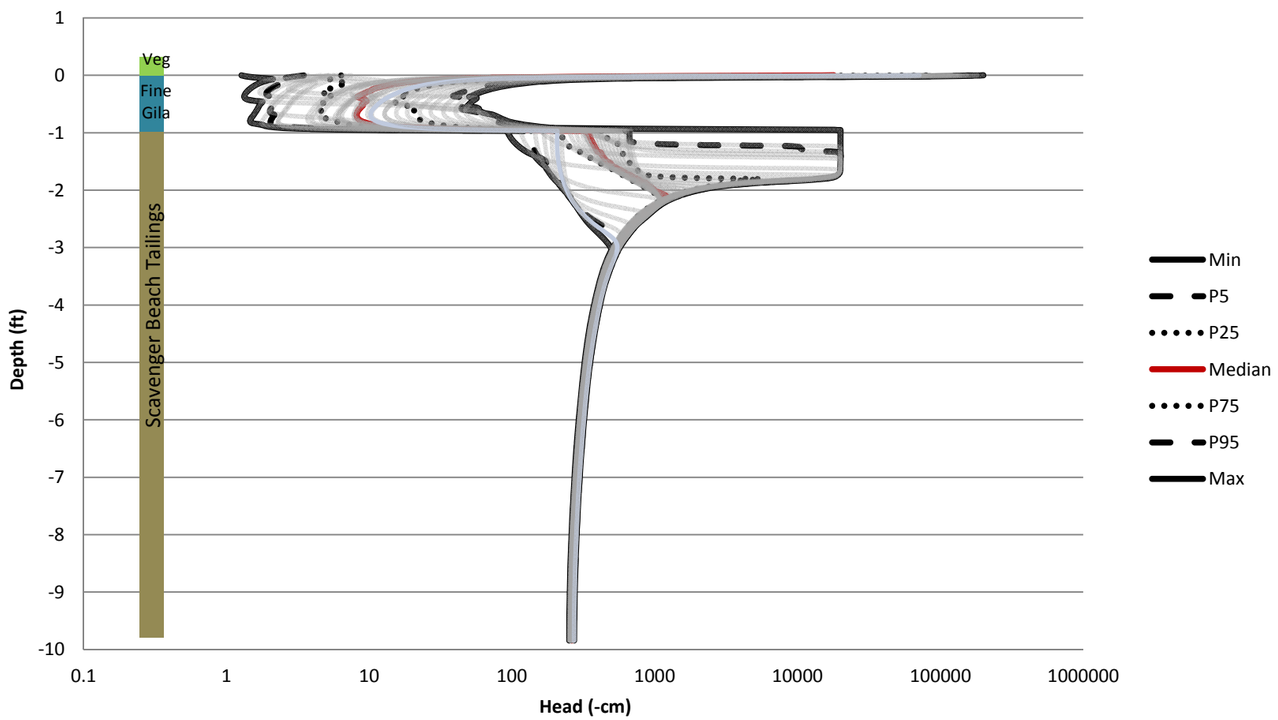
PROJECT No. M09441A16

FIG. No. III-B.4

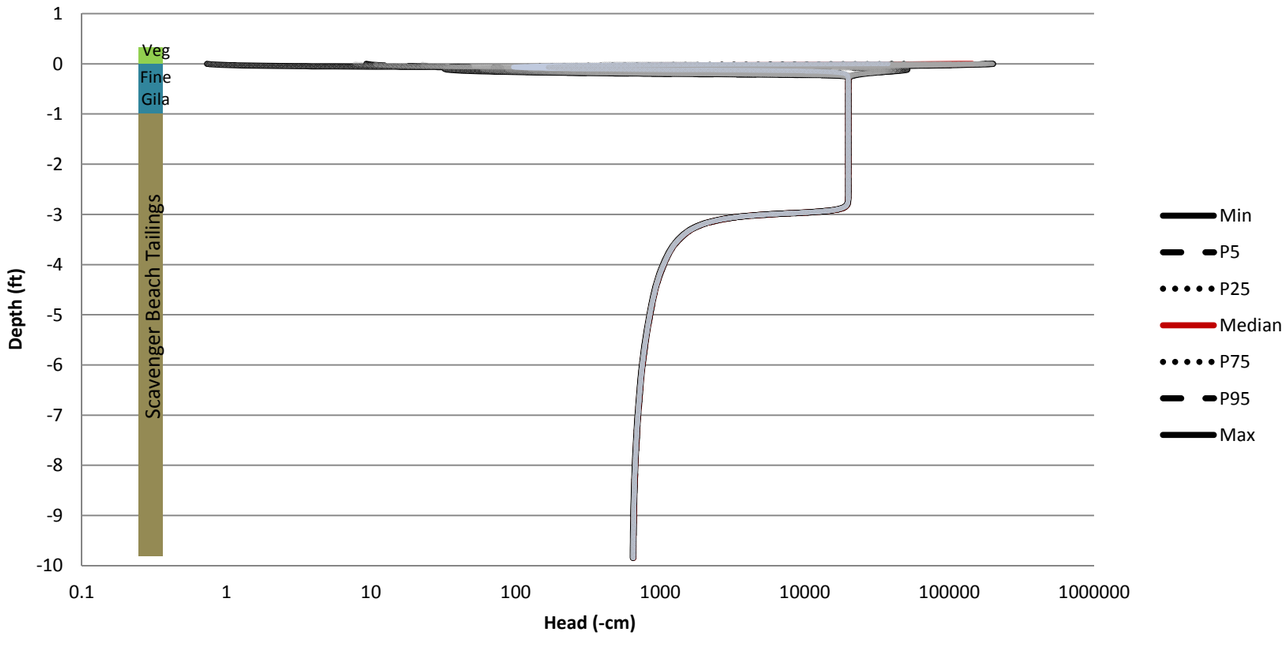
August Average Year (1980) - Daily Suction Head



August Wet Year (1992) - Daily Suction Head



August Dry Year (2000) - Daily Suction Head



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CLIENT

Resolution Copper Mining

Klohn Crippen Berger

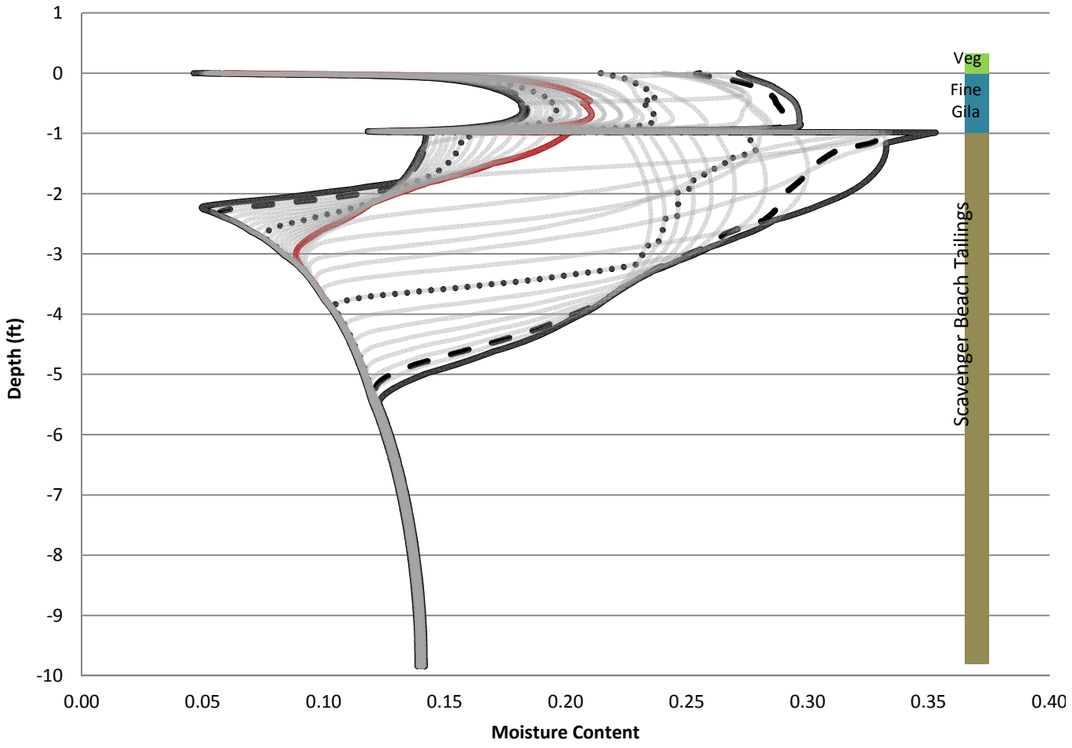
PROJECT
RESOLUTION PROJECT
NEAR WEST TAILINGS STORAGE FACILITY CLOSURE
COVER STUDY - CLOSURE COVER PREDICTIONS

TITLE
ST6 - 8.6ft Beach / 1ft Fine Gila / Veg
Suciton Profiles - Summer Monsoon

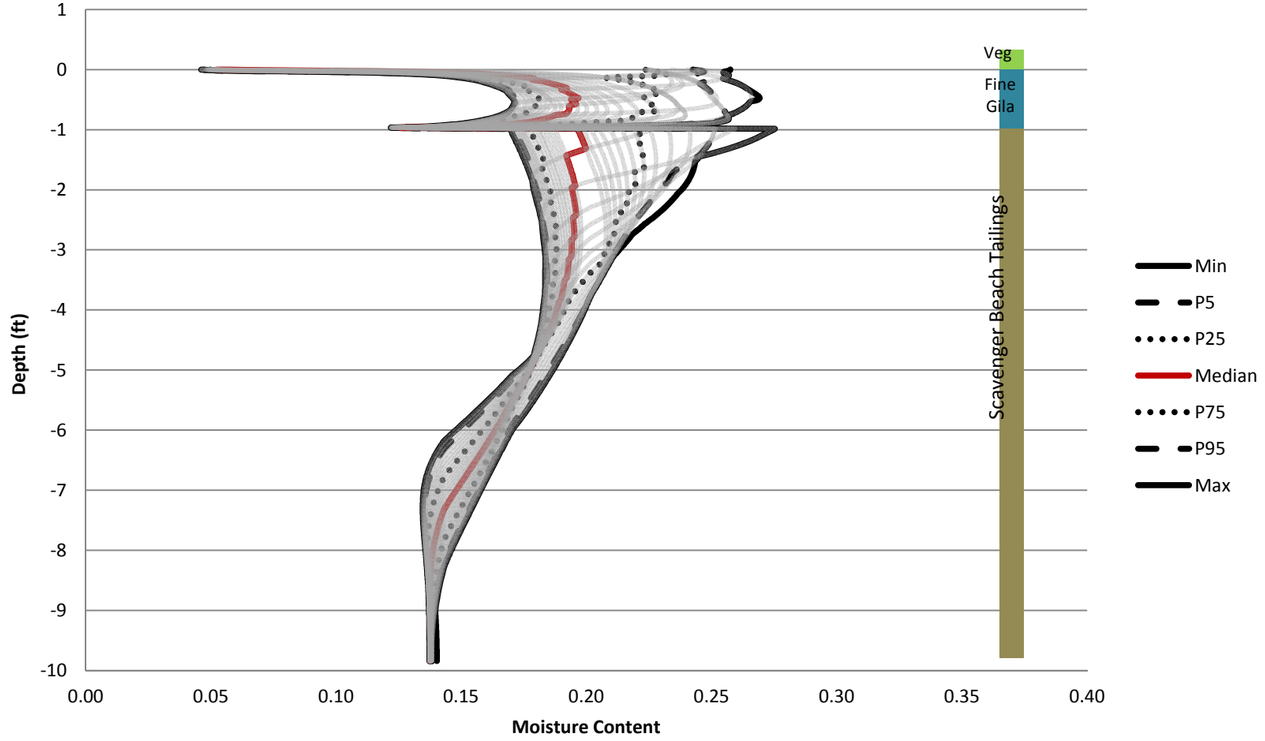
PROJECT No. M09441A16

FIG. No. III-B.5

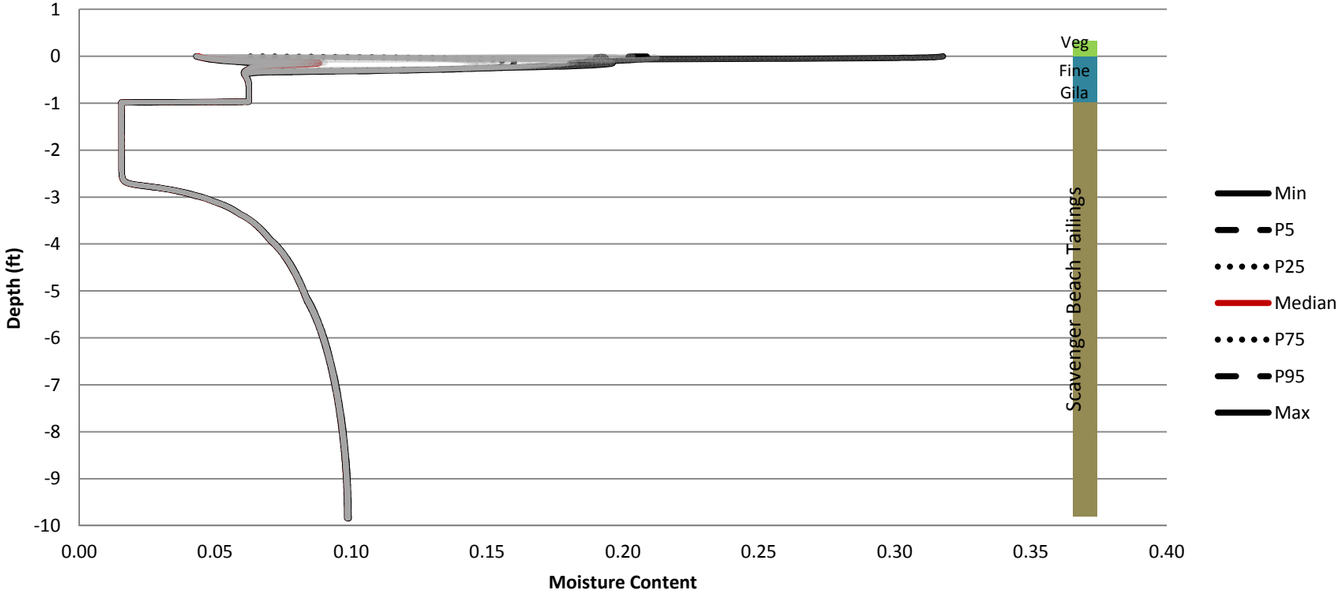
February Average Year (1980) - Daily Moisture Content



February Wet Year (1992) - Daily Moisture Content



February Dry Year (2000) - Daily Moisture Content



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Klohn Crippen Berger

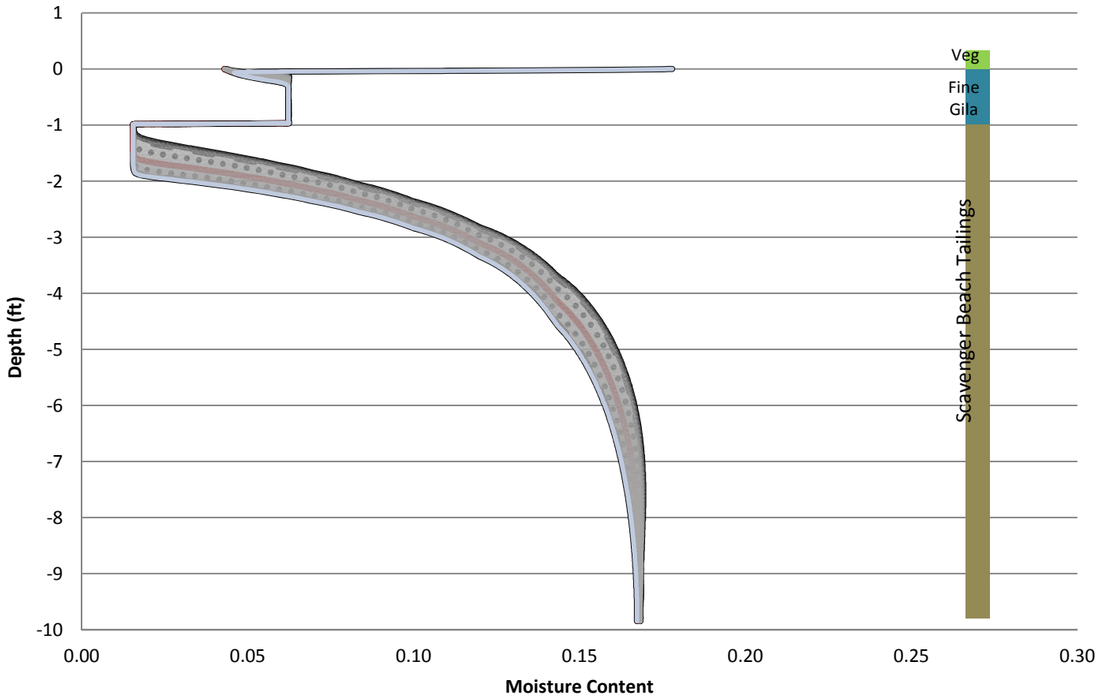
PROJECT: RESOLUTION PROJECT
NEAR WEST TAILINGS STORAGE FACILITY CLOSURE
COVER STUDY - CLOSURE COVER PREDICTIONS

TITLE: ST6 - 8.6ft Beach / 1ft Fine Gila / Veg
Moisture Content - Winter (February)

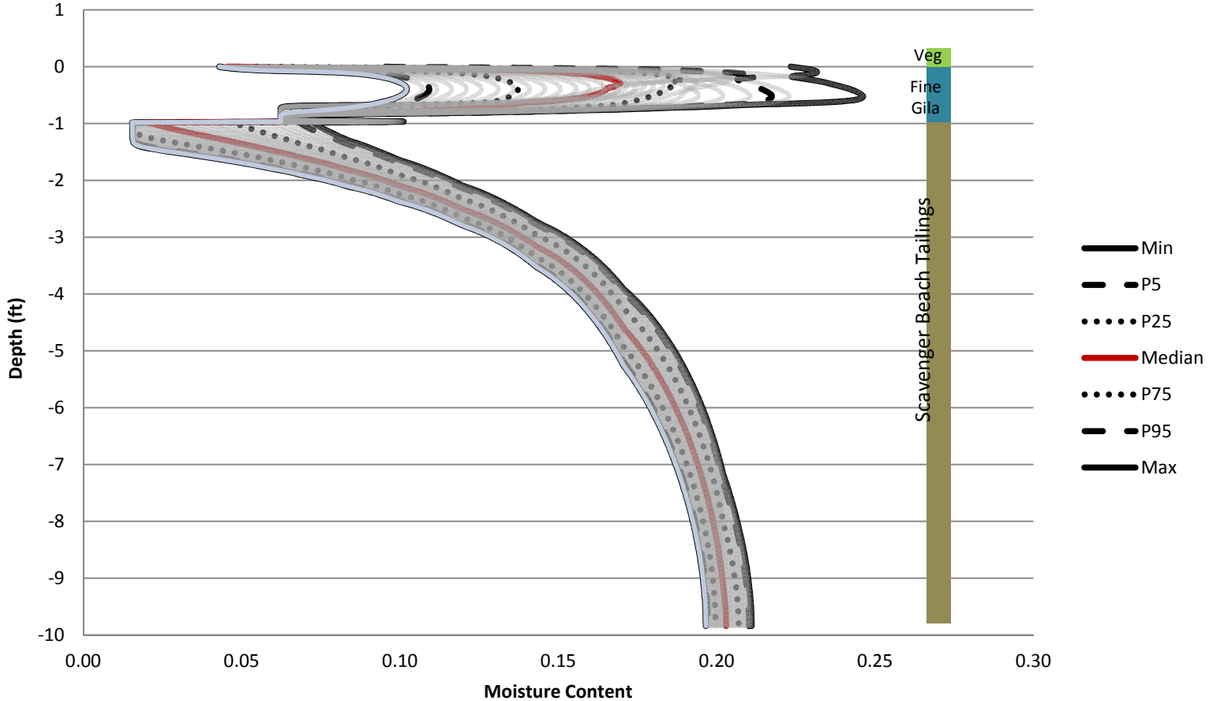
PROJECT No. M09441A16

FIG. No. III-B.6

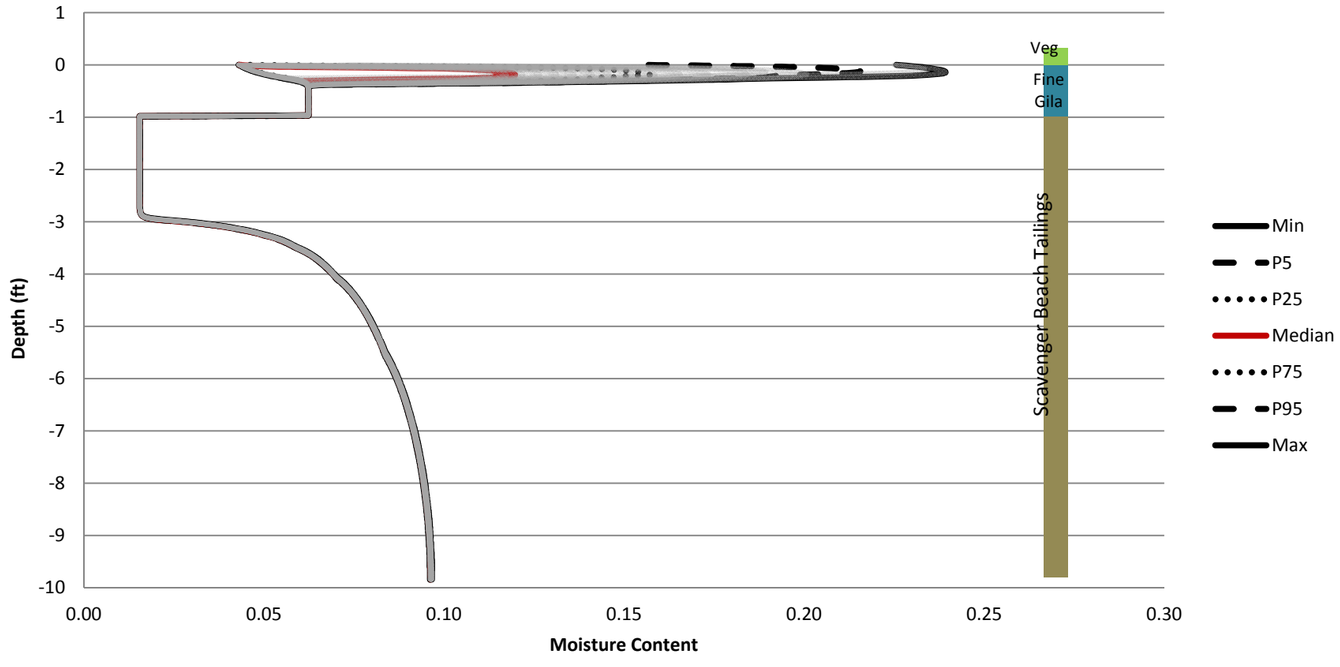
June Average Year (1980) - Daily Moisture Content



June Wet Year (1992) - Daily Moisture Content



June Dry Year (2000) - Daily Moisture Content



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Klohn Crippen Berger

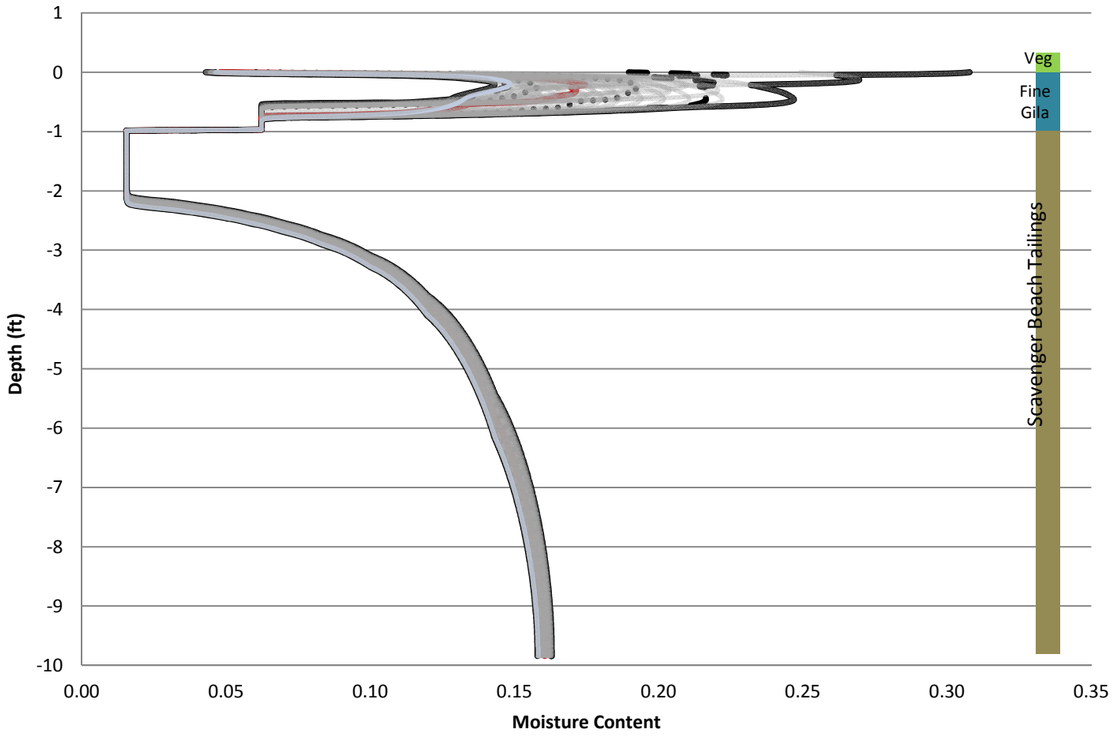
PROJECT: RESOLUTION PROJECT
NEAR WEST TAILINGS STORAGE FACILITY CLOSURE
COVER STUDY - CLOSURE COVER PREDICTIONS

TITLE: ST6 - 8.6ft Beach / 1ft Fine Gila / Veg
Moisture Content - Dry Season (June)

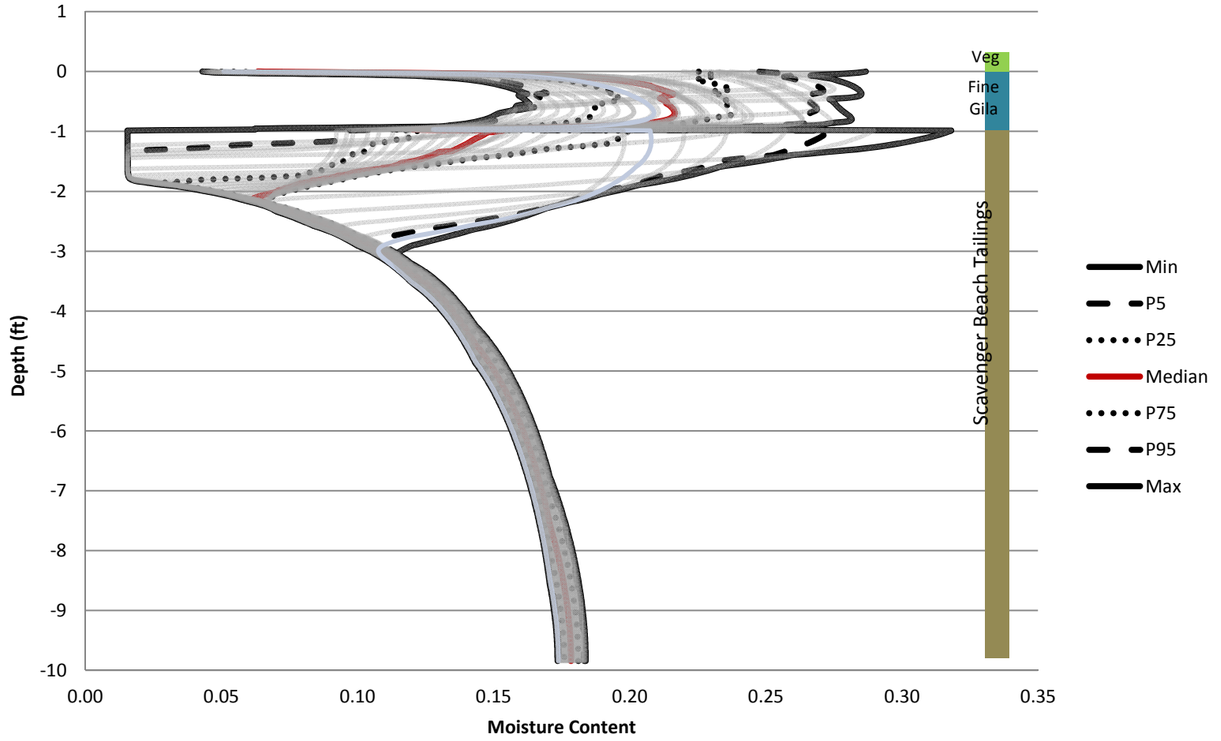
PROJECT No. M09441A16

FIG. No. III-B.7

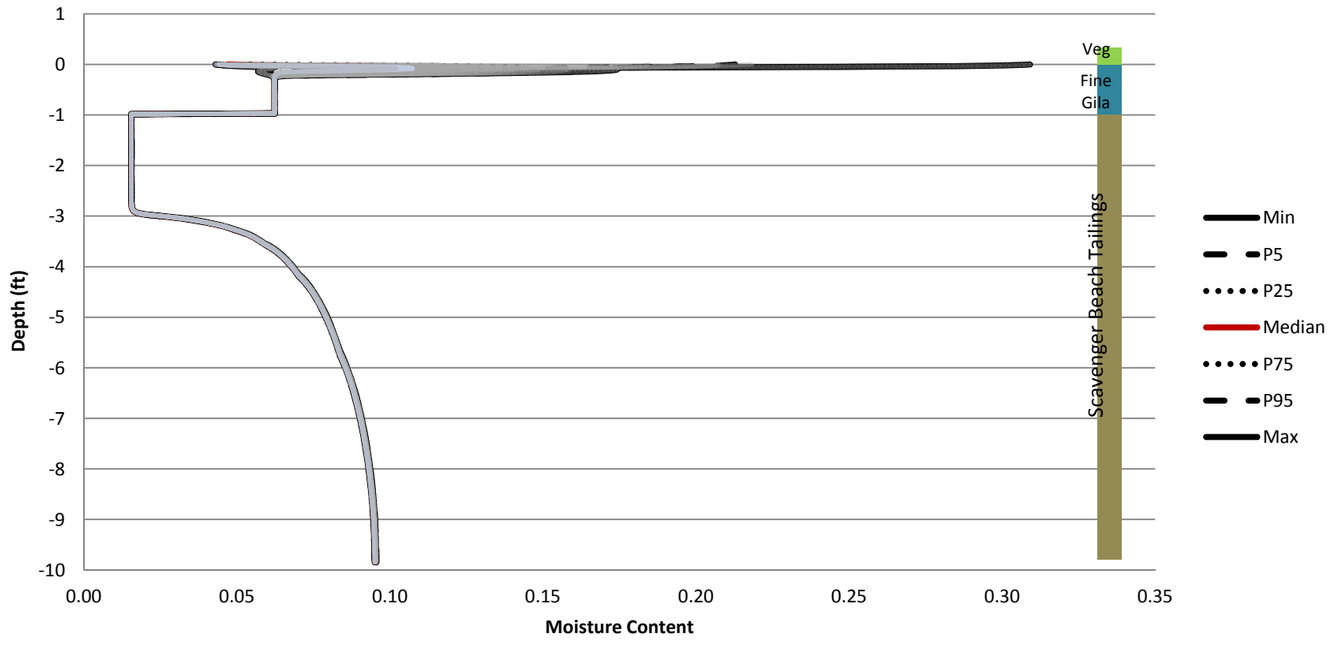
August Average Year (1980) - Daily Moisture Content



August Wet Year (1992) - Daily Moisture Content



August Dry Year (2000) - Daily Moisture Content



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CLIENT

Resolution Copper Mining

Klohn Crippen Berger

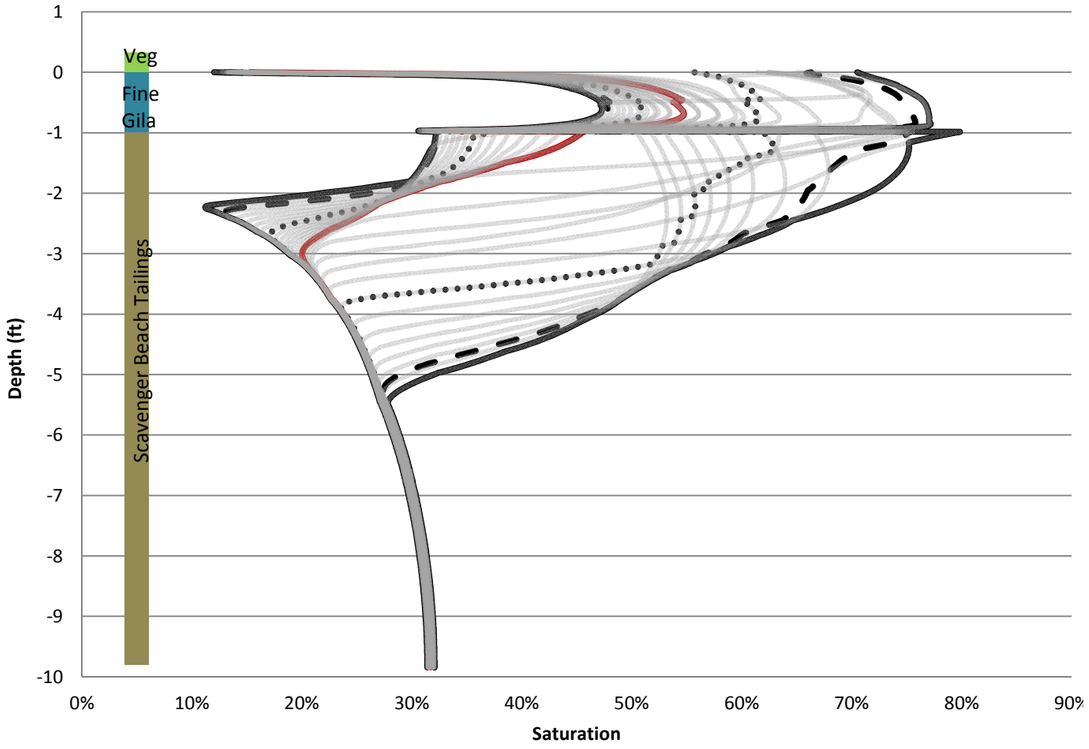
PROJECT
RESOLUTION PROJECT
NEAR WEST TAILINGS STORAGE FACILITY CLOSURE COVER STUDY - CLOSURE COVER PREDICTIONS

TITLE
ST6 - 8.6ft Beach / 1ft Fine Gila / Veg
Moisture Content - Summer Monsoon (August)

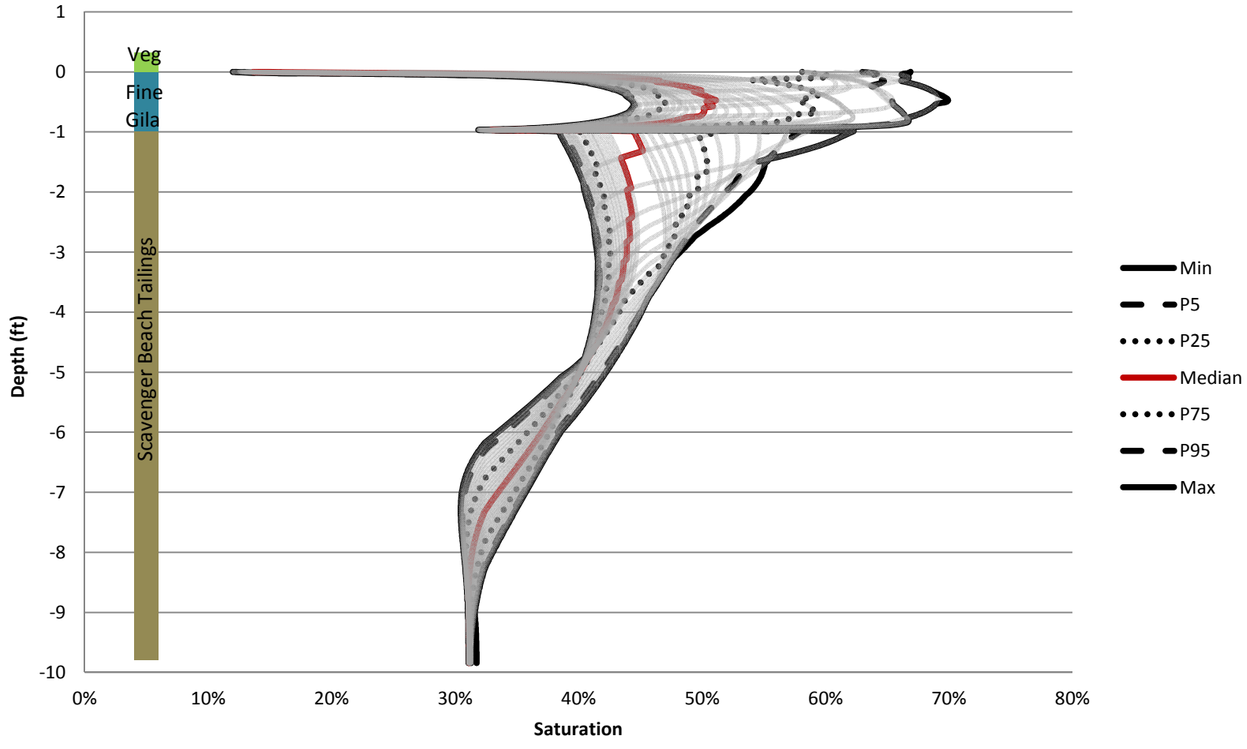
PROJECT No. M09441A16

FIG. No. III-B.8

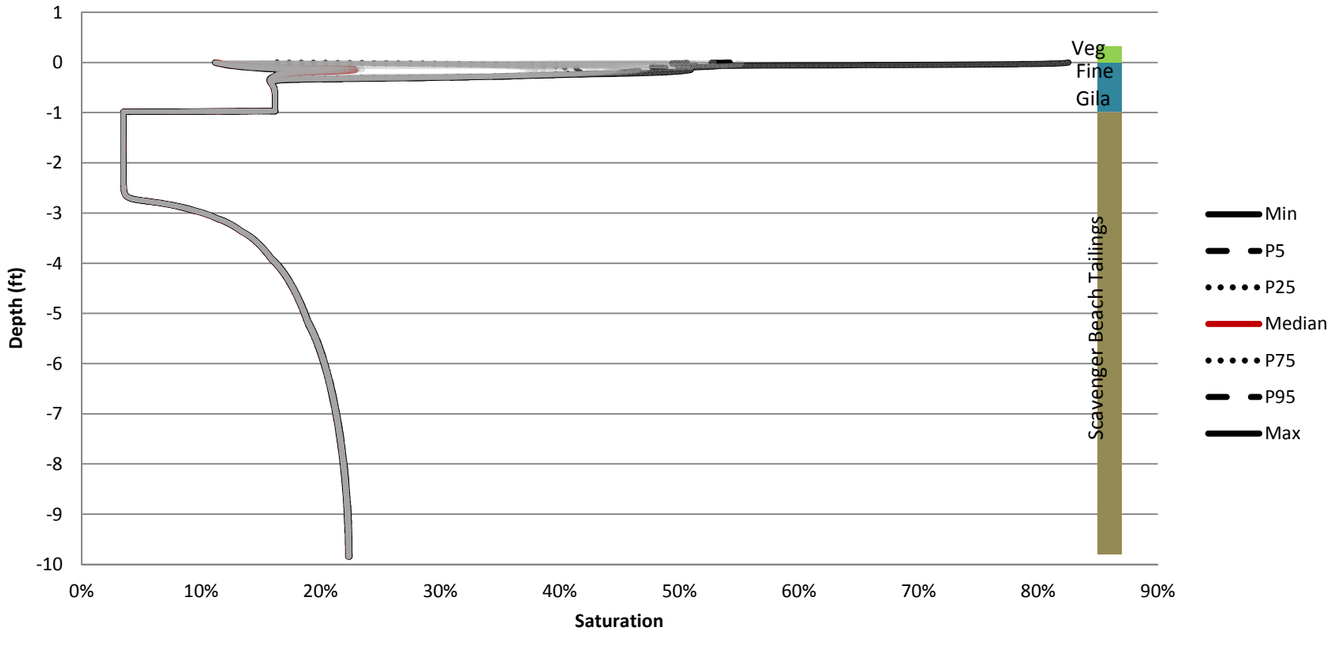
February Average Year (1980) - Daily Saturation



February Wet Year (1992) - Daily Saturation



February Dry Year (2000) - Daily Saturation



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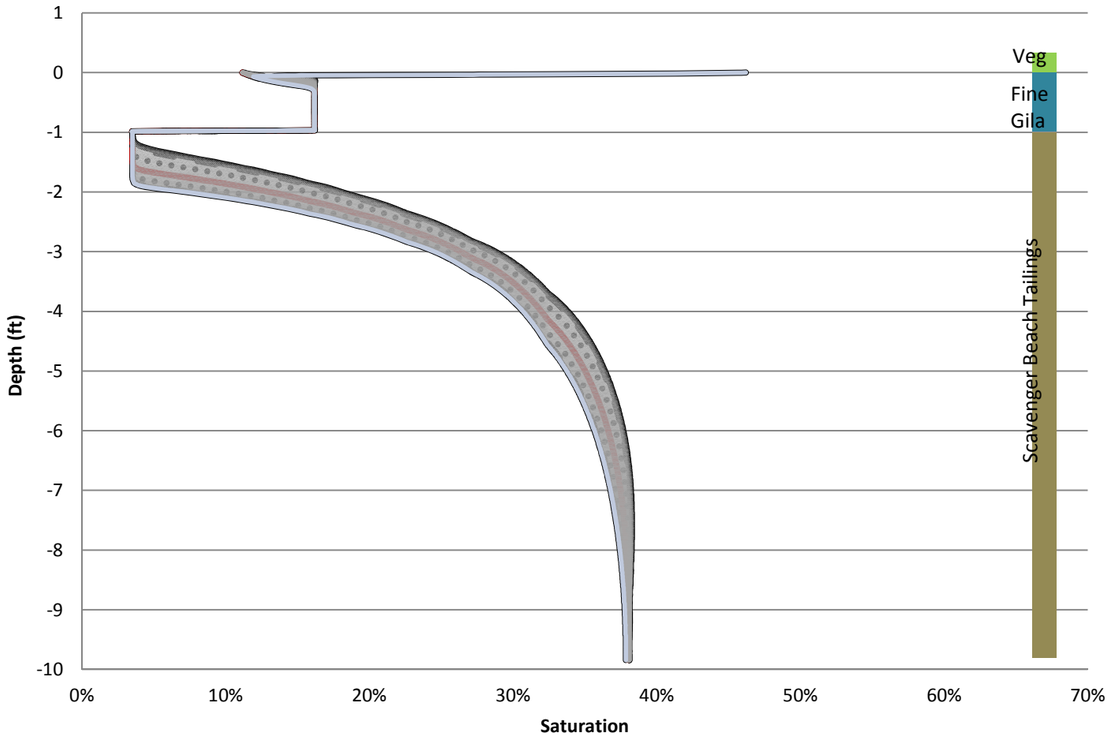
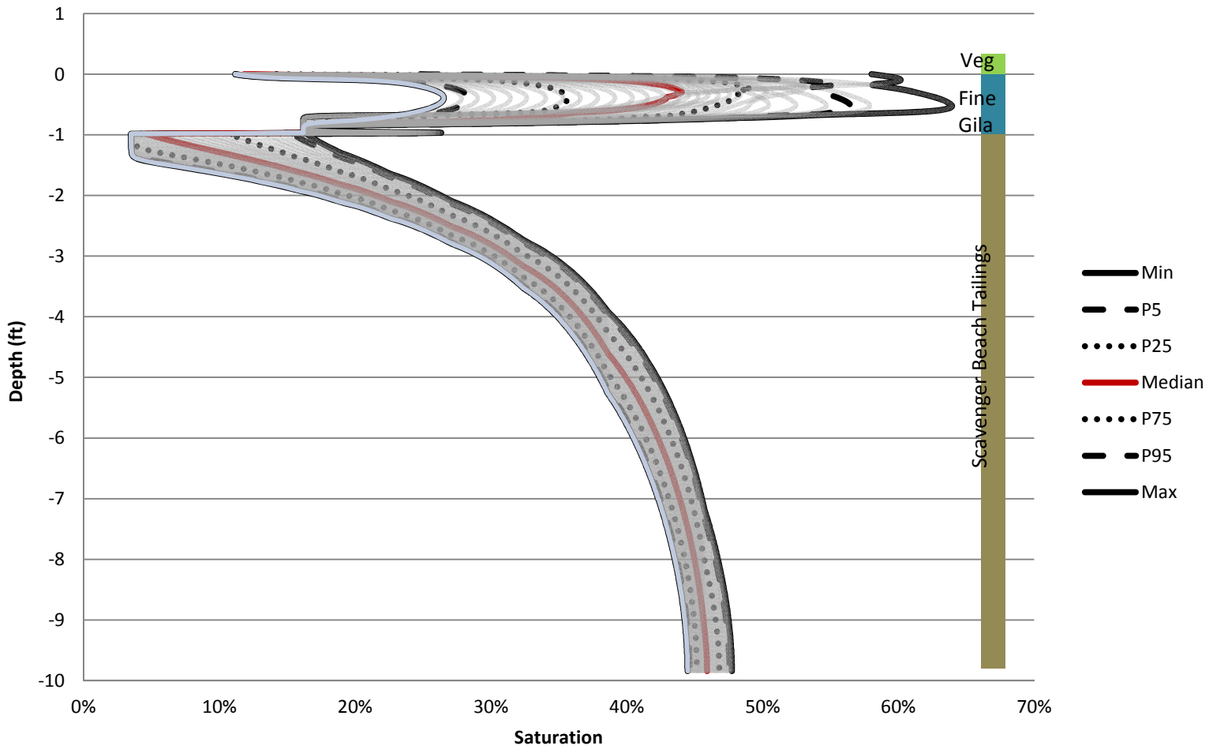
PROJECT
RESOLUTION PROJECT
NEAR WEST TAILINGS STORAGE FACILITY CLOSURE COVER STUDY - CLOSURE COVER PREDICTIONS

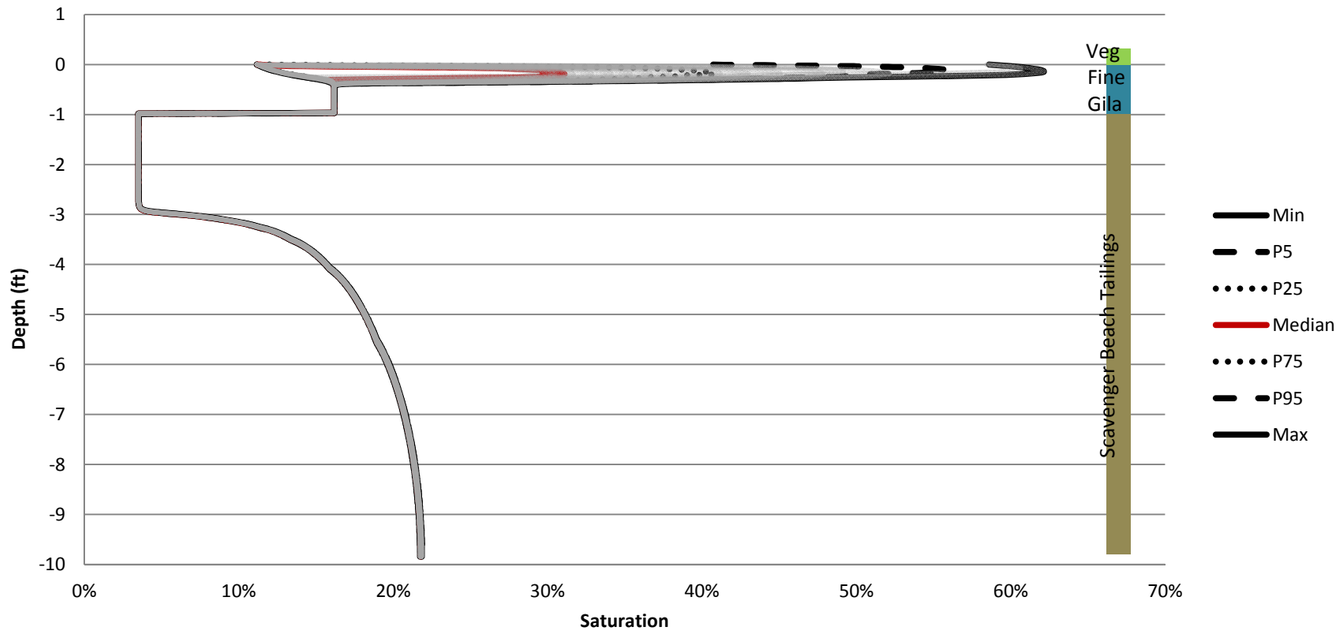
TITLE
ST6 - 8.6ft Beach / 1ft Fine Gila / Veg
Saturation - Winter (February)

PROJECT No. M09441A16

FIG. No. III-B.9







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CLIENT

Resolution Copper Mining

Klohn Crippen Berger

PROJECT RESOLUTION PROJECT
NEAR WEST TAILINGS STORAGE FACILITY CLOSURE
COVER STUDY - CLOSURE COVER PREDICTIONS

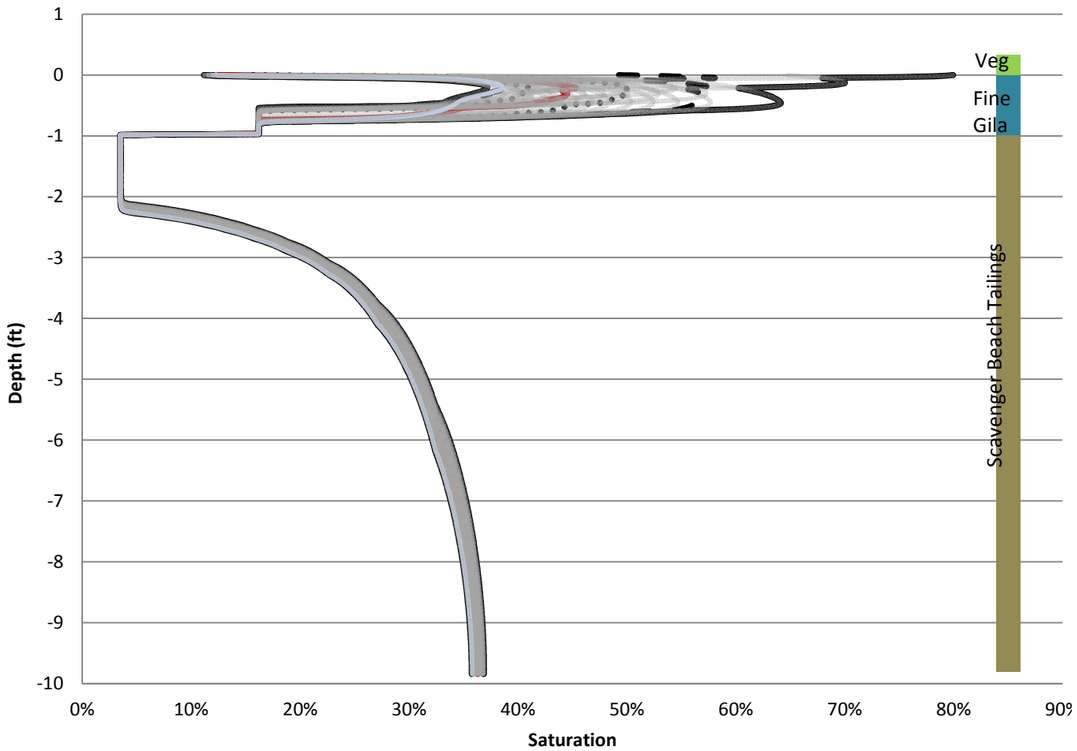
TITLE

ST6 - 8.6ft Beach / 1ft Fine Gila / Veg
Saturation - Dry Season (June)

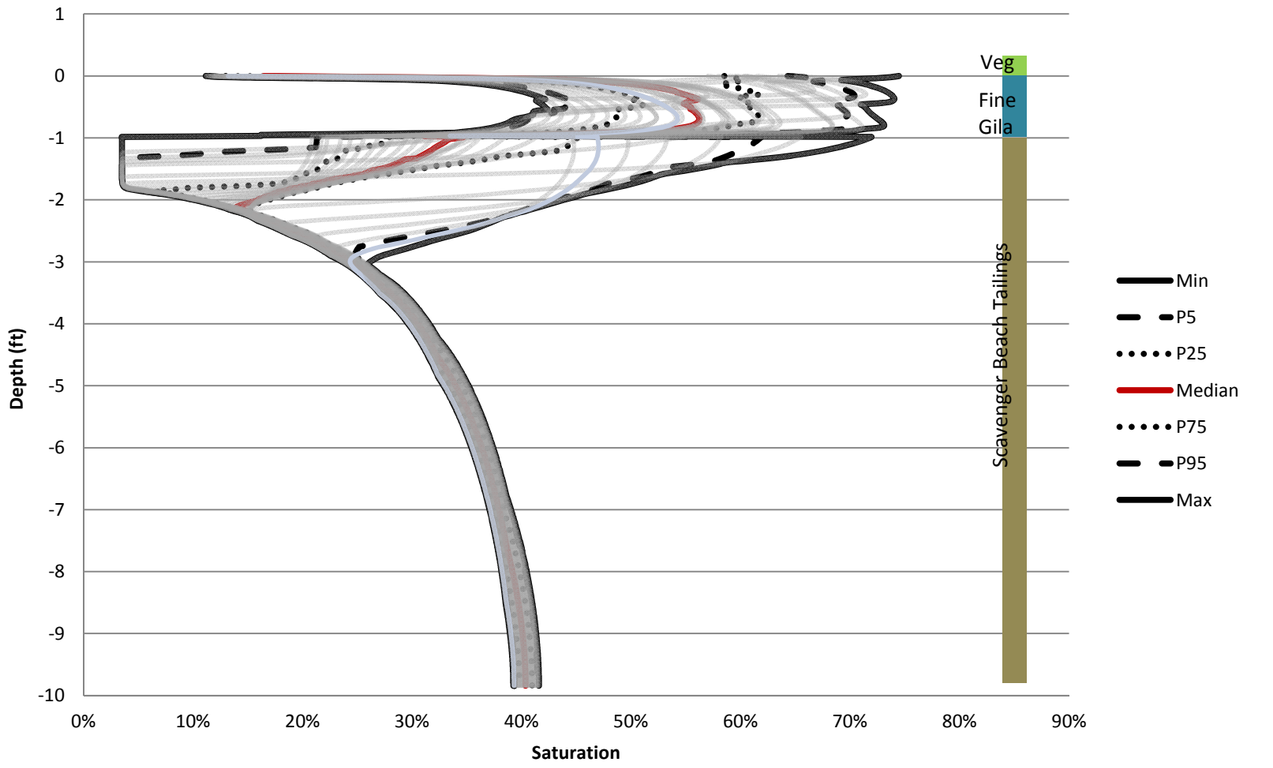
PROJECT No. M09441A16

FIG. No. III-B.10

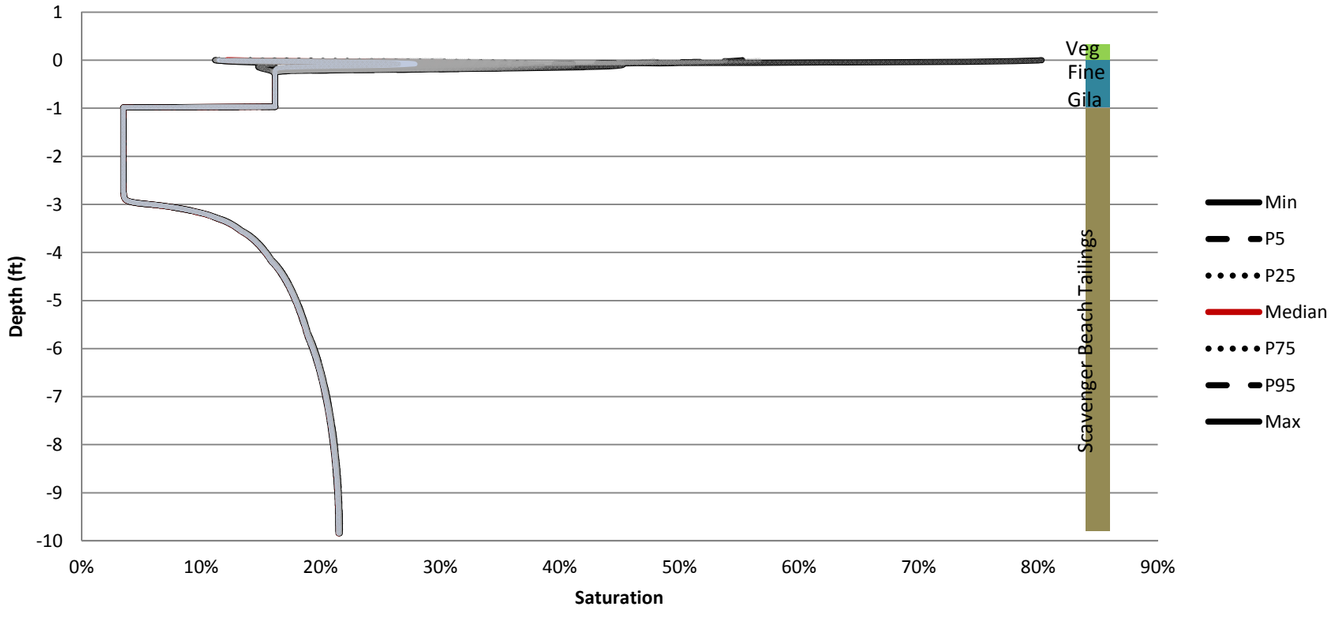
August Average Year (1980) - Daily Saturation



August Wet Year (1992) - Daily Saturation



August Dry Year (2000) - Daily Saturation



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CLIENT: Resolution Copper Mining

Klohn Crippen Berger

PROJECT: RESOLUTION PROJECT
NEAR WEST TAILINGS STORAGE FACILITY CLOSURE COVER STUDY - CLOSURE COVER PREDICTIONS

TITLE: ST6 - 8.6ft Beach / 1ft Fine Gila / Veg Saturation - Summer Monsoon (August)

PROJECT No. M09441A16

FIG. No. III-B.11

APPENDIX III-C

ST 11 Results

Table III-C.1 ST 11 Annual Water Balance

Water Year	Result Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
		[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
1951	10/1/1951	14.21	90.07	(5.21)	12.47	(5.04)	-	14.21	9.01	33.65
1952	10/1/1952	20.54	101.44	(8.81)	10.91	(1.20)	-	20.54	11.73	38.81
1953	10/1/1953	15.48	106.44	(7.72)	8.90	(0.45)	-	15.48	7.76	38.74
1954	10/1/1954	21.57	99.33	(11.33)	11.83	(0.24)	0.24	21.33	10.00	38.63
1955	10/1/1955	13.57	103.43	(6.57)	7.51	(0.16)	-	13.57	7.00	37.42
1956	10/1/1956	12.67	109.92	(5.89)	6.25	(0.12)	-	12.67	6.78	40.00
1957	10/1/1957	15.21	98.50	(6.98)	7.40	(0.07)	-	15.21	8.23	37.21
1958	10/1/1958	19.46	95.59	(8.65)	7.98	(0.07)	-	19.46	10.82	37.74
1959	10/1/1959	15.85	106.22	(7.26)	8.54	(0.07)	-	15.85	8.59	39.88
1960	10/1/1960	19.18	101.65	(10.03)	8.92	(0.06)	0.00	19.18	9.15	39.62
1961	10/1/1961	9.95	105.63	(4.35)	4.87	(0.06)	-	9.95	5.60	38.30
1962	10/1/1962	14.32	100.63	(6.66)	6.63	(0.07)	-	14.32	7.63	38.46
1963	10/1/1963	24.23	92.24	(11.64)	11.07	(0.06)	0.64	23.59	11.91	38.66
1964	10/1/1964	11.60	98.11	(4.97)	5.90	(0.06)	-	11.60	6.63	36.66
1965	10/1/1965	17.60	93.27	(8.14)	8.54	(0.06)	-	17.60	9.46	36.91
1966	10/1/1966	23.01	92.13	(12.95)	9.59	(0.04)	-	23.01	10.07	38.93
1967	10/1/1967	14.54	95.39	(6.78)	8.30	(0.18)	-	14.54	7.76	36.92
1968	10/1/1968	22.52	86.81	(12.73)	10.31	(0.32)	-	22.52	9.79	37.38
1969	10/1/1969	18.78	93.98	(8.93)	9.56	(0.52)	-	18.78	9.85	38.25
1970	10/1/1970	16.07	94.65	(7.83)	7.94	(0.32)	0.00	16.07	8.24	38.53
1971	10/1/1971	12.47	98.58	(6.89)	5.35	(0.19)	0.12	12.35	5.46	37.96
1972	10/1/1972	11.29	105.94	(4.27)	6.97	(0.14)	0.10	11.19	6.92	40.53
1973	10/1/1973	30.96	73.39	(13.53)	12.72	(0.09)	0.09	30.86	17.28	35.99
1974	10/1/1974	15.91	90.87	(7.57)	7.43	(0.07)	-	15.91	8.26	36.84
1975	10/1/1975	19.06	83.66	(8.91)	9.74	(0.07)	-	19.06	10.15	35.44
1976	10/1/1976	16.61	90.00	(8.45)	6.89	(0.07)	0.00	16.61	8.15	37.84
1977	10/1/1977	16.46	90.75	(7.91)	8.67	(0.07)	-	16.46	8.52	37.86
1978	10/1/1978	23.94	83.98	(12.55)	11.15	(0.06)	-	23.94	11.40	38.30
1979	10/1/1979	29.61	77.17	(15.50)	11.32	(0.79)	-	29.61	14.11	38.53
1980	10/1/1980	20.31	86.10	(10.22)	10.17	(1.04)	-	20.31	10.10	38.22
1981	10/1/1981	15.24	97.09	(8.08)	8.61	(0.57)	-	15.24	7.16	40.87
1982	10/1/1982	23.55	77.76	(11.10)	10.76	(0.31)	0.04	23.50	12.43	36.58
1983	10/1/1983	27.47	72.56	(14.23)	11.38	(0.17)	0.07	27.40	13.17	36.00
1984	10/1/1984	17.80	84.53	(6.47)	9.57	(0.14)	-	17.80	11.33	37.32
1985	10/1/1985	22.76	68.98	(10.71)	9.32	(0.13)	-	22.76	12.03	34.11
1986	10/1/1986	21.30	79.02	(9.78)	10.63	(0.11)	-	21.30	11.55	37.61
1987	10/1/1987	20.16	77.24	(9.30)	9.75	(0.08)	-	20.16	10.83	36.00
1988	10/1/1988	23.07	76.97	(10.67)	10.63	(0.02)	-	23.07	12.43	37.38
1989	10/1/1989	11.73	97.64	(5.76)	5.92	-	-	11.73	5.96	40.88
1990	10/1/1990	23.36	76.38	(11.02)	9.02	-	2.42	20.94	9.92	37.63
1991	10/1/1991	22.95	75.00	(11.04)	12.53	-	-	22.95	11.95	37.08
1992	10/1/1992	36.59	60.75	(17.78)	15.67	-	0.09	36.50	18.54	37.66
1993	10/1/1993	32.76	65.00	(20.46)	12.48	(3.32)	-	32.76	12.28	37.29
1994	10/1/1994	15.39	85.39	(8.11)	9.09	(1.42)	-	15.39	7.24	38.98
1995	10/1/1995	24.95	70.47	(11.89)	10.63	(0.50)	0.03	24.92	13.07	37.33
1996	10/1/1996	13.58	90.16	(6.46)	7.36	(0.30)	-	13.58	7.13	40.43
1997	10/1/1997	10.28	92.91	(5.00)	5.39	(0.17)	-	10.28	5.24	40.01
1998	10/1/1998	20.51	73.23	(9.92)	9.57	(0.14)	-	20.51	10.59	36.85
1999	10/1/1999	15.04	81.89	(7.09)	6.69	(0.13)	-	15.04	7.99	38.14
2000	10/1/2000	5.47	103.54	(2.87)	2.87	(0.09)	-	5.47	2.56	42.81
2001	10/1/2001	23.46	73.62	(10.94)	10.51	(0.00)	-	23.46	12.52	38.65
2002	10/1/2002	5.47	99.21	(2.60)	2.32	-	-	5.47	2.87	42.03
2003	10/1/2003	13.27	85.83	(6.65)	6.22	-	-	13.27	6.65	40.74
2004	10/1/2004	12.36	85.04	(5.91)	5.28	-	-	12.36	6.50	41.68
2005	10/1/2005	24.23	68.50	(12.17)	10.51	-	0.77	23.46	11.30	37.59
2006	10/1/2006	12.29	82.68	(5.87)	6.06	-	0.00	12.28	6.42	39.59

Table III-C.2 ST 11 Monthly Water Balance 9 Wet Years (1983 to 1991)

Month	Result Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
		[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
Nov-82	11/30/1982	2.52	9.76	(1.33)	0.96	(0.04)	-	2.52	1.19	4.79
Dec-82	12/30/1982	2.52	0.12	(0.92)	0.30	(0.02)	-	2.52	1.57	1.04
Jan-83	1/29/1983	0.67	2.87	(0.35)	0.50	(0.01)	-	0.67	0.33	1.12
Feb-83	2/28/1983	3.54	0.47	(1.95)	0.78	(0.01)	-	3.54	1.60	1.07
Mar-83	3/30/1983	5.39	(0.63)	(2.75)	1.22	(0.01)	-	5.39	2.65	1.71
Apr-83	4/29/1983	0.83	6.81	0.15	2.28	(0.01)	-	0.83	0.97	2.34
May-83	5/29/1983	-	11.54	0.00	1.50	(0.01)	-	-	0.01	3.88
Jun-83	6/28/1983	-	14.06	-	0.26	(0.01)	-	-	0.01	5.42
Jul-83	7/28/1983	2.13	12.09	(1.25)	0.60	(0.01)	-	2.13	0.87	5.48
Aug-83	8/27/1983	3.98	7.48	(1.45)	1.45	(0.01)	-	3.98	2.52	4.09
Sep-83	9/26/1983	1.93	10.39	(0.85)	1.43	(0.01)	-	1.93	1.07	4.50
Oct-83	10/26/1983	5.11	2.72	(3.00)	1.35	(0.01)	0.07	5.04	2.03	2.93
Nov-83	11/25/1983	1.57	3.90	(1.20)	1.01	(0.01)	-	1.57	0.41	2.15
Dec-83	12/25/1983	1.89	0.87	(0.56)	0.42	(0.01)	-	1.89	1.33	1.00
Jan-84	1/24/1984	1.54	1.42	(0.38)	0.47	(0.01)	-	1.54	1.14	0.96
Feb-84	2/23/1984	-	4.76	0.07	0.87	(0.01)	-	-	0.07	1.48
Mar-84	3/24/1984	-	7.17	-	1.06	(0.01)	-	-	0.00	2.09
Apr-84	4/23/1984	0.87	7.44	(0.46)	0.56	(0.01)	-	0.87	0.40	2.95
May-84	5/23/1984	0.67	10.91	(0.29)	0.32	(0.01)	-	0.67	0.38	4.08
Jun-84	6/22/1984	0.04	14.17	(0.00)	0.03	(0.01)	-	0.04	0.04	5.37
Jul-84	7/22/1984	3.62	8.50	(1.80)	0.85	(0.01)	-	3.62	1.82	5.03
Aug-84	8/21/1984	4.02	7.01	(1.31)	1.27	(0.01)	-	4.02	2.72	3.99
Sep-84	9/20/1984	1.22	11.34	(0.37)	1.29	(0.01)	-	1.22	0.85	4.18
Oct-84	10/20/1984	2.60	5.12	(1.14)	0.70	(0.01)	-	2.60	1.44	3.50
Nov-84	11/19/1984	-	5.51	0.04	0.45	(0.01)	-	-	0.03	2.00
Dec-84	12/19/1984	4.76	(2.17)	(3.46)	0.24	(0.01)	-	4.76	1.33	1.28
Jan-85	1/18/1985	3.94	(1.57)	(1.72)	0.35	(0.01)	-	3.94	2.22	0.74
Feb-85	2/17/1985	2.87	(0.31)	(1.15)	0.48	(0.01)	-	2.87	1.73	0.72
Mar-85	3/19/1985	1.69	2.72	(0.27)	1.01	(0.01)	-	1.69	1.41	1.47
Apr-85	4/18/1985	0.43	7.28	0.08	2.19	(0.01)	-	0.43	0.53	2.35
May-85	5/18/1985	0.47	8.58	(0.22)	1.06	(0.01)	-	0.47	0.24	3.46
Jun-85	6/17/1985	-	11.89	-	0.34	(0.01)	-	-	-	4.21
Jul-85	7/17/1985	0.24	12.64	(0.20)	0.18	(0.01)	-	0.24	0.03	5.06
Aug-85	8/16/1985	2.13	9.17	(1.01)	0.87	(0.01)	-	2.13	1.13	4.31
Sep-85	9/15/1985	2.28	9.45	(1.10)	0.98	(0.01)	-	2.28	1.18	4.83
Oct-85	10/15/1985	3.27	4.80	(1.50)	1.09	(0.01)	-	3.27	1.78	3.24
Nov-85	11/14/1985	1.42	4.37	(0.82)	0.78	(0.01)	-	1.42	0.60	2.00
Dec-85	12/14/1985	2.76	0.20	(1.46)	0.32	(0.01)	-	2.76	1.27	1.26
Jan-86	1/13/1986	-	3.62	0.60	0.48	(0.01)	-	-	0.60	1.25
Feb-86	2/12/1986	2.32	1.34	(1.71)	0.54	(0.01)	-	2.32	0.62	1.59
Mar-86	3/14/1986	1.93	4.17	(0.61)	1.17	(0.01)	-	1.93	1.31	1.67
Apr-86	4/13/1986	3.11	4.53	(1.43)	1.99	(0.01)	-	3.11	1.68	2.60
May-86	5/13/1986	-	11.02	0.01	1.30	(0.01)	-	-	0.01	3.91
Jun-86	6/12/1986	-	13.58	-	0.04	(0.01)	-	-	0.01	4.91
Jul-86	7/12/1986	2.17	11.85	(1.23)	0.39	(0.01)	-	2.17	0.96	5.74
Aug-86	8/11/1986	2.83	8.03	(1.02)	1.42	(0.01)	-	2.83	1.79	3.77
Sep-86	9/10/1986	3.11	8.46	(1.77)	1.07	(0.01)	-	3.11	1.35	4.48
Oct-86	10/10/1986	0.94	8.15	(0.07)	0.96	(0.01)	-	0.94	0.87	3.68
Nov-86	11/9/1986	2.76	2.99	(1.45)	0.73	(0.01)	-	2.76	1.30	2.41
Dec-86	12/9/1986	2.60	1.14	(2.08)	0.41	(0.01)	-	2.60	0.52	1.46
Jan-87	1/8/1987	1.50	1.22	0.04	0.35	(0.01)	-	1.50	1.52	1.01
Feb-87	2/7/1987	3.11	0.20	(1.19)	0.54	(0.01)	-	3.11	1.91	1.05
Mar-87	3/9/1987	2.28	2.36	(1.00)	0.97	(0.01)	-	2.28	1.28	1.32
Apr-87	4/8/1987	0.94	5.35	(0.15)	1.74	(0.01)	-	0.94	0.80	2.15
May-87	5/8/1987	-	7.64	-	1.33	(0.01)	-	-	0.02	2.78
Jun-87	6/7/1987	0.31	11.81	(0.07)	0.21	(0.01)	-	0.31	0.24	4.46
Jul-87	7/7/1987	0.20	14.65	(0.11)	0.12	(0.01)	-	0.20	0.10	5.51
Aug-87	8/6/1987	3.11	10.04	(1.96)	1.02	(0.01)	-	3.11	1.15	5.35
Sep-87	9/5/1987	2.48	9.57	(1.24)	1.40	(0.01)	-	2.48	1.24	4.21
Oct-87	10/5/1987	0.87	9.06	(0.11)	0.76	(0.01)	-	0.87	0.73	3.95
Nov-87	11/4/1987	1.38	6.65	(0.93)	0.22	(0.01)	-	1.38	0.46	3.49
Dec-87	12/4/1987	0.71	3.27	(0.06)	0.35	(0.01)	-	0.71	0.65	1.83

Table III-C.2 ST 11 Monthly Water Balance 9 Wet Years (1983 to 1991)

Month	Result Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
		[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
Jan-88	1/3/1988	4.02	(1.34)	(2.61)	0.26	(0.01)	-	4.02	1.42	1.08
Feb-88	2/2/1988	3.58	(1.26)	(1.80)	0.37	(0.00)	-	3.58	1.79	0.72
Mar-88	3/3/1988	0.75	4.41	0.15	1.05	-	-	0.75	0.87	1.35
Apr-88	4/2/1988	0.12	6.54	-	1.62	-	-	0.12	0.14	2.27
May-88	5/2/1988	2.44	6.14	(1.26)	1.41	-	-	2.44	1.17	3.34
Jun-88	6/1/1988	-	12.40	0.05	0.91	-	-	-	0.05	4.25
Jul-88	7/1/1988	0.12	13.58	(0.03)	0.13	-	-	0.12	0.11	5.30
Aug-88	7/31/1988	2.48	10.16	(1.43)	0.30	-	-	2.48	1.03	5.01
Sep-88	8/30/1988	6.97	4.25	(2.88)	1.82	-	-	6.97	4.09	4.21
Oct-88	10/29/1988	2.01	17.56	(0.69)	2.51	-	-	2.01	1.33	7.40
Nov-88	11/28/1988	1.73	3.27	(1.45)	0.41	-	-	1.73	0.28	2.23
Dec-88	12/28/1988	1.10	1.81	(0.11)	0.29	-	-	1.10	1.00	1.11
Jan-89	1/27/1989	1.97	0.83	(0.74)	0.37	-	-	1.97	1.24	0.75
Feb-89	2/26/1989	0.55	3.74	0.00	0.76	-	-	0.55	0.52	1.22
Mar-89	3/28/1989	1.69	6.38	(1.46)	1.01	-	-	1.69	0.24	2.66
Apr-89	4/27/1989	-	11.61	0.43	1.03	-	-	-	0.42	3.89
May-89	5/27/1989	0.16	12.05	(0.04)	0.05	-	-	0.16	0.12	4.76
Jun-89	6/26/1989	-	14.13	-	0.02	-	-	-	-	5.32
Jul-89	7/26/1989	0.08	13.82	(0.03)	0.03	-	-	0.08	0.05	5.71
Aug-89	8/25/1989	1.38	10.16	(0.61)	0.47	-	-	1.38	0.77	4.57
Sep-89	9/24/1989	1.57	10.31	(0.95)	0.99	-	-	1.57	0.62	4.34
Oct-89	10/24/1989	1.06	8.11	(0.51)	0.42	-	-	1.06	0.56	3.84
Nov-89	11/23/1989	0.31	5.43	(0.17)	0.11	-	-	0.31	0.11	2.30
Dec-89	12/23/1989	-	3.35	0.09	0.09	-	-	-	0.09	1.42
Jan-90	1/22/1990	2.13	0.51	(1.11)	0.17	-	-	2.13	1.04	1.02
Feb-90	2/21/1990	2.56	0.51	(1.10)	0.39	-	-	2.56	1.44	0.94
Mar-90	3/23/1990	0.79	5.00	(0.18)	1.07	-	-	0.79	0.62	1.77
Apr-90	4/22/1990	1.02	8.50	(0.39)	1.17	-	-	1.02	0.63	2.98
May-90	5/22/1990	1.06	9.33	(0.66)	0.66	-	-	1.06	0.43	4.15
Jun-90	6/21/1990	0.39	13.62	(0.22)	0.20	-	-	0.39	0.18	5.09
Jul-90	7/21/1990	0.94	11.97	(0.44)	0.33	-	-	0.94	0.50	5.37
Aug-90	8/20/1990	10.09	0.71	(5.53)	0.84	-	2.42	7.68	2.15	4.21
Sep-90	9/19/1990	2.60	9.06	(1.28)	2.83	-	-	2.60	1.31	4.00
Oct-90	10/19/1990	0.43	8.03	0.53	1.92	-	-	0.43	0.98	3.61
Nov-90	11/18/1990	1.54	4.49	(0.91)	0.90	-	-	1.54	0.63	2.52
Dec-90	12/18/1990	2.80	0.59	(1.86)	0.31	-	-	2.80	0.91	1.52
Jan-91	1/17/1991	4.65	(2.48)	(2.56)	0.32	-	-	4.65	2.11	0.89
Feb-91	2/16/1991	0.16	3.78	0.53	0.72	-	-	0.16	0.68	1.11
Mar-91	3/18/1991	3.62	1.34	(1.98)	1.12	-	-	3.62	1.63	1.80
Apr-91	4/17/1991	3.23	3.90	(1.07)	2.09	-	-	3.23	2.15	2.09
May-91	5/17/1991	-	9.88	0.02	2.06	-	-	-	0.02	3.68
Jun-91	6/16/1991	0.71	12.20	(0.28)	0.61	-	-	0.71	0.43	4.71
Jul-91	7/16/1991	0.43	12.87	(0.22)	0.44	-	-	0.43	0.24	5.29
Aug-91	8/15/1991	3.46	8.39	(1.81)	0.69	-	-	3.46	1.64	4.66
Sep-91	9/14/1991	2.09	9.45	(0.89)	1.53	-	-	2.09	1.22	4.57
Oct-91	10/1/1991	0.24	5.67	(0.05)	0.63	-	-	0.24	0.20	2.19

Table III-C.3 ST 11 Monsoon Period Water Balance

Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
6/1/1951	8.65	32.06	(2.05)	8.06	(3.82)	-	8.65	6.60	13.29
7/1/1951	-	16.19	0.01	0.56	(0.39)	-	-	0.01	5.25
8/1/1951	1.05	16.82	(0.55)	0.79	(0.33)	-	1.05	0.50	5.79
9/1/1951	3.83	11.41	(2.44)	1.01	(0.28)	-	3.83	1.39	4.84
10/1/1951	0.68	13.59	(0.18)	2.04	(0.22)	-	0.68	0.51	4.49
11/1/1951	1.64	8.59	(1.20)	0.42	(0.19)	-	1.64	0.44	3.15
1951	7.20	66.60	(4.36)	4.82	(1.41)	-	7.20	2.84	23.52
6/1/1952	16.50	32.08	(6.74)	9.21	(0.77)	-	16.50	9.75	15.54
7/1/1952	0.63	15.60	(0.15)	0.34	(0.07)	-	0.63	0.48	5.28
8/1/1952	0.56	15.71	(0.22)	0.24	(0.06)	-	0.56	0.34	5.19
9/1/1952	0.47	15.41	(0.16)	0.37	(0.06)	-	0.47	0.32	5.09
10/1/1952	0.74	14.05	(0.34)	0.35	(0.05)	-	0.74	0.40	4.56
11/1/1952	0.00	11.74	0.03	0.17	(0.05)	-	0.00	0.03	3.81
1952	2.40	72.51	(0.83)	1.46	(0.29)	-	2.40	1.57	23.93
6/1/1953	10.86	36.80	(5.36)	6.01	(0.28)	-	10.86	5.49	14.82
7/1/1953	-	16.78	0.01	0.08	(0.03)	-	-	0.01	5.51
8/1/1953	2.72	12.80	(1.69)	0.65	(0.03)	-	2.72	1.03	5.21
9/1/1953	1.90	13.28	(0.78)	1.26	(0.03)	-	1.90	1.12	4.71
10/1/1953	-	15.06	0.08	0.73	(0.03)	-	-	0.08	4.63
11/1/1953	0.01	10.29	0.01	0.03	(0.03)	-	0.01	0.02	3.39
1953	4.63	68.20	(2.37)	2.76	(0.15)	-	4.63	2.26	23.46
6/1/1954	10.05	44.58	(5.69)	6.15	(0.14)	-	10.05	4.36	17.36
7/1/1954	0.13	15.39	(0.02)	0.08	(0.02)	-	0.13	0.11	5.13
8/1/1954	4.46	9.72	(2.31)	1.18	(0.02)	-	4.46	2.16	4.63
9/1/1954	5.55	7.26	(2.69)	2.30	(0.02)	0.24	5.32	2.62	3.93
10/1/1954	1.35	12.07	(0.62)	2.09	(0.02)	-	1.35	0.73	4.18
11/1/1954	-	10.94	0.05	0.36	(0.02)	-	-	0.05	3.47
1954	11.50	55.40	(5.60)	6.01	(0.09)	0.24	11.27	5.67	21.36
6/1/1955	4.09	46.57	(1.92)	2.20	(0.10)	-	4.09	2.17	16.02
7/1/1955	2.06	13.27	(1.20)	1.08	(0.01)	-	2.06	0.85	5.17
8/1/1955	4.46	9.21	(2.56)	0.70	(0.01)	-	4.46	1.90	4.39
9/1/1955	2.83	9.69	(0.92)	2.28	(0.01)	-	2.83	1.91	3.95
10/1/1955	0.13	13.74	(0.02)	0.89	(0.01)	-	0.13	0.11	4.43
11/1/1955	0.02	11.22	0.01	0.02	(0.01)	-	0.02	0.03	3.54
1955	9.50	57.13	(4.69)	4.96	(0.06)	-	9.50	4.81	21.47
6/1/1956	7.73	43.74	(3.65)	3.90	(0.08)	-	7.73	4.09	16.91
7/1/1956	0.24	16.73	(0.15)	0.04	(0.01)	-	0.24	0.09	5.79
8/1/1956	2.77	11.85	(1.31)	0.65	(0.01)	-	2.77	1.45	4.84
9/1/1956	1.84	11.81	(0.74)	1.46	(0.01)	-	1.84	1.10	4.30
10/1/1956	0.07	14.57	(0.05)	0.18	(0.01)	-	0.07	0.02	4.61
11/1/1956	0.54	8.94	(0.25)	0.07	(0.01)	-	0.54	0.28	3.03
1956	5.46	63.90	(2.51)	2.40	(0.03)	-	5.46	2.94	22.58
6/1/1957	9.38	37.13	(4.40)	4.85	(0.04)	-	9.38	4.98	14.94
7/1/1957	0.03	16.26	0.02	0.04	(0.01)	-	0.03	0.04	5.53
8/1/1957	1.09	13.54	(0.54)	0.26	(0.01)	-	1.09	0.55	4.97
9/1/1957	3.57	10.20	(1.62)	1.18	(0.01)	-	3.57	1.96	4.44
10/1/1957	0.60	12.44	(0.19)	1.00	(0.01)	-	0.60	0.41	4.26
11/1/1957	3.23	4.69	(2.15)	0.35	(0.01)	-	3.23	1.08	2.60
1957	8.52	57.13	(4.48)	2.83	(0.03)	-	8.52	4.04	21.80
6/1/1958	10.68	36.73	(3.54)	5.58	(0.04)	-	10.68	7.14	15.40
7/1/1958	0.70	15.75	(0.36)	0.30	(0.01)	-	0.70	0.34	5.50
8/1/1958	0.78	15.12	(0.40)	0.21	(0.01)	-	0.78	0.38	5.44
9/1/1958	0.89	14.13	(0.35)	0.65	(0.01)	-	0.89	0.55	4.68
10/1/1958	3.17	9.17	(1.85)	0.90	(0.01)	-	3.17	1.33	4.12
11/1/1958	1.92	7.64	(0.90)	1.39	(0.01)	-	1.92	1.02	3.06
1958	7.46	61.81	(3.85)	3.44	(0.03)	-	7.46	3.62	22.80
6/1/1959	3.43	50.43	(1.60)	2.28	(0.04)	-	3.43	1.83	17.30
7/1/1959	1.03	15.39	(0.53)	0.50	(0.01)	-	1.03	0.50	5.64
8/1/1959	3.79	12.83	(2.50)	1.00	(0.01)	-	3.79	1.29	5.64
9/1/1959	5.62	7.13	(1.76)	2.01	(0.01)	-	5.62	3.86	3.94
10/1/1959	0.05	12.80	0.04	1.38	(0.01)	-	0.05	0.09	4.31
11/1/1959	4.87	4.72	(4.44)	0.29	(0.01)	0.00	4.87	0.43	3.20
1959	15.37	52.87	(9.19)	5.17	(0.03)	0.00	15.37	6.18	22.73

Table III-C.3 ST 11 Monsoon Period Water Balance

Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
6/1/1960	11.66	38.50	(4.45)	6.88	(0.03)	-	11.66	7.21	16.20
7/1/1960	-	17.13	0.01	0.25	(0.00)	-	-	0.01	5.76
8/1/1960	0.74	15.20	(0.40)	0.40	(0.00)	-	0.74	0.34	5.41
9/1/1960	1.62	12.48	(0.65)	0.85	(0.00)	-	1.62	0.97	4.54
10/1/1960	0.28	13.62	(0.10)	0.24	(0.00)	-	0.28	0.19	4.52
11/1/1960	2.06	6.46	(0.97)	0.52	(0.00)	-	2.06	1.08	2.80
1960	4.70	64.88	(2.11)	2.26	(0.02)	-	4.70	2.59	23.02
6/1/1961	3.57	46.65	(1.39)	2.25	(0.04)	-	3.57	2.18	16.32
7/1/1961	-	16.69	-	0.05	(0.01)	-	-	-	5.66
8/1/1961	0.67	14.65	(0.28)	0.18	(0.01)	-	0.67	0.39	5.34
9/1/1961	3.13	10.71	(2.06)	0.87	(0.01)	-	3.13	1.07	4.51
10/1/1961	0.52	10.47	0.35	1.01	(0.01)	-	0.52	0.87	3.65
11/1/1961	0.45	8.90	(0.31)	0.05	(0.01)	-	0.45	0.14	3.23
1961	4.78	61.42	(2.29)	2.16	(0.03)	-	4.78	2.48	22.38
6/1/1962	11.44	35.43	(5.35)	5.76	(0.04)	-	11.44	6.08	15.23
7/1/1962	-	15.39	0.02	0.05	(0.01)	-	-	-	5.29
8/1/1962	0.61	14.72	(0.25)	0.23	(0.01)	-	0.61	0.36	5.26
9/1/1962	0.52	15.12	(0.21)	0.27	(0.01)	-	0.52	0.31	5.21
10/1/1962	1.30	11.06	(0.56)	0.27	(0.01)	-	1.30	0.74	4.26
11/1/1962	0.87	8.31	(0.30)	0.48	(0.01)	-	0.87	0.57	2.98
1962	3.30	64.61	(1.30)	1.30	(0.03)	-	3.30	1.98	22.98
6/1/1963	11.15	40.51	(5.93)	6.19	(0.04)	-	11.15	5.20	17.00
7/1/1963	-	14.72	0.01	0.03	(0.00)	-	-	0.00	4.97
8/1/1963	0.08	15.94	(0.01)	0.04	(0.01)	-	0.08	0.06	5.61
9/1/1963	11.02	1.14	(5.80)	1.41	(0.00)	0.64	10.38	4.58	3.97
10/1/1963	1.10	11.61	0.39	2.94	(0.01)	-	1.10	1.49	4.13
11/1/1963	0.67	9.37	(0.35)	1.24	(0.00)	-	0.67	0.32	3.50
1963	12.87	52.80	(5.76)	5.65	(0.02)	0.64	12.23	6.45	22.18
6/1/1964	5.50	40.94	(2.38)	2.64	(0.03)	-	5.50	3.12	15.18
7/1/1964	-	14.65	-	0.01	(0.00)	-	-	0.00	4.97
8/1/1964	1.48	13.54	(0.69)	0.31	(0.01)	-	1.48	0.79	5.15
9/1/1964	2.29	10.87	(0.95)	1.03	(0.00)	-	2.29	1.34	4.25
10/1/1964	1.65	8.74	(0.60)	0.66	(0.00)	-	1.65	1.06	3.61
11/1/1964	1.54	8.98	(0.88)	0.63	(0.01)	-	1.54	0.66	3.51
1964	6.97	56.77	(3.13)	2.65	(0.02)	-	6.97	3.85	21.49
6/1/1965	12.47	33.35	(5.68)	6.27	(0.03)	-	12.47	6.80	14.85
7/1/1965	0.10	13.74	(0.01)	0.02	(0.00)	-	0.10	0.09	4.83
8/1/1965	1.44	12.87	(0.63)	0.36	(0.01)	-	1.44	0.82	4.98
9/1/1965	0.95	13.35	(0.43)	0.70	(0.00)	-	0.95	0.52	4.70
10/1/1965	1.09	10.98	(0.52)	0.55	(0.00)	-	1.09	0.57	4.01
11/1/1965	0.46	9.92	(0.23)	0.20	(0.01)	-	0.46	0.23	3.38
1965	4.05	60.87	(1.81)	1.83	(0.02)	-	4.05	2.24	21.90
6/1/1966	17.03	32.28	(9.81)	6.28	(0.02)	-	17.03	7.22	16.33
7/1/1966	0.18	14.92	(0.06)	0.36	(0.00)	-	0.18	0.13	5.46
8/1/1966	0.84	13.74	(0.40)	0.50	(0.00)	-	0.84	0.44	4.96
9/1/1966	1.69	12.40	(0.93)	0.67	(0.01)	-	1.69	0.76	4.76
10/1/1966	2.81	8.86	(1.52)	1.57	(0.01)	-	2.81	1.30	4.04
11/1/1966	1.36	7.40	(0.58)	1.24	(0.01)	-	1.36	0.78	2.86
1966	6.88	57.32	(3.48)	4.35	(0.03)	-	6.88	3.41	22.08
6/1/1967	5.79	42.24	(2.69)	3.35	(0.10)	-	5.79	3.11	15.89
7/1/1967	0.08	14.13	(0.02)	0.08	(0.02)	-	0.08	0.06	4.81
8/1/1967	4.05	9.33	(1.98)	1.07	(0.02)	-	4.05	2.07	4.76
9/1/1967	2.67	11.46	(1.30)	2.07	(0.02)	-	2.67	1.38	4.46
10/1/1967	0.58	10.83	(0.21)	0.48	(0.02)	-	0.58	0.37	4.14
11/1/1967	0.42	9.29	(0.19)	0.28	(0.02)	-	0.42	0.23	3.39
1967	7.80	55.04	(3.70)	3.98	(0.09)	-	7.80	4.10	21.57
6/1/1968	17.52	29.45	(10.58)	7.06	(0.12)	-	17.52	6.95	15.70
7/1/1968	-	15.75	-	0.43	(0.04)	-	-	-	5.56
8/1/1968	1.83	11.77	(1.04)	0.59	(0.05)	-	1.83	0.79	4.91
9/1/1968	2.69	8.94	(0.93)	1.50	(0.05)	-	2.69	1.76	3.78
10/1/1968	0.05	11.61	0.00	0.45	(0.05)	-	0.05	0.06	4.04
11/1/1968	0.39	8.86	(0.17)	0.27	(0.05)	-	0.39	0.22	2.90
1968	4.96	56.93	(2.13)	3.24	(0.24)	-	4.96	2.82	21.19

Table III-C.3 ST 11 Monsoon Period Water Balance

Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
6/1/1969	14.04	32.72	(6.74)	6.83	(0.32)	-	14.04	7.31	15.41
7/1/1969	-	14.37	-	0.19	(0.04)	-	-	-	5.23
8/1/1969	0.33	14.37	(0.09)	0.20	(0.04)	-	0.33	0.24	5.28
9/1/1969	2.71	12.44	(1.30)	1.24	(0.04)	-	2.71	1.41	5.07
10/1/1969	1.31	11.22	(0.63)	0.83	(0.03)	-	1.31	0.68	4.33
11/1/1969	0.83	7.76	(0.45)	0.27	(0.03)	-	0.83	0.37	3.11
1969	5.18	60.16	(2.48)	2.73	(0.18)	-	5.18	2.70	23.01
6/1/1970	8.79	37.72	(4.06)	4.76	(0.20)	-	8.79	4.73	15.36
7/1/1970	0.08	15.08	(0.00)	0.06	(0.02)	-	0.08	0.07	5.33
8/1/1970	1.04	13.98	(0.46)	0.49	(0.02)	-	1.04	0.57	5.56
9/1/1970	1.81	12.17	(0.87)	0.60	(0.02)	-	1.81	0.94	4.73
10/1/1970	3.53	7.95	(1.97)	1.76	(0.02)	0.00	3.53	1.56	4.45
11/1/1970	-	8.39	0.01	0.62	(0.02)	-	-	0.01	2.87
1970	6.46	57.56	(3.30)	3.53	(0.10)	0.00	6.45	3.15	22.93
6/1/1971	3.93	43.43	(1.67)	1.84	(0.12)	-	3.93	2.27	15.85
7/1/1971	-	14.84	-	0.04	(0.02)	-	-	-	5.06
8/1/1971	0.39	15.47	(0.15)	0.16	(0.02)	-	0.39	0.24	5.59
9/1/1971	4.93	7.32	(2.43)	1.37	(0.01)	-	4.93	2.49	4.19
10/1/1971	3.23	9.13	(2.65)	1.33	(0.01)	0.12	3.10	0.46	4.40
11/1/1971	4.21	3.15	(1.36)	1.41	(0.01)	0.10	4.11	2.74	2.80
1971	12.75	49.92	(6.60)	4.31	(0.07)	0.23	12.52	5.93	22.04
6/1/1972	2.32	49.72	(0.55)	3.12	(0.08)	-	2.32	1.78	17.30
7/1/1972	1.68	13.82	(0.98)	0.57	(0.01)	-	1.68	0.70	5.44
8/1/1972	0.27	16.10	(0.10)	0.56	(0.01)	-	0.27	0.17	5.69
9/1/1972	2.10	11.54	(1.08)	0.82	(0.01)	-	2.10	1.02	4.93
10/1/1972	0.70	11.61	(0.19)	0.50	(0.01)	-	0.70	0.51	4.37
11/1/1972	8.96	(1.77)	(5.44)	0.93	(0.01)	0.09	8.87	3.43	2.78
1972	13.72	51.30	(7.79)	3.38	(0.05)	0.09	13.62	5.83	23.21
6/1/1973	16.91	23.43	(5.71)	8.56	(0.05)	-	16.91	11.19	13.27
7/1/1973	0.87	14.65	(0.33)	0.74	(0.01)	-	0.87	0.52	5.37
8/1/1973	2.72	11.14	(1.75)	0.80	(0.01)	-	2.72	0.97	5.31
9/1/1973	1.50	13.23	(0.31)	1.51	(0.01)	-	1.50	1.18	4.93
10/1/1973	-	12.72	0.01	0.18	(0.01)	-	-	-	4.31
11/1/1973	-	8.66	-	0.06	(0.01)	-	-	-	3.27
1973	5.09	60.39	(2.39)	3.29	(0.03)	-	5.09	2.67	23.18
6/1/1974	8.15	33.94	(3.91)	4.20	(0.04)	-	8.15	4.19	13.59
7/1/1974	-	16.61	-	0.05	(0.01)	-	-	-	5.69
8/1/1974	2.44	11.57	(1.17)	0.77	(0.01)	-	2.44	1.28	5.16
9/1/1974	1.46	12.56	(0.57)	1.01	(0.01)	-	1.46	0.88	4.88
10/1/1974	3.86	7.52	(1.93)	1.33	(0.01)	-	3.86	1.91	4.26
11/1/1974	3.39	4.84	(2.50)	0.86	(0.01)	-	3.39	0.89	3.10
1974	11.14	53.11	(6.17)	4.03	(0.03)	-	11.14	4.96	23.08
6/1/1975	10.43	29.45	(4.21)	6.63	(0.04)	-	10.43	6.20	13.03
7/1/1975	-	15.16	-	0.03	(0.01)	-	-	-	5.27
8/1/1975	2.20	10.67	(0.92)	0.62	(0.01)	-	2.20	1.28	4.96
9/1/1975	2.09	12.17	(0.96)	1.14	(0.01)	-	2.09	1.14	4.65
10/1/1975	0.94	11.38	(0.32)	0.45	(0.01)	-	0.94	0.63	4.44
11/1/1975	0.28	8.39	(0.08)	0.06	(0.01)	-	0.28	0.17	3.43
1975	5.51	57.76	(2.28)	2.30	(0.03)	-	5.51	3.22	22.75
6/1/1976	8.23	36.22	(3.78)	3.80	(0.04)	-	8.23	4.44	15.22
7/1/1976	-	15.79	-	0.02	(0.01)	-	-	-	5.28
8/1/1976	2.76	10.28	(1.49)	0.62	(0.01)	0.00	2.76	1.28	5.23
9/1/1976	0.91	13.46	(0.47)	1.14	(0.01)	-	0.91	0.42	4.63
10/1/1976	4.45	5.87	(2.63)	1.25	(0.01)	-	4.45	1.84	4.06
11/1/1976	0.91	6.38	(0.28)	1.16	(0.01)	-	0.91	0.62	2.68
1976	9.02	51.77	(4.87)	4.19	(0.03)	0.00	9.02	4.15	21.87
6/1/1977	6.73	37.80	(3.13)	3.82	(0.04)	-	6.73	3.61	15.05
7/1/1977	0.08	15.75	(0.02)	0.02	(0.01)	-	0.08	0.04	5.46
8/1/1977	2.52	12.52	(1.35)	0.59	(0.01)	-	2.52	1.19	5.62
9/1/1977	2.56	11.50	(1.26)	1.65	(0.01)	-	2.56	1.31	4.92
10/1/1977	3.66	6.81	(1.87)	1.43	(0.00)	-	3.66	1.77	4.09
11/1/1977	1.30	7.76	(0.58)	0.95	(0.01)	-	1.30	0.74	3.39
1977	10.12	54.33	(5.08)	4.64	(0.03)	-	10.12	5.04	23.49

Table III-C.3 ST 11 Monsoon Period Water Balance

Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
6/1/1978	19.61	24.17	(10.52)	7.67	(0.03)	-	19.61	9.06	14.90
7/1/1978	0.51	15.12	(0.33)	0.62	(0.00)	-	0.51	0.21	5.55
8/1/1978	0.98	14.37	(0.56)	0.63	(0.01)	-	0.98	0.42	5.90
9/1/1978	1.14	11.69	(0.38)	1.00	(0.01)	-	1.14	0.74	4.26
10/1/1978	0.39	10.87	(0.18)	0.29	(0.00)	-	0.39	0.23	4.30
11/1/1978	1.93	7.52	(1.10)	0.28	(0.01)	-	1.93	0.83	4.04
1978	4.96	59.57	(2.54)	2.81	(0.02)	-	4.96	2.43	24.05
6/1/1979	25.43	15.59	(13.60)	8.63	(0.17)	-	25.43	11.84	14.22
7/1/1979	0.35	14.65	(0.04)	0.81	(0.15)	-	0.35	0.31	5.17
8/1/1979	0.16	14.92	(0.07)	0.42	(0.17)	-	0.16	0.10	5.76
9/1/1979	1.61	11.18	(0.67)	0.91	(0.16)	-	1.61	0.95	4.49
10/1/1979	0.12	13.31	(0.02)	0.28	(0.14)	-	0.12	0.09	4.85
11/1/1979	0.67	9.06	(0.38)	0.29	(0.13)	-	0.67	0.30	3.81
1979	2.91	63.11	(1.18)	2.70	(0.75)	-	2.91	1.74	24.08
6/1/1980	15.55	26.02	(7.89)	6.85	(0.64)	-	15.55	7.67	14.55
7/1/1980	0.16	15.20	(0.11)	0.52	(0.07)	-	0.16	0.04	5.23
8/1/1980	1.93	11.81	(1.02)	0.79	(0.07)	-	1.93	0.94	5.39
9/1/1980	1.38	12.17	(0.51)	1.21	(0.07)	-	1.38	0.87	4.74
10/1/1980	0.63	11.85	(0.32)	0.52	(0.07)	-	0.63	0.29	4.50
11/1/1980	0.04	9.09	(0.01)	0.10	(0.07)	-	0.04	0.03	3.67
1980	4.13	60.12	(1.96)	3.13	(0.35)	-	4.13	2.17	23.53
6/1/1981	9.61	37.80	(5.21)	5.48	(0.35)	-	9.61	4.40	16.76
7/1/1981	0.12	15.59	(0.04)	0.26	(0.04)	-	0.12	0.09	5.53
8/1/1981	2.17	11.69	(1.56)	0.48	(0.04)	-	2.17	0.60	5.49
9/1/1981	2.76	11.26	(0.92)	1.90	(0.04)	-	2.76	1.84	4.55
10/1/1981	0.55	11.65	(0.34)	0.39	(0.03)	-	0.55	0.20	4.84
11/1/1981	0.94	6.77	(0.39)	0.57	(0.03)	-	0.94	0.57	3.07
1981	6.54	56.97	(3.25)	3.61	(0.19)	-	6.54	3.30	23.48
6/1/1982	12.72	30.94	(5.67)	5.83	(0.19)	0.01	12.72	7.04	15.04
7/1/1982	0.04	13.90	(0.05)	0.05	(0.02)	-	0.04	-	5.04
8/1/1982	2.68	10.12	(1.37)	0.61	(0.02)	-	2.68	1.28	4.94
9/1/1982	4.01	8.11	(1.85)	1.74	(0.02)	0.04	3.98	2.14	4.25
10/1/1982	3.15	7.91	(1.77)	1.94	(0.02)	-	3.15	1.40	4.25
11/1/1982	-	8.43	0.02	0.78	(0.02)	-	-	0.02	3.10
1982	9.88	48.46	(5.02)	5.12	(0.11)	0.04	9.84	4.83	21.57
6/1/1983	15.47	23.98	(7.17)	6.80	(0.10)	-	15.47	8.31	13.33
7/1/1983	-	13.98	-	0.22	(0.01)	-	-	-	5.53
8/1/1983	2.80	11.54	(1.59)	0.74	(0.01)	-	2.80	1.21	5.41
9/1/1983	3.86	8.31	(1.63)	1.63	(0.01)	-	3.86	2.20	4.18
10/1/1983	5.34	6.34	(3.87)	1.21	(0.01)	0.07	5.28	1.43	4.46
11/1/1983	1.14	6.42	0.57	1.50	(0.01)	-	1.14	1.70	2.89
1983	13.14	46.57	(6.51)	5.30	(0.06)	0.07	13.07	6.54	22.47
6/1/1984	6.54	39.72	(2.85)	4.45	(0.08)	-	6.54	3.72	15.78
7/1/1984	1.34	12.52	(0.84)	0.09	(0.01)	-	1.34	0.50	5.38
8/1/1984	3.35	8.54	(1.15)	1.21	(0.01)	-	3.35	2.17	4.65
9/1/1984	3.43	7.95	(1.12)	1.46	(0.01)	-	3.43	2.33	4.09
10/1/1984	2.01	9.37	(1.09)	0.86	(0.01)	-	2.01	0.91	4.53
11/1/1984	1.38	5.51	(0.39)	0.76	(0.01)	-	1.38	0.96	2.68
1984	11.50	43.90	(4.59)	4.38	(0.06)	-	11.50	6.87	21.33
6/1/1985	14.17	22.72	(6.72)	5.71	(0.08)	-	14.17	7.47	13.20
7/1/1985	-	12.01	-	0.24	(0.01)	-	-	-	4.69
8/1/1985	1.22	11.93	(0.81)	0.35	(0.01)	-	1.22	0.43	4.91
9/1/1985	2.24	10.63	(1.07)	1.24	(0.01)	-	2.24	1.14	4.57
10/1/1985	3.74	6.18	(1.71)	1.02	(0.01)	-	3.74	2.03	4.02
11/1/1985	1.22	5.51	(0.23)	0.97	(0.01)	-	1.22	1.02	2.40
1985	8.43	46.26	(3.82)	3.82	(0.05)	-	8.43	4.62	20.60
6/1/1986	11.02	34.49	(5.40)	6.07	(0.07)	-	11.02	5.59	16.29
7/1/1986	-	14.84	-	0.04	(0.01)	-	-	0.01	5.54
8/1/1986	4.76	5.87	(2.13)	1.20	(0.01)	-	4.76	2.63	4.60
9/1/1986	2.13	10.47	(1.06)	1.30	(0.01)	-	2.13	1.09	4.71
10/1/1986	2.17	7.83	(0.96)	1.06	(0.01)	-	2.17	1.22	4.07
11/1/1986	1.77	5.47	(0.87)	0.86	(0.01)	-	1.77	0.88	2.44
1986	10.83	44.49	(5.02)	4.46	(0.04)	-	10.83	5.82	21.36

Table III-C.3 ST 11 Monsoon Period Water Balance

Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
6/1/1987	11.73	27.05	(4.98)	5.67	(0.04)	-	11.73	6.75	14.14
7/1/1987	0.20	14.41	(0.11)	0.12	(0.01)	-	0.20	0.10	5.17
8/1/1987	2.09	11.97	(1.24)	0.79	(0.01)	-	2.09	0.82	5.50
9/1/1987	3.03	9.41	(1.48)	1.44	(0.01)	-	3.03	1.54	4.63
10/1/1987	1.34	8.94	(0.61)	0.86	(0.01)	-	1.34	0.73	4.13
11/1/1987	0.31	8.54	(0.13)	0.29	(0.01)	-	0.31	0.21	3.69
1987	6.97	53.27	(3.57)	3.51	(0.03)	-	6.97	3.41	23.12
6/1/1988	12.68	29.57	(6.30)	6.00	(0.02)	-	12.68	6.36	15.00
7/1/1988	0.12	13.58	(0.03)	0.13	-	-	0.12	0.11	5.30
8/1/1988	3.43	9.41	(2.26)	0.32	-	-	3.43	1.13	5.15
9/1/1988	6.22	5.59	(2.03)	1.96	-	-	6.22	4.20	4.27
10/1/1988	0.31	10.28	0.08	1.93	-	-	0.31	0.41	3.96
11/1/1988	1.50	7.28	(0.78)	0.49	-	-	1.50	0.71	3.45
1988	11.57	46.14	(5.01)	4.82	-	-	11.57	6.57	22.14
6/1/1989	7.20	41.30	(3.39)	3.85	-	-	7.20	3.81	17.29
7/1/1989	-	14.37	-	0.02	-	-	-	-	5.55
8/1/1989	0.51	13.19	(0.25)	0.08	-	-	0.51	0.25	5.73
9/1/1989	0.94	11.46	(0.39)	0.54	-	-	0.94	0.58	4.32
10/1/1989	1.57	10.04	(0.96)	0.96	-	-	1.57	0.61	4.51
11/1/1989	1.06	6.77	(0.47)	0.40	-	-	1.06	0.60	3.57
1989	4.09	55.83	(2.06)	1.99	-	-	4.09	2.04	23.69
6/1/1990	8.11	35.35	(3.70)	3.62	-	-	8.11	4.40	15.31
7/1/1990	0.24	14.72	(0.15)	0.17	-	-	0.24	0.11	5.40
8/1/1990	1.50	10.31	(0.69)	0.58	-	-	1.50	0.82	5.16
9/1/1990	9.46	2.13	(4.63)	1.81	-	2.42	7.05	2.40	4.02
10/1/1990	2.99	7.09	(1.39)	2.43	-	-	2.99	1.59	4.17
11/1/1990	0.24	7.83	(0.04)	1.66	-	-	0.24	0.22	3.23
1990	14.42	42.09	(6.90)	6.65	-	2.42	12.01	5.14	21.98
6/1/1991	15.87	24.76	(7.76)	7.30	-	-	15.87	8.08	14.73
7/1/1991	0.63	12.56	(0.24)	0.46	-	-	0.63	0.38	5.21
8/1/1991	1.69	11.22	(1.06)	0.39	-	-	1.69	0.63	5.17
9/1/1991	2.87	9.65	(1.17)	1.52	-	-	2.87	1.73	4.65
10/1/1991	1.65	8.98	(0.76)	1.20	-	-	1.65	0.91	4.09
11/1/1991	1.22	7.99	(0.90)	0.08	-	-	1.22	0.31	3.99
1991	8.07	50.39	(4.13)	3.65	-	-	8.07	3.96	23.12
6/1/1992	24.29	15.28	(11.51)	8.80	-	-	24.29	12.72	14.72
7/1/1992	1.30	11.73	(0.38)	1.48	-	-	1.30	0.91	4.97
8/1/1992	3.31	9.61	(2.09)	0.84	-	-	3.31	1.18	5.44
9/1/1992	5.56	5.79	(2.52)	2.04	-	0.09	5.47	2.91	4.49
10/1/1992	0.91	10.35	(0.37)	2.42	-	-	0.91	0.51	4.06
11/1/1992	1.22	7.24	(0.74)	0.48	-	-	1.22	0.47	3.90
1992	12.30	44.72	(6.11)	7.26	-	0.09	12.20	5.98	22.85
6/1/1993	27.52	12.72	(17.91)	8.46	(1.67)	-	27.52	9.57	14.30
7/1/1993	-	13.74	-	0.79	(0.60)	-	-	-	5.07
8/1/1993	0.28	12.60	(0.16)	0.55	(0.44)	-	0.28	0.12	5.27
9/1/1993	3.58	8.19	(1.73)	0.94	(0.34)	-	3.58	1.85	4.95
10/1/1993	0.16	10.51	0.08	1.26	(0.28)	-	0.16	0.28	3.76
11/1/1993	0.83	7.17	(0.35)	0.43	(0.24)	-	0.83	0.43	3.67
1993	4.84	52.20	(2.17)	3.98	(1.89)	-	4.84	2.68	22.72
6/1/1994	9.92	31.65	(5.35)	5.83	(0.89)	-	9.92	4.57	15.17
7/1/1994	0.39	13.35	(0.20)	0.51	(0.08)	-	0.39	0.20	5.35
8/1/1994	1.46	12.17	(1.18)	0.24	(0.08)	-	1.46	0.31	5.54
9/1/1994	0.75	12.52	-	1.06	(0.07)	-	0.75	0.71	5.03
10/1/1994	2.05	8.54	(1.02)	1.02	(0.06)	-	2.05	1.02	4.23
11/1/1994	1.85	5.12	(1.10)	0.51	(0.06)	-	1.85	0.75	3.25
1994	6.50	51.69	(3.50)	3.35	(0.35)	-	6.50	2.99	23.40
6/1/1995	16.10	21.65	(6.93)	6.97	(0.30)	-	16.10	9.21	14.05
7/1/1995	-	12.99	-	0.28	(0.03)	-	-	-	4.73
8/1/1995	0.04	13.78	-	0.16	(0.03)	-	0.04	0.04	5.36
9/1/1995	4.08	8.66	(2.05)	1.18	(0.03)	0.03	4.06	1.97	5.39
10/1/1995	2.87	8.27	(1.81)	1.54	(0.03)	-	2.87	1.10	4.56
11/1/1995	-	9.06	0.24	1.02	(0.03)	-	-	0.24	3.61
1995	7.00	52.76	(3.62)	4.17	(0.17)	0.03	6.97	3.35	23.64
6/1/1996	6.34	39.76	(3.31)	3.43	(0.18)	-	6.34	2.99	17.23
7/1/1996	0.39	13.78	(0.20)	0.12	(0.02)	-	0.39	0.20	5.47
8/1/1996	2.36	10.63	(1.14)	0.91	(0.02)	-	2.36	1.22	5.32
9/1/1996	1.30	11.02	(0.71)	0.83	(0.02)	-	1.30	0.59	4.79
10/1/1996	3.19	5.91	(1.34)	1.06	(0.02)	-	3.19	1.89	4.01
11/1/1996	0.43	7.48	(0.16)	0.51	(0.02)	-	0.43	0.24	3.85
1996	7.68	48.82	(3.54)	3.43	(0.11)	-	7.68	4.13	23.44

Table III-C.3 ST 11 Monsoon Period Water Balance

Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
6/1/1997	6.97	37.40	(3.43)	3.46	(0.10)	-	6.97	3.58	15.88
7/1/1997	0.04	12.99	-	0.04	(0.01)	-	0.04	-	5.13
8/1/1997	0.12	13.78	(0.04)	0.04	(0.01)	-	0.12	0.08	5.89
9/1/1997	2.72	9.45	(1.38)	1.02	(0.01)	-	2.72	1.34	4.66
10/1/1997	-	11.81	-	0.31	(0.01)	-	-	-	4.56
11/1/1997	0.75	6.30	(0.39)	0.16	(0.01)	-	0.75	0.35	3.74
1997	3.62	54.33	(1.81)	1.57	(0.06)	-	3.62	1.77	23.98
6/1/1998	14.13	22.83	(6.85)	6.38	(0.08)	-	14.13	7.28	13.06
7/1/1998	-	12.60	-	0.28	(0.01)	-	-	-	4.83
8/1/1998	1.69	11.81	(0.87)	0.83	(0.01)	-	1.69	0.83	5.67
9/1/1998	2.56	9.84	(1.10)	1.14	(0.01)	-	2.56	1.46	4.73
10/1/1998	1.38	9.84	(0.71)	0.79	(0.01)	-	1.38	0.67	4.82
11/1/1998	-	7.48	-	-	(0.01)	-	-	-	3.85
1998	5.63	51.57	(2.68)	3.03	(0.06)	-	5.63	2.95	23.90
6/1/1999	5.08	38.19	(2.68)	2.60	(0.08)	-	5.08	2.40	15.57
7/1/1999	-	13.39	-	-	(0.01)	-	-	-	5.00
8/1/1999	5.79	5.12	(3.07)	1.02	(0.01)	-	5.79	2.76	5.16
9/1/1999	2.99	8.66	(1.22)	1.85	(0.01)	-	2.99	1.73	4.31
10/1/1999	1.18	9.06	(0.12)	1.22	(0.01)	-	1.18	1.10	4.25
11/1/1999	-	9.45	-	0.16	(0.01)	-	-	-	3.82
1999	9.96	45.67	(4.41)	4.25	(0.05)	-	9.96	5.59	22.54
6/1/2000	3.86	44.49	(2.13)	2.05	(0.07)	-	3.86	1.73	17.87
7/1/2000	0.83	12.60	(0.43)	0.31	(0.01)	-	0.83	0.39	5.86
8/1/2000	0.08	14.17	-	0.08	(0.00)	-	0.08	0.04	5.52
9/1/2000	0.71	11.02	(0.31)	0.24	(0.00)	-	0.71	0.39	5.25
10/1/2000	-	11.81	-	0.04	(0.00)	-	-	-	4.50
11/1/2000	5.28	1.18	(3.86)	0.31	(0.00)	-	5.28	1.46	3.66
2000	6.89	50.79	(4.61)	0.98	(0.02)	-	6.89	2.28	24.78
6/1/2001	11.77	28.35	(4.13)	7.17	(0.00)	-	11.77	7.64	14.56
7/1/2001	0.04	14.57	(0.04)	0.08	-	-	0.04	-	5.59
8/1/2001	2.72	9.84	(2.09)	0.20	-	-	2.72	0.63	5.87
9/1/2001	3.54	8.27	(0.79)	2.09	-	-	3.54	2.72	4.15
10/1/2001	0.12	11.42	(0.04)	0.67	-	-	0.12	0.08	4.79
11/1/2001	0.39	7.87	(0.20)	0.16	-	-	0.39	0.20	3.65
2001	6.81	51.97	(3.15)	3.19	-	-	6.81	3.62	24.04
6/1/2002	2.99	41.73	(1.50)	1.38	-	-	2.99	1.54	17.09
7/1/2002	-	14.96	-	-	-	-	-	-	5.57
8/1/2002	0.35	13.39	(0.12)	0.08	-	-	0.35	0.20	6.27
9/1/2002	0.47	11.81	(0.28)	0.08	-	-	0.47	0.24	4.90
10/1/2002	1.26	9.45	(0.51)	0.63	-	-	1.26	0.71	4.56
11/1/2002	0.08	7.48	(0.04)	-	-	-	0.08	0.08	3.72
2002	2.17	57.09	(0.94)	0.79	-	-	2.17	1.22	25.02
6/1/2003	9.29	32.68	(4.92)	4.80	-	-	9.29	4.37	15.60
7/1/2003	-	13.78	-	-	-	-	-	-	6.03
8/1/2003	0.47	12.60	(0.12)	0.04	-	-	0.47	0.35	6.11
9/1/2003	1.38	10.63	(0.75)	0.43	-	-	1.38	0.63	4.94
10/1/2003	2.05	8.66	(0.83)	0.94	-	-	2.05	1.22	4.33
11/1/2003	0.04	9.06	-	0.12	-	-	0.04	0.08	3.92
2003	3.94	54.72	(1.69)	1.54	-	-	3.94	2.28	25.33
6/1/2004	7.99	32.28	(3.94)	3.78	-	-	7.99	4.02	16.89
7/1/2004	-	13.39	-	-	-	-	-	-	5.46
8/1/2004	0.55	12.20	(0.24)	0.12	-	-	0.55	0.31	5.62
9/1/2004	2.20	9.45	(0.83)	0.71	-	-	2.20	1.38	4.93
10/1/2004	1.57	8.66	(0.91)	0.55	-	-	1.57	0.71	4.87
11/1/2004	1.22	5.12	(0.63)	0.47	-	-	1.22	0.55	3.51
2004	5.55	48.82	(2.60)	1.85	-	-	5.55	2.95	24.39
6/1/2005	16.52	22.44	(8.66)	6.42	-	0.77	15.75	7.13	13.86
7/1/2005	0.08	12.60	(0.04)	0.39	-	-	0.08	0.04	5.14
8/1/2005	1.38	11.81	(0.79)	0.31	-	-	1.38	0.59	6.50
9/1/2005	4.96	5.91	(2.05)	1.89	-	-	4.96	2.91	3.98
10/1/2005	0.08	10.63	-	1.02	-	-	0.08	0.08	4.57
11/1/2005	0.43	7.09	(0.24)	0.20	-	-	0.43	0.20	3.81
2005	6.93	48.03	(3.11)	3.82	-	-	6.93	3.82	23.99
6/1/2006	3.94	39.37	(2.17)	2.44	-	-	3.94	1.73	16.77
7/1/2006	0.51	12.99	(0.24)	0.08	-	-	0.51	0.28	5.71
8/1/2006	3.19	7.87	(2.24)	0.35	-	0.00	3.19	0.94	5.46
9/1/2006	3.03	7.87	(0.47)	1.85	-	-	3.03	2.60	4.04
10/1/2006	1.18	7.48	(0.51)	1.14	-	-	1.18	0.67	3.80
11/1/2006	1.02	5.51	(0.39)	0.31	-	-	1.02	0.63	3.31
2006	8.94	41.73	(3.86)	3.74	-	0.00	8.94	5.12	22.33

Table III-C.4 ST 11 Winter Storm Period Water Balance

Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
10/1/1951	14.21	90.07	(5.21)	12.47	(5.04)	-	14.21	9.01	33.65
11/1/1951	1.64	8.59	(1.20)	0.42	(0.19)	-	1.64	0.44	3.15
12/1/1951	1.71	3.44	(0.33)	0.56	(0.15)	-	1.71	1.38	1.66
1/1/1952	3.02	0.52	(1.96)	0.42	(0.13)	-	3.02	1.06	1.05
2/1/1952	2.79	0.81	(0.56)	0.58	(0.12)	-	2.79	2.24	1.08
3/1/1952	0.50	4.29	0.13	0.96	(0.10)	-	0.50	0.63	1.31
1952	9.66	17.65	(3.92)	2.93	(0.69)	-	9.66	5.74	8.25
10/1/1952	10.88	83.79	(4.89)	7.98	(0.51)	-	10.88	5.99	30.56
11/1/1952	0.00	11.74	0.03	0.17	(0.05)	-	0.00	0.03	3.81
12/1/1952	4.31	0.74	(2.94)	0.22	(0.04)	-	4.31	1.37	1.47
1/1/1953	1.98	1.22	(0.34)	0.46	(0.04)	-	1.98	1.64	0.96
2/1/1953	0.74	3.65	0.06	0.74	(0.04)	-	0.74	0.80	1.27
3/1/1953	0.60	4.11	(0.27)	0.91	(0.04)	-	0.60	0.33	1.36
1953	7.62	21.45	(3.46)	2.50	(0.22)	-	7.62	4.17	8.87
10/1/1953	7.85	84.98	(4.26)	6.41	(0.23)	-	7.85	3.59	29.79
11/1/1953	0.01	10.29	0.01	0.03	(0.03)	-	0.01	0.02	3.39
12/1/1953	0.56	5.66	(0.31)	0.10	(0.02)	-	0.56	0.26	1.91
1/1/1954	0.19	3.36	(0.01)	0.17	(0.02)	-	0.19	0.18	1.06
2/1/1954	2.41	1.97	(1.31)	0.29	(0.02)	-	2.41	1.10	1.27
3/1/1954	0.72	5.39	(0.20)	0.85	(0.02)	-	0.72	0.52	1.83
1954	3.90	26.67	(1.81)	1.45	(0.12)	-	3.90	2.08	9.46
10/1/1954	17.67	72.65	(9.52)	10.39	(0.12)	0.24	17.43	7.92	29.17
11/1/1954	-	10.94	0.05	0.36	(0.02)	-	-	0.05	3.47
12/1/1954	0.09	6.69	(0.05)	0.02	(0.02)	-	0.09	0.04	2.01
1/1/1955	0.29	3.74	(0.07)	0.08	(0.02)	-	0.29	0.22	1.30
2/1/1955	3.41	(0.55)	(1.98)	0.28	(0.02)	-	3.41	1.43	0.83
3/1/1955	0.28	4.13	0.11	0.75	(0.01)	-	0.28	0.39	1.29
1955	4.07	24.96	(1.94)	1.48	(0.08)	-	4.07	2.13	8.90
10/1/1955	9.49	78.46	(4.63)	6.02	(0.08)	-	9.49	4.87	28.52
11/1/1955	0.02	11.22	0.01	0.02	(0.01)	-	0.02	0.03	3.54
12/1/1955	0.96	4.41	(0.53)	0.17	(0.01)	-	0.96	0.43	1.72
1/1/1956	1.37	2.76	(0.68)	0.40	(0.01)	-	1.37	0.69	1.30
2/1/1956	2.62	1.57	(1.92)	0.45	(0.01)	-	2.62	0.70	1.38
3/1/1956	2.00	1.69	(0.29)	0.62	(0.01)	-	2.00	1.71	1.07
1956	6.98	21.65	(3.41)	1.66	(0.06)	-	6.98	3.56	9.01
10/1/1956	5.70	88.27	(2.48)	4.59	(0.06)	-	5.70	3.22	30.99
11/1/1956	0.54	8.94	(0.25)	0.07	(0.01)	-	0.54	0.28	3.03
12/1/1956	-	5.24	0.09	0.17	(0.01)	-	-	0.09	1.61
1/1/1957	0.47	3.35	(0.21)	0.12	(0.01)	-	0.47	0.26	1.13
2/1/1957	4.76	(1.85)	(3.38)	0.31	(0.01)	-	4.76	1.39	0.96
3/1/1957	0.73	4.69	0.50	0.99	(0.01)	-	0.73	1.23	1.51
1957	6.50	20.35	(3.25)	1.67	(0.03)	-	6.50	3.24	8.24
10/1/1957	8.71	78.15	(3.72)	5.73	(0.04)	-	8.71	4.98	28.90
11/1/1957	3.23	4.69	(2.15)	0.35	(0.01)	-	3.23	1.08	2.60
12/1/1957	0.61	3.62	0.43	0.52	(0.01)	-	0.61	1.04	1.36
1/1/1958	1.06	2.80	(0.35)	0.45	(0.01)	-	1.06	0.71	1.23
2/1/1958	0.01	4.25	0.06	0.50	(0.01)	-	0.01	0.07	1.22
3/1/1958	2.52	1.93	(1.40)	0.59	(0.01)	-	2.52	1.12	1.34
1958	7.43	17.28	(3.41)	2.41	(0.03)	-	7.43	4.02	7.74
10/1/1958	12.02	78.31	(5.23)	5.57	(0.04)	-	12.02	6.80	30.00
11/1/1958	1.92	7.64	(0.90)	1.39	(0.01)	-	1.92	1.02	3.06
12/1/1958	1.53	3.98	(0.87)	0.63	(0.01)	-	1.53	0.66	1.61
1/1/1959	-	4.76	0.09	0.44	(0.01)	-	-	0.09	1.56
2/1/1959	0.21	4.29	(0.06)	0.33	(0.01)	-	0.21	0.16	1.30
3/1/1959	1.42	2.76	(0.72)	0.30	(0.01)	-	1.42	0.70	1.23
1959	5.08	23.43	(2.46)	3.09	(0.03)	-	5.08	2.62	8.76
10/1/1959	10.77	82.80	(4.80)	5.46	(0.04)	-	10.77	5.97	31.12
11/1/1959	4.87	4.72	(4.44)	0.29	(0.01)	0.00	4.87	0.43	3.20
12/1/1959	0.38	4.80	1.11	0.87	(0.01)	-	0.38	1.49	1.62
1/1/1960	5.23	(2.01)	(3.67)	0.49	(0.00)	-	5.23	1.57	1.00
2/1/1960	4.16	(1.26)	(1.92)	0.49	(0.00)	-	4.16	2.25	0.85
3/1/1960	0.87	3.07	0.33	0.79	(0.00)	-	0.87	1.20	1.18
1960	15.52	9.33	(8.57)	2.93	(0.02)	0.00	15.52	6.94	7.86

Table III-C.4 ST 11 Winter Storm Period Water Balance

Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
10/1/1960	3.66	92.32	(1.46)	5.99	(0.03)	-	3.66	2.20	31.77
11/1/1960	2.06	6.46	(0.97)	0.52	(0.00)	-	2.06	1.08	2.80
12/1/1960	0.48	4.72	(0.15)	0.50	(0.00)	-	0.48	0.33	1.70
1/1/1961	0.46	3.27	(0.19)	0.22	(0.00)	-	0.46	0.28	1.25
2/1/1961	0.70	3.19	(0.33)	0.14	(0.01)	-	0.70	0.37	1.27
3/1/1961	0.23	4.92	0.01	0.35	(0.00)	-	0.23	0.24	1.46
1961	3.93	22.56	(1.63)	1.72	(0.02)	-	3.93	2.30	8.48
10/1/1961	6.02	83.07	(2.72)	3.15	(0.04)	-	6.02	3.30	29.75
11/1/1961	0.45	8.90	(0.31)	0.05	(0.01)	-	0.45	0.14	3.23
12/1/1961	0.32	3.90	0.02	0.15	(0.01)	-	0.32	0.35	1.27
1/1/1962	3.95	(0.98)	(2.55)	0.27	(0.01)	-	3.95	1.40	0.99
2/1/1962	3.21	(0.04)	(1.95)	0.50	(0.01)	-	3.21	1.26	0.93
3/1/1962	1.67	2.44	(0.43)	0.80	(0.01)	-	1.67	1.24	1.29
1962	9.60	14.21	(5.21)	1.77	(0.03)	-	9.60	4.38	7.71
10/1/1962	4.72	86.42	(1.44)	4.86	(0.04)	-	4.72	3.25	30.75
11/1/1962	0.87	8.31	(0.30)	0.48	(0.01)	-	0.87	0.57	2.98
12/1/1962	0.83	5.31	(0.43)	0.28	(0.01)	-	0.83	0.40	2.04
1/1/1963	1.81	2.01	(0.94)	0.23	(0.01)	-	1.81	0.87	1.37
2/1/1963	2.11	1.42	(0.75)	0.42	(0.01)	-	2.11	1.36	1.00
3/1/1963	4.23	0.87	(2.80)	0.91	(0.00)	-	4.23	1.43	1.61
1963	9.86	17.91	(5.22)	2.31	(0.03)	-	9.86	4.63	9.00
10/1/1963	14.37	74.33	(6.42)	8.76	(0.03)	0.64	13.73	7.28	29.66
11/1/1963	0.67	9.37	(0.35)	1.24	(0.00)	-	0.67	0.32	3.50
12/1/1963	2.35	2.52	(1.16)	0.39	(0.01)	-	2.35	1.19	1.61
1/1/1964	0.33	3.46	0.04	0.37	(0.00)	-	0.33	0.37	1.28
2/1/1964	0.58	2.91	(0.28)	0.36	(0.01)	-	0.58	0.31	1.02
3/1/1964	-	4.41	0.06	0.38	(0.00)	-	-	0.06	1.28
1964	3.93	22.68	(1.68)	2.74	(0.02)	-	3.93	2.25	8.69
10/1/1964	7.67	75.43	(3.30)	3.16	(0.03)	-	7.67	4.38	27.97
11/1/1964	1.54	8.98	(0.88)	0.63	(0.01)	-	1.54	0.66	3.51
12/1/1964	1.38	3.35	(0.72)	0.44	(0.00)	-	1.38	0.66	1.60
1/1/1965	1.57	1.65	(0.86)	0.30	(0.01)	-	1.57	0.71	1.21
2/1/1965	2.89	0.59	(1.18)	0.45	(0.00)	-	2.89	1.72	1.00
3/1/1965	2.83	1.61	(1.51)	0.83	(0.00)	-	2.83	1.32	1.23
1965	10.22	16.18	(5.15)	2.66	(0.02)	-	10.22	5.07	8.54
10/1/1965	7.38	77.09	(3.00)	5.87	(0.03)	-	7.38	4.39	28.31
11/1/1965	0.46	9.92	(0.23)	0.20	(0.01)	-	0.46	0.23	3.38
12/1/1965	2.35	3.27	(1.62)	0.09	(0.00)	-	2.35	0.73	2.08
1/1/1966	10.47	(7.87)	(8.72)	0.34	(0.00)	-	10.47	1.76	0.93
2/1/1966	1.83	1.30	0.49	0.52	(0.01)	-	1.83	2.32	0.95
3/1/1966	2.03	1.65	(0.13)	0.74	(0.00)	-	2.03	1.89	1.04
1966	17.15	8.27	(10.21)	1.89	(0.02)	-	17.15	6.94	8.38
10/1/1966	5.87	83.86	(2.74)	7.70	(0.02)	-	5.87	3.13	30.55
11/1/1966	1.36	7.40	(0.58)	1.24	(0.01)	-	1.36	0.78	2.86
12/1/1966	0.88	4.84	(0.48)	0.43	(0.01)	-	0.88	0.40	2.01
1/1/1967	1.25	2.09	(0.61)	0.25	(0.01)	-	1.25	0.64	1.22
2/1/1967	0.79	2.91	(0.31)	0.34	(0.01)	-	0.79	0.48	0.96
3/1/1967	-	4.69	0.09	0.49	(0.01)	-	-	0.09	1.54
1967	4.28	21.93	(1.89)	2.75	(0.06)	-	4.28	2.40	8.58
10/1/1967	10.25	73.46	(4.89)	5.55	(0.12)	-	10.25	5.36	28.34
11/1/1967	0.42	9.29	(0.19)	0.28	(0.02)	-	0.42	0.23	3.39
12/1/1967	2.11	3.50	(1.53)	0.06	(0.02)	-	2.11	0.58	2.04
1/1/1968	10.19	(7.56)	(8.39)	0.32	(0.02)	-	10.19	1.79	0.80
2/1/1968	0.63	3.23	0.88	0.65	(0.01)	-	0.63	1.51	1.18
3/1/1968	1.94	3.07	(0.48)	1.02	(0.01)	-	1.94	1.46	1.44
1968	15.29	11.54	(9.71)	2.32	(0.08)	-	15.29	5.57	8.85
10/1/1968	7.23	75.28	(3.02)	7.99	(0.24)	-	7.23	4.21	28.53
11/1/1968	0.39	8.86	(0.17)	0.27	(0.05)	-	0.39	0.22	2.90
12/1/1968	2.54	2.28	(1.37)	0.39	(0.05)	-	2.54	1.18	1.81
1/1/1969	3.30	(0.35)	(2.37)	0.35	(0.05)	-	3.30	0.93	1.04
2/1/1969	4.16	(0.98)	(2.08)	0.51	(0.05)	-	4.16	2.08	0.96
3/1/1969	1.36	2.32	0.24	0.74	(0.04)	-	1.36	1.60	1.04
1969	11.75	12.13	(5.74)	2.26	(0.24)	-	11.75	6.00	7.75

Table III-C.4 ST 11 Winter Storm Period Water Balance

Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
10/1/1969	7.04	81.85	(3.19)	7.30	(0.28)	-	7.04	3.85	30.43
11/1/1969	0.83	7.76	(0.45)	0.27	(0.03)	-	0.83	0.37	3.11
12/1/1969	2.12	2.52	(0.94)	0.39	(0.03)	-	2.12	1.18	1.64
1/1/1970	1.32	2.20	(0.54)	0.37	(0.03)	-	1.32	0.78	1.32
2/1/1970	0.50	2.87	0.02	0.41	(0.03)	-	0.50	0.52	0.94
3/1/1970	0.41	4.61	(0.06)	0.62	(0.03)	-	0.41	0.35	1.48
1970	5.17	19.96	(1.97)	2.07	(0.16)	-	5.17	3.20	8.49
10/1/1970	10.90	74.69	(5.85)	5.88	(0.16)	0.00	10.90	5.04	30.04
11/1/1970	-	8.39	0.01	0.62	(0.02)	-	-	0.01	2.87
12/1/1970	0.65	4.76	(0.51)	0.02	(0.02)	-	0.65	0.14	1.96
1/1/1971	1.21	1.85	(0.39)	0.16	(0.02)	-	1.21	0.82	1.09
2/1/1971	0.85	3.19	(0.26)	0.43	(0.02)	-	0.85	0.59	1.08
3/1/1971	0.82	3.74	(0.38)	0.55	(0.02)	-	0.82	0.44	1.55
1971	3.52	21.93	(1.53)	1.78	(0.08)	-	3.52	2.00	8.55
10/1/1971	8.95	76.65	(5.37)	3.58	(0.11)	0.12	8.83	3.46	29.41
11/1/1971	4.21	3.15	(1.36)	1.41	(0.01)	0.10	4.11	2.74	2.80
12/1/1971	0.04	4.84	0.18	0.85	(0.01)	-	0.04	0.22	1.64
1/1/1972	2.11	0.75	(0.93)	0.43	(0.01)	-	2.11	1.19	0.99
2/1/1972	-	4.06	0.21	0.66	(0.01)	-	-	0.21	1.25
3/1/1972	-	5.63	0.02	0.91	(0.01)	-	-	0.02	1.56
1972	6.36	18.43	(1.87)	4.26	(0.06)	0.10	6.26	4.38	8.23
10/1/1972	4.93	87.52	(2.39)	2.71	(0.08)	-	4.93	2.54	32.29
11/1/1972	8.96	(1.77)	(5.44)	0.93	(0.01)	0.09	8.87	3.43	2.78
12/1/1972	2.83	0.71	(0.82)	0.65	(0.01)	-	2.83	2.01	1.35
1/1/1973	2.98	(0.12)	(1.56)	0.44	(0.01)	-	2.98	1.42	0.98
2/1/1973	0.74	2.17	0.73	0.48	(0.01)	-	0.74	1.46	0.87
3/1/1973	3.17	0.31	(1.35)	0.71	(0.01)	-	3.17	1.82	0.94
1973	18.67	1.30	(8.44)	3.22	(0.05)	0.09	18.58	10.14	6.92
10/1/1973	12.28	72.09	(5.09)	9.50	(0.04)	-	12.28	7.14	29.00
11/1/1973	-	8.66	-	0.06	(0.01)	-	-	-	3.27
12/1/1973	1.77	3.35	(1.00)	0.12	(0.01)	-	1.77	0.76	1.88
1/1/1974	0.08	3.50	0.16	0.32	(0.01)	-	0.08	0.24	1.16
2/1/1974	3.43	(0.24)	(1.81)	0.42	(0.01)	-	3.43	1.59	1.02
3/1/1974	0.16	3.90	0.10	0.75	(0.01)	-	0.16	0.25	1.10
1974	5.43	19.17	(2.55)	1.67	(0.03)	-	5.43	2.85	8.42
10/1/1974	10.47	71.69	(5.03)	5.76	(0.04)	-	10.47	5.41	28.42
11/1/1974	3.39	4.84	(2.50)	0.86	(0.01)	-	3.39	0.89	3.10
12/1/1974	0.12	5.04	0.77	0.69	(0.01)	-	0.12	0.87	1.70
1/1/1975	0.75	2.24	(0.26)	0.37	(0.01)	-	0.75	0.49	1.18
2/1/1975	0.39	2.40	(0.13)	0.35	(0.01)	-	0.39	0.26	0.88
3/1/1975	3.94	0.16	(2.51)	0.67	(0.01)	-	3.94	1.44	1.04
1975	8.58	14.69	(4.63)	2.94	(0.03)	-	8.58	3.95	7.90
10/1/1975	10.47	68.98	(4.28)	6.80	(0.04)	-	10.47	6.19	27.54
11/1/1975	0.28	8.39	(0.08)	0.06	(0.01)	-	0.28	0.17	3.43
12/1/1975	2.28	2.83	(2.05)	0.03	(0.01)	-	2.28	0.23	2.12
1/1/1976	1.26	2.09	0.11	0.37	(0.01)	-	1.26	1.36	1.14
2/1/1976	0.20	2.83	0.11	0.42	(0.01)	-	0.20	0.33	0.98
3/1/1976	1.61	2.60	(0.61)	0.72	(0.01)	-	1.61	1.00	1.13
1976	5.63	18.74	(2.52)	1.61	(0.03)	-	5.63	3.10	8.80
10/1/1976	10.98	71.26	(5.93)	5.28	(0.04)	0.00	10.98	5.06	29.04
11/1/1976	0.91	6.38	(0.28)	1.16	(0.01)	-	0.91	0.62	2.68
12/1/1976	0.55	4.57	(0.23)	0.57	(0.01)	-	0.55	0.32	1.80
1/1/1977	1.85	1.38	(1.54)	0.19	(0.01)	-	1.85	0.28	1.15
2/1/1977	1.89	0.67	(0.35)	0.32	(0.01)	-	1.89	1.54	0.77
3/1/1977	0.08	5.16	0.10	0.88	(0.01)	-	0.08	0.18	1.64
1977	5.28	18.15	(2.31)	3.12	(0.03)	-	5.28	2.95	8.04
10/1/1977	11.18	72.60	(5.60)	5.55	(0.04)	-	11.18	5.57	29.75
11/1/1977	1.30	7.76	(0.58)	0.95	(0.01)	-	1.30	0.74	3.39
12/1/1977	0.35	5.08	(0.03)	0.33	(0.00)	-	0.35	0.31	1.96
1/1/1978	0.67	3.03	(0.41)	0.09	(0.01)	-	0.67	0.24	1.41
2/1/1978	6.38	(3.74)	(4.82)	0.28	(0.01)	-	6.38	1.58	0.82
3/1/1978	5.47	(2.24)	(2.94)	0.65	(0.00)	-	5.47	2.52	0.95
1978	14.17	9.88	(8.78)	2.30	(0.02)	-	14.17	5.40	8.53

Table III-C.4 ST 11 Winter Storm Period Water Balance

Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
10/1/1978	9.76	74.09	(3.77)	8.86	(0.03)	-	9.76	6.00	29.77
11/1/1978	1.93	7.52	(1.10)	0.28	(0.01)	-	1.93	0.83	4.04
12/1/1978	5.59	(1.54)	(3.91)	0.56	(0.01)	-	5.59	1.71	1.63
1/1/1979	6.57	(3.70)	(4.37)	0.44	(0.01)	-	6.57	2.20	0.93
2/1/1979	6.02	(4.13)	(4.12)	0.31	(0.01)	-	6.02	1.90	0.71
3/1/1979	1.26	3.27	0.83	0.91	(0.01)	-	1.26	2.07	1.27
1979	21.38	1.42	(12.66)	2.50	(0.03)	-	21.38	8.71	8.59
10/1/1979	8.23	75.75	(2.84)	8.82	(0.76)	-	8.23	5.40	29.94
11/1/1979	0.67	9.06	(0.38)	0.29	(0.13)	-	0.67	0.30	3.81
12/1/1979	0.67	3.82	(0.22)	0.32	(0.12)	-	0.67	0.46	1.80
1/1/1980	0.71	3.11	(0.36)	0.19	(0.11)	-	0.71	0.33	1.40
2/1/1980	4.09	(1.46)	(2.63)	0.27	(0.10)	-	4.09	1.48	0.94
3/1/1980	6.02	(1.97)	(4.06)	0.78	(0.09)	-	6.02	1.97	1.00
1980	12.17	12.56	(7.66)	1.84	(0.54)	-	12.17	4.54	8.95
10/1/1980	8.15	73.54	(2.57)	8.33	(0.50)	-	8.15	5.56	29.27
11/1/1980	0.04	9.09	(0.01)	0.10	(0.07)	-	0.04	0.03	3.67
12/1/1980	-	5.39	-	0.05	(0.06)	-	-	-	2.08
1/1/1981	0.55	3.82	(0.24)	0.16	(0.06)	-	0.55	0.32	1.38
2/1/1981	1.34	2.40	(0.76)	0.28	(0.05)	-	1.34	0.56	1.43
3/1/1981	2.56	2.17	(1.55)	0.72	(0.05)	-	2.56	1.04	1.43
1981	4.49	22.87	(2.55)	1.30	(0.28)	-	4.49	1.96	10.00
10/1/1981	10.75	74.21	(5.53)	7.31	(0.29)	-	10.75	5.20	30.81
11/1/1981	0.94	6.77	(0.39)	0.57	(0.03)	-	0.94	0.57	3.07
12/1/1981	2.32	3.46	(2.20)	0.04	(0.03)	-	2.32	0.12	2.27
1/1/1982	-	3.90	0.70	0.46	(0.03)	-	-	0.70	1.37
2/1/1982	2.76	0.35	(1.08)	0.43	(0.03)	-	2.76	1.65	0.96
3/1/1982	1.81	2.28	(0.52)	0.71	(0.03)	-	1.81	1.29	1.14
1982	7.83	16.77	(3.49)	2.22	(0.15)	-	7.83	4.33	8.81
10/1/1982	15.71	60.98	(7.61)	8.53	(0.16)	0.04	15.67	8.09	27.78
11/1/1982	-	8.43	0.02	0.78	(0.02)	-	-	0.02	3.10
12/1/1982	3.31	0.55	(2.12)	0.19	(0.02)	-	3.31	1.19	1.75
1/1/1983	1.73	1.02	(0.09)	0.31	(0.02)	-	1.73	1.61	1.04
2/1/1983	1.89	1.73	(1.44)	0.51	(0.01)	-	1.89	0.45	1.14
3/1/1983	2.32	1.65	(0.90)	0.78	(0.01)	-	2.32	1.43	1.04
1983	9.25	13.39	(4.54)	2.57	(0.08)	-	9.25	4.70	8.07
10/1/1983	18.22	59.17	(9.70)	8.81	(0.08)	0.07	18.15	8.47	27.94
11/1/1983	1.14	6.42	0.57	1.50	(0.01)	-	1.14	1.70	2.89
12/1/1983	2.01	2.68	(1.27)	0.82	(0.01)	-	2.01	0.76	1.87
1/1/1984	2.52	0.31	(1.12)	0.43	(0.01)	-	2.52	1.37	1.00
2/1/1984	0.47	3.07	0.25	0.59	(0.01)	-	0.47	0.74	0.98
3/1/1984	-	4.80	0.04	0.91	(0.01)	-	-	0.04	1.53
1984	6.14	17.28	(1.53)	4.24	(0.06)	-	6.14	4.61	8.27
10/1/1984	11.65	67.24	(4.94)	5.33	(0.08)	-	11.65	6.72	29.05
11/1/1984	1.38	5.51	(0.39)	0.76	(0.01)	-	1.38	0.96	2.68
12/1/1984	2.05	2.17	(1.58)	0.26	(0.01)	-	2.05	0.50	1.84
1/1/1985	5.79	(3.27)	(4.02)	0.31	(0.01)	-	5.79	1.77	0.90
2/1/1985	2.68	(0.31)	(0.73)	0.39	(0.01)	-	2.68	1.95	0.80
3/1/1985	1.69	1.54	0.06	0.65	(0.01)	-	1.69	1.72	0.94
1985	13.58	5.63	(6.67)	2.37	(0.06)	-	13.58	6.90	7.17
10/1/1985	9.17	63.35	(4.04)	6.96	(0.07)	-	9.17	5.13	26.87
11/1/1985	1.22	5.51	(0.23)	0.97	(0.01)	-	1.22	1.02	2.40
12/1/1985	2.76	0.98	(2.09)	0.43	(0.01)	-	2.76	0.67	1.90
1/1/1986	0.91	2.60	0.37	0.44	(0.01)	-	0.91	1.24	1.10
2/1/1986	0.08	4.25	(0.02)	0.63	(0.01)	-	0.08	0.08	1.51
3/1/1986	3.07	0.87	(1.43)	0.71	(0.01)	-	3.07	1.65	1.18
1986	8.03	14.21	(3.40)	3.17	(0.05)	-	8.03	4.65	8.09
10/1/1986	13.27	64.80	(6.38)	7.46	(0.06)	-	13.27	6.90	29.52
11/1/1986	1.77	5.47	(0.87)	0.86	(0.01)	-	1.77	0.88	2.44
12/1/1986	1.42	2.52	(0.49)	0.46	(0.01)	-	1.42	0.92	1.76
1/1/1987	2.99	(0.12)	(1.63)	0.34	(0.01)	-	2.99	1.38	1.13
2/1/1987	3.39	(0.08)	(1.69)	0.50	(0.01)	-	3.39	1.67	0.98
3/1/1987	2.68	0.83	(1.56)	0.69	(0.01)	-	2.68	1.12	1.41
1987	12.24	8.62	(6.24)	2.85	(0.03)	-	12.24	5.98	7.71
10/1/1987	7.91	68.62	(3.06)	6.90	(0.05)	-	7.91	4.85	28.29
11/1/1987	0.31	8.54	(0.13)	0.29	(0.01)	-	0.31	0.21	3.69
12/1/1987	1.77	2.44	(0.85)	0.35	(0.01)	-	1.77	0.91	1.83
1/1/1988	4.02	(1.22)	(2.73)	0.27	(0.01)	-	4.02	1.30	1.17
2/1/1988	3.58	(1.26)	(1.72)	0.37	(0.00)	-	3.58	1.87	0.76
3/1/1988	0.75	4.09	0.19	0.98	-	-	0.75	0.92	1.24
1988	10.43	12.60	(5.23)	2.27	(0.02)	-	10.43	5.20	8.69

Table III-C.4 ST 11 Winter Storm Period Water Balance

Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
10/1/1988	12.64	64.37	(5.44)	8.36	-	-	12.64	7.23	28.69
11/1/1988	1.50	7.28	(0.78)	0.49	-	-	1.50	0.71	3.45
12/1/1988	1.73	2.95	(1.20)	0.37	-	-	1.73	0.52	2.12
1/1/1989	1.10	1.81	(0.19)	0.30	-	-	1.10	0.93	1.10
2/1/1989	2.20	0.79	(0.98)	0.41	-	-	2.20	1.22	0.89
3/1/1989	0.31	4.37	0.05	0.85	-	-	0.31	0.35	1.16
1989	6.85	17.20	(3.09)	2.41	-	-	6.85	3.74	8.72
10/1/1989	4.88	80.43	(2.67)	3.51	-	-	4.88	2.22	32.08
11/1/1989	1.06	6.77	(0.47)	0.40	-	-	1.06	0.60	3.57
12/1/1989	0.31	4.92	(0.15)	0.07	-	-	0.31	0.15	2.06
1/1/1990	0.87	2.36	(0.65)	0.07	-	-	0.87	0.22	1.21
2/1/1990	1.26	1.65	(0.33)	0.28	-	-	1.26	0.95	1.04
3/1/1990	2.56	0.94	(1.03)	0.52	-	-	2.56	1.51	0.96
1990	6.06	16.65	(2.62)	1.35	-	-	6.06	3.43	8.85
10/1/1990	17.30	59.72	(8.40)	7.66	-	2.42	14.88	6.49	28.78
11/1/1990	0.24	7.83	(0.04)	1.66	-	-	0.24	0.22	3.23
12/1/1990	2.20	2.36	(1.03)	0.49	-	-	2.20	1.15	2.20
1/1/1991	4.84	(2.28)	(3.73)	0.26	-	-	4.84	1.11	1.16
2/1/1991	1.77	1.06	(0.04)	0.47	-	-	1.77	1.74	0.89
3/1/1991	0.94	3.78	(0.25)	0.95	-	-	0.94	0.70	1.35
1991	10.00	12.76	(5.09)	3.83	-	-	10.00	4.91	8.82
10/1/1991	12.95	62.24	(5.95)	8.70	-	-	12.95	7.04	28.26
11/1/1991	1.22	7.99	(0.90)	0.08	-	-	1.22	0.31	3.99
12/1/1991	3.27	0.75	(2.04)	0.41	-	-	3.27	1.18	1.66
1/1/1992	3.98	(1.54)	(1.85)	0.34	-	-	3.98	2.13	1.07
2/1/1992	2.99	(0.24)	(1.03)	0.47	-	-	2.99	2.01	0.75
3/1/1992	2.76	1.06	(1.13)	0.78	-	-	2.76	1.61	1.13
1992	14.21	8.03	(6.96)	2.08	-	-	14.21	7.24	8.60
10/1/1992	22.38	52.72	(10.82)	13.59	-	0.09	22.28	11.30	29.06
11/1/1992	1.22	7.24	(0.74)	0.48	-	-	1.22	0.47	3.90
12/1/1992	0.51	3.23	(0.01)	0.34	-	-	0.51	0.51	1.68
1/1/1993	6.34	(4.06)	(4.74)	0.30	-	-	6.34	1.57	0.78
2/1/1993	11.26	(8.86)	(8.95)	0.41	-	-	11.26	2.32	0.67
3/1/1993	6.02	(3.39)	(3.86)	0.52	-	-	6.02	2.17	1.04
1993	25.35	(5.83)	(18.30)	2.04	-	-	25.35	7.05	8.07
10/1/1993	7.40	70.83	(2.17)	10.44	(3.32)	-	7.40	5.24	29.14
11/1/1993	0.83	7.17	(0.35)	0.43	(0.24)	-	0.83	0.43	3.67
12/1/1993	4.17	(0.47)	(2.99)	0.35	(0.19)	-	4.17	1.18	1.76
1/1/1994	0.28	2.76	0.20	0.47	(0.16)	-	0.28	0.47	1.29
2/1/1994	0.28	3.35	(0.08)	0.63	(0.13)	-	0.28	0.20	1.22
3/1/1994	2.64	0.79	(1.42)	0.67	(0.11)	-	2.64	1.22	1.10
1994	8.19	13.58	(4.65)	2.56	(0.83)	-	8.19	3.50	9.05
10/1/1994	7.20	71.81	(3.46)	6.54	(0.59)	-	7.20	3.74	29.94
11/1/1994	1.85	5.12	(1.10)	0.51	(0.06)	-	1.85	0.75	3.25
12/1/1994	3.39	-	(1.65)	0.47	(0.05)	-	3.39	1.73	1.76
1/1/1995	2.64	-	(1.30)	0.39	(0.04)	-	2.64	1.38	1.10
2/1/1995	3.66	(0.79)	(1.57)	0.43	(0.04)	-	3.66	2.09	0.86
3/1/1995	2.72	1.57	(1.22)	0.87	(0.04)	-	2.72	1.46	1.22
1995	14.25	5.91	(6.85)	2.68	(0.24)	-	14.25	7.40	8.20
10/1/1995	10.70	64.57	(5.04)	7.95	(0.26)	0.03	10.67	5.67	29.13
11/1/1995	-	9.06	0.24	1.02	(0.03)	-	-	0.24	3.61
12/1/1995	1.34	3.15	(0.67)	0.35	(0.03)	-	1.34	0.63	2.00
1/1/1996	0.87	2.36	(0.51)	0.28	(0.03)	-	0.87	0.39	1.52
2/1/1996	0.04	3.94	0.04	0.31	(0.02)	-	0.04	0.04	1.28
3/1/1996	3.15	0.79	(1.97)	0.63	(0.02)	-	3.15	1.18	1.45
1996	5.39	19.29	(2.87)	2.60	(0.14)	-	5.39	2.48	9.86
10/1/1996	8.19	70.87	(3.58)	4.76	(0.15)	-	8.19	4.65	30.57
11/1/1996	0.43	7.48	(0.16)	0.51	(0.02)	-	0.43	0.24	3.85
12/1/1996	1.26	3.15	(0.87)	0.12	(0.02)	-	1.26	0.39	1.67
1/1/1997	-	3.15	0.31	0.24	(0.02)	-	-	0.31	1.24
2/1/1997	2.83	-	(1.61)	0.28	(0.01)	-	2.83	1.22	1.02
3/1/1997	1.65	2.36	(1.26)	0.67	(0.01)	-	1.65	0.39	1.27
1997	6.18	16.14	(3.58)	1.81	(0.09)	-	6.18	2.56	9.04
10/1/1997	4.09	76.77	(1.42)	3.58	(0.09)	-	4.09	2.68	30.90
11/1/1997	0.75	6.30	(0.39)	0.16	(0.01)	-	0.75	0.35	3.74
12/1/1997	0.79	3.54	(0.39)	0.24	(0.01)	-	0.79	0.39	1.79
1/1/1998	2.72	-	(1.38)	0.20	(0.01)	-	2.72	1.30	1.21
2/1/1998	0.35	2.76	0.12	0.43	(0.01)	-	0.35	0.55	0.93
3/1/1998	6.42	(3.94)	(4.25)	0.43	(0.01)	-	6.42	2.13	1.05
1998	11.02	8.66	(6.30)	1.46	(0.06)	-	11.02	4.72	8.73

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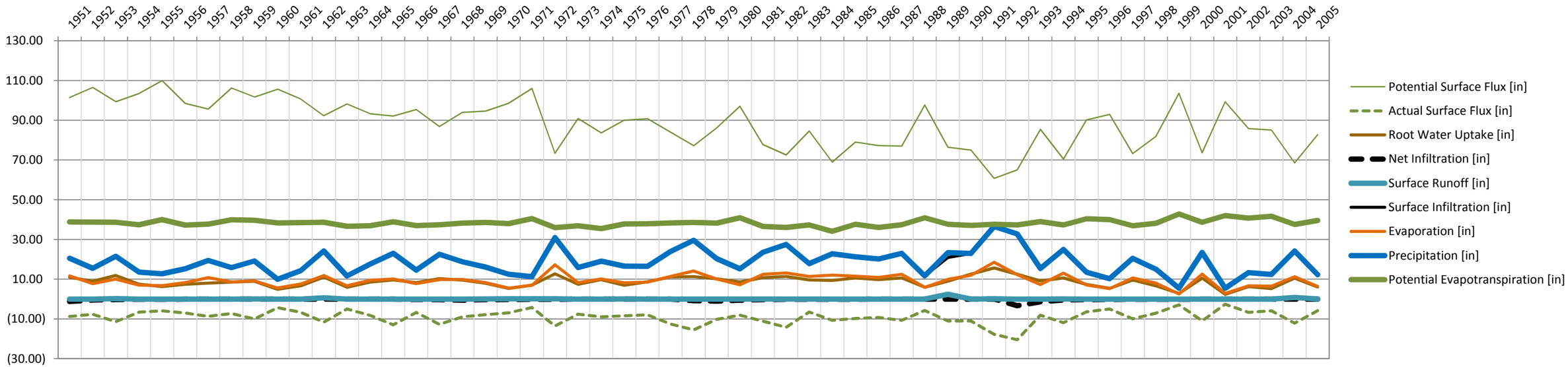
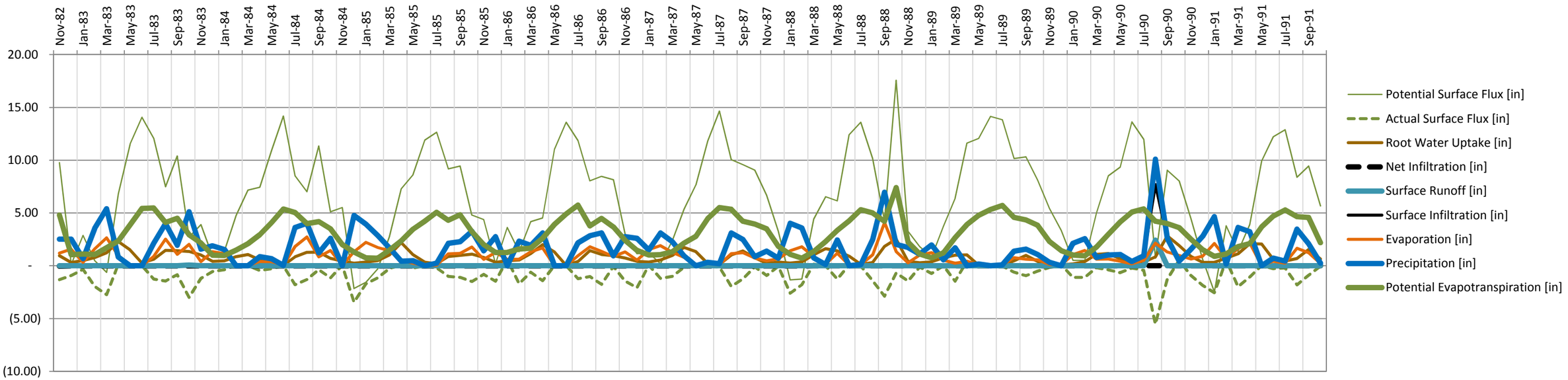
Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
10/1/1998	9.49	64.57	(3.62)	8.11	(0.08)	-	9.49	5.87	28.12
11/1/1998	-	7.48	-	-	(0.01)	-	-	-	3.85
12/1/1998	1.06	3.54	(0.87)	0.04	(0.01)	-	1.06	0.20	1.81
1/1/1999	0.75	2.36	0.04	0.24	(0.01)	-	0.75	0.79	1.30
2/1/1999	0.04	3.54	-	0.31	(0.01)	-	0.04	0.04	1.38
3/1/1999	0.20	4.72	(0.08)	0.20	(0.01)	-	0.20	0.12	1.38
1999	2.05	21.65	(0.91)	0.79	(0.06)	-	2.05	1.14	9.71
10/1/1999	12.99	60.24	(6.18)	5.91	(0.07)	-	12.99	6.85	28.42
11/1/1999	-	9.45	-	0.16	(0.01)	-	-	-	3.82
12/1/1999	-	6.30	-	-	(0.01)	-	-	-	2.67
1/1/2000	0.04	3.15	(0.04)	-	(0.01)	-	0.04	-	1.49
2/1/2000	0.28	3.94	(0.12)	0.12	(0.01)	-	0.28	0.16	1.32
3/1/2000	0.71	3.54	(0.28)	0.04	(0.01)	-	0.71	0.39	1.69
2000	1.02	26.38	(0.43)	0.31	(0.05)	-	1.02	0.55	11.00
9/30/2000	4.45	76.77	(2.44)	2.56	(0.04)	-	4.45	2.01	31.65
11/1/2000	5.28	1.57	(3.86)	0.31	(0.00)	-	5.28	1.46	3.82
12/1/2000	2.13	0.79	(0.35)	0.47	(0.00)	-	2.13	1.77	1.12
1/1/2001	0.12	3.54	0.20	0.55	-	-	0.12	0.28	1.48
2/1/2001	3.35	(1.18)	(2.09)	0.39	-	-	3.35	1.30	1.09
3/1/2001	1.77	1.97	(0.12)	0.71	-	-	1.77	1.61	1.01
2001	12.64	6.69	(6.22)	2.44	(0.00)	-	12.64	6.42	8.52
9/30/2001	10.83	66.93	(4.72)	8.07	-	-	10.83	6.10	30.06
11/1/2001	0.39	8.27	(0.20)	0.16	-	-	0.39	0.20	3.82
12/1/2001	0.28	4.72	(0.12)	0.08	-	-	0.28	0.20	2.65
1/1/2002	1.85	0.79	(0.98)	0.16	-	-	1.85	0.83	1.07
2/1/2002	0.20	3.15	(0.12)	0.35	-	-	0.20	0.12	1.22
3/1/2002	-	4.72	0.08	0.43	-	-	-	0.08	1.25
2002	2.72	21.65	(1.34)	1.18	-	-	2.72	1.42	10.00
9/30/2002	2.76	77.56	(1.26)	1.14	-	-	2.76	1.46	32.03
11/1/2002	0.08	7.87	(0.04)	-	-	-	0.08	0.08	3.90
12/1/2002	0.87	3.94	(0.71)	0.08	-	-	0.87	0.16	2.19
1/1/2003	0.98	1.97	(0.20)	0.12	-	-	0.98	0.79	1.34
2/1/2003	0.35	3.54	-	0.35	-	-	0.35	0.35	1.19
3/1/2003	4.96	(1.18)	(4.02)	0.39	-	-	4.96	0.94	1.50
2003	7.24	16.14	(4.96)	0.94	-	-	7.24	2.32	10.12
9/30/2003	6.02	69.69	(1.69)	5.28	-	-	6.02	4.33	30.64
11/1/2003	0.04	9.45	-	0.12	-	-	0.04	0.08	4.07
12/1/2003	0.91	2.76	(0.47)	0.16	-	-	0.91	0.39	2.31
1/1/2004	0.94	1.97	(0.47)	0.16	-	-	0.94	0.51	1.52
2/1/2004	1.46	1.18	(0.63)	0.24	-	-	1.46	0.79	1.21
3/1/2004	0.71	2.76	(0.16)	0.39	-	-	0.71	0.55	1.06
2004	4.06	18.11	(1.73)	1.06	-	-	4.06	2.32	10.16
9/30/2004	8.31	66.93	(4.17)	4.17	-	-	8.31	4.13	31.52
11/1/2004	1.22	5.51	(0.63)	0.51	-	-	1.22	0.59	3.66
12/1/2004	0.63	2.76	(0.20)	0.24	-	-	0.63	0.43	1.48
1/1/2005	2.80	(0.39)	(1.97)	0.24	-	0.00	2.80	0.83	1.02
2/1/2005	4.21	(1.57)	(2.44)	0.39	-	-	4.21	1.77	1.02
3/1/2005	7.34	(4.72)	(4.41)	0.47	-	0.77	6.57	2.20	0.94
2005	16.20	1.57	(9.65)	1.85	-	0.77	15.43	5.83	8.12
9/30/2005	8.03	66.93	(2.52)	8.70	-	-	8.03	5.51	29.40
11/1/2005	0.43	7.48	(0.24)	0.20	-	-	0.43	0.20	3.96
12/1/2005	-	4.72	-	0.08	-	-	-	-	2.27
1/1/2006	-	3.94	-	-	-	-	-	-	1.53
2/1/2006	-	3.54	-	0.04	-	-	-	-	1.56
3/1/2006	0.12	4.33	(0.04)	0.04	-	-	0.12	0.08	1.67
2006	0.55	24.02	(0.28)	0.35	-	-	0.55	0.28	10.98
9/30/2006	11.73	58.66	(5.59)	5.71	-	0.00	11.73	6.14	28.65

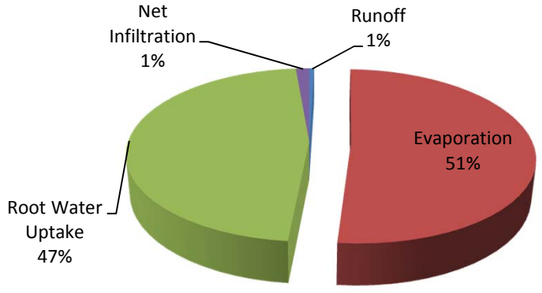
03-ST11 - 3m Scavenger Beach w Veg.xlsx

Annual Water Balance - 56-Year Simulated Period (Results on October 1)



Monthly Water Balance - 9 Wet Years (1983 - 1991)





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CLIENT: Resolution Copper Mining

Klohn Crippen Berger

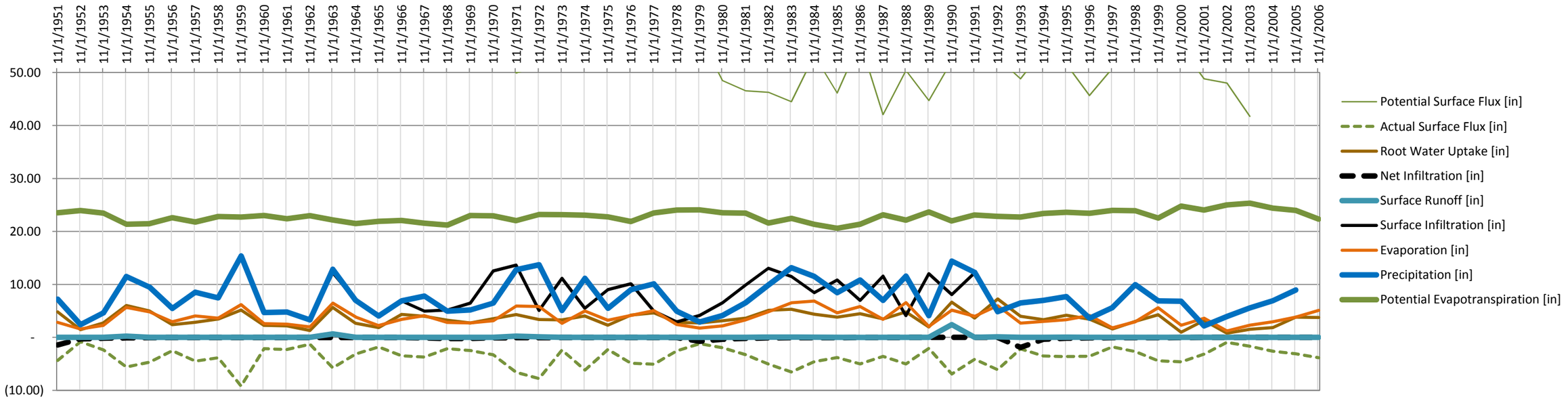
PROJECT: RESOLUTION PROJECT
NEAR WEST TAILINGS STORAGE FACILITY CLOSURE COVER STUDY - CLOSURE COVER PREDICTIONS

TITLE: ST11 - 9.8 ft Beach / Veg Water Balance Results

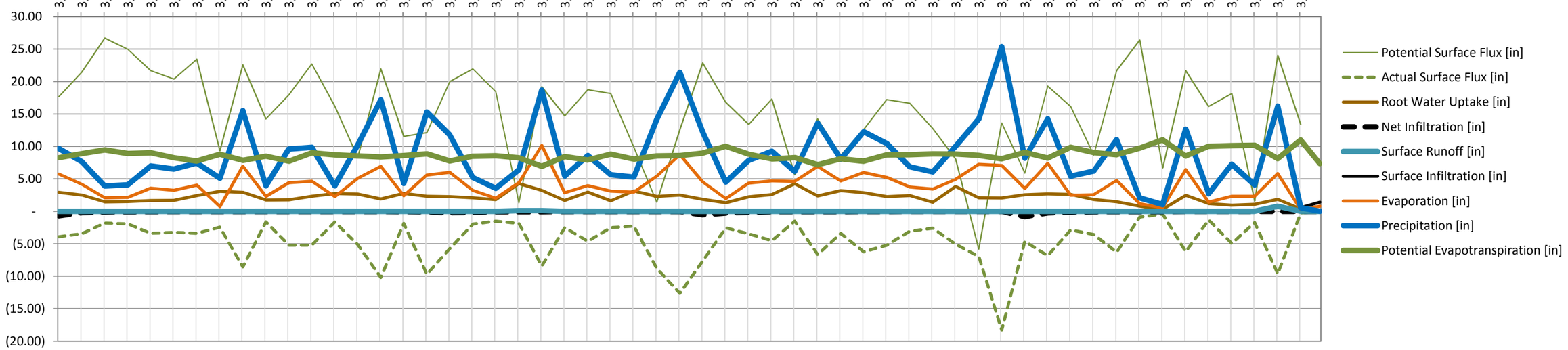
PROJECT No. M09441A16

FIG. No. III-C.1

Monsoon Season Water Balance - 56-Year Simulated Period (July-November)



Winter Storm Season Water Balance - 56-Year Simulated Period (November-March)



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NEAR WEST TAILINGS STORAGE FACILITY CLOSURE
COVER STUDY - CLOSURE COVER PREDICTIONS

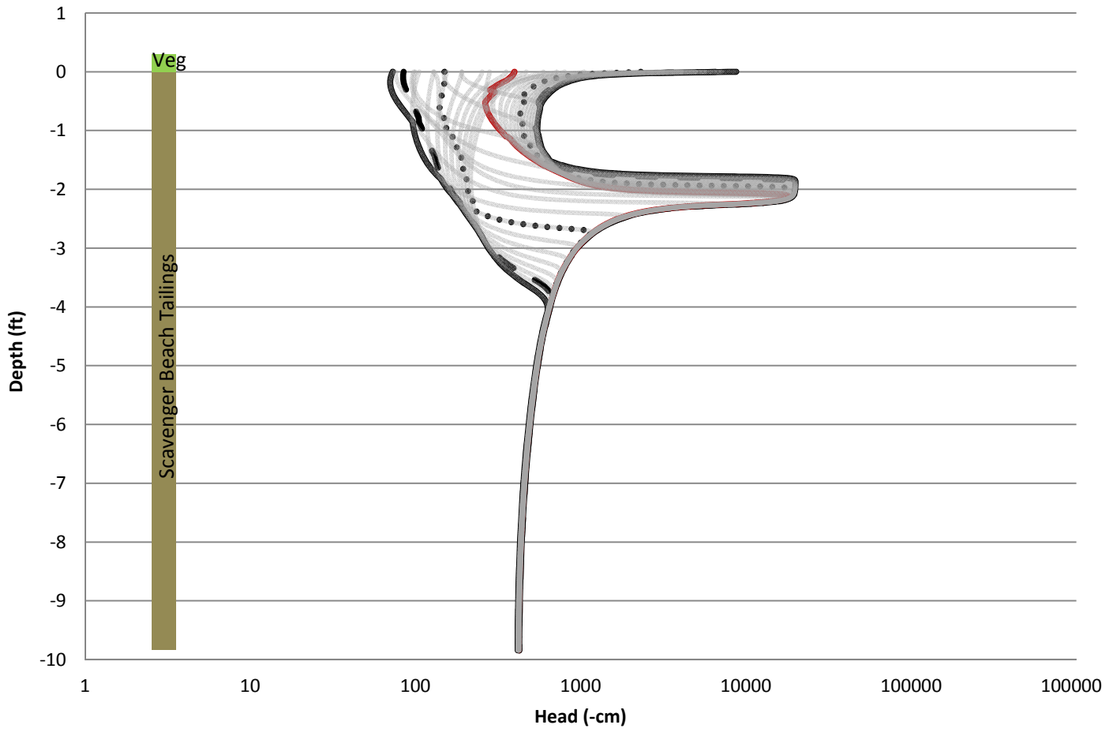
TITLE

ST11 - 9.8 ft Beach / Veg
Water Balance Results

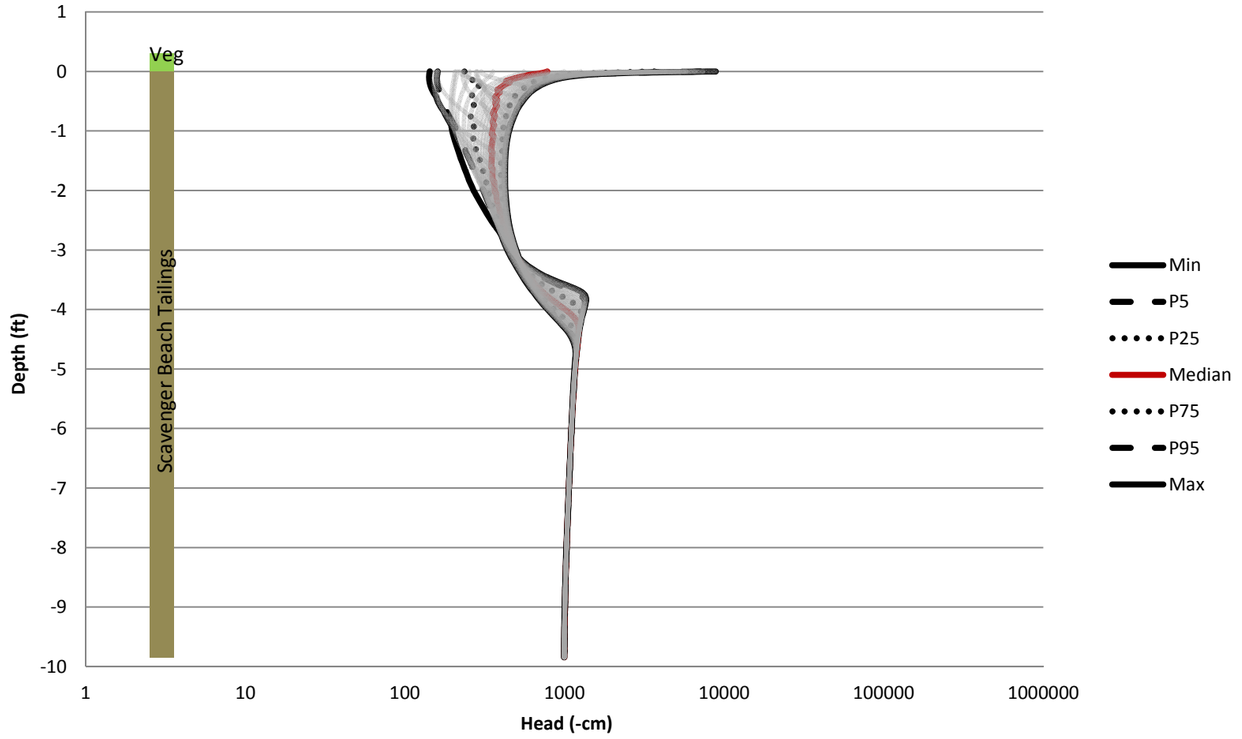
PROJECT No. M09441A16

FIG. No. III-C.2

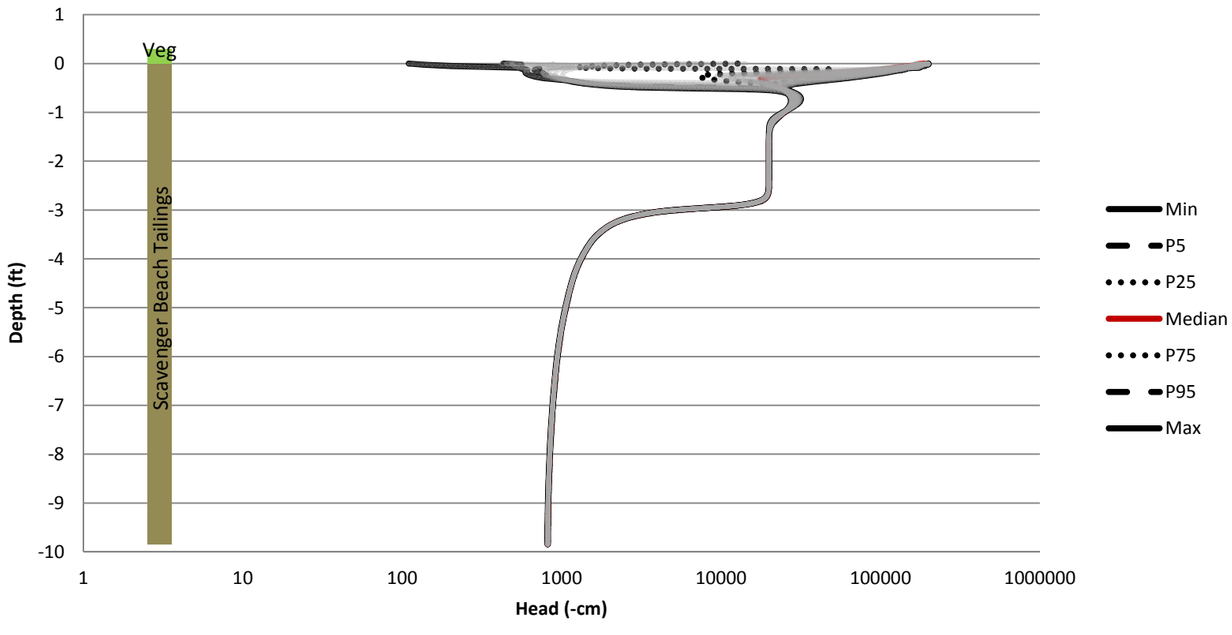
February Average Year (1980) - Daily Suction Head



February Wet Year (1992) - Daily Suction Head



February Dry Year (2000) - Daily Suctioon Head



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NEAR WEST TAILINGS STORAGE FACILITY CLOSURE COVER STUDY - CLOSURE COVER PREDICTIONS

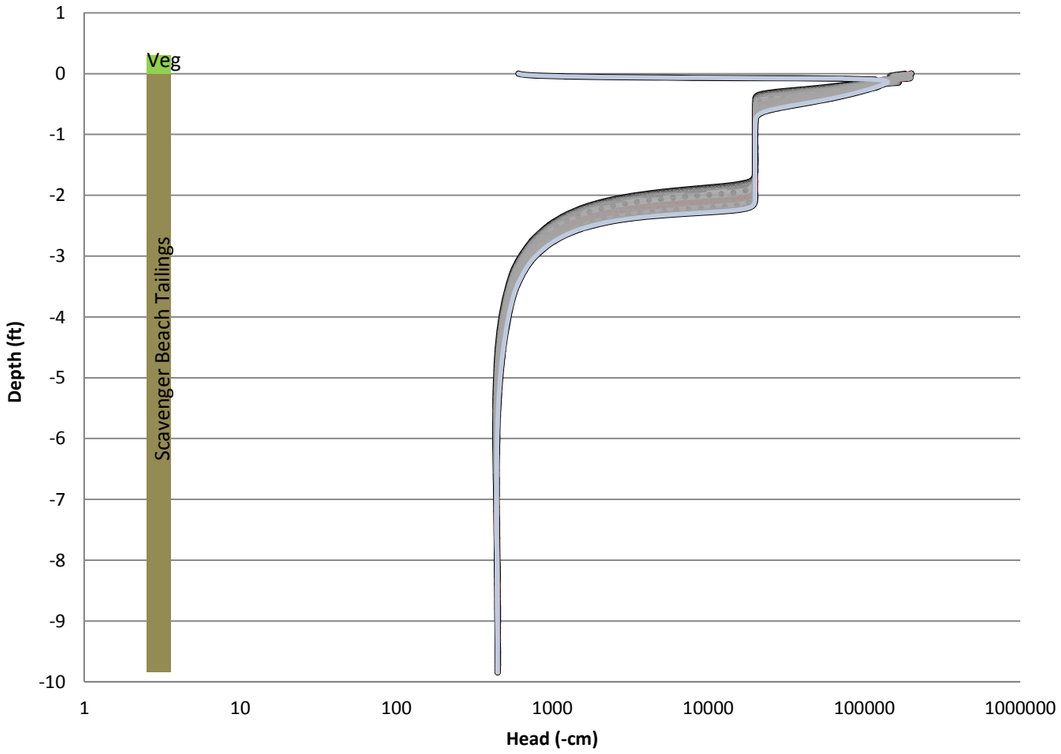
TITLE

ST11 - 9.8 ft Beach / Veg
Suction Profiles - Winter (February)

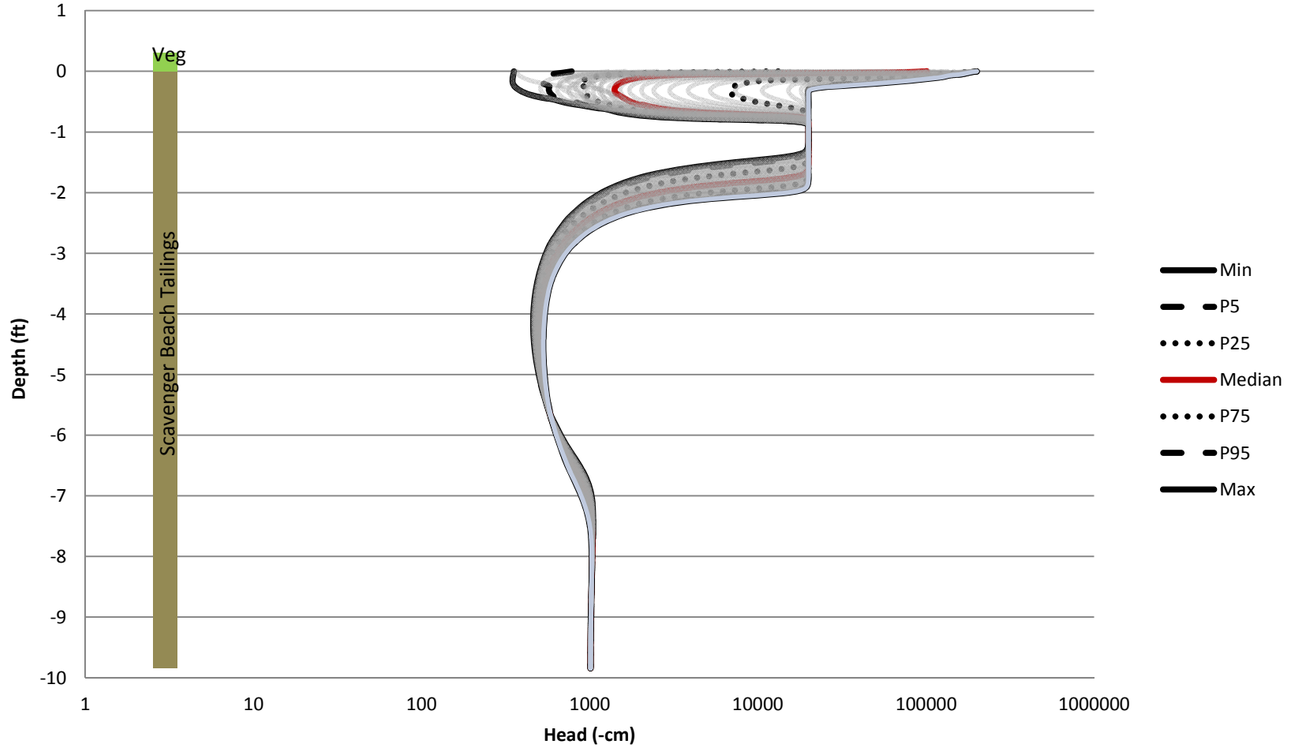
PROJECT No. M09441A16

FIG. No. III-C.3

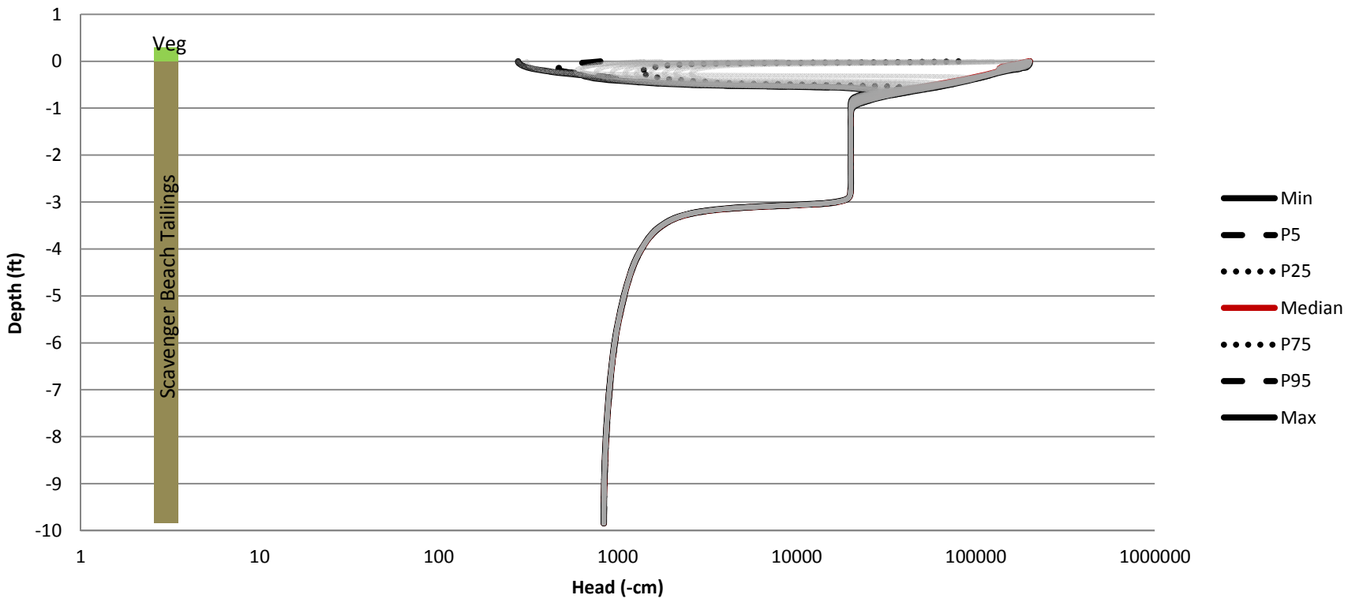
June Average Year (1980) - Daily Suction Head



June Wet Year (1992) - Daily Suction Head



June Dry Year (2000)- Daily Suction Head



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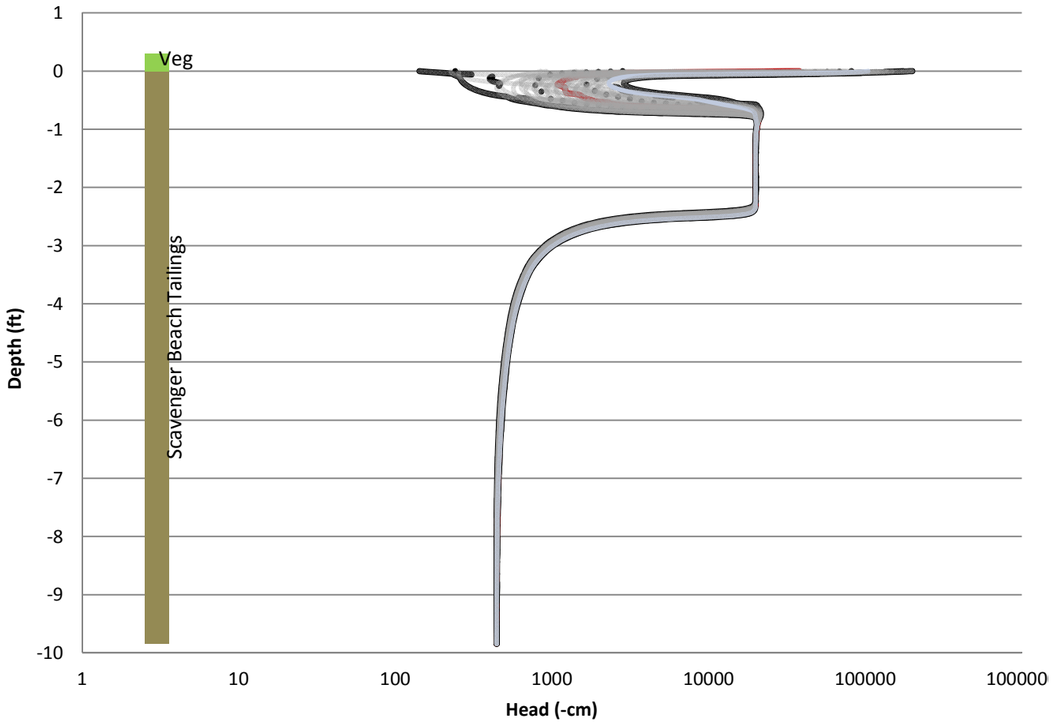
NEAR WEST TAILINGS STORAGE FACILITY CLOSURE
COVER STUDY - CLOSURE COVER PREDICTIONS

TITLE: ST11 - 9.8 ft Beach / Veg
Suction Profiles - Dry Season (June)

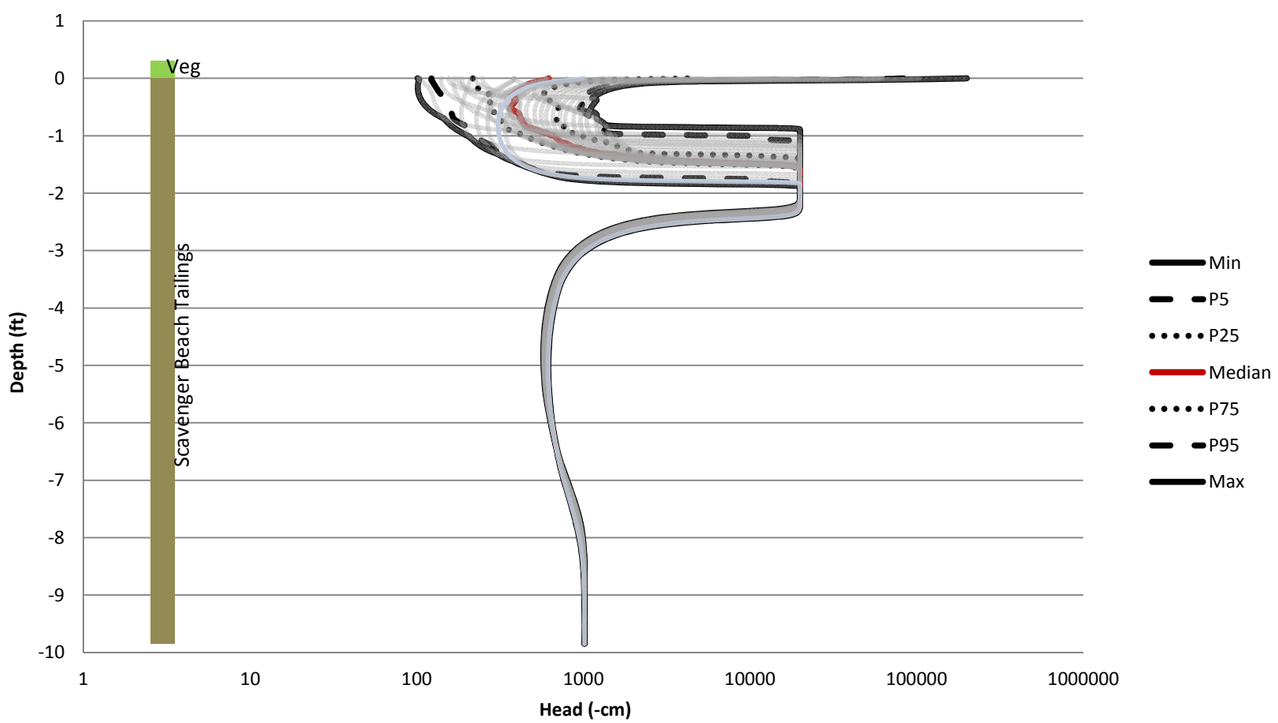
PROJECT No. M09441A16

FIG. No. III-C.4

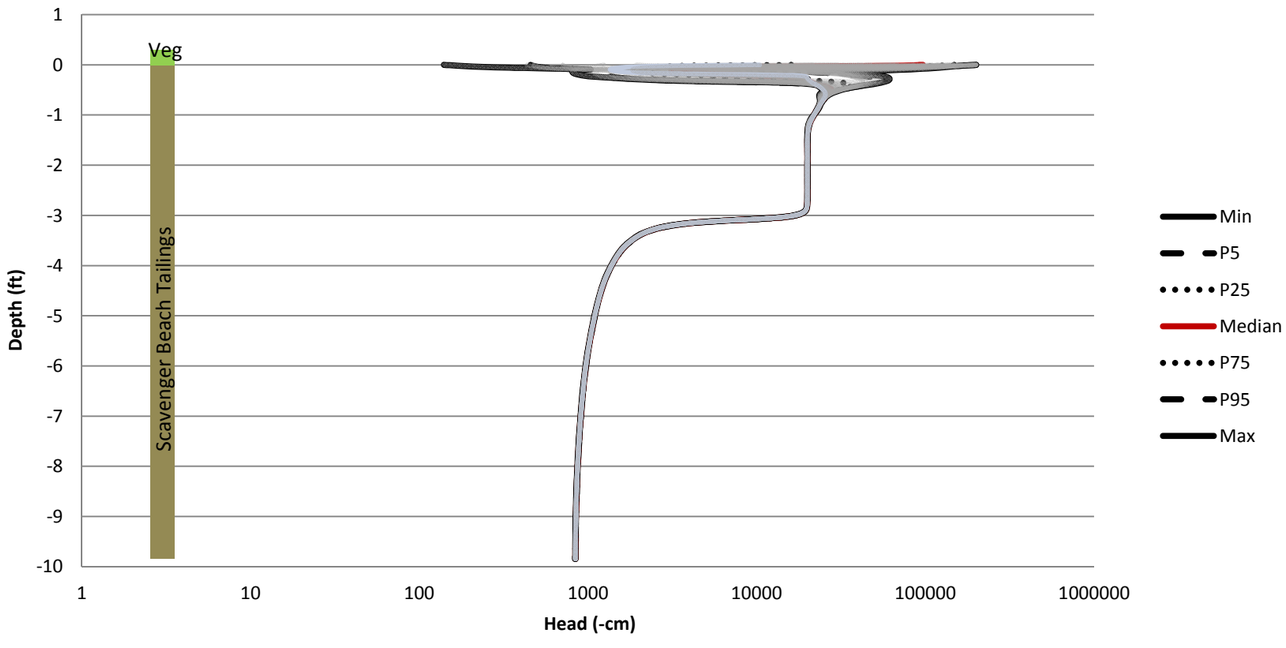
August Average Year (1980) - Daily Suction Head



August Wet Year (1992) - Daily Suction Head



August Dry Year (2000) - Daily Suction Head



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RESOLUTION PROJECT
NEAR WEST TAILINGS STORAGE FACILITY CLOSURE
COVER STUDY - CLOSURE COVER PREDICTIONS

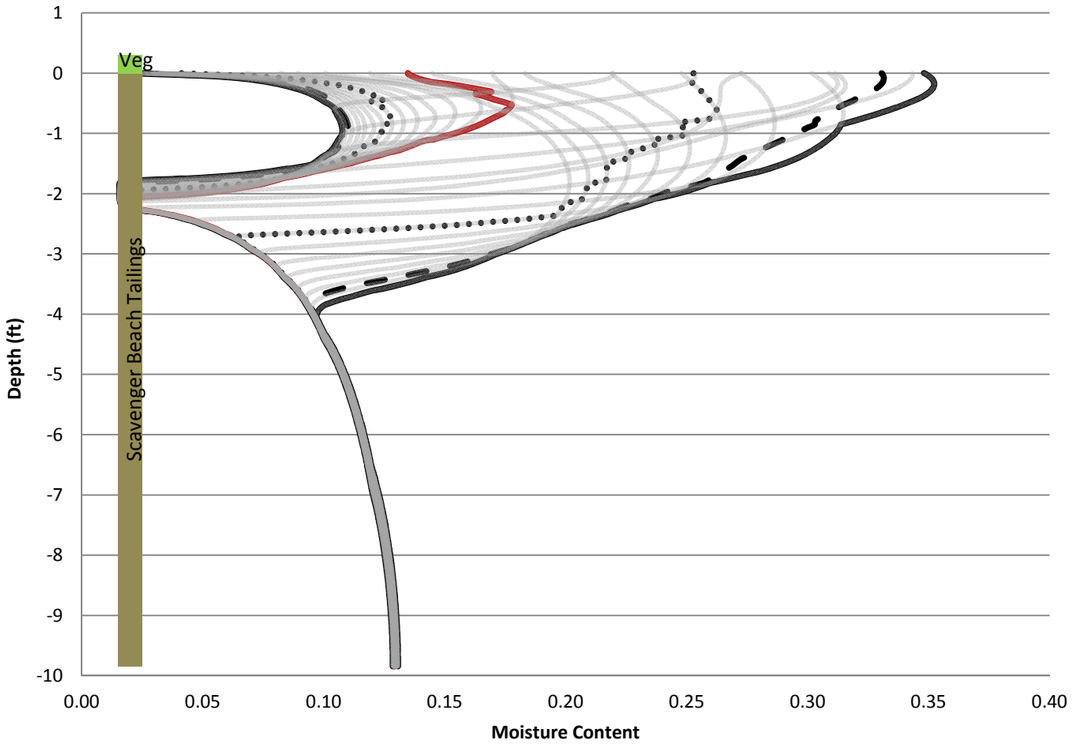
TITLE

ST11 - 9.8 ft Beach / Veg
Suction Profiles - Summer Monsoon (August)

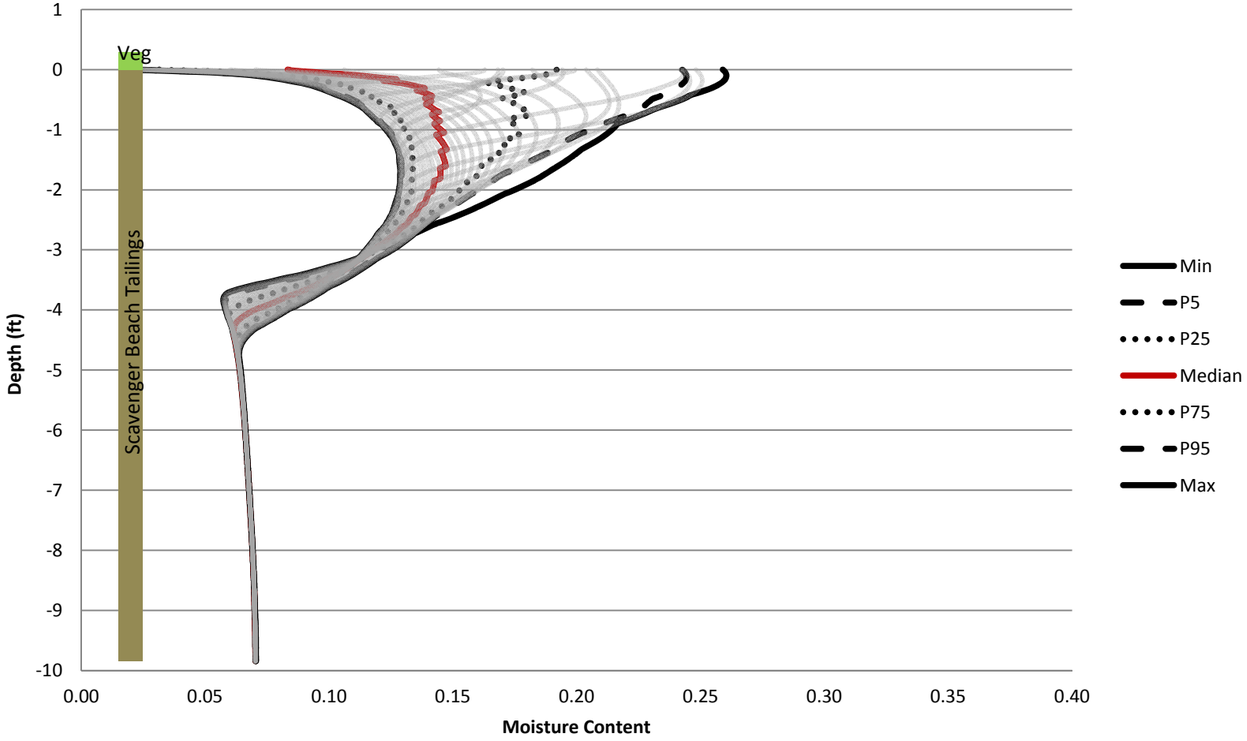
PROJECT No. M09441A16

FIG. No. III-C.5

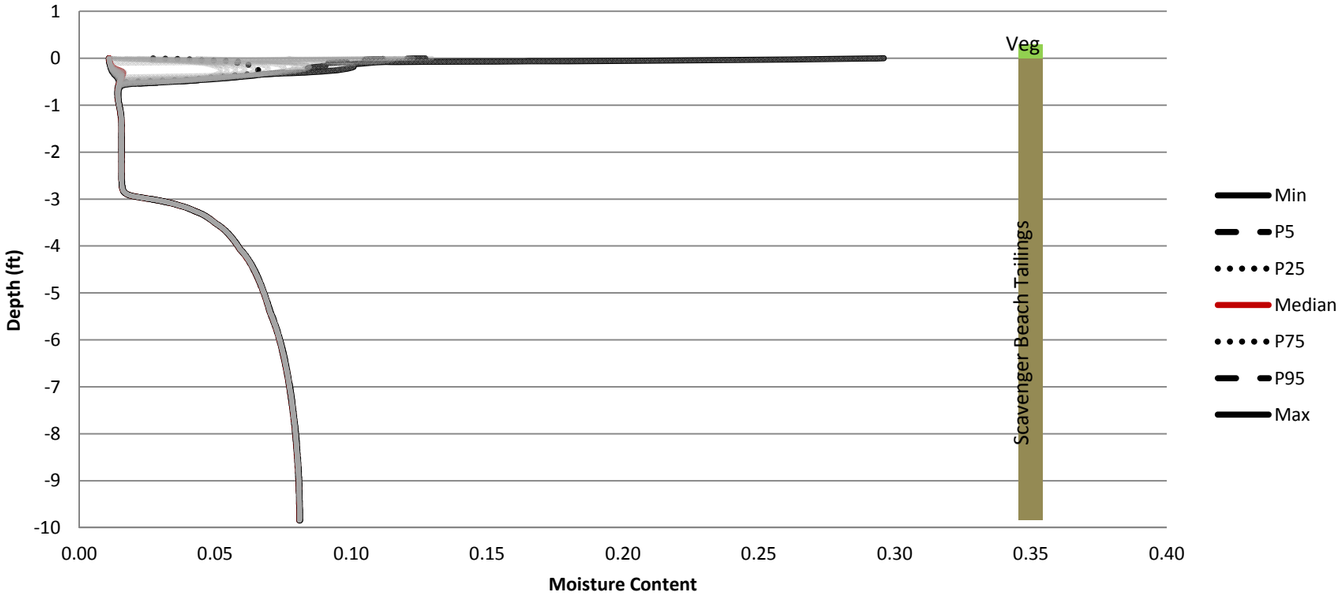
February Average Year (1980) - Daily Moisture Content



February Wet Year (1992) - Daily Moisture Content



February Dry Year (2000) - Daily Moisture Content



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NEAR WEST TAILINGS STORAGE FACILITY CLOSURE
COVER STUDY - CLOSURE COVER PREDICTIONS

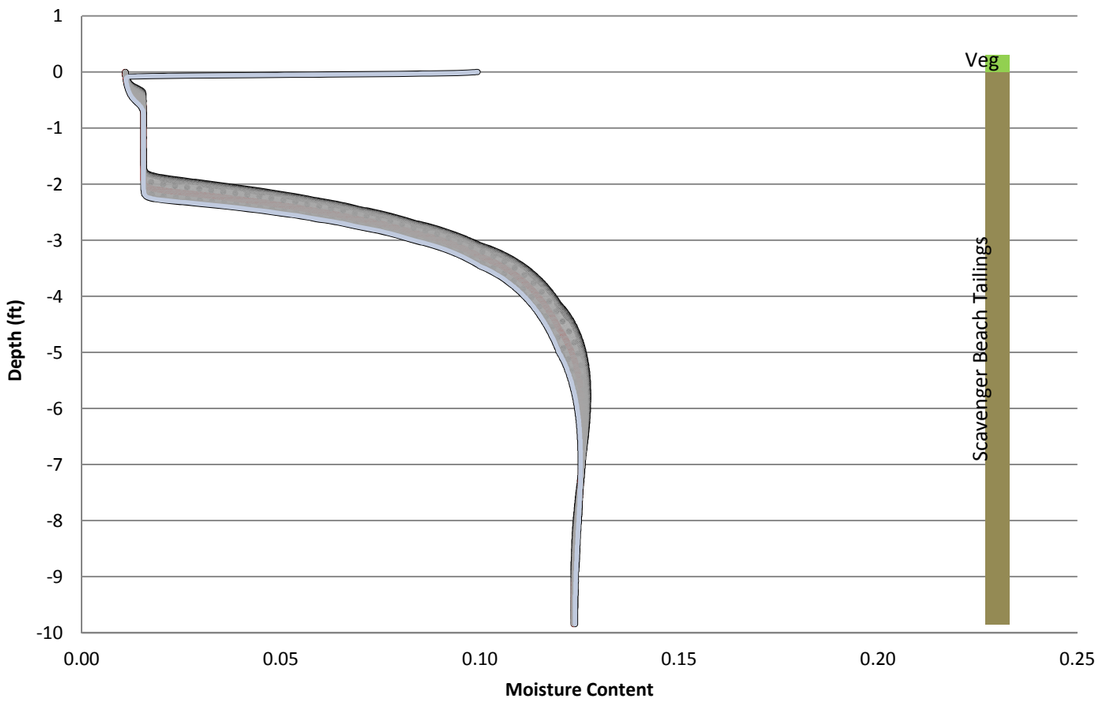
TITLE

ST11 - 9.8 ft Beach / Veg
Moisture Content - Winter (February)

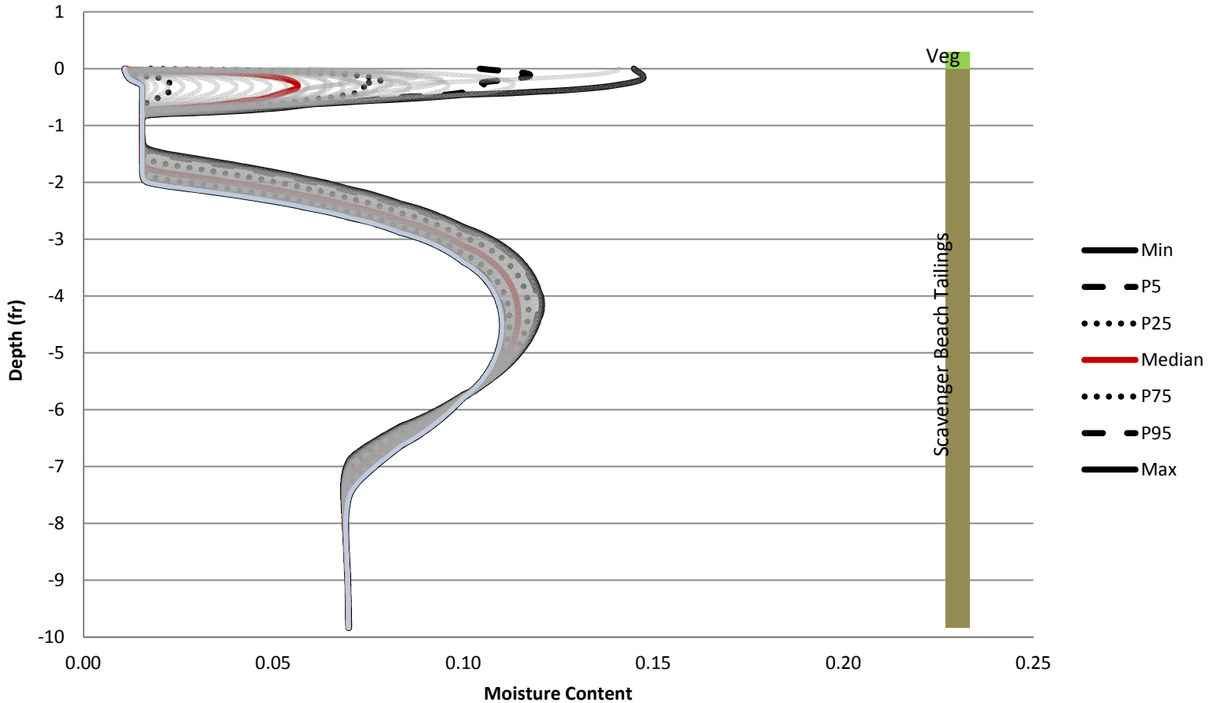
PROJECT No. M09441A16

FIG. No. III-C.6

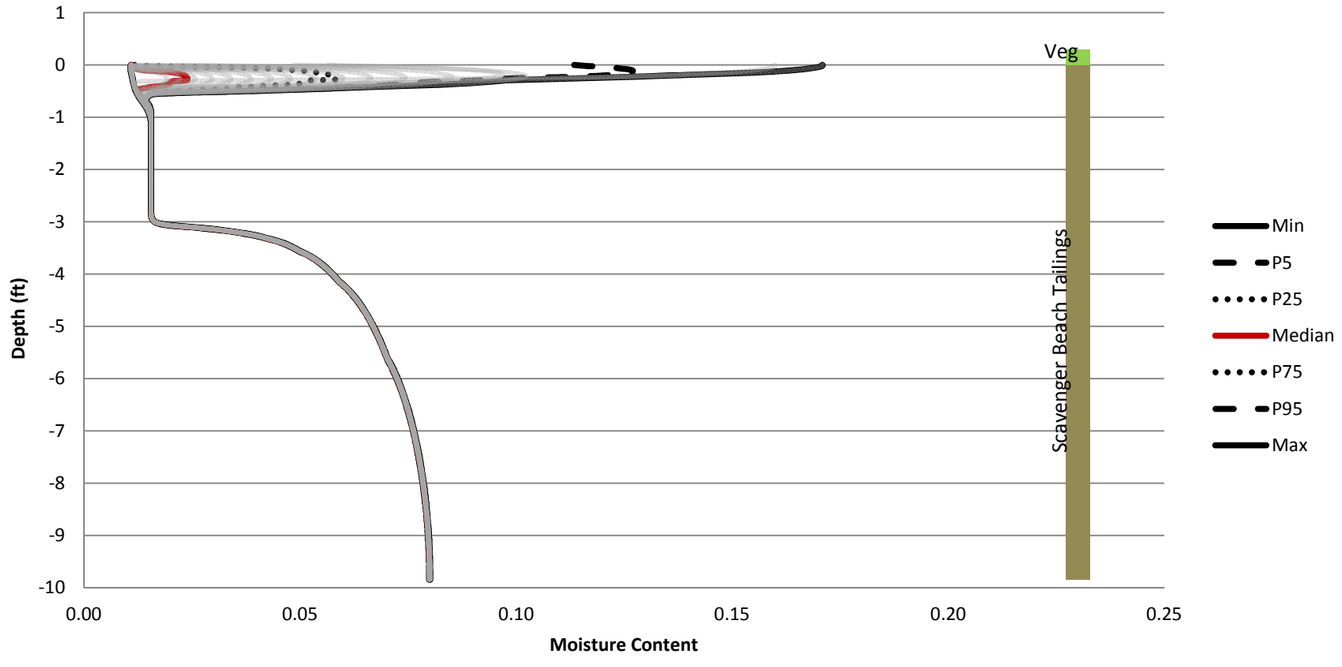
June Average Year (1980) - Daily Moisture Content



June Wet Year (1992) - Daily Moisture Content



June Dry Year (2000) - Daily Moisture Content



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NEAR WEST TAILINGS STORAGE FACILITY CLOSURE COVER STUDY - CLOSURE COVER PREDICTIONS

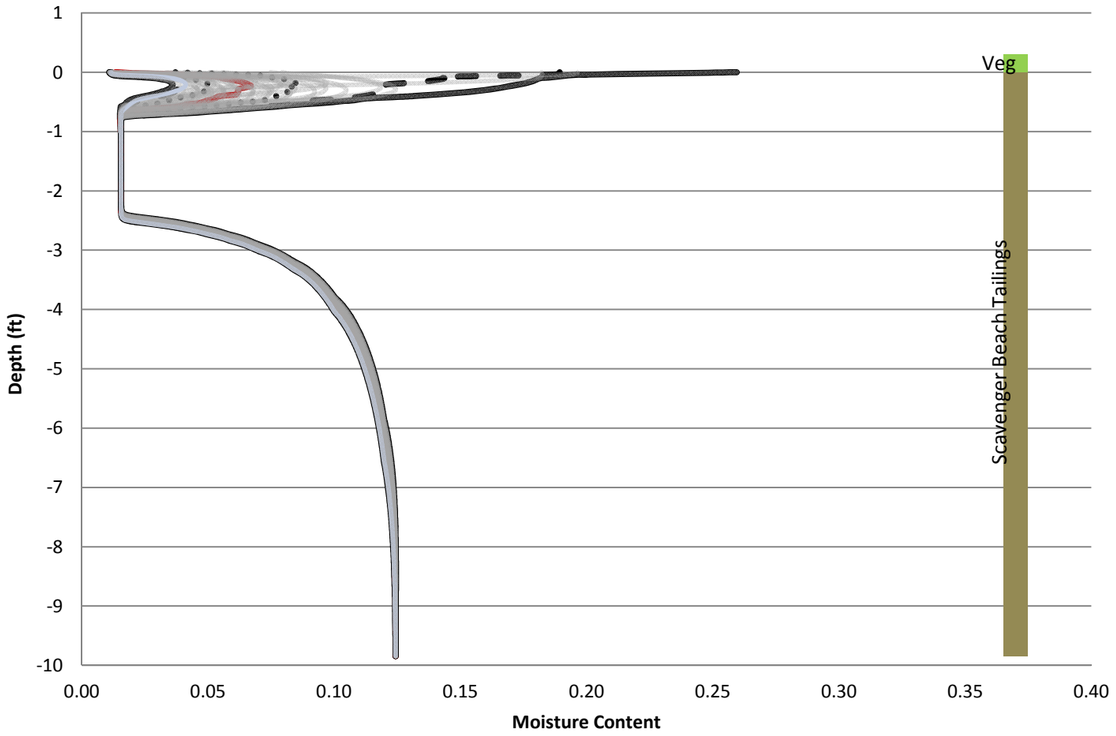
TITLE

ST11 - 9.8 ft Beach / Veg
Moisture Content - Dry Season (June)

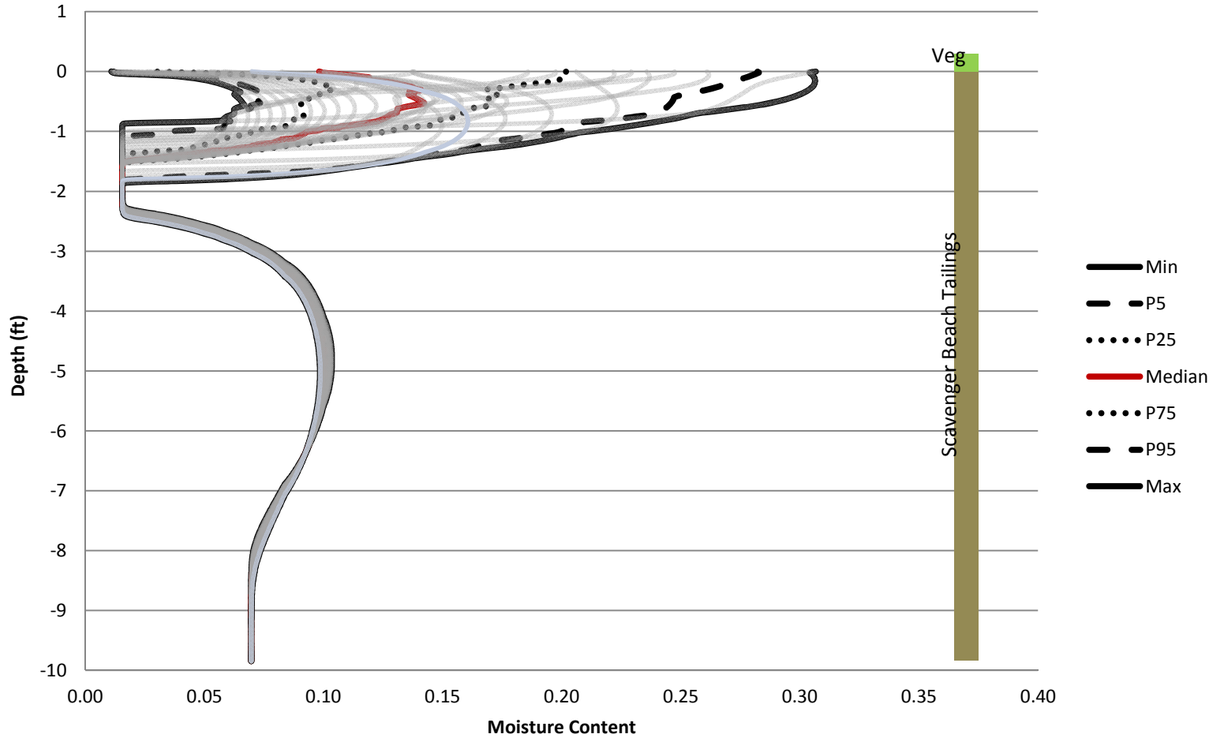
PROJECT No. M09441A16

FIG. No. III-C.7

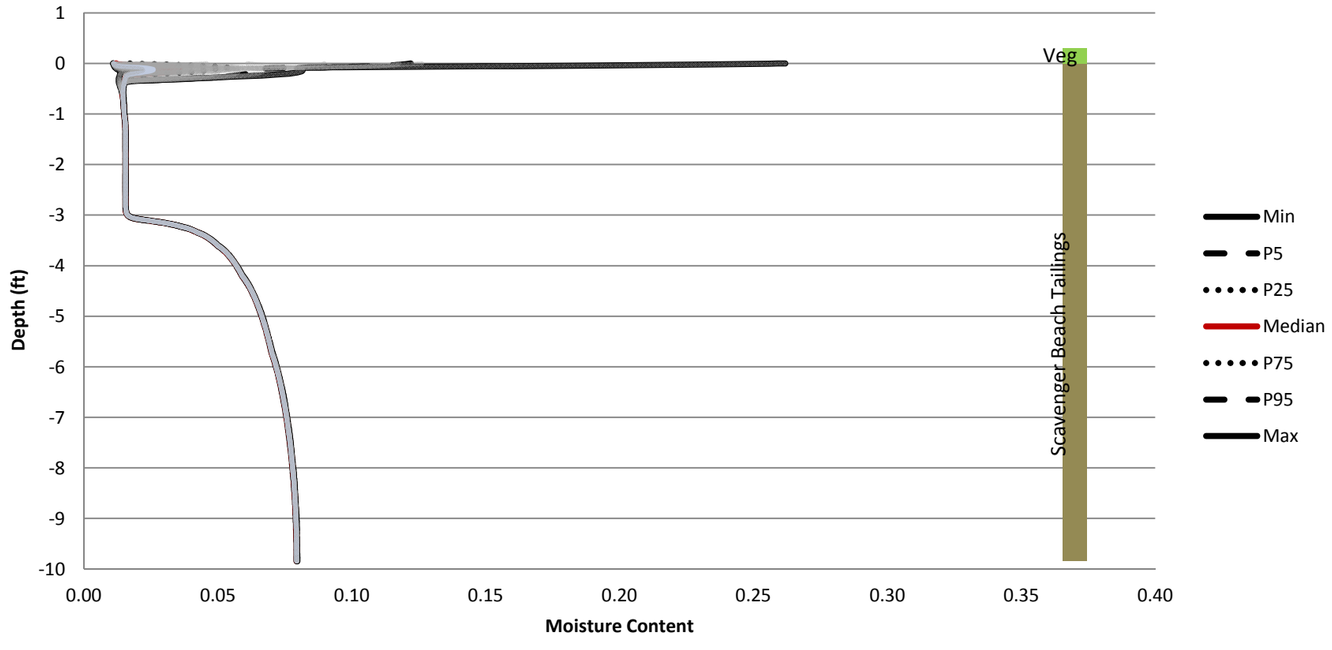
August Average Year (1980) - Daily Moisture Content



August Wet Year (1992) - Daily Moisture Content



August Dry Year (2000) - Daily Moisture Content



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NEAR WEST TAILINGS STORAGE FACILITY CLOSURE COVER STUDY - CLOSURE COVER PREDICTIONS

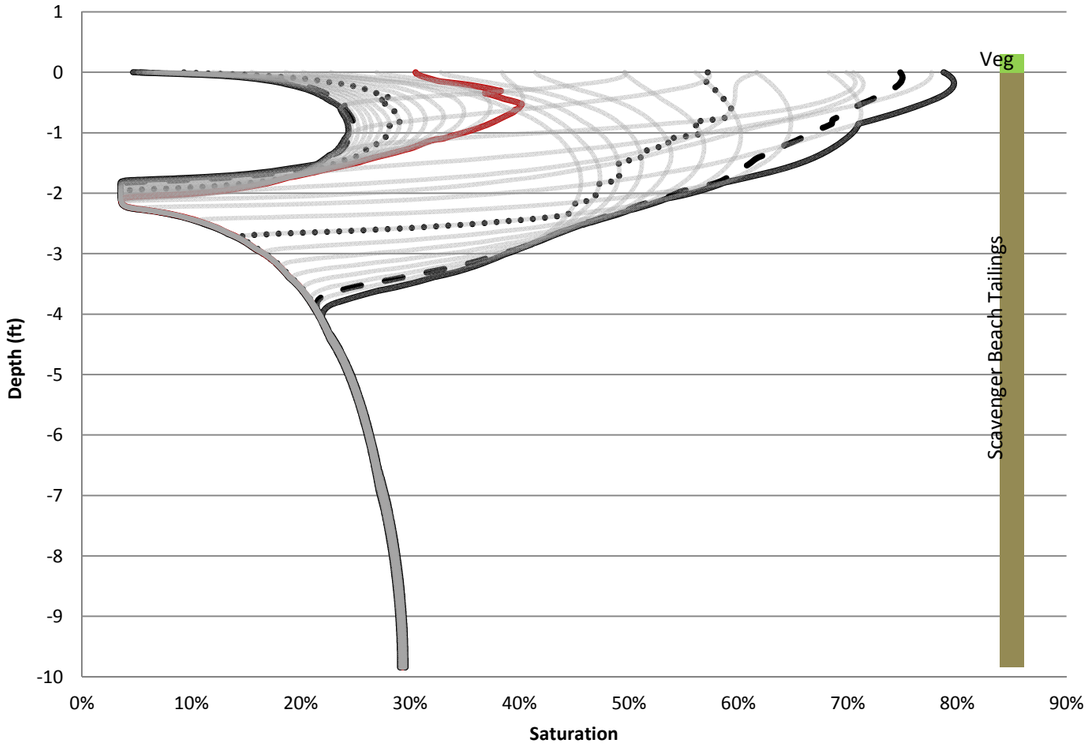
TITLE

ST11 - 9.8 ft Beach / Veg
Moisture Content - Summer Monsoon (August)

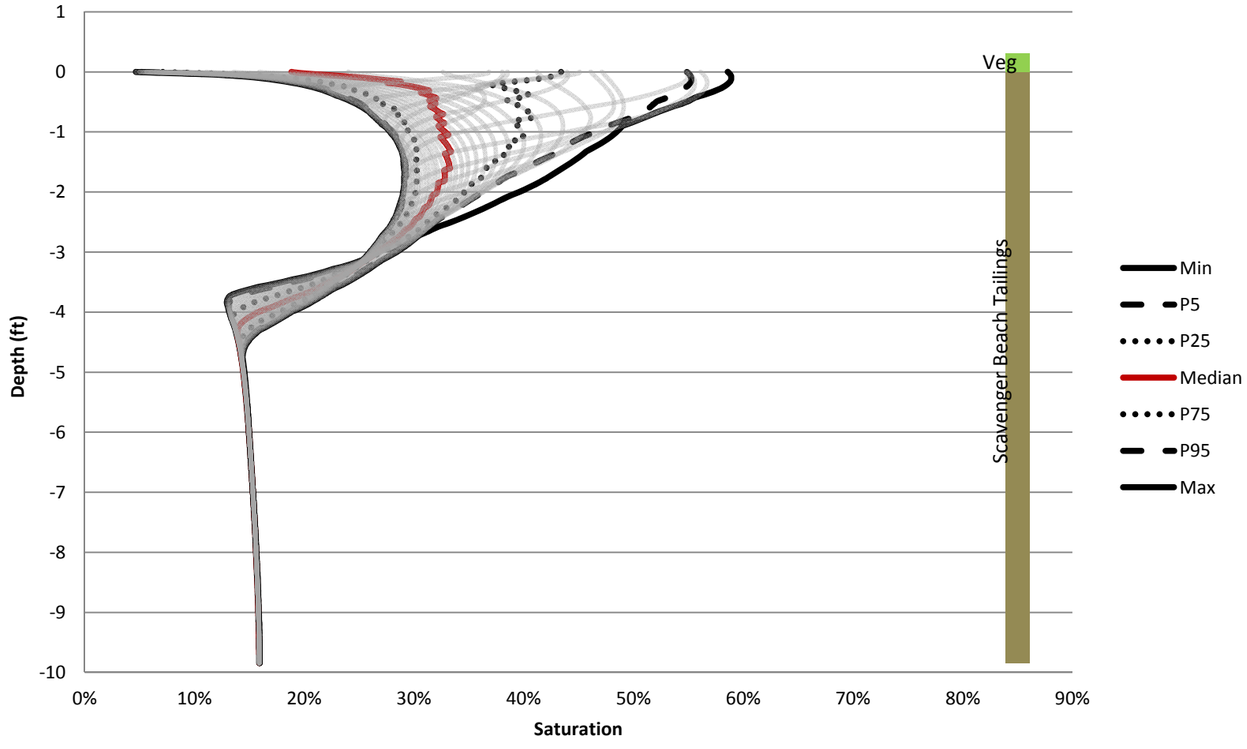
PROJECT No. M09441A16

FIG. No. III-C.8

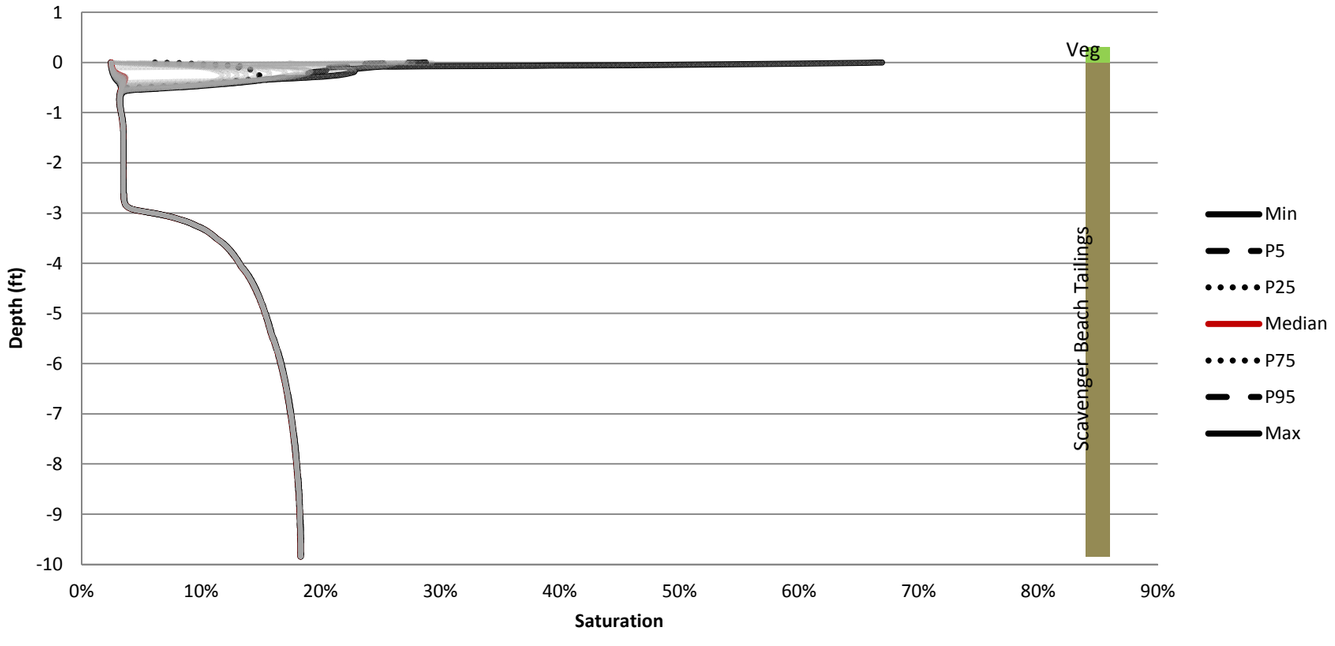
February Average Year (1980) - Daily Saturation



February Wet Year (1992) - Daily Saturation



February Dry Year (2000) - Daily Saturation



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AS A MUTUAL PROTECTION TO OUR CLIENT, THE PUBLIC AND OURSELVES, ALL REPORTS AND DRAWINGS ARE SUBMITTED FOR THE CONFIDENTIAL INFORMATION OF OUR CLIENT FOR A SPECIFIC PROJECT AND AUTHORIZATION FOR USE AND/OR PUBLICATION OF DATA,STATEMENTS,CONCLUSIONS OR ABSTRACTS FROM OR REGARDING OUR REPORTS AND DRAWINGS IS RESERVED PENDING OUR WRITTEN APPROVAL.

CLIENT

Resolution Copper Mining

Klohn Crippen Berger

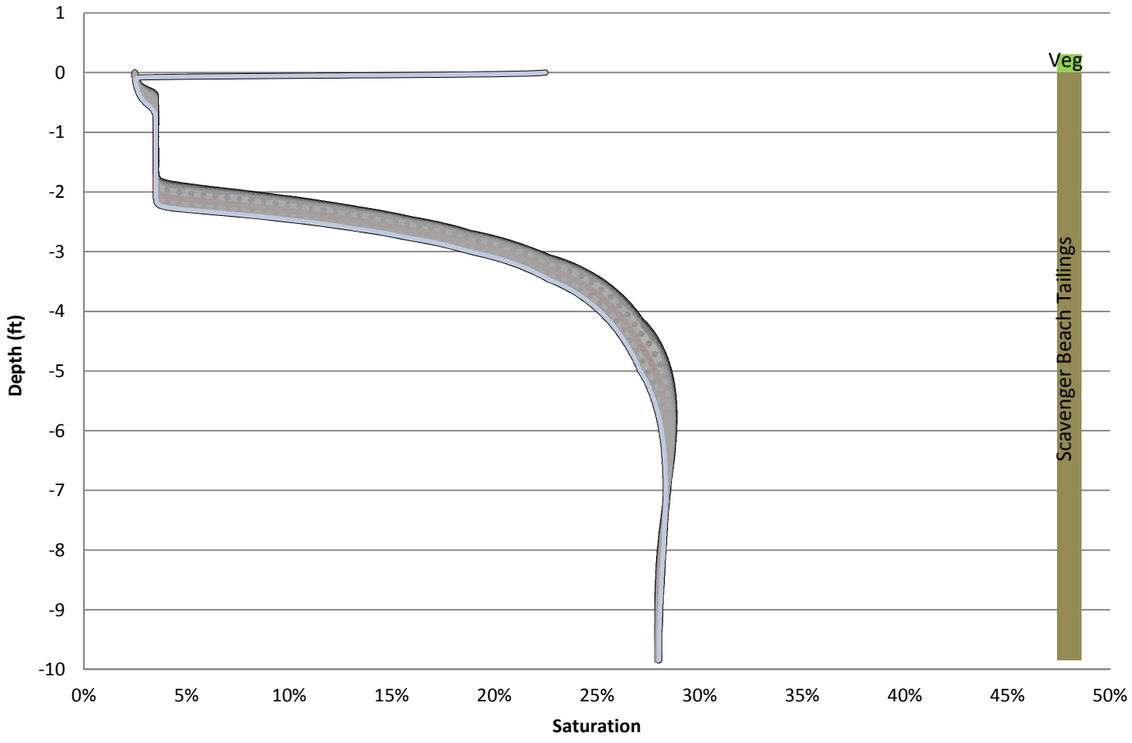
PROJECT
RESOLUTION PROJECT
NEAR WEST TAILINGS STORAGE FACILITY CLOSURE
COVER STUDY - CLOSURE COVER PREDICTIONS

TITLE
ST11 - 9.8 ft Beach / Veg
Saturation - Winter (February)

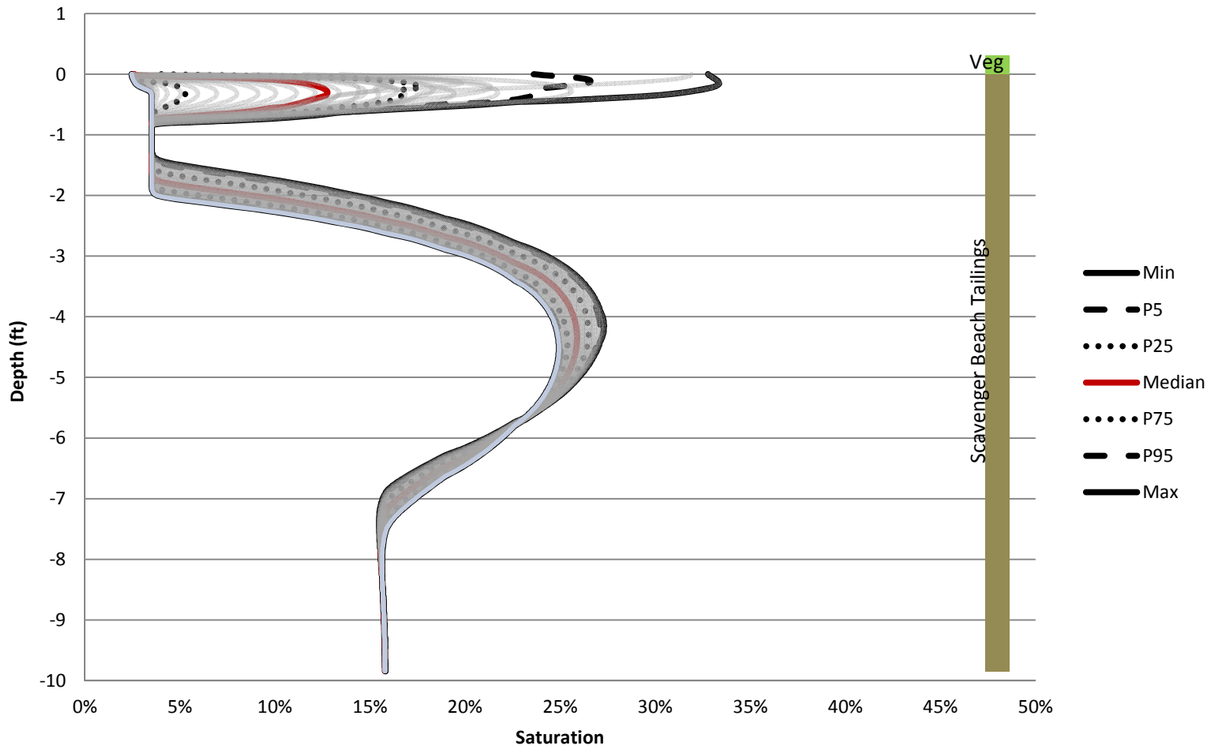
PROJECT No. M09441A16

FIG. No. III-C.9

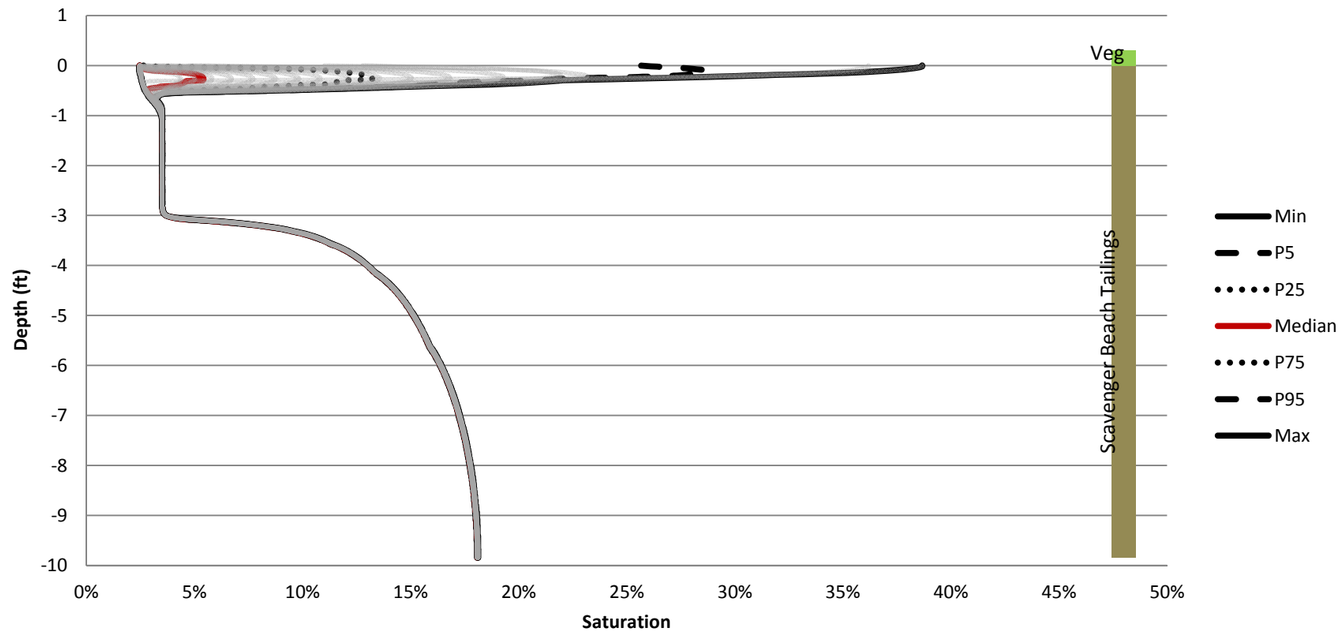
June Average Year (1980) - Daily Saturation



June Wet Year (1992) - Daily Saturation



June Dry Year (2000) - Daily Saturation



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CLIENT

Resolution Copper Mining

Klohn Crippen Berger

PROJECT

RESOLUTION PROJECT
NEAR WEST TAILINGS STORAGE FACILITY CLOSURE
COVER STUDY - CLOSURE COVER PREDICTIONS

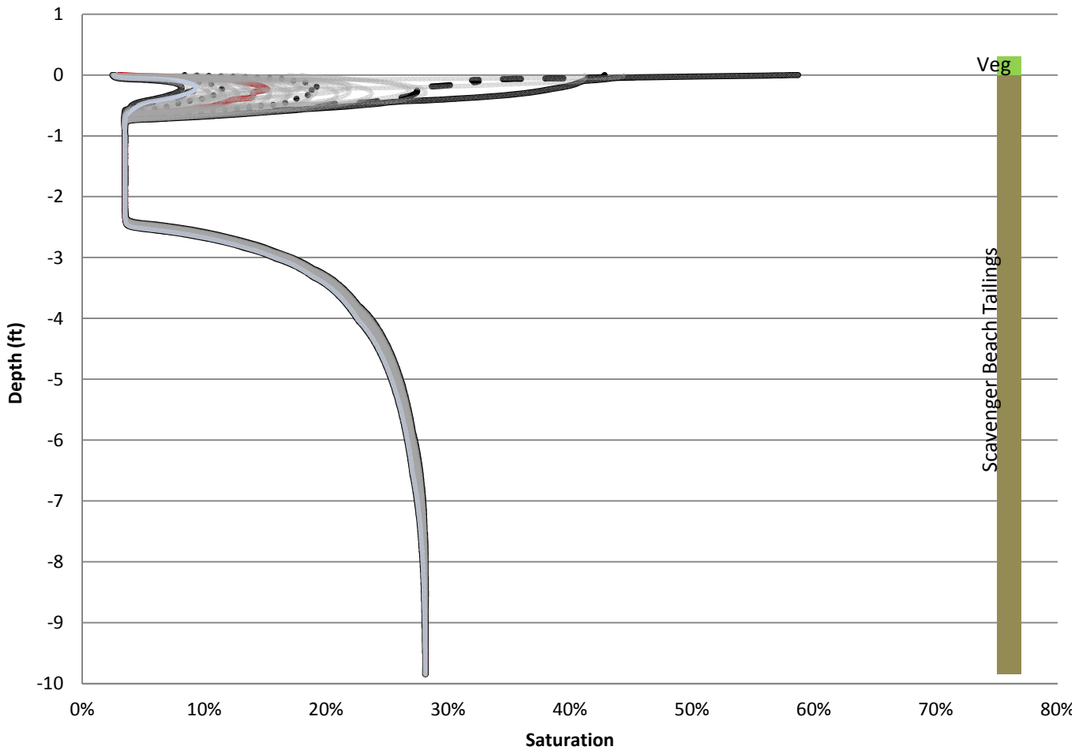
TITLE

ST11 - 9.8 ft Beach / Veg
Saturation - Dry Season (June)

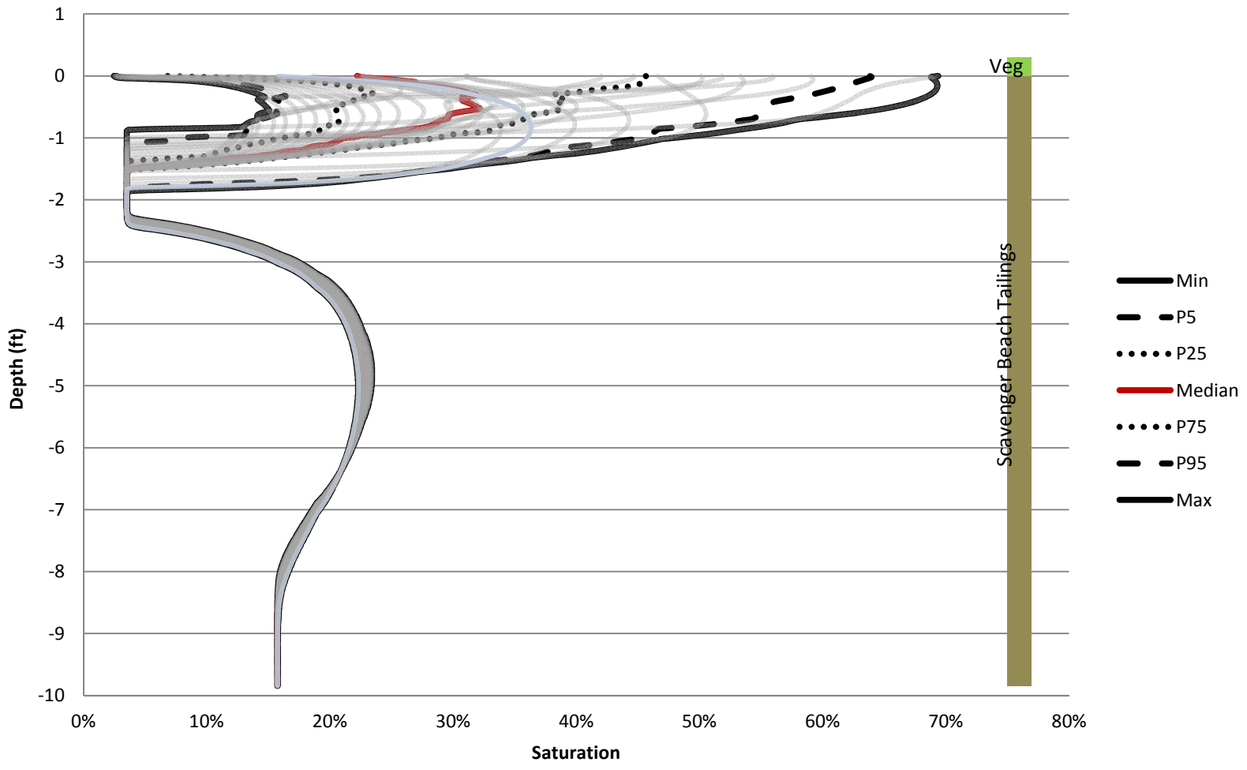
PROJECT No. M09441A16

FIG. No. III-C.10

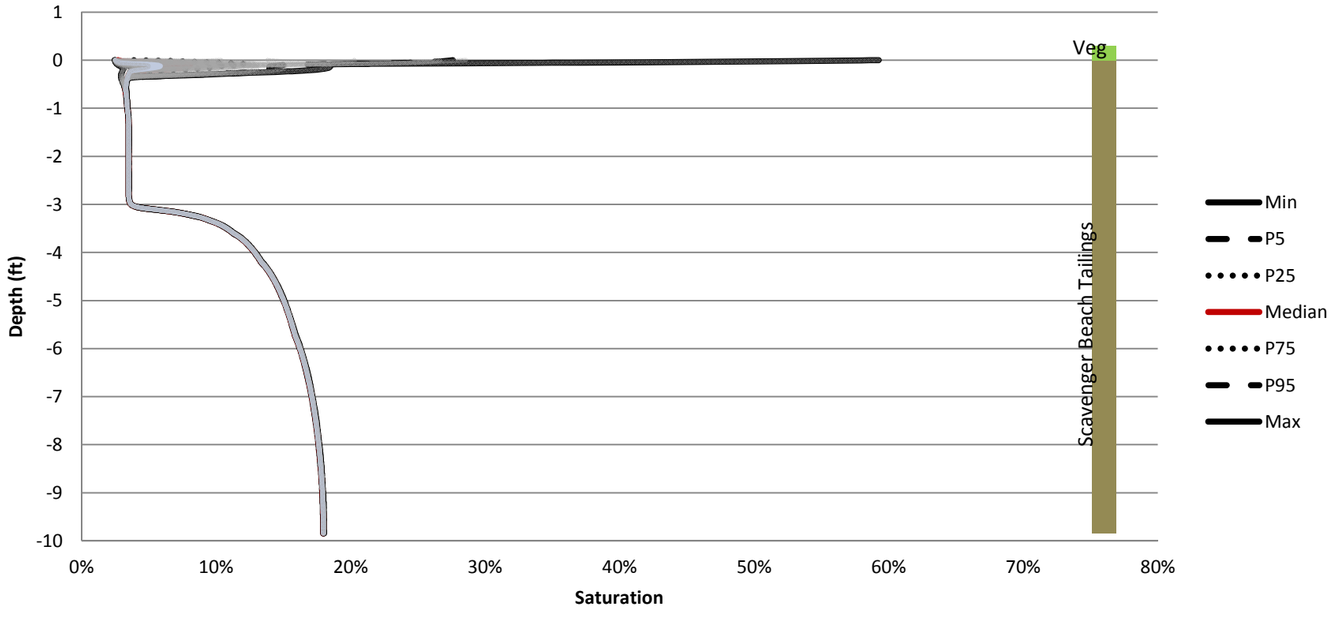
August Average Year (1980) - Daily Saturation



August Wet Year (1992) - Daily Saturation



August Dry Year (2000) - Daily Saturation



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CLIENT: Resolution Copper Mining

Klohn Crippen Berger

PROJECT: RESOLUTION PROJECT
NEAR WEST TAILINGS STORAGE FACILITY CLOSURE COVER STUDY - CLOSURE COVER PREDICTIONS

TITLE: ST11 - 9.8 ft Beach / Veg Saturation - Summer Monsoon (August)

PROJECT No. M09441A16

FIG. No. III-C.11

APPENDIX III-D

ST 15 Results

Table III-D.1 ST 15 Annual Water Balance

Water Year	Result Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
		[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
1951	10/1/1951	14.21	90.07	(9.21)	13.79	(6.07)	-	14.21	5.00	33.65
1952	10/1/1952	20.54	101.44	(13.71)	14.72	(1.57)	-	20.54	6.83	38.81
1953	10/1/1953	15.47	106.44	(11.27)	12.45	(0.85)	-	15.47	4.21	38.74
1954	10/1/1954	21.85	99.05	(16.14)	15.18	(0.48)	-	21.85	5.70	38.63
1955	10/1/1955	13.57	103.43	(9.56)	12.47	(0.26)	-	13.57	4.03	37.42
1956	10/1/1956	12.67	109.88	(8.42)	9.11	(0.19)	-	12.67	4.29	40.00
1957	10/1/1957	15.21	98.54	(9.73)	9.88	(0.14)	-	15.21	5.48	37.21
1958	10/1/1958	19.46	95.59	(12.25)	11.42	(0.08)	-	19.46	7.23	37.74
1959	10/1/1959	15.85	106.22	(11.11)	12.10	(0.07)	-	15.85	4.77	39.88
1960	10/1/1960	19.18	101.65	(14.43)	11.61	(0.22)	-	19.18	4.80	39.62
1961	10/1/1961	9.95	105.63	(5.22)	5.74	(0.56)	-	9.95	4.75	38.30
1962	10/1/1962	14.25	100.71	(9.52)	9.58	(0.31)	-	14.25	4.77	38.46
1963	10/1/1963	23.48	92.99	(17.79)	13.61	(0.20)	-	23.48	5.72	38.66
1964	10/1/1964	11.60	98.11	(5.98)	9.46	(0.22)	-	11.60	5.65	36.66
1965	10/1/1965	17.60	93.27	(11.89)	12.17	(0.20)	-	17.60	5.74	36.91
1966	10/1/1966	23.02	92.13	(18.20)	11.05	(2.15)	-	23.02	4.85	38.93
1967	10/1/1967	14.53	95.39	(9.76)	12.96	(1.24)	-	14.53	4.79	36.92
1968	10/1/1968	22.55	86.73	(17.75)	12.99	(2.32)	-	22.55	4.93	37.38
1969	10/1/1969	18.79	93.94	(13.35)	12.46	(1.56)	-	18.79	5.58	38.25
1970	10/1/1970	16.07	94.65	(10.64)	10.42	(0.84)	-	16.07	5.57	38.53
1971	10/1/1971	12.65	98.39	(8.76)	8.02	(0.37)	-	12.65	4.00	37.96
1972	10/1/1972	11.31	105.94	(7.32)	10.22	(0.20)	-	11.31	4.09	40.53
1973	10/1/1973	30.97	73.39	(22.57)	16.10	(1.66)	-	30.97	8.47	35.99
1974	10/1/1974	15.87	90.87	(10.71)	10.54	(1.44)	-	15.87	5.23	36.84
1975	10/1/1975	19.09	83.62	(12.41)	13.89	(0.49)	-	19.09	6.78	35.44
1976	10/1/1976	16.50	90.12	(11.30)	9.13	(0.31)	-	16.50	5.30	37.84
1977	10/1/1977	16.42	90.71	(11.10)	11.74	(0.19)	-	16.42	5.43	37.86
1978	10/1/1978	23.94	83.94	(17.96)	14.30	(1.11)	-	23.94	6.16	38.30
1979	10/1/1979	29.65	77.13	(22.64)	13.06	(8.49)	-	29.65	7.16	38.53
1980	10/1/1980	20.31	86.06	(14.33)	12.13	(2.66)	-	20.31	6.14	38.22
1981	10/1/1981	15.24	97.09	(10.92)	11.86	(1.25)	-	15.24	4.46	40.87
1982	10/1/1982	23.58	77.60	(15.95)	14.04	(0.46)	-	23.58	7.73	36.58
1983	10/1/1983	27.44	72.52	(20.20)	15.87	(0.29)	-	27.44	7.52	36.00
1984	10/1/1984	17.80	84.53	(10.87)	13.74	(0.52)	-	17.80	7.32	37.32
1985	10/1/1985	22.83	68.86	(16.02)	11.65	(0.91)	-	22.83	7.13	34.11
1986	10/1/1986	21.34	79.06	(14.65)	15.16	(0.90)	-	21.34	7.01	37.61
1987	10/1/1987	20.12	77.13	(14.29)	13.62	(0.57)	-	20.12	6.05	36.00
1988	10/1/1988	23.07	77.01	(16.73)	14.41	(0.65)	-	23.07	6.57	37.38
1989	10/1/1989	11.73	97.72	(7.91)	10.31	(0.57)	-	11.73	4.02	40.88
1990	10/1/1990	23.03	78.19	(16.81)	10.87	(0.31)	0.00	23.03	6.50	37.63
1991	10/1/1991	22.95	75.00	(16.54)	15.94	(1.14)	-	22.95	6.69	37.08
1992	10/1/1992	36.57	60.51	(27.32)	18.43	(5.28)	-	36.57	9.43	37.66
1993	10/1/1993	32.80	65.00	(26.81)	14.80	(14.32)	-	32.80	6.15	37.29
1994	10/1/1994	15.35	85.12	(10.75)	11.26	(1.64)	-	15.35	4.94	38.98
1995	10/1/1995	24.92	70.87	(18.54)	13.39	(1.09)	0.00	24.92	6.59	37.33
1996	10/1/1996	13.62	90.55	(8.94)	10.79	(1.02)	-	13.62	4.92	40.43
1997	10/1/1997	10.24	92.52	(6.85)	8.43	(0.52)	-	10.24	3.68	40.01
1998	10/1/1998	20.51	73.23	(13.98)	11.69	(0.06)	-	20.51	6.76	36.85
1999	10/1/1999	15.04	82.28	(10.16)	9.45	(0.22)	-	15.04	5.09	38.14
2000	10/1/2000	5.47	103.54	(3.58)	4.92	-	-	5.47	2.05	42.81
2001	10/1/2001	23.50	73.62	(17.05)	15.20	-	-	23.50	6.67	38.65
2002	10/1/2002	5.43	99.21	(3.19)	3.19	-	-	5.43	2.55	42.03
2003	10/1/2003	13.27	85.83	(8.90)	8.27	-	-	13.27	4.63	40.74
2004	10/1/2004	12.40	84.65	(8.11)	7.56	-	-	12.40	4.56	41.68
2005	10/1/2005	24.21	68.50	(18.86)	13.46	(0.54)	-	24.21	5.56	37.59
2006	10/1/2006	12.24	82.28	(8.54)	8.62	(1.02)	-	12.24	3.89	39.59

Table III-D.2 ST 15 Monthly Water Balance 9 Wet Years (1983 to 1991)

Month	Result Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
		[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
Nov-82	11/30/1982	2.52	9.72	(1.81)	2.32	(0.05)	-	2.52	0.74	4.79
Dec-82	12/30/1982	2.48	0.16	(1.61)	0.35	(0.02)	-	2.48	0.86	1.04
Jan-83	1/29/1983	0.67	2.87	(0.51)	0.54	(0.02)	-	0.67	0.21	1.12
Feb-83	2/28/1983	3.54	0.43	(2.95)	0.80	(0.02)	-	3.54	0.63	1.07
Mar-83	3/30/1983	5.43	(0.63)	(4.21)	1.22	(0.02)	-	5.43	1.22	1.71
Apr-83	4/29/1983	0.83	6.81	(0.20)	2.29	(0.02)	-	0.83	0.66	2.34
May-83	5/29/1983	-	11.54	-	2.26	(0.02)	-	-	0.04	3.88
Jun-83	6/28/1983	-	14.06	-	0.91	(0.02)	-	-	0.01	5.42
Jul-83	7/28/1983	2.13	12.09	(1.57)	0.89	(0.02)	-	2.13	0.57	5.48
Aug-83	8/27/1983	3.98	7.48	(2.56)	1.69	(0.02)	-	3.98	1.43	4.09
Sep-83	9/26/1983	1.89	10.39	(1.06)	2.34	(0.03)	-	1.89	0.88	4.50
Oct-83	10/26/1983	5.12	2.72	(4.29)	1.65	(0.04)	-	5.12	0.83	2.93
Nov-83	11/25/1983	1.61	3.94	(1.34)	1.06	(0.04)	-	1.61	0.33	2.15
Dec-83	12/25/1983	1.89	0.87	(1.38)	0.43	(0.04)	-	1.89	0.53	1.00
Jan-84	1/24/1984	1.50	1.42	(0.87)	0.47	(0.04)	-	1.50	0.65	0.96
Feb-84	2/23/1984	-	4.76	-	0.87	(0.04)	-	-	0.08	1.48
Mar-84	3/24/1984	-	7.13	-	1.69	(0.04)	-	-	0.01	2.09
Apr-84	4/23/1984	0.87	7.44	(0.55)	1.50	(0.04)	-	0.87	0.33	2.95
May-84	5/23/1984	0.67	10.91	(0.31)	1.10	(0.04)	-	0.67	0.40	4.08
Jun-84	6/22/1984	0.04	14.17	(0.04)	0.31	(0.04)	-	0.04	0.06	5.37
Jul-84	7/22/1984	3.62	8.54	(2.32)	0.83	(0.04)	-	3.62	1.33	5.03
Aug-84	8/21/1984	4.02	6.97	(2.20)	1.46	(0.04)	-	4.02	1.81	3.99
Sep-84	9/20/1984	1.22	11.34	(0.43)	2.17	(0.04)	-	1.22	0.83	4.18
Oct-84	10/20/1984	2.60	5.12	(1.54)	1.06	(0.04)	-	2.60	1.05	3.50
Nov-84	11/19/1984	-	5.51	-	0.59	(0.04)	-	-	0.07	2.00
Dec-84	12/19/1984	4.84	(2.24)	(4.13)	0.28	(0.04)	-	4.84	0.72	1.28
Jan-85	1/18/1985	3.98	(1.61)	(3.23)	0.35	(0.04)	-	3.98	0.76	0.74
Feb-85	2/17/1985	2.83	(0.31)	(2.13)	0.47	(0.04)	-	2.83	0.76	0.72
Mar-85	3/19/1985	1.69	2.72	(0.79)	1.02	(0.04)	-	1.69	0.92	1.47
Apr-85	4/18/1985	0.47	7.28	-	2.28	(0.04)	-	0.47	0.48	2.35
May-85	5/18/1985	0.43	8.58	(0.28)	1.77	(0.07)	-	0.43	0.24	3.46
Jun-85	6/17/1985	-	11.89	-	0.87	(0.11)	-	-	-	4.21
Jul-85	7/17/1985	0.24	12.64	(0.20)	0.51	(0.13)	-	0.24	0.03	5.06
Aug-85	8/16/1985	2.13	9.17	(1.38)	0.87	(0.13)	-	2.13	0.78	4.31
Sep-85	9/15/1985	2.28	9.49	(1.30)	1.34	(0.13)	-	2.28	1.03	4.83
Oct-85	10/15/1985	3.31	4.76	(2.28)	1.18	(0.12)	-	3.31	1.02	3.24
Nov-85	11/14/1985	1.42	4.41	(0.94)	0.87	(0.11)	-	1.42	0.51	2.00
Dec-85	12/14/1985	2.72	0.20	(1.93)	0.39	(0.10)	-	2.72	0.80	1.26
Jan-86	1/13/1986	-	3.62	0.20	0.55	(0.09)	-	-	0.26	1.25
Feb-86	2/12/1986	2.32	1.30	(1.81)	0.63	(0.09)	-	2.32	0.55	1.59
Mar-86	3/14/1986	1.93	4.21	(1.38)	1.34	(0.08)	-	1.93	0.57	1.67
Apr-86	4/13/1986	3.11	4.53	(2.36)	2.20	(0.07)	-	3.11	0.79	2.60
May-86	5/13/1986	-	10.98	-	2.60	(0.07)	-	-	0.03	3.91
Jun-86	6/12/1986	-	13.58	-	0.91	(0.06)	-	-	0.02	4.91
Jul-86	7/12/1986	2.20	11.89	(1.73)	0.71	(0.05)	-	2.20	0.43	5.74
Aug-86	8/11/1986	2.80	8.03	(1.77)	1.65	(0.05)	-	2.80	1.10	3.77
Sep-86	9/10/1986	3.15	8.50	(2.01)	1.97	(0.05)	-	3.15	1.13	4.48
Oct-86	10/10/1986	0.94	8.11	(0.47)	1.18	(0.05)	-	0.94	0.52	3.68
Nov-86	11/9/1986	2.72	2.99	(2.01)	0.87	(0.05)	-	2.72	0.76	2.41
Dec-86	12/9/1986	2.64	1.14	(2.20)	0.47	(0.05)	-	2.64	0.42	1.46
Jan-87	1/8/1987	1.46	1.22	(0.63)	0.39	(0.05)	-	1.46	0.84	1.01
Feb-87	2/7/1987	3.11	0.20	(2.28)	0.59	(0.05)	-	3.11	0.82	1.05
Mar-87	3/9/1987	2.28	2.36	(1.77)	0.98	(0.05)	-	2.28	0.53	1.32
Apr-87	4/8/1987	0.94	5.35	(0.47)	1.73	(0.04)	-	0.94	0.52	2.15
May-87	5/8/1987	-	7.60	-	2.17	(0.04)	-	-	0.02	2.78
Jun-87	6/7/1987	0.31	11.85	(0.08)	1.18	(0.04)	-	0.31	0.23	4.46
Jul-87	7/7/1987	0.24	14.61	(0.16)	0.71	(0.05)	-	0.24	0.09	5.51
Aug-87	8/6/1987	3.11	9.96	(2.60)	1.14	(0.04)	-	3.11	0.53	5.35
Sep-87	9/5/1987	2.48	9.57	(1.93)	1.77	(0.06)	-	2.48	0.59	4.21
Oct-87	10/5/1987	0.83	9.09	(0.20)	1.50	(0.06)	-	0.83	0.66	3.95
Nov-87	11/4/1987	1.38	6.61	(1.02)	0.83	(0.06)	-	1.38	0.41	3.49
Dec-87	12/4/1987	0.71	3.31	(0.31)	0.31	(0.06)	-	0.71	0.38	1.83

Table III-D.2 ST 15 Monthly Water Balance 9 Wet Years (1983 to 1991)

Month	Result Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
		[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
Jan-88	1/3/1988	4.02	(1.34)	(3.15)	0.28	(0.05)	-	4.02	0.89	1.08
Feb-88	2/2/1988	3.58	(1.26)	(2.95)	0.39	(0.05)	-	3.58	0.62	0.72
Mar-88	3/3/1988	0.75	4.37	(0.43)	1.02	(0.05)	-	0.75	0.33	1.35
Apr-88	4/2/1988	0.12	6.54	(0.04)	1.77	(0.04)	-	0.12	0.12	2.27
May-88	5/2/1988	2.44	6.10	(1.57)	1.93	(0.04)	-	2.44	0.86	3.34
Jun-88	6/1/1988	-	12.44	0.04	1.93	(0.05)	-	-	0.06	4.25
Jul-88	7/1/1988	0.12	13.58	(0.04)	0.43	(0.05)	-	0.12	0.11	5.30
Aug-88	7/31/1988	2.48	10.12	(1.77)	0.39	(0.06)	-	2.48	0.70	5.01
Sep-88	8/30/1988	6.97	4.33	(5.31)	2.13	(0.06)	-	6.97	1.66	4.21
Oct-88	10/29/1988	2.01	17.56	(1.22)	4.49	(0.13)	-	2.01	0.87	7.40
Nov-88	11/28/1988	1.73	3.27	(1.46)	0.75	(0.06)	-	1.73	0.30	2.23
Dec-88	12/28/1988	1.10	1.81	(0.55)	0.35	(0.05)	-	1.10	0.56	1.11
Jan-89	1/27/1989	2.01	0.87	(1.34)	0.43	(0.05)	-	2.01	0.64	0.75
Feb-89	2/26/1989	0.51	3.74	(0.12)	0.87	(0.04)	-	0.51	0.44	1.22
Mar-89	3/28/1989	1.69	6.42	(1.46)	1.97	(0.04)	-	1.69	0.25	2.66
Apr-89	4/27/1989	-	11.57	0.16	2.20	(0.04)	-	-	0.16	3.89
May-89	5/27/1989	0.16	12.05	(0.08)	0.24	(0.04)	-	0.16	0.12	4.76
Jun-89	6/26/1989	-	14.13	-	0.12	(0.04)	-	-	0.00	5.32
Jul-89	7/26/1989	0.08	13.82	(0.04)	0.08	(0.04)	-	0.08	0.05	5.71
Aug-89	8/25/1989	1.38	10.20	(0.67)	0.35	(0.04)	-	1.38	0.72	4.57
Sep-89	9/24/1989	1.57	10.31	(1.30)	0.98	(0.04)	-	1.57	0.32	4.34
Oct-89	10/24/1989	1.06	8.07	(0.63)	0.79	(0.04)	-	1.06	0.49	3.84
Nov-89	11/23/1989	0.31	5.47	(0.16)	0.28	(0.04)	-	0.31	0.13	2.30
Dec-89	12/23/1989	-	3.35	0.04	0.12	(0.02)	-	-	0.09	1.42
Jan-90	1/22/1990	2.13	0.51	(1.38)	0.16	(0.02)	-	2.13	0.75	1.02
Feb-90	2/21/1990	2.56	0.51	(1.61)	0.35	(0.02)	-	2.56	0.94	0.94
Mar-90	3/23/1990	0.79	5.00	(0.39)	0.98	(0.02)	-	0.79	0.42	1.77
Apr-90	4/22/1990	1.02	8.50	(0.51)	1.97	(0.02)	-	1.02	0.55	2.98
May-90	5/22/1990	1.10	9.33	(0.87)	1.34	(0.02)	-	1.10	0.27	4.15
Jun-90	6/21/1990	0.39	13.66	(0.24)	0.39	(0.02)	-	0.39	0.18	5.09
Jul-90	7/21/1990	0.91	11.93	(0.51)	0.28	(0.02)	-	0.91	0.43	5.37
Aug-90	8/20/1990	9.76	2.48	(8.46)	0.79	(0.02)	0.00	9.76	1.29	4.21
Sep-90	9/19/1990	2.60	9.09	(2.13)	2.87	(0.02)	-	2.60	0.52	4.00
Oct-90	10/19/1990	0.43	8.03	0.08	1.93	(0.02)	-	0.43	0.55	3.61
Nov-90	11/18/1990	1.54	4.53	(1.02)	1.22	(0.02)	-	1.54	0.51	2.52
Dec-90	12/18/1990	2.76	0.59	(2.05)	0.55	(0.02)	-	2.76	0.76	1.52
Jan-91	1/17/1991	4.69	(2.48)	(3.70)	0.31	(0.02)	-	4.69	0.96	0.89
Feb-91	2/16/1991	0.16	3.78	-	0.75	(0.02)	-	0.16	0.19	1.11
Mar-91	3/18/1991	3.58	1.30	(2.76)	1.10	(0.02)	-	3.58	0.84	1.80
Apr-91	4/17/1991	3.23	3.90	(2.44)	2.09	(0.03)	-	3.23	0.82	2.09
May-91	5/17/1991	-	9.84	-	2.52	(0.06)	-	-	-	3.68
Jun-91	6/16/1991	0.75	12.24	(0.31)	1.18	(0.14)	-	0.75	0.43	4.71
Jul-91	7/16/1991	0.43	12.83	(0.28)	1.10	(0.22)	-	0.43	0.19	5.29
Aug-91	8/15/1991	3.46	8.46	(2.60)	1.10	(0.23)	-	3.46	0.91	4.66
Sep-91	9/14/1991	2.09	9.45	(1.34)	1.97	(0.22)	-	2.09	0.80	4.57
Oct-91	10/1/1991	0.24	5.63	(0.08)	0.94	(0.11)	-	0.24	0.19	2.19

Table III-D.3 ST 15 Monsoon Period Water Balance

Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
6/1/1951	8.65	32.06	(5.20)	8.43	(4.54)	-	8.65	3.45	13.29
7/1/1951	-	16.19	0.02	0.85	(0.55)	-	-	0.02	5.25
8/1/1951	1.05	16.83	(0.60)	0.77	(0.40)	-	1.05	0.45	5.79
9/1/1951	3.83	11.40	(3.07)	1.25	(0.32)	-	3.83	0.75	4.84
10/1/1951	0.68	13.59	(0.35)	2.49	(0.26)	-	0.68	0.33	4.49
11/1/1951	1.64	8.59	(1.24)	0.85	(0.22)	-	1.64	0.40	3.15
1951	7.20	66.60	(5.25)	6.22	(1.76)	-	7.20	1.95	23.52
6/1/1952	16.50	32.08	(11.57)	11.07	(0.88)	-	16.50	4.92	15.54
7/1/1952	0.63	15.60	(0.20)	1.36	(0.11)	-	0.63	0.43	5.28
8/1/1952	0.56	15.71	(0.19)	0.48	(0.12)	-	0.56	0.37	5.19
9/1/1952	0.47	15.41	(0.14)	0.52	(0.12)	-	0.47	0.34	5.09
10/1/1952	0.74	14.05	(0.36)	0.43	(0.11)	-	0.74	0.38	4.56
11/1/1952	-	11.74	0.04	0.35	(0.11)	-	-	0.04	3.81
1952	2.40	72.51	(0.84)	3.14	(0.58)	-	2.40	1.56	23.93
6/1/1953	10.86	36.80	(8.20)	7.81	(0.54)	-	10.86	2.65	14.82
7/1/1953	-	16.78	0.01	0.50	(0.05)	-	-	0.01	5.51
8/1/1953	2.71	12.79	(2.10)	0.68	(0.05)	-	2.71	0.61	5.21
9/1/1953	1.90	13.28	(1.09)	1.75	(0.05)	-	1.90	0.82	4.71
10/1/1953	-	15.06	0.07	1.37	(0.05)	-	-	0.07	4.63
11/1/1953	0.01	10.29	0.02	0.10	(0.05)	-	0.01	0.03	3.39
1953	4.63	68.20	(3.09)	4.39	(0.25)	-	4.63	1.53	23.46
6/1/1954	10.05	44.59	(7.36)	7.61	(0.30)	-	10.05	2.69	17.36
7/1/1954	0.13	15.39	(0.01)	0.36	(0.03)	-	0.13	0.12	5.13
8/1/1954	4.46	9.72	(3.33)	1.13	(0.03)	-	4.46	1.13	4.63
9/1/1954	5.83	6.98	(4.69)	2.74	(0.03)	-	5.83	1.14	3.93
10/1/1954	1.35	12.08	(0.76)	3.24	(0.03)	-	1.35	0.59	4.18
11/1/1954	-	10.94	0.06	1.55	(0.03)	-	-	0.06	3.47
1954	11.78	55.12	(8.74)	9.02	(0.16)	-	11.78	3.04	21.36
6/1/1955	4.09	46.57	(2.61)	3.63	(0.17)	-	4.09	1.50	16.02
7/1/1955	2.06	13.27	(1.73)	0.99	(0.02)	-	2.06	0.33	5.17
8/1/1955	4.46	9.21	(3.52)	1.30	(0.02)	-	4.46	0.93	4.39
9/1/1955	2.83	9.69	(1.75)	2.39	(0.02)	-	2.83	1.09	3.95
10/1/1955	0.13	13.74	(0.00)	2.61	(0.02)	-	0.13	0.12	4.43
11/1/1955	0.02	11.26	0.02	0.16	(0.02)	-	0.02	0.04	3.54
1955	9.50	57.17	(6.98)	7.46	(0.09)	-	9.50	2.52	21.47
6/1/1956	7.73	43.70	(5.24)	5.63	(0.12)	-	7.73	2.51	16.91
7/1/1956	0.24	16.73	(0.16)	0.04	(0.01)	-	0.24	0.10	5.79
8/1/1956	2.77	11.85	(1.81)	0.53	(0.01)	-	2.77	0.95	4.84
9/1/1956	1.84	11.81	(1.19)	1.56	(0.01)	-	1.84	0.66	4.30
10/1/1956	0.07	14.53	(0.04)	1.20	(0.01)	-	0.07	0.03	4.61
11/1/1956	0.53	8.98	(0.27)	0.06	(0.01)	-	0.53	0.26	3.03
1956	5.46	63.90	(3.47)	3.38	(0.06)	-	5.46	2.00	22.58
6/1/1957	9.38	37.13	(6.17)	6.37	(0.08)	-	9.38	3.22	14.94
7/1/1957	0.03	16.26	0.02	0.43	(0.01)	-	0.03	0.06	5.53
8/1/1957	1.09	13.54	(0.59)	0.19	(0.01)	-	1.09	0.51	4.97
9/1/1957	3.57	10.24	(2.45)	1.10	(0.01)	-	3.57	1.12	4.44
10/1/1957	0.60	12.40	(0.28)	1.74	(0.01)	-	0.60	0.32	4.26
11/1/1957	3.23	4.69	(2.37)	0.66	(0.01)	-	3.23	0.86	2.60
1957	8.52	57.13	(5.66)	4.11	(0.06)	-	8.52	2.86	21.80
6/1/1958	10.68	36.77	(6.28)	8.77	(0.05)	-	10.68	4.40	15.40
7/1/1958	0.70	15.75	(0.46)	0.24	(0.01)	-	0.70	0.26	5.50
8/1/1958	0.78	15.08	(0.41)	0.35	(0.01)	-	0.78	0.37	5.44
9/1/1958	0.89	14.17	(0.33)	0.54	(0.01)	-	0.89	0.57	4.68
10/1/1958	3.17	9.13	(2.41)	0.87	(0.01)	-	3.17	0.77	4.12
11/1/1958	1.92	7.64	(1.49)	1.41	(0.01)	-	1.92	0.43	3.06
1958	7.47	61.77	(5.09)	3.40	(0.03)	-	7.47	2.39	22.80
6/1/1959	3.43	50.47	(2.00)	4.04	(0.04)	-	3.43	1.44	17.30
7/1/1959	1.03	15.35	(0.64)	0.38	(0.01)	-	1.03	0.41	5.64
8/1/1959	3.79	12.87	(3.03)	1.00	(0.01)	-	3.79	0.76	5.64
9/1/1959	5.62	7.09	(3.97)	2.40	(0.01)	-	5.62	1.65	3.94
10/1/1959	0.05	12.80	0.03	2.87	(0.01)	-	0.05	0.09	4.31
11/1/1959	4.87	4.72	(4.48)	1.06	(0.01)	-	4.87	0.39	3.20
1959	15.37	52.83	(12.09)	7.70	(0.03)	-	15.37	3.29	22.73

Table III-D.3 ST 15 Monsoon Period Water Balance

Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
6/1/1960	11.66	38.54	(8.66)	8.10	(0.05)	-	11.66	3.04	16.20
7/1/1960	-	17.13	-	0.49	(0.02)	-	-	0.01	5.76
8/1/1960	0.74	15.16	(0.46)	0.45	(0.04)	-	0.74	0.28	5.41
9/1/1960	1.62	12.48	(0.77)	0.90	(0.05)	-	1.62	0.85	4.54
10/1/1960	0.28	13.62	(0.06)	0.61	(0.05)	-	0.28	0.23	4.52
11/1/1960	2.05	6.46	(1.34)	0.45	(0.06)	-	2.05	0.72	2.80
1960	4.70	64.84	(2.63)	2.91	(0.23)	-	4.70	2.09	23.02
6/1/1961	3.57	46.69	(1.44)	3.08	(0.34)	-	3.57	2.15	16.32
7/1/1961	-	16.69	-	0.09	(0.04)	-	-	-	5.66
8/1/1961	0.67	14.61	(0.28)	0.17	(0.04)	-	0.67	0.38	5.34
9/1/1961	3.13	10.71	(2.25)	0.72	(0.04)	-	3.13	0.89	4.51
10/1/1961	0.52	10.47	0.09	1.21	(0.04)	-	0.52	0.61	3.65
11/1/1961	0.45	8.90	(0.30)	0.56	(0.03)	-	0.45	0.15	3.23
1961	4.78	61.38	(2.74)	2.76	(0.19)	-	4.78	2.04	22.38
6/1/1962	11.37	35.51	(8.15)	7.75	(0.19)	-	11.37	3.25	15.23
7/1/1962	-	15.39	-	0.30	(0.02)	-	-	-	5.29
8/1/1962	0.61	14.72	(0.26)	0.33	(0.02)	-	0.61	0.35	5.26
9/1/1962	0.52	15.12	(0.22)	0.33	(0.02)	-	0.52	0.30	5.21
10/1/1962	1.30	11.06	(0.58)	0.32	(0.02)	-	1.30	0.72	4.26
11/1/1962	0.87	8.31	(0.33)	0.44	(0.02)	-	0.87	0.54	2.98
1962	3.30	64.61	(1.39)	1.71	(0.10)	-	3.30	1.90	22.98
6/1/1963	11.12	40.51	(8.60)	8.11	(0.12)	-	11.12	2.56	17.00
7/1/1963	-	14.72	0.00	0.27	(0.02)	-	-	-	4.97
8/1/1963	0.08	15.98	(0.02)	0.19	(0.02)	-	0.08	0.06	5.61
9/1/1963	10.31	1.85	(8.39)	1.51	(0.02)	-	10.31	1.91	3.97
10/1/1963	1.10	11.61	(0.45)	3.09	(0.02)	-	1.10	0.65	4.13
11/1/1963	0.67	9.37	(0.42)	2.07	(0.02)	-	0.67	0.26	3.50
1963	12.16	53.54	(9.28)	7.13	(0.08)	-	12.16	2.89	22.18
6/1/1964	5.50	40.91	(2.95)	5.17	(0.12)	-	5.50	2.58	15.18
7/1/1964	-	14.69	0.00	0.12	(0.02)	-	-	-	4.97
8/1/1964	1.48	13.54	(0.74)	0.28	(0.02)	-	1.48	0.74	5.15
9/1/1964	2.29	10.87	(1.21)	0.96	(0.02)	-	2.29	1.08	4.25
10/1/1964	1.65	8.74	(0.67)	0.85	(0.02)	-	1.65	0.98	3.61
11/1/1964	1.54	8.98	(1.20)	0.85	(0.02)	-	1.54	0.33	3.51
1964	6.97	56.81	(3.82)	3.07	(0.10)	-	6.97	3.15	21.49
6/1/1965	12.48	33.35	(8.89)	8.93	(0.12)	-	12.48	3.61	14.85
7/1/1965	0.10	13.74	(0.01)	0.33	(0.02)	-	0.10	0.10	4.83
8/1/1965	1.44	12.87	(0.72)	0.43	(0.02)	-	1.44	0.72	4.98
9/1/1965	0.95	13.35	(0.44)	0.82	(0.02)	-	0.95	0.51	4.70
10/1/1965	1.09	10.98	(0.62)	0.82	(0.02)	-	1.09	0.47	4.01
11/1/1965	0.46	9.92	(0.27)	0.38	(0.02)	-	0.46	0.20	3.38
1965	4.04	60.87	(2.06)	2.78	(0.09)	-	4.04	2.00	21.90
6/1/1966	17.03	32.32	(14.09)	6.96	(0.91)	-	17.03	2.96	16.33
7/1/1966	0.18	14.92	(0.06)	0.70	(0.37)	-	0.18	0.13	5.46
8/1/1966	0.84	13.70	(0.41)	0.58	(0.33)	-	0.84	0.44	4.96
9/1/1966	1.69	12.44	(1.13)	0.80	(0.28)	-	1.69	0.56	4.76
10/1/1966	2.81	8.82	(2.25)	1.63	(0.23)	-	2.81	0.56	4.04
11/1/1966	1.36	7.44	(0.89)	1.45	(0.20)	-	1.36	0.46	2.86
1966	6.89	57.32	(4.73)	5.16	(1.41)	-	6.89	2.15	22.08
6/1/1967	5.79	42.20	(3.46)	5.92	(0.79)	-	5.79	2.35	15.89
7/1/1967	0.08	14.13	(0.01)	0.13	(0.07)	-	0.08	0.08	4.81
8/1/1967	4.05	9.37	(3.12)	1.05	(0.07)	-	4.05	0.92	4.76
9/1/1967	2.67	11.42	(2.05)	2.44	(0.06)	-	2.67	0.63	4.46
10/1/1967	0.58	10.83	(0.22)	1.96	(0.06)	-	0.58	0.35	4.14
11/1/1967	0.42	9.29	(0.20)	0.50	(0.05)	-	0.42	0.22	3.39
1967	7.80	55.04	(5.60)	6.09	(0.30)	-	7.80	2.20	21.57
6/1/1968	17.56	29.33	(14.72)	7.81	(1.08)	-	17.56	2.93	15.70
7/1/1968	-	15.79	-	0.89	(0.35)	-	-	-	5.56
8/1/1968	1.82	11.73	(1.20)	0.67	(0.33)	-	1.82	0.64	4.91
9/1/1968	2.70	8.98	(1.64)	1.59	(0.28)	-	2.70	1.05	3.78
10/1/1968	0.05	11.61	0.00	1.53	(0.23)	-	0.05	0.09	4.04
11/1/1968	0.39	8.86	(0.20)	0.38	(0.20)	-	0.39	0.21	2.90
1968	4.96	56.97	(3.04)	5.06	(1.38)	-	4.96	1.99	21.19

Table III-D.3 ST 15 Monsoon Period Water Balance

Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
6/1/1969	14.04	32.68	(10.48)	8.78	(0.85)	-	14.04	3.65	15.41
7/1/1969	-	14.41	-	0.48	(0.13)	-	-	0.01	5.23
8/1/1969	0.33	14.33	(0.09)	0.35	(0.14)	-	0.33	0.24	5.28
9/1/1969	2.72	12.44	(1.76)	1.22	(0.13)	-	2.72	0.96	5.07
10/1/1969	1.31	11.22	(0.81)	1.24	(0.12)	-	1.31	0.51	4.33
11/1/1969	0.83	7.76	(0.54)	0.65	(0.11)	-	0.83	0.31	3.11
1969	5.19	60.16	(3.21)	3.96	(0.62)	-	5.19	2.04	23.01
6/1/1970	8.79	37.72	(5.59)	6.81	(0.54)	-	8.79	3.25	15.36
7/1/1970	0.08	15.12	(0.00)	0.12	(0.05)	-	0.08	0.07	5.33
8/1/1970	1.04	13.98	(0.51)	0.47	(0.05)	-	1.04	0.54	5.56
9/1/1970	1.81	12.17	(0.99)	0.54	(0.05)	-	1.81	0.84	4.73
10/1/1970	3.53	7.91	(3.00)	1.83	(0.05)	-	3.53	0.56	4.45
11/1/1970	-	8.43	0.00	1.37	(0.05)	-	-	0.01	2.87
1970	6.46	57.60	(4.50)	4.33	(0.23)	-	6.46	2.02	22.93
6/1/1971	3.94	43.39	(2.24)	2.99	(0.23)	-	3.94	1.77	15.85
7/1/1971	-	14.84	-	0.05	(0.02)	-	-	-	5.06
8/1/1971	0.39	15.47	(0.18)	0.12	(0.02)	-	0.39	0.22	5.59
9/1/1971	4.92	7.28	(3.52)	1.30	(0.02)	-	4.92	1.42	4.19
10/1/1971	3.40	8.98	(2.83)	2.19	(0.02)	-	3.40	0.58	4.40
11/1/1971	4.22	3.15	(3.25)	1.57	(0.02)	-	4.22	0.97	2.80
1971	12.93	49.72	(9.77)	5.23	(0.12)	-	12.93	3.19	22.04
6/1/1972	2.33	49.72	(1.13)	5.58	(0.13)	-	2.33	1.23	17.30
7/1/1972	1.68	13.82	(1.25)	0.54	(0.01)	-	1.68	0.46	5.44
8/1/1972	0.27	16.10	(0.12)	0.94	(0.01)	-	0.27	0.18	5.69
9/1/1972	2.10	11.54	(1.37)	0.84	(0.01)	-	2.10	0.74	4.93
10/1/1972	0.70	11.61	(0.20)	0.75	(0.01)	-	0.70	0.51	4.37
11/1/1972	8.96	(1.73)	(7.69)	1.00	(0.01)	-	8.96	1.27	2.78
1972	13.71	51.34	(10.63)	4.07	(0.06)	-	13.71	3.16	23.21
6/1/1973	16.91	23.39	(11.65)	9.29	(0.32)	-	16.91	5.30	13.27
7/1/1973	0.87	14.69	(0.47)	1.54	(0.36)	-	0.87	0.42	5.37
8/1/1973	2.72	11.14	(2.08)	1.15	(0.37)	-	2.72	0.64	5.31
9/1/1973	1.51	13.19	(0.68)	1.96	(0.33)	-	1.51	0.82	4.93
10/1/1973	-	12.72	0.01	1.16	(0.28)	-	-	0.02	4.31
11/1/1973	-	8.66	-	0.18	(0.24)	-	-	0.00	3.27
1973	5.10	60.39	(3.22)	5.99	(1.57)	-	5.10	1.90	23.18
6/1/1974	8.11	33.94	(5.57)	6.53	(0.91)	-	8.11	2.59	13.59
7/1/1974	-	16.61	-	0.16	(0.08)	-	-	-	5.69
8/1/1974	2.44	11.57	(1.63)	0.70	(0.08)	-	2.44	0.81	5.16
9/1/1974	1.46	12.56	(0.76)	1.50	(0.07)	-	1.46	0.72	4.88
10/1/1974	3.86	7.52	(2.76)	1.46	(0.06)	-	3.86	1.10	4.26
11/1/1974	3.39	4.84	(2.63)	1.13	(0.05)	-	3.39	0.77	3.10
1974	11.14	53.11	(7.77)	4.96	(0.34)	-	11.14	3.41	23.08
6/1/1975	10.47	29.41	(7.11)	8.74	(0.30)	-	10.47	3.40	13.03
7/1/1975	-	15.20	-	0.88	(0.03)	-	-	0.00	5.27
8/1/1975	2.20	10.63	(1.02)	0.70	(0.03)	-	2.20	1.18	4.96
9/1/1975	2.09	12.13	(1.34)	1.32	(0.03)	-	2.09	0.76	4.65
10/1/1975	0.94	11.42	(0.31)	1.12	(0.03)	-	0.94	0.66	4.44
11/1/1975	0.28	8.35	(0.08)	0.22	(0.03)	-	0.28	0.19	3.43
1975	5.51	57.72	(2.76)	4.24	(0.17)	-	5.51	2.80	22.75
6/1/1976	8.07	36.34	(5.02)	5.31	(0.19)	-	8.07	3.14	15.22
7/1/1976	-	15.79	0.00	0.16	(0.02)	-	-	0.01	5.28
8/1/1976	2.80	10.31	(2.06)	0.56	(0.02)	-	2.80	0.71	5.23
9/1/1976	0.87	13.46	(0.59)	1.65	(0.02)	-	0.87	0.32	4.63
10/1/1976	4.49	5.87	(3.55)	1.24	(0.02)	-	4.49	0.93	4.06
11/1/1976	0.91	6.34	(0.48)	1.22	(0.02)	-	0.91	0.43	2.68
1976	9.06	51.77	(6.68)	4.82	(0.11)	-	9.06	2.41	21.87
6/1/1977	6.73	37.83	(4.21)	6.47	(0.12)	-	6.73	2.59	15.05
7/1/1977	0.04	15.75	(0.02)	0.04	(0.01)	-	0.04	0.04	5.46
8/1/1977	2.52	12.52	(1.88)	0.49	(0.01)	-	2.52	0.66	5.62
9/1/1977	2.60	11.50	(1.91)	1.76	(0.01)	-	2.60	0.66	4.92
10/1/1977	3.62	6.77	(2.60)	1.76	(0.01)	-	3.62	1.05	4.09
11/1/1977	1.30	7.76	(0.85)	1.43	(0.01)	-	1.30	0.49	3.39
1977	10.08	54.29	(7.26)	5.49	(0.06)	-	10.08	2.89	23.49

Table III-D.3 ST 15 Monsoon Period Water Balance

Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
6/1/1978	19.61	24.13	(15.33)	9.01	(0.15)	-	19.61	4.35	14.90
7/1/1978	0.55	15.12	(0.40)	1.04	(0.22)	-	0.55	0.15	5.55
8/1/1978	0.94	14.37	(0.59)	0.95	(0.27)	-	0.94	0.42	5.90
9/1/1978	1.14	11.73	(0.62)	1.27	(0.25)	-	1.14	0.52	4.26
10/1/1978	0.39	10.83	(0.19)	0.58	(0.21)	-	0.39	0.24	4.30
11/1/1978	1.93	7.52	(1.46)	0.37	(0.18)	-	1.93	0.47	4.04
1978	4.96	59.57	(3.25)	4.22	(1.12)	-	4.96	1.79	24.05
6/1/1979	25.47	15.55	(20.28)	9.07	(6.18)	-	25.47	5.28	14.22
7/1/1979	0.35	14.61	(0.03)	1.23	(0.77)	-	0.35	0.34	5.17
8/1/1979	0.16	14.92	(0.07)	0.78	(0.60)	-	0.16	0.11	5.76
9/1/1979	1.61	11.22	(0.78)	0.94	(0.42)	-	1.61	0.85	4.49
10/1/1979	0.12	13.31	(0.02)	0.68	(0.32)	-	0.12	0.11	4.85
11/1/1979	0.67	9.02	(0.46)	0.31	(0.28)	-	0.67	0.22	3.81
1979	2.91	63.07	(1.35)	3.93	(2.40)	-	2.91	1.63	24.08
6/1/1980	15.55	26.02	(11.58)	7.51	(1.24)	-	15.55	4.08	14.55
7/1/1980	0.16	15.24	(0.10)	0.98	(0.33)	-	0.16	0.04	5.23
8/1/1980	1.97	11.81	(1.15)	0.91	(0.31)	-	1.97	0.82	5.39
9/1/1980	1.38	12.17	(0.69)	1.35	(0.28)	-	1.38	0.69	4.74
10/1/1980	0.59	11.81	(0.35)	1.06	(0.23)	-	0.59	0.29	4.50
11/1/1980	0.04	9.13	(0.01)	0.24	(0.20)	-	0.04	0.04	3.67
1980	4.13	60.16	(2.30)	4.56	(1.34)	-	4.13	1.87	23.53
6/1/1981	9.61	37.80	(6.94)	7.13	(0.80)	-	9.61	2.75	16.76
7/1/1981	0.16	15.59	(0.04)	0.48	(0.07)	-	0.16	0.11	5.53
8/1/1981	2.17	11.69	(1.72)	0.43	(0.07)	-	2.17	0.45	5.49
9/1/1981	2.76	11.26	(1.88)	2.04	(0.07)	-	2.76	0.88	4.55
10/1/1981	0.51	11.61	(0.33)	1.53	(0.05)	-	0.51	0.22	4.84
11/1/1981	0.98	6.77	(0.48)	0.48	(0.04)	-	0.98	0.50	3.07
1981	6.57	56.93	(4.45)	4.96	(0.30)	-	6.57	2.17	23.48
6/1/1982	12.72	30.87	(8.50)	8.50	(0.30)	-	12.72	4.28	15.04
7/1/1982	0.04	13.94	(0.04)	0.47	(0.04)	-	0.04	0.02	5.04
8/1/1982	2.64	10.08	(1.65)	0.52	(0.03)	-	2.64	0.98	4.94
9/1/1982	4.02	7.99	(2.91)	1.76	(0.02)	-	4.02	1.14	4.25
10/1/1982	3.19	7.95	(2.36)	2.30	(0.02)	-	3.19	0.81	4.25
11/1/1982	-	8.43	0.04	1.72	(0.02)	-	-	0.05	3.10
1982	9.88	48.39	(6.93)	6.77	(0.14)	-	9.88	3.00	21.57
6/1/1983	15.47	23.94	(11.34)	8.16	(0.16)	-	15.47	4.33	13.33
7/1/1983	-	13.94	-	0.87	(0.02)	-	-	-	5.53
8/1/1983	2.80	11.54	(2.05)	0.98	(0.02)	-	2.80	0.78	5.41
9/1/1983	3.82	8.35	(2.60)	1.95	(0.02)	-	3.82	1.24	4.18
10/1/1983	5.35	6.34	(4.25)	2.19	(0.03)	-	5.35	1.13	4.46
11/1/1983	1.14	6.46	(0.59)	1.65	(0.04)	-	1.14	0.60	2.89
1983	13.11	46.61	(9.49)	7.65	(0.14)	-	13.11	3.74	22.47
6/1/1984	6.57	39.69	(4.45)	7.01	(0.30)	-	6.57	2.33	15.78
7/1/1984	1.30	12.56	(0.98)	0.28	(0.04)	-	1.30	0.39	5.38
8/1/1984	3.35	8.54	(1.85)	1.18	(0.04)	-	3.35	1.51	4.65
9/1/1984	3.46	7.91	(1.73)	1.73	(0.04)	-	3.46	1.72	4.09
10/1/1984	1.97	9.37	(1.26)	1.89	(0.04)	-	1.97	0.78	4.53
11/1/1984	1.38	5.47	(0.71)	0.87	(0.04)	-	1.38	0.69	2.68
1984	11.46	43.86	(6.54)	5.94	(0.22)	-	11.46	5.08	21.33
6/1/1985	14.25	22.64	(10.55)	6.89	(0.35)	-	14.25	3.91	13.20
7/1/1985	-	12.01	-	0.71	(0.12)	-	-	-	4.69
8/1/1985	1.26	11.93	(0.87)	0.55	(0.14)	-	1.26	0.37	4.91
9/1/1985	2.20	10.63	(1.42)	1.46	(0.14)	-	2.20	0.84	4.57
10/1/1985	3.74	6.18	(2.48)	1.18	(0.11)	-	3.74	1.31	4.02
11/1/1985	1.26	5.51	(0.51)	1.06	(0.12)	-	1.26	0.73	2.40
1985	8.46	46.26	(5.28)	4.96	(0.63)	-	8.46	3.26	20.60
6/1/1986	10.98	34.53	(8.11)	8.62	(0.59)	-	10.98	3.13	16.29
7/1/1986	-	14.84	-	0.59	(0.05)	-	-	0.01	5.54
8/1/1986	4.76	5.87	(3.35)	1.30	(0.05)	-	4.76	1.41	4.60
9/1/1986	2.13	10.43	(1.26)	2.17	(0.05)	-	2.13	0.91	4.71
10/1/1986	2.20	7.87	(1.42)	1.42	(0.05)	-	2.20	0.81	4.07
11/1/1986	1.73	5.47	(1.34)	1.02	(0.05)	-	1.73	0.45	2.44
1986	10.83	44.49	(7.36)	6.50	(0.24)	-	10.83	3.60	21.36

Table III-D.3 ST 15 Monsoon Period Water Balance

Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
6/1/1987	11.73	27.05	(8.07)	7.48	(0.32)	-	11.73	3.74	14.14
7/1/1987	0.24	14.37	(0.16)	0.83	(0.05)	-	0.24	0.09	5.17
8/1/1987	2.05	11.89	(1.69)	0.98	(0.05)	-	2.05	0.35	5.50
9/1/1987	3.03	9.41	(2.32)	1.73	(0.06)	-	3.03	0.76	4.63
10/1/1987	1.34	8.94	(0.71)	1.57	(0.06)	-	1.34	0.66	4.13
11/1/1987	0.31	8.58	(0.16)	0.98	(0.06)	-	0.31	0.22	3.69
1987	6.97	53.19	(5.04)	6.10	(0.27)	-	6.97	2.09	23.12
6/1/1988	12.68	29.53	(9.29)	7.68	(0.34)	-	12.68	3.46	15.00
7/1/1988	0.12	13.58	(0.04)	0.43	(0.05)	-	0.12	0.11	5.30
8/1/1988	3.43	9.41	(2.68)	0.43	(0.06)	-	3.43	0.74	5.15
9/1/1988	6.22	5.63	(4.49)	2.28	(0.07)	-	6.22	1.73	4.27
10/1/1988	0.31	10.28	(0.08)	2.60	(0.07)	-	0.31	0.30	3.96
11/1/1988	1.50	7.32	(1.02)	1.81	(0.07)	-	1.50	0.47	3.45
1988	11.57	46.22	(8.31)	7.56	(0.31)	-	11.57	3.36	22.14
6/1/1989	7.20	41.30	(4.88)	6.73	(0.33)	-	7.20	2.45	17.29
7/1/1989	-	14.37	-	0.08	(0.04)	-	-	0.00	5.55
8/1/1989	0.51	13.23	(0.28)	0.12	(0.04)	-	0.51	0.22	5.73
9/1/1989	0.94	11.46	(0.43)	0.47	(0.05)	-	0.94	0.56	4.32
10/1/1989	1.57	10.04	(1.30)	1.10	(0.04)	-	1.57	0.31	4.51
11/1/1989	1.06	6.77	(0.59)	0.59	(0.04)	-	1.06	0.53	3.57
1989	4.09	55.87	(2.60)	2.36	(0.21)	-	4.09	1.63	23.69
6/1/1990	8.11	35.35	(5.04)	5.31	(0.18)	-	8.11	3.17	15.31
7/1/1990	0.24	14.72	(0.16)	0.24	(0.02)	-	0.24	0.11	5.40
8/1/1990	1.54	10.35	(0.87)	0.43	(0.02)	-	1.54	0.71	5.16
9/1/1990	9.09	3.86	(8.03)	1.85	(0.02)	0.00	9.09	1.07	4.02
10/1/1990	2.99	7.13	(2.13)	2.44	(0.02)	-	2.99	0.90	4.17
11/1/1990	0.24	7.83	(0.08)	1.77	(0.02)	-	0.24	0.22	3.23
1990	14.09	43.90	(11.26)	6.73	(0.12)	0.00	14.09	3.01	21.98
6/1/1991	15.87	24.76	(11.85)	8.54	(0.25)	-	15.87	4.04	14.73
7/1/1991	0.63	12.52	(0.31)	1.06	(0.19)	-	0.63	0.37	5.21
8/1/1991	1.69	11.22	(1.26)	0.98	(0.24)	-	1.69	0.48	5.17
9/1/1991	2.87	9.69	(1.93)	1.85	(0.24)	-	2.87	0.96	4.65
10/1/1991	1.65	8.98	(1.10)	1.73	(0.20)	-	1.65	0.62	4.09
11/1/1991	1.22	8.03	(0.94)	1.14	(0.18)	-	1.22	0.28	3.99
1991	8.07	50.43	(5.55)	6.77	(1.05)	-	8.07	2.71	23.12
6/1/1992	24.29	15.16	(18.27)	8.66	(2.57)	-	24.29	6.09	14.72
7/1/1992	1.30	11.73	(0.63)	2.01	(0.94)	-	1.30	0.70	4.97
8/1/1992	3.31	9.57	(2.56)	1.42	(0.72)	-	3.31	0.79	5.44
9/1/1992	5.55	5.71	(4.25)	2.48	(0.52)	-	5.55	1.28	4.49
10/1/1992	0.91	10.31	(0.67)	2.72	(0.36)	-	0.91	0.30	4.06
11/1/1992	1.22	7.28	(0.87)	1.65	(0.31)	-	1.22	0.36	3.90
1992	12.28	44.61	(8.98)	10.28	(2.84)	-	12.28	3.43	22.85
6/1/1993	27.52	12.68	(23.50)	8.58	(11.84)	-	27.52	4.11	14.30
7/1/1993	-	13.74	-	1.30	(0.81)	-	-	0.00	5.07
8/1/1993	0.28	12.60	(0.16)	0.75	(0.61)	-	0.28	0.11	5.27
9/1/1993	3.58	8.15	(2.32)	0.91	(0.42)	-	3.58	1.33	4.95
10/1/1993	0.20	10.55	0.04	1.61	(0.32)	-	0.20	0.22	3.76
11/1/1993	0.79	7.13	(0.39)	0.75	(0.28)	-	0.79	0.45	3.67
1993	4.84	52.17	(2.83)	5.31	(2.44)	-	4.84	2.12	22.72
6/1/1994	9.96	31.69	(7.32)	7.44	(1.01)	-	9.96	2.75	15.17
7/1/1994	0.35	13.35	(0.28)	0.67	(0.09)	-	0.35	0.17	5.35
8/1/1994	1.50	12.20	(1.22)	0.31	(0.09)	-	1.50	0.25	5.54
9/1/1994	0.75	12.48	(0.20)	1.06	(0.09)	-	0.75	0.57	5.03
10/1/1994	2.01	8.27	(1.34)	1.02	(0.09)	-	2.01	0.75	4.23
11/1/1994	1.85	5.51	(1.50)	0.79	(0.08)	-	1.85	0.36	3.25
1994	6.46	51.81	(4.53)	3.86	(0.43)	-	6.46	2.11	23.40
6/1/1995	16.10	21.65	(11.61)	7.83	(0.39)	-	16.10	4.61	14.05
7/1/1995	-	12.99	-	0.94	(0.14)	-	-	-	4.73
8/1/1995	0.04	13.78	(0.04)	0.55	(0.18)	-	0.04	0.04	5.36
9/1/1995	4.06	8.66	(3.03)	1.34	(0.18)	0.00	4.06	1.00	5.39
10/1/1995	2.87	8.27	(2.36)	1.93	(0.14)	-	2.87	0.60	4.56
11/1/1995	-	9.06	0.08	1.46	(0.14)	-	-	0.10	3.61
1995	6.97	52.76	(5.35)	6.22	(0.77)	0.00	6.97	1.73	23.64
6/1/1996	6.34	40.16	(4.53)	6.26	(0.69)	-	6.34	1.96	17.23
7/1/1996	0.39	13.78	(0.24)	0.12	(0.05)	-	0.39	0.16	5.47
8/1/1996	2.36	10.63	(1.42)	0.79	(0.05)	-	2.36	0.94	5.32
9/1/1996	1.30	11.02	(0.79)	1.02	(0.05)	-	1.30	0.57	4.79
10/1/1996	3.23	5.91	(2.05)	1.14	(0.05)	-	3.23	1.18	4.01
11/1/1996	0.39	7.48	(0.20)	1.06	(0.05)	-	0.39	0.26	3.85
1996	7.68	48.82	(4.69)	4.13	(0.24)	-	7.68	3.11	23.44

Table III-D.3 ST 15 Monsoon Period Water Balance

Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
6/1/1997	6.97	37.40	(4.72)	5.39	(0.31)	-	6.97	2.44	15.88
7/1/1997	0.04	12.99	-	0.04	(0.04)	-	0.04	0.02	5.13
8/1/1997	0.12	13.78	(0.04)	0.08	(0.04)	-	0.12	0.07	5.89
9/1/1997	2.72	9.45	(1.89)	0.87	(0.04)	-	2.72	0.87	4.66
10/1/1997	-	11.42	-	0.98	(0.04)	-	-	0.02	4.56
11/1/1997	0.75	6.30	(0.47)	0.12	(0.04)	-	0.75	0.29	3.74
1997	3.62	53.94	(2.40)	2.09	(0.20)	-	3.62	1.27	23.98
6/1/1998	14.13	23.23	(10.04)	7.05	(0.02)	-	14.13	4.21	13.06
7/1/1998	-	12.60	-	0.79	-	-	-	0.00	4.83
8/1/1998	1.69	11.42	(1.10)	1.10	-	-	1.69	0.63	5.67
9/1/1998	2.56	10.24	(1.46)	1.42	-	-	2.56	1.11	4.73
10/1/1998	1.38	9.45	(0.91)	1.22	-	-	1.38	0.52	4.82
11/1/1998	-	7.87	-	0.51	-	-	-	0.00	3.85
1998	5.63	51.57	(3.46)	5.04	-	-	5.63	2.27	23.90
6/1/1999	5.08	37.80	(3.46)	3.70	(0.20)	-	5.08	1.73	15.57
7/1/1999	-	13.39	-	0.04	(0.01)	-	-	-	5.00
8/1/1999	5.83	5.12	(4.41)	0.98	-	-	5.83	1.44	5.16
9/1/1999	2.99	9.06	(1.89)	2.28	-	-	2.99	1.08	4.31
10/1/1999	1.14	9.06	(0.39)	1.93	-	-	1.14	0.84	4.25
11/1/1999	-	9.06	-	1.26	-	-	-	0.01	3.82
1999	9.96	45.67	(6.69)	6.50	(0.01)	-	9.96	3.37	22.54
6/1/2000	3.90	44.49	(2.76)	2.91	-	-	3.90	1.19	17.87
7/1/2000	0.79	12.60	(0.47)	0.24	-	-	0.79	0.34	5.86
8/1/2000	0.08	14.17	(0.04)	0.24	-	-	0.08	0.04	5.52
9/1/2000	0.71	11.02	(0.31)	0.20	-	-	0.71	0.44	5.25
10/1/2000	-	12.20	-	0.08	-	-	-	0.02	4.50
11/1/2000	5.31	1.18	(4.37)	0.28	-	-	5.31	0.94	3.66
2000	6.89	51.18	(5.20)	1.02	-	-	6.89	1.78	24.78
6/1/2001	11.77	28.35	(7.76)	9.29	-	-	11.77	4.20	14.56
7/1/2001	0.04	14.17	-	0.47	-	-	0.04	0.03	5.59
8/1/2001	2.72	9.84	(2.36)	0.31	-	-	2.72	0.35	5.87
9/1/2001	3.50	8.27	(2.52)	2.48	-	-	3.50	1.05	4.15
10/1/2001	0.16	11.81	(0.04)	2.36	-	-	0.16	0.09	4.79
11/1/2001	0.35	7.87	(0.20)	0.35	-	-	0.35	0.20	3.65
2001	6.77	51.97	(5.12)	5.98	-	-	6.77	1.72	24.04
6/1/2002	3.03	41.73	(1.89)	2.05	-	-	3.03	1.27	17.09
7/1/2002	-	14.96	-	0.08	-	-	-	-	5.57
8/1/2002	0.31	13.39	(0.16)	0.08	-	-	0.31	0.22	6.27
9/1/2002	0.47	11.81	(0.24)	0.12	-	-	0.47	0.25	4.90
10/1/2002	1.26	9.45	(0.71)	0.51	-	-	1.26	0.61	4.56
11/1/2002	0.12	7.48	(0.04)	0.28	-	-	0.12	0.07	3.72
2002	2.17	57.09	(1.14)	1.06	-	-	2.17	1.15	25.02
6/1/2003	9.25	32.28	(6.77)	6.34	-	-	9.25	2.66	15.60
7/1/2003	-	13.78	-	0.20	-	-	-	-	6.03
8/1/2003	0.51	12.60	(0.12)	0.08	-	-	0.51	0.39	6.11
9/1/2003	1.34	10.63	(0.91)	0.47	-	-	1.34	0.51	4.94
10/1/2003	2.05	9.06	(1.06)	0.91	-	-	2.05	0.99	4.33
11/1/2003	0.08	8.66	-	0.59	-	-	0.08	0.09	3.92
2003	3.98	54.72	(2.09)	2.24	-	-	3.98	1.99	25.33
6/1/2004	7.95	32.28	(5.43)	5.31	-	-	7.95	2.70	16.89
7/1/2004	-	13.39	-	-	-	-	-	-	5.46
8/1/2004	0.55	12.20	(0.24)	0.12	-	-	0.55	0.35	5.62
9/1/2004	2.20	9.84	(1.30)	0.63	-	-	2.20	0.94	4.93
10/1/2004	1.61	8.27	(1.14)	0.91	-	-	1.61	0.48	4.87
11/1/2004	1.18	5.51	(0.79)	0.55	-	-	1.18	0.44	3.51
2004	5.55	49.21	(3.46)	2.20	-	-	5.55	2.21	24.39
6/1/2005	16.54	22.05	(13.31)	6.81	(0.03)	-	16.54	3.35	13.86
7/1/2005	0.04	12.60	(0.04)	0.83	(0.10)	-	0.04	0.04	5.14
8/1/2005	1.42	11.81	(1.06)	0.59	(0.14)	-	1.42	0.31	6.50
9/1/2005	4.92	5.91	(3.66)	2.24	(0.14)	-	4.92	1.31	3.98
10/1/2005	0.12	10.63	-	2.44	(0.13)	-	0.12	0.11	4.57
11/1/2005	0.39	7.09	(0.28)	0.63	(0.14)	-	0.39	0.17	3.81
2005	6.89	48.03	(5.04)	6.73	(0.65)	-	6.89	1.94	23.99
6/1/2006	3.94	39.37	(3.03)	3.82	(0.69)	-	3.94	0.97	16.77
7/1/2006	0.51	12.99	(0.24)	0.16	(0.05)	-	0.51	0.27	5.71
8/1/2006	3.19	7.87	(2.44)	0.39	(0.05)	-	3.19	0.76	5.46
9/1/2006	3.03	7.48	(1.85)	1.89	(0.05)	-	3.03	1.24	4.04
10/1/2006	1.18	7.48	(0.71)	1.73	(0.05)	-	1.18	0.48	3.80
11/1/2006	1.02	5.91	(0.43)	1.10	(0.05)	-	1.02	0.63	3.31
2006	8.94	41.73	(5.67)	5.28	(0.24)	-	8.94	3.38	22.33

Table III-D.4 ST 15 Winter Storm Period Water Balance

Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
10/1/1951	14.21	90.07	(9.21)	13.79	(6.07)	-	14.21	5.00	33.65
11/1/1951	1.64	8.59	(1.24)	0.85	(0.22)	-	1.64	0.40	3.15
12/1/1951	1.71	3.44	(1.01)	0.47	(0.18)	-	1.71	0.70	1.66
1/1/1952	3.02	0.52	(2.33)	0.39	(0.15)	-	3.02	0.69	1.05
2/1/1952	2.79	0.81	(1.94)	0.60	(0.13)	-	2.79	0.85	1.08
3/1/1952	0.50	4.29	(0.11)	0.96	(0.11)	-	0.50	0.39	1.31
1952	9.66	17.65	(6.63)	3.28	(0.79)	-	9.66	3.02	8.25
10/1/1952	10.88	83.79	(7.07)	11.43	(0.78)	-	10.88	3.81	30.56
11/1/1952	-	11.74	0.04	0.35	(0.11)	-	-	0.04	3.81
12/1/1952	4.31	0.74	(3.67)	0.22	(0.10)	-	4.31	0.64	1.47
1/1/1953	1.98	1.22	(1.25)	0.49	(0.09)	-	1.98	0.73	0.96
2/1/1953	0.74	3.65	(0.30)	0.74	(0.09)	-	0.74	0.44	1.27
3/1/1953	0.60	4.11	(0.30)	0.92	(0.07)	-	0.60	0.30	1.36
1953	7.63	21.45	(5.48)	2.72	(0.46)	-	7.63	2.15	8.87
10/1/1953	7.84	84.99	(5.79)	9.73	(0.39)	-	7.84	2.06	29.79
11/1/1953	0.01	10.29	0.02	0.10	(0.05)	-	0.01	0.03	3.39
12/1/1953	0.56	5.67	(0.35)	0.10	(0.05)	-	0.56	0.21	1.91
1/1/1954	0.19	3.36	0.00	0.12	(0.05)	-	0.19	0.20	1.06
2/1/1954	2.41	1.97	(1.79)	0.28	(0.05)	-	2.41	0.62	1.27
3/1/1954	0.72	5.39	(0.35)	0.76	(0.04)	-	0.72	0.37	1.83
1954	3.90	26.67	(2.46)	1.37	(0.23)	-	3.90	1.43	9.46
10/1/1954	17.95	72.38	(13.68)	13.81	(0.25)	-	17.95	4.27	29.17
11/1/1954	-	10.94	0.06	1.55	(0.03)	-	-	0.06	3.47
12/1/1954	0.09	6.69	(0.05)	0.26	(0.03)	-	0.09	0.04	2.01
1/1/1955	0.29	3.74	(0.09)	0.12	(0.03)	-	0.29	0.20	1.30
2/1/1955	3.41	(0.55)	(2.55)	0.29	(0.02)	-	3.41	0.86	0.83
3/1/1955	0.28	4.13	0.01	0.72	(0.02)	-	0.28	0.29	1.29
1955	4.07	24.96	(2.62)	2.93	(0.13)	-	4.07	1.46	8.90
10/1/1955	9.49	78.46	(6.94)	9.54	(0.13)	-	9.49	2.57	28.52
11/1/1955	0.02	11.26	0.02	0.16	(0.02)	-	0.02	0.04	3.54
12/1/1955	0.96	4.37	(0.66)	0.12	(0.02)	-	0.96	0.31	1.72
1/1/1956	1.37	2.76	(1.01)	0.32	(0.02)	-	1.37	0.36	1.30
2/1/1956	2.62	1.57	(2.09)	0.38	(0.02)	-	2.62	0.52	1.38
3/1/1956	2.00	1.69	(1.19)	0.65	(0.02)	-	2.00	0.82	1.07
1956	6.97	21.65	(4.93)	1.63	(0.08)	-	6.97	2.06	9.01
10/1/1956	5.70	88.23	(3.50)	7.49	(0.10)	-	5.70	2.23	30.99
11/1/1956	0.53	8.98	(0.27)	0.06	(0.01)	-	0.53	0.26	3.03
12/1/1956	-	5.24	0.09	0.13	(0.01)	-	-	0.09	1.61
1/1/1957	0.47	3.35	(0.24)	0.10	(0.01)	-	0.47	0.23	1.13
2/1/1957	4.77	(1.85)	(4.06)	0.29	(0.01)	-	4.77	0.71	0.96
3/1/1957	0.73	4.69	(0.05)	1.02	(0.01)	-	0.73	0.69	1.51
1957	6.50	20.39	(4.53)	1.59	(0.06)	-	6.50	1.98	8.24
10/1/1957	8.71	78.15	(5.20)	8.29	(0.08)	-	8.71	3.51	28.90
11/1/1957	3.23	4.69	(2.37)	0.66	(0.01)	-	3.23	0.86	2.60
12/1/1957	0.61	3.62	(0.09)	0.47	(0.01)	-	0.61	0.53	1.36
1/1/1958	1.06	2.80	(0.55)	0.40	(0.01)	-	1.06	0.52	1.23
2/1/1958	0.01	4.25	0.07	0.48	(0.01)	-	0.01	0.09	1.22
3/1/1958	2.52	1.97	(1.83)	0.63	(0.01)	-	2.52	0.69	1.34
1958	7.43	17.32	(4.76)	2.64	(0.04)	-	7.43	2.68	7.74
10/1/1958	12.03	78.27	(7.49)	8.78	(0.04)	-	12.03	4.55	30.00
11/1/1958	1.92	7.64	(1.49)	1.41	(0.01)	-	1.92	0.43	3.06
12/1/1958	1.53	3.98	(1.16)	0.75	(0.01)	-	1.53	0.37	1.61
1/1/1959	-	4.76	0.08	0.55	(0.01)	-	-	0.08	1.56
2/1/1959	0.21	4.33	(0.04)	0.55	(0.01)	-	0.21	0.17	1.30
3/1/1959	1.42	2.76	(0.86)	0.60	(0.01)	-	1.42	0.56	1.23
1959	5.08	23.46	(3.47)	3.86	(0.03)	-	5.08	1.61	8.76
10/1/1959	10.77	82.76	(7.63)	8.24	(0.04)	-	10.77	3.16	31.12
11/1/1959	4.87	4.72	(4.48)	1.06	(0.01)	-	4.87	0.39	3.20
12/1/1959	0.38	4.84	0.13	0.95	(0.01)	-	0.38	0.51	1.62
1/1/1960	5.23	(2.05)	(4.51)	0.49	(0.01)	-	5.23	0.73	1.00
2/1/1960	4.16	(1.22)	(3.46)	0.49	(0.01)	-	4.16	0.71	0.85
3/1/1960	0.87	3.03	(0.34)	0.78	(0.01)	-	0.87	0.53	1.18
1960	15.52	9.33	(12.67)	3.77	(0.03)	-	15.52	2.87	7.86

Table III-D.4 ST 15 Winter Storm Period Water Balance

Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
10/1/1960	3.66	92.32	(1.76)	7.84	(0.19)	-	3.66	1.93	31.77
11/1/1960	2.05	6.46	(1.34)	0.45	(0.06)	-	2.05	0.72	2.80
12/1/1960	0.48	4.76	(0.18)	0.45	(0.05)	-	0.48	0.31	1.70
1/1/1961	0.47	3.23	(0.16)	0.27	(0.06)	-	0.47	0.30	1.25
2/1/1961	0.70	3.19	(0.32)	0.30	(0.05)	-	0.70	0.38	1.27
3/1/1961	0.23	4.92	0.02	0.43	(0.05)	-	0.23	0.25	1.46
1961	3.93	22.56	(1.98)	1.89	(0.26)	-	3.93	1.96	8.48
10/1/1961	6.02	83.07	(3.24)	3.84	(0.29)	-	6.02	2.79	29.75
11/1/1961	0.45	8.90	(0.30)	0.56	(0.03)	-	0.45	0.15	3.23
12/1/1961	0.32	3.90	0.02	0.10	(0.03)	-	0.32	0.34	1.27
1/1/1962	3.88	(0.87)	(3.20)	0.25	(0.03)	-	3.88	0.68	0.99
2/1/1962	3.21	(0.08)	(2.63)	0.50	(0.03)	-	3.21	0.58	0.93
3/1/1962	1.67	2.44	(0.99)	0.81	(0.03)	-	1.67	0.68	1.29
1962	9.52	14.29	(7.10)	2.21	(0.15)	-	9.52	2.44	7.71
10/1/1962	4.73	86.42	(2.41)	7.37	(0.16)	-	4.73	2.33	30.75
11/1/1962	0.87	8.31	(0.33)	0.44	(0.02)	-	0.87	0.54	2.98
12/1/1962	0.83	5.31	(0.53)	0.29	(0.02)	-	0.83	0.31	2.04
1/1/1963	1.81	2.01	(1.11)	0.20	(0.02)	-	1.81	0.70	1.37
2/1/1963	2.09	1.46	(1.50)	0.43	(0.02)	-	2.09	0.59	1.00
3/1/1963	4.22	0.83	(3.86)	0.95	(0.02)	-	4.22	0.37	1.61
1963	9.83	17.91	(7.32)	2.31	(0.08)	-	9.83	2.51	9.00
10/1/1963	13.66	75.08	(10.47)	11.30	(0.12)	-	13.66	3.22	29.66
11/1/1963	0.67	9.37	(0.42)	2.07	(0.02)	-	0.67	0.26	3.50
12/1/1963	2.34	2.52	(1.52)	0.58	(0.02)	-	2.34	0.83	1.61
1/1/1964	0.34	3.46	(0.04)	0.48	(0.02)	-	0.34	0.30	1.28
2/1/1964	0.58	2.91	(0.31)	0.47	(0.02)	-	0.58	0.27	1.02
3/1/1964	-	4.41	0.08	0.72	(0.02)	-	-	0.08	1.28
1964	3.93	22.68	(2.20)	4.32	(0.08)	-	3.93	1.74	8.69
10/1/1964	7.67	75.43	(3.78)	5.13	(0.13)	-	7.67	3.90	27.97
11/1/1964	1.54	8.98	(1.20)	0.85	(0.02)	-	1.54	0.33	3.51
12/1/1964	1.38	3.35	(0.94)	0.43	(0.02)	-	1.38	0.44	1.60
1/1/1965	1.57	1.65	(1.13)	0.30	(0.02)	-	1.57	0.45	1.21
2/1/1965	2.90	0.59	(2.16)	0.52	(0.02)	-	2.90	0.74	1.00
3/1/1965	2.83	1.61	(2.38)	0.90	(0.02)	-	2.83	0.45	1.23
1965	10.22	16.18	(7.81)	2.99	(0.08)	-	10.22	2.42	8.54
10/1/1965	7.38	77.09	(4.08)	9.18	(0.12)	-	7.38	3.32	28.31
11/1/1965	0.46	9.92	(0.27)	0.38	(0.02)	-	0.46	0.20	3.38
12/1/1965	2.35	3.27	(1.93)	0.18	(0.02)	-	2.35	0.44	2.08
1/1/1966	10.47	(7.87)	(9.53)	0.33	(0.02)	-	10.47	0.94	0.93
2/1/1966	1.83	1.34	(1.27)	0.52	(0.02)	-	1.83	0.56	0.95
3/1/1966	2.03	1.65	(1.38)	0.74	(0.02)	-	2.03	0.65	1.04
1966	17.15	8.31	(14.38)	2.15	(0.08)	-	17.15	2.79	8.38
10/1/1966	5.87	83.82	(3.82)	8.90	(2.06)	-	5.87	2.06	30.55
11/1/1966	1.36	7.44	(0.89)	1.45	(0.20)	-	1.36	0.46	2.86
12/1/1966	0.88	4.80	(0.58)	0.78	(0.15)	-	0.88	0.30	2.01
1/1/1967	1.25	2.13	(0.72)	0.39	(0.13)	-	1.25	0.54	1.22
2/1/1967	0.79	2.87	(0.44)	0.47	(0.12)	-	0.79	0.35	0.96
3/1/1967	-	4.69	0.09	0.67	(0.10)	-	-	0.10	1.54
1967	4.28	21.93	(2.54)	3.75	(0.71)	-	4.28	1.75	8.58
10/1/1967	10.25	73.46	(7.22)	9.21	(0.53)	-	10.25	3.04	28.34
11/1/1967	0.42	9.29	(0.20)	0.50	(0.05)	-	0.42	0.22	3.39
12/1/1967	2.11	3.50	(1.65)	0.10	(0.05)	-	2.11	0.47	2.04
1/1/1968	10.06	(7.48)	(9.41)	0.30	(0.04)	-	10.06	0.66	0.80
2/1/1968	0.63	3.27	(0.25)	0.65	(0.04)	-	0.63	0.38	1.18
3/1/1968	2.11	2.87	(1.51)	1.02	(0.06)	-	2.11	0.61	1.44
1968	15.32	11.46	(13.02)	2.56	(0.25)	-	15.32	2.35	8.85
10/1/1968	7.23	75.28	(4.73)	10.43	(2.07)	-	7.23	2.59	28.53
11/1/1968	0.39	8.86	(0.20)	0.38	(0.20)	-	0.39	0.21	2.90
12/1/1968	2.54	2.24	(1.95)	0.34	(0.15)	-	2.54	0.59	1.81
1/1/1969	3.30	(0.35)	(2.71)	0.32	(0.14)	-	3.30	0.60	1.04
2/1/1969	4.16	(0.94)	(3.41)	0.53	(0.12)	-	4.16	0.76	0.96
3/1/1969	1.35	2.32	(0.56)	0.74	(0.10)	-	1.35	0.81	1.04
1969	11.75	12.13	(8.83)	2.31	(0.71)	-	11.75	2.97	7.75

Table III-D.4 ST 15 Winter Storm Period Water Balance

Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
10/1/1969	7.04	81.81	(4.53)	10.15	(0.85)	-	7.04	2.61	30.43
11/1/1969	0.83	7.76	(0.54)	0.65	(0.11)	-	0.83	0.31	3.11
12/1/1969	2.12	2.56	(1.41)	0.35	(0.10)	-	2.12	0.72	1.64
1/1/1970	1.32	2.20	(0.70)	0.35	(0.09)	-	1.32	0.63	1.32
2/1/1970	0.50	2.87	(0.06)	0.39	(0.09)	-	0.50	0.44	0.94
3/1/1970	0.40	4.57	(0.02)	0.70	(0.07)	-	0.40	0.38	1.48
1970	5.17	19.96	(2.73)	2.44	(0.46)	-	5.17	2.49	8.49
10/1/1970	10.90	74.69	(7.91)	7.97	(0.37)	-	10.90	3.08	30.04
11/1/1970	-	8.43	0.00	1.37	(0.05)	-	-	0.01	2.87
12/1/1970	0.65	4.72	(0.54)	0.43	(0.04)	-	0.65	0.11	1.96
1/1/1971	1.21	1.89	(0.56)	0.19	(0.03)	-	1.21	0.65	1.09
2/1/1971	0.85	3.15	(0.53)	0.39	(0.03)	-	0.85	0.32	1.08
3/1/1971	0.82	3.74	(0.46)	0.50	(0.03)	-	0.82	0.39	1.55
1971	3.53	21.93	(2.08)	2.87	(0.18)	-	3.53	1.48	8.55
10/1/1971	9.12	76.46	(6.67)	5.15	(0.19)	-	9.12	2.52	29.41
11/1/1971	4.22	3.15	(3.25)	1.57	(0.02)	-	4.22	0.97	2.80
12/1/1971	0.04	4.84	0.09	0.91	(0.02)	-	0.04	0.13	1.64
1/1/1972	2.12	0.75	(1.33)	0.44	(0.02)	-	2.12	0.80	0.99
2/1/1972	-	4.06	0.15	0.68	(0.02)	-	-	0.15	1.25
3/1/1972	-	5.63	0.01	1.11	(0.02)	-	-	0.04	1.56
1972	6.38	18.43	(4.33)	4.70	(0.11)	-	6.38	2.09	8.23
10/1/1972	4.93	87.52	(2.99)	5.52	(0.09)	-	4.93	2.01	32.29
11/1/1972	8.96	(1.73)	(7.69)	1.00	(0.01)	-	8.96	1.27	2.78
12/1/1972	2.83	0.71	(2.03)	0.65	(0.01)	-	2.83	0.81	1.35
1/1/1973	2.98	(0.12)	(2.33)	0.44	(0.01)	-	2.98	0.65	0.98
2/1/1973	0.74	2.13	0.03	0.48	(0.01)	-	0.74	0.77	0.87
3/1/1973	3.17	0.31	(2.21)	0.71	(0.01)	-	3.17	0.96	0.94
1973	18.67	1.30	(14.23)	3.27	(0.06)	-	18.67	4.46	6.92
10/1/1973	12.30	72.09	(8.34)	12.83	(1.60)	-	12.30	4.01	29.00
11/1/1973	-	8.66	-	0.18	(0.24)	-	-	0.00	3.27
12/1/1973	1.77	3.35	(1.19)	0.15	(0.19)	-	1.77	0.59	1.88
1/1/1974	0.08	3.54	0.09	0.28	(0.16)	-	0.08	0.17	1.16
2/1/1974	3.39	(0.28)	(2.59)	0.46	(0.14)	-	3.39	0.81	1.02
3/1/1974	0.16	3.86	0.04	0.81	(0.11)	-	0.16	0.19	1.10
1974	5.39	19.13	(3.65)	1.87	(0.84)	-	5.39	1.77	8.42
10/1/1974	10.47	71.73	(7.06)	8.67	(0.60)	-	10.47	3.46	28.42
11/1/1974	3.39	4.84	(2.63)	1.13	(0.05)	-	3.39	0.77	3.10
12/1/1974	0.12	5.04	0.26	0.74	(0.05)	-	0.12	0.38	1.70
1/1/1975	0.75	2.24	(0.36)	0.41	(0.05)	-	0.75	0.41	1.18
2/1/1975	0.43	2.40	(0.11)	0.42	(0.05)	-	0.43	0.30	0.88
3/1/1975	3.94	0.16	(3.31)	0.79	(0.04)	-	3.94	0.64	1.04
1975	8.62	14.69	(6.15)	3.48	(0.24)	-	8.62	2.50	7.90
10/1/1975	10.47	68.94	(6.26)	10.41	(0.25)	-	10.47	4.28	27.54
11/1/1975	0.28	8.35	(0.08)	0.22	(0.03)	-	0.28	0.19	3.43
12/1/1975	2.13	2.99	(1.96)	0.07	(0.03)	-	2.13	0.20	2.12
1/1/1976	1.26	2.09	(0.58)	0.31	(0.03)	-	1.26	0.68	1.14
2/1/1976	0.24	2.83	0.04	0.36	(0.03)	-	0.24	0.27	0.98
3/1/1976	1.61	2.60	(0.93)	0.65	(0.03)	-	1.61	0.68	1.13
1976	5.51	18.86	(3.51)	1.61	(0.16)	-	5.51	2.01	8.80
10/1/1976	10.98	71.26	(7.78)	7.52	(0.15)	-	10.98	3.29	29.04
11/1/1976	0.91	6.34	(0.48)	1.22	(0.02)	-	0.91	0.43	2.68
12/1/1976	0.55	4.61	(0.21)	0.73	(0.02)	-	0.55	0.34	1.80
1/1/1977	1.81	1.34	(1.52)	0.38	(0.02)	-	1.81	0.30	1.15
2/1/1977	1.89	0.67	(0.98)	0.36	(0.02)	-	1.89	0.93	0.77
3/1/1977	0.08	5.16	0.04	0.98	(0.02)	-	0.08	0.14	1.64
1977	5.24	18.11	(3.15)	3.67	(0.10)	-	5.24	2.14	8.04
10/1/1977	11.18	72.60	(7.95)	8.07	(0.09)	-	11.18	3.29	29.75
11/1/1977	1.30	7.76	(0.85)	1.43	(0.01)	-	1.30	0.49	3.39
12/1/1977	0.35	5.08	(0.04)	0.68	(0.01)	-	0.35	0.32	1.96
1/1/1978	0.67	3.03	(0.44)	0.37	(0.01)	-	0.67	0.24	1.41
2/1/1978	6.38	(3.78)	(5.63)	0.35	(0.01)	-	6.38	0.77	0.82
3/1/1978	5.47	(2.24)	(4.48)	0.65	(0.01)	-	5.47	1.00	0.95
1978	14.17	9.84	(11.43)	3.49	(0.06)	-	14.17	2.82	8.53

Table III-D.4 ST 15 Winter Storm Period Water Balance

Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
10/1/1978	9.76	74.09	(6.54)	10.81	(1.05)	-	9.76	3.34	29.77
11/1/1978	1.93	7.52	(1.46)	0.37	(0.18)	-	1.93	0.47	4.04
12/1/1978	5.63	(1.54)	(4.88)	0.55	(0.14)	-	5.63	0.74	1.63
1/1/1979	6.54	(3.70)	(5.81)	0.44	(0.13)	-	6.54	0.76	0.93
2/1/1979	6.02	(4.13)	(4.81)	0.31	(0.14)	-	6.02	1.21	0.71
3/1/1979	1.26	3.23	(0.72)	0.91	(1.10)	-	1.26	0.53	1.27
1979	21.38	1.38	(17.69)	2.57	(1.70)	-	21.38	3.72	8.59
10/1/1979	8.27	75.75	(4.95)	10.49	(6.79)	-	8.27	3.44	29.94
11/1/1979	0.67	9.02	(0.46)	0.31	(0.28)	-	0.67	0.22	3.81
12/1/1979	0.71	3.82	(0.26)	0.26	(0.22)	-	0.71	0.43	1.80
1/1/1980	0.67	3.15	(0.39)	0.21	(0.19)	-	0.67	0.34	1.40
2/1/1980	4.13	(1.46)	(3.22)	0.26	(0.15)	-	4.13	0.89	0.94
3/1/1980	6.02	(2.01)	(5.42)	0.80	(0.12)	-	6.02	0.63	1.00
1980	12.20	12.52	(9.74)	1.83	(0.97)	-	12.20	2.51	8.95
10/1/1980	8.11	73.54	(4.59)	10.30	(1.69)	-	8.11	3.63	29.27
11/1/1980	0.04	9.13	(0.01)	0.24	(0.20)	-	0.04	0.04	3.67
12/1/1980	-	5.35	-	0.08	(0.16)	-	-	-	2.08
1/1/1981	0.55	3.86	(0.27)	0.14	(0.13)	-	0.55	0.31	1.38
2/1/1981	1.34	2.36	(0.96)	0.24	(0.12)	-	1.34	0.38	1.43
3/1/1981	2.60	2.20	(2.09)	0.70	(0.10)	-	2.60	0.50	1.43
1981	4.53	22.91	(3.33)	1.41	(0.72)	-	4.53	1.23	10.00
10/1/1981	10.71	74.17	(7.59)	10.45	(0.54)	-	10.71	3.23	30.81
11/1/1981	0.98	6.77	(0.48)	0.48	(0.04)	-	0.98	0.50	3.07
12/1/1981	2.32	3.46	(2.20)	0.25	(0.04)	-	2.32	0.13	2.27
1/1/1982	-	3.90	0.23	0.38	(0.04)	-	-	0.23	1.37
2/1/1982	2.72	0.39	(1.72)	0.37	(0.04)	-	2.72	1.02	0.96
3/1/1982	1.81	2.24	(1.00)	0.74	(0.04)	-	1.81	0.81	1.14
1982	7.83	16.77	(5.18)	2.23	(0.22)	-	7.83	2.70	8.81
10/1/1982	15.75	60.83	(10.77)	11.81	(0.24)	-	15.75	5.04	27.78
11/1/1982	-	8.43	0.04	1.72	(0.02)	-	-	0.05	3.10
12/1/1982	3.31	0.55	(2.60)	0.60	(0.02)	-	3.31	0.71	1.75
1/1/1983	1.69	1.02	(0.87)	0.36	(0.02)	-	1.69	0.87	1.04
2/1/1983	1.89	1.69	(1.57)	0.55	(0.02)	-	1.89	0.35	1.14
3/1/1983	2.32	1.65	(1.89)	0.80	(0.02)	-	2.32	0.47	1.04
1983	9.21	13.35	(6.89)	4.04	(0.12)	-	9.21	2.44	8.07
10/1/1983	18.23	59.17	(13.31)	11.83	(0.17)	-	18.23	5.07	27.94
11/1/1983	1.14	6.46	(0.59)	1.65	(0.04)	-	1.14	0.60	2.89
12/1/1983	2.05	2.64	(1.57)	0.87	(0.04)	-	2.05	0.51	1.87
1/1/1984	2.48	0.35	(1.93)	0.43	(0.04)	-	2.48	0.55	1.00
2/1/1984	0.47	3.07	(0.08)	0.59	(0.04)	-	0.47	0.44	0.98
3/1/1984	-	4.76	-	0.94	(0.04)	-	-	0.06	1.53
1984	6.14	17.28	(4.17)	4.49	(0.22)	-	6.14	2.16	8.27
10/1/1984	11.65	67.24	(6.69)	9.25	(0.31)	-	11.65	5.16	29.05
11/1/1984	1.38	5.47	(0.71)	0.87	(0.04)	-	1.38	0.69	2.68
12/1/1984	2.09	2.20	(1.81)	0.43	(0.04)	-	2.09	0.30	1.84
1/1/1985	5.83	(3.39)	(5.00)	0.31	(0.04)	-	5.83	0.87	0.90
2/1/1985	2.72	(0.31)	(1.89)	0.35	(0.04)	-	2.72	0.81	0.80
3/1/1985	1.65	1.54	(1.02)	0.67	(0.04)	-	1.65	0.65	0.94
1985	13.66	5.51	(10.43)	2.64	(0.21)	-	13.66	3.32	7.17
10/1/1985	9.17	63.35	(5.59)	9.02	(0.69)	-	9.17	3.80	26.87
11/1/1985	1.26	5.51	(0.51)	1.06	(0.12)	-	1.26	0.73	2.40
12/1/1985	2.76	0.98	(2.24)	0.51	(0.11)	-	2.76	0.53	1.90
1/1/1986	0.87	2.60	(0.31)	0.51	(0.09)	-	0.87	0.61	1.10
2/1/1986	0.12	4.29	(0.08)	0.75	(0.09)	-	0.12	0.08	1.51
3/1/1986	3.07	0.83	(2.20)	0.79	(0.08)	-	3.07	0.87	1.18
1986	8.07	14.21	(5.35)	3.62	(0.50)	-	8.07	2.83	8.09
10/1/1986	13.27	64.84	(9.29)	11.54	(0.40)	-	13.27	4.18	29.52
11/1/1986	1.73	5.47	(1.34)	1.02	(0.05)	-	1.73	0.45	2.44
12/1/1986	1.42	2.52	(0.71)	0.51	(0.05)	-	1.42	0.70	1.76
1/1/1987	3.03	(0.08)	(2.28)	0.43	(0.05)	-	3.03	0.75	1.13
2/1/1987	3.35	(0.12)	(2.56)	0.55	(0.05)	-	3.35	0.78	0.98
3/1/1987	2.68	0.83	(2.05)	0.67	(0.04)	-	2.68	0.62	1.41
1987	12.20	8.62	(8.94)	3.19	(0.24)	-	12.20	3.31	7.71
10/1/1987	7.91	68.50	(5.35)	10.43	(0.34)	-	7.91	2.74	28.29
11/1/1987	0.31	8.58	(0.16)	0.98	(0.06)	-	0.31	0.22	3.69
12/1/1987	1.77	2.40	(1.18)	0.31	(0.06)	-	1.77	0.57	1.83
1/1/1988	4.02	(1.18)	(3.15)	0.28	(0.05)	-	4.02	0.89	1.17
2/1/1988	3.58	(1.26)	(2.95)	0.39	(0.05)	-	3.58	0.63	0.76
3/1/1988	0.75	4.09	(0.43)	0.98	(0.05)	-	0.75	0.33	1.24
1988	10.43	12.64	(7.87)	2.95	(0.27)	-	10.43	2.65	8.69

Table III-D.4 ST 15 Winter Storm Period Water Balance

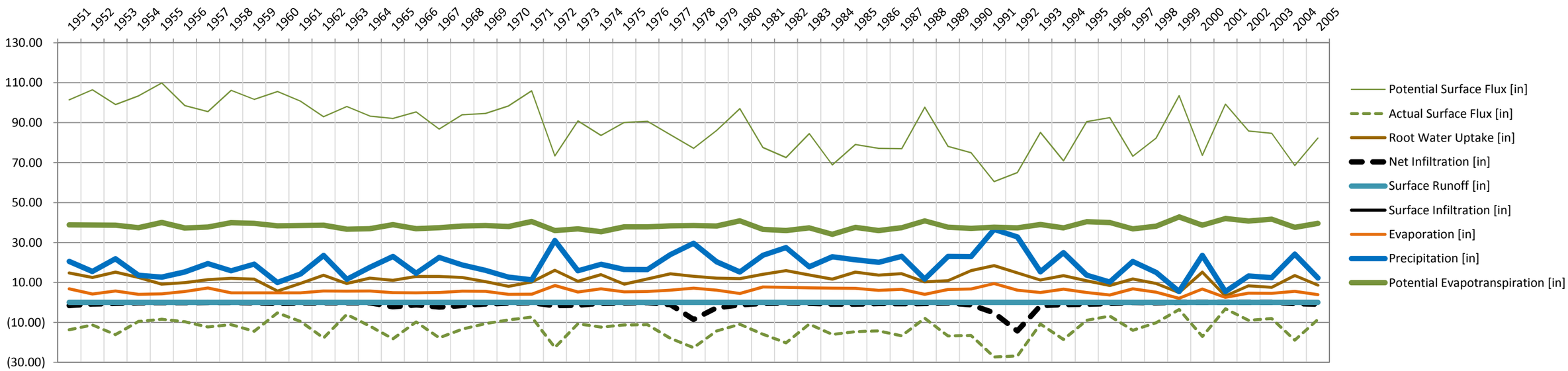
Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
10/1/1988	12.64	64.37	(8.86)	11.46	(0.39)	-	12.64	3.93	28.69
11/1/1988	1.50	7.32	(1.02)	1.81	(0.07)	-	1.50	0.47	3.45
12/1/1988	1.73	2.95	(1.38)	0.67	(0.06)	-	1.73	0.38	2.12
1/1/1989	1.10	1.77	(0.51)	0.35	(0.06)	-	1.10	0.62	1.10
2/1/1989	2.20	0.83	(1.57)	0.47	(0.05)	-	2.20	0.64	0.89
3/1/1989	0.31	4.37	(0.04)	0.94	(0.04)	-	0.31	0.29	1.16
1989	6.85	17.24	(4.53)	4.25	(0.27)	-	6.85	2.40	8.72
10/1/1989	4.88	80.47	(3.39)	6.06	(0.31)	-	4.88	1.62	32.08
11/1/1989	1.06	6.77	(0.59)	0.59	(0.04)	-	1.06	0.53	3.57
12/1/1989	0.31	4.92	(0.16)	0.24	(0.04)	-	0.31	0.15	2.06
1/1/1990	0.87	2.36	(0.67)	0.12	(0.02)	-	0.87	0.21	1.21
2/1/1990	1.26	1.61	(0.63)	0.20	(0.02)	-	1.26	0.65	1.04
3/1/1990	2.56	0.98	(1.61)	0.51	(0.02)	-	2.56	0.95	0.96
1990	6.06	16.65	(3.66)	1.65	(0.14)	-	6.06	2.48	8.85
10/1/1990	16.97	61.54	(13.15)	9.21	(0.17)	0.00	16.97	4.01	28.78
11/1/1990	0.24	7.83	(0.08)	1.77	(0.02)	-	0.24	0.22	3.23
12/1/1990	2.20	2.40	(1.30)	0.83	(0.02)	-	2.20	0.87	2.20
1/1/1991	4.80	(2.28)	(4.02)	0.39	(0.02)	-	4.80	0.81	1.16
2/1/1991	1.81	1.06	(1.30)	0.47	(0.02)	-	1.81	0.50	0.89
3/1/1991	0.94	3.78	(0.47)	0.94	(0.02)	-	0.94	0.50	1.35
1991	10.00	12.80	(7.17)	4.41	(0.11)	-	10.00	2.91	8.82
10/1/1991	12.95	62.20	(9.37)	11.54	(1.03)	-	12.95	3.77	28.26
11/1/1991	1.22	8.03	(0.94)	1.14	(0.18)	-	1.22	0.28	3.99
12/1/1991	3.23	0.75	(2.68)	0.43	(0.15)	-	3.23	0.54	1.66
1/1/1992	4.02	(1.61)	(3.07)	0.35	(0.13)	-	4.02	0.93	1.07
2/1/1992	2.99	(0.20)	(2.01)	0.47	(0.12)	-	2.99	1.01	0.75
3/1/1992	2.76	1.06	(2.01)	0.75	(0.11)	-	2.76	0.76	1.13
1992	14.21	8.03	(10.71)	3.15	(0.68)	-	14.21	3.52	8.60
10/1/1992	22.36	52.48	(16.61)	15.28	(4.61)	-	22.36	5.91	29.06
11/1/1992	1.22	7.28	(0.87)	1.65	(0.31)	-	1.22	0.36	3.90
12/1/1992	0.51	3.23	(0.16)	0.47	(0.26)	-	0.51	0.35	1.68
1/1/1993	6.34	(4.06)	(5.39)	0.35	(0.23)	-	6.34	0.95	0.78
2/1/1993	11.26	(8.86)	(10.43)	0.35	(0.28)	-	11.26	0.87	0.67
3/1/1993	6.02	(3.39)	(5.00)	0.55	(3.52)	-	6.02	1.02	1.04
1993	25.35	(5.79)	(21.85)	3.39	(4.59)	-	25.35	3.56	8.07
10/1/1993	7.44	70.79	(4.96)	11.42	(9.72)	-	7.44	2.58	29.14
11/1/1993	0.79	7.13	(0.39)	0.75	(0.28)	-	0.79	0.45	3.67
12/1/1993	4.17	(0.43)	(3.82)	0.39	(0.22)	-	4.17	0.37	1.76
1/1/1994	0.31	2.76	(0.08)	0.47	(0.19)	-	0.31	0.26	1.29
2/1/1994	0.24	3.39	(0.08)	0.63	(0.15)	-	0.24	0.19	1.22
3/1/1994	2.64	0.71	(2.01)	0.67	(0.12)	-	2.64	0.60	1.10
1994	8.15	13.54	(6.38)	2.91	(0.96)	-	8.15	1.86	9.05
10/1/1994	7.20	71.57	(4.37)	8.35	(0.68)	-	7.20	3.08	29.94
11/1/1994	1.85	5.51	(1.50)	0.79	(0.08)	-	1.85	0.36	3.25
12/1/1994	3.39	-	(2.52)	0.43	(0.05)	-	3.39	0.85	1.76
1/1/1995	2.68	-	(2.01)	0.43	(0.05)	-	2.68	0.66	1.10
2/1/1995	3.66	(0.79)	(2.80)	0.43	(0.05)	-	3.66	0.87	0.86
3/1/1995	2.68	1.57	(2.17)	0.87	(0.04)	-	2.68	0.57	1.22
1995	14.25	6.30	(10.98)	2.95	(0.27)	-	14.25	3.30	8.20
10/1/1995	10.67	64.57	(7.56)	10.43	(0.83)	0.00	10.67	3.29	29.13
11/1/1995	-	9.06	0.08	1.46	(0.14)	-	-	0.10	3.61
12/1/1995	1.34	3.54	(0.91)	0.63	(0.13)	-	1.34	0.44	2.00
1/1/1996	0.87	2.36	(0.63)	0.39	(0.12)	-	0.87	0.27	1.52
2/1/1996	0.04	3.54	0.04	0.47	(0.09)	-	0.04	0.09	1.28
3/1/1996	3.15	1.18	(2.64)	0.75	(0.08)	-	3.15	0.57	1.45
1996	5.39	19.69	(4.06)	3.70	(0.57)	-	5.39	1.47	9.86
10/1/1996	8.23	70.87	(4.88)	7.09	(0.45)	-	8.23	3.45	30.57
11/1/1996	0.39	7.48	(0.20)	1.06	(0.05)	-	0.39	0.26	3.85
12/1/1996	1.26	3.15	(0.94)	0.43	(0.05)	-	1.26	0.31	1.67
1/1/1997	-	3.15	0.20	0.28	(0.05)	-	-	0.26	1.24
2/1/1997	2.83	-	(2.13)	0.28	(0.05)	-	2.83	0.72	1.02
3/1/1997	1.65	2.36	(1.34)	0.59	(0.04)	-	1.65	0.33	1.27
1997	6.14	16.14	(4.41)	2.64	(0.23)	-	6.14	1.88	9.04
10/1/1997	4.09	76.38	(2.44)	5.79	(0.28)	-	4.09	1.80	30.90
11/1/1997	0.75	6.30	(0.47)	0.12	(0.04)	-	0.75	0.29	3.74
12/1/1997	0.79	3.94	(0.43)	0.16	(0.02)	-	0.79	0.38	1.79
1/1/1998	2.72	(0.39)	(1.85)	0.20	-	-	2.72	0.86	1.21
2/1/1998	0.35	3.15	-	0.35	-	-	0.35	0.40	0.93
3/1/1998	6.42	(3.94)	(5.28)	0.47	-	-	6.42	1.12	1.05
1998	11.02	9.06	(8.03)	1.30	(0.06)	-	11.02	3.05	8.73

Table III-D.4 ST 15 Winter Storm Period Water Balance

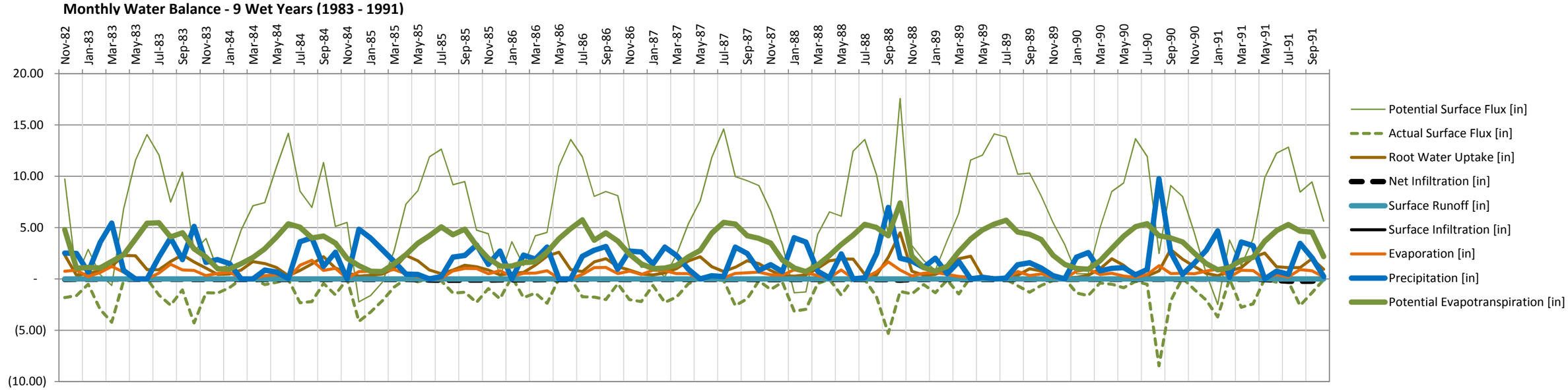
Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
10/1/1998	9.49	64.17	(5.94)	10.39	-	-	9.49	3.71	28.12
11/1/1998	-	7.87	-	0.51	-	-	-	0.00	3.85
12/1/1998	1.06	3.54	(0.91)	0.04	-	-	1.06	0.18	1.81
1/1/1999	0.75	1.97	(0.16)	0.20	(0.02)	-	0.75	0.59	1.30
2/1/1999	0.04	3.94	-	0.28	(0.04)	-	0.04	0.07	1.38
3/1/1999	0.20	4.33	(0.12)	0.43	(0.04)	-	0.20	0.13	1.38
1999	2.05	21.65	(1.18)	1.46	(0.10)	-	2.05	0.98	9.71
10/1/1999	12.99	60.63	(8.98)	7.99	(0.12)	-	12.99	4.12	28.42
11/1/1999	-	9.06	-	1.26	-	-	-	0.01	3.82
12/1/1999	-	6.30	-	0.20	-	-	-	-	2.67
1/1/2000	0.04	3.54	(0.04)	-	-	-	0.04	0.00	1.49
2/1/2000	0.28	3.54	(0.16)	0.08	-	-	0.28	0.15	1.32
3/1/2000	0.71	3.94	(0.31)	0.08	-	-	0.71	0.37	1.69
2000	1.02	26.38	(0.51)	1.61	-	-	1.02	0.54	11.00
9/30/2000	4.45	76.77	(3.07)	3.31	-	-	4.45	1.51	31.65
11/1/2000	5.31	1.57	(4.37)	0.28	-	-	5.31	0.94	3.82
12/1/2000	2.13	0.79	(1.46)	0.47	-	-	2.13	0.67	1.12
1/1/2001	0.08	3.15	(0.04)	0.55	-	-	0.08	0.14	1.48
2/1/2001	3.39	(0.79)	(2.52)	0.39	-	-	3.39	0.87	1.09
3/1/2001	1.73	1.57	(0.94)	0.71	-	-	1.73	0.78	1.01
2001	12.64	6.30	(9.33)	2.40	-	-	12.64	3.40	8.52
9/30/2001	10.87	67.32	(7.72)	12.76	-	-	10.87	3.27	30.06
11/1/2001	0.35	8.27	(0.20)	0.39	-	-	0.35	0.20	3.82
12/1/2001	0.28	4.33	(0.16)	0.12	-	-	0.28	0.18	2.65
1/1/2002	1.85	0.79	(1.26)	0.12	-	-	1.85	0.57	1.07
2/1/2002	0.24	3.15	(0.12)	0.31	-	-	0.24	0.15	1.22
3/1/2002	-	4.72	0.04	0.47	-	-	-	0.08	1.25
2002	2.72	21.26	(1.69)	1.42	-	-	2.72	1.18	10.00
9/30/2002	2.72	77.95	(1.50)	1.81	-	-	2.72	1.37	32.03
11/1/2002	0.12	7.87	(0.04)	0.28	-	-	0.12	0.07	3.90
12/1/2002	0.83	3.94	(0.71)	0.04	-	-	0.83	0.17	2.19
1/1/2003	0.98	1.57	(0.39)	0.12	-	-	0.98	0.62	1.34
2/1/2003	0.39	3.94	(0.04)	0.24	-	-	0.39	0.35	1.19
3/1/2003	4.92	(1.18)	(4.41)	0.35	-	-	4.92	0.54	1.50
2003	7.24	16.14	(5.59)	1.02	-	-	7.24	1.76	10.12
9/30/2003	6.02	69.69	(3.31)	7.20	-	-	6.02	2.86	30.64
11/1/2003	0.08	9.06	-	0.63	-	-	0.08	0.10	4.07
12/1/2003	0.87	2.76	(0.63)	0.12	-	-	0.87	0.29	2.31
1/1/2004	0.98	1.97	(0.55)	0.12	-	-	0.98	0.44	1.52
2/1/2004	1.46	1.18	(0.87)	0.16	-	-	1.46	0.61	1.21
3/1/2004	0.67	2.76	(0.24)	0.35	-	-	0.67	0.49	1.06
2004	4.06	17.72	(2.28)	1.38	-	-	4.06	1.92	10.16
9/30/2004	8.35	67.32	(5.83)	6.18	-	-	8.35	2.64	31.52
11/1/2004	1.18	5.51	(0.79)	0.59	-	-	1.18	0.44	3.66
12/1/2004	0.67	2.36	(0.28)	0.20	-	-	0.67	0.39	1.48
1/1/2005	2.76	(0.39)	(2.24)	0.24	-	-	2.76	0.55	1.02
2/1/2005	4.21	(1.57)	(3.58)	0.43	-	-	4.21	0.65	1.02
3/1/2005	7.32	(4.72)	(6.30)	0.47	-	-	7.32	1.04	0.94
2005	16.14	1.18	(13.19)	1.93	-	-	16.14	3.07	8.12
9/30/2005	8.07	66.93	(5.67)	11.50	(0.54)	-	8.07	2.49	29.40
11/1/2005	0.39	7.48	(0.28)	0.71	(0.14)	-	0.39	0.17	3.96
12/1/2005	-	4.72	-	0.20	(0.13)	-	-	0.00	2.27
1/1/2006	-	3.94	-	0.04	(0.12)	-	-	0.00	1.53
2/1/2006	-	3.54	-	0.08	(0.09)	-	-	-	1.56
3/1/2006	0.12	4.33	(0.08)	0.12	(0.08)	-	0.12	0.07	1.67
2006	0.51	24.02	(0.35)	1.14	(0.56)	-	0.51	0.25	10.98
9/30/2006	11.73	58.66	(8.19)	7.48	(0.46)	-	11.73	3.64	28.65

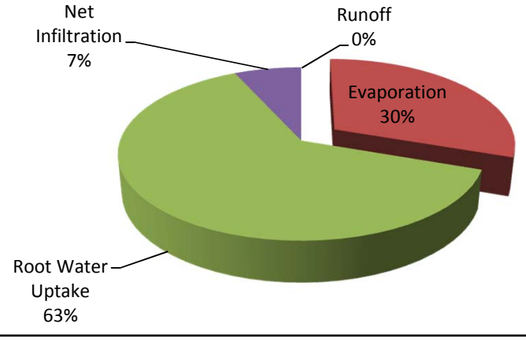
04-ST15 - 2.5m Scavenger Beach_0.5m Mixed Cover w Veg.xlsx

Annual Water Balance - 56-Year Simulated Period (Results on October 1)



Monthly Water Balance - 9 Wet Years (1983 - 1991)





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Klohn Crippen Berger

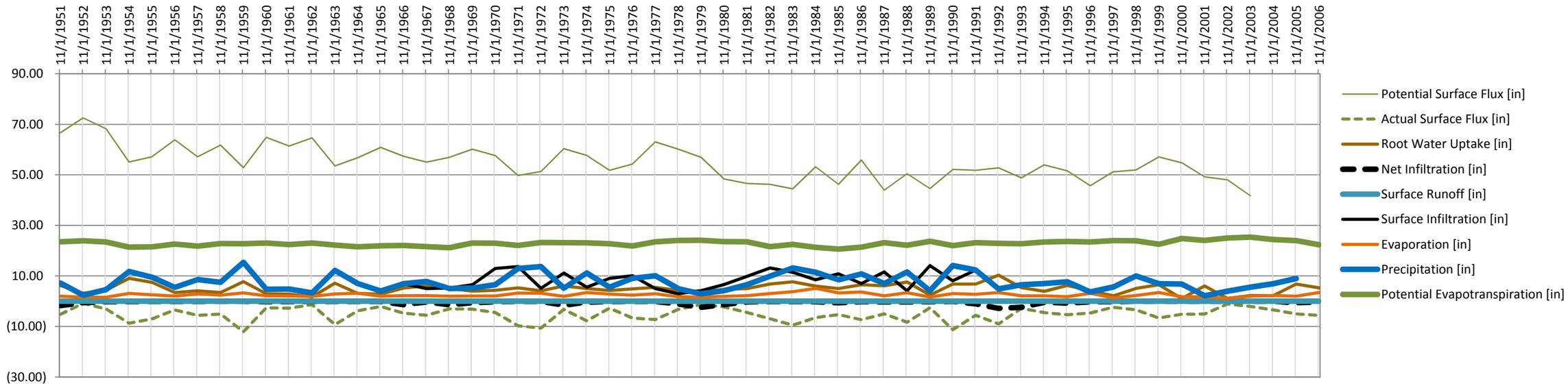
PROJECT: RESOLUTION PROJECT
NEAR WEST TAILINGS STORAGE FACILITY CLOSURE
COVER STUDY - CLOSURE COVER PREDICTIONS

TITLE: ST15 - 8.2 ft Beach / 1.6 ft 25% / 75% Lab Composite / Veg
Water Balance Results

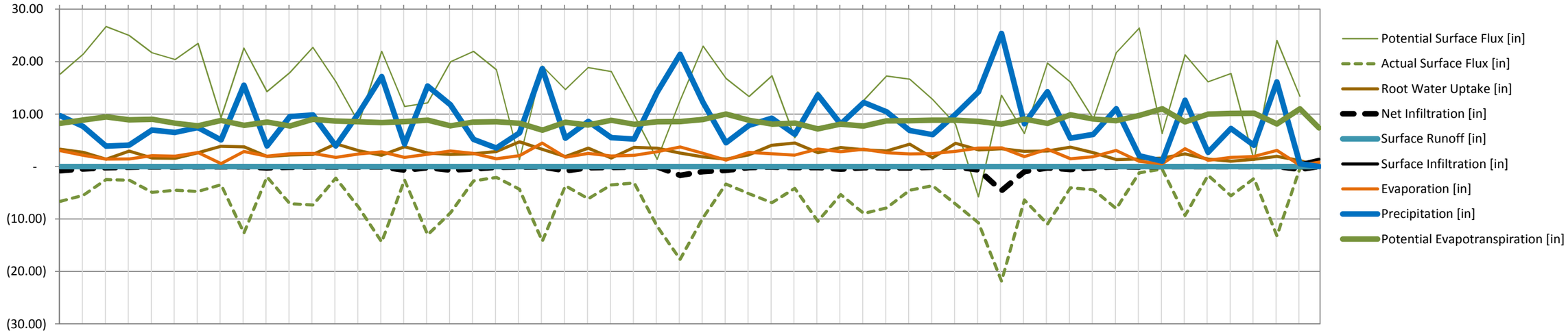
PROJECT No. M09441A16

FIG. No. III-D.1

Monsoon Season Water Balance - 56-Year Simulated Period (July-November)



Winter Storm Season Water Balance - 56-Year Simulated Period (November-March)



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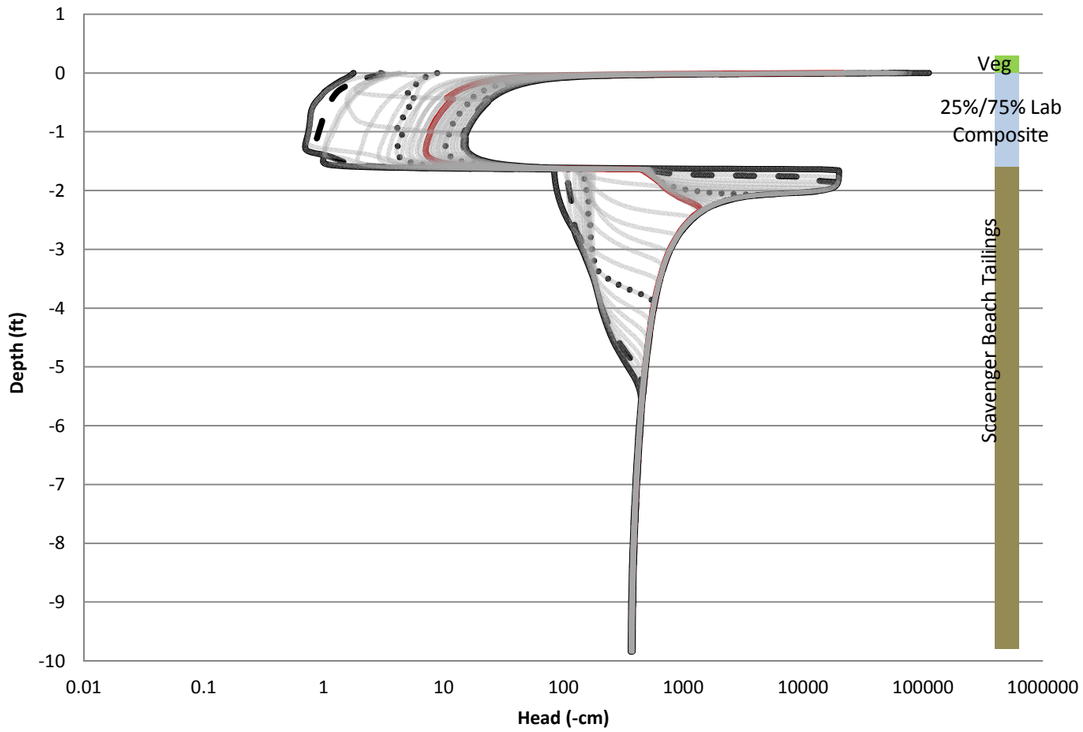
NEAR WEST TAILINGS STORAGE FACILITY CLOSURE COVER STUDY - CLOSURE COVER PREDICTIONS

TITLE
ST15 - 8.2 ft Beach / 1.6 ft 25% / 75% Lab Composite / Veg
Water Balance Results

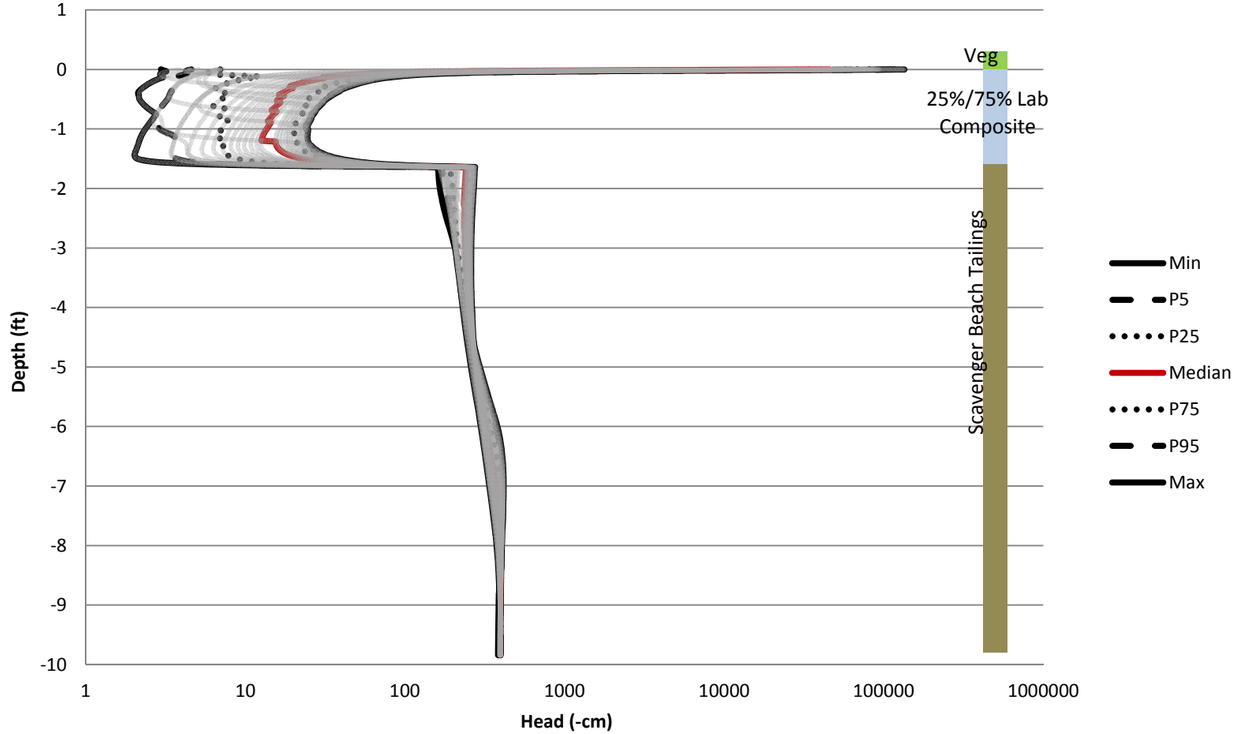
PROJECT No. M09441A16

FIG. No. III-D.2

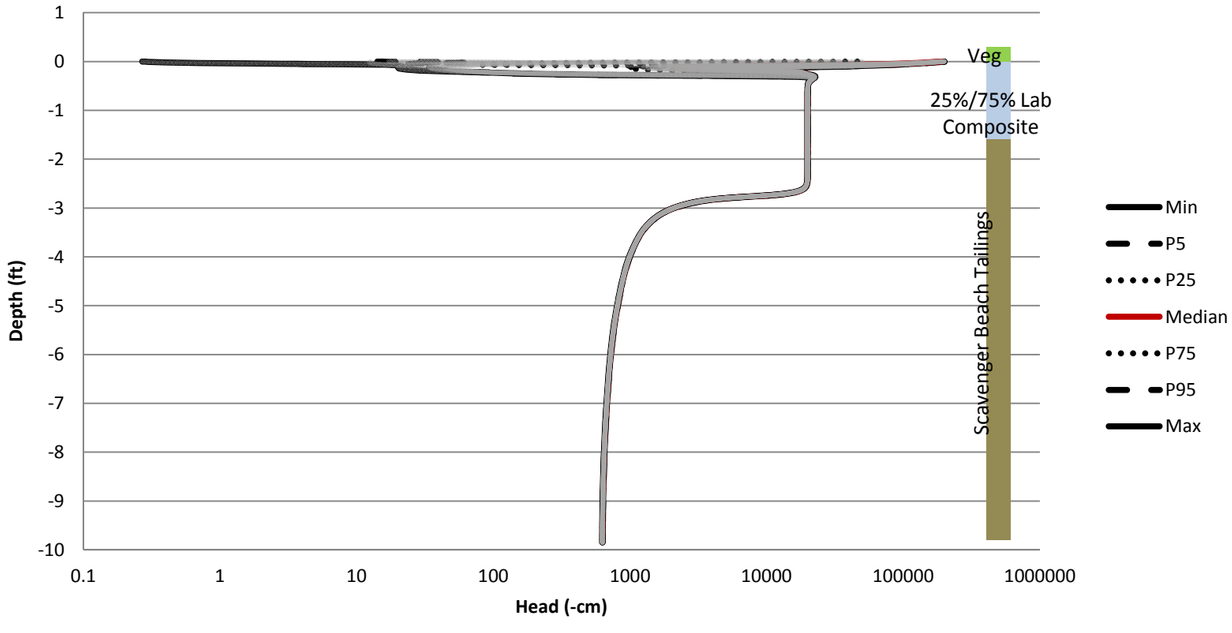
February Average Year (1980) - Daily Suction Head



February Wet Year (1992) - Daily Suction Head



February Dry Year (2000) - Daily Suction Head



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COVER STUDY - CLOSURE COVER PREDICTIONS

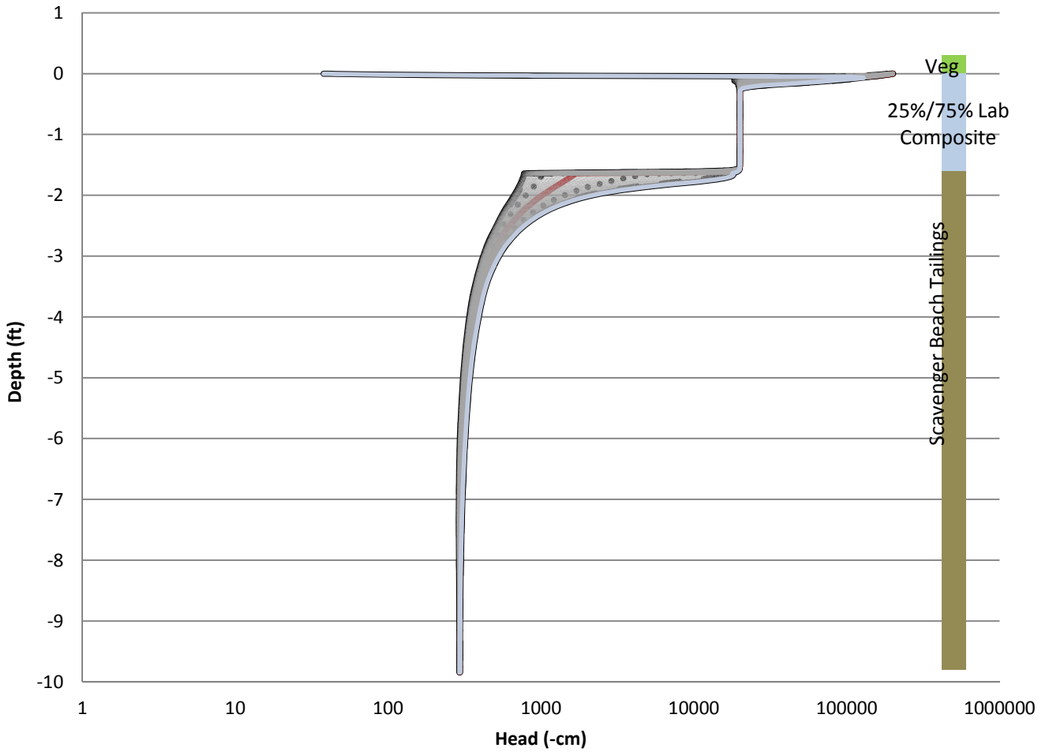
TITLE

ST15 - 8.2 ft Beach / 1.6 ft 25% / 75% Lab Composite / Veg
Suciton Profiles - Winter (February)

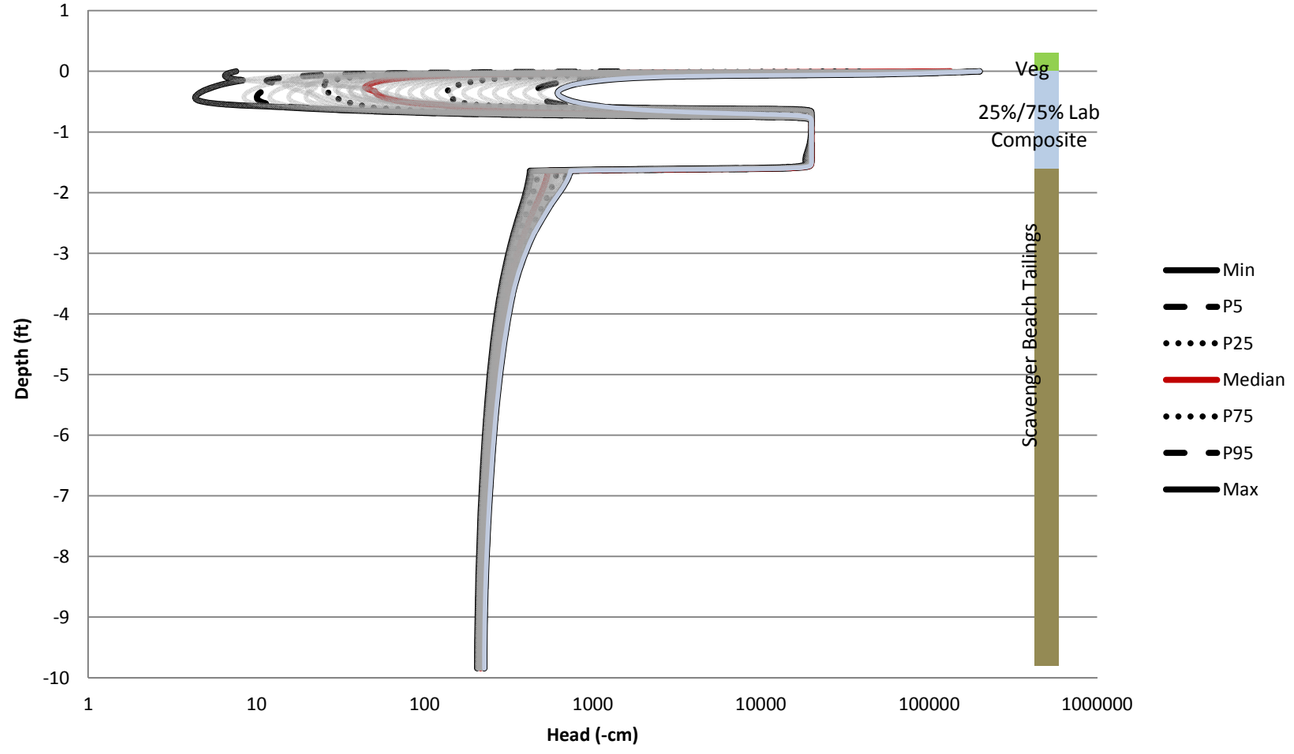
PROJECT No. M09441A16

FIG. No. III-D.3

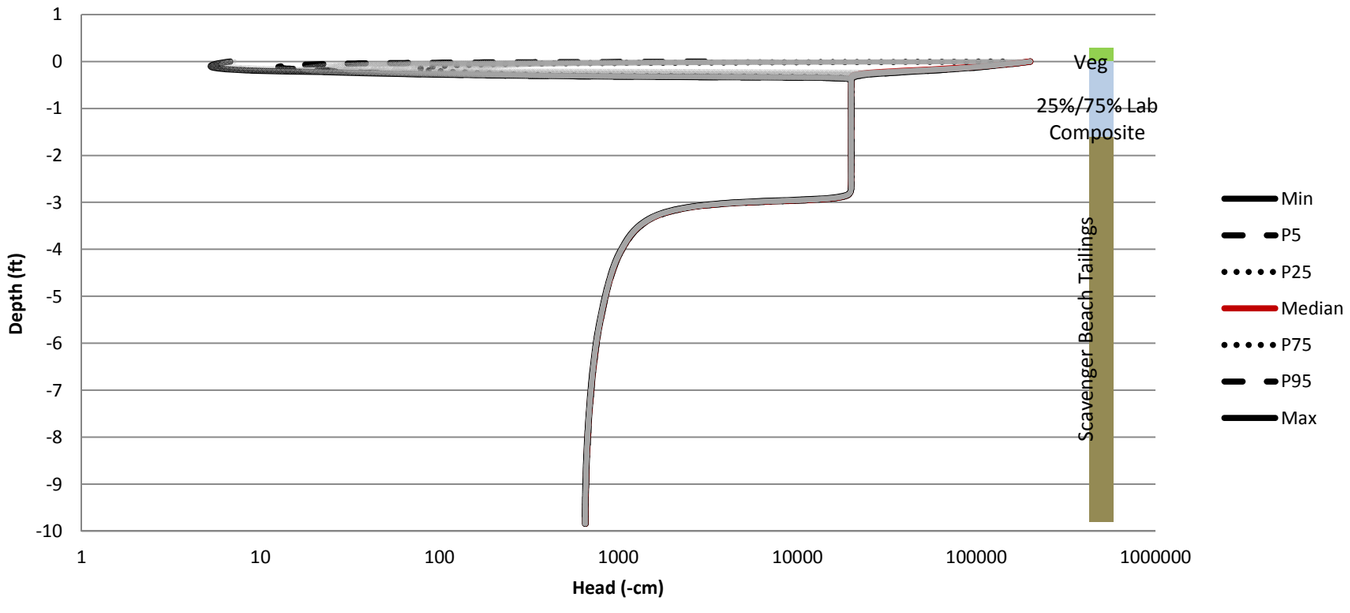
June Average Year (1980) - Daily Suction Head



June Wet Year (1992) - Daily Suction Head



June Dry Year (2000) - Daily Suction Head



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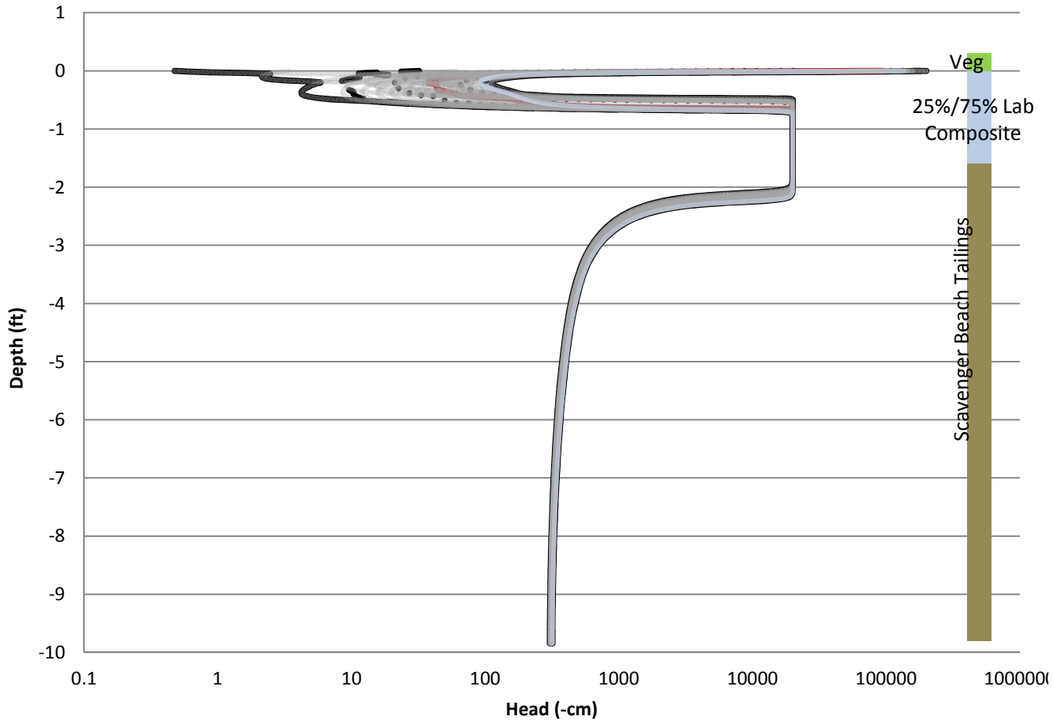
NEAR WEST TAILINGS STORAGE FACILITY CLOSURE
COVER STUDY - CLOSURE COVER PREDICTIONS

TITLE: ST15 - 8.2 ft Beach / 1.6 ft 25% / 75% Lab Composite / Veg
Suction Profiles - Dry Season (June)

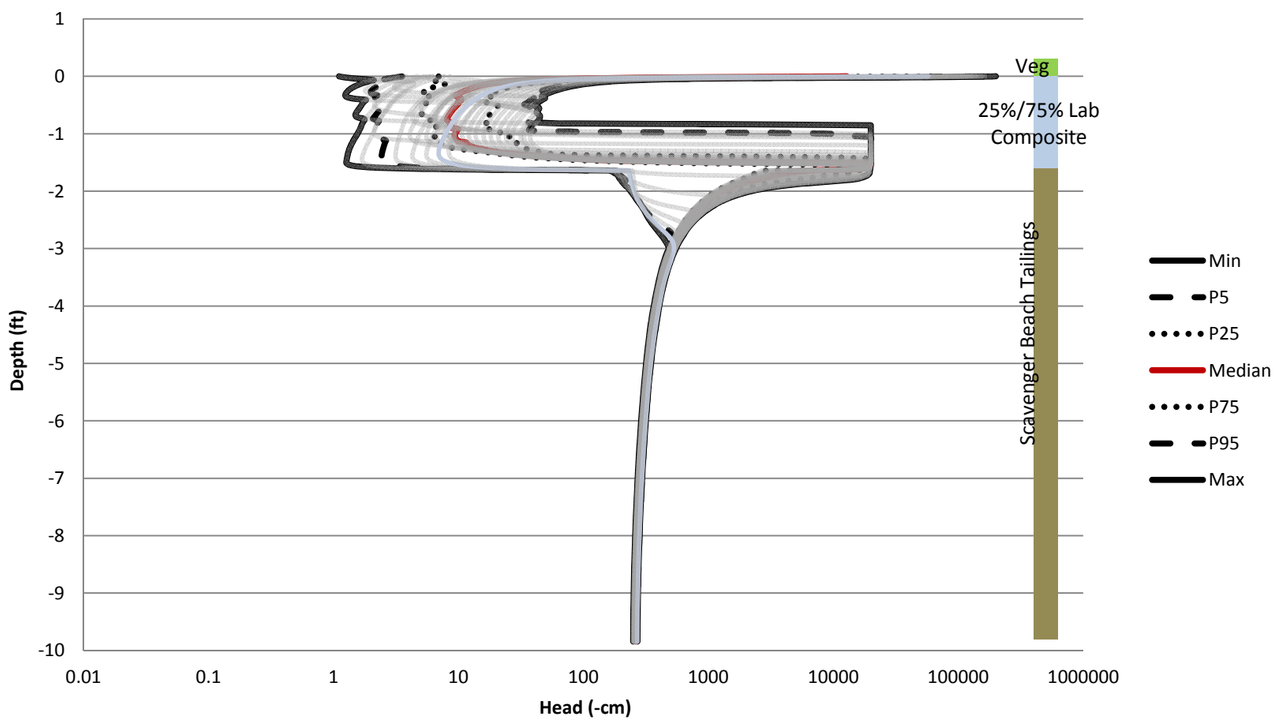
PROJECT No. M09441A16

FIG. No. III-D.4

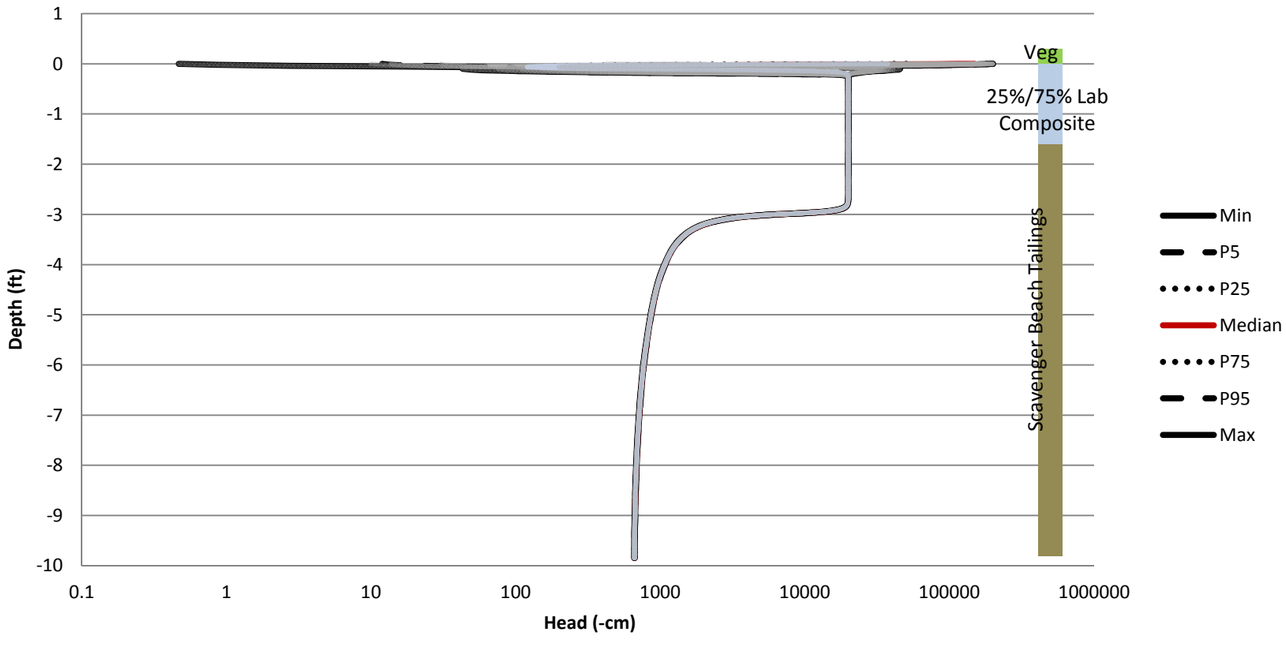
August Average Year (1980) - Daily Suction Head



August Wet Year (1992) - Daily Suction Head



August Dry Year (2000) - Daily Suction Head



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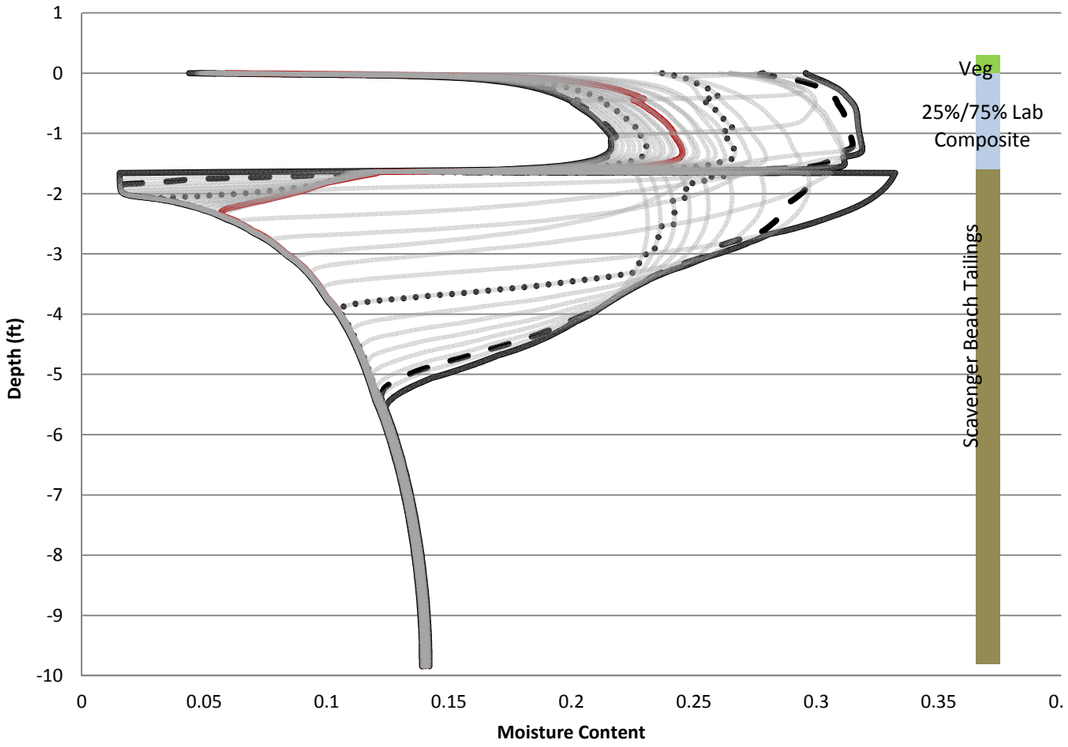
RESOLUTION PROJECT
NEAR WEST TAILINGS STORAGE FACILITY CLOSURE COVER STUDY - CLOSURE COVER PREDICTIONS

TITLE
ST15 - 8.2 ft Beach / 1.6 ft 25% / 75% Lab Composite / Veg
Suction Profiles - Summer Monsoon (August)

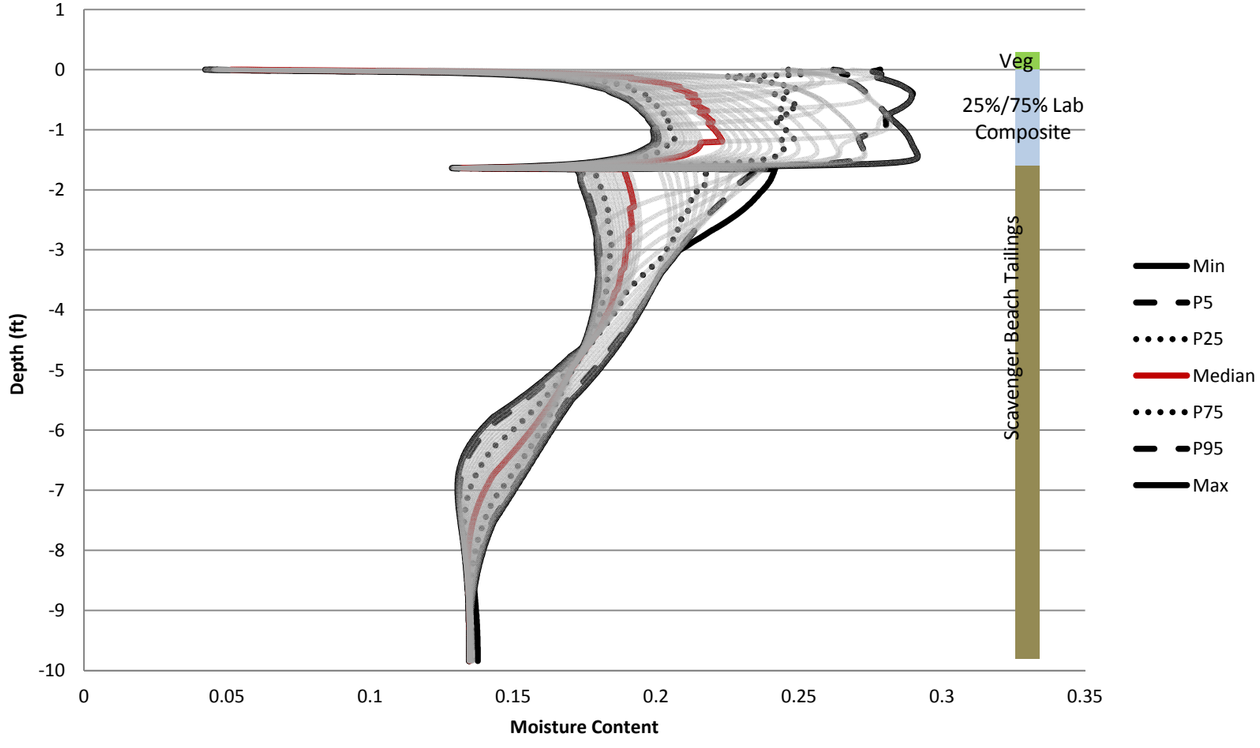
PROJECT No. M09441A16

FIG. No. III-D.5

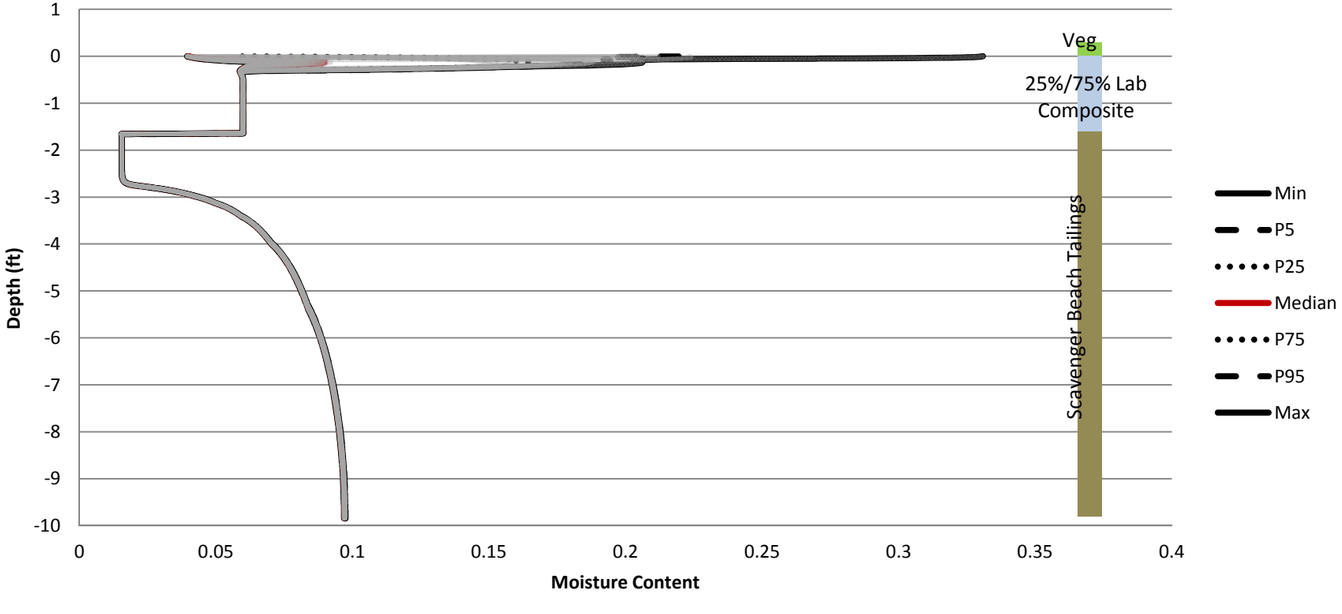
February Average Year (1980) - Daily Moisture Content



February Wet Year (1992) - Daily Moisture Content



February Dry Year (2000) - Daily Moisture Content



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CLIENT

Resolution Copper Mining

Klohn Crippen Berger

PROJECT

RESOLUTION PROJECT
NEAR WEST TAILINGS STORAGE FACILITY CLOSURE COVER STUDY - CLOSURE COVER PREDICTIONS

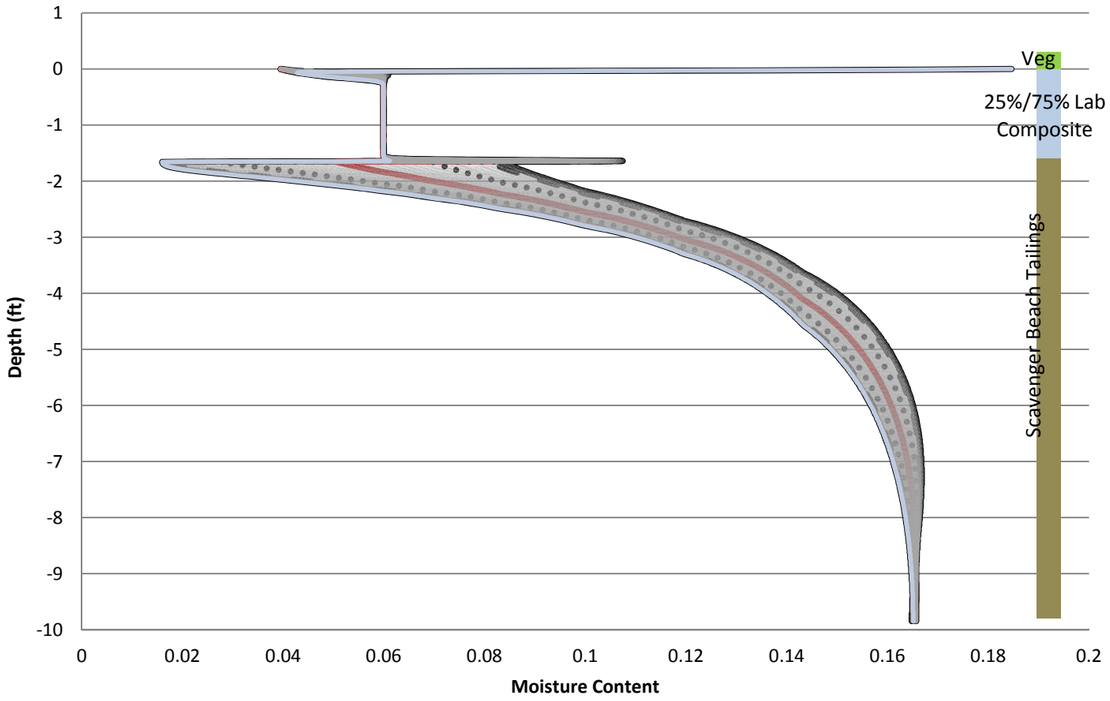
TITLE

ST15 - 8.2 ft Beach / 1.6 ft 25% / 75% Lab Composite / Veg
Moisture Content - Winter (February)

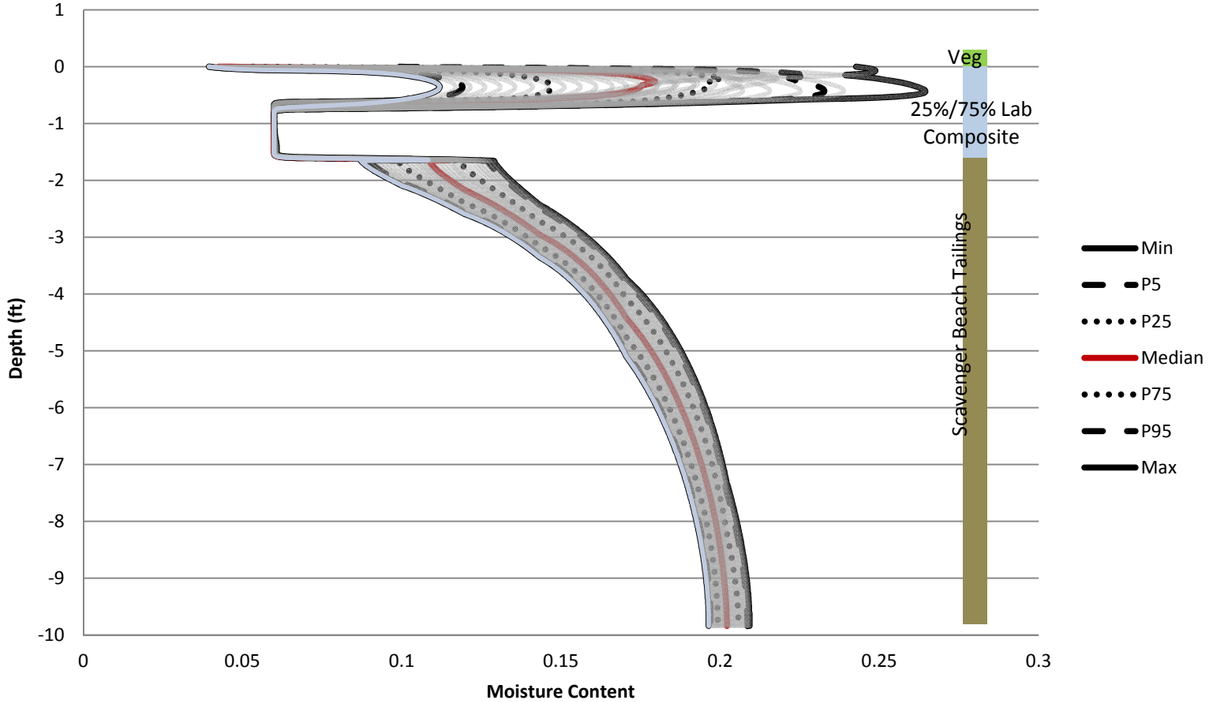
PROJECT No. M09441A16

FIG. No. III-D.6

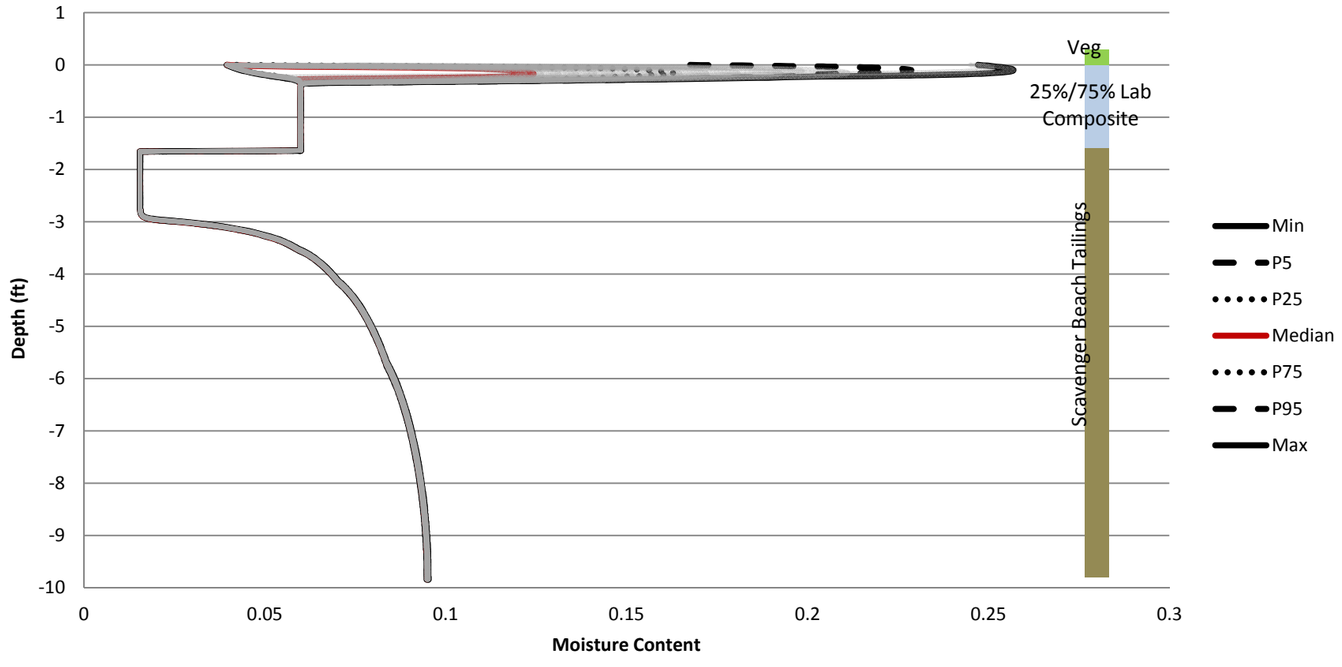
June Average Year (1980) - Daily Moisture Content



June Wet Year (1992) - Daily Moisture Content



June Dry Year (2000) - Daily Moisture Content



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CLIENT: Resolution Copper Mining

Klohn Crippen Berger

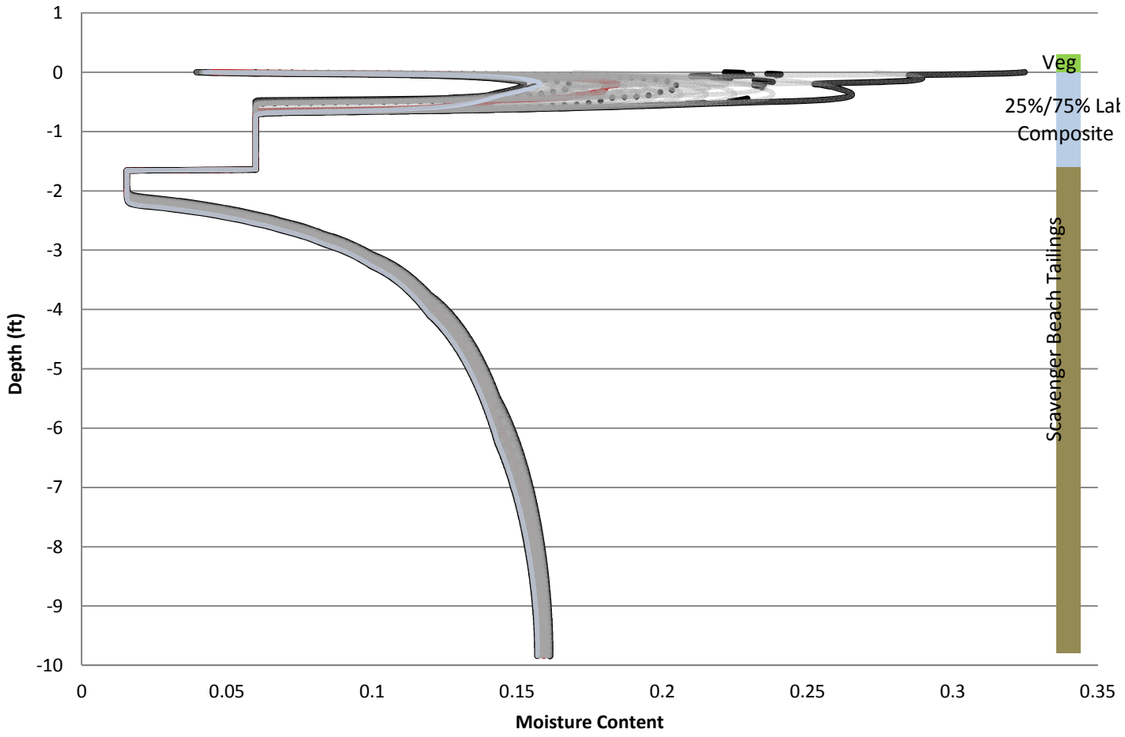
PROJECT: RESOLUTION PROJECT
NEAR WEST TAILINGS STORAGE FACILITY CLOSURE COVER STUDY - CLOSURE COVER PREDICTIONS

TITLE: ST15 - 8.2 ft Beach / 1.6 ft 25% / 75% Lab Composite / Veg
Moisture Content - Dry Season (June)

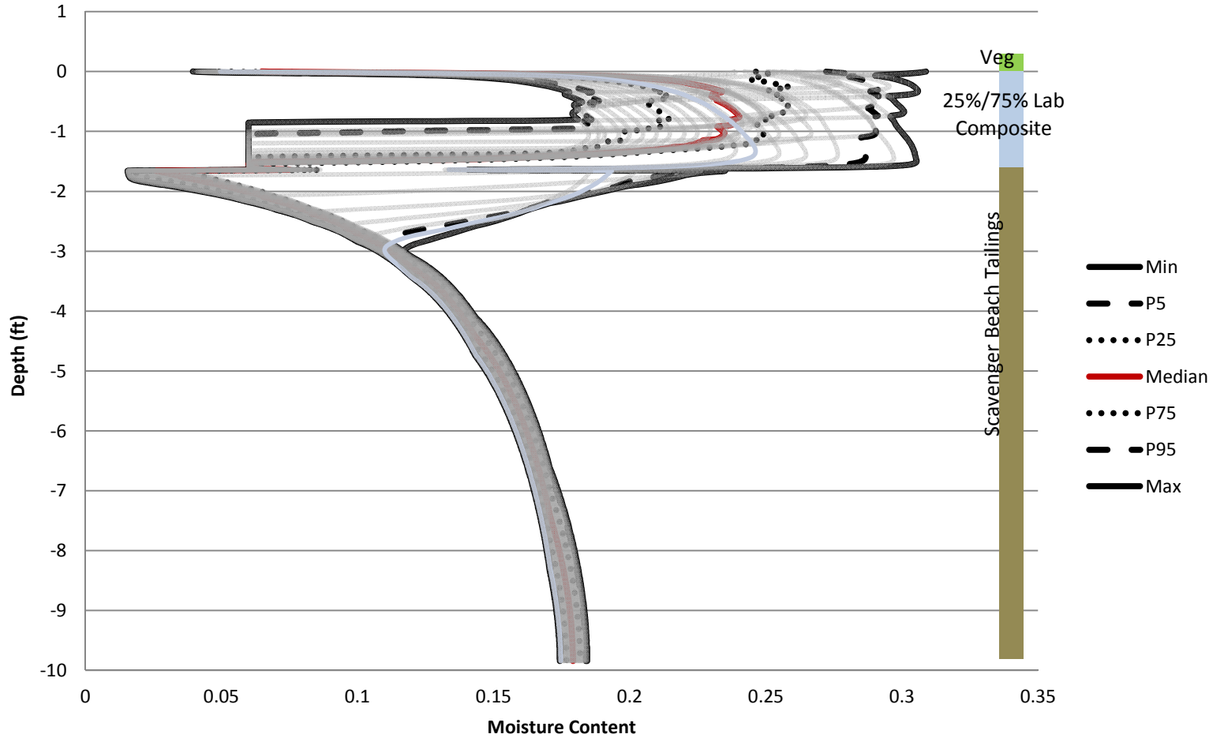
PROJECT No. M09441A16

FIG. No. III-D.7

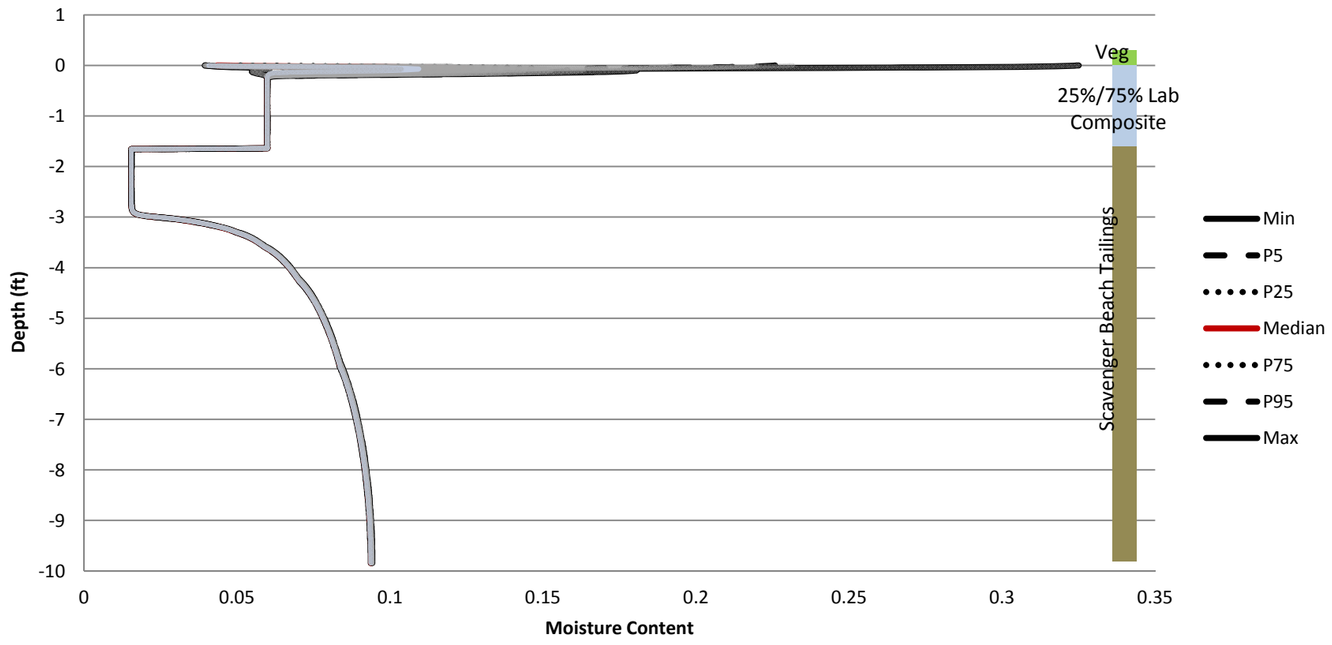
August Average Year (1980) - Daily Moisture Content



August Wet Year (1992) - Daily Moisture Content



August Dry Year (2000) - Daily Moisture Content



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CLIENT

Resolution Copper Mining

Klohn Crippen Berger

PROJECT

RESOLUTION PROJECT
NEAR WEST TAILINGS STORAGE FACILITY CLOSURE COVER STUDY - CLOSURE COVER PREDICTIONS

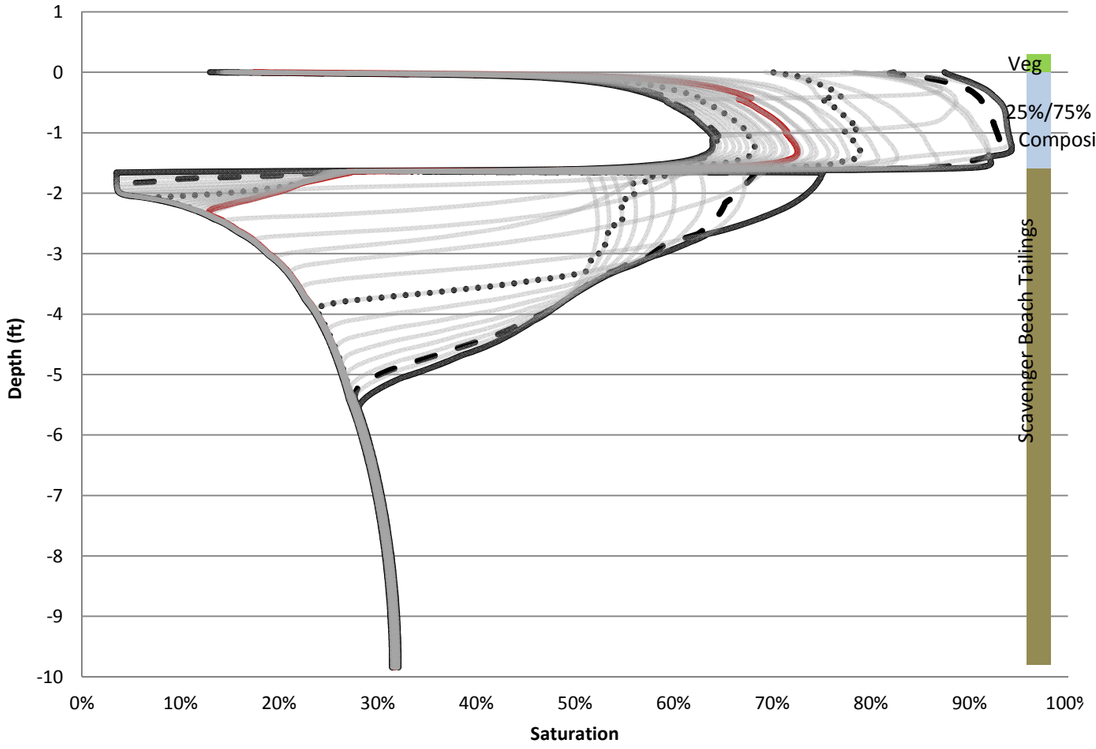
TITLE

ST15 - 2.5m Beach_0.5m Mixed w Veg
Moisture Content - Summer Monsoon (August)

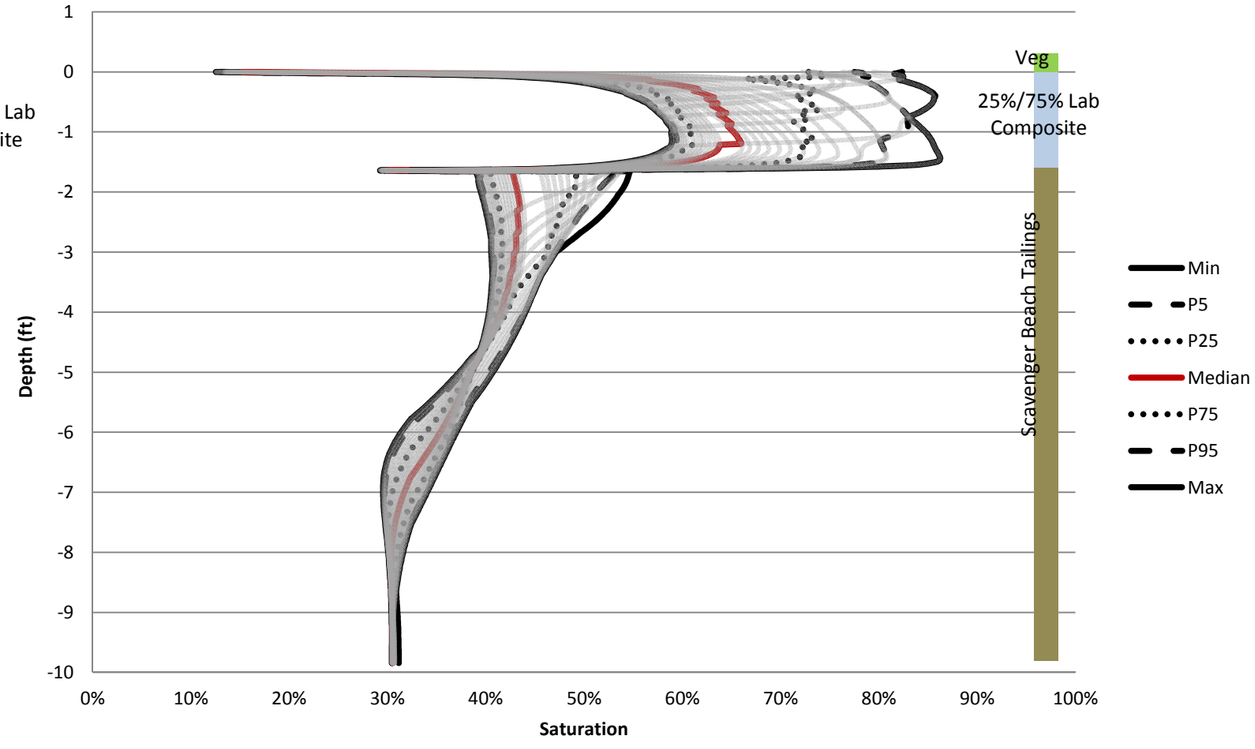
PROJECT No. M09441A16

FIG. No. III-D.8

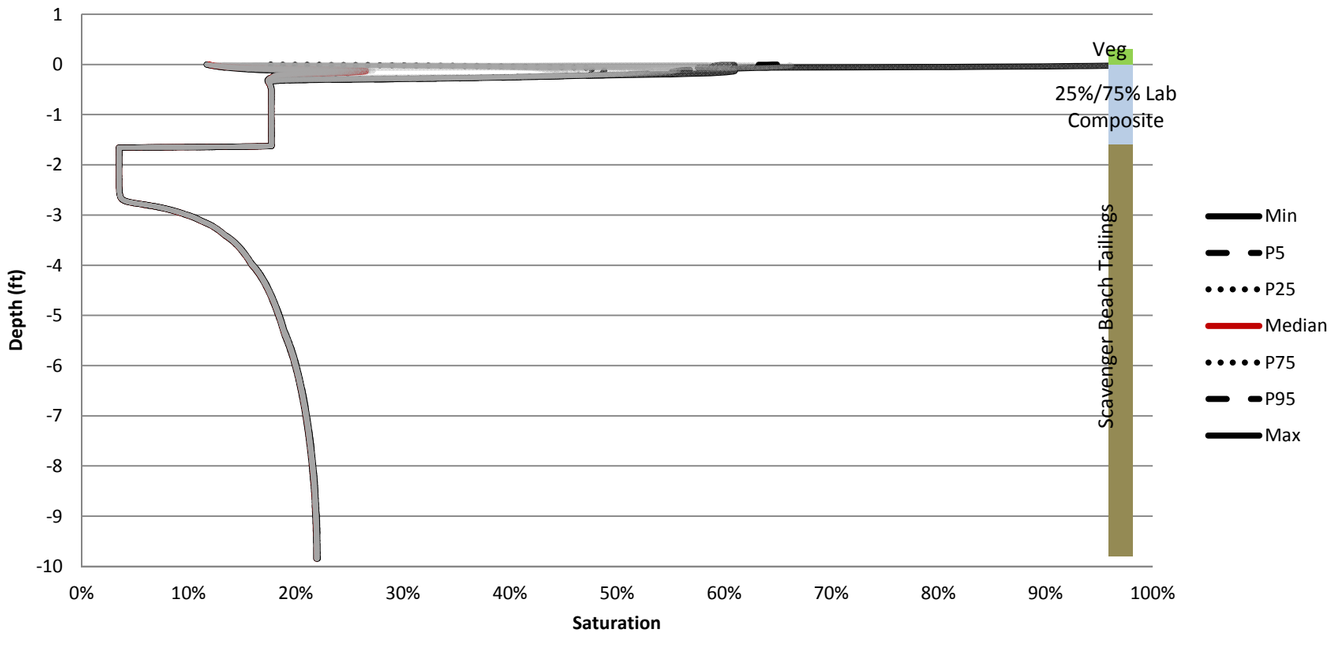
February Average Year (1980) - Daily Saturation



February Wet Year (1992) - Daily Saturation



February Dry Year (2000) - Daily Saturation



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CLIENT: Resolution Copper Mining

Klohn Crippen Berger

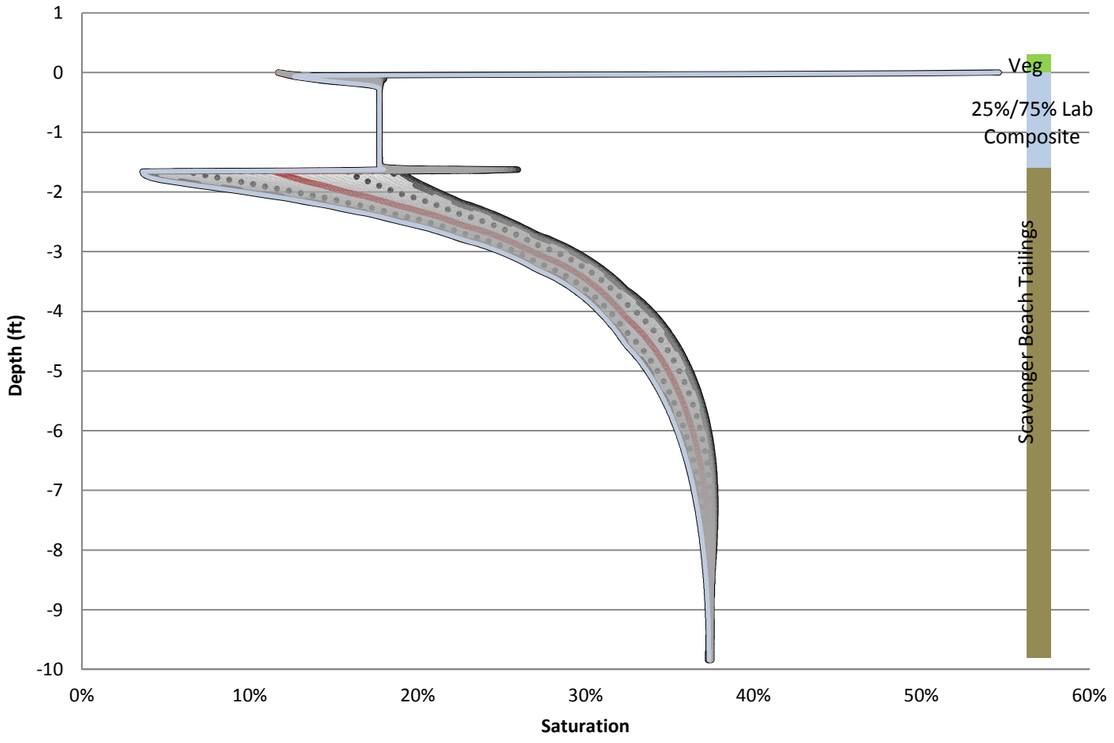
PROJECT: RESOLUTION PROJECT
NEAR WEST TAILINGS STORAGE FACILITY CLOSURE
COVER STUDY - CLOSURE COVER PREDICTIONS

TITLE: ST15 - 2.5m Beach_0.5m Mixed w Veg
Saturation - Winter (February)

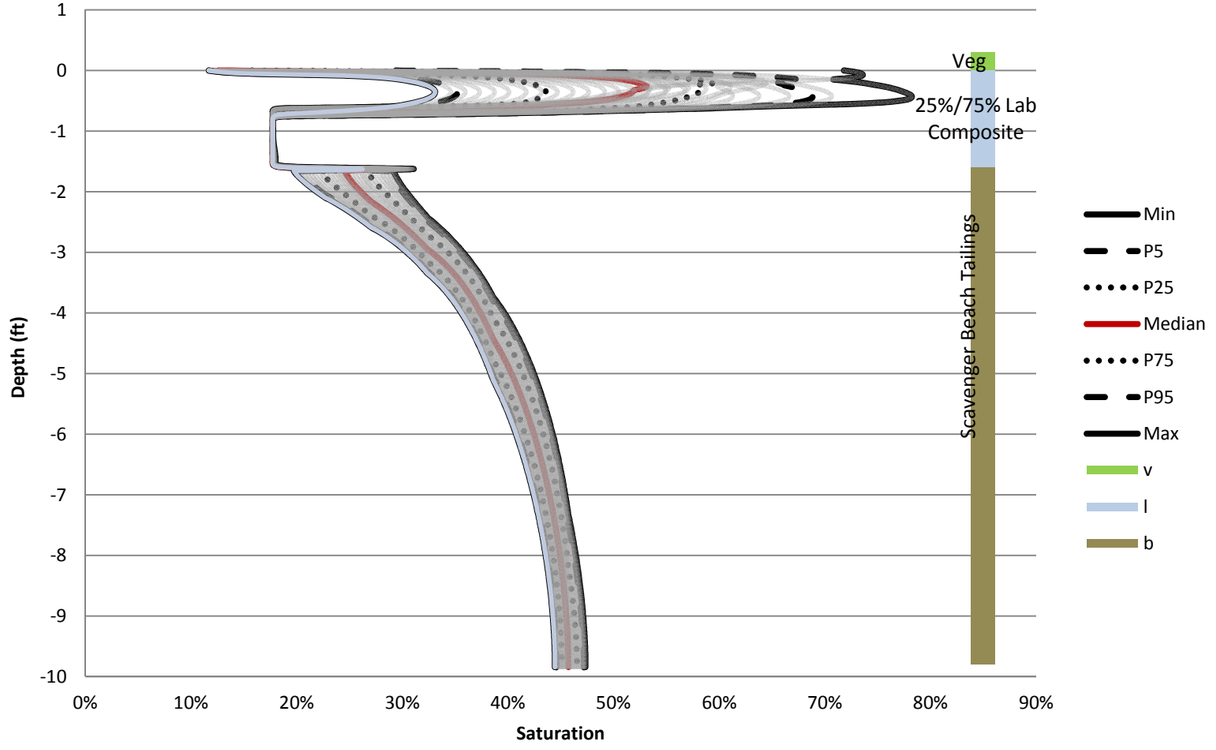
PROJECT No. M09441A16

FIG. No. III-D.9

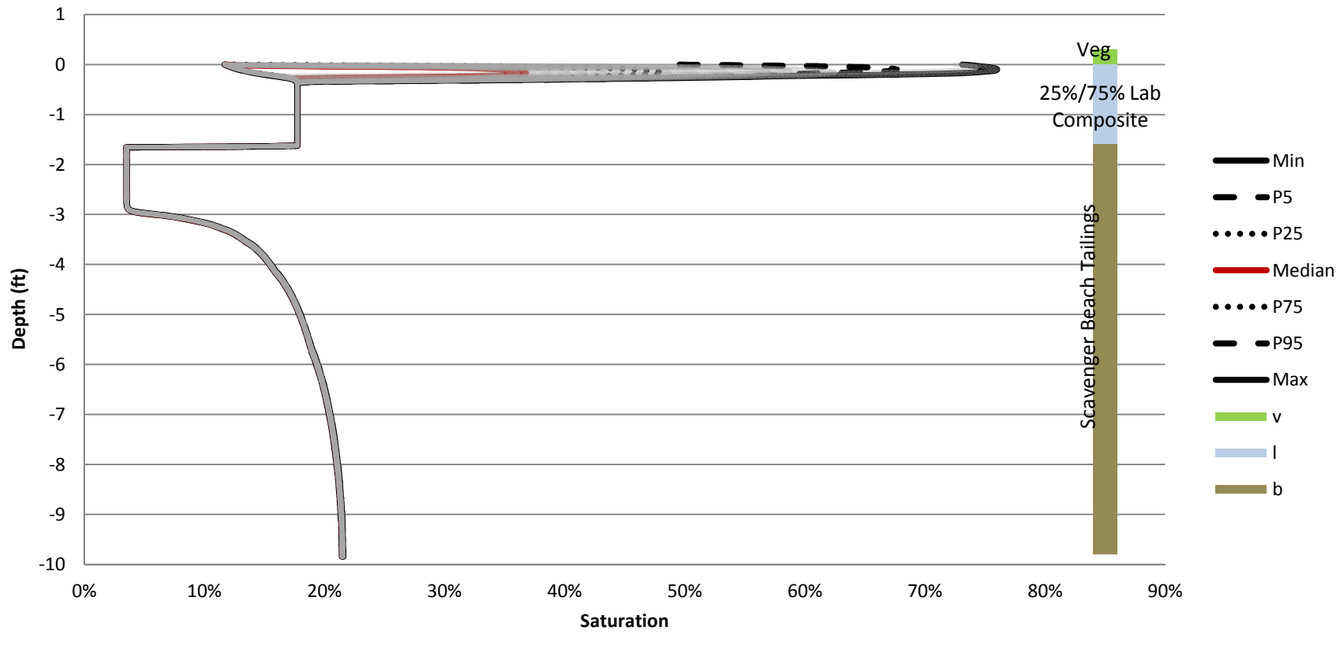
June Average Year (1980) - Daily Saturation



June Wet Year (1992) - Daily Saturation



June Dry Year (2000) - Daily Saturation



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CLIENT: Resolution Copper Mining

Klohn Crippen Berger

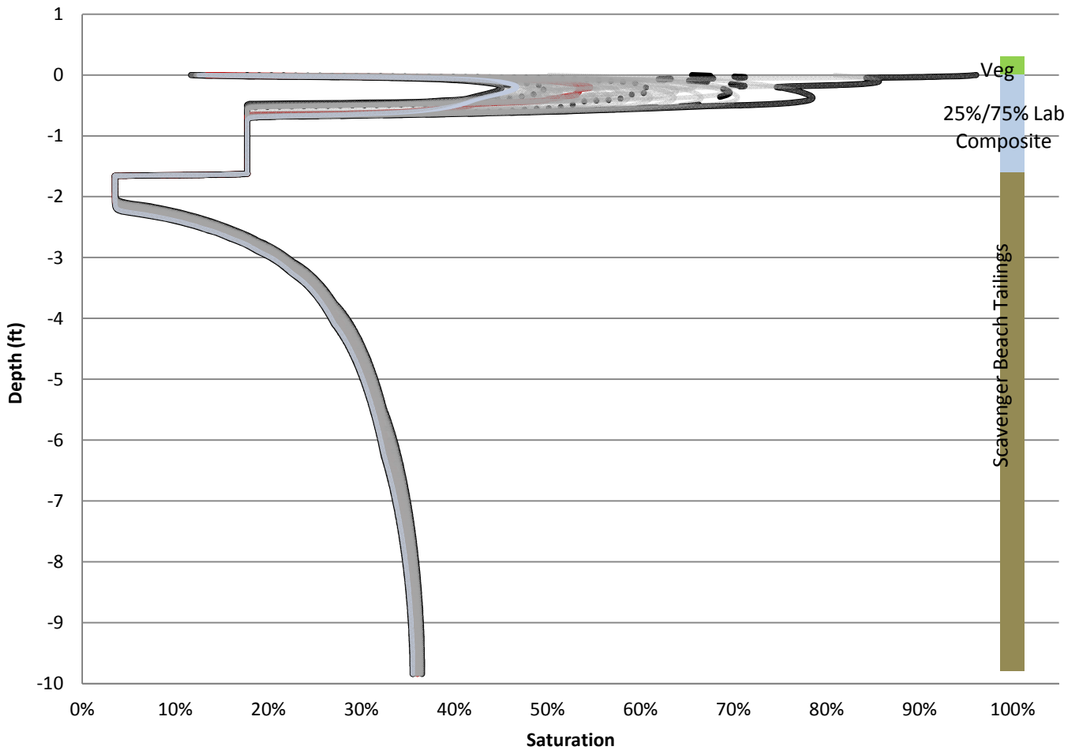
PROJECT: RESOLUTION PROJECT
NEAR WEST TAILINGS STORAGE FACILITY CLOSURE COVER STUDY - CLOSURE COVER PREDICTIONS

TITLE: ST15 - 2.5m Beach_0.5m Mixed w Veg Saturation - Dry Season (June)

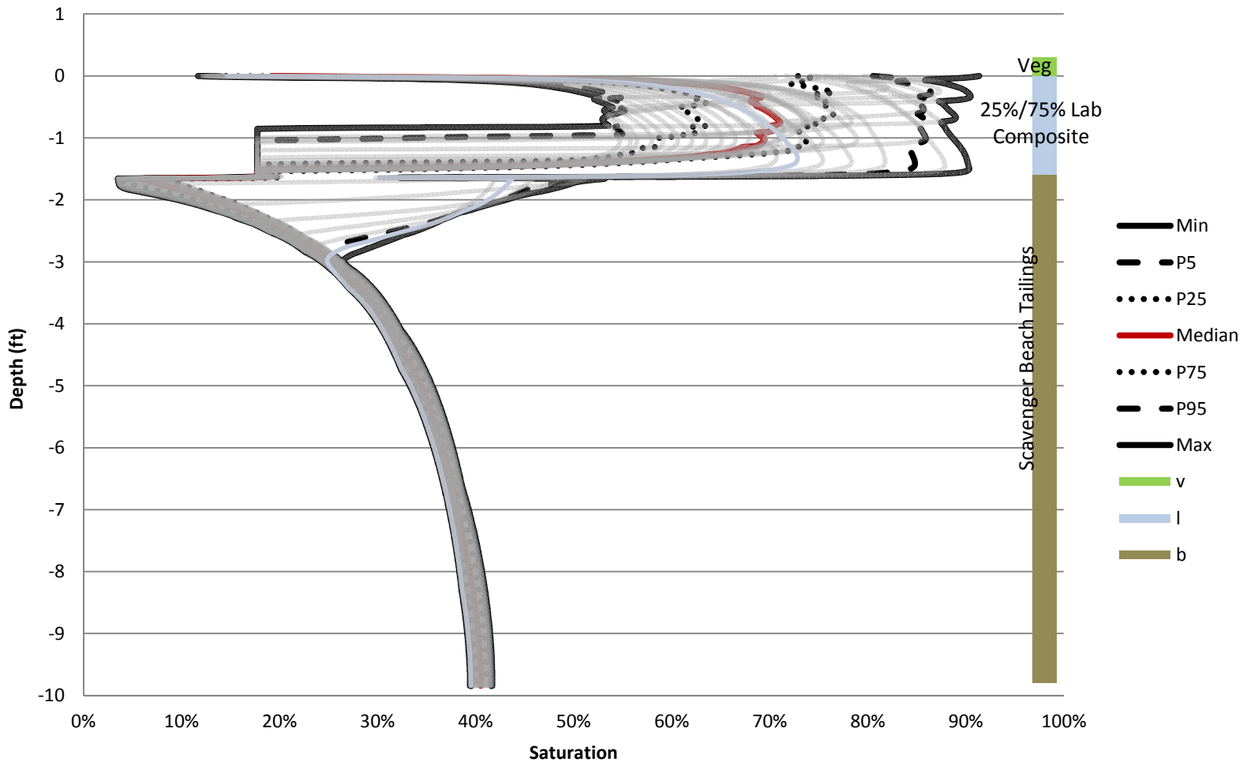
PROJECT No. M09441A16

FIG. No. III-D.10

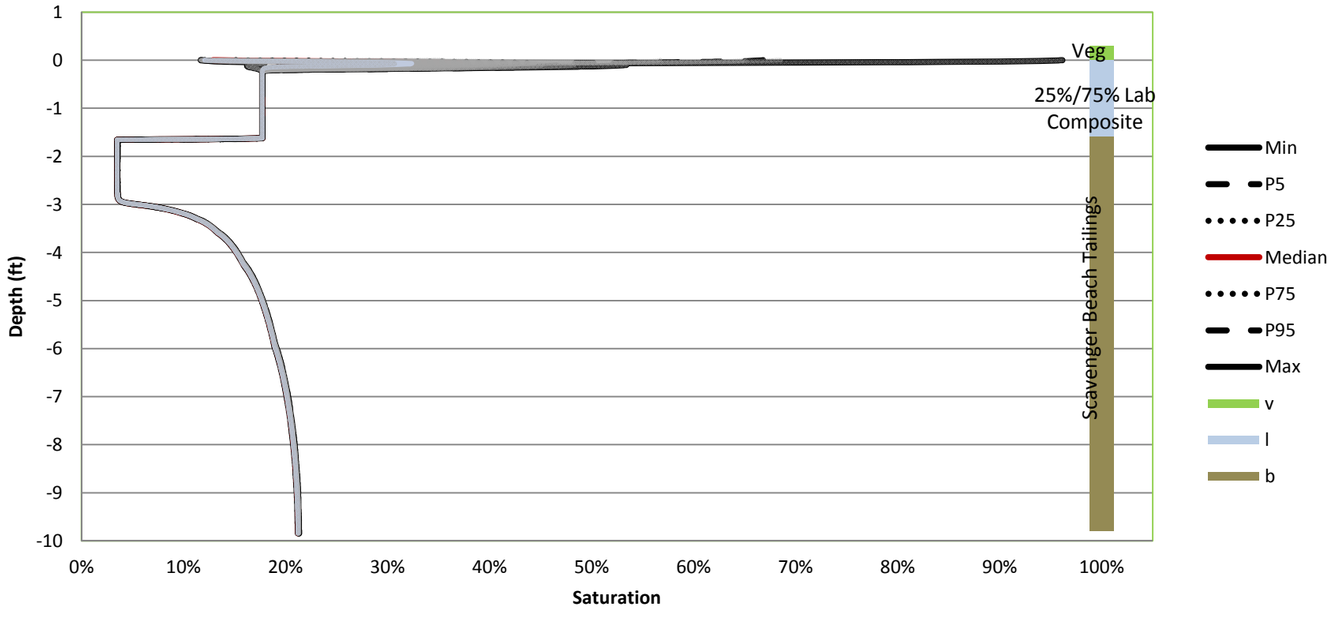
August Average Year (1980) - Daily Saturation



August Wet Year (1992) - Daily Saturation



August Dry Year (2000) - Daily Saturation



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CLIENT: Resolution Copper Mining

Klohn Crippen Berger

PROJECT: RESOLUTION PROJECT
NEAR WEST TAILINGS STORAGE FACILITY CLOSURE COVER STUDY - CLOSURE COVER PREDICTIONS

TITLE: ST15 - 2.5m Beach_0.5m Mixed w Veg Saturation - Summer Monsoon (August)

PROJECT No. M09441A16

FIG. No. III-D.11

APPENDIX III-E

BC 4 Results

Table III-E.1 BC 4 Annual Water Balance

Water Year	Result Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
		[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
1951	10/1/1951	14.05	46.45	2.19	-	(0.32)	3.15	10.90	13.14	60.83
1952	10/1/1952	20.31	51.71	0.96	-	(0.41)	1.89	18.43	19.47	72.63
1953	10/1/1953	15.31	56.76	0.50	-	(0.37)	2.97	12.34	12.94	73.03
1954	10/1/1954	21.32	50.53	0.10	-	(0.33)	5.42	15.90	16.09	73.19
1955	10/1/1955	13.38	58.63	0.95	-	(0.30)	2.48	10.90	11.93	72.73
1956	10/1/1956	12.73	61.57	0.44	-	(0.28)	0.75	11.98	12.46	75.66
1957	10/1/1957	15.05	56.20	0.33	-	(0.25)	1.30	13.74	14.15	71.61
1958	10/1/1958	19.40	51.33	(0.41)	-	(0.23)	1.58	17.81	17.52	71.64
1959	10/1/1959	15.65	59.06	0.65	-	(0.21)	2.04	13.61	14.30	75.65
1960	10/1/1960	18.89	53.70	0.29	-	(0.20)	6.48	12.41	12.82	73.88
1961	10/1/1961	9.83	63.07	0.57	-	(0.19)	0.25	9.58	10.21	73.78
1962	10/1/1962	14.12	56.73	(0.13)	-	(0.18)	2.08	12.04	12.01	72.08
1963	10/1/1963	24.01	49.21	(0.68)	-	(0.17)	6.56	17.45	16.85	73.69
1964	10/1/1964	11.54	59.84	0.85	-	(0.17)	-	11.54	12.49	71.31
1965	10/1/1965	17.55	53.50	(0.01)	-	(0.16)	1.92	15.63	15.67	71.65
1966	10/1/1966	22.80	49.06	(0.69)	-	(0.15)	8.36	14.44	13.87	72.21
1967	10/1/1967	14.18	58.66	0.68	-	(0.14)	1.35	12.83	13.57	73.37
1968	10/1/1968	22.05	49.09	(0.08)	-	(0.14)	8.46	13.58	13.62	73.34
1969	10/1/1969	18.50	53.27	(0.32)	-	(0.14)	2.85	15.65	15.46	72.50
1970	10/1/1970	15.87	56.22	0.23	-	(0.14)	2.96	12.91	13.27	73.70
1971	10/1/1971	11.82	60.91	0.19	-	(0.13)	2.48	9.34	9.59	73.30
1972	10/1/1972	11.64	65.12	0.89	-	(0.13)	2.17	9.48	10.41	77.19
1973	10/1/1973	30.30	38.74	(1.18)	-	(0.13)	6.24	24.06	23.04	70.45
1974	10/1/1974	15.41	56.06	0.02	-	(0.12)	1.89	13.52	13.61	73.17
1975	10/1/1975	18.89	50.08	0.15	-	(0.12)	2.74	16.14	16.34	69.99
1976	10/1/1976	16.06	56.06	(0.16)	-	(0.12)	3.12	12.94	12.85	73.77
1977	10/1/1977	16.22	56.26	(0.30)	-	(0.12)	0.84	15.39	15.14	73.78
1978	10/1/1978	23.70	47.95	0.20	-	(0.11)	6.94	16.76	17.11	73.38
1979	10/1/1979	29.33	41.97	(0.55)	-	(0.11)	10.27	19.06	18.66	71.00
1980	10/1/1980	19.98	51.50	(0.17)	-	(0.11)	4.15	15.83	15.83	72.18
1981	10/1/1981	15.06	60.08	0.08	-	(0.11)	2.07	12.99	13.15	76.54
1982	10/1/1982	23.35	46.18	(0.26)	-	(0.11)	3.79	19.57	19.37	70.58
1983	10/1/1983	26.48	42.32	(1.03)	-	(0.11)	5.49	20.98	20.08	70.61
1984	10/1/1984	18.22	53.11	0.42	-	(0.11)	0.74	17.48	17.99	71.92
1985	10/1/1985	22.39	44.29	(0.42)	-	(0.11)	4.12	18.27	17.99	67.29
1986	10/1/1986	21.06	49.06	(0.26)	-	(0.11)	1.80	19.25	19.13	71.25
1987	10/1/1987	19.92	50.63	0.37	-	(0.11)	2.83	17.09	17.56	71.27
1988	10/1/1988	22.89	48.70	(0.36)	-	(0.11)	3.72	19.17	18.90	72.23
1989	10/1/1989	11.57	62.44	0.93	-	(0.11)	1.22	10.35	11.38	74.55
1990	10/1/1990	23.14	47.72	(0.58)	-	(0.11)	7.19	15.94	15.43	71.73
1991	10/1/1991	22.67	48.46	(0.26)	-	(0.11)	3.54	19.13	19.02	71.83
1992	10/1/1992	36.19	34.25	(1.36)	-	(0.11)	8.59	27.60	26.42	69.27
1993	10/1/1993	32.46	37.64	(0.14)	-	(0.11)	14.78	17.68	17.76	70.68
1994	10/1/1994	15.18	57.48	0.72	-	(0.11)	3.17	12.01	12.87	73.41
1995	10/1/1995	24.74	46.18	(1.12)	-	(0.11)	4.50	20.24	19.21	72.19
1996	10/1/1996	13.42	60.04	0.97	-	(0.12)	0.78	12.64	13.66	74.72
1997	10/1/1997	10.13	65.12	0.82	-	(0.12)	0.60	9.53	10.43	74.28
1998	10/1/1998	20.28	49.21	(0.73)	-	(0.12)	2.76	17.52	16.89	70.12
1999	10/1/1999	14.73	58.50	0.20	-	(0.12)	1.22	13.50	13.86	74.63
2000	10/1/2000	5.42	71.93	1.22	-	(0.12)	0.69	4.72	5.98	78.62
2001	10/1/2001	23.32	47.87	(1.36)	-	(0.12)	2.89	20.43	19.13	72.05
2002	10/1/2002	5.63	70.04	0.97	-	(0.12)	-	5.63	6.65	76.41
2003	10/1/2003	13.13	62.48	(0.08)	-	(0.11)	1.75	11.38	11.34	78.19
2004	10/1/2004	12.25	64.80	0.14	-	(0.11)	1.39	10.87	11.06	79.83
2005	10/1/2005	24.00	48.46	(0.61)	-	(0.11)	7.54	16.46	15.98	74.81
2006	10/1/2006	12.01	62.91	0.43	-	(0.11)	2.48	9.53	10.12	77.44

Table III-E.2 BC 4 Monthly Water Balance 9 Wet Years (1983-1991)

Month	Result Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
		[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
Nov-82	11/30/1982	2.48	5.63	(0.41)	-	(0.02)	-	2.48	2.13	9.14
Dec-82	12/30/1982	2.48	0.08	(0.33)	-	(0.01)	-	2.48	2.13	3.11
Jan-83	1/29/1983	0.59	2.60	0.15	-	(0.01)	-	0.59	0.75	3.20
Feb-83	2/28/1983	3.62	(0.08)	(0.12)	-	(0.01)	1.65	1.97	1.85	3.09
Mar-83	3/30/1983	5.32	(1.34)	(1.10)	-	(0.01)	1.15	4.17	3.11	4.13
Apr-83	4/29/1983	0.83	5.24	0.95	-	(0.01)	-	0.83	1.77	5.38
May-83	5/29/1983	-	8.46	0.38	-	(0.01)	-	-	0.39	7.94
Jun-83	6/28/1983	-	9.41	0.27	-	(0.01)	-	-	0.28	9.21
Jul-83	7/28/1983	2.11	6.73	(0.26)	-	(0.01)	0.30	1.81	1.57	9.47
Aug-83	8/27/1983	3.91	3.50	(0.09)	-	(0.01)	0.13	3.78	3.66	7.43
Sep-83	9/26/1983	1.89	5.20	0.15	-	(0.01)	-	1.89	2.09	7.57
Oct-83	10/26/1983	5.08	(0.43)	(0.23)	-	(0.01)	2.72	2.36	2.13	5.20
Nov-83	11/25/1983	1.46	2.13	(0.71)	-	(0.01)	-	1.46	0.75	4.24
Dec-83	12/25/1983	2.02	0.83	0.26	-	(0.01)	0.29	1.73	2.01	2.91
Jan-84	1/24/1984	1.50	1.22	0.13	-	(0.01)	-	1.50	1.61	2.94
Feb-84	2/23/1984	-	4.09	0.38	-	(0.01)	-	-	0.39	3.89
Mar-84	3/24/1984	-	5.59	0.27	-	(0.01)	-	-	0.28	5.02
Apr-84	4/23/1984	0.87	5.79	0.02	-	(0.01)	-	0.87	0.87	6.43
May-84	5/23/1984	0.63	7.28	0.18	-	(0.01)	-	0.63	0.83	7.59
Jun-84	6/22/1984	0.04	9.21	0.23	-	(0.01)	-	0.04	0.28	9.25
Jul-84	7/22/1984	3.58	4.25	(0.88)	-	(0.01)	-	3.58	2.72	8.51
Aug-84	8/21/1984	3.90	3.19	0.03	-	(0.01)	-	3.90	3.94	7.15
Sep-84	9/20/1984	1.18	6.06	0.41	-	(0.01)	-	1.18	1.61	7.08
Oct-84	10/20/1984	2.56	2.56	(0.15)	-	(0.01)	-	2.56	2.40	6.05
Nov-84	11/19/1984	-	4.33	0.37	-	(0.01)	-	-	0.39	4.48
Dec-84	12/19/1984	4.73	(2.20)	(1.53)	-	(0.01)	1.39	3.35	1.85	3.30
Jan-85	1/18/1985	3.90	(1.54)	(0.00)	-	(0.01)	1.54	2.36	2.36	2.36
Feb-85	2/17/1985	2.83	(0.35)	(0.20)	-	(0.01)	0.63	2.20	2.05	2.42
Mar-85	3/19/1985	1.65	2.17	0.20	-	(0.01)	-	1.65	1.85	3.72
Apr-85	4/18/1985	0.43	5.79	0.60	-	(0.01)	-	0.43	1.06	5.54
May-85	5/18/1985	0.47	6.50	0.26	-	(0.01)	-	0.47	0.71	6.83
Jun-85	6/17/1985	-	8.58	0.26	-	(0.01)	-	-	0.28	8.48
Jul-85	7/17/1985	0.20	8.15	0.01	-	(0.01)	-	0.20	0.24	7.83
Aug-85	8/16/1985	2.09	5.63	(0.08)	-	(0.01)	-	2.09	2.01	7.53
Sep-85	9/15/1985	2.20	4.88	(0.19)	-	(0.01)	-	2.20	2.01	8.11
Oct-85	10/15/1985	3.24	1.97	(0.10)	-	(0.01)	0.56	2.68	2.60	5.86
Nov-85	11/14/1985	1.22	2.48	(0.21)	-	(0.01)	-	1.22	1.02	4.02
Dec-85	12/14/1985	2.72	0.16	(0.57)	-	(0.01)	0.20	2.52	1.93	3.24
Jan-86	1/13/1986	0.20	3.31	0.88	-	(0.01)	-	0.20	1.06	3.53
Feb-86	2/12/1986	1.89	0.87	(1.09)	-	(0.01)	-	1.89	0.83	3.75
Mar-86	3/14/1986	2.13	2.68	0.01	-	(0.01)	-	2.13	2.17	3.92
Apr-86	4/13/1986	3.25	2.48	0.43	-	(0.01)	1.28	1.97	2.40	4.94
May-86	5/13/1986	-	7.76	0.42	-	(0.01)	-	-	0.43	7.39
Jun-86	6/12/1986	-	9.29	0.28	-	(0.01)	-	-	0.28	8.60
Jul-86	7/12/1986	2.17	6.89	(0.30)	-	(0.01)	0.31	1.85	1.57	9.33
Aug-86	8/11/1986	2.76	4.61	(0.17)	-	(0.01)	-	2.76	2.60	7.58
Sep-86	9/10/1986	2.64	3.94	(0.30)	-	(0.01)	-	2.64	2.36	7.37
Oct-86	10/10/1986	1.38	4.92	0.43	-	(0.01)	-	1.38	1.85	6.32
Nov-86	11/9/1986	2.74	1.30	(0.53)	-	(0.01)	0.18	2.56	2.01	4.93
Dec-86	12/9/1986	1.78	0.63	(0.11)	-	(0.01)	0.64	1.14	1.10	3.64
Jan-87	1/8/1987	2.28	1.30	(0.19)	-	(0.01)	-	2.28	2.05	2.95
Feb-87	2/7/1987	3.06	(0.12)	0.08	-	(0.01)	0.81	2.24	2.36	3.12
Mar-87	3/9/1987	2.22	1.97	0.05	-	(0.01)	0.61	1.61	1.69	3.53
Apr-87	4/8/1987	0.94	4.37	0.39	-	(0.01)	-	0.94	1.34	5.15
May-87	5/8/1987	0.04	7.09	0.34	-	(0.01)	-	0.04	0.35	6.82
Jun-87	6/7/1987	0.28	8.07	0.24	-	(0.01)	-	0.28	0.55	7.83
Jul-87	7/7/1987	0.24	9.06	0.19	-	(0.01)	-	0.24	0.39	9.34
Aug-87	8/6/1987	2.88	5.47	(0.69)	-	(0.01)	0.56	2.32	1.65	8.81
Sep-87	9/5/1987	2.43	5.00	0.03	-	(0.01)	0.03	2.40	2.44	7.61
Oct-87	10/5/1987	1.02	5.71	0.41	-	(0.01)	-	1.02	1.46	6.86
Nov-87	11/4/1987	1.34	3.78	(0.55)	-	(0.01)	-	1.34	0.79	5.98
Dec-87	12/4/1987	0.75	3.07	0.64	-	(0.01)	-	0.75	1.38	4.02

Table III-E.2 BC 4 Monthly Water Balance 9 Wet Years (1983-1991)

Month	Result Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
		[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
Jan-88	1/3/1988	3.99	(1.34)	(1.27)	-	(0.01)	0.96	3.03	1.81	2.98
Feb-88	2/2/1988	3.59	(0.87)	0.20	-	(0.01)	1.58	2.01	2.20	2.51
Mar-88	3/3/1988	0.71	3.54	0.41	-	(0.01)	-	0.71	1.14	3.78
Apr-88	4/2/1988	0.16	5.87	0.34	-	(0.01)	-	0.16	0.47	5.73
May-88	5/2/1988	2.40	3.74	(0.40)	-	(0.01)	-	2.40	2.01	6.34
Jun-88	6/1/1988	-	8.54	0.47	-	(0.01)	-	-	0.47	7.85
Jul-88	7/1/1988	0.12	8.66	0.26	-	(0.01)	-	0.12	0.39	8.69
Aug-88	7/31/1988	2.17	5.79	(0.63)	-	(0.01)	-	2.17	1.54	8.69
Sep-88	8/30/1988	7.16	0.39	(0.78)	-	(0.01)	1.18	5.98	5.20	7.51
Oct-88	10/29/1988	1.98	10.08	0.84	-	(0.02)	0.09	1.89	2.76	13.10
Nov-88	11/28/1988	1.27	1.81	(0.45)	-	(0.01)	0.13	1.14	0.71	4.23
Dec-88	12/28/1988	1.54	1.81	0.13	-	(0.01)	-	1.54	1.69	3.31
Jan-89	1/27/1989	1.96	0.87	0.09	-	(0.01)	0.26	1.69	1.77	2.71
Feb-89	2/26/1989	0.51	3.31	0.37	-	(0.01)	-	0.51	0.91	3.55
Mar-89	3/28/1989	1.22	4.09	(0.41)	-	(0.01)	0.23	0.98	0.59	5.44
Apr-89	4/27/1989	0.47	7.64	0.63	-	(0.01)	-	0.47	1.10	6.93
May-89	5/27/1989	0.16	8.19	0.24	-	(0.01)	-	0.16	0.39	7.91
Jun-89	6/26/1989	-	9.25	0.20	-	(0.01)	-	-	0.20	8.53
Jul-89	7/26/1989	0.08	8.70	0.15	-	(0.01)	-	0.08	0.24	9.11
Aug-89	8/25/1989	1.38	6.14	(0.08)	-	(0.01)	-	1.38	1.30	8.19
Sep-89	9/24/1989	1.52	5.71	0.02	-	(0.01)	0.50	1.02	1.06	7.20
Oct-89	10/24/1989	1.06	4.69	(0.01)	-	(0.01)	-	1.06	1.06	6.43
Nov-89	11/23/1989	0.28	3.78	0.05	-	(0.01)	-	0.28	0.35	4.75
Dec-89	12/23/1989	-	3.31	0.34	-	(0.01)	-	-	0.31	3.61
Jan-90	1/22/1990	2.17	0.47	(0.66)	-	(0.01)	-	2.17	1.50	2.97
Feb-90	2/21/1990	2.48	0.39	(0.58)	-	(0.01)	-	2.48	1.93	2.68
Mar-90	3/23/1990	0.79	3.94	0.38	-	(0.01)	-	0.79	1.18	4.38
Apr-90	4/22/1990	0.98	5.79	0.25	-	(0.01)	-	0.98	1.22	5.95
May-90	5/22/1990	1.06	6.81	0.11	-	(0.01)	-	1.06	1.18	7.49
Jun-90	6/21/1990	0.39	8.74	0.20	-	(0.01)	-	0.39	0.59	8.74
Jul-90	7/21/1990	0.91	7.36	0.06	-	(0.01)	-	0.91	0.98	8.90
Aug-90	8/20/1990	10.04	(2.83)	(1.13)	-	(0.01)	6.37	3.66	2.56	7.80
Sep-90	9/19/1990	2.24	4.65	0.11	-	(0.01)	0.82	1.42	1.54	7.06
Oct-90	10/19/1990	0.79	5.08	0.68	-	(0.01)	-	0.79	1.46	6.30
Nov-90	11/18/1990	1.54	2.68	(0.29)	-	(0.01)	-	1.54	1.22	4.42
Dec-90	12/18/1990	2.14	0.35	(0.35)	-	(0.01)	0.41	1.73	1.46	3.72
Jan-91	1/17/1991	5.27	(2.20)	(0.99)	-	(0.01)	1.84	3.43	2.44	2.64
Feb-91	2/16/1991	0.12	3.54	0.81	-	(0.01)	-	0.12	0.94	3.29
Mar-91	3/18/1991	3.37	0.94	(0.74)	-	(0.01)	0.54	2.83	2.09	4.50
Apr-91	4/17/1991	3.36	2.52	0.26	-	(0.01)	0.61	2.76	3.03	4.92
May-91	5/17/1991	-	7.80	0.47	-	(0.01)	-	-	0.47	7.47
Jun-91	6/16/1991	0.71	8.27	0.19	-	(0.01)	-	0.71	0.91	8.18
Jul-91	7/16/1991	0.39	8.78	0.22	-	(0.01)	-	0.39	0.63	9.11
Aug-91	8/15/1991	3.39	4.57	(0.71)	-	(0.01)	-	3.39	2.72	8.28
Sep-91	9/14/1991	2.11	4.96	0.28	-	(0.01)	0.15	1.97	2.20	7.80
Oct-91	10/1/1991	0.24	3.27	0.29	-	(0.01)	-	0.24	0.55	3.82

Table III-E.3 BC 4 Monsoon Period Water Balance

Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
6/1/1951	8.54	18.41	1.91	-	(0.18)	1.68	6.86	8.81	26.98
7/1/1951	-	9.29	0.31	-	(0.04)	-	-	0.31	9.10
8/1/1951	1.03	8.41	0.10	-	(0.04)	-	1.03	1.13	9.62
9/1/1951	3.81	4.16	(0.62)	-	(0.04)	1.47	2.34	1.73	8.04
10/1/1951	0.67	6.17	0.49	-	(0.04)	-	0.67	1.16	7.09
11/1/1951	0.97	3.94	0.07	-	(0.04)	0.03	0.94	1.01	5.50
1951	6.48	31.98	0.36	-	(0.18)	1.50	4.98	5.35	39.34
6/1/1952	16.97	16.57	(0.09)	-	(0.24)	1.86	15.11	15.10	33.80
7/1/1952	0.61	8.77	0.35	-	(0.03)	-	0.61	0.97	9.09
8/1/1952	0.56	8.46	0.25	-	(0.03)	-	0.56	0.81	9.03
9/1/1952	0.47	7.57	0.25	-	(0.03)	-	0.47	0.73	8.05
10/1/1952	0.74	6.39	0.11	-	(0.03)	-	0.74	0.85	7.16
11/1/1952	-	6.05	0.28	-	(0.03)	-	-	0.28	6.25
1952	2.38	37.24	1.26	-	(0.16)	-	2.38	3.65	39.58
6/1/1953	10.73	22.62	(0.01)	-	(0.22)	2.65	8.08	8.16	33.98
7/1/1953	-	9.20	0.23	-	(0.03)	-	-	0.23	9.10
8/1/1953	2.62	5.80	(0.80)	-	(0.03)	0.32	2.30	1.50	8.70
9/1/1953	1.96	6.13	0.17	-	(0.03)	-	1.96	2.13	7.91
10/1/1953	-	6.96	0.63	-	(0.03)	-	-	0.63	7.06
11/1/1953	0.01	5.62	0.27	-	(0.03)	-	0.01	0.29	5.88
1953	4.59	33.71	0.50	-	(0.15)	0.32	4.27	4.78	38.64
6/1/1954	9.92	25.53	0.19	-	(0.20)	2.92	7.00	7.24	36.39
7/1/1954	0.13	8.82	0.26	-	(0.03)	-	0.13	0.39	8.77
8/1/1954	4.44	3.30	(0.66)	-	(0.03)	0.53	3.91	3.26	7.91
9/1/1954	5.48	1.82	(0.15)	-	(0.03)	1.97	3.51	3.37	7.31
10/1/1954	1.34	5.44	0.19	-	(0.03)	-	1.34	1.55	6.93
11/1/1954	-	5.77	0.46	-	(0.03)	-	-	0.46	5.77
1954	11.39	25.16	0.09	-	(0.13)	2.50	8.89	9.02	36.69
6/1/1955	4.05	31.20	0.65	-	(0.18)	0.38	3.68	4.35	36.19
7/1/1955	2.00	7.01	(0.21)	-	(0.02)	0.36	1.65	1.45	8.98
8/1/1955	4.39	3.43	(0.67)	-	(0.02)	1.22	3.17	2.51	7.60
9/1/1955	2.80	4.29	0.34	-	(0.02)	0.52	2.28	2.65	7.19
10/1/1955	0.13	6.93	0.38	-	(0.02)	-	0.13	0.52	7.01
11/1/1955	0.02	5.94	0.25	-	(0.02)	-	0.02	0.27	6.22
1955	9.34	27.61	0.09	-	(0.12)	2.10	7.24	7.39	36.99
6/1/1956	7.92	27.53	0.05	-	(0.16)	0.72	7.20	7.28	35.94
7/1/1956	0.24	9.13	0.09	-	(0.02)	-	0.24	0.33	9.41
8/1/1956	2.69	6.11	(0.40)	-	(0.02)	-	2.69	2.31	9.10
9/1/1956	1.78	5.88	0.20	-	(0.02)	0.03	1.75	1.95	7.72
10/1/1956	0.08	6.97	0.25	-	(0.02)	-	0.08	0.32	7.26
11/1/1956	0.52	4.66	0.04	-	(0.02)	-	0.52	0.57	5.52
1956	5.30	32.76	0.18	-	(0.11)	0.03	5.27	5.49	39.02
6/1/1957	9.31	24.23	0.02	-	(0.15)	1.20	8.11	8.17	33.73
7/1/1957	0.03	9.31	0.28	-	(0.02)	-	0.03	0.31	8.78
8/1/1957	1.09	7.44	(0.04)	-	(0.02)	-	1.09	1.05	8.57
9/1/1957	3.52	4.29	(0.32)	-	(0.02)	0.10	3.42	3.11	8.07
10/1/1957	0.58	6.28	0.35	-	(0.02)	-	0.58	0.93	6.91
11/1/1957	2.58	1.30	(0.69)	-	(0.02)	0.33	2.25	1.59	4.80
1957	7.80	28.61	(0.42)	-	(0.10)	0.43	7.37	6.99	37.13
6/1/1958	11.34	22.91	0.35	-	(0.14)	0.40	10.94	11.33	33.78
7/1/1958	0.69	8.50	0.13	-	(0.02)	-	0.69	0.82	9.06
8/1/1958	0.76	8.11	0.07	-	(0.02)	-	0.76	0.84	9.22
9/1/1958	0.88	7.28	0.25	-	(0.02)	-	0.88	1.14	8.08
10/1/1958	3.14	3.23	(0.51)	-	(0.02)	0.85	2.29	1.80	6.69
11/1/1958	1.92	3.39	0.39	-	(0.02)	0.77	1.15	1.54	5.57
1958	7.39	30.51	0.32	-	(0.09)	1.62	5.76	6.14	38.63
6/1/1959	3.42	33.19	0.78	-	(0.13)	-	3.42	4.20	36.83
7/1/1959	1.01	8.19	(0.06)	-	(0.02)	-	1.01	0.95	9.23
8/1/1959	3.25	5.75	(0.77)	-	(0.02)	0.20	3.05	2.30	9.66
9/1/1959	6.00	1.69	(0.15)	-	(0.02)	1.07	4.93	4.80	7.27
10/1/1959	0.05	6.85	0.46	-	(0.02)	-	0.05	0.51	7.08
11/1/1959	4.23	0.59	(0.59)	-	(0.02)	2.79	1.44	0.85	5.52
1959	14.54	23.07	(1.10)	-	(0.09)	4.06	10.48	9.41	38.77

Table III-E.3 BC 4 Monsoon Period Water Balance

Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
6/1/1960	12.06	22.48	0.36	-	(0.12)	3.69	8.37	8.84	34.58
7/1/1960	-	9.25	0.23	-	(0.02)	-	-	0.23	9.43
8/1/1960	0.73	8.31	0.02	-	(0.02)	-	0.73	0.76	9.19
9/1/1960	1.59	6.38	0.03	-	(0.02)	-	1.59	1.63	7.95
10/1/1960	0.28	6.69	0.24	-	(0.02)	-	0.28	0.52	7.22
11/1/1960	2.05	2.99	(0.40)	-	(0.02)	0.07	1.98	1.59	5.27
1960	4.65	33.62	0.12	-	(0.08)	0.07	4.58	4.72	39.05
6/1/1961	3.52	31.61	0.95	-	(0.11)	-	3.52	4.50	35.62
7/1/1961	-	9.33	0.15	-	(0.02)	-	-	0.15	9.44
8/1/1961	0.66	8.03	(0.01)	-	(0.02)	-	0.66	0.66	8.94
9/1/1961	2.47	4.92	(0.50)	-	(0.02)	0.18	2.29	1.79	8.03
10/1/1961	1.13	6.18	0.38	-	(0.02)	-	1.13	1.52	6.46
11/1/1961	0.44	4.65	(0.07)	-	(0.02)	-	0.44	0.38	5.66
1961	4.71	33.11	(0.06)	-	(0.08)	0.18	4.52	4.50	38.52
6/1/1962	11.29	21.61	(0.33)	-	(0.11)	2.08	9.20	8.93	32.77
7/1/1962	-	9.09	0.21	-	(0.01)	-	-	0.21	9.02
8/1/1962	0.60	8.27	0.10	-	(0.02)	-	0.60	0.70	8.96
9/1/1962	0.50	7.87	0.12	-	(0.02)	-	0.50	0.64	8.67
10/1/1962	1.28	5.24	(0.14)	-	(0.01)	-	1.28	1.15	7.00
11/1/1962	0.86	4.29	0.07	-	(0.02)	-	0.86	0.93	5.52
1962	3.25	34.76	0.35	-	(0.08)	-	3.25	3.63	39.17
6/1/1963	11.05	24.41	(0.16)	-	(0.10)	2.60	8.45	8.33	35.41
7/1/1963	-	9.17	0.23	-	(0.01)	-	-	0.22	9.03
8/1/1963	0.08	9.21	0.17	-	(0.01)	-	0.08	0.25	9.44
9/1/1963	10.50	(3.70)	(1.85)	-	(0.01)	3.95	6.54	4.72	7.31
10/1/1963	1.52	5.83	0.87	-	(0.01)	-	1.52	2.39	6.98
11/1/1963	0.65	5.12	0.22	-	(0.01)	-	0.65	0.87	5.97
1963	12.74	25.63	(0.36)	-	(0.07)	3.95	8.79	8.46	38.73
6/1/1964	5.44	28.35	0.69	-	(0.10)	-	5.44	6.17	33.89
7/1/1964	-	9.25	0.17	-	(0.01)	-	-	0.17	8.93
8/1/1964	1.46	7.05	(0.24)	-	(0.01)	-	1.46	1.24	8.59
9/1/1964	2.25	5.47	(0.05)	-	(0.01)	-	2.25	2.22	7.59
10/1/1964	1.74	4.61	0.05	-	(0.01)	-	1.74	1.81	6.34
11/1/1964	1.54	4.25	(0.06)	-	(0.01)	0.31	1.23	1.17	6.00
1964	6.99	30.63	(0.12)	-	(0.07)	0.31	6.69	6.62	37.45
6/1/1965	12.48	20.75	(0.41)	-	(0.09)	1.61	10.87	10.50	33.20
7/1/1965	0.10	8.82	0.24	-	(0.01)	-	0.10	0.34	8.67
8/1/1965	1.43	7.01	(0.04)	-	(0.01)	-	1.43	1.39	8.73
9/1/1965	0.94	7.17	0.17	-	(0.01)	-	0.94	1.11	8.16
10/1/1965	1.06	5.51	0.09	-	(0.01)	-	1.06	1.16	6.84
11/1/1965	0.45	5.16	0.11	-	(0.01)	-	0.45	0.57	5.93
1965	3.98	33.66	0.57	-	(0.07)	-	3.98	4.57	38.33
6/1/1966	16.89	17.36	(0.79)	-	(0.09)	7.37	9.52	8.80	34.51
7/1/1966	0.18	8.70	0.17	-	(0.01)	-	0.18	0.35	8.72
8/1/1966	0.83	7.68	0.04	-	(0.01)	-	0.83	0.88	8.19
9/1/1966	1.65	6.46	(0.25)	-	(0.01)	-	1.65	1.41	8.21
10/1/1966	2.81	3.70	0.03	-	(0.01)	0.99	1.82	1.85	6.66
11/1/1966	1.36	4.06	0.13	-	(0.01)	-	1.36	1.48	5.32
1966	6.82	30.59	0.12	-	(0.06)	0.99	5.83	5.98	37.09
6/1/1967	5.67	29.76	0.61	-	(0.08)	0.20	5.47	6.13	35.97
7/1/1967	0.08	8.98	0.17	-	(0.01)	-	0.08	0.25	8.77
8/1/1967	3.90	4.33	(0.45)	-	(0.01)	0.76	3.14	2.69	8.51
9/1/1967	2.62	5.51	(0.00)	-	(0.01)	0.40	2.22	2.22	7.94
10/1/1967	0.55	6.02	0.23	-	(0.01)	-	0.55	0.80	6.86
11/1/1967	0.42	4.96	0.19	-	(0.01)	-	0.42	0.61	6.22
1967	7.56	29.80	0.14	-	(0.06)	1.15	6.41	6.57	38.30
6/1/1968	17.16	16.54	(0.44)	-	(0.08)	8.46	8.69	8.35	34.35
7/1/1968	-	9.29	0.20	-	(0.01)	-	-	0.20	9.40
8/1/1968	1.76	6.93	(0.35)	-	(0.01)	-	1.76	1.42	8.89
9/1/1968	2.66	4.57	(0.02)	-	(0.01)	-	2.66	2.65	7.36
10/1/1968	0.05	6.81	0.34	-	(0.01)	-	0.05	0.39	7.11
11/1/1968	0.38	4.76	0.16	-	(0.01)	-	0.38	0.56	5.42
1968	4.85	32.36	0.33	-	(0.06)	-	4.85	5.21	38.19

Table III-E.3 BC 4 Monsoon Period Water Balance

Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
6/1/1969	13.85	19.84	(0.80)	-	(0.08)	2.49	11.37	10.65	33.69
7/1/1969	-	9.29	0.28	-	(0.01)	-	-	0.28	9.35
8/1/1969	0.33	8.23	0.19	-	(0.01)	-	0.33	0.52	8.76
9/1/1969	2.67	5.67	(0.17)	-	(0.01)	0.36	2.31	2.15	8.09
10/1/1969	1.27	5.47	0.01	-	(0.01)	-	1.27	1.30	7.15
11/1/1969	0.80	4.25	0.02	-	(0.01)	-	0.80	0.82	5.61
1969	5.07	32.91	0.33	-	(0.06)	0.36	4.70	5.07	38.96
6/1/1970	8.68	25.39	0.25	-	(0.08)	1.42	7.26	7.59	34.33
7/1/1970	0.08	9.13	0.19	-	(0.01)	-	0.08	0.26	8.95
8/1/1970	1.02	7.72	0.04	-	(0.01)	-	1.02	1.08	9.14
9/1/1970	1.77	6.50	(0.17)	-	(0.01)	-	1.77	1.63	8.33
10/1/1970	3.52	3.23	(0.10)	-	(0.01)	1.54	1.98	1.89	7.33
11/1/1970	-	5.31	0.28	-	(0.01)	-	-	0.28	5.49
1970	6.39	31.89	0.24	-	(0.06)	1.54	4.85	5.13	39.24
6/1/1971	3.86	31.26	0.46	-	(0.08)	-	3.86	4.36	35.25
7/1/1971	-	9.21	0.14	-	(0.01)	-	-	0.14	8.54
8/1/1971	0.39	8.78	0.05	-	(0.01)	-	0.39	0.44	9.17
9/1/1971	4.86	2.68	(0.72)	-	(0.01)	0.77	4.09	3.38	7.74
10/1/1971	2.71	3.66	(0.02)	-	(0.01)	1.71	1.00	0.99	7.12
11/1/1971	4.67	0.79	(0.25)	-	(0.01)	1.80	2.86	2.62	5.50
1971	12.63	25.12	(0.80)	-	(0.06)	4.28	8.34	7.57	38.06
6/1/1972	2.29	35.20	1.10	-	(0.08)	-	2.29	3.41	37.59
7/1/1972	1.67	7.76	(0.21)	-	(0.01)	0.26	1.41	1.21	9.13
8/1/1972	0.27	9.13	0.23	-	(0.01)	-	0.27	0.50	9.54
9/1/1972	2.05	6.02	(0.24)	-	(0.01)	0.10	1.95	1.72	8.30
10/1/1972	0.70	6.22	0.25	-	(0.01)	-	0.70	0.95	7.14
11/1/1972	8.63	(3.98)	(1.12)	-	(0.01)	4.30	4.34	3.24	5.44
1972	13.32	25.16	(1.09)	-	(0.05)	4.66	8.67	7.62	39.55
6/1/1973	16.66	15.04	(0.61)	-	(0.07)	1.67	14.98	14.48	31.63
7/1/1973	0.85	8.23	0.24	-	(0.01)	-	0.85	1.10	8.80
8/1/1973	2.48	5.79	(0.49)	-	(0.01)	0.27	2.22	1.74	9.06
9/1/1973	1.67	6.93	0.48	-	(0.01)	-	1.67	2.15	8.45
10/1/1973	-	6.73	0.32	-	(0.01)	-	-	0.32	7.01
11/1/1973	-	5.28	0.23	-	(0.01)	-	-	0.23	5.96
1973	5.01	32.95	0.78	-	(0.05)	0.27	4.74	5.55	39.29
6/1/1974	8.05	25.79	(0.01)	-	(0.07)	1.02	7.03	7.04	33.56
7/1/1974	-	9.37	0.19	-	(0.01)	-	-	0.19	9.51
8/1/1974	2.41	6.14	(0.33)	-	(0.01)	-	2.41	2.09	8.91
9/1/1974	1.44	6.50	0.16	-	(0.01)	-	1.44	1.61	8.34
10/1/1974	3.51	2.99	(0.21)	-	(0.01)	0.87	2.64	2.44	6.90
11/1/1974	2.62	1.50	(0.78)	-	(0.01)	0.44	2.17	1.41	5.92
1974	9.98	26.50	(0.97)	-	(0.05)	1.31	8.67	7.74	39.57
6/1/1975	11.13	21.34	0.56	-	(0.07)	2.13	9.01	9.59	30.73
7/1/1975	-	9.53	0.26	-	(0.01)	-	-	0.26	9.54
8/1/1975	2.18	5.75	(0.15)	-	(0.01)	-	2.18	2.04	8.54
9/1/1975	2.03	6.22	0.04	-	(0.01)	0.17	1.85	1.90	8.12
10/1/1975	0.93	5.75	0.22	-	(0.01)	-	0.93	1.15	7.14
11/1/1975	0.26	5.08	0.21	-	(0.01)	-	0.26	0.47	5.99
1975	5.39	32.32	0.58	-	(0.05)	0.17	5.22	5.82	39.33
6/1/1976	8.00	26.57	0.02	-	(0.07)	0.70	7.30	7.37	34.54
7/1/1976	-	9.61	0.23	-	(0.01)	-	-	0.23	9.53
8/1/1976	2.74	5.43	(0.20)	-	(0.01)	1.11	1.63	1.45	8.78
9/1/1976	0.88	7.44	0.08	-	(0.01)	-	0.88	0.96	8.25
10/1/1976	4.19	1.93	(0.50)	-	(0.01)	1.31	2.87	2.37	6.67
11/1/1976	0.89	3.94	0.23	-	(0.01)	-	0.89	1.12	5.43
1976	8.69	28.35	(0.16)	-	(0.05)	2.42	6.27	6.13	38.67
6/1/1977	6.68	28.31	0.26	-	(0.07)	0.40	6.28	6.58	34.59
7/1/1977	0.05	9.53	0.19	-	(0.01)	-	0.05	0.24	9.36
8/1/1977	2.49	6.42	(0.47)	-	(0.01)	-	2.49	2.02	9.27
9/1/1977	2.51	5.59	(0.07)	-	(0.01)	0.11	2.41	2.33	8.37
10/1/1977	3.60	2.48	(0.44)	-	(0.01)	0.33	3.27	2.83	6.73
11/1/1977	1.31	4.09	0.25	-	(0.01)	-	1.31	1.56	5.86
1977	9.96	28.11	(0.55)	-	(0.05)	0.44	9.52	8.99	39.58

Table III-E.3 BC 4 Monsoon Period Water Balance

Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
6/1/1978	19.39	14.25	(0.62)	-	(0.07)	6.94	12.45	11.93	33.22
7/1/1978	0.54	8.74	0.09	-	(0.01)	-	0.54	0.63	9.55
8/1/1978	0.96	7.99	(0.03)	-	(0.01)	-	0.96	0.94	9.60
9/1/1978	1.10	6.65	0.35	-	(0.01)	-	1.10	1.46	7.88
10/1/1978	0.41	6.22	0.17	-	(0.01)	-	0.41	0.59	7.28
11/1/1978	1.92	3.74	(0.45)	-	(0.01)	0.31	1.61	1.14	6.34
1978	4.92	33.35	0.12	-	(0.05)	0.31	4.61	4.76	40.65
6/1/1979	25.20	7.44	(0.91)	-	(0.06)	9.96	15.24	14.49	31.97
7/1/1979	0.35	9.02	0.33	-	(0.01)	-	0.35	0.67	8.13
8/1/1979	0.16	8.90	0.22	-	(0.01)	-	0.16	0.39	9.41
9/1/1979	1.57	6.10	0.01	-	(0.01)	-	1.57	1.61	7.84
10/1/1979	0.12	6.77	0.26	-	(0.01)	-	0.12	0.35	7.32
11/1/1979	0.67	5.04	0.00	-	(0.01)	-	0.67	0.67	6.03
1979	2.87	35.83	0.81	-	(0.05)	-	2.87	3.70	38.72
6/1/1980	15.30	17.52	(0.68)	-	(0.06)	4.15	11.14	10.63	32.48
7/1/1980	0.16	8.98	0.16	-	(0.01)	-	0.16	0.31	8.86
8/1/1980	1.93	6.81	(0.25)	-	(0.01)	-	1.93	1.69	9.13
9/1/1980	1.38	6.81	0.39	-	(0.01)	-	1.38	1.73	8.28
10/1/1980	0.55	6.34	0.21	-	(0.01)	-	0.55	0.79	7.42
11/1/1980	0.04	5.51	0.22	-	(0.01)	-	0.04	0.28	6.23
1980	4.06	34.45	0.73	-	(0.05)	-	4.06	4.80	39.91
6/1/1981	9.50	26.46	(0.27)	-	(0.06)	1.63	7.87	7.64	35.64
7/1/1981	0.12	9.21	0.29	-	(0.01)	-	0.12	0.43	9.30
8/1/1981	1.69	6.73	(0.40)	-	(0.01)	-	1.69	1.26	9.37
9/1/1981	3.20	5.55	0.13	-	(0.01)	0.44	2.76	2.91	8.07
10/1/1981	0.51	6.61	0.10	-	(0.01)	-	0.51	0.63	7.89
11/1/1981	0.94	3.90	0.22	-	(0.01)	-	0.94	1.18	5.46
1981	6.46	32.01	0.35	-	(0.05)	0.44	6.02	6.42	40.09
6/1/1982	12.61	21.06	(0.44)	-	(0.06)	1.35	11.26	10.87	33.31
7/1/1982	0.04	9.17	0.24	-	(0.01)	-	0.04	0.28	8.72
8/1/1982	2.60	5.67	(0.51)	-	(0.01)	-	2.60	2.09	8.94
9/1/1982	4.00	3.27	0.10	-	(0.01)	1.21	2.80	2.91	7.39
10/1/1982	3.16	3.11	0.12	-	(0.01)	1.23	1.93	2.05	6.77
11/1/1982	-	5.16	0.34	-	(0.01)	-	-	0.35	5.64
1982	9.80	26.38	0.30	-	(0.05)	2.44	7.36	7.68	37.46
6/1/1983	15.31	16.34	(0.79)	-	(0.06)	2.80	12.52	11.81	31.24
7/1/1983	-	9.49	0.26	-	(0.01)	-	-	0.28	9.30
8/1/1983	2.78	6.06	(0.44)	-	(0.01)	0.30	2.48	2.05	9.43
9/1/1983	3.52	3.94	(0.13)	-	(0.01)	0.13	3.39	3.27	7.66
10/1/1983	4.87	1.34	(0.28)	-	(0.01)	2.27	2.60	2.32	7.34
11/1/1983	1.82	3.43	0.50	-	(0.01)	0.44	1.38	1.89	5.17
1983	12.98	24.25	(0.08)	-	(0.05)	3.14	9.84	9.80	38.90
6/1/1984	6.51	28.90	0.49	-	(0.06)	0.29	6.22	6.73	34.92
7/1/1984	1.30	7.76	(0.46)	-	(0.01)	-	1.30	0.87	9.18
8/1/1984	3.27	4.65	0.08	-	(0.01)	-	3.27	3.35	8.02
9/1/1984	3.35	3.66	(0.07)	-	(0.01)	-	3.35	3.31	7.34
10/1/1984	1.97	4.72	(0.13)	-	(0.01)	-	1.97	1.85	7.30
11/1/1984	1.34	3.39	0.30	-	(0.01)	-	1.34	1.65	5.29
1984	11.22	24.17	(0.27)	-	(0.05)	-	11.22	11.02	37.13
6/1/1985	14.03	17.09	(0.34)	-	(0.06)	3.56	10.47	10.20	30.63
7/1/1985	-	8.19	0.23	-	(0.01)	-	-	0.24	8.59
8/1/1985	1.10	7.40	(0.28)	-	(0.01)	-	1.10	0.87	7.91
9/1/1985	2.28	5.83	(0.15)	-	(0.01)	-	2.28	2.13	8.09
10/1/1985	3.63	2.40	(0.19)	-	(0.01)	0.56	3.07	2.91	6.74
11/1/1985	1.22	3.15	0.40	-	(0.01)	-	1.22	1.61	4.80
1985	8.24	26.97	0.02	-	(0.05)	0.56	7.68	7.76	36.13
6/1/1986	10.90	23.86	(0.20)	-	(0.06)	1.49	9.41	9.29	33.98
7/1/1986	-	9.25	0.25	-	(0.01)	-	-	0.24	9.12
8/1/1986	4.69	3.11	(0.70)	-	(0.01)	0.31	4.37	3.70	8.47
9/1/1986	2.13	5.63	(0.07)	-	(0.01)	-	2.13	2.05	8.05
10/1/1986	2.13	4.06	0.05	-	(0.01)	-	2.13	2.24	6.83
11/1/1986	1.76	3.19	0.11	-	(0.01)	0.18	1.57	1.65	5.01
1986	10.69	25.24	(0.36)	-	(0.05)	0.50	10.20	9.88	37.48

Table III-E.3 BC 4 Monsoon Period Water Balance

Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
6/1/1987	11.59	21.22	0.36	-	(0.06)	2.06	9.53	10.00	32.79
7/1/1987	0.24	9.13	0.19	-	(0.01)	-	0.24	0.39	9.11
8/1/1987	2.02	6.97	(0.24)	-	(0.01)	0.53	1.50	1.30	9.06
9/1/1987	3.02	4.80	(0.18)	-	(0.01)	0.06	2.95	2.76	8.11
10/1/1987	1.30	5.31	0.13	-	(0.01)	-	1.30	1.46	7.19
11/1/1987	0.35	5.43	0.29	-	(0.01)	-	0.35	0.63	6.35
1987	6.93	31.65	0.20	-	(0.05)	0.59	6.34	6.54	39.82
6/1/1988	12.58	21.81	(0.37)	-	(0.06)	2.54	10.04	9.72	33.57
7/1/1988	0.12	8.66	0.26	-	(0.01)	-	0.12	0.39	8.69
8/1/1988	2.78	5.00	(0.79)	-	(0.01)	0.30	2.48	1.65	8.94
9/1/1988	6.74	1.50	(0.47)	-	(0.01)	0.88	5.87	5.43	7.69
10/1/1988	0.31	6.30	0.73	-	(0.01)	-	0.31	1.06	6.99
11/1/1988	1.47	3.82	0.03	-	(0.01)	0.09	1.38	1.42	6.12
1988	11.43	25.28	(0.25)	-	(0.05)	1.27	10.16	9.96	38.43
6/1/1989	7.12	28.82	0.58	-	(0.06)	0.63	6.50	7.13	34.89
7/1/1989	-	9.41	0.19	-	(0.01)	-	-	0.20	8.92
8/1/1989	0.51	8.27	0.04	-	(0.01)	-	0.51	0.51	9.36
9/1/1989	0.94	6.89	0.09	-	(0.01)	-	0.94	1.06	7.93
10/1/1989	1.52	5.24	0.01	-	(0.01)	0.50	1.02	1.06	7.30
11/1/1989	1.06	4.29	0.04	-	(0.01)	-	1.06	1.10	6.20
1989	4.04	34.09	0.36	-	(0.05)	0.50	3.54	3.94	39.71
6/1/1990	7.95	26.18	(0.21)	-	(0.06)	-	7.95	7.80	33.28
7/1/1990	0.31	8.90	0.16	-	(0.01)	-	0.31	0.43	9.06
8/1/1990	1.42	6.61	(0.03)	-	(0.01)	-	1.42	1.42	8.69
9/1/1990	9.41	(1.77)	(0.40)	-	(0.01)	6.37	3.03	2.64	7.50
10/1/1990	2.98	3.50	(0.14)	-	(0.01)	0.82	2.17	2.05	6.99
11/1/1990	0.24	4.80	0.40	-	(0.01)	-	0.24	0.63	5.63
1990	14.36	22.05	(0.01)	-	(0.05)	7.19	7.17	7.17	37.88
6/1/1991	15.68	18.07	(0.78)	-	(0.07)	3.39	12.28	11.61	33.25
7/1/1991	0.63	8.70	0.22	-	(0.01)	-	0.63	0.87	8.52
8/1/1991	1.65	7.01	(0.47)	-	(0.01)	-	1.65	1.18	9.21
9/1/1991	2.83	5.08	0.19	-	(0.01)	-	2.83	3.03	8.20
10/1/1991	1.64	4.80	0.18	-	(0.01)	0.15	1.50	1.69	7.03
11/1/1991	1.14	4.69	(0.55)	-	(0.01)	-	1.14	0.59	6.64
1991	7.90	30.28	(0.43)	-	(0.05)	0.15	7.76	7.36	39.60
6/1/1992	24.11	8.19	(1.09)	-	(0.06)	6.59	17.52	16.57	31.10
7/1/1992	1.26	7.87	0.40	-	(0.01)	-	1.26	1.69	7.39
8/1/1992	3.09	5.47	(0.62)	-	(0.01)	0.45	2.64	2.01	9.27
9/1/1992	5.65	1.97	0.06	-	(0.01)	1.55	4.09	4.21	7.98
10/1/1992	0.94	6.06	0.44	-	(0.01)	-	0.94	1.34	6.89
11/1/1992	1.18	4.33	(0.22)	-	(0.01)	-	1.18	0.98	6.65
1992	12.12	25.71	0.07	-	(0.05)	2.00	10.12	10.24	38.18
6/1/1993	27.34	5.04	(0.49)	-	(0.06)	14.78	12.56	12.24	31.34
7/1/1993	-	9.25	0.35	-	(0.01)	-	-	0.35	8.78
8/1/1993	0.24	8.50	0.25	-	(0.01)	-	0.24	0.51	8.95
9/1/1993	3.54	4.06	(0.86)	-	(0.01)	-	3.54	2.72	8.41
10/1/1993	0.16	6.46	0.82	-	(0.01)	-	0.16	0.94	6.50
11/1/1993	0.79	4.61	0.20	-	(0.01)	-	0.79	1.02	6.08
1993	4.72	32.87	0.76	-	(0.05)	-	4.72	5.55	38.72
6/1/1994	9.87	25.00	0.33	-	(0.06)	3.02	6.85	7.24	33.98
7/1/1994	0.35	8.62	0.22	-	(0.01)	-	0.35	0.59	8.72
8/1/1994	1.06	7.32	(0.41)	-	(0.01)	-	1.06	0.67	9.17
9/1/1994	1.10	7.48	0.48	-	(0.01)	-	1.10	1.57	8.66
10/1/1994	2.00	4.45	(0.10)	-	(0.01)	0.15	1.85	1.77	6.81
11/1/1994	1.87	2.87	(0.19)	-	(0.01)	0.41	1.46	1.26	5.66
1994	6.39	30.75	0.00	-	(0.05)	0.56	5.83	5.87	39.01
6/1/1995	15.98	16.89	(0.57)	-	(0.07)	2.28	13.70	13.19	31.84
7/1/1995	-	9.29	0.28	-	(0.01)	-	-	0.28	9.01
8/1/1995	0.04	9.13	0.22	-	(0.01)	-	0.04	0.28	9.31
9/1/1995	3.99	4.13	(0.38)	-	(0.01)	1.23	2.76	2.40	8.90
10/1/1995	2.86	3.86	(0.47)	-	(0.01)	0.58	2.28	1.81	7.47
11/1/1995	-	5.39	0.78	-	(0.01)	-	-	0.79	6.16
1995	6.89	31.81	0.42	-	(0.05)	1.81	5.08	5.55	40.85
6/1/1996	6.28	30.12	0.47	-	(0.07)	0.69	5.59	6.10	35.54
7/1/1996	0.39	8.66	0.06	-	(0.01)	-	0.39	0.47	8.94
8/1/1996	2.32	6.42	(0.20)	-	(0.01)	-	2.32	2.13	8.99
9/1/1996	1.30	6.57	0.05	-	(0.01)	-	1.30	1.34	8.10
10/1/1996	3.12	2.87	(0.19)	-	(0.01)	0.09	3.03	2.83	6.99
11/1/1996	0.39	5.31	0.25	-	(0.01)	-	0.39	0.67	6.16
1996	7.53	29.84	(0.03)	-	(0.05)	0.09	7.44	7.44	39.18

Table III-E.3 BC 4 Monsoon Period Water Balance

Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
6/1/1997	6.94	28.74	0.29	-	(0.07)	0.57	6.38	6.69	33.70
7/1/1997	-	9.13	0.19	-	(0.01)	-	-	0.20	8.62
8/1/1997	0.12	9.29	0.13	-	(0.01)	-	0.12	0.24	9.86
9/1/1997	2.67	5.43	(0.34)	-	(0.01)	0.03	2.64	2.32	8.36
10/1/1997	-	7.20	0.29	-	(0.01)	-	-	0.31	7.53
11/1/1997	0.75	4.41	(0.02)	-	(0.01)	-	0.75	0.71	6.47
1997	3.54	35.47	0.26	-	(0.05)	0.03	3.50	3.78	40.85
6/1/1998	14.00	17.52	(1.02)	-	(0.07)	2.66	11.34	10.43	29.93
7/1/1998	-	9.33	0.27	-	(0.01)	-	-	0.24	8.96
8/1/1998	1.65	7.17	(0.04)	-	(0.01)	-	1.65	1.65	9.47
9/1/1998	2.50	5.31	(0.01)	-	(0.01)	0.10	2.40	2.40	8.19
10/1/1998	1.38	5.47	0.10	-	(0.01)	-	1.38	1.46	7.10
11/1/1998	-	5.59	0.26	-	(0.01)	-	-	0.28	6.74
1998	5.54	32.87	0.57	-	(0.05)	0.10	5.43	6.02	40.46
6/1/1999	4.96	31.26	0.29	-	(0.07)	0.47	4.49	4.84	35.16
7/1/1999	-	9.13	0.18	-	(0.01)	-	-	0.20	8.88
8/1/1999	5.72	2.20	(1.01)	-	(0.01)	0.69	5.04	4.06	8.68
9/1/1999	2.74	4.76	(0.14)	-	(0.01)	0.07	2.68	2.56	7.98
10/1/1999	1.30	5.55	0.61	-	(0.01)	-	1.30	1.93	7.19
11/1/1999	-	5.63	0.30	-	(0.01)	-	-	0.28	6.46
1999	9.77	27.28	(0.05)	-	(0.05)	0.75	9.02	9.02	39.19
6/1/2000	3.84	34.33	0.54	-	(0.07)	0.69	3.15	3.74	37.47
7/1/2000	0.79	8.39	(0.03)	-	(0.01)	-	0.79	0.75	9.39
8/1/2000	0.08	9.49	0.19	-	(0.01)	-	0.08	0.28	9.39
9/1/2000	0.71	7.01	0.05	-	(0.01)	-	0.71	0.79	8.65
10/1/2000	-	7.09	0.17	-	(0.01)	-	-	0.16	7.25
11/1/2000	4.71	(0.67)	(1.73)	-	(0.01)	1.33	3.39	1.65	6.07
2000	6.29	31.30	(1.35)	-	(0.05)	1.33	4.96	3.62	40.76
6/1/2001	12.31	22.32	0.24	-	(0.07)	0.69	11.61	11.93	32.55
7/1/2001	0.04	9.33	0.27	-	(0.01)	-	0.04	0.28	8.74
8/1/2001	2.58	6.26	(0.69)	-	(0.01)	0.73	1.85	1.18	9.58
9/1/2001	3.52	4.13	0.18	-	(0.01)	0.14	3.39	3.58	7.65
10/1/2001	0.16	6.50	0.37	-	(0.01)	-	0.16	0.51	7.42
11/1/2001	0.35	4.69	0.20	-	(0.01)	-	0.35	0.59	5.97
2001	6.66	30.91	0.34	-	(0.05)	0.87	5.79	6.14	39.37
6/1/2002	3.23	34.02	0.66	-	(0.07)	-	3.23	3.90	36.31
7/1/2002	-	9.45	0.13	-	(0.01)	-	-	0.12	9.13
8/1/2002	0.35	8.86	0.07	-	(0.01)	-	0.35	0.39	9.64
9/1/2002	0.47	7.52	(0.01)	-	(0.01)	-	0.47	0.47	8.31
10/1/2002	1.22	5.51	(0.08)	-	(0.01)	-	1.22	1.18	7.04
11/1/2002	0.08	5.08	0.17	-	(0.01)	-	0.08	0.24	6.43
2002	2.13	36.42	0.28	-	(0.05)	-	2.13	2.40	40.55
6/1/2003	9.23	26.81	(0.37)	-	(0.07)	1.75	7.48	7.13	35.00
7/1/2003	-	9.96	0.19	-	(0.01)	-	-	0.20	9.92
8/1/2003	0.47	8.78	0.10	-	(0.01)	-	0.47	0.59	10.38
9/1/2003	1.34	6.93	(0.14)	-	(0.01)	-	1.34	1.18	8.86
10/1/2003	2.01	4.92	(0.04)	-	(0.01)	-	2.01	2.01	7.61
11/1/2003	0.08	5.71	0.27	-	(0.01)	-	0.08	0.35	6.44
2003	3.90	36.30	0.38	-	(0.05)	-	3.90	4.33	43.20
6/1/2004	7.85	28.54	(0.03)	-	(0.06)	1.19	6.65	6.65	36.22
7/1/2004	-	9.92	0.17	-	(0.01)	-	-	0.20	9.97
8/1/2004	0.55	8.78	0.06	-	(0.01)	-	0.55	0.59	10.00
9/1/2004	2.17	6.14	(0.22)	-	(0.01)	-	2.17	1.97	8.99
10/1/2004	1.61	5.71	(0.11)	-	(0.01)	0.19	1.42	1.30	8.22
11/1/2004	1.14	4.06	(0.16)	-	(0.01)	-	1.14	1.02	6.74
2004	5.47	34.61	(0.26)	-	(0.05)	0.19	5.28	5.08	43.93
6/1/2005	16.43	17.36	(0.50)	-	(0.06)	6.70	9.72	9.29	32.35
7/1/2005	0.08	9.69	0.21	-	(0.01)	-	0.08	0.28	9.61
8/1/2005	1.35	7.91	(0.25)	-	(0.01)	0.09	1.26	1.06	10.73
9/1/2005	4.93	2.64	(0.30)	-	(0.01)	0.75	4.17	3.86	7.60
10/1/2005	0.08	6.81	0.38	-	(0.01)	-	0.08	0.47	7.72
11/1/2005	0.43	5.04	0.16	-	(0.01)	-	0.43	0.59	6.66
2005	6.87	32.09	0.20	-	(0.04)	0.84	6.02	6.26	42.32
6/1/2006	3.79	33.66	0.63	-	(0.06)	1.31	2.48	3.23	36.46
7/1/2006	0.51	9.06	(0.00)	-	(0.01)	-	0.51	0.51	10.08
8/1/2006	3.12	4.88	(0.92)	-	(0.01)	1.11	2.01	1.10	9.49
9/1/2006	3.02	4.84	0.43	-	(0.01)	0.06	2.95	3.39	7.60
10/1/2006	1.14	5.43	0.13	-	(0.01)	-	1.14	1.30	7.15
11/1/2006	1.06	4.13	0.13	-	(0.01)	-	1.06	1.18	6.29
2006	8.85	28.35	(0.23)	-	(0.04)	1.17	7.68	7.48	40.61

Table III-E.4 BC 4 Winter Storm Peirod Water Balance

Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
10/1/1951	14.05	46.45	2.19	-	(0.32)	3.15	10.90	13.14	60.83
11/1/1951	0.97	3.94	0.07	-	(0.04)	0.03	0.94	1.01	5.50
12/1/1951	2.36	2.03	(0.11)	-	(0.03)	-	2.36	2.25	3.88
1/1/1952	2.25	(0.25)	(0.19)	-	(0.04)	0.46	1.79	1.63	2.93
2/1/1952	3.52	(0.00)	(0.32)	-	(0.04)	0.64	2.88	2.57	3.05
3/1/1952	0.47	3.30	0.62	-	(0.03)	-	0.47	1.11	3.88
1952	9.58	9.02	0.09	-	(0.18)	1.13	8.45	8.58	19.23
10/1/1952	10.74	42.69	0.87	-	(0.23)	0.76	9.98	10.89	53.40
11/1/1952	-	6.05	0.28	-	(0.03)	-	-	0.28	6.25
12/1/1952	4.13	(1.07)	(1.55)	-	(0.03)	1.11	3.02	1.51	3.52
1/1/1953	2.08	0.64	0.11	-	(0.03)	-	2.08	2.20	2.96
2/1/1953	0.74	2.57	0.61	-	(0.03)	-	0.74	1.34	3.44
3/1/1953	0.60	3.23	0.13	-	(0.03)	-	0.60	0.74	3.87
1953	7.54	11.43	(0.41)	-	(0.16)	1.11	6.44	6.08	20.03
10/1/1953	7.76	45.33	0.91	-	(0.21)	1.86	5.90	6.86	52.89
11/1/1953	0.01	5.62	0.27	-	(0.03)	-	0.01	0.29	5.88
12/1/1953	0.56	3.23	0.03	-	(0.03)	-	0.56	0.59	3.95
1/1/1954	0.19	2.66	0.23	-	(0.03)	-	0.19	0.43	3.11
2/1/1954	2.39	0.88	(0.65)	-	(0.03)	0.17	2.22	1.58	3.44
3/1/1954	0.70	3.49	0.31	-	(0.03)	-	0.70	1.02	4.35
1954	3.85	15.88	0.20	-	(0.14)	0.17	3.69	3.90	20.72
10/1/1954	17.47	34.65	(0.10)	-	(0.19)	5.25	12.21	12.19	52.46
11/1/1954	-	5.77	0.46	-	(0.03)	-	-	0.46	5.77
12/1/1954	0.09	4.04	0.19	-	(0.03)	-	0.09	0.28	4.59
1/1/1955	0.28	3.27	0.21	-	(0.03)	-	0.28	0.50	3.86
2/1/1955	3.39	(1.01)	(1.07)	-	(0.03)	0.38	3.02	1.96	2.49
3/1/1955	0.28	3.37	0.55	-	(0.02)	-	0.28	0.83	3.72
1955	4.04	15.44	0.35	-	(0.13)	0.38	3.67	4.04	20.44
10/1/1955	9.34	43.19	0.60	-	(0.17)	2.10	7.24	7.89	52.30
11/1/1955	0.02	5.94	0.25	-	(0.02)	-	0.02	0.27	6.22
12/1/1955	0.96	2.63	(0.11)	-	(0.02)	-	0.96	0.85	3.91
1/1/1956	1.62	1.78	(0.22)	-	(0.02)	0.05	1.57	1.34	3.35
2/1/1956	2.37	0.95	(0.67)	-	(0.02)	0.66	1.70	1.04	3.71
3/1/1956	2.22	1.25	0.10	-	(0.02)	-	2.22	2.32	3.23
1956	7.19	12.56	(0.66)	-	(0.12)	0.72	6.48	5.83	20.41
10/1/1956	5.53	49.02	1.10	-	(0.16)	0.03	5.50	6.63	55.24
11/1/1956	0.52	4.66	0.04	-	(0.02)	-	0.52	0.57	5.52
12/1/1956	-	3.75	0.33	-	(0.02)	-	-	0.33	3.87
1/1/1957	0.46	2.66	0.07	-	(0.02)	-	0.46	0.53	3.25
2/1/1957	4.35	(2.24)	(1.49)	-	(0.02)	1.20	3.15	1.67	2.86
3/1/1957	1.13	2.92	0.65	-	(0.02)	-	1.13	1.80	3.43
1957	6.45	11.75	(0.39)	-	(0.11)	1.20	5.25	4.91	18.93
10/1/1957	8.59	44.45	0.72	-	(0.14)	0.10	8.49	9.23	52.59
11/1/1957	2.58	1.30	(0.69)	-	(0.02)	0.33	2.25	1.59	4.80
12/1/1957	1.22	2.54	0.35	-	(0.02)	0.04	1.19	1.53	3.29
1/1/1958	1.04	2.11	0.11	-	(0.02)	-	1.04	1.17	3.41
2/1/1958	0.01	3.42	0.29	-	(0.02)	-	0.01	0.31	3.37
3/1/1958	2.68	0.70	(0.61)	-	(0.02)	0.36	2.31	1.71	3.29
1958	7.53	10.06	(0.55)	-	(0.10)	0.73	6.80	6.30	18.16
10/1/1958	11.86	41.27	0.14	-	(0.13)	0.85	11.01	11.21	53.48
11/1/1958	1.92	3.39	0.39	-	(0.02)	0.77	1.15	1.54	5.57
12/1/1958	1.52	2.01	(0.32)	-	(0.02)	-	1.52	1.21	3.70
1/1/1959	-	3.54	0.42	-	(0.02)	-	-	0.42	3.80
2/1/1959	0.21	3.35	0.22	-	(0.02)	-	0.21	0.44	3.60
3/1/1959	1.42	1.93	(0.22)	-	(0.02)	-	1.42	1.20	3.56
1959	5.06	14.21	0.50	-	(0.09)	0.77	4.30	4.80	20.23
10/1/1959	10.58	44.84	0.15	-	(0.12)	1.27	9.31	9.50	55.43
11/1/1959	4.23	0.59	(0.59)	-	(0.02)	2.79	1.44	0.85	5.52
12/1/1959	0.91	3.31	0.54	-	(0.02)	-	0.91	1.44	3.80
1/1/1960	5.07	(2.60)	(1.58)	-	(0.02)	1.74	3.33	1.79	2.76
2/1/1960	4.24	(1.61)	0.07	-	(0.02)	1.95	2.29	2.40	2.64
3/1/1960	0.86	2.56	0.53	-	(0.02)	-	0.86	1.40	3.51
1960	15.30	2.24	(1.03)	-	(0.09)	6.48	8.82	7.88	18.24

Table III-E.4 BC 4 Winter Storm Peirod Water Balance

Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
10/1/1960	3.59	51.46	1.32	-	(0.12)	-	3.59	4.94	55.64
11/1/1960	2.05	2.99	(0.40)	-	(0.02)	0.07	1.98	1.59	5.27
12/1/1960	0.48	3.03	0.26	-	(0.02)	-	0.48	0.75	3.86
1/1/1961	0.46	2.72	0.14	-	(0.02)	-	0.46	0.61	3.44
2/1/1961	0.70	2.48	(0.12)	-	(0.02)	-	0.70	0.57	3.29
3/1/1961	0.23	3.82	0.34	-	(0.01)	-	0.23	0.57	3.75
1961	3.92	15.04	0.23	-	(0.08)	0.07	3.85	4.09	19.61
10/1/1961	5.92	48.03	0.35	-	(0.11)	0.18	5.73	6.12	54.08
11/1/1961	0.44	4.65	(0.07)	-	(0.02)	-	0.44	0.38	5.66
12/1/1961	0.32	2.87	0.32	-	(0.02)	-	0.32	0.63	3.22
1/1/1962	3.86	(1.22)	(1.08)	-	(0.02)	1.05	2.81	1.75	2.79
2/1/1962	3.18	(0.47)	(0.75)	-	(0.02)	1.03	2.14	1.42	2.80
3/1/1962	1.52	1.46	0.04	-	(0.01)	-	1.52	1.57	3.31
1962	9.32	7.28	(1.54)	-	(0.08)	2.08	7.23	5.76	17.78
10/1/1962	4.81	49.45	1.41	-	(0.11)	-	4.81	6.25	54.31
11/1/1962	0.86	4.29	0.07	-	(0.02)	-	0.86	0.93	5.52
12/1/1962	0.83	3.07	(0.00)	-	(0.01)	-	0.83	0.82	4.00
1/1/1963	1.80	1.26	(0.52)	-	(0.02)	-	1.80	1.28	3.37
2/1/1963	2.09	1.06	(0.06)	-	(0.02)	-	2.09	2.03	3.13
3/1/1963	4.18	(0.28)	(0.18)	-	(0.01)	2.59	1.59	1.44	3.83
1963	9.75	9.41	(0.70)	-	(0.07)	2.59	7.16	6.50	19.84
10/1/1963	14.25	39.80	0.03	-	(0.10)	3.97	10.29	10.34	53.85
11/1/1963	0.65	5.12	0.22	-	(0.01)	-	0.65	0.87	5.97
12/1/1963	2.33	1.18	(0.43)	-	(0.01)	-	2.33	1.91	3.86
1/1/1964	0.33	2.95	0.49	-	(0.01)	-	0.33	0.83	3.47
2/1/1964	0.57	2.32	0.09	-	(0.01)	-	0.57	0.66	3.15
3/1/1964	-	3.66	0.29	-	(0.01)	-	-	0.29	3.63
1964	3.88	15.24	0.66	-	(0.07)	-	3.88	4.56	20.08
10/1/1964	7.66	44.61	0.19	-	(0.10)	-	7.66	7.93	51.23
11/1/1964	1.54	4.25	(0.06)	-	(0.01)	0.31	1.23	1.17	6.00
12/1/1964	1.38	2.05	(0.26)	-	(0.01)	-	1.38	1.12	3.73
1/1/1965	1.57	1.34	(0.39)	-	(0.01)	-	1.57	1.18	3.31
2/1/1965	2.97	(0.04)	(0.15)	-	(0.01)	0.60	2.37	2.23	2.75
3/1/1965	2.80	0.83	(0.12)	-	(0.01)	1.00	1.80	1.69	3.54
1965	10.26	8.43	(0.97)	-	(0.07)	1.92	8.34	7.40	19.33
10/1/1965	7.29	45.08	0.96	-	(0.09)	-	7.29	8.28	52.23
11/1/1965	0.45	5.16	0.11	-	(0.01)	-	0.45	0.57	5.93
12/1/1965	2.35	1.42	(1.18)	-	(0.01)	0.31	2.04	0.87	4.20
1/1/1966	9.60	(7.83)	(1.07)	-	(0.01)	6.65	2.94	1.94	2.94
2/1/1966	2.42	0.94	(0.05)	-	(0.01)	-	2.42	2.37	2.84
3/1/1966	2.18	1.30	0.38	-	(0.01)	0.42	1.76	2.15	3.26
1966	16.99	0.98	(1.81)	-	(0.06)	7.37	9.62	7.90	19.18
10/1/1966	5.81	48.07	1.12	-	(0.09)	0.99	4.82	5.97	53.04
11/1/1966	1.36	4.06	0.13	-	(0.01)	-	1.36	1.48	5.32
12/1/1966	0.85	2.83	0.05	-	(0.01)	-	0.85	0.91	4.25
1/1/1967	1.23	1.73	(0.15)	-	(0.01)	-	1.23	1.10	3.38
2/1/1967	0.79	2.36	0.09	-	(0.01)	-	0.79	0.88	3.09
3/1/1967	-	4.02	0.34	-	(0.01)	-	-	0.34	4.09
1967	4.23	15.00	0.46	-	(0.06)	-	4.23	4.71	20.13
10/1/1967	9.95	43.66	0.22	-	(0.08)	1.35	8.60	8.86	53.24
11/1/1967	0.42	4.96	0.19	-	(0.01)	-	0.42	0.61	6.22
12/1/1967	1.84	1.50	(1.07)	-	(0.01)	-	1.84	0.78	4.01
1/1/1968	10.17	(7.56)	(0.40)	-	(0.01)	7.86	2.31	1.98	2.47
2/1/1968	0.62	2.48	0.48	-	(0.01)	-	0.62	1.11	3.22
3/1/1968	1.89	1.81	(0.18)	-	(0.01)	-	1.89	1.72	3.58
1968	14.94	3.19	(0.98)	-	(0.06)	7.86	7.07	6.20	19.49
10/1/1968	7.11	45.91	0.89	-	(0.08)	0.60	6.51	7.42	53.85
11/1/1968	0.38	4.76	0.16	-	(0.01)	-	0.38	0.56	5.42
12/1/1968	2.52	0.91	(0.64)	-	(0.01)	0.15	2.37	1.74	3.76
1/1/1969	3.15	(0.39)	(1.06)	-	(0.01)	0.79	2.35	1.31	3.13
2/1/1969	4.22	(1.34)	(0.51)	-	(0.01)	1.55	2.67	2.19	2.78
3/1/1969	1.34	1.93	0.76	-	(0.01)	-	1.34	2.11	3.12
1969	11.61	5.87	(1.29)	-	(0.06)	2.49	9.12	7.91	18.21

Table III-E.4 BC 4 Winter Storm Peirod Water Balance

Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
10/1/1969	6.90	47.40	0.96	-	(0.08)	0.36	6.54	7.55	54.19
11/1/1969	0.80	4.25	0.02	-	(0.01)	-	0.80	0.82	5.61
12/1/1969	2.11	1.18	(0.43)	-	(0.01)	-	2.11	1.68	3.98
1/1/1970	1.30	1.81	(0.21)	-	(0.01)	-	1.30	1.11	3.62
2/1/1970	0.50	2.64	0.54	-	(0.01)	-	0.50	1.04	2.99
3/1/1970	0.41	3.35	0.23	-	(0.01)	-	0.41	0.63	3.72
1970	5.11	13.23	0.15	-	(0.06)	-	5.11	5.29	19.93
10/1/1970	10.76	42.99	0.09	-	(0.08)	2.96	7.80	7.98	53.76
11/1/1970	-	5.31	0.28	-	(0.01)	-	-	0.28	5.49
12/1/1970	0.55	2.99	(0.16)	-	(0.01)	-	0.55	0.39	4.04
1/1/1971	1.28	1.69	(0.10)	-	(0.01)	-	1.28	1.20	3.06
2/1/1971	0.84	2.60	0.16	-	(0.01)	-	0.84	1.00	3.18
3/1/1971	0.78	2.99	(0.05)	-	(0.01)	-	0.78	0.75	4.17
1971	3.46	15.59	0.12	-	(0.05)	-	3.46	3.61	19.94
10/1/1971	8.36	45.31	0.07	-	(0.08)	2.48	5.88	5.98	53.36
11/1/1971	4.67	0.79	(0.25)	-	(0.01)	1.80	2.86	2.62	5.50
12/1/1971	0.04	3.62	0.44	-	(0.01)	-	0.04	0.48	3.84
1/1/1972	2.08	0.83	(0.47)	-	(0.01)	-	2.08	1.63	3.13
2/1/1972	-	3.27	0.51	-	(0.01)	-	-	0.51	3.30
3/1/1972	-	4.61	0.22	-	(0.01)	-	-	0.22	4.20
1972	6.79	13.11	0.45	-	(0.05)	1.80	4.98	5.46	19.97
10/1/1972	4.85	52.01	0.44	-	(0.08)	0.36	4.49	4.95	57.22
11/1/1972	8.63	(3.98)	(1.12)	-	(0.01)	4.30	4.34	3.24	5.44
12/1/1972	2.82	0.28	(0.38)	-	(0.01)	0.17	2.65	2.27	3.23
1/1/1973	2.56	(0.31)	(0.78)	-	(0.01)	0.14	2.41	1.64	3.15
2/1/1973	1.13	2.09	0.72	-	(0.01)	-	1.13	1.85	2.82
3/1/1973	3.11	0.12	(0.56)	-	(0.01)	0.33	2.79	2.25	2.92
1973	18.26	(1.81)	(2.13)	-	(0.05)	4.93	13.32	11.26	17.57
10/1/1973	12.04	40.55	0.95	-	(0.07)	1.30	10.74	11.78	52.79
11/1/1973	-	5.28	0.23	-	(0.01)	-	-	0.23	5.96
12/1/1973	1.76	1.69	(0.63)	-	(0.01)	-	1.76	1.13	4.15
1/1/1974	0.10	3.27	0.50	-	(0.01)	-	0.10	0.60	3.44
2/1/1974	3.35	(0.59)	(0.57)	-	(0.01)	0.77	2.58	2.03	2.97
3/1/1974	0.15	3.58	0.39	-	(0.01)	-	0.15	0.54	3.42
1974	5.36	13.23	(0.08)	-	(0.05)	0.77	4.59	4.52	19.94
10/1/1974	10.05	42.83	0.11	-	(0.07)	1.12	8.93	9.08	53.23
11/1/1974	2.62	1.50	(0.78)	-	(0.01)	0.44	2.17	1.41	5.92
12/1/1974	0.87	3.58	0.62	-	(0.01)	-	0.87	1.48	3.78
1/1/1975	0.74	2.01	0.16	-	(0.01)	-	0.74	0.91	3.35
2/1/1975	0.40	2.36	0.14	-	(0.01)	-	0.40	0.54	2.74
3/1/1975	3.92	(0.39)	(0.40)	-	(0.01)	1.93	1.99	1.60	3.09
1975	8.54	9.06	(0.26)	-	(0.05)	2.37	6.17	5.94	18.87
10/1/1975	10.34	41.02	0.41	-	(0.07)	0.37	9.97	10.41	51.12
11/1/1975	0.26	5.08	0.21	-	(0.01)	-	0.26	0.47	5.99
12/1/1975	1.85	1.77	(0.78)	-	(0.01)	0.70	1.15	0.38	4.51
1/1/1976	1.53	1.73	0.29	-	(0.01)	-	1.53	1.82	3.12
2/1/1976	0.23	2.80	0.36	-	(0.01)	-	0.23	0.59	3.05
3/1/1976	1.59	2.24	(0.15)	-	(0.01)	-	1.59	1.46	3.50
1976	5.46	13.62	(0.06)	-	(0.05)	0.70	4.76	4.72	20.17
10/1/1976	10.61	42.44	(0.10)	-	(0.07)	2.42	8.19	8.13	53.60
11/1/1976	0.89	3.94	0.23	-	(0.01)	-	0.89	1.12	5.43
12/1/1976	0.54	3.11	0.16	-	(0.01)	-	0.54	0.70	3.95
1/1/1977	1.08	1.14	(0.30)	-	(0.01)	0.21	0.87	0.59	3.23
2/1/1977	2.61	0.91	(0.33)	-	(0.01)	0.19	2.42	2.09	2.66
3/1/1977	0.08	4.33	0.43	-	(0.01)	-	0.08	0.51	4.36
1977	5.20	13.43	0.18	-	(0.05)	0.40	4.80	5.02	19.63
10/1/1977	11.02	42.83	(0.48)	-	(0.07)	0.44	10.58	10.12	54.05
11/1/1977	1.31	4.09	0.25	-	(0.01)	-	1.31	1.56	5.86
12/1/1977	0.35	3.43	0.39	-	(0.01)	-	0.35	0.74	4.12
1/1/1978	0.65	2.48	(0.10)	-	(0.01)	-	0.65	0.56	3.66
2/1/1978	5.58	(3.74)	(1.41)	-	(0.01)	2.37	3.21	1.84	2.56
3/1/1978	5.41	(2.20)	(0.55)	-	(0.01)	2.19	3.21	2.70	3.07
1978	13.30	4.06	(1.42)	-	(0.05)	4.57	8.74	7.40	19.27

Table III-E.4 BC 4 Winter Storm Peirod Water Balance

Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
10/1/1978	10.40	43.90	1.62	-	(0.07)	2.37	8.03	9.71	54.11
11/1/1978	1.92	3.74	(0.45)	-	(0.01)	0.31	1.61	1.14	6.34
12/1/1978	5.54	(2.44)	(1.25)	-	(0.01)	2.43	3.11	1.89	3.73
1/1/1979	6.35	(3.90)	(0.38)	-	(0.01)	3.64	2.72	2.36	2.66
2/1/1979	5.50	(3.74)	(0.74)	-	(0.01)	2.54	2.95	2.24	2.30
3/1/1979	1.87	2.83	0.85	-	(0.01)	0.69	1.18	2.09	3.56
1979	21.17	(3.50)	(1.97)	-	(0.05)	9.60	11.57	9.72	18.59
10/1/1979	8.15	45.47	1.42	-	(0.07)	0.67	7.48	8.94	52.41
11/1/1979	0.67	5.04	0.00	-	(0.01)	-	0.67	0.67	6.03
12/1/1979	0.63	3.07	0.12	-	(0.01)	-	0.63	0.79	4.12
1/1/1980	0.71	2.76	(0.06)	-	(0.01)	-	0.71	0.63	3.81
2/1/1980	3.62	(1.61)	(1.72)	-	(0.01)	0.12	3.50	1.81	2.70
3/1/1980	6.36	(2.83)	(0.01)	-	(0.01)	4.04	2.32	2.44	2.60
1980	11.99	6.42	(1.66)	-	(0.05)	4.15	7.83	6.34	19.25
10/1/1980	7.99	45.08	1.49	-	(0.06)	-	7.99	9.49	52.93
11/1/1980	0.04	5.51	0.22	-	(0.01)	-	0.04	0.28	6.23
12/1/1980	-	4.02	0.17	-	(0.01)	-	-	0.16	4.36
1/1/1981	0.55	3.11	0.06	-	(0.01)	-	0.55	0.63	3.64
2/1/1981	1.34	2.01	(0.29)	-	(0.01)	-	1.34	1.02	3.70
3/1/1981	2.41	1.30	(0.42)	-	(0.01)	0.52	1.89	1.50	3.76
1981	4.34	15.94	(0.27)	-	(0.05)	0.52	3.82	3.58	21.70
10/1/1981	10.72	44.13	0.35	-	(0.06)	1.55	9.17	9.57	54.75
11/1/1981	0.94	3.90	0.22	-	(0.01)	-	0.94	1.18	5.46
12/1/1981	1.87	1.54	(0.77)	-	(0.01)	0.72	1.14	0.35	4.85
1/1/1982	0.47	3.43	0.67	-	(0.01)	-	0.47	1.14	3.46
2/1/1982	2.68	0.08	(0.52)	-	(0.01)	-	2.68	2.20	2.94
3/1/1982	1.77	1.73	(0.05)	-	(0.01)	-	1.77	1.73	3.24
1982	7.73	10.67	(0.44)	-	(0.04)	0.72	7.01	6.61	19.95
10/1/1982	15.62	35.51	0.18	-	(0.06)	3.06	12.56	12.76	50.63
11/1/1982	-	5.16	0.34	-	(0.01)	-	-	0.35	5.64
12/1/1982	2.87	(0.31)	(1.11)	-	(0.01)	-	2.87	1.77	3.64
1/1/1983	2.09	1.02	0.14	-	(0.01)	-	2.09	2.24	3.06
2/1/1983	1.39	1.42	(0.40)	-	(0.01)	0.20	1.18	0.79	3.40
3/1/1983	2.82	1.06	0.34	-	(0.01)	1.44	1.38	1.73	2.95
1983	9.17	8.35	(0.69)	-	(0.05)	1.65	7.52	6.89	18.70
10/1/1983	17.31	33.98	(0.34)	-	(0.06)	3.84	13.46	13.19	51.91
11/1/1983	1.82	3.43	0.50	-	(0.01)	0.44	1.38	1.89	5.17
12/1/1983	2.05	1.50	(0.87)	-	(0.01)	-	2.05	1.18	3.88
1/1/1984	2.46	0.16	(0.24)	-	(0.01)	0.29	2.17	1.93	3.15
2/1/1984	0.47	2.83	0.80	-	(0.01)	-	0.47	1.26	2.95
3/1/1984	-	4.02	0.32	-	(0.01)	-	-	0.35	4.05
1984	6.80	11.93	0.51	-	(0.05)	0.74	6.06	6.61	19.20
10/1/1984	11.42	41.18	(0.09)	-	(0.06)	-	11.42	11.38	52.73
11/1/1984	1.34	3.39	0.30	-	(0.01)	-	1.34	1.65	5.29
12/1/1984	2.09	1.65	(0.92)	-	(0.01)	0.36	1.73	0.79	4.35
1/1/1985	5.52	(3.23)	(0.76)	-	(0.01)	2.57	2.95	2.24	2.50
2/1/1985	2.36	(0.31)	(0.27)	-	(0.01)	-	2.36	2.09	2.65
3/1/1985	2.09	1.22	0.61	-	(0.01)	0.63	1.46	2.13	2.66
1985	13.40	2.72	(1.05)	-	(0.05)	3.56	9.84	8.90	17.46
10/1/1985	8.99	41.57	0.63	-	(0.06)	0.56	8.43	9.09	49.73
11/1/1985	1.22	3.15	0.40	-	(0.01)	-	1.22	1.61	4.80
12/1/1985	2.33	0.39	(0.95)	-	(0.01)	0.20	2.13	1.18	3.93
1/1/1986	1.30	2.56	0.62	-	(0.01)	-	1.30	1.93	3.26
2/1/1986	0.08	3.70	0.29	-	(0.01)	-	0.08	0.39	3.76
3/1/1986	3.07	0.16	(0.75)	-	(0.01)	-	3.07	2.28	3.04
1986	8.00	9.96	(0.39)	-	(0.05)	0.20	7.80	7.40	18.79
10/1/1986	13.06	39.09	0.13	-	(0.06)	1.60	11.46	11.73	52.46
11/1/1986	1.76	3.19	0.11	-	(0.01)	0.18	1.57	1.65	5.01
12/1/1986	1.38	1.89	0.12	-	(0.01)	-	1.38	1.54	4.03
1/1/1987	3.00	(0.12)	(0.45)	-	(0.01)	0.64	2.36	1.93	3.16
2/1/1987	3.33	(0.35)	(0.41)	-	(0.01)	0.81	2.52	2.13	3.04
3/1/1987	2.26	0.59	(0.30)	-	(0.01)	0.61	1.65	1.38	3.60
1987	11.73	5.20	(0.93)	-	(0.04)	2.24	9.49	8.62	18.84
10/1/1987	8.19	45.43	1.31	-	(0.06)	0.59	7.60	8.94	52.44
11/1/1987	0.35	5.43	0.29	-	(0.01)	-	0.35	0.63	6.35
12/1/1987	1.73	1.93	(0.17)	-	(0.01)	-	1.73	1.57	4.01
1/1/1988	3.99	(1.14)	(1.39)	-	(0.01)	0.96	3.03	1.65	3.15
2/1/1988	3.59	(0.83)	0.33	-	(0.01)	1.58	2.01	2.36	2.61
3/1/1988	0.71	3.39	0.42	-	(0.01)	-	0.71	1.14	3.55
1988	10.37	8.78	(0.53)	-	(0.05)	2.54	7.83	7.36	19.67

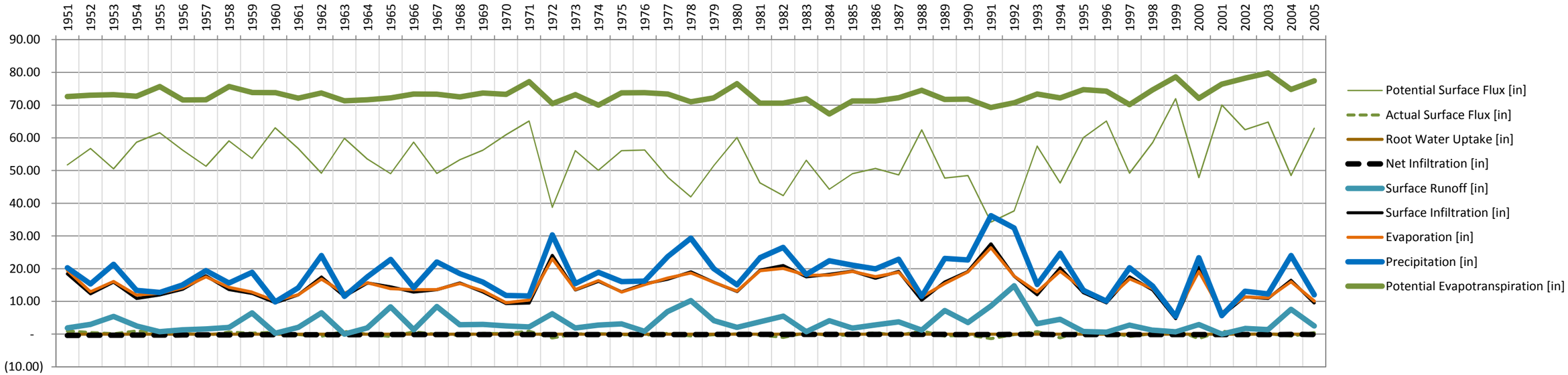
Table III-E.4 BC 4 Winter Storm Peirod Water Balance

Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
10/1/1988	12.52	39.92	0.17	-	(0.06)	1.18	11.34	11.54	52.57
11/1/1988	1.47	3.82	0.03	-	(0.01)	0.09	1.38	1.42	6.12
12/1/1988	1.70	1.85	(0.56)	-	(0.01)	0.13	1.57	1.02	4.12
1/1/1989	1.10	1.81	0.48	-	(0.01)	-	1.10	1.57	3.34
2/1/1989	2.19	0.67	(0.17)	-	(0.01)	0.26	1.93	1.77	2.94
3/1/1989	0.28	3.66	0.37	-	(0.01)	-	0.28	0.67	3.31
1989	6.75	11.81	0.14	-	(0.05)	0.49	6.26	6.46	19.83
10/1/1989	4.82	50.63	0.79	-	(0.06)	0.73	4.09	4.92	54.63
11/1/1989	1.06	4.29	0.04	-	(0.01)	-	1.06	1.10	6.20
12/1/1989	0.28	3.50	0.12	-	(0.01)	-	0.28	0.39	4.40
1/1/1990	0.87	2.48	(0.51)	-	(0.01)	-	0.87	0.35	3.45
2/1/1990	1.30	1.50	0.23	-	(0.01)	-	1.30	1.54	2.90
3/1/1990	2.48	0.71	(0.45)	-	(0.01)	-	2.48	2.05	2.81
1990	5.98	12.48	(0.56)	-	(0.05)	-	5.98	5.43	19.77
10/1/1990	17.15	35.24	(0.01)	-	(0.06)	7.19	9.96	10.00	51.97
11/1/1990	0.24	4.80	0.40	-	(0.01)	-	0.24	0.63	5.63
12/1/1990	2.17	1.50	(0.27)	-	(0.01)	-	2.17	1.93	4.26
1/1/1991	4.22	(2.28)	(1.42)	-	(0.01)	1.46	2.76	1.38	3.26
2/1/1991	2.36	1.38	0.53	-	(0.01)	0.79	1.57	2.09	2.89
3/1/1991	0.94	3.31	0.07	-	(0.01)	-	0.94	1.02	3.35
1991	9.93	8.70	(0.69)	-	(0.05)	2.25	7.68	7.05	19.39
10/1/1991	12.75	39.76	0.43	-	(0.07)	1.29	11.46	11.97	52.45
11/1/1991	1.14	4.69	(0.55)	-	(0.01)	-	1.14	0.59	6.64
12/1/1991	2.92	0.12	(0.23)	-	(0.01)	0.91	2.01	1.81	3.76
1/1/1992	4.19	(1.30)	(1.15)	-	(0.01)	0.56	3.62	2.48	3.08
2/1/1992	3.15	(0.20)	0.19	-	(0.01)	0.91	2.24	2.40	2.50
3/1/1992	2.69	0.63	(0.12)	-	(0.01)	0.48	2.20	2.13	3.11
1992	14.09	3.94	(1.86)	-	(0.05)	2.87	11.22	9.41	19.10
10/1/1992	22.11	30.31	0.50	-	(0.06)	5.73	16.38	17.01	50.18
11/1/1992	1.18	4.33	(0.22)	-	(0.01)	-	1.18	0.98	6.65
12/1/1992	0.51	2.80	0.62	-	(0.01)	-	0.51	1.14	3.80
1/1/1993	5.80	(3.98)	(1.59)	-	(0.01)	2.30	3.50	1.93	2.66
2/1/1993	11.67	(8.94)	(0.21)	-	(0.01)	9.26	2.40	2.32	2.15
3/1/1993	5.43	(3.46)	(0.87)	-	(0.01)	2.56	2.87	2.01	2.82
1993	24.59	(9.25)	(2.28)	-	(0.04)	14.12	10.47	8.39	18.09
10/1/1993	7.87	46.89	2.13	-	(0.06)	0.66	7.20	9.37	52.48
11/1/1993	0.79	4.61	0.20	-	(0.01)	-	0.79	1.02	6.08
12/1/1993	4.19	(0.83)	(0.54)	-	(0.01)	2.30	1.89	1.34	3.85
1/1/1994	0.28	2.76	0.43	-	(0.01)	-	0.28	0.75	3.47
2/1/1994	0.28	3.19	0.22	-	(0.01)	-	0.28	0.47	3.50
3/1/1994	2.58	0.67	(0.27)	-	(0.01)	0.73	1.85	1.61	3.03
1994	8.10	10.39	0.03	-	(0.04)	3.02	5.08	5.20	19.93
10/1/1994	7.07	47.09	0.69	-	(0.07)	0.15	6.93	7.68	53.48
11/1/1994	1.87	2.87	(0.19)	-	(0.01)	0.41	1.46	1.26	5.66
12/1/1994	3.35	(0.35)	(0.74)	-	(0.01)	0.28	3.07	2.32	3.60
1/1/1995	2.64	0.04	(0.75)	-	(0.01)	-	2.64	1.93	3.21
2/1/1995	3.62	(0.71)	0.10	-	(0.01)	1.14	2.48	2.60	2.65
3/1/1995	2.67	0.79	(0.16)	-	(0.01)	0.66	2.01	1.85	3.18
1995	14.15	2.64	(1.74)	-	(0.05)	2.49	11.65	9.96	18.29
10/1/1995	10.59	43.54	0.62	-	(0.07)	2.01	8.58	9.25	53.90
11/1/1995	-	5.39	0.78	-	(0.01)	-	-	0.79	6.16
12/1/1995	1.30	2.24	(0.06)	-	(0.01)	-	1.30	1.26	3.94
1/1/1996	0.91	2.28	(0.02)	-	(0.01)	-	0.91	0.87	3.59
2/1/1996	-	3.54	0.32	-	(0.01)	-	-	0.35	3.42
3/1/1996	3.13	0.55	(0.75)	-	(0.01)	0.69	2.44	1.69	3.70
1996	5.34	14.02	0.28	-	(0.05)	0.69	4.65	4.96	20.81
10/1/1996	8.08	46.02	0.69	-	(0.07)	0.09	7.99	8.70	53.91
11/1/1996	0.39	5.31	0.25	-	(0.01)	-	0.39	0.67	6.16
12/1/1996	1.22	2.36	(0.45)	-	(0.01)	-	1.22	0.79	3.59
1/1/1997	0.04	3.15	0.65	-	(0.01)	-	0.04	0.67	3.51
2/1/1997	2.81	(0.08)	(0.75)	-	(0.01)	0.33	2.48	1.73	2.79
3/1/1997	0.94	2.24	(0.01)	-	(0.01)	0.15	0.79	0.79	3.61
1997	5.40	12.99	(0.30)	-	(0.05)	0.48	4.92	4.65	19.65
10/1/1997	4.72	52.13	1.12	-	(0.07)	0.12	4.61	5.79	54.53
11/1/1997	0.75	4.41	(0.02)	-	(0.01)	-	0.75	0.71	6.47
12/1/1997	0.79	2.56	(0.02)	-	(0.01)	-	0.79	0.79	3.78
1/1/1998	2.68	-	(0.90)	-	(0.01)	-	2.68	1.77	3.34
2/1/1998	0.39	2.72	0.56	-	(0.01)	-	0.39	0.94	2.59
3/1/1998	6.17	(3.82)	(1.96)	-	(0.01)	1.99	4.17	2.24	3.01
1998	10.77	5.87	(2.34)	-	(0.05)	1.99	8.78	6.46	19.19

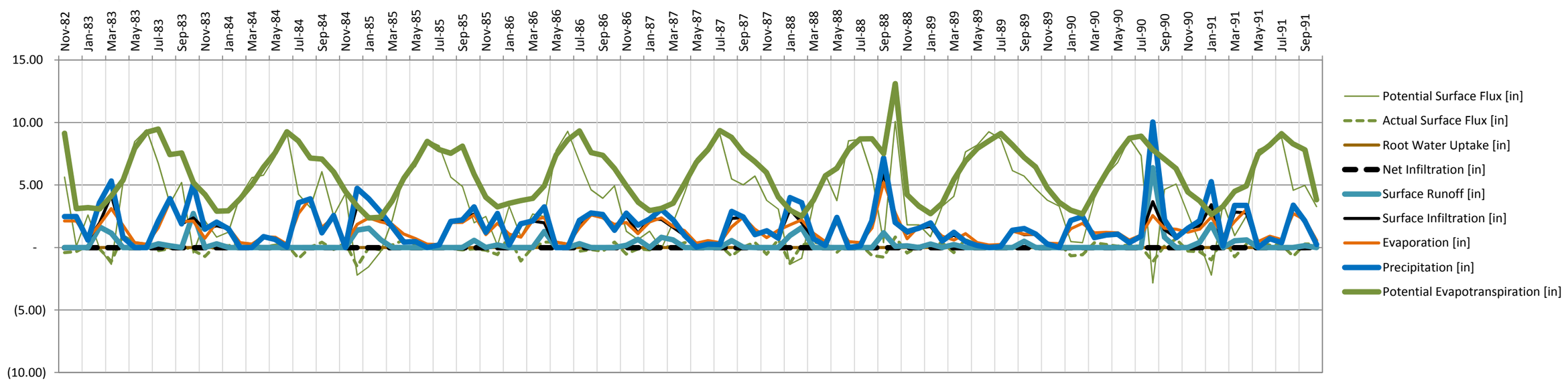
Table III-E.4 BC 4 Winter Storm Peirod Water Balance

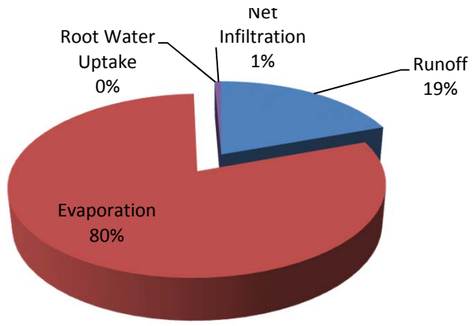
Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
10/1/1998	9.51	43.35	1.61	-	(0.07)	0.77	8.74	10.43	50.93
11/1/1998	-	5.59	0.26	-	(0.01)	-	-	0.28	6.74
12/1/1998	1.02	2.68	(0.64)	-	(0.01)	-	1.02	0.39	4.10
1/1/1999	0.75	2.48	0.58	-	(0.01)	-	0.75	1.34	3.41
2/1/1999	0.08	3.50	0.24	-	(0.01)	-	0.08	0.28	3.74
3/1/1999	0.20	4.25	0.15	-	(0.01)	-	0.20	0.35	3.79
1999	2.05	18.50	0.60	-	(0.05)	-	2.05	2.64	21.78
10/1/1999	12.68	40.00	(0.40)	-	(0.07)	1.22	11.46	11.22	52.85
11/1/1999	-	5.63	0.30	-	(0.01)	-	-	0.28	6.46
12/1/1999	-	4.13	0.21	-	(0.01)	-	-	0.24	4.74
1/1/2000	0.04	3.35	0.12	-	(0.01)	-	0.04	0.16	3.89
2/1/2000	0.28	3.46	0.13	-	(0.01)	-	0.28	0.39	3.58
3/1/2000	0.71	3.46	(0.03)	-	(0.01)	-	0.71	0.67	4.08
2000	1.02	20.04	0.73	-	(0.05)	-	1.02	1.73	22.75
9/30/2000	4.39	51.69	0.49	-	(0.07)	0.69	3.70	4.25	55.62
11/1/2000	4.71	(0.47)	(1.73)	-	(0.01)	1.33	3.39	1.65	6.32
12/1/2000	2.66	1.14	0.17	-	(0.01)	0.69	1.97	2.20	3.05
1/1/2001	0.12	3.39	0.44	-	(0.01)	-	0.12	0.51	3.94
2/1/2001	3.11	(0.55)	(1.34)	-	(0.01)	-	3.11	1.81	3.23
3/1/2001	2.01	1.65	0.24	-	(0.01)	-	2.01	2.24	2.96
2001	12.61	5.16	(2.22)	-	(0.05)	2.02	10.59	8.43	19.51
9/30/2001	10.71	42.72	0.85	-	(0.07)	0.87	9.84	10.71	52.45
11/1/2001	0.35	4.88	0.21	-	(0.01)	-	0.35	0.59	6.25
12/1/2001	0.51	3.58	0.12	-	(0.01)	-	0.51	0.63	4.70
1/1/2002	1.85	0.94	(0.41)	-	(0.01)	-	1.85	1.46	3.14
2/1/2002	0.24	3.07	0.20	-	(0.01)	-	0.24	0.39	3.39
3/1/2002	-	4.33	0.33	-	(0.01)	-	-	0.31	3.42
2002	2.95	16.81	0.45	-	(0.05)	-	2.95	3.39	20.90
9/30/2002	2.68	53.23	0.52	-	(0.07)	-	2.68	3.23	55.56
11/1/2002	0.08	5.28	0.18	-	(0.01)	-	0.08	0.28	6.65
12/1/2002	0.83	3.07	(0.46)	-	(0.01)	-	0.83	0.39	4.57
1/1/2003	1.02	2.01	0.23	-	(0.01)	-	1.02	1.22	3.54
2/1/2003	0.35	3.58	0.23	-	(0.01)	-	0.35	0.63	3.23
3/1/2003	4.16	(1.57)	(1.20)	-	(0.01)	1.68	2.48	1.26	3.74
2003	6.44	12.36	(1.01)	-	(0.05)	1.68	4.76	3.78	21.72
9/30/2003	6.68	50.08	0.91	-	(0.07)	0.07	6.61	7.60	56.41
11/1/2003	0.08	5.94	0.29	-	(0.01)	-	0.08	0.35	6.71
12/1/2003	0.83	2.52	(0.10)	-	(0.01)	-	0.83	0.75	4.21
1/1/2004	0.98	2.40	(0.06)	-	(0.01)	-	0.98	0.91	4.07
2/1/2004	1.42	1.54	(0.33)	-	(0.01)	-	1.42	1.10	3.35
3/1/2004	0.67	2.83	0.22	-	(0.01)	-	0.67	0.91	3.22
2004	3.98	15.24	0.01	-	(0.05)	-	3.98	4.02	21.57
9/30/2004	8.28	49.57	0.13	-	(0.06)	1.39	6.89	7.05	58.30
11/1/2004	1.14	4.29	(0.14)	-	(0.01)	-	1.14	1.02	6.99
12/1/2004	0.67	2.48	0.20	-	(0.01)	-	0.67	0.87	3.79
1/1/2005	2.43	0.47	(0.87)	-	(0.01)	0.38	2.05	1.18	3.19
2/1/2005	4.53	(1.46)	(0.58)	-	(0.01)	2.17	2.36	1.77	2.91
3/1/2005	7.31	(4.49)	(0.77)	-	(0.01)	4.16	3.15	2.44	2.91
2005	16.07	1.30	(2.16)	-	(0.05)	6.70	9.37	7.28	19.79
9/30/2005	7.93	47.17	1.56	-	(0.06)	0.84	7.09	8.70	54.89
11/1/2005	0.43	5.28	0.17	-	(0.01)	-	0.43	0.59	6.93
12/1/2005	-	4.02	0.22	-	(0.01)	-	-	0.20	4.57
1/1/2006	-	3.31	0.16	-	(0.01)	-	-	0.16	3.66
2/1/2006	-	4.17	0.15	-	(0.01)	-	-	0.16	3.99
3/1/2006	0.12	4.25	0.10	-	(0.01)	-	0.12	0.20	4.45
2006	0.55	21.02	0.80	-	(0.04)	-	0.55	1.30	23.61
9/30/2006	11.46	41.93	(0.37)	-	(0.06)	2.48	8.98	8.82	53.87

Annual Water Balance - 56-Year Simulated Period (Results on



Monthly Water Balance - 9 Wet Years (1983 - 1991)





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CLIENT: Resolution Copper Mining

Klohn Crippen Berger

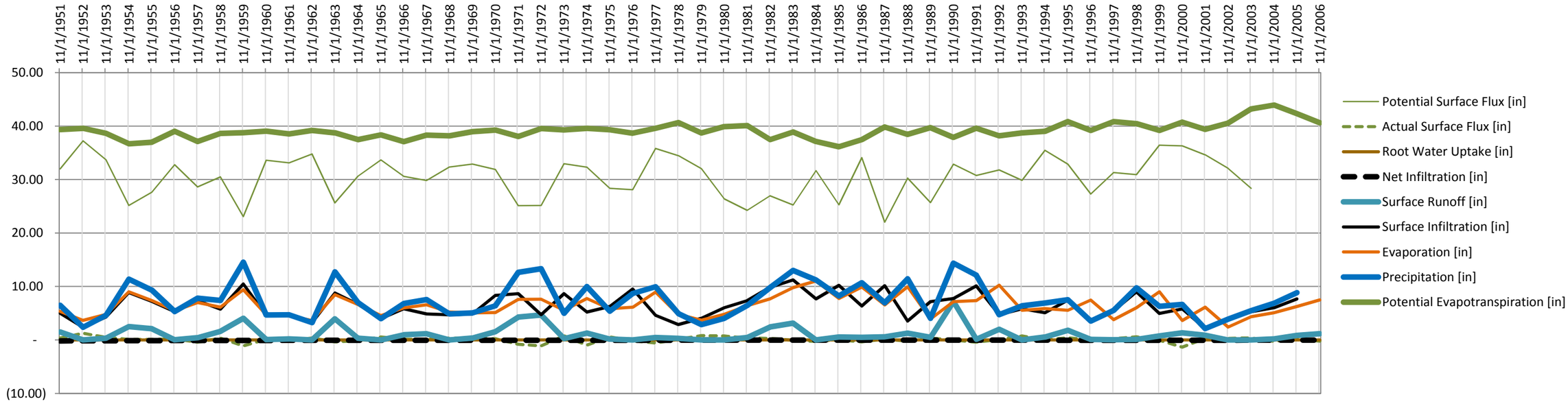
PROJECT: RESOLUTION PROJECT
NEAR WEST TAILINGS STORAGE FACILITY CLOSURE COVER STUDY - CLOSURE COVER PREDICTIONS

TITLE: BC4 - 9.8ft Cleaner Water Balance Results

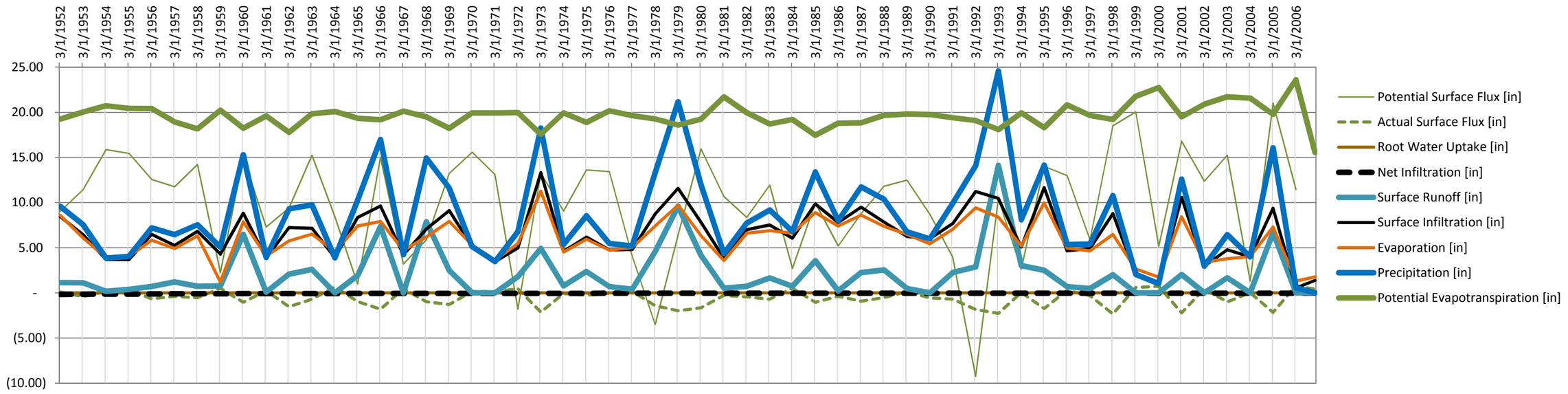
PROJECT No. M09441A16

FIG. No. III-E.1

Monsoon Season Water Balance - 56-Year Simulated Period (July-November)



Winter Storm Season Water Balance - 56-Year Simulated Period (November-March)



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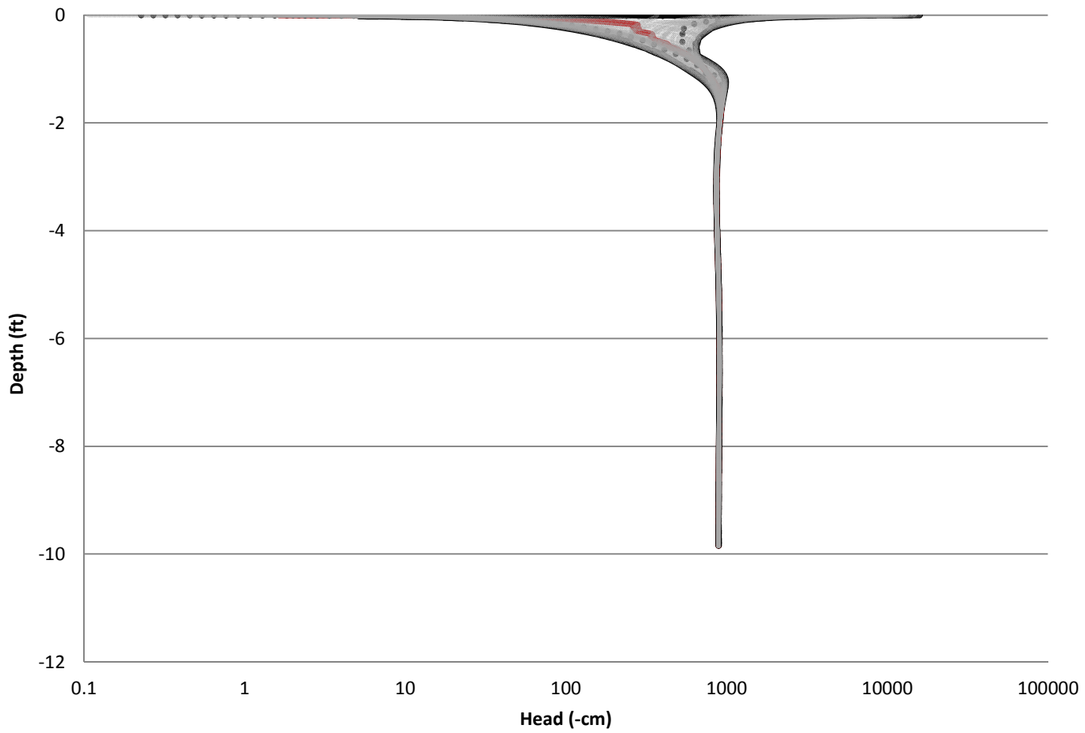
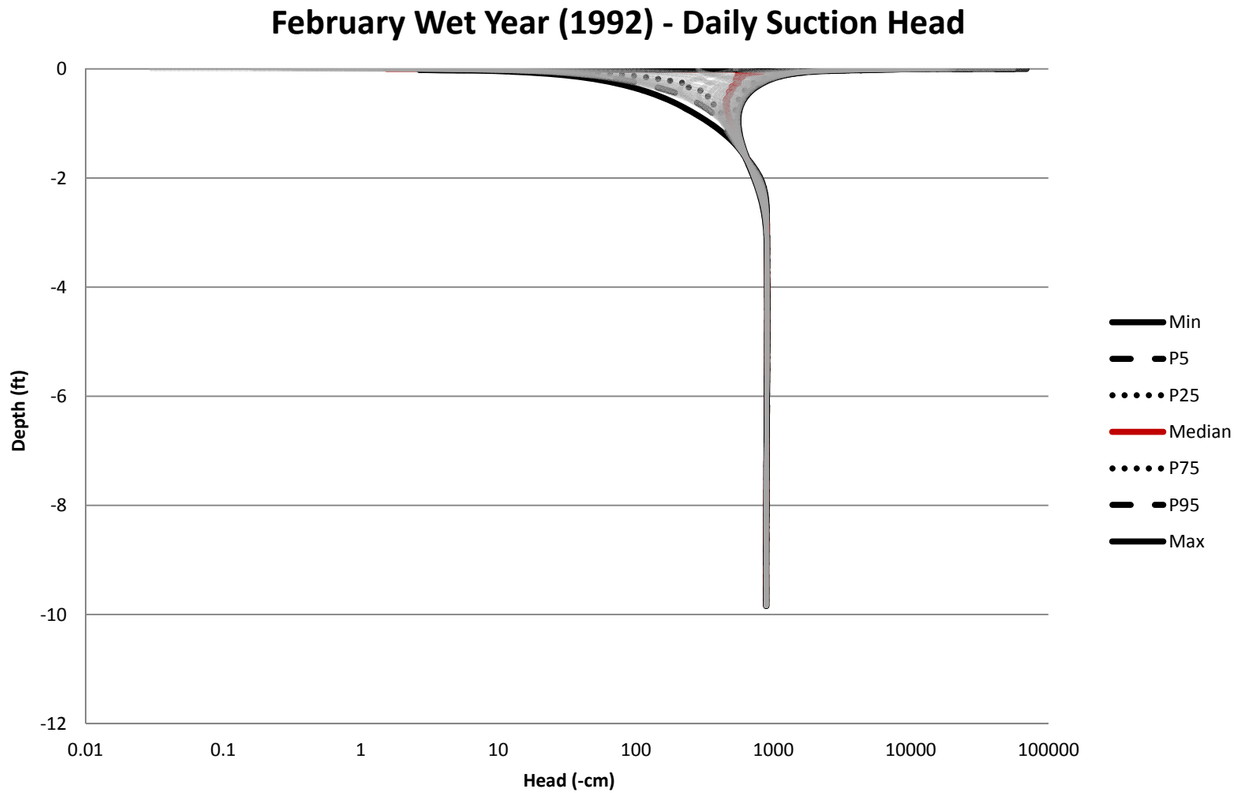
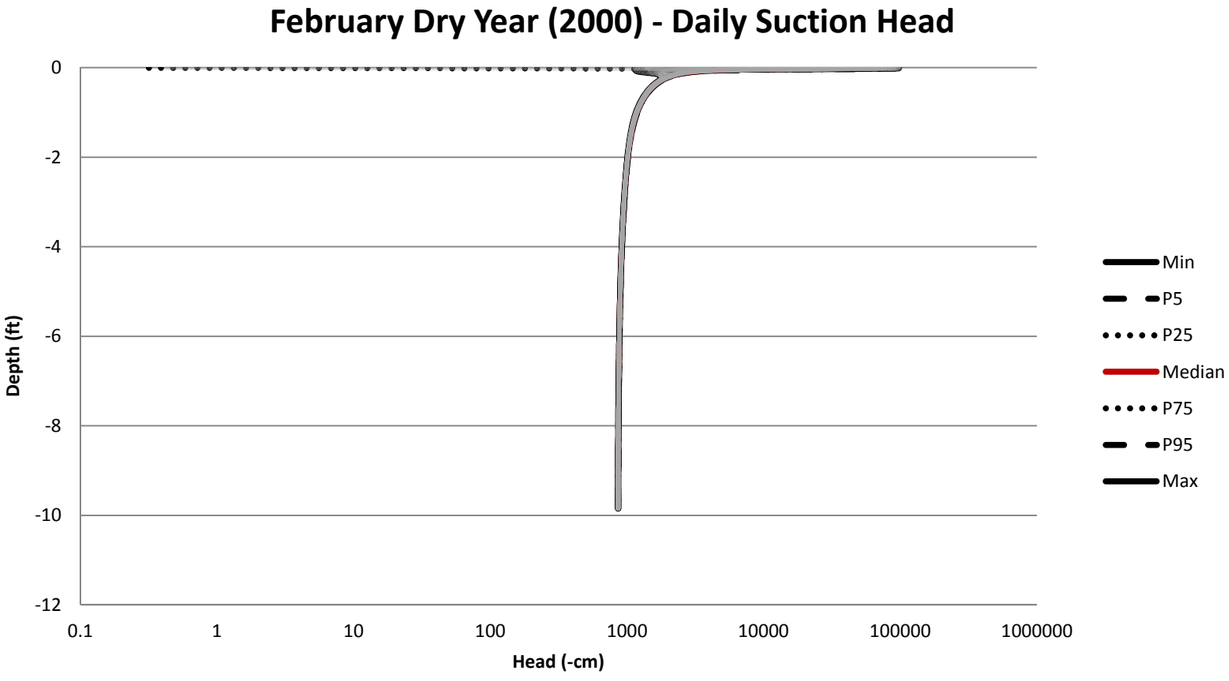
TITLE: BC4 - 9.8ft Cleaner Water Balance Results

PROJECT No. M09441A16

FIG. No. III-E.2







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NEAR WEST TAILINGS STORAGE FACILITY CLOSURE COVER STUDY - CLOSURE COVER PREDICTIONS

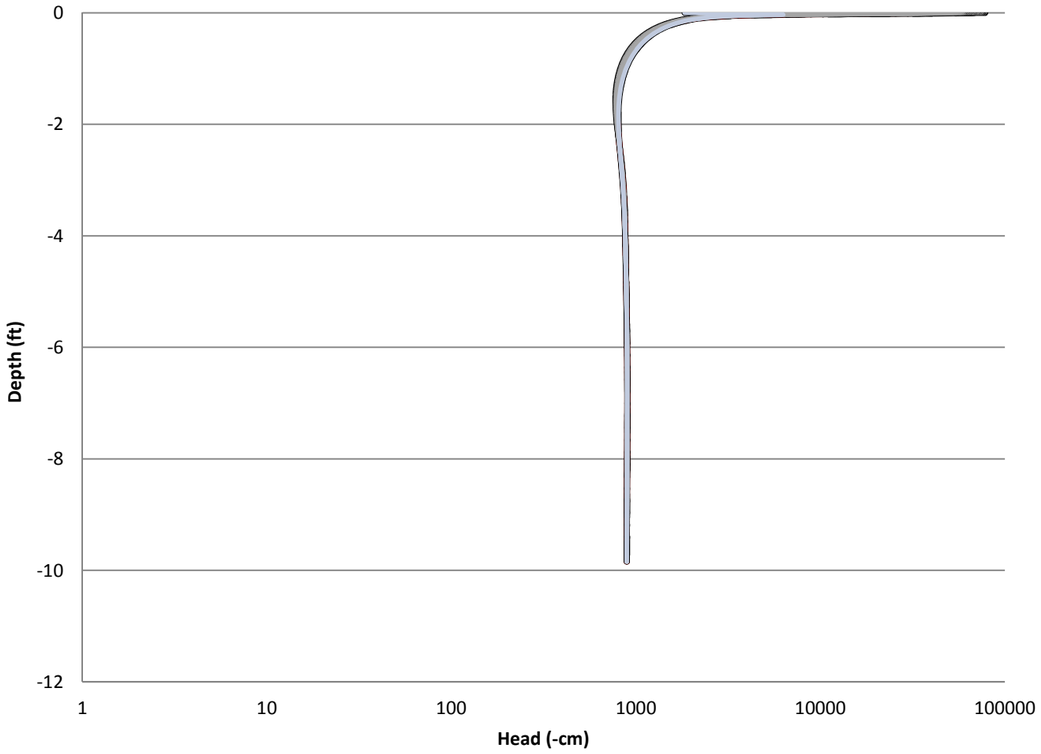
TITLE

BC4 - 9.8ft Cleaner
Suction Profiles - Winter (February)

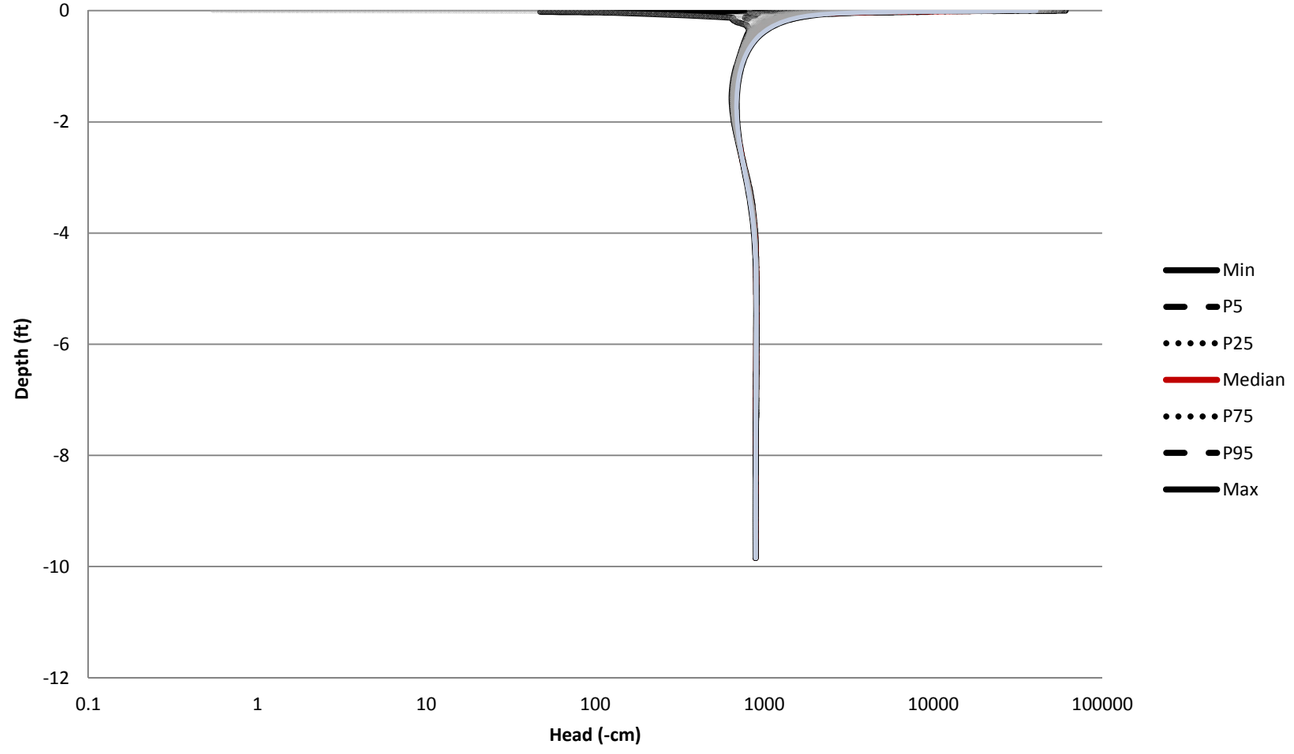
PROJECT No. M09441A16

FIG. No. III-E.3

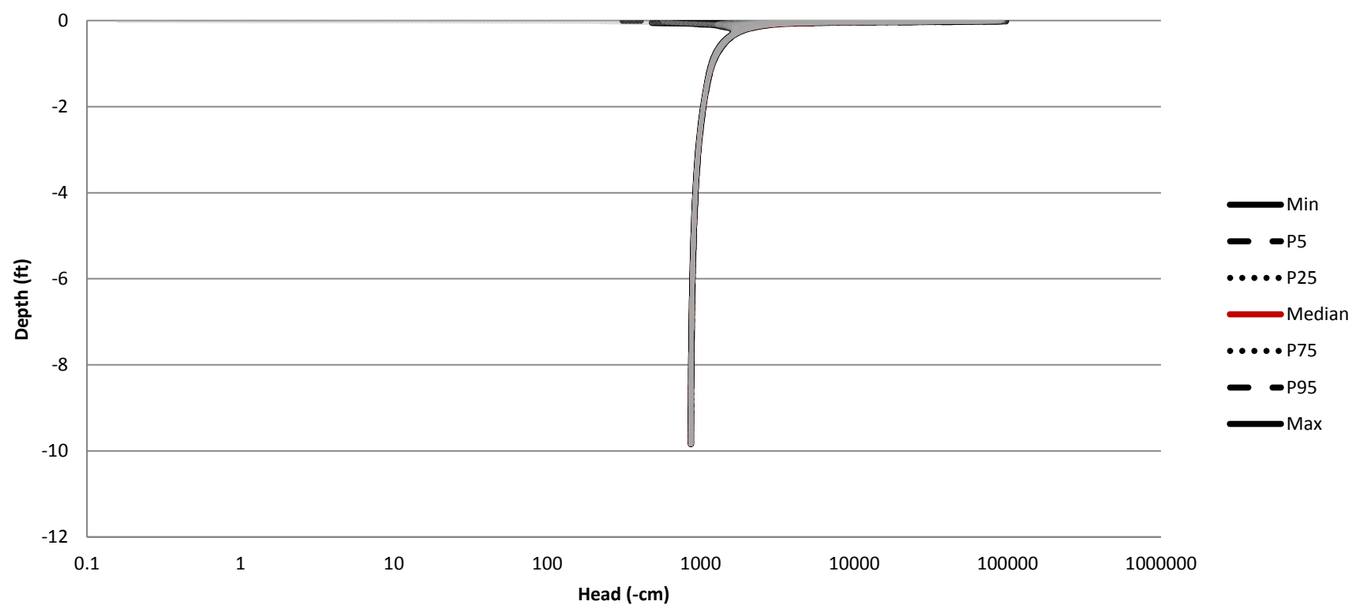
June Average Year (1980) - Daily Suction Head



June Wet Year (1992) - Daily Suction Head



June Dry Year (2000) - Daily Suction Head



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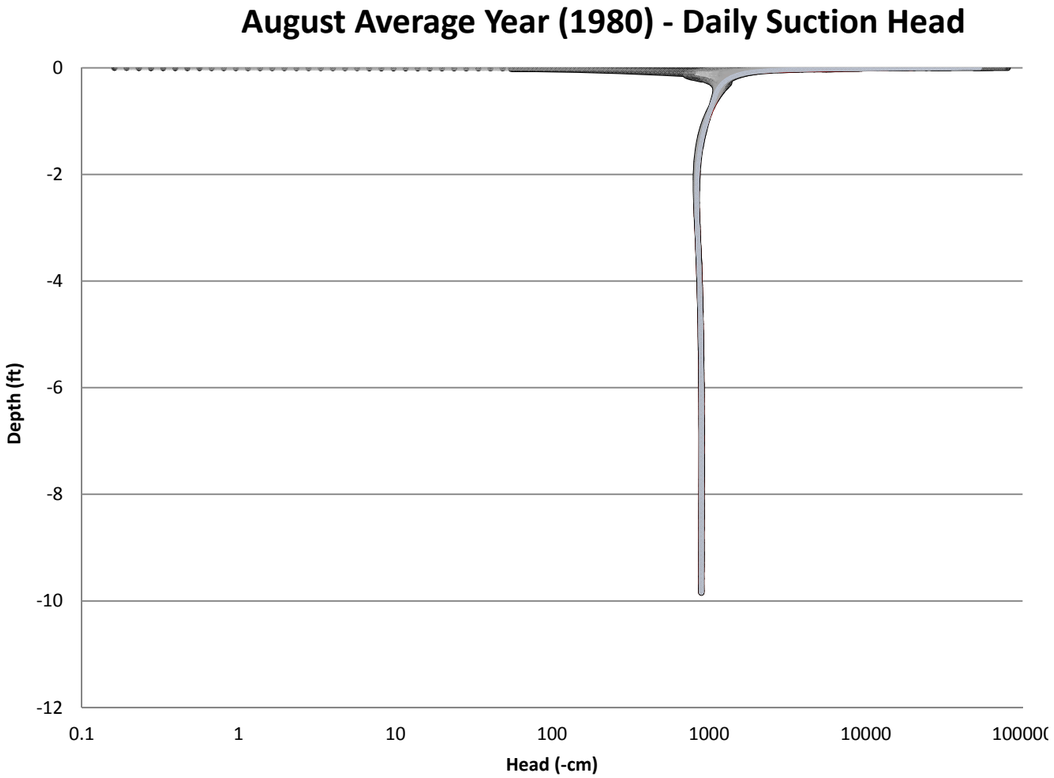
RESOLUTION PROJECT
NEAR WEST TAILINGS STORAGE FACILITY CLOSURE COVER STUDY - CLOSURE COVER PREDICTIONS

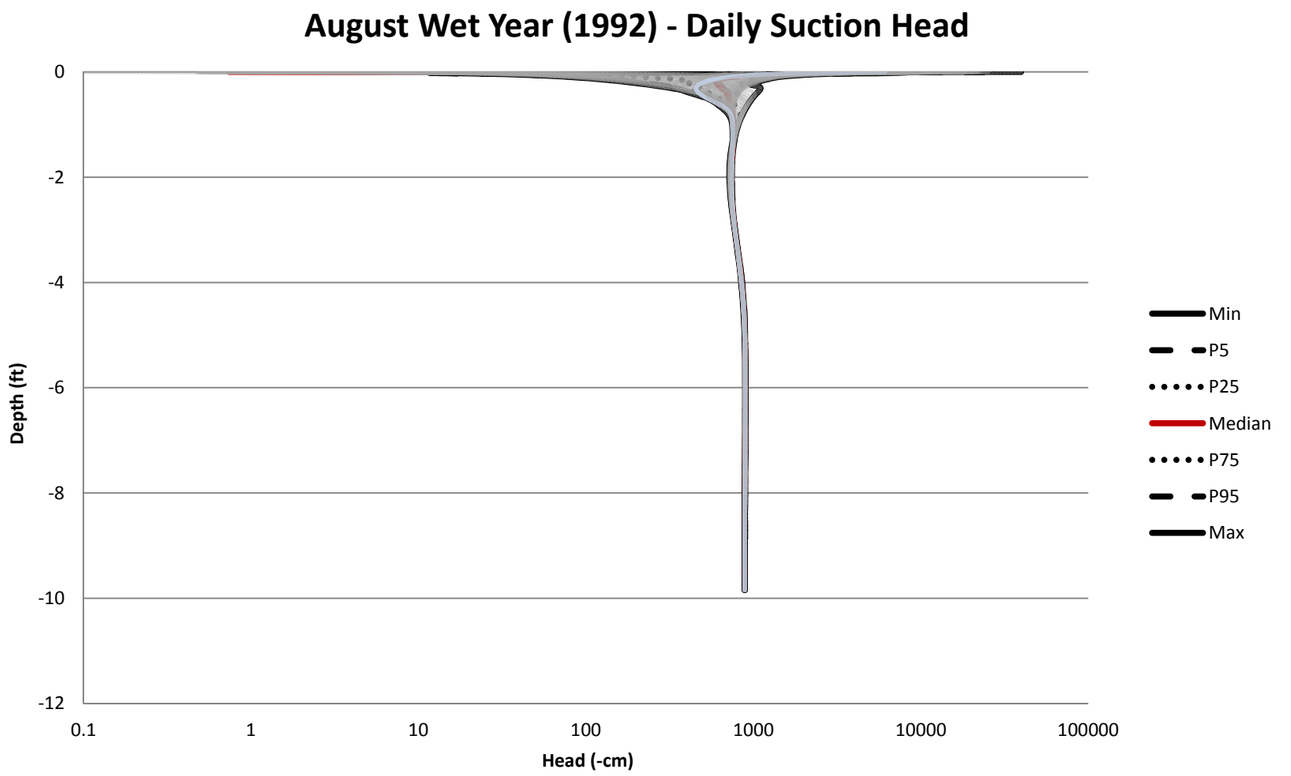
TITLE

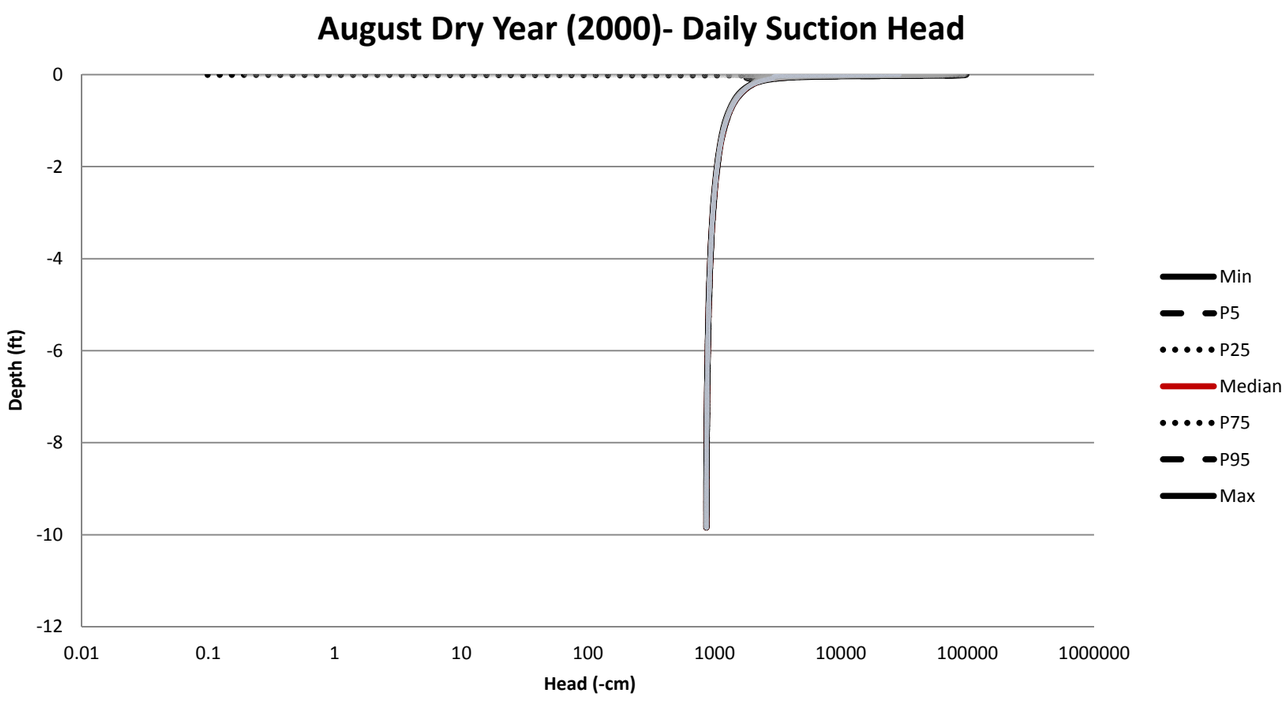
BC4 - 9.8ft Cleaner
Suction Profiles - Dry Season (June)

PROJECT No. M09441A16

FIG. No. III-E.4







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CLIENT

Resolution Copper Mining

Klohn Crippen Berger

PROJECT

RESOLUTION PROJECT
NEAR WEST TAILINGS STORAGE FACILITY CLOSURE
COVER STUDY - CLOSURE COVER PREDICTIONS

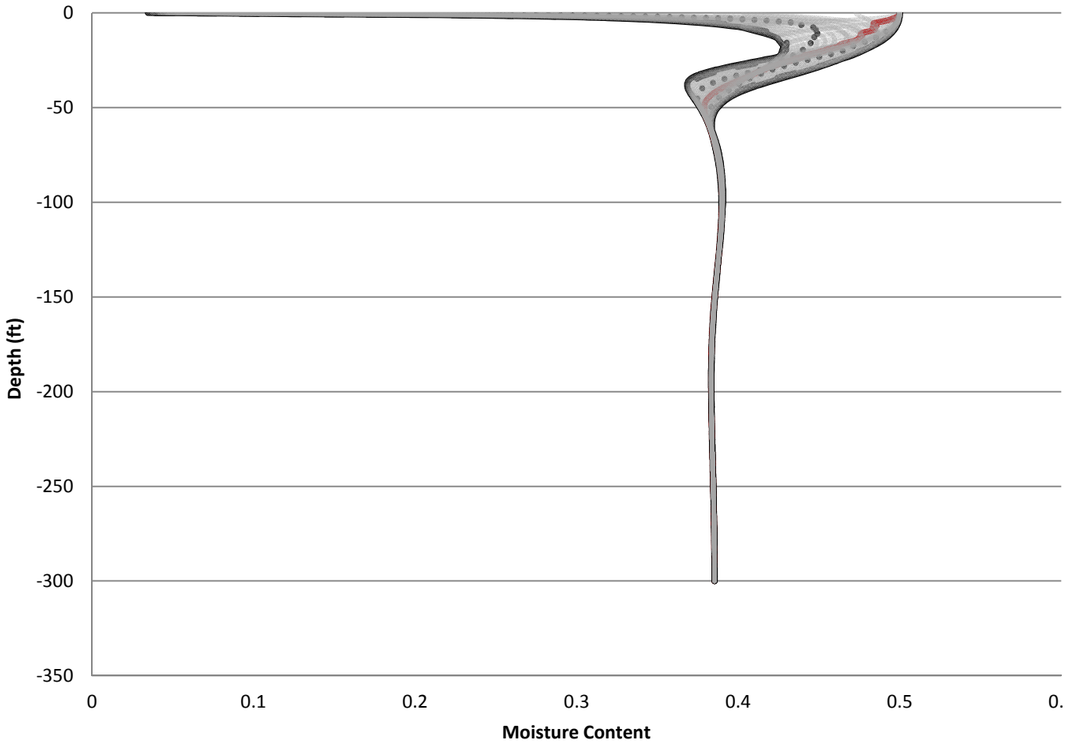
TITLE

BC4 - 9.8ft Cleaner
Suction Profiles - Summer Monsoon (August)

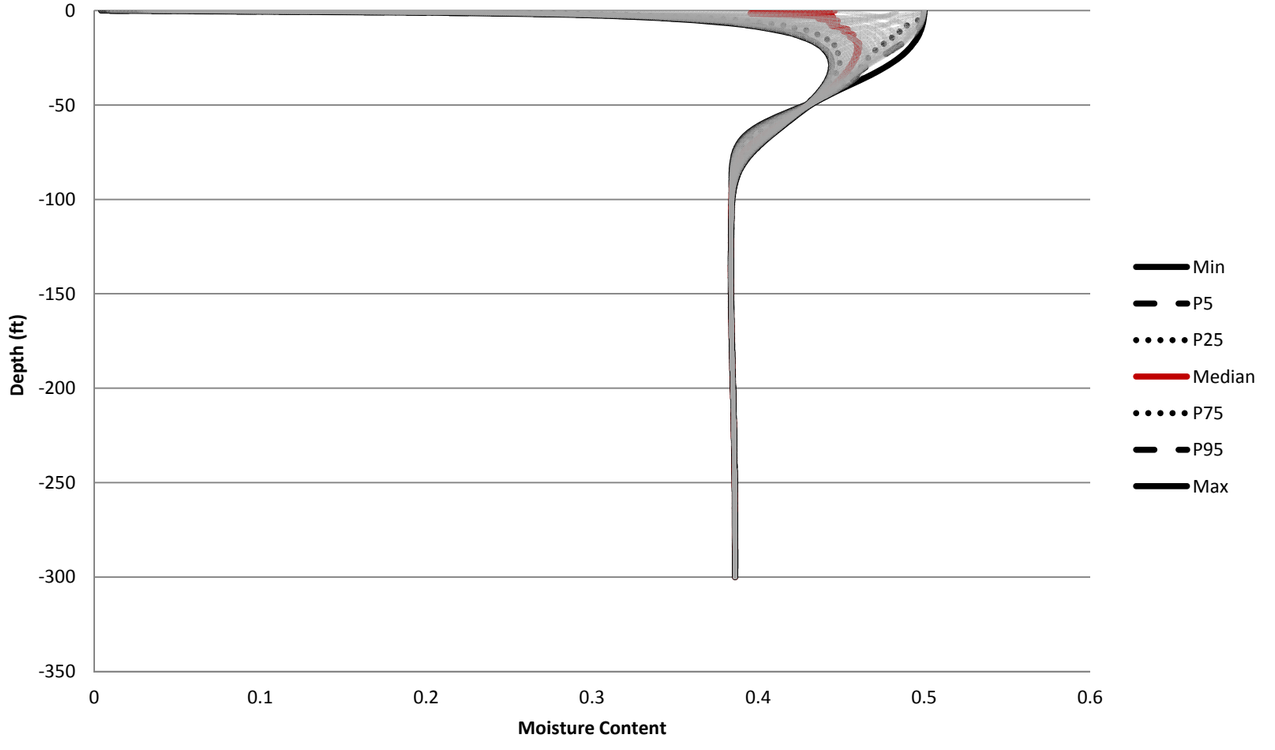
PROJECT No. M09441A16

FIG. No. III-E.5

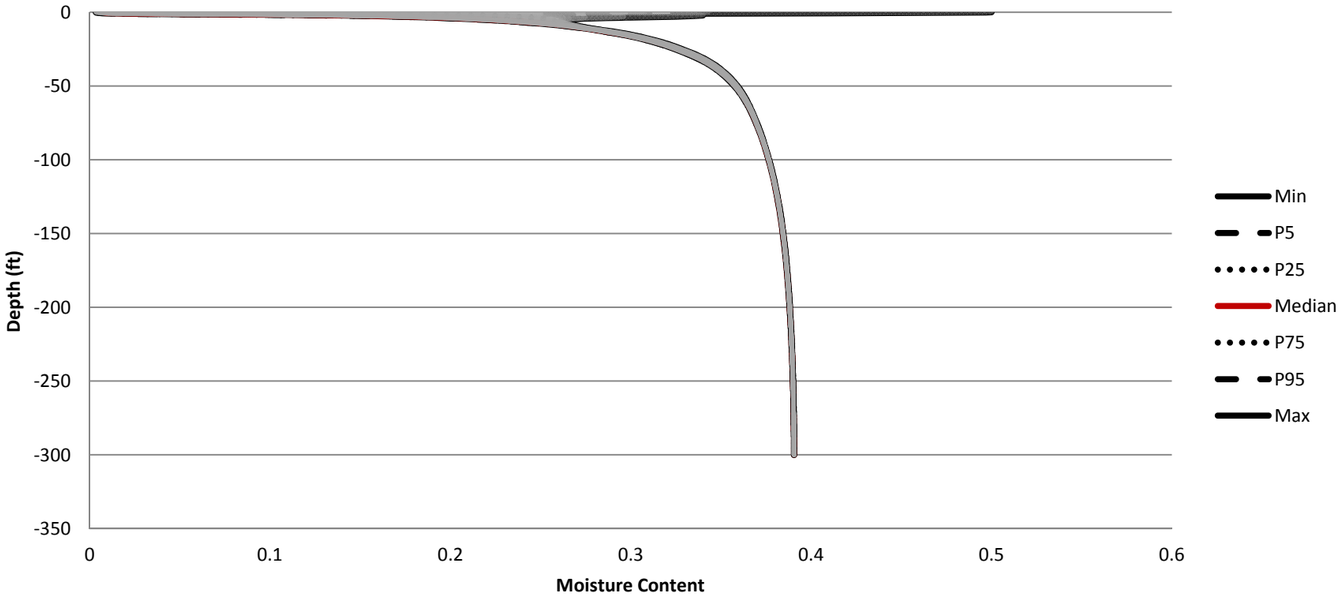
February Average Year (1980) - Daily Moisture Content



February Wet Year (1992) - Daily Moisture Content



February Dry Year (2000) - Daily Moisture Content



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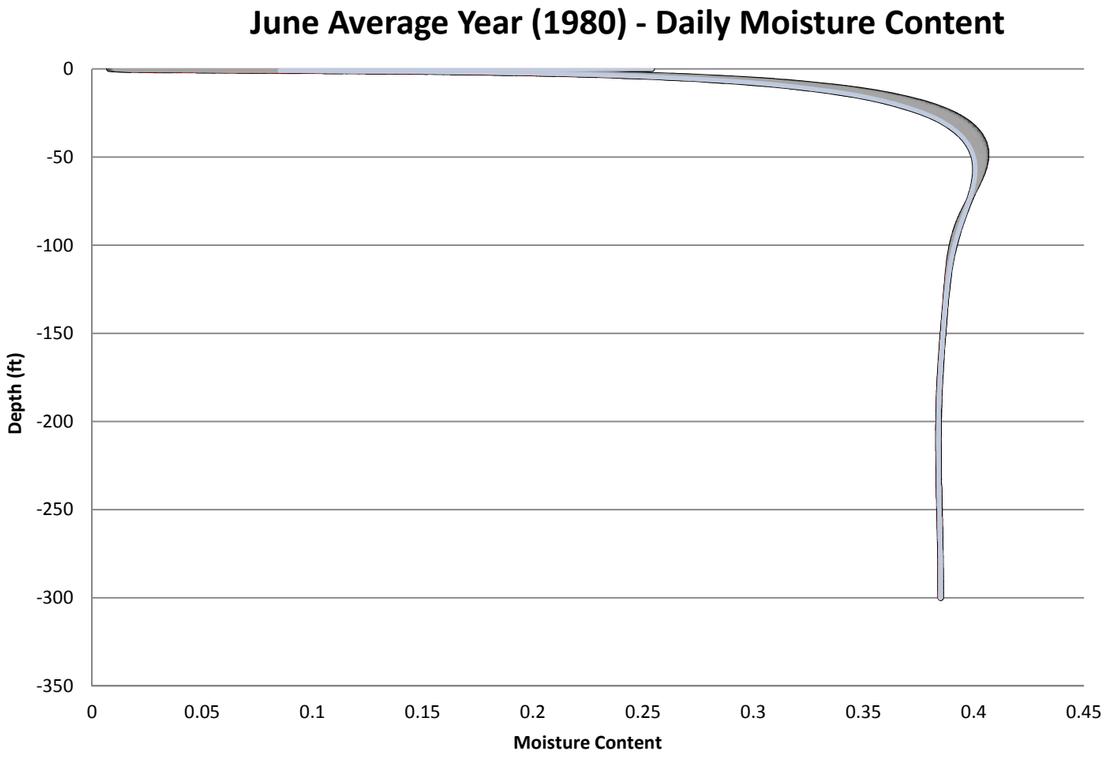
Klohn Crippen Berger

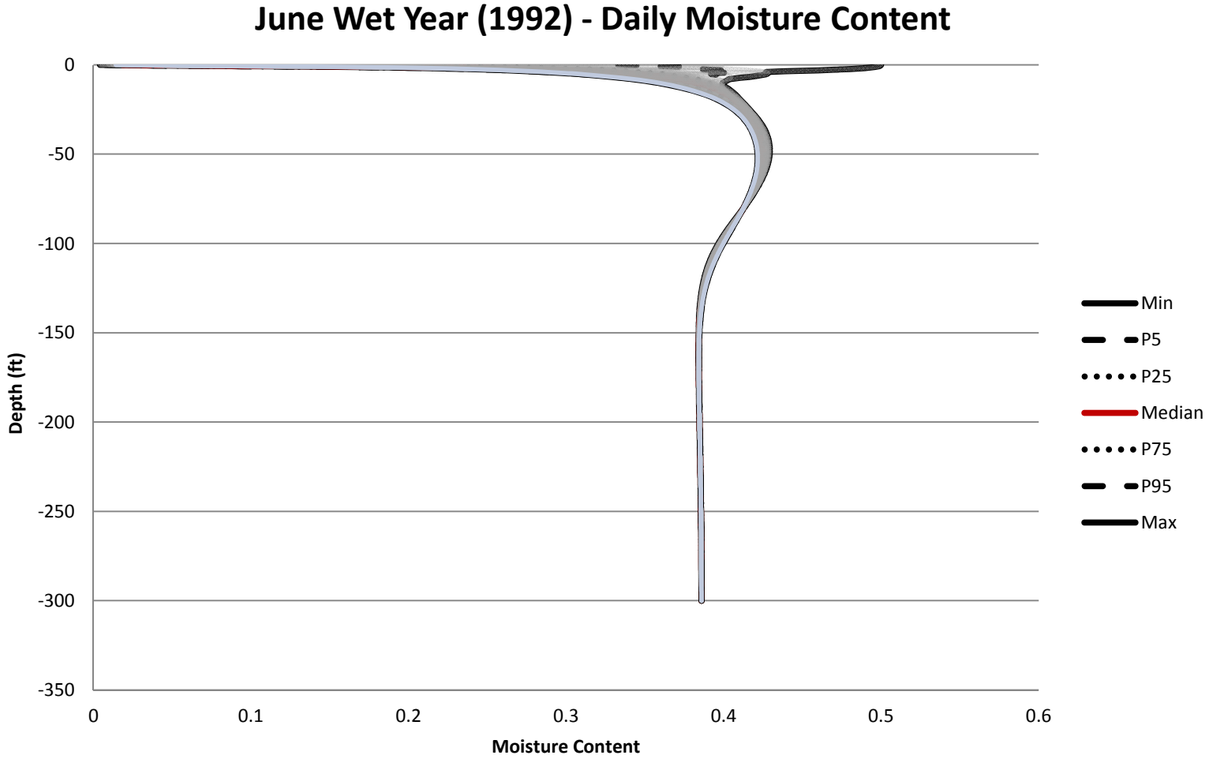
PROJECT: RESOLUTION PROJECT
NEAR WEST TAILINGS STORAGE FACILITY CLOSURE COVER STUDY - CLOSURE COVER PREDICTIONS

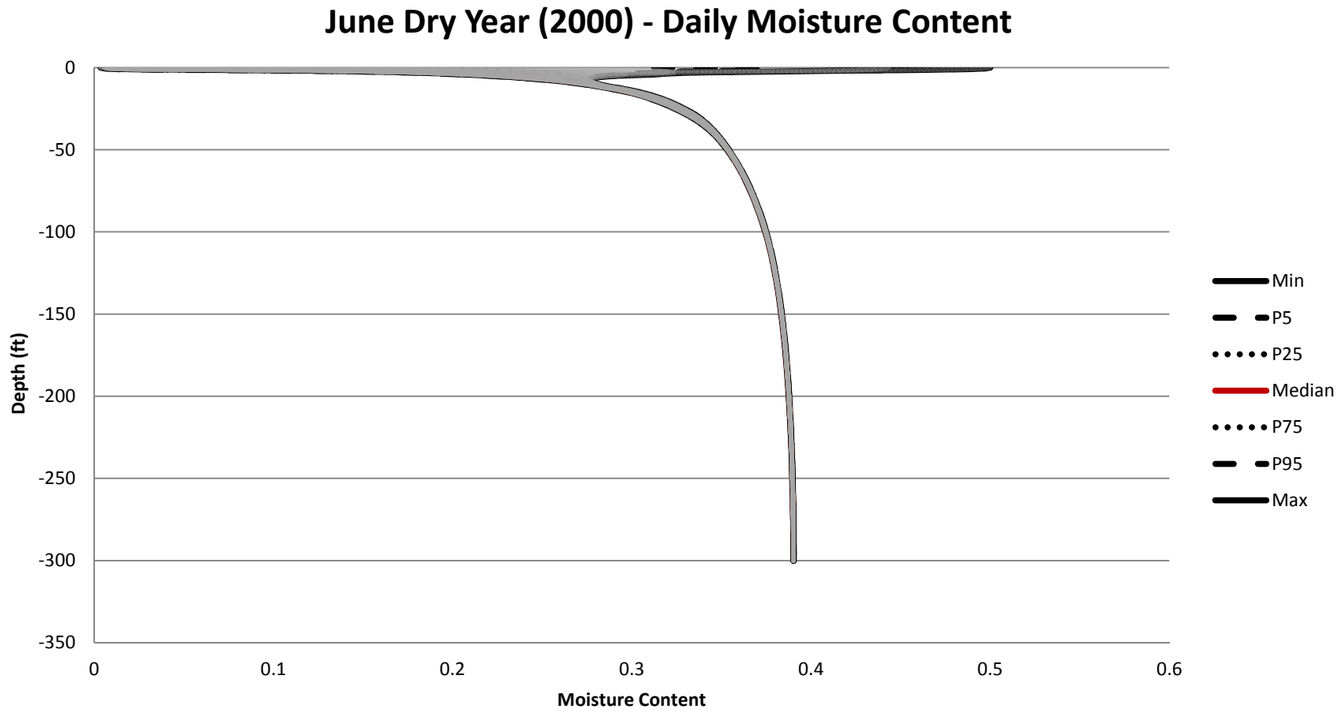
TITLE: BC4 - 9.8ft Cleaner
Moisture Content - Winter (February)

PROJECT No. M09441A16

FIG. No. III-E.6







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CLIENT

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Klohn Crippen Berger

PROJECT

RESOLUTION PROJECT
NEAR WEST TAILINGS STORAGE FACILITY CLOSURE
COVER STUDY - CLOSURE COVER PREDICTIONS

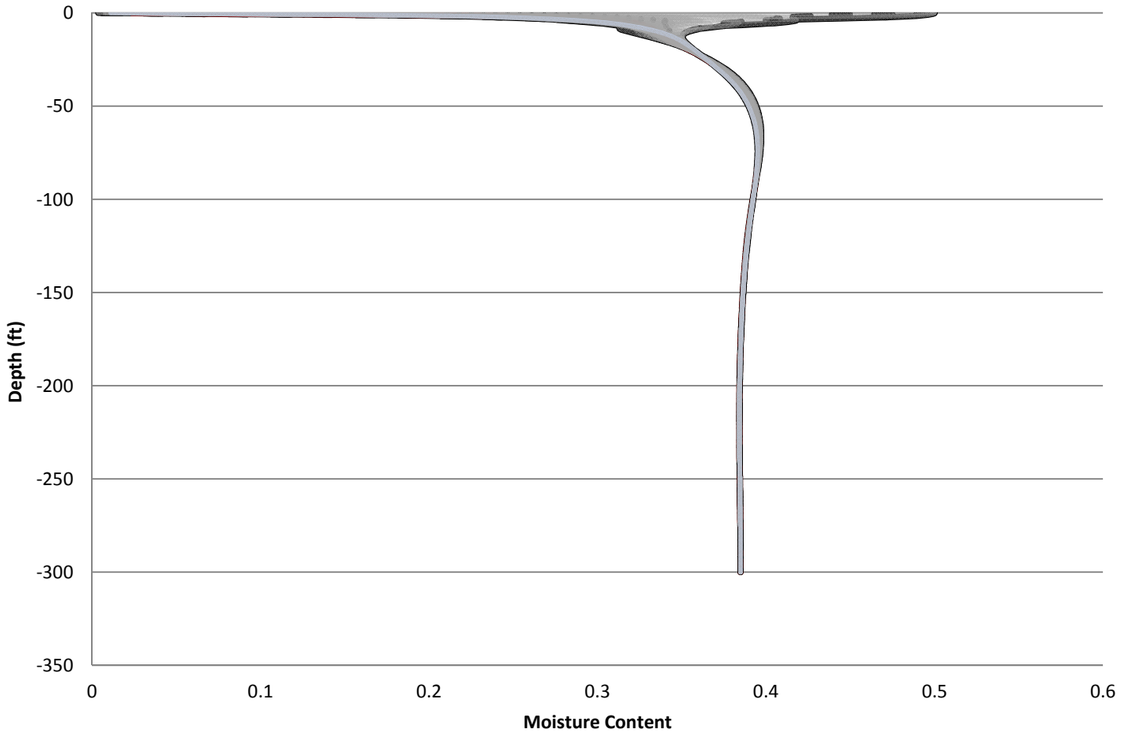
TITLE

BC4 - 9.8ft Cleaner
Moisture Content - Dry Season (June)

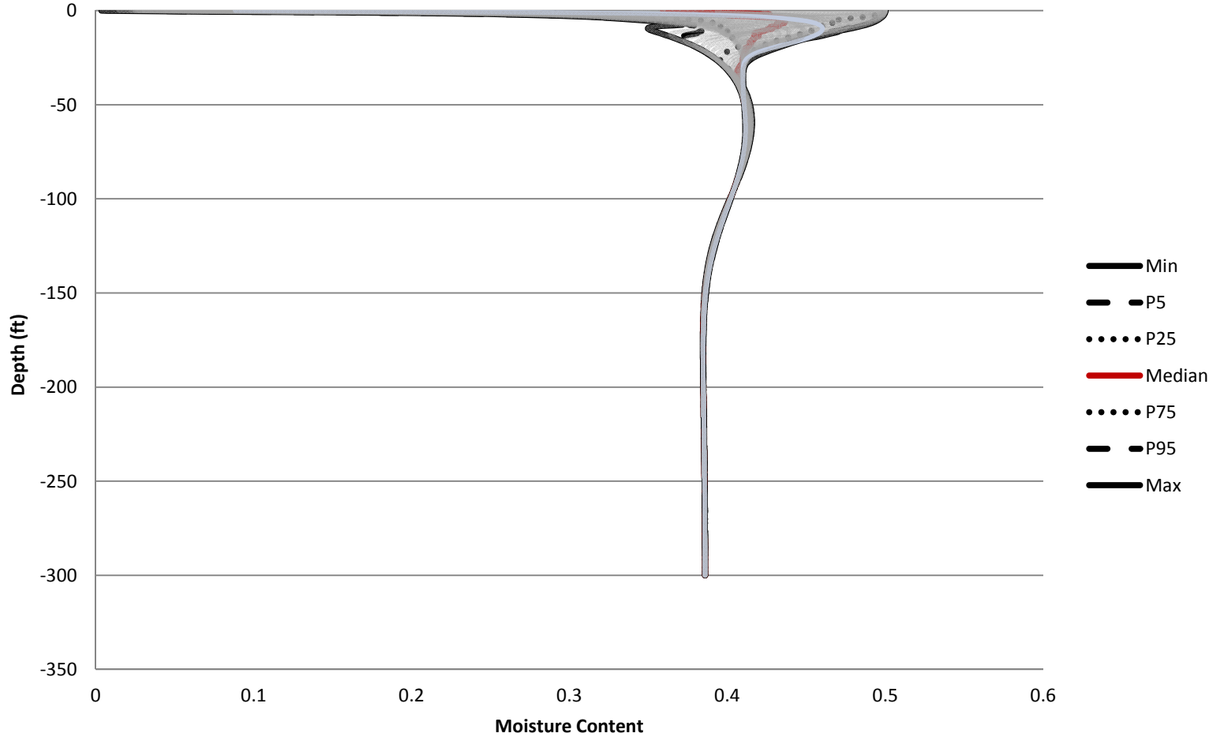
PROJECT No. M09441A16

FIG. No. III-E.7

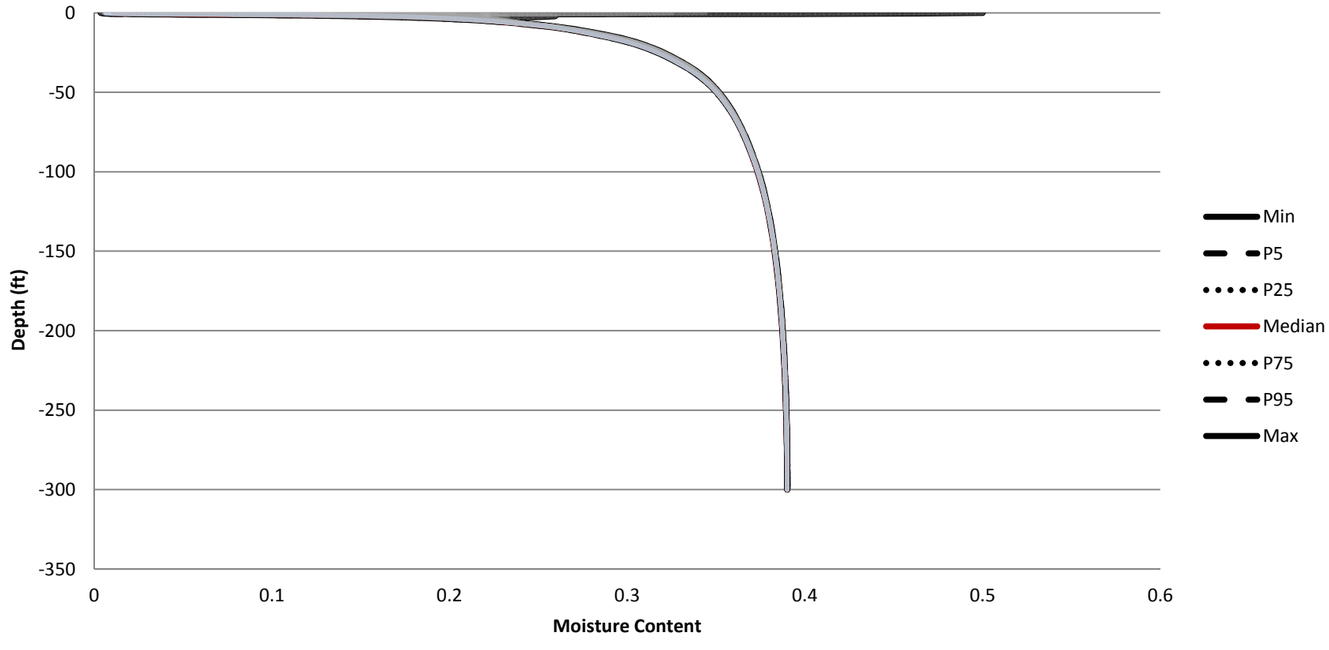
August Average Year (1980) - Daily Moisture Content



August Wet Year (1992) - Daily Moisture Content



August Dry Year (2000) - Daily Moisture Content



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PROJECT

RESOLUTION PROJECT
NEAR WEST TAILINGS STORAGE FACILITY CLOSURE COVER STUDY - CLOSURE COVER PREDICTIONS

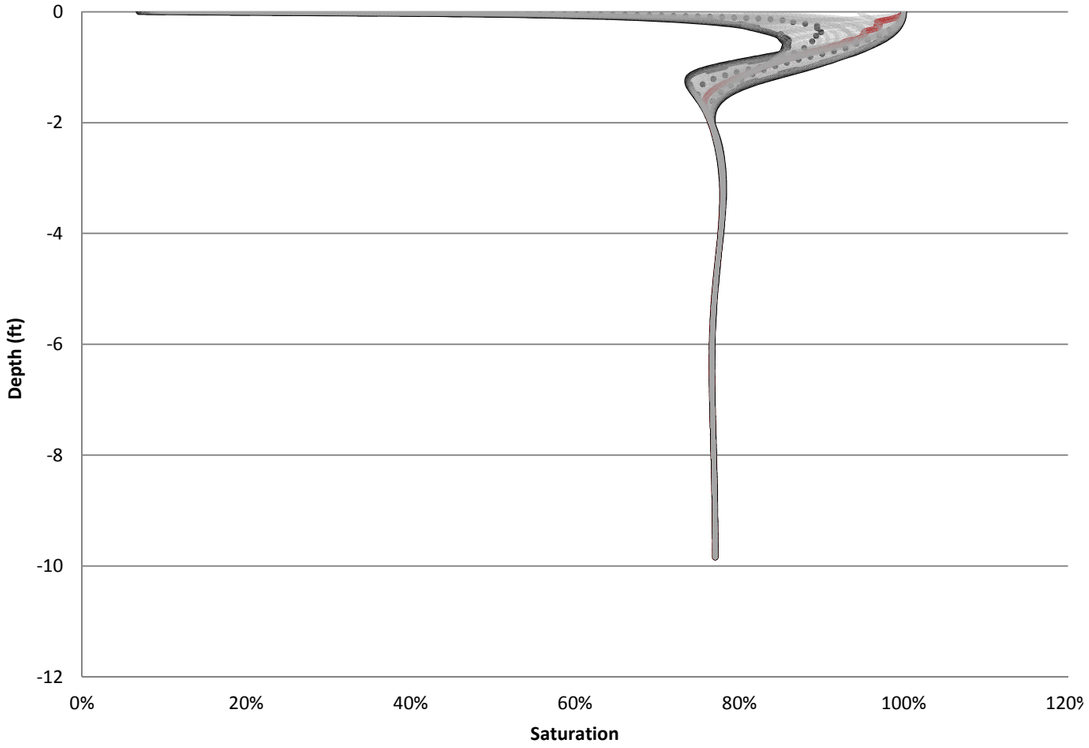
TITLE

BC4 - 9.8ft Cleaner
Moisture Content - Summer Monsoon (August)

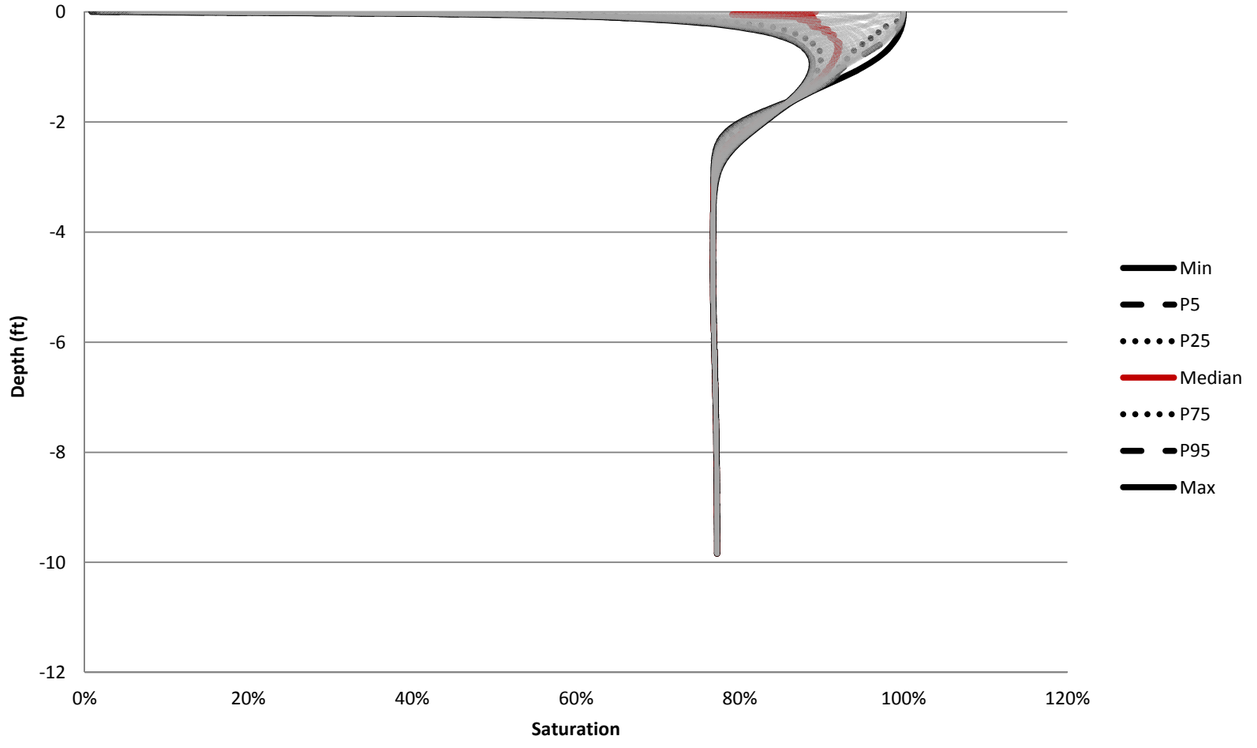
PROJECT No. M09441A16

FIG. No. III-E.8

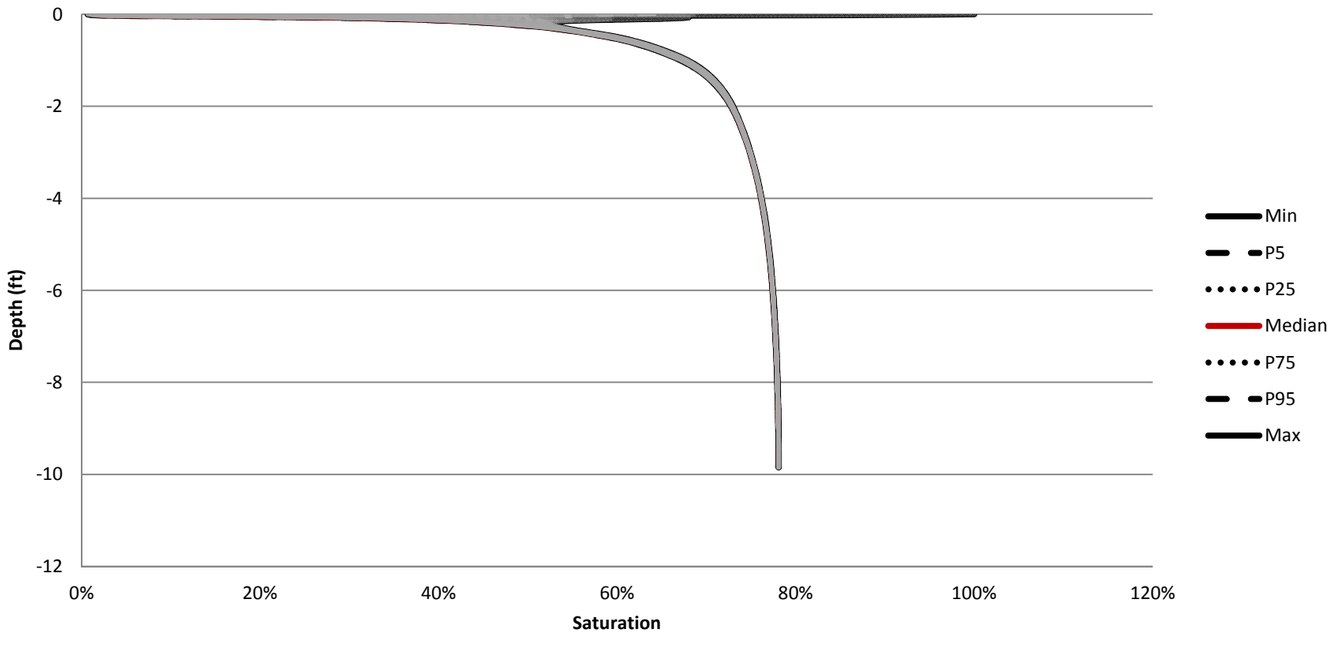
February Average Year (1980) - Daily Saturation



February Wet Year (1992) - Daily Saturation



February Dry Year (2000)- Daily Saturation



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PROJECT

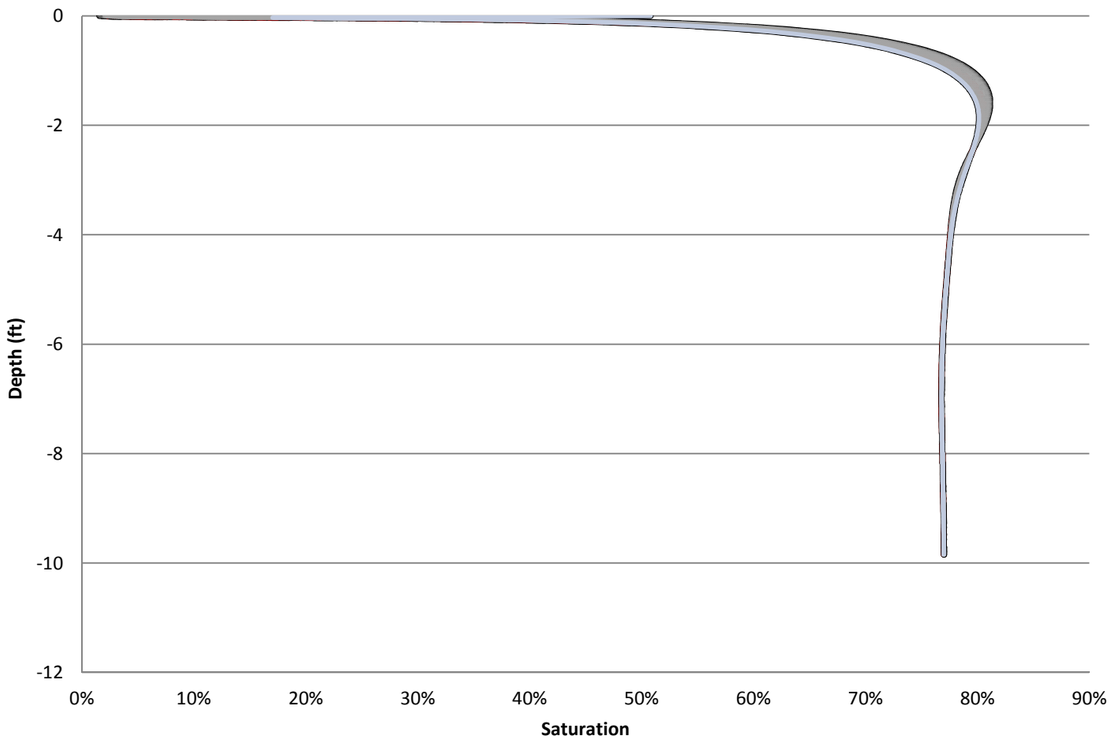
RESOLUTION PROJECT
NEAR WEST TAILINGS STORAGE FACILITY CLOSURE COVER STUDY - CLOSURE COVER PREDICTIONS

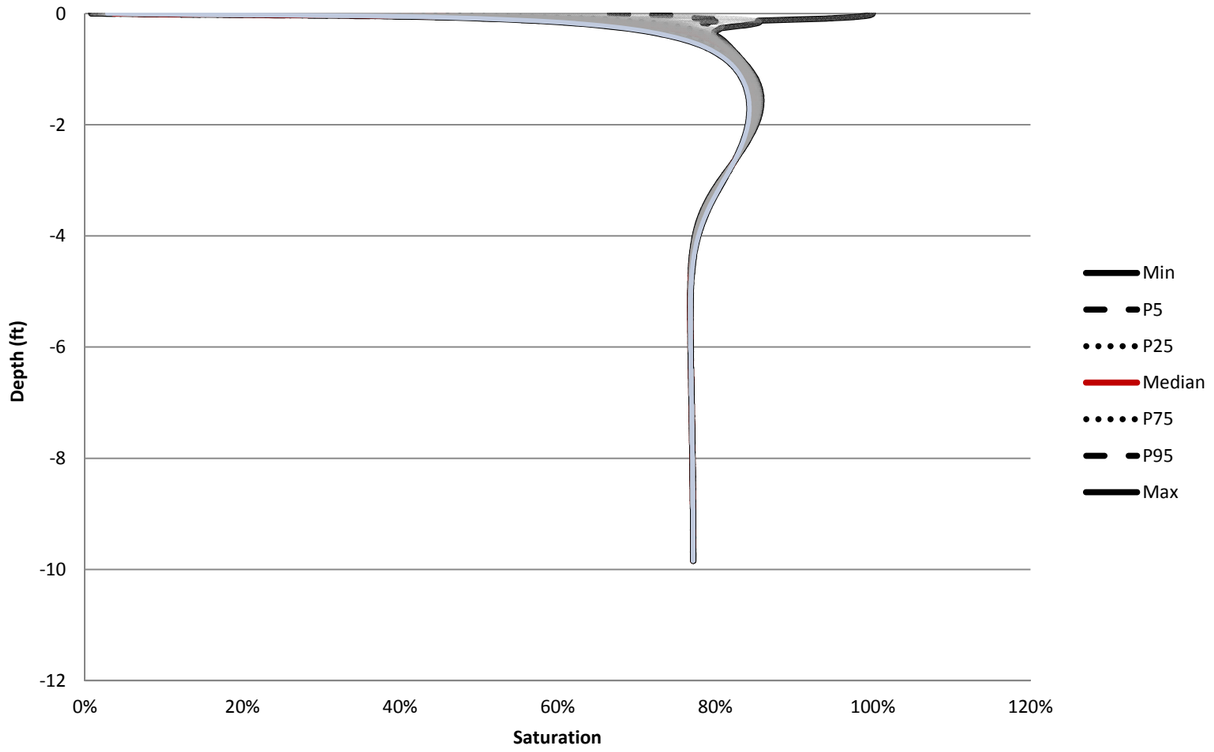
TITLE

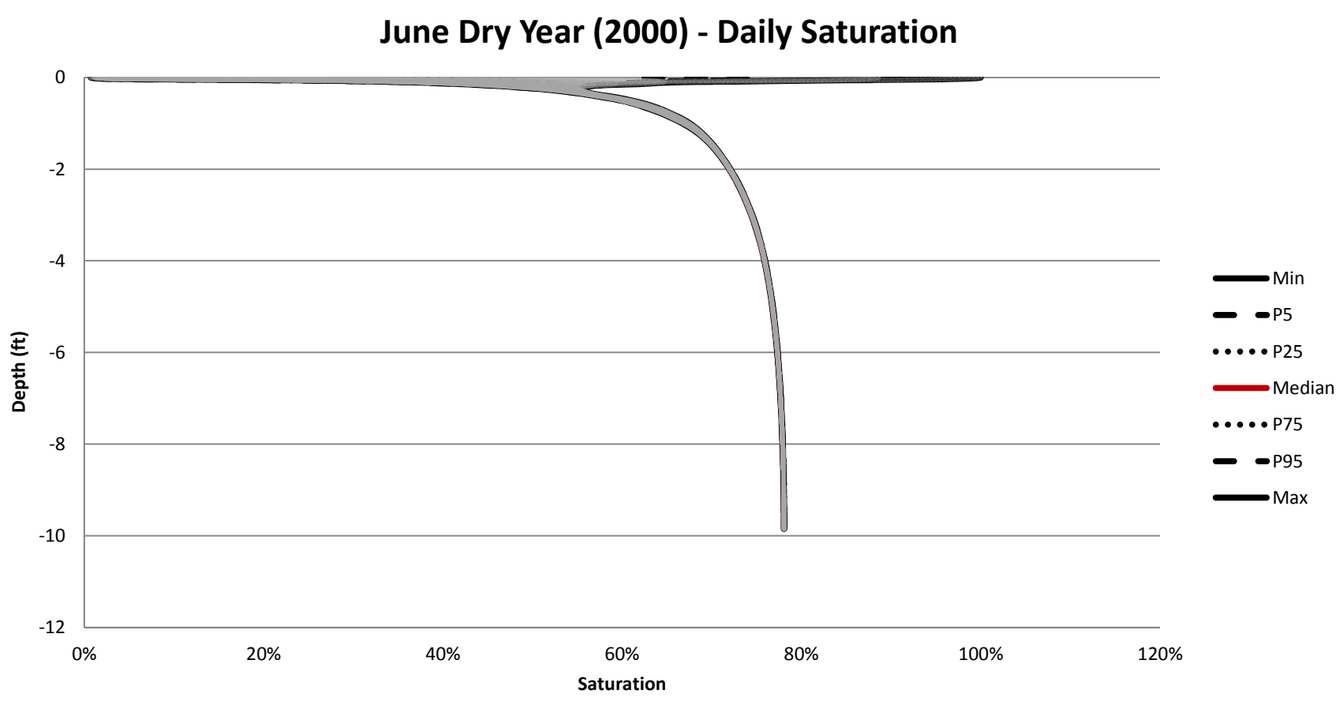
BC4 - 9.8ft Cleaner
Saturation - Winter(February)

PROJECT No. M09441A16

FIG. No. III-E.9







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Resolution Copper Mining

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PROJECT

RESOLUTION PROJECT
NEAR WEST TAILINGS STORAGE FACILITY CLOSURE
COVER STUDY - CLOSURE COVER PREDICTIONS

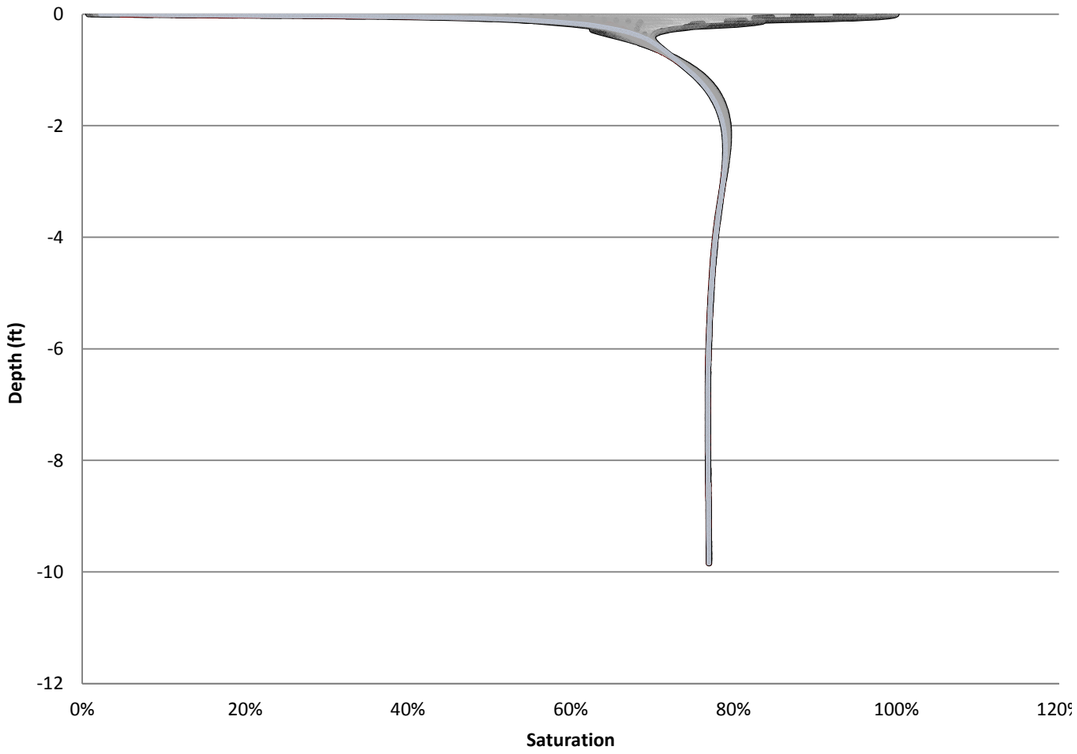
TITLE

BC4 - 9.8ft Cleaner
Saturation - Dry Season (June)

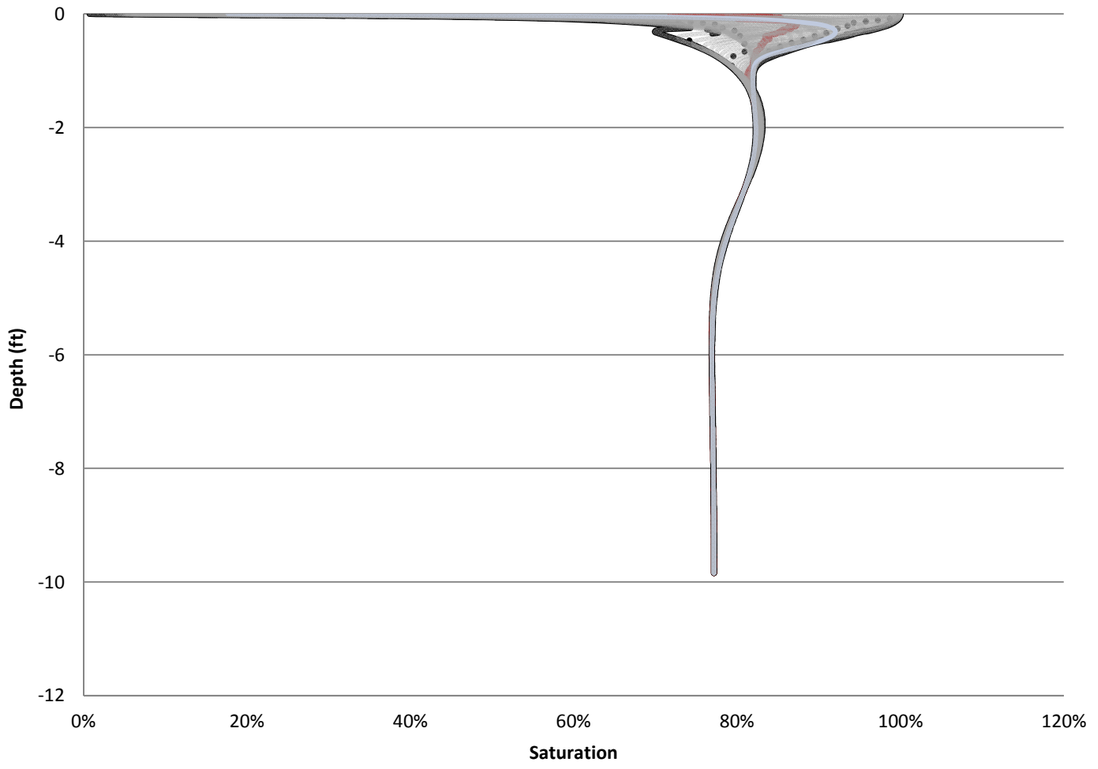
PROJECT No. M09441A16

FIG. No. III-E.10

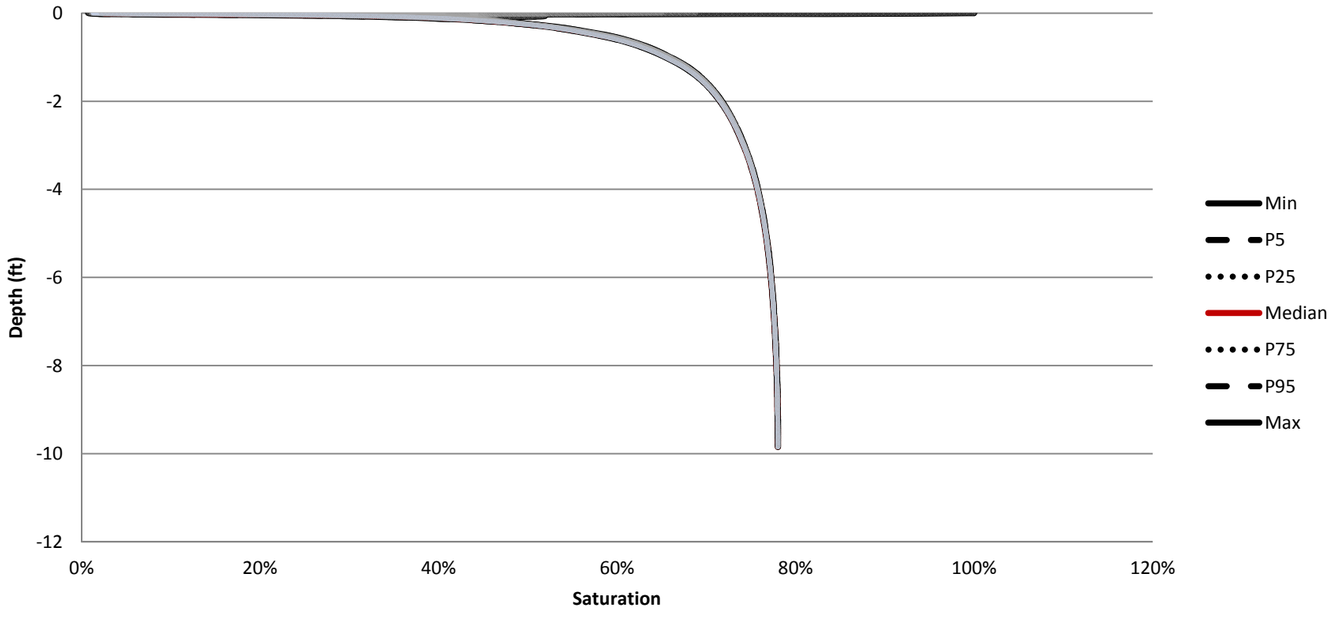
August Average Year (1980) - Daily Saturation



August Wet Year (1992) - Daily Saturation



August Dry Year (2000) - Daily Saturation



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CLIENT: Resolution Copper Mining

Klohn Crippen Berger

PROJECT: RESOLUTION PROJECT
NEAR WEST TAILINGS STORAGE FACILITY CLOSURE COVER STUDY - CLOSURE COVER PREDICTIONS

TITLE: BC4 - 9.8ft Cleaner
Saturation - Summer Monsoon (August)

PROJECT No. M09441A16

FIG. No. III-E.11

APPENDIX III-F

BC 5 Results

Table III-F.1 BC 5 Annual Water Balance

Water Year	Result Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
		[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
1951	10/1/1951	14.21	46.45	(0.36)	-	(0.00)	-	14.21	13.86	60.66
1952	10/1/1952	20.48	51.78	(1.80)	-	(0.01)	-	20.48	18.68	72.26
1953	10/1/1953	15.47	56.84	(2.37)	-	(0.09)	-	15.47	13.10	72.27
1954	10/1/1954	21.56	50.53	(4.03)	-	(0.30)	-	21.56	17.53	72.10
1955	10/1/1955	13.57	58.63	(0.30)	-	(0.51)	-	13.57	13.27	72.22
1956	10/1/1956	12.67	61.57	0.13	-	(0.58)	-	12.67	12.81	74.23
1957	10/1/1957	15.23	56.20	(0.60)	-	(0.57)	-	15.23	14.63	71.46
1958	10/1/1958	19.46	51.33	(1.61)	-	(0.57)	-	19.46	17.85	70.83
1959	10/1/1959	15.80	59.06	(0.26)	-	(0.57)	-	15.80	15.55	74.82
1960	10/1/1960	19.09	53.70	(2.59)	-	(0.68)	-	19.09	16.50	72.75
1961	10/1/1961	9.95	63.07	1.74	-	(0.65)	-	9.95	11.69	72.91
1962	10/1/1962	14.25	56.81	(0.97)	-	(0.60)	-	14.25	13.28	71.21
1963	10/1/1963	24.18	49.21	(4.96)	-	(0.61)	-	24.18	19.24	73.26
1964	10/1/1964	11.60	59.92	2.89	-	(0.69)	-	11.60	14.50	71.57
1965	10/1/1965	17.70	53.62	(0.51)	-	(0.64)	-	17.70	17.19	71.35
1966	10/1/1966	22.98	49.06	(4.63)	-	(0.74)	-	22.98	18.35	72.14
1967	10/1/1967	14.42	58.66	2.30	-	(0.70)	-	14.42	16.72	72.79
1968	10/1/1968	22.33	49.09	(3.14)	-	(0.75)	-	22.33	19.20	71.52
1969	10/1/1969	18.74	53.31	0.26	-	(0.75)	-	18.74	19.01	72.01
1970	10/1/1970	16.07	56.42	(0.03)	-	(0.68)	-	16.07	16.04	72.65
1971	10/1/1971	12.48	60.98	(1.14)	-	(0.63)	-	12.48	11.34	73.39
1972	10/1/1972	11.29	65.08	2.24	-	(0.63)	-	11.29	13.53	76.19
1973	10/1/1973	30.70	38.74	(4.13)	-	(0.71)	-	30.70	26.56	69.32
1974	10/1/1974	15.59	56.06	0.53	-	(0.69)	-	15.59	16.15	71.82
1975	10/1/1975	19.09	50.16	(0.31)	-	(0.67)	-	19.09	18.81	69.16
1976	10/1/1976	16.22	56.02	(0.98)	-	(0.64)	-	16.22	15.24	72.40
1977	10/1/1977	16.42	56.26	(0.05)	-	(0.61)	-	16.42	16.38	72.72
1978	10/1/1978	23.98	47.95	(3.22)	-	(0.69)	-	23.98	20.71	71.67
1979	10/1/1979	29.57	41.97	(2.38)	-	(0.84)	-	29.57	27.24	71.67
1980	10/1/1980	20.31	51.50	0.52	-	(0.79)	-	20.31	20.83	71.66
1981	10/1/1981	15.24	60.12	1.07	-	(0.71)	-	15.24	16.30	75.36
1982	10/1/1982	23.58	46.14	(1.57)	-	(0.67)	-	23.58	22.01	69.86
1983	10/1/1983	27.44	42.32	(4.64)	-	(0.71)	-	27.44	22.83	69.77
1984	10/1/1984	17.80	53.15	3.45	-	(0.74)	-	17.80	21.26	70.94
1985	10/1/1985	22.72	44.29	(1.90)	-	(0.73)	-	22.72	20.83	66.86
1986	10/1/1986	21.34	49.02	0.09	-	(0.71)	-	21.34	21.42	70.66
1987	10/1/1987	20.12	50.63	(0.00)	-	(0.70)	-	20.12	20.12	70.34
1988	10/1/1988	23.11	48.78	(1.66)	-	(0.70)	-	23.11	21.46	71.67
1989	10/1/1989	11.73	62.44	1.82	-	(0.69)	-	11.73	13.54	74.11
1990	10/1/1990	23.35	47.72	(4.44)	-	(0.61)	1.10	22.24	17.83	71.03
1991	10/1/1991	22.95	48.46	0.03	-	(0.74)	-	22.95	22.99	71.44
1992	10/1/1992	36.57	34.25	(4.45)	-	(0.80)	-	36.57	32.13	70.56
1993	10/1/1993	32.76	37.64	(0.37)	-	(0.87)	-	32.76	32.44	70.40
1994	10/1/1994	15.39	57.44	3.21	-	(0.78)	-	15.39	18.58	72.86
1995	10/1/1995	24.96	46.18	(2.37)	-	(0.73)	-	24.96	22.60	71.32
1996	10/1/1996	13.58	60.08	2.45	-	(0.69)	-	13.58	16.06	73.81
1997	10/1/1997	10.28	65.12	1.27	-	(0.62)	-	10.28	11.50	74.80
1998	10/1/1998	20.51	49.21	(2.47)	-	(0.60)	-	20.51	18.07	69.87
1999	10/1/1999	15.04	58.54	0.08	-	(0.62)	-	15.04	15.12	73.55
2000	10/1/2000	5.43	72.01	1.64	-	(0.58)	-	5.43	7.09	77.40
2001	10/1/2001	23.50	47.91	(3.47)	-	(0.59)	-	23.50	20.04	71.51
2002	10/1/2002	5.43	70.00	1.86	-	(0.61)	-	5.43	7.32	75.20
2003	10/1/2003	13.31	62.48	(0.95)	-	(0.54)	-	13.31	12.32	75.89
2004	10/1/2004	12.36	64.80	(0.31)	-	(0.53)	-	12.36	12.09	77.18
2005	10/1/2005	24.17	48.50	(5.02)	-	(0.61)	-	24.17	19.21	72.60
2006	10/1/2006	12.28	62.91	1.07	-	(0.68)	-	12.28	13.35	75.07

Table III-F.2 BC 5 Monthly Water Balance 9 Wet Years (1983 to 1991)

Month	Result Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
		[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
Nov-82	11/30/1982	2.48	5.63	(0.01)	-	(0.11)	-	2.48	2.52	8.89
Dec-82	12/30/1982	2.52	0.08	(0.32)	-	(0.06)	-	2.52	2.17	2.77
Jan-83	1/29/1983	0.67	2.60	0.23	-	(0.06)	-	0.67	0.91	3.06
Feb-83	2/28/1983	3.54	(0.08)	(1.31)	-	(0.06)	-	3.54	2.24	2.98
Mar-83	3/30/1983	5.39	(1.34)	(2.19)	-	(0.06)	-	5.39	3.23	4.12
Apr-83	4/29/1983	0.83	5.24	1.36	-	(0.06)	-	0.83	2.17	5.35
May-83	5/29/1983	-	8.46	0.69	-	(0.06)	-	-	0.71	7.89
Jun-83	6/28/1983	-	9.41	0.53	-	(0.06)	-	-	0.55	9.32
Jul-83	7/28/1983	2.13	6.73	(0.34)	-	(0.06)	-	2.13	1.77	9.37
Aug-83	8/27/1983	3.98	3.50	(0.06)	-	(0.06)	-	3.98	3.90	7.44
Sep-83	9/26/1983	1.93	5.20	0.37	-	(0.06)	-	1.93	2.28	7.60
Oct-83	10/26/1983	5.12	(0.39)	(2.16)	-	(0.06)	-	5.12	2.95	5.16
Nov-83	11/25/1983	1.57	2.13	(0.44)	-	(0.06)	-	1.57	1.14	4.12
Dec-83	12/25/1983	1.89	0.83	0.29	-	(0.06)	-	1.89	2.20	2.65
Jan-84	1/24/1984	1.54	1.22	0.35	-	(0.06)	-	1.54	1.85	2.73
Feb-84	2/23/1984	-	4.06	0.69	-	(0.06)	-	-	0.71	3.75
Mar-84	3/24/1984	-	5.59	0.55	-	(0.06)	-	-	0.55	4.96
Apr-84	4/23/1984	0.87	5.79	0.28	-	(0.06)	-	0.87	1.14	6.46
May-84	5/23/1984	0.67	7.28	0.43	-	(0.06)	-	0.67	1.10	7.47
Jun-84	6/22/1984	0.04	9.21	0.43	-	(0.06)	-	0.04	0.47	9.21
Jul-84	7/22/1984	3.62	4.25	(0.82)	-	(0.06)	-	3.62	2.80	8.57
Aug-84	8/21/1984	4.02	3.23	(0.05)	-	(0.06)	-	4.02	3.98	7.28
Sep-84	9/20/1984	1.22	6.02	0.66	-	(0.06)	-	1.22	1.85	7.00
Oct-84	10/20/1984	2.56	2.56	(0.15)	-	(0.06)	-	2.56	2.44	5.89
Nov-84	11/19/1984	-	4.37	0.57	-	(0.06)	-	-	0.59	4.30
Dec-84	12/19/1984	4.80	(2.24)	(2.86)	-	(0.06)	-	4.80	1.93	3.19
Jan-85	1/18/1985	3.94	(1.54)	(1.51)	-	(0.06)	-	3.94	2.44	2.32
Feb-85	2/17/1985	2.87	(0.35)	(0.61)	-	(0.06)	-	2.87	2.24	2.29
Mar-85	3/19/1985	1.69	2.20	0.51	-	(0.06)	-	1.69	2.20	3.62
Apr-85	4/18/1985	0.43	5.75	0.99	-	(0.06)	-	0.43	1.42	5.44
May-85	5/18/1985	0.47	6.50	0.58	-	(0.06)	-	0.47	1.06	6.63
Jun-85	6/17/1985	-	8.58	0.56	-	(0.06)	-	-	0.55	8.41
Jul-85	7/17/1985	0.20	8.15	0.29	-	(0.06)	-	0.20	0.51	8.33
Aug-85	8/16/1985	2.17	5.67	0.05	-	(0.06)	-	2.17	2.20	7.75
Sep-85	9/15/1985	2.28	4.84	(0.04)	-	(0.06)	-	2.28	2.20	7.99
Oct-85	10/15/1985	3.27	1.97	(0.29)	-	(0.06)	-	3.27	2.99	5.79
Nov-85	11/14/1985	1.42	2.48	(0.12)	-	(0.06)	-	1.42	1.30	3.97
Dec-85	12/14/1985	2.72	0.16	(0.72)	-	(0.06)	-	2.72	2.01	3.10
Jan-86	1/13/1986	-	3.35	1.29	-	(0.06)	-	-	1.30	3.34
Feb-86	2/12/1986	2.36	0.83	(1.37)	-	(0.06)	-	2.36	0.94	3.59
Mar-86	3/14/1986	1.89	2.68	0.23	-	(0.06)	-	1.89	2.17	3.80
Apr-86	4/13/1986	3.11	2.48	(0.27)	-	(0.06)	-	3.11	2.83	4.91
May-86	5/13/1986	-	7.76	0.72	-	(0.06)	-	-	0.75	7.34
Jun-86	6/12/1986	0.04	9.33	0.48	-	(0.06)	-	0.04	0.47	8.91
Jul-86	7/12/1986	2.17	6.85	(0.45)	-	(0.06)	-	2.17	1.73	9.33
Aug-86	8/11/1986	2.83	4.61	(0.03)	-	(0.06)	-	2.83	2.80	7.51
Sep-86	9/10/1986	3.11	3.98	(0.67)	-	(0.06)	-	3.11	2.44	7.42
Oct-86	10/10/1986	0.94	4.88	0.98	-	(0.06)	-	0.94	1.93	6.24
Nov-86	11/9/1986	2.76	1.30	(0.61)	-	(0.06)	-	2.76	2.13	4.77
Dec-86	12/9/1986	2.60	0.63	(1.37)	-	(0.06)	-	2.60	1.26	3.33
Jan-87	1/8/1987	1.50	1.30	0.71	-	(0.06)	-	1.50	2.20	2.79
Feb-87	2/7/1987	3.11	(0.12)	(0.58)	-	(0.06)	-	3.11	2.52	2.96
Mar-87	3/9/1987	2.24	1.97	(0.23)	-	(0.06)	-	2.24	2.05	3.42
Apr-87	4/8/1987	0.94	4.37	0.72	-	(0.06)	-	0.94	1.65	4.98
May-87	5/8/1987	0.04	7.09	0.58	-	(0.06)	-	0.04	0.63	6.69
Jun-87	6/7/1987	0.31	8.07	0.43	-	(0.06)	-	0.31	0.71	8.06
Jul-87	7/7/1987	0.20	9.06	0.37	-	(0.06)	-	0.20	0.59	9.33
Aug-87	8/6/1987	3.11	5.47	(1.12)	-	(0.06)	-	3.11	2.01	8.93
Sep-87	9/5/1987	2.48	5.00	0.06	-	(0.06)	-	2.48	2.52	7.51
Oct-87	10/5/1987	0.83	5.71	0.82	-	(0.06)	-	0.83	1.65	6.87
Nov-87	11/4/1987	1.42	3.78	(0.45)	-	(0.06)	-	1.42	0.94	5.99
Dec-87	12/4/1987	0.71	3.11	0.79	-	(0.06)	-	0.71	1.50	3.90

Table III-F.2 BC 5 Monthly Water Balance 9 Wet Years (1983 to 1991)

Month	Result Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
		[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
Jan-88	1/3/1988	4.02	(1.34)	(2.15)	-	(0.06)	-	4.02	1.89	3.02
Feb-88	2/2/1988	3.58	(0.87)	(1.12)	-	(0.05)	-	3.58	2.44	2.40
Mar-88	3/3/1988	0.71	3.54	0.85	-	(0.06)	-	0.71	1.57	3.71
Apr-88	4/2/1988	0.16	5.87	0.60	-	(0.06)	-	0.16	0.75	5.55
May-88	5/2/1988	2.44	3.74	(0.35)	-	(0.06)	-	2.44	2.09	6.16
Jun-88	6/1/1988	-	8.54	0.74	-	(0.06)	-	-	0.75	7.83
Jul-88	7/1/1988	0.12	8.66	0.44	-	(0.06)	-	0.12	0.55	8.90
Aug-88	7/31/1988	2.44	5.79	(0.82)	-	(0.06)	-	2.44	1.65	8.57
Sep-88	8/30/1988	6.97	0.43	(1.75)	-	(0.06)	-	6.97	5.24	7.48
Oct-88	10/29/1988	2.05	10.04	1.48	-	(0.11)	-	2.05	3.46	12.97
Nov-88	11/28/1988	1.73	1.85	(0.80)	-	(0.06)	-	1.73	0.94	4.03
Dec-88	12/28/1988	1.10	1.81	0.67	-	(0.06)	-	1.10	1.81	3.11
Jan-89	1/27/1989	1.97	0.83	(0.06)	-	(0.06)	-	1.97	1.89	2.51
Feb-89	2/26/1989	0.51	3.35	0.57	-	(0.06)	-	0.51	1.10	3.39
Mar-89	3/28/1989	1.73	4.09	(0.96)	-	(0.06)	-	1.73	0.75	5.28
Apr-89	4/27/1989	-	7.60	1.31	-	(0.06)	-	-	1.30	6.90
May-89	5/27/1989	0.16	8.19	0.41	-	(0.06)	-	0.16	0.59	8.12
Jun-89	6/26/1989	-	9.25	0.34	-	(0.06)	-	-	0.31	9.10
Jul-89	7/26/1989	0.08	8.74	0.29	-	(0.06)	-	0.08	0.39	8.98
Aug-89	8/25/1989	1.38	6.14	0.04	-	(0.05)	-	1.38	1.42	8.10
Sep-89	9/24/1989	1.57	5.71	(0.14)	-	(0.05)	-	1.57	1.42	7.35
Oct-89	10/24/1989	1.06	4.65	0.14	-	(0.05)	-	1.06	1.22	6.27
Nov-89	11/23/1989	0.28	3.82	0.19	-	(0.05)	-	0.28	0.47	4.65
Dec-89	12/23/1989	-	3.27	0.45	-	(0.05)	-	-	0.43	3.46
Jan-90	1/22/1990	2.17	0.51	(0.64)	-	(0.05)	-	2.17	1.54	2.86
Feb-90	2/21/1990	2.52	0.43	(0.60)	-	(0.05)	-	2.52	1.93	2.57
Mar-90	3/23/1990	0.83	3.90	0.46	-	(0.05)	-	0.83	1.26	4.21
Apr-90	4/22/1990	1.02	5.79	0.30	-	(0.05)	-	1.02	1.30	5.97
May-90	5/22/1990	1.06	6.81	0.09	-	(0.05)	-	1.06	1.18	7.60
Jun-90	6/21/1990	0.39	8.74	0.26	-	(0.05)	-	0.39	0.67	8.85
Jul-90	7/21/1990	0.94	7.36	0.07	-	(0.05)	-	0.94	1.02	8.67
Aug-90	8/20/1990	10.08	(2.83)	(6.40)	-	(0.05)	1.10	8.98	2.56	7.84
Sep-90	9/19/1990	2.60	4.69	0.27	-	(0.05)	-	2.60	2.87	7.23
Oct-90	10/19/1990	0.43	5.04	1.74	-	(0.05)	-	0.43	2.20	6.15
Nov-90	11/18/1990	1.54	2.68	(0.01)	-	(0.05)	-	1.54	1.50	4.34
Dec-90	12/18/1990	2.80	0.35	(1.12)	-	(0.06)	-	2.80	1.65	3.54
Jan-91	1/17/1991	4.65	(2.20)	(2.23)	-	(0.06)	-	4.65	2.44	2.39
Feb-91	2/16/1991	0.16	3.54	1.41	-	(0.06)	-	0.16	1.57	3.37
Mar-91	3/18/1991	3.62	0.94	(1.13)	-	(0.06)	-	3.62	2.48	4.39
Apr-91	4/17/1991	3.23	2.52	0.11	-	(0.06)	-	3.23	3.35	4.87
May-91	5/17/1991	-	7.80	0.92	-	(0.06)	-	-	0.91	7.37
Jun-91	6/16/1991	0.71	8.27	0.55	-	(0.06)	-	0.71	1.26	8.56
Jul-91	7/16/1991	0.43	8.78	0.58	-	(0.06)	-	0.43	1.02	9.34
Aug-91	8/15/1991	3.46	4.57	(0.67)	-	(0.06)	-	3.46	2.80	8.34
Sep-91	9/14/1991	2.09	4.96	0.45	-	(0.06)	-	2.09	2.56	7.62
Oct-91	10/1/1991	0.24	3.27	0.51	-	(0.03)	-	0.24	0.75	3.60

Table III-F.3 BC 5 Monsoon Period Water Balance

Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
6/1/1951	8.65	18.41	0.61	-	(0.00)	-	8.65	9.26	27.06
7/1/1951	-	9.29	0.29	-	(0.00)	-	-	0.29	9.29
8/1/1951	1.05	8.41	(0.04)	-	(0.00)	-	1.05	1.01	9.46
9/1/1951	3.83	4.16	(2.14)	-	(0.00)	-	3.83	1.68	7.99
10/1/1951	0.68	6.17	0.93	-	(0.00)	-	0.68	1.61	6.86
11/1/1951	1.64	3.94	(0.59)	-	(0.00)	-	1.64	1.05	5.58
1951	7.20	31.98	(1.55)	-	(0.00)	-	7.20	5.65	39.18
6/1/1952	16.44	16.65	(2.04)	-	(0.00)	-	16.44	14.40	33.08
7/1/1952	0.63	8.77	0.34	-	(0.00)	-	0.63	0.97	9.40
8/1/1952	0.56	8.46	0.20	-	(0.00)	-	0.56	0.76	9.02
9/1/1952	0.47	7.57	0.23	-	(0.00)	-	0.47	0.70	8.05
10/1/1952	0.74	6.39	0.05	-	(0.00)	-	0.74	0.79	7.13
11/1/1952	-	6.05	0.25	-	(0.00)	-	-	0.25	6.05
1952	2.40	37.24	1.08	-	(0.00)	-	2.40	3.48	39.64
6/1/1953	10.86	22.70	(2.41)	-	(0.04)	-	10.86	8.45	33.41
7/1/1953	-	9.20	0.23	-	(0.01)	-	-	0.23	9.18
8/1/1953	2.71	5.80	(1.27)	-	(0.01)	-	2.71	1.44	8.78
9/1/1953	1.90	6.13	0.14	-	(0.01)	-	1.90	2.04	7.87
10/1/1953	-	6.96	0.68	-	(0.02)	-	-	0.69	6.94
11/1/1953	0.01	5.62	0.27	-	(0.02)	-	0.01	0.28	5.69
1953	4.63	33.71	0.05	-	(0.07)	-	4.63	4.68	38.46
6/1/1954	10.05	25.53	(2.14)	-	(0.16)	-	10.05	7.91	35.46
7/1/1954	0.13	8.81	0.33	-	(0.03)	-	0.13	0.46	8.93
8/1/1954	4.46	3.30	(1.31)	-	(0.03)	-	4.46	3.15	7.84
9/1/1954	5.56	1.82	(1.68)	-	(0.03)	-	5.56	3.88	7.42
10/1/1954	1.35	5.44	0.50	-	(0.03)	-	1.35	1.85	6.76
11/1/1954	-	5.77	0.63	-	(0.03)	-	-	0.63	5.85
1954	11.50	25.15	(1.53)	-	(0.16)	-	11.50	9.97	36.80
6/1/1955	4.09	31.20	0.52	-	(0.29)	-	4.09	4.61	35.16
7/1/1955	2.06	7.00	(0.54)	-	(0.04)	-	2.06	1.52	9.07
8/1/1955	4.46	3.43	(1.88)	-	(0.05)	-	4.46	2.57	7.90
9/1/1955	2.83	4.29	0.36	-	(0.05)	-	2.83	3.19	7.26
10/1/1955	0.13	6.93	0.61	-	(0.05)	-	0.13	0.74	6.99
11/1/1955	0.02	5.94	0.36	-	(0.05)	-	0.02	0.38	6.02
1955	9.50	27.61	(1.09)	-	(0.23)	-	9.50	8.41	37.23
6/1/1956	7.73	27.53	(0.29)	-	(0.33)	-	7.73	7.44	35.11
7/1/1956	0.24	9.13	0.12	-	(0.05)	-	0.24	0.36	9.35
8/1/1956	2.77	6.11	(0.56)	-	(0.05)	-	2.77	2.20	8.97
9/1/1956	1.84	5.88	0.17	-	(0.05)	-	1.84	2.01	7.71
10/1/1956	0.07	6.97	0.34	-	(0.05)	-	0.07	0.42	7.06
11/1/1956	0.53	4.66	0.07	-	(0.05)	-	0.53	0.60	5.31
1956	5.46	32.76	0.14	-	(0.24)	-	5.46	5.59	38.40
6/1/1957	9.41	24.23	(0.82)	-	(0.33)	-	9.41	8.58	33.29
7/1/1957	0.03	9.31	0.34	-	(0.05)	-	0.03	0.37	9.31
8/1/1957	1.09	7.43	(0.04)	-	(0.05)	-	1.09	1.05	8.60
9/1/1957	3.57	4.30	(0.62)	-	(0.05)	-	3.57	2.96	8.06
10/1/1957	0.60	6.28	0.47	-	(0.05)	-	0.60	1.07	6.85
11/1/1957	3.23	1.29	(1.65)	-	(0.05)	-	3.23	1.58	4.73
1957	8.52	28.61	(1.49)	-	(0.24)	-	8.52	7.03	37.55
6/1/1958	10.68	22.91	0.63	-	(0.33)	-	10.68	11.31	33.18
7/1/1958	0.70	8.50	0.13	-	(0.05)	-	0.70	0.83	9.22
8/1/1958	0.78	8.11	0.08	-	(0.05)	-	0.78	0.87	9.02
9/1/1958	0.89	7.28	0.29	-	(0.05)	-	0.89	1.18	8.15
10/1/1958	3.17	3.23	(1.09)	-	(0.05)	-	3.17	2.08	6.54
11/1/1958	1.92	3.39	0.08	-	(0.05)	-	1.92	2.00	5.45
1958	7.47	30.51	(0.51)	-	(0.24)	-	7.47	6.96	38.37
6/1/1959	3.43	33.19	1.18	-	(0.34)	-	3.43	4.62	36.23
7/1/1959	1.03	8.19	(0.05)	-	(0.05)	-	1.03	0.98	9.11
8/1/1959	3.79	5.75	(1.53)	-	(0.05)	-	3.79	2.26	9.61
9/1/1959	5.58	1.69	(0.70)	-	(0.05)	-	5.58	4.88	7.34
10/1/1959	0.05	6.85	0.76	-	(0.05)	-	0.05	0.81	7.07
11/1/1959	4.79	0.59	(3.81)	-	(0.05)	-	4.79	0.98	5.57
1959	15.25	23.07	(5.33)	-	(0.23)	-	15.25	9.91	38.71

Table III-F.3 BC 5 Monsoon Period Water Balance

Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
6/1/1960	11.66	22.48	(0.24)	-	(0.38)	-	11.66	11.42	33.73
7/1/1960	-	9.25	0.50	-	(0.06)	-	-	0.50	9.18
8/1/1960	0.74	8.31	0.28	-	(0.06)	-	0.74	1.02	9.13
9/1/1960	1.62	6.38	0.23	-	(0.06)	-	1.62	1.85	8.08
10/1/1960	0.28	6.69	0.45	-	(0.06)	-	0.28	0.74	7.06
11/1/1960	2.06	2.99	(0.30)	-	(0.06)	-	2.06	1.76	5.12
1960	4.70	33.62	1.17	-	(0.31)	-	4.70	5.87	38.57
6/1/1961	3.57	31.61	1.88	-	(0.39)	-	3.57	5.45	34.79
7/1/1961	-	9.33	0.23	-	(0.05)	-	-	0.23	9.29
8/1/1961	0.67	8.03	0.10	-	(0.05)	-	0.67	0.77	8.97
9/1/1961	3.13	4.92	(1.33)	-	(0.05)	-	3.13	1.81	8.11
10/1/1961	0.52	6.18	1.15	-	(0.05)	-	0.52	1.68	6.61
11/1/1961	0.45	4.65	0.03	-	(0.05)	-	0.45	0.48	5.57
1961	4.78	33.11	0.19	-	(0.26)	-	4.78	4.96	38.54
6/1/1962	11.38	21.69	(1.58)	-	(0.34)	-	11.38	9.80	32.42
7/1/1962	-	9.09	0.30	-	(0.05)	-	-	0.30	9.06
8/1/1962	0.61	8.27	0.19	-	(0.05)	-	0.61	0.80	8.95
9/1/1962	0.52	7.87	0.20	-	(0.05)	-	0.52	0.72	8.46
10/1/1962	1.29	5.24	(0.11)	-	(0.05)	-	1.29	1.19	6.75
11/1/1962	0.87	4.29	0.16	-	(0.05)	-	0.87	1.04	5.31
1962	3.30	34.76	0.74	-	(0.26)	-	3.30	4.04	38.53
6/1/1963	11.13	24.41	(1.66)	-	(0.35)	-	11.13	9.47	35.08
7/1/1963	-	9.17	0.34	-	(0.05)	-	-	0.33	9.10
8/1/1963	0.08	9.21	0.28	-	(0.05)	-	0.08	0.36	9.41
9/1/1963	11.00	(3.70)	(6.24)	-	(0.05)	-	11.00	4.78	7.52
10/1/1963	1.10	5.83	2.16	-	(0.05)	-	1.10	3.26	6.84
11/1/1963	0.67	5.12	0.57	-	(0.06)	-	0.67	1.24	6.03
1963	12.85	25.63	(2.90)	-	(0.27)	-	12.85	9.98	38.91
6/1/1964	5.50	28.43	1.98	-	(0.41)	-	5.50	7.48	33.51
7/1/1964	-	9.29	0.31	-	(0.06)	-	-	0.31	9.29
8/1/1964	1.48	7.05	(0.13)	-	(0.06)	-	1.48	1.36	8.72
9/1/1964	2.29	5.47	0.01	-	(0.06)	-	2.29	2.30	7.70
10/1/1964	1.66	4.57	0.16	-	(0.05)	-	1.66	1.81	6.32
11/1/1964	1.54	4.29	(0.18)	-	(0.05)	-	1.54	1.36	5.96
1964	6.97	30.67	0.17	-	(0.28)	-	6.97	7.14	37.99
6/1/1965	12.57	20.79	(1.16)	-	(0.36)	-	12.57	11.42	32.82
7/1/1965	0.10	8.82	0.35	-	(0.05)	-	0.10	0.46	8.88
8/1/1965	1.44	7.01	0.02	-	(0.06)	-	1.44	1.46	8.75
9/1/1965	0.95	7.17	0.28	-	(0.06)	-	0.95	1.22	8.13
10/1/1965	1.09	5.55	0.17	-	(0.05)	-	1.09	1.26	6.75
11/1/1965	0.46	5.12	0.23	-	(0.05)	-	0.46	0.69	5.83
1965	4.05	33.66	1.05	-	(0.27)	-	4.05	5.09	38.34
6/1/1966	16.99	17.40	(5.65)	-	(0.42)	-	16.99	11.34	33.72
7/1/1966	0.18	8.70	0.63	-	(0.07)	-	0.18	0.81	9.19
8/1/1966	0.84	7.64	0.46	-	(0.07)	-	0.84	1.30	8.38
9/1/1966	1.69	6.46	0.02	-	(0.06)	-	1.69	1.71	8.28
10/1/1966	2.81	3.74	(0.31)	-	(0.06)	-	2.81	2.50	6.74
11/1/1966	1.36	4.02	0.51	-	(0.06)	-	1.36	1.87	5.34
1966	6.89	30.55	1.30	-	(0.32)	-	6.89	8.19	37.93
6/1/1967	5.79	29.80	1.96	-	(0.42)	-	5.79	7.75	35.13
7/1/1967	0.08	8.98	0.33	-	(0.06)	-	0.08	0.41	9.02
8/1/1967	3.96	4.33	(0.89)	-	(0.06)	-	3.96	3.08	8.51
9/1/1967	2.64	5.51	(0.09)	-	(0.06)	-	2.64	2.56	7.99
10/1/1967	0.58	6.02	0.48	-	(0.05)	-	0.58	1.06	6.81
11/1/1967	0.42	4.96	0.37	-	(0.06)	-	0.42	0.79	5.83
1967	7.69	29.80	0.20	-	(0.28)	-	7.69	7.89	38.16
6/1/1968	17.34	16.54	(5.24)	-	(0.44)	-	17.34	12.11	33.17
7/1/1968	-	9.29	0.69	-	(0.07)	-	-	0.69	9.23
8/1/1968	1.85	6.93	(0.03)	-	(0.07)	-	1.85	1.82	8.89
9/1/1968	2.67	4.57	0.37	-	(0.07)	-	2.67	3.04	7.37
10/1/1968	0.05	6.81	0.70	-	(0.06)	-	0.05	0.76	7.03
11/1/1968	0.39	4.76	0.47	-	(0.06)	-	0.39	0.86	5.25
1968	4.96	32.36	2.21	-	(0.33)	-	4.96	7.17	37.76

Table III-F.3 BC 5 Monsoon Period Water Balance

Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
6/1/1969	14.00	19.84	(1.36)	-	(0.43)	-	14.00	12.64	33.18
7/1/1969	-	9.29	0.57	-	(0.06)	-	-	0.57	9.37
8/1/1969	0.33	8.23	0.46	-	(0.06)	-	0.33	0.79	8.72
9/1/1969	2.71	5.67	(0.15)	-	(0.06)	-	2.71	2.57	8.42
10/1/1969	1.31	5.51	0.27	-	(0.06)	-	1.31	1.58	7.03
11/1/1969	0.83	4.21	0.24	-	(0.06)	-	0.83	1.07	5.36
1969	5.18	32.91	1.40	-	(0.31)	-	5.18	6.58	38.91
6/1/1970	8.79	25.63	0.26	-	(0.40)	-	8.79	9.06	33.63
7/1/1970	0.08	9.13	0.34	-	(0.06)	-	0.08	0.42	9.10
8/1/1970	1.04	7.72	0.20	-	(0.06)	-	1.04	1.24	9.11
9/1/1970	1.81	6.46	(0.10)	-	(0.06)	-	1.81	1.72	8.23
10/1/1970	3.53	3.27	(0.98)	-	(0.05)	-	3.53	2.55	7.23
11/1/1970	-	5.28	0.59	-	(0.06)	-	-	0.58	5.40
1970	6.46	31.85	0.05	-	(0.28)	-	6.46	6.50	39.07
6/1/1971	3.93	31.38	1.30	-	(0.37)	-	3.93	5.24	34.64
7/1/1971	-	9.17	0.22	-	(0.05)	-	-	0.22	9.02
8/1/1971	0.39	8.78	0.15	-	(0.05)	-	0.39	0.54	9.32
9/1/1971	4.93	2.68	(1.42)	-	(0.05)	-	4.93	3.51	7.82
10/1/1971	3.23	3.70	(1.97)	-	(0.05)	-	3.23	1.26	7.19
11/1/1971	4.21	0.75	(0.49)	-	(0.05)	-	4.21	3.72	5.32
1971	12.75	25.08	(3.51)	-	(0.25)	-	12.75	9.24	38.67
6/1/1972	2.32	35.20	2.46	-	(0.37)	-	2.32	4.79	36.63
7/1/1972	1.68	7.76	(0.32)	-	(0.05)	-	1.68	1.36	9.32
8/1/1972	0.27	9.17	0.45	-	(0.05)	-	0.27	0.72	9.38
9/1/1972	2.10	6.02	(0.26)	-	(0.05)	-	2.10	1.85	8.53
10/1/1972	0.70	6.18	0.39	-	(0.05)	-	0.70	1.09	7.00
11/1/1972	8.68	(3.98)	(4.98)	-	(0.05)	-	8.68	3.70	5.15
1972	13.44	25.16	(4.72)	-	(0.26)	-	13.44	8.72	39.39
6/1/1973	16.91	15.04	(0.59)	-	(0.40)	-	16.91	16.33	30.97
7/1/1973	0.87	8.23	0.53	-	(0.06)	-	0.87	1.40	8.97
8/1/1973	2.72	5.79	(0.65)	-	(0.06)	-	2.72	2.07	8.87
9/1/1973	1.52	6.93	0.95	-	(0.06)	-	1.52	2.46	8.49
10/1/1973	-	6.73	0.61	-	(0.06)	-	-	0.61	6.83
11/1/1973	-	5.28	0.46	-	(0.06)	-	-	0.46	5.81
1973	5.11	32.95	1.90	-	(0.31)	-	5.11	6.99	38.97
6/1/1974	8.11	25.79	0.41	-	(0.41)	-	8.11	8.54	32.90
7/1/1974	-	9.37	0.34	-	(0.06)	-	-	0.34	9.27
8/1/1974	2.44	6.10	(0.31)	-	(0.06)	-	2.44	2.13	8.69
9/1/1974	1.46	6.54	0.29	-	(0.06)	-	1.46	1.75	8.36
10/1/1974	3.58	2.99	(0.65)	-	(0.05)	-	3.58	2.93	6.81
11/1/1974	3.39	1.50	(1.80)	-	(0.06)	-	3.39	1.60	5.46
1974	10.87	26.50	(2.13)	-	(0.28)	-	10.87	8.75	38.58
6/1/1975	10.47	21.38	0.70	-	(0.38)	-	10.47	11.15	30.71
7/1/1975	-	9.53	0.42	-	(0.06)	-	-	0.43	9.45
8/1/1975	2.20	5.75	(0.06)	-	(0.06)	-	2.20	2.13	8.50
9/1/1975	2.09	6.22	0.04	-	(0.06)	-	2.09	2.17	8.11
10/1/1975	0.94	5.79	0.39	-	(0.06)	-	0.94	1.34	6.93
11/1/1975	0.28	5.04	0.35	-	(0.06)	-	0.28	0.59	5.62
1975	5.51	32.32	1.14	-	(0.29)	-	5.51	6.65	38.61
6/1/1976	8.07	26.61	0.30	-	(0.38)	-	8.07	8.39	33.85
7/1/1976	-	9.61	0.32	-	(0.05)	-	-	0.31	9.48
8/1/1976	2.76	5.39	(0.82)	-	(0.05)	-	2.76	1.97	8.64
9/1/1976	0.91	7.44	0.32	-	(0.05)	-	0.91	1.22	8.23
10/1/1976	4.21	1.93	(1.45)	-	(0.05)	-	4.21	2.76	6.59
11/1/1976	0.91	3.94	0.68	-	(0.05)	-	0.91	1.57	5.22
1976	8.78	28.31	(0.95)	-	(0.26)	-	8.78	7.83	38.16
6/1/1977	6.73	28.31	0.60	-	(0.35)	-	6.73	7.32	33.92
7/1/1977	0.04	9.53	0.26	-	(0.05)	-	0.04	0.31	9.42
8/1/1977	2.56	6.42	(0.63)	-	(0.05)	-	2.56	1.89	9.27
9/1/1977	2.56	5.59	(0.19)	-	(0.05)	-	2.56	2.40	8.28
10/1/1977	3.62	2.48	(0.76)	-	(0.05)	-	3.62	2.87	6.57
11/1/1977	1.34	4.09	0.37	-	(0.05)	-	1.34	1.69	5.73
1977	10.12	28.11	(0.95)	-	(0.25)	-	10.12	9.17	39.27

Table III-F.3 BC 5 Monsoon Period Water Balance

Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
6/1/1978	19.57	14.29	(5.72)	-	(0.37)	-	19.57	13.86	32.69
7/1/1978	0.55	8.74	0.52	-	(0.07)	-	0.55	1.06	9.34
8/1/1978	0.98	7.95	0.41	-	(0.07)	-	0.98	1.38	9.40
9/1/1978	1.10	6.65	0.70	-	(0.07)	-	1.10	1.81	7.63
10/1/1978	0.43	6.22	0.50	-	(0.06)	-	0.43	0.91	6.88
11/1/1978	1.89	3.78	(0.46)	-	(0.06)	-	1.89	1.46	6.24
1978	4.96	33.35	1.67	-	(0.33)	-	4.96	6.61	39.49
6/1/1979	25.47	7.44	(5.49)	-	(0.49)	-	25.47	20.00	31.82
7/1/1979	0.31	9.02	1.20	-	(0.07)	-	0.31	1.54	9.08
8/1/1979	0.20	8.86	0.97	-	(0.07)	-	0.20	1.14	9.33
9/1/1979	1.61	6.10	0.63	-	(0.07)	-	1.61	2.24	7.89
10/1/1979	0.08	6.77	0.77	-	(0.07)	-	0.08	0.87	7.30
11/1/1979	0.71	5.08	0.47	-	(0.07)	-	0.71	1.14	6.05
1979	2.91	35.83	4.04	-	(0.35)	-	2.91	6.93	39.65
6/1/1980	15.51	17.48	(2.10)	-	(0.45)	-	15.51	13.46	32.16
7/1/1980	0.20	8.98	0.66	-	(0.07)	-	0.20	0.83	9.02
8/1/1980	1.93	6.81	0.17	-	(0.07)	-	1.93	2.09	9.09
9/1/1980	1.38	6.81	0.78	-	(0.07)	-	1.38	2.17	8.13
10/1/1980	0.59	6.34	0.55	-	(0.06)	-	0.59	1.14	7.22
11/1/1980	0.04	5.51	0.53	-	(0.06)	-	0.04	0.59	6.06
1980	4.13	34.45	2.69	-	(0.33)	-	4.13	6.81	39.52
6/1/1981	9.61	26.50	0.02	-	(0.42)	-	9.61	9.65	34.89
7/1/1981	0.16	9.17	0.52	-	(0.06)	-	0.16	0.63	9.28
8/1/1981	2.17	6.73	(0.77)	-	(0.06)	-	2.17	1.38	9.31
9/1/1981	2.76	5.59	0.41	-	(0.06)	-	2.76	3.19	8.06
10/1/1981	0.51	6.61	0.36	-	(0.06)	-	0.51	0.87	7.71
11/1/1981	0.98	3.86	0.39	-	(0.06)	-	0.98	1.38	5.40
1981	6.57	31.97	0.90	-	(0.29)	-	6.57	7.44	39.77
6/1/1982	12.68	21.06	(0.75)	-	(0.39)	-	12.68	11.97	32.58
7/1/1982	0.04	9.17	0.42	-	(0.05)	-	0.04	0.47	9.04
8/1/1982	2.68	5.67	(0.48)	-	(0.06)	-	2.68	2.17	8.84
9/1/1982	4.02	3.27	(0.68)	-	(0.06)	-	4.02	3.35	7.25
10/1/1982	3.19	3.11	(0.46)	-	(0.05)	-	3.19	2.68	6.75
11/1/1982	-	5.16	0.71	-	(0.06)	-	-	0.71	5.56
1982	9.92	26.38	(0.50)	-	(0.28)	-	9.92	9.37	37.44
6/1/1983	15.43	16.34	(2.20)	-	(0.40)	-	15.43	13.31	30.41
7/1/1983	-	9.49	0.52	-	(0.06)	-	-	0.51	9.37
8/1/1983	2.83	6.06	(0.53)	-	(0.06)	-	2.83	2.24	9.36
9/1/1983	3.82	3.98	(0.29)	-	(0.06)	-	3.82	3.54	7.71
10/1/1983	5.35	1.30	(2.85)	-	(0.06)	-	5.35	2.52	7.36
11/1/1983	1.14	3.43	1.67	-	(0.06)	-	1.14	2.80	5.06
1983	13.15	24.25	(1.48)	-	(0.31)	-	13.15	11.61	38.86
6/1/1984	6.54	28.90	2.05	-	(0.44)	-	6.54	8.62	33.99
7/1/1984	1.34	7.76	(0.34)	-	(0.06)	-	1.34	0.98	9.23
8/1/1984	3.35	4.69	0.10	-	(0.06)	-	3.35	3.43	8.03
9/1/1984	3.43	3.62	0.03	-	(0.06)	-	3.43	3.50	7.54
10/1/1984	2.01	4.76	(0.06)	-	(0.06)	-	2.01	1.93	7.10
11/1/1984	1.34	3.35	0.47	-	(0.06)	-	1.34	1.81	5.11
1984	11.46	24.17	0.21	-	(0.29)	-	11.46	11.65	37.00
6/1/1985	14.21	17.09	(2.33)	-	(0.42)	-	14.21	11.89	29.78
7/1/1985	-	8.19	0.52	-	(0.06)	-	-	0.51	8.55
8/1/1985	1.22	7.44	(0.11)	-	(0.06)	-	1.22	1.10	8.52
9/1/1985	2.20	5.79	0.09	-	(0.06)	-	2.20	2.32	8.21
10/1/1985	3.74	2.44	(0.54)	-	(0.06)	-	3.74	3.19	6.65
11/1/1985	1.26	3.11	0.76	-	(0.06)	-	1.26	2.01	4.69
1985	8.43	26.97	0.72	-	(0.31)	-	8.43	9.13	36.62
6/1/1986	10.98	23.86	(0.35)	-	(0.41)	-	10.98	10.67	33.41
7/1/1986	0.04	9.29	0.43	-	(0.06)	-	0.04	0.43	9.24
8/1/1986	4.72	3.11	(0.94)	-	(0.06)	-	4.72	3.82	8.46
9/1/1986	2.17	5.59	0.05	-	(0.06)	-	2.17	2.17	8.15
10/1/1986	2.17	4.06	0.14	-	(0.06)	-	2.17	2.32	6.71
11/1/1986	1.77	3.23	0.09	-	(0.06)	-	1.77	1.85	4.98
1986	10.87	25.28	(0.23)	-	(0.30)	-	10.87	10.59	37.53

Table III-F.3 BC 5 Monsoon Period Water Balance

Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
6/1/1987	11.73	21.18	(0.20)	-	(0.41)	-	11.73	11.54	31.84
7/1/1987	0.20	9.13	0.37	-	(0.06)	-	0.20	0.59	9.07
8/1/1987	2.05	6.97	(0.44)	-	(0.06)	-	2.05	1.61	9.13
9/1/1987	3.03	4.80	(0.19)	-	(0.06)	-	3.03	2.83	8.12
10/1/1987	1.34	5.31	0.35	-	(0.06)	-	1.34	1.69	7.21
11/1/1987	0.35	5.43	0.48	-	(0.06)	-	0.35	0.83	6.33
1987	6.97	31.65	0.58	-	(0.29)	-	6.97	7.56	39.85
6/1/1988	12.68	21.85	(1.46)	-	(0.40)	-	12.68	11.22	32.93
7/1/1988	0.12	8.66	0.44	-	(0.06)	-	0.12	0.55	8.90
8/1/1988	3.39	5.00	(1.63)	-	(0.06)	-	3.39	1.77	8.79
9/1/1988	6.26	1.50	(0.75)	-	(0.06)	-	6.26	5.47	7.68
10/1/1988	0.31	6.34	1.27	-	(0.06)	-	0.31	1.61	7.04
11/1/1988	1.50	3.78	0.12	-	(0.06)	-	1.50	1.61	5.93
1988	11.57	25.28	(0.55)	-	(0.29)	-	11.57	11.02	38.34
6/1/1989	7.20	28.86	1.12	-	(0.41)	-	7.20	8.31	34.41
7/1/1989	-	9.41	0.33	-	(0.06)	-	-	0.35	9.23
8/1/1989	0.47	8.23	0.17	-	(0.06)	-	0.47	0.67	9.27
9/1/1989	0.98	6.89	0.22	-	(0.06)	-	0.98	1.18	7.83
10/1/1989	1.57	5.28	(0.14)	-	(0.05)	-	1.57	1.42	7.39
11/1/1989	1.06	4.29	0.20	-	(0.05)	-	1.06	1.26	6.10
1989	4.09	34.09	0.78	-	(0.28)	-	4.09	4.88	39.83
6/1/1990	8.07	26.18	0.11	-	(0.36)	-	8.07	8.19	32.69
7/1/1990	0.31	8.90	0.23	-	(0.05)	-	0.31	0.55	9.17
8/1/1990	1.46	6.65	(0.03)	-	(0.05)	-	1.46	1.42	8.57
9/1/1990	9.45	(1.77)	(4.75)	-	(0.05)	1.10	8.35	3.62	7.54
10/1/1990	2.99	3.46	(0.19)	-	(0.05)	-	2.99	2.80	6.97
11/1/1990	0.24	4.80	0.91	-	(0.05)	-	0.24	1.14	5.53
1990	14.45	22.05	(3.83)	-	(0.25)	1.10	13.35	9.53	37.78
6/1/1991	15.87	18.07	(1.96)	-	(0.43)	-	15.87	13.90	32.63
7/1/1991	0.63	8.70	0.58	-	(0.06)	-	0.63	1.22	9.12
8/1/1991	1.69	7.01	(0.18)	-	(0.07)	-	1.69	1.50	9.27
9/1/1991	2.87	5.08	0.32	-	(0.06)	-	2.87	3.23	8.22
10/1/1991	1.65	4.80	0.36	-	(0.06)	-	1.65	2.01	6.67
11/1/1991	1.22	4.69	(0.35)	-	(0.06)	-	1.22	0.87	6.71
1991	8.07	30.28	0.73	-	(0.32)	-	8.07	8.82	39.99
6/1/1992	24.29	8.19	(4.99)	-	(0.46)	-	24.29	19.29	31.04
7/1/1992	1.30	7.87	1.07	-	(0.07)	-	1.30	2.40	8.76
8/1/1992	3.31	5.43	(0.77)	-	(0.07)	-	3.31	2.52	9.27
9/1/1992	5.55	2.01	(0.72)	-	(0.07)	-	5.55	4.80	7.88
10/1/1992	0.91	6.06	1.31	-	(0.07)	-	0.91	2.24	6.92
11/1/1992	1.26	4.33	0.30	-	(0.07)	-	1.26	1.54	6.43
1992	12.32	25.71	1.19	-	(0.35)	-	12.32	13.50	39.24
6/1/1993	27.48	5.04	(5.02)	-	(0.51)	-	27.48	22.52	30.70
7/1/1993	-	9.21	1.70	-	(0.07)	-	-	1.69	9.24
8/1/1993	0.28	8.54	1.31	-	(0.07)	-	0.28	1.57	8.92
9/1/1993	3.58	4.02	(0.26)	-	(0.07)	-	3.58	3.35	8.48
10/1/1993	0.16	6.50	1.60	-	(0.07)	-	0.16	1.77	6.58
11/1/1993	0.83	4.61	0.76	-	(0.07)	-	0.83	1.54	6.15
1993	4.84	32.87	5.12	-	(0.36)	-	4.84	9.92	39.37
6/1/1994	9.96	25.00	1.27	-	(0.46)	-	9.96	11.26	33.52
7/1/1994	0.35	8.62	0.56	-	(0.06)	-	0.35	0.94	8.95
8/1/1994	1.50	7.28	(0.51)	-	(0.06)	-	1.50	0.94	8.96
9/1/1994	0.75	7.52	1.11	-	(0.06)	-	0.75	1.85	8.57
10/1/1994	2.01	4.41	0.01	-	(0.06)	-	2.01	2.05	6.71
11/1/1994	1.85	2.87	(0.30)	-	(0.06)	-	1.85	1.57	5.47
1994	6.46	30.71	0.88	-	(0.31)	-	6.46	7.36	38.65
6/1/1995	16.10	16.89	(1.43)	-	(0.42)	-	16.10	14.69	31.52
7/1/1995	-	9.29	0.54	-	(0.06)	-	-	0.51	8.95
8/1/1995	0.04	9.17	0.47	-	(0.06)	-	0.04	0.51	9.25
9/1/1995	4.09	4.13	(0.93)	-	(0.06)	-	4.09	3.15	8.81
10/1/1995	2.87	3.82	(0.72)	-	(0.06)	-	2.87	2.17	7.32
11/1/1995	-	5.43	1.35	-	(0.06)	-	-	1.34	6.01
1995	7.01	31.85	0.71	-	(0.31)	-	7.01	7.68	40.34
6/1/1996	6.34	30.12	1.23	-	(0.41)	-	6.34	7.56	34.72
7/1/1996	0.39	8.66	0.19	-	(0.06)	-	0.39	0.59	9.04
8/1/1996	2.36	6.42	(0.17)	-	(0.06)	-	2.36	2.20	8.94
9/1/1996	1.30	6.57	0.15	-	(0.06)	-	1.30	1.46	8.17
10/1/1996	3.19	2.87	(0.29)	-	(0.05)	-	3.19	2.91	6.92
11/1/1996	0.43	5.31	0.41	-	(0.05)	-	0.43	0.83	6.28
1996	7.68	29.84	0.29	-	(0.28)	-	7.68	7.99	39.36

Table III-F.3 BC 5 Monsoon Period Water Balance

Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
6/1/1997	6.97	28.74	0.43	-	(0.36)	-	6.97	7.40	33.74
7/1/1997	0.04	9.13	0.26	-	(0.05)	-	0.04	0.28	8.97
8/1/1997	0.08	9.25	0.21	-	(0.05)	-	0.08	0.31	9.78
9/1/1997	2.76	5.47	(0.45)	-	(0.05)	-	2.76	2.28	8.55
10/1/1997	-	7.20	0.41	-	(0.05)	-	-	0.39	7.43
11/1/1997	0.71	4.41	0.05	-	(0.05)	-	0.71	0.79	6.32
1997	3.58	35.47	0.48	-	(0.25)	-	3.58	4.06	41.04
6/1/1998	14.17	17.52	(3.04)	-	(0.33)	-	14.17	11.10	29.68
7/1/1998	-	9.33	0.39	-	(0.05)	-	-	0.39	9.10
8/1/1998	1.69	7.13	(0.00)	-	(0.05)	-	1.69	1.73	9.26
9/1/1998	2.52	5.35	(0.03)	-	(0.05)	-	2.52	2.48	8.31
10/1/1998	1.42	5.47	0.17	-	(0.05)	-	1.42	1.57	7.21
11/1/1998	-	5.59	0.40	-	(0.06)	-	-	0.39	6.53
1998	5.63	32.87	0.92	-	(0.27)	-	5.63	6.57	40.41
6/1/1999	5.04	31.30	0.50	-	(0.36)	-	5.04	5.55	34.31
7/1/1999	-	9.17	0.28	-	(0.05)	-	-	0.28	9.13
8/1/1999	5.83	2.17	(1.99)	-	(0.05)	-	5.83	3.86	8.72
9/1/1999	2.99	4.80	(0.07)	-	(0.05)	-	2.99	2.91	7.85
10/1/1999	1.18	5.51	0.96	-	(0.05)	-	1.18	2.13	7.01
11/1/1999	-	5.63	0.45	-	(0.05)	-	-	0.43	6.39
1999	10.00	27.28	(0.37)	-	(0.25)	-	10.00	9.61	39.10
6/1/2000	3.86	34.41	0.56	-	(0.34)	-	3.86	4.45	36.33
7/1/2000	0.79	8.39	0.04	-	(0.05)	-	0.79	0.83	9.38
8/1/2000	0.08	9.53	0.26	-	(0.05)	-	0.08	0.35	9.47
9/1/2000	0.71	6.97	0.11	-	(0.05)	-	0.71	0.83	8.83
10/1/2000	-	7.09	0.21	-	(0.05)	-	-	0.20	6.99
11/1/2000	5.31	(0.63)	(3.61)	-	(0.05)	-	5.31	1.73	6.07
2000	6.89	31.34	(2.98)	-	(0.24)	-	6.89	3.94	40.74
6/1/2001	11.77	22.32	0.46	-	(0.33)	-	11.77	12.20	31.56
7/1/2001	0.04	9.29	0.36	-	(0.05)	-	0.04	0.39	9.18
8/1/2001	2.72	6.30	(1.59)	-	(0.05)	-	2.72	1.10	9.61
9/1/2001	3.50	4.09	0.34	-	(0.05)	-	3.50	3.90	7.70
10/1/2001	0.16	6.54	0.57	-	(0.05)	-	0.16	0.71	7.34
11/1/2001	0.35	4.69	0.33	-	(0.05)	-	0.35	0.71	5.69
2001	6.77	30.91	0.02	-	(0.26)	-	6.77	6.81	39.52
6/1/2002	3.03	34.02	1.19	-	(0.36)	-	3.03	4.21	35.28
7/1/2002	-	9.45	0.18	-	(0.05)	-	-	0.16	9.15
8/1/2002	0.31	8.86	0.15	-	(0.05)	-	0.31	0.47	9.59
9/1/2002	0.51	7.52	0.04	-	(0.05)	-	0.51	0.51	8.30
10/1/2002	1.22	5.47	(0.02)	-	(0.05)	-	1.22	1.26	7.20
11/1/2002	0.12	5.12	0.23	-	(0.05)	-	0.12	0.31	6.24
2002	2.17	36.42	0.57	-	(0.24)	-	2.17	2.72	40.48
6/1/2003	9.29	26.77	(1.47)	-	(0.31)	-	9.29	7.83	33.89
7/1/2003	-	9.96	0.27	-	(0.04)	-	-	0.28	9.64
8/1/2003	0.47	8.82	0.17	-	(0.05)	-	0.47	0.63	10.06
9/1/2003	1.38	6.89	(0.13)	-	(0.05)	-	1.38	1.22	8.63
10/1/2003	2.05	4.92	(0.02)	-	(0.05)	-	2.05	2.05	7.42
11/1/2003	0.04	5.75	0.34	-	(0.05)	-	0.04	0.39	6.23
2003	3.94	36.34	0.63	-	(0.23)	-	3.94	4.57	41.99
6/1/2004	7.99	28.50	(0.50)	-	(0.31)	-	7.99	7.48	34.81
7/1/2004	-	9.92	0.24	-	(0.04)	-	-	0.24	9.68
8/1/2004	0.55	8.78	0.12	-	(0.04)	-	0.55	0.67	9.72
9/1/2004	2.20	6.14	(0.26)	-	(0.04)	-	2.20	1.93	8.74
10/1/2004	1.57	5.71	(0.26)	-	(0.04)	-	1.57	1.38	7.98
11/1/2004	1.22	4.09	(0.11)	-	(0.04)	-	1.22	1.06	6.49
2004	5.55	34.65	(0.26)	-	(0.22)	-	5.55	5.28	42.62
6/1/2005	16.42	17.36	(5.38)	-	(0.32)	-	16.42	11.18	31.29
7/1/2005	0.08	9.69	0.50	-	(0.06)	-	0.08	0.55	9.40
8/1/2005	1.42	7.91	(0.15)	-	(0.06)	-	1.42	1.26	10.42
9/1/2005	4.92	2.64	(0.63)	-	(0.06)	-	4.92	4.29	7.43
10/1/2005	0.12	6.81	0.75	-	(0.06)	-	0.12	0.87	7.53
11/1/2005	0.39	5.00	0.42	-	(0.06)	-	0.39	0.83	6.43
2005	6.93	32.05	0.89	-	(0.30)	-	6.93	7.80	41.21
6/1/2006	3.94	33.70	1.22	-	(0.40)	-	3.94	5.16	35.16
7/1/2006	0.51	9.06	0.17	-	(0.05)	-	0.51	0.67	9.80
8/1/2006	3.19	4.88	(1.90)	-	(0.06)	-	3.19	1.30	9.24
9/1/2006	3.07	4.84	0.83	-	(0.05)	-	3.07	3.86	7.44
10/1/2006	1.18	5.43	0.35	-	(0.05)	-	1.18	1.54	7.00
11/1/2006	1.02	4.09	0.29	-	(0.05)	-	1.02	1.34	6.12
2006	8.98	28.31	(0.28)	-	(0.27)	-	8.98	8.70	39.59

Table III-F.4 BC 5 Winter Storm Period Water Balance

Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
10/1/1951	14.21	46.45	(0.36)	-	(0.00)	-	14.21	13.86	60.66
11/1/1951	1.64	3.94	(0.59)	-	(0.00)	-	1.64	1.05	5.58
12/1/1951	1.71	2.03	0.36	-	(0.00)	-	1.71	2.07	3.74
1/1/1952	3.02	(0.25)	(1.47)	-	(0.00)	-	3.02	1.55	2.77
2/1/1952	2.79	0.07	(0.24)	-	(0.00)	-	2.79	2.55	2.86
3/1/1952	0.50	3.30	0.70	-	(0.00)	-	0.50	1.20	3.81
1952	9.66	9.10	(1.25)	-	(0.00)	-	9.66	8.41	18.76
10/1/1952	10.82	42.69	(0.56)	-	(0.00)	-	10.82	10.27	53.51
11/1/1952	-	6.05	0.25	-	(0.00)	-	-	0.25	6.05
12/1/1952	4.31	(1.07)	(2.81)	-	(0.00)	-	4.31	1.49	3.24
1/1/1953	1.98	0.64	0.11	-	(0.00)	-	1.98	2.09	2.68
2/1/1953	0.74	2.65	0.57	-	(0.00)	-	0.74	1.31	3.30
3/1/1953	0.60	3.23	0.10	-	(0.00)	-	0.60	0.70	3.80
1953	7.63	11.51	(1.78)	-	(0.01)	-	7.63	5.84	19.06
10/1/1953	7.85	45.33	(0.59)	-	(0.07)	-	7.85	7.25	53.09
11/1/1953	0.01	5.62	0.27	-	(0.02)	-	0.01	0.28	5.69
12/1/1953	0.56	3.23	0.00	-	(0.02)	-	0.56	0.57	3.84
1/1/1954	0.19	2.66	0.22	-	(0.02)	-	0.19	0.41	2.90
2/1/1954	2.41	0.88	(0.95)	-	(0.02)	-	2.41	1.46	3.21
3/1/1954	0.72	3.49	0.29	-	(0.02)	-	0.72	1.01	4.22
1954	3.89	15.88	(0.17)	-	(0.10)	-	3.89	3.73	19.87
10/1/1954	17.67	34.65	(3.87)	-	(0.20)	-	17.67	13.80	52.23
11/1/1954	-	5.77	0.63	-	(0.03)	-	-	0.63	5.85
12/1/1954	0.09	4.04	0.27	-	(0.04)	-	0.09	0.36	4.18
1/1/1955	0.29	3.27	0.26	-	(0.04)	-	0.29	0.56	3.55
2/1/1955	3.41	(1.01)	(1.55)	-	(0.04)	-	3.41	1.86	2.41
3/1/1955	0.28	3.37	0.65	-	(0.04)	-	0.28	0.93	3.60
1955	4.07	15.44	0.27	-	(0.19)	-	4.07	4.34	19.59
10/1/1955	9.49	43.19	(0.57)	-	(0.32)	-	9.49	8.93	52.63
11/1/1955	0.02	5.94	0.36	-	(0.05)	-	0.02	0.38	6.02
12/1/1955	0.96	2.63	(0.06)	-	(0.05)	-	0.96	0.90	3.66
1/1/1956	1.37	1.78	(0.16)	-	(0.05)	-	1.37	1.21	3.12
2/1/1956	2.62	0.95	(1.57)	-	(0.05)	-	2.62	1.05	3.56
3/1/1956	2.00	1.25	0.31	-	(0.05)	-	2.00	2.31	3.17
1956	6.97	12.56	(1.12)	-	(0.24)	-	6.97	5.85	19.53
10/1/1956	5.70	49.02	1.25	-	(0.34)	-	5.70	6.96	54.69
11/1/1956	0.53	4.66	0.07	-	(0.05)	-	0.53	0.60	5.31
12/1/1956	-	3.75	0.39	-	(0.05)	-	-	0.39	3.75
1/1/1957	0.47	2.66	0.10	-	(0.05)	-	0.47	0.57	3.11
2/1/1957	4.79	(2.24)	(2.98)	-	(0.05)	-	4.79	1.81	2.68
3/1/1957	0.73	2.92	1.13	-	(0.04)	-	0.73	1.86	3.40
1957	6.52	11.75	(1.29)	-	(0.23)	-	6.52	5.23	18.25
10/1/1957	8.71	44.46	0.69	-	(0.33)	-	8.71	9.40	53.11
11/1/1957	3.23	1.29	(1.65)	-	(0.05)	-	3.23	1.58	4.73
12/1/1957	0.61	2.55	1.01	-	(0.05)	-	0.61	1.62	3.10
1/1/1958	1.06	2.11	0.15	-	(0.05)	-	1.06	1.22	3.20
2/1/1958	0.01	3.42	0.36	-	(0.05)	-	0.01	0.37	3.36
3/1/1958	2.52	0.70	(0.84)	-	(0.04)	-	2.52	1.67	3.23
1958	7.43	10.06	(0.97)	-	(0.23)	-	7.43	6.46	17.63
10/1/1958	12.03	41.27	(0.64)	-	(0.34)	-	12.03	11.39	53.20
11/1/1958	1.92	3.39	0.08	-	(0.05)	-	1.92	2.00	5.45
12/1/1958	1.52	2.01	(0.24)	-	(0.05)	-	1.52	1.29	3.55
1/1/1959	-	3.54	0.55	-	(0.05)	-	-	0.55	3.59
2/1/1959	0.21	3.35	0.29	-	(0.05)	-	0.21	0.51	3.44
3/1/1959	1.42	1.93	(0.24)	-	(0.04)	-	1.42	1.19	3.39
1959	5.07	14.21	0.45	-	(0.24)	-	5.07	5.53	19.42
10/1/1959	10.73	44.84	(0.71)	-	(0.33)	-	10.73	10.02	55.40
11/1/1959	4.79	0.59	(3.81)	-	(0.05)	-	4.79	0.98	5.57
12/1/1959	0.38	3.31	1.87	-	(0.05)	-	0.38	2.25	3.65
1/1/1960	5.24	(2.60)	(3.37)	-	(0.05)	-	5.24	1.87	2.67
2/1/1960	4.16	(1.61)	(1.60)	-	(0.05)	-	4.16	2.56	2.56
3/1/1960	0.87	2.56	1.02	-	(0.05)	-	0.87	1.89	3.39
1960	15.43	2.24	(5.89)	-	(0.24)	-	15.43	9.54	17.84

Table III-F.4 BC 5 Winter Storm Period Water Balance

Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
10/1/1960	3.66	51.46	3.30	-	(0.43)	-	3.66	6.96	54.90
11/1/1960	2.06	2.99	(0.30)	-	(0.06)	-	2.06	1.76	5.12
12/1/1960	0.48	3.03	0.47	-	(0.06)	-	0.48	0.95	3.66
1/1/1961	0.47	2.72	0.28	-	(0.06)	-	0.47	0.75	3.27
2/1/1961	0.70	2.48	0.00	-	(0.06)	-	0.70	0.70	3.21
3/1/1961	0.23	3.82	0.49	-	(0.05)	-	0.23	0.72	3.72
1961	3.94	15.04	0.95	-	(0.28)	-	3.94	4.88	18.97
10/1/1961	6.02	48.03	0.80	-	(0.37)	-	6.02	6.81	53.85
11/1/1961	0.45	4.65	0.03	-	(0.05)	-	0.45	0.48	5.57
12/1/1961	0.32	2.87	0.40	-	(0.05)	-	0.32	0.72	3.11
1/1/1962	3.88	(1.22)	(2.02)	-	(0.05)	-	3.88	1.85	2.66
2/1/1962	3.21	(0.39)	(1.58)	-	(0.05)	-	3.21	1.63	2.76
3/1/1962	1.67	1.46	0.15	-	(0.04)	-	1.67	1.81	3.20
1962	9.52	7.36	(3.03)	-	(0.24)	-	9.52	6.49	17.30
10/1/1962	4.72	49.45	2.06	-	(0.36)	-	4.72	6.79	53.91
11/1/1962	0.87	4.29	0.16	-	(0.05)	-	0.87	1.04	5.31
12/1/1962	0.83	3.03	0.05	-	(0.05)	-	0.83	0.88	3.83
1/1/1963	1.81	1.30	(0.52)	-	(0.05)	-	1.81	1.29	3.25
2/1/1963	2.09	1.06	(0.15)	-	(0.05)	-	2.09	1.94	3.04
3/1/1963	4.23	(0.31)	(2.27)	-	(0.04)	-	4.23	1.96	3.77
1963	9.83	9.37	(2.72)	-	(0.25)	-	9.83	7.11	19.20
10/1/1963	14.35	39.84	(2.24)	-	(0.36)	-	14.35	12.13	54.06
11/1/1963	0.67	5.12	0.57	-	(0.06)	-	0.67	1.24	6.03
12/1/1963	2.35	1.18	(0.29)	-	(0.06)	-	2.35	2.05	3.60
1/1/1964	0.34	2.95	0.76	-	(0.06)	-	0.34	1.10	3.33
2/1/1964	0.58	2.44	0.29	-	(0.06)	-	0.58	0.87	3.00
3/1/1964	-	3.66	0.49	-	(0.06)	-	-	0.49	3.58
1964	3.93	15.35	1.82	-	(0.29)	-	3.93	5.76	19.55
10/1/1964	7.67	44.57	1.07	-	(0.40)	-	7.67	8.74	52.02
11/1/1964	1.54	4.29	(0.18)	-	(0.05)	-	1.54	1.36	5.96
12/1/1964	1.38	2.05	(0.13)	-	(0.05)	-	1.38	1.25	3.53
1/1/1965	1.69	1.34	(0.44)	-	(0.05)	-	1.69	1.25	3.36
2/1/1965	2.88	-	(0.55)	-	(0.05)	-	2.88	2.33	2.60
3/1/1965	2.83	0.83	(0.89)	-	(0.05)	-	2.83	1.94	3.44
1965	10.32	8.50	(2.18)	-	(0.26)	-	10.32	8.14	18.90
10/1/1965	7.38	45.12	1.67	-	(0.38)	-	7.38	9.05	52.37
11/1/1965	0.46	5.12	0.23	-	(0.05)	-	0.46	0.69	5.83
12/1/1965	2.35	1.46	(1.43)	-	(0.05)	-	2.35	0.93	3.89
1/1/1966	10.43	(7.87)	(8.50)	-	(0.05)	-	10.43	1.93	2.74
2/1/1966	1.83	0.98	0.85	-	(0.05)	-	1.83	2.69	2.77
3/1/1966	2.02	1.30	0.52	-	(0.06)	-	2.02	2.54	3.16
1966	17.10	0.98	(8.33)	-	(0.27)	-	17.10	8.77	18.38
10/1/1966	5.87	48.07	3.70	-	(0.47)	-	5.87	9.57	53.75
11/1/1966	1.36	4.02	0.51	-	(0.06)	-	1.36	1.87	5.34
12/1/1966	0.87	2.87	0.32	-	(0.06)	-	0.87	1.20	4.02
1/1/1967	1.25	1.73	0.08	-	(0.06)	-	1.25	1.33	3.10
2/1/1967	0.79	2.36	0.32	-	(0.06)	-	0.79	1.11	2.94
3/1/1967	-	4.02	0.57	-	(0.06)	-	-	0.56	3.97
1967	4.28	15.00	1.80	-	(0.30)	-	4.28	6.08	19.37
10/1/1967	10.14	43.66	0.50	-	(0.40)	-	10.14	10.64	53.43
11/1/1967	0.42	4.96	0.37	-	(0.06)	-	0.42	0.79	5.83
12/1/1967	2.11	1.50	(1.24)	-	(0.05)	-	2.11	0.87	3.84
1/1/1968	10.00	(7.56)	(7.98)	-	(0.05)	-	10.00	2.02	2.34
2/1/1968	0.63	2.48	1.58	-	(0.06)	-	0.63	2.21	3.04
3/1/1968	1.94	1.81	0.34	-	(0.06)	-	1.94	2.28	3.44
1968	15.10	3.19	(6.93)	-	(0.28)	-	15.10	8.17	18.49
10/1/1968	7.23	45.91	3.79	-	(0.47)	-	7.23	11.02	53.03
11/1/1968	0.39	4.76	0.47	-	(0.06)	-	0.39	0.86	5.25
12/1/1968	2.54	0.91	(0.61)	-	(0.06)	-	2.54	1.93	3.78
1/1/1969	3.26	(0.39)	(1.75)	-	(0.06)	-	3.26	1.52	2.98
2/1/1969	4.16	(1.34)	(1.76)	-	(0.06)	-	4.16	2.40	2.65
3/1/1969	1.36	1.93	1.16	-	(0.06)	-	1.36	2.52	3.09
1969	11.71	5.87	(2.48)	-	(0.30)	-	11.71	9.23	17.75

Table III-F.4 BC 5 Winter Storm Period Water Balance

Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
10/1/1969	7.03	47.44	2.74	-	(0.44)	-	7.03	9.78	54.16
11/1/1969	0.83	4.21	0.24	-	(0.06)	-	0.83	1.07	5.36
12/1/1969	2.12	1.18	(0.32)	-	(0.06)	-	2.12	1.80	3.52
1/1/1970	1.32	1.89	0.01	-	(0.06)	-	1.32	1.33	3.44
2/1/1970	0.50	2.76	0.64	-	(0.06)	-	0.50	1.14	2.95
3/1/1970	0.41	3.39	0.36	-	(0.05)	-	0.41	0.77	3.67
1970	5.18	13.43	0.93	-	(0.29)	-	5.18	6.11	18.94
10/1/1970	10.90	42.99	(0.96)	-	(0.40)	-	10.90	9.94	53.71
11/1/1970	-	5.28	0.59	-	(0.06)	-	-	0.58	5.40
12/1/1970	0.65	3.03	(0.09)	-	(0.05)	-	0.65	0.57	3.89
1/1/1971	1.20	1.65	0.12	-	(0.06)	-	1.20	1.33	3.00
2/1/1971	0.85	2.68	0.29	-	(0.06)	-	0.85	1.15	3.08
3/1/1971	0.82	2.99	0.06	-	(0.05)	-	0.82	0.87	4.03
1971	3.52	15.63	0.97	-	(0.27)	-	3.52	4.50	19.41
10/1/1971	8.95	45.35	(2.11)	-	(0.36)	-	8.95	6.84	53.98
11/1/1971	4.21	0.75	(0.49)	-	(0.05)	-	4.21	3.72	5.32
12/1/1971	0.04	3.62	0.93	-	(0.05)	-	0.04	0.97	3.73
1/1/1972	2.11	0.83	(0.35)	-	(0.05)	-	2.11	1.76	3.01
2/1/1972	-	3.27	0.74	-	(0.05)	-	-	0.74	3.14
3/1/1972	-	4.61	0.36	-	(0.05)	-	-	0.36	4.07
1972	6.36	13.07	1.19	-	(0.26)	-	6.36	7.56	19.26
10/1/1972	4.93	52.01	1.05	-	(0.37)	-	4.93	5.97	56.93
11/1/1972	8.68	(3.98)	(4.98)	-	(0.05)	-	8.68	3.70	5.15
12/1/1972	2.83	0.28	(0.11)	-	(0.05)	-	2.83	2.72	3.19
1/1/1973	2.98	(0.31)	(1.14)	-	(0.05)	-	2.98	1.83	2.90
2/1/1973	0.74	2.09	1.31	-	(0.06)	-	0.74	2.04	2.66
3/1/1973	3.17	0.08	(0.84)	-	(0.05)	-	3.17	2.34	2.84
1973	18.39	(1.85)	(5.76)	-	(0.27)	-	18.39	12.64	16.75
10/1/1973	12.30	40.59	1.63	-	(0.44)	-	12.30	13.92	52.48
11/1/1973	-	5.28	0.46	-	(0.06)	-	-	0.46	5.81
12/1/1973	1.77	1.69	(0.51)	-	(0.06)	-	1.77	1.26	3.83
1/1/1974	0.08	3.27	0.79	-	(0.06)	-	0.08	0.88	3.27
2/1/1974	3.39	(0.59)	(1.13)	-	(0.06)	-	3.39	2.27	2.84
3/1/1974	0.16	3.54	0.67	-	(0.05)	-	0.16	0.82	3.33
1974	5.39	13.19	0.28	-	(0.29)	-	5.39	5.69	19.08
10/1/1974	10.20	42.87	0.26	-	(0.40)	-	10.20	10.46	52.74
11/1/1974	3.39	1.50	(1.80)	-	(0.06)	-	3.39	1.60	5.46
12/1/1974	0.12	3.58	1.59	-	(0.05)	-	0.12	1.71	3.62
1/1/1975	0.75	2.05	0.32	-	(0.06)	-	0.75	1.07	3.12
2/1/1975	0.43	2.36	0.25	-	(0.06)	-	0.43	0.66	2.63
3/1/1975	3.94	(0.35)	(1.91)	-	(0.05)	-	3.94	2.04	3.09
1975	8.62	9.13	(1.55)	-	(0.27)	-	8.62	7.07	17.92
10/1/1975	10.47	41.02	1.24	-	(0.40)	-	10.47	11.74	51.24
11/1/1975	0.28	5.04	0.35	-	(0.06)	-	0.28	0.59	5.62
12/1/1975	2.13	1.77	(1.66)	-	(0.05)	-	2.13	0.51	4.23
1/1/1976	1.26	1.73	0.90	-	(0.06)	-	1.26	2.13	3.10
2/1/1976	0.24	2.83	0.57	-	(0.06)	-	0.24	0.83	2.92
3/1/1976	1.61	2.24	(0.10)	-	(0.05)	-	1.61	1.50	3.41
1976	5.51	13.62	0.07	-	(0.27)	-	5.51	5.55	19.27
10/1/1976	10.71	42.40	(1.05)	-	(0.37)	-	10.71	9.69	53.13
11/1/1976	0.91	3.94	0.68	-	(0.05)	-	0.91	1.57	5.22
12/1/1976	0.55	3.11	0.33	-	(0.05)	-	0.55	0.87	3.88
1/1/1977	1.81	1.14	(1.09)	-	(0.05)	-	1.81	0.75	3.08
2/1/1977	1.89	0.94	0.27	-	(0.05)	-	1.89	2.17	2.53
3/1/1977	0.08	4.29	0.58	-	(0.05)	-	0.08	0.67	4.21
1977	5.24	13.43	0.77	-	(0.25)	-	5.24	6.02	18.91
10/1/1977	11.18	42.83	(0.82)	-	(0.36)	-	11.18	10.35	53.71
11/1/1977	1.34	4.09	0.37	-	(0.05)	-	1.34	1.69	5.73
12/1/1977	0.35	3.43	0.53	-	(0.05)	-	0.35	0.87	3.90
1/1/1978	0.63	2.48	(0.04)	-	(0.05)	-	0.63	0.59	3.49
2/1/1978	6.42	(3.74)	(4.42)	-	(0.05)	-	6.42	2.01	2.45
3/1/1978	5.47	(2.20)	(2.55)	-	(0.05)	-	5.47	2.91	2.98
1978	14.21	4.06	(6.11)	-	(0.25)	-	14.21	8.07	18.55

Table III-F.4 BC 5 Winter Storm Period Water Balance

Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
10/1/1978	9.76	43.90	2.89	-	(0.44)	-	9.76	12.64	53.12
11/1/1978	1.89	3.78	(0.46)	-	(0.06)	-	1.89	1.46	6.24
12/1/1978	5.63	(2.44)	(3.42)	-	(0.06)	-	5.63	2.20	3.63
1/1/1979	6.57	(3.90)	(3.96)	-	(0.06)	-	6.57	2.64	2.54
2/1/1979	6.02	(3.74)	(3.76)	-	(0.07)	-	6.02	2.28	2.29
3/1/1979	1.22	2.80	2.08	-	(0.07)	-	1.22	3.31	3.40
1979	21.34	(3.50)	(9.50)	-	(0.33)	-	21.34	11.89	18.10
10/1/1979	8.23	45.47	7.12	-	(0.51)	-	8.23	15.35	53.57
11/1/1979	0.71	5.08	0.47	-	(0.07)	-	0.71	1.14	6.05
12/1/1979	0.67	3.07	0.53	-	(0.06)	-	0.67	1.22	4.03
1/1/1980	0.71	2.72	0.25	-	(0.06)	-	0.71	0.94	3.67
2/1/1980	4.09	(1.61)	(2.15)	-	(0.06)	-	4.09	1.97	2.50
3/1/1980	6.02	(2.83)	(3.43)	-	(0.06)	-	6.02	2.60	2.53
1980	12.20	6.42	(4.34)	-	(0.32)	-	12.20	7.87	18.77
10/1/1980	8.11	45.08	4.86	-	(0.47)	-	8.11	12.95	52.89
11/1/1980	0.04	5.51	0.53	-	(0.06)	-	0.04	0.59	6.06
12/1/1980	-	4.06	0.44	-	(0.06)	-	-	0.43	4.29
1/1/1981	0.59	3.11	0.32	-	(0.06)	-	0.59	0.91	3.46
2/1/1981	1.30	2.01	(0.09)	-	(0.06)	-	1.30	1.22	3.49
3/1/1981	2.68	1.26	(0.88)	-	(0.05)	-	2.68	1.77	3.62
1981	4.61	15.94	0.33	-	(0.30)	-	4.61	4.92	20.93
10/1/1981	10.63	44.17	0.73	-	(0.41)	-	10.63	11.38	54.33
11/1/1981	0.98	3.86	0.39	-	(0.06)	-	0.98	1.38	5.40
12/1/1981	2.32	1.54	(1.85)	-	(0.06)	-	2.32	0.47	4.36
1/1/1982	-	3.46	1.52	-	(0.06)	-	-	1.50	3.25
2/1/1982	2.72	0.04	(0.50)	-	(0.06)	-	2.72	2.24	2.78
3/1/1982	1.81	1.73	0.04	-	(0.05)	-	1.81	1.85	3.15
1982	7.83	10.63	(0.40)	-	(0.28)	-	7.83	7.44	18.94
10/1/1982	15.75	35.51	(1.17)	-	(0.39)	-	15.75	14.57	50.92
11/1/1982	-	5.16	0.71	-	(0.06)	-	-	0.71	5.56
12/1/1982	3.31	(0.31)	(1.50)	-	(0.05)	-	3.31	1.81	3.47
1/1/1983	1.69	1.06	0.58	-	(0.06)	-	1.69	2.28	2.72
2/1/1983	1.89	1.38	(0.92)	-	(0.06)	-	1.89	0.98	3.26
3/1/1983	2.32	1.06	(0.23)	-	(0.05)	-	2.32	2.09	2.85
1983	9.21	8.35	(1.37)	-	(0.28)	-	9.21	7.87	17.87
10/1/1983	18.23	33.98	(3.27)	-	(0.43)	-	18.23	14.96	51.90
11/1/1983	1.14	3.43	1.67	-	(0.06)	-	1.14	2.80	5.06
12/1/1983	2.01	1.54	(0.58)	-	(0.06)	-	2.01	1.46	3.76
1/1/1984	2.48	0.16	(0.37)	-	(0.06)	-	2.48	2.13	2.79
2/1/1984	0.51	2.80	1.11	-	(0.06)	-	0.51	1.61	2.85
3/1/1984	-	4.02	0.61	-	(0.06)	-	-	0.59	3.91
1984	6.14	11.93	2.45	-	(0.31)	-	6.14	8.58	18.37
10/1/1984	11.65	41.22	1.00	-	(0.43)	-	11.65	12.68	52.57
11/1/1984	1.34	3.35	0.47	-	(0.06)	-	1.34	1.81	5.11
12/1/1984	2.09	1.65	(1.16)	-	(0.06)	-	2.09	0.94	4.20
1/1/1985	5.79	(3.23)	(3.47)	-	(0.06)	-	5.79	2.28	2.53
2/1/1985	2.68	(0.31)	(0.41)	-	(0.06)	-	2.68	2.28	2.51
3/1/1985	1.65	1.22	0.66	-	(0.05)	-	1.65	2.32	2.51
1985	13.54	2.68	(3.90)	-	(0.29)	-	13.54	9.65	16.86
10/1/1985	9.17	41.61	2.00	-	(0.44)	-	9.17	11.18	49.90
11/1/1985	1.26	3.11	0.76	-	(0.06)	-	1.26	2.01	4.69
12/1/1985	2.76	0.39	(1.43)	-	(0.06)	-	2.76	1.34	3.88
1/1/1986	0.87	2.56	1.17	-	(0.06)	-	0.87	2.05	3.06
2/1/1986	0.12	3.70	0.51	-	(0.06)	-	0.12	0.63	3.57
3/1/1986	3.07	0.20	(0.84)	-	(0.05)	-	3.07	2.20	2.94
1986	8.07	9.96	0.18	-	(0.29)	-	8.07	8.23	18.14
10/1/1986	13.27	39.06	(0.09)	-	(0.42)	-	13.27	13.19	52.52
11/1/1986	1.77	3.23	0.09	-	(0.06)	-	1.77	1.85	4.98
12/1/1986	1.42	1.85	0.26	-	(0.06)	-	1.42	1.69	3.69
1/1/1987	2.99	(0.12)	(0.98)	-	(0.06)	-	2.99	2.01	2.93
2/1/1987	3.35	(0.35)	(1.05)	-	(0.06)	-	3.35	2.32	2.87
3/1/1987	2.68	0.59	(1.01)	-	(0.05)	-	2.68	1.65	3.47
1987	12.20	5.20	(2.70)	-	(0.29)	-	12.20	9.53	17.93
10/1/1987	7.91	45.43	2.69	-	(0.42)	-	7.91	10.59	52.41
11/1/1987	0.35	5.43	0.48	-	(0.06)	-	0.35	0.83	6.33
12/1/1987	1.77	1.93	(0.09)	-	(0.06)	-	1.77	1.65	3.85
1/1/1988	4.02	(1.10)	(2.28)	-	(0.06)	-	4.02	1.77	3.16
2/1/1988	3.58	(0.79)	(1.00)	-	(0.06)	-	3.58	2.56	2.57
3/1/1988	0.71	3.35	0.88	-	(0.05)	-	0.71	1.61	3.48
1988	10.43	8.82	(2.02)	-	(0.28)	-	10.43	8.43	19.38

Table III-F.4 BC 5 Winter Storm Period Water Balance

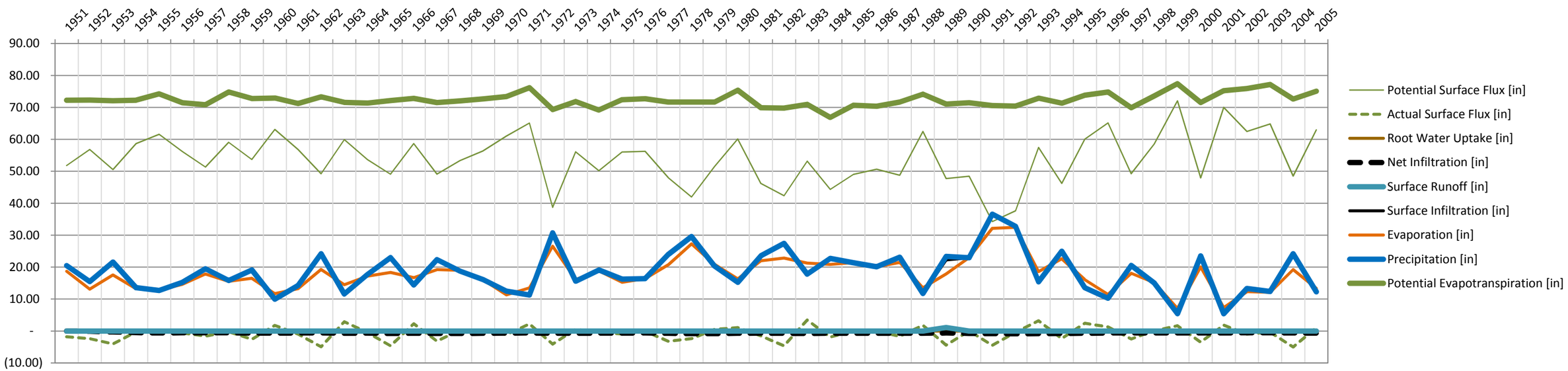
Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
10/1/1988	12.68	39.96	0.36	-	(0.41)	-	12.68	13.03	52.29
11/1/1988	1.50	3.78	0.12	-	(0.06)	-	1.50	1.61	5.93
12/1/1988	1.73	1.85	(0.51)	-	(0.06)	-	1.73	1.22	3.92
1/1/1989	1.10	1.81	0.60	-	(0.06)	-	1.10	1.69	3.13
2/1/1989	2.20	0.67	(0.32)	-	(0.06)	-	2.20	1.89	2.74
3/1/1989	0.28	3.66	0.58	-	(0.05)	-	0.28	0.87	3.17
1989	6.81	11.77	0.47	-	(0.29)	-	6.81	7.28	18.90
10/1/1989	4.92	50.67	1.35	-	(0.40)	-	4.92	6.26	55.10
11/1/1989	1.06	4.29	0.20	-	(0.05)	-	1.06	1.26	6.10
12/1/1989	0.28	3.50	0.25	-	(0.05)	-	0.28	0.55	4.24
1/1/1990	0.87	2.48	(0.42)	-	(0.05)	-	0.87	0.43	3.34
2/1/1990	1.30	1.50	0.28	-	(0.05)	-	1.30	1.57	2.75
3/1/1990	2.52	0.71	(0.49)	-	(0.05)	-	2.52	2.05	2.72
1990	6.02	12.48	(0.19)	-	(0.26)	-	6.02	5.87	19.15
10/1/1990	17.33	35.24	(4.25)	-	(0.35)	1.10	16.22	11.97	51.88
11/1/1990	0.24	4.80	0.91	-	(0.05)	-	0.24	1.14	5.53
12/1/1990	2.20	1.50	(0.07)	-	(0.06)	-	2.20	2.13	4.25
1/1/1991	4.84	(2.28)	(3.33)	-	(0.06)	-	4.84	1.50	3.05
2/1/1991	1.77	1.38	0.72	-	(0.06)	-	1.77	2.52	2.71
3/1/1991	0.94	3.31	0.44	-	(0.06)	-	0.94	1.38	3.38
1991	10.00	8.70	(1.33)	-	(0.29)	-	10.00	8.66	18.91
10/1/1991	12.95	39.76	1.35	-	(0.45)	-	12.95	14.33	52.53
11/1/1991	1.22	4.69	(0.35)	-	(0.06)	-	1.22	0.87	6.71
12/1/1991	3.27	0.08	(1.15)	-	(0.06)	-	3.27	2.13	3.62
1/1/1992	3.98	(1.26)	(1.46)	-	(0.06)	-	3.98	2.48	3.00
2/1/1992	2.99	(0.20)	(0.52)	-	(0.06)	-	2.99	2.52	2.27
3/1/1992	2.76	0.63	(0.44)	-	(0.06)	-	2.76	2.28	3.02
1992	14.21	3.94	(3.92)	-	(0.31)	-	14.21	10.28	18.62
10/1/1992	22.36	30.31	(0.53)	-	(0.49)	-	22.36	21.85	51.95
11/1/1992	1.26	4.33	0.30	-	(0.07)	-	1.26	1.54	6.43
12/1/1992	0.47	2.80	1.13	-	(0.07)	-	0.47	1.61	3.72
1/1/1993	6.34	(4.02)	(4.20)	-	(0.07)	-	6.34	2.17	2.48
2/1/1993	11.30	(8.94)	(8.96)	-	(0.07)	-	11.30	2.32	2.00
3/1/1993	5.98	(3.43)	(3.48)	-	(0.07)	-	5.98	2.52	2.71
1993	25.35	(9.25)	(15.21)	-	(0.35)	-	25.35	10.16	17.35
10/1/1993	7.40	46.89	14.85	-	(0.52)	-	7.40	22.28	52.94
11/1/1993	0.83	4.61	0.76	-	(0.07)	-	0.83	1.54	6.15
12/1/1993	4.17	(0.83)	(2.16)	-	(0.07)	-	4.17	2.05	3.67
1/1/1994	0.31	2.76	1.25	-	(0.07)	-	0.31	1.54	3.39
2/1/1994	0.28	3.19	0.79	-	(0.07)	-	0.28	1.06	3.34
3/1/1994	2.60	0.67	(0.44)	-	(0.06)	-	2.60	2.17	3.03
1994	8.19	10.39	0.19	-	(0.34)	-	8.19	8.35	19.58
10/1/1994	7.20	47.05	3.02	-	(0.45)	-	7.20	10.24	53.28
11/1/1994	1.85	2.87	(0.30)	-	(0.06)	-	1.85	1.57	5.47
12/1/1994	3.39	(0.35)	(0.95)	-	(0.06)	-	3.39	2.40	3.53
1/1/1995	2.68	0.04	(0.68)	-	(0.06)	-	2.68	2.01	3.00
2/1/1995	3.62	(0.71)	(0.92)	-	(0.06)	-	3.62	2.72	2.57
3/1/1995	2.72	0.83	(0.57)	-	(0.06)	-	2.72	2.13	3.16
1995	14.25	2.68	(3.42)	-	(0.29)	-	14.25	10.83	17.72
10/1/1995	10.71	43.50	1.05	-	(0.44)	-	10.71	11.77	53.60
11/1/1995	-	5.43	1.35	-	(0.06)	-	-	1.34	6.01
12/1/1995	1.30	2.24	0.17	-	(0.06)	-	1.30	1.50	3.82
1/1/1996	0.91	2.28	0.17	-	(0.06)	-	0.91	1.06	3.49
2/1/1996	0.04	3.54	0.52	-	(0.06)	-	0.04	0.55	3.30
3/1/1996	3.15	0.55	(1.19)	-	(0.05)	-	3.15	1.97	3.58
1996	5.39	14.06	1.01	-	(0.30)	-	5.39	6.42	20.20
10/1/1996	8.19	46.02	1.44	-	(0.40)	-	8.19	9.65	53.61
11/1/1996	0.43	5.31	0.41	-	(0.05)	-	0.43	0.83	6.28
12/1/1996	1.22	2.36	(0.36)	-	(0.05)	-	1.22	0.87	3.80
1/1/1997	0.04	3.15	0.78	-	(0.05)	-	0.04	0.79	3.27
2/1/1997	2.83	(0.08)	(1.08)	-	(0.05)	-	2.83	1.77	2.68
3/1/1997	1.65	2.20	(0.74)	-	(0.05)	-	1.65	0.94	3.51
1997	6.18	12.95	(1.00)	-	(0.26)	-	6.18	5.20	19.55
10/1/1997	4.09	52.17	2.26	-	(0.36)	-	4.09	6.30	55.15
11/1/1997	0.71	4.41	0.05	-	(0.05)	-	0.71	0.79	6.32
12/1/1997	0.83	2.56	0.05	-	(0.05)	-	0.83	0.87	3.63
1/1/1998	2.68	-	(0.95)	-	(0.05)	-	2.68	1.73	3.14
2/1/1998	0.39	2.72	0.62	-	(0.05)	-	0.39	1.02	2.47
3/1/1998	6.38	(3.82)	(4.15)	-	(0.04)	-	6.38	2.24	2.90
1998	10.98	5.87	(4.38)	-	(0.24)	-	10.98	6.65	18.46

Table III-F.4 BC 5 Winter Storm Period Water Balance

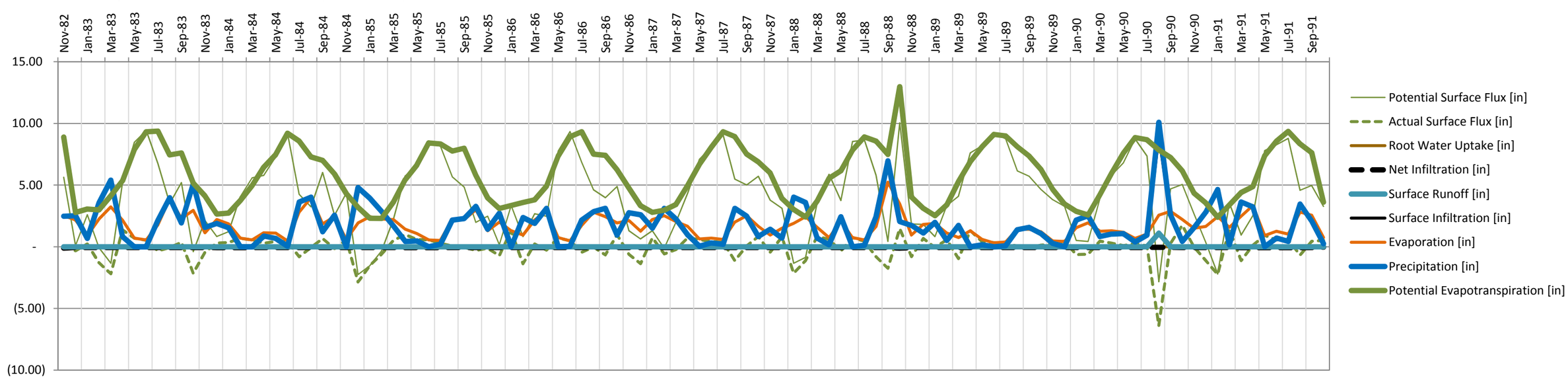
Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
10/1/1998	9.53	43.35	1.91	-	(0.36)	-	9.53	11.42	51.41
11/1/1998	-	5.59	0.40	-	(0.06)	-	-	0.39	6.53
12/1/1998	1.06	2.68	(0.57)	-	(0.05)	-	1.06	0.47	3.98
1/1/1999	0.75	2.52	0.68	-	(0.05)	-	0.75	1.46	3.32
2/1/1999	0.04	3.50	0.34	-	(0.05)	-	0.04	0.39	3.55
3/1/1999	0.20	4.25	0.22	-	(0.05)	-	0.20	0.39	3.65
1999	2.05	18.54	1.07	-	(0.26)	-	2.05	3.11	21.04
10/1/1999	12.99	40.00	(0.99)	-	(0.35)	-	12.99	12.01	52.51
11/1/1999	-	5.63	0.45	-	(0.05)	-	-	0.43	6.39
12/1/1999	-	4.13	0.29	-	(0.05)	-	-	0.31	4.53
1/1/2000	0.04	3.35	0.20	-	(0.05)	-	0.04	0.24	3.66
2/1/2000	0.28	3.58	0.20	-	(0.05)	-	0.28	0.47	3.42
3/1/2000	0.71	3.46	0.01	-	(0.05)	-	0.71	0.71	4.03
2000	1.02	20.16	1.14	-	(0.24)	-	1.02	2.17	22.03
9/30/2000	4.41	51.65	0.49	-	(0.33)	-	4.41	4.92	55.12
11/1/2000	5.31	(0.43)	(3.60)	-	(0.05)	-	5.31	1.73	6.32
12/1/2000	2.13	1.10	0.25	-	(0.04)	-	2.13	2.36	2.99
1/1/2001	0.08	3.39	0.69	-	(0.05)	-	0.08	0.79	3.73
2/1/2001	3.39	(0.55)	(1.59)	-	(0.05)	-	3.39	1.77	3.07
3/1/2001	1.77	1.69	0.37	-	(0.04)	-	1.77	2.13	2.85
2001	12.68	5.20	(3.89)	-	(0.23)	-	12.68	8.78	18.95
9/30/2001	10.83	42.68	0.41	-	(0.36)	-	10.83	11.26	52.47
11/1/2001	0.35	4.92	0.34	-	(0.06)	-	0.35	0.71	5.95
12/1/2001	0.31	3.54	0.27	-	(0.05)	-	0.31	0.55	4.62
1/1/2002	1.81	0.98	(0.39)	-	(0.05)	-	1.81	1.46	2.85
2/1/2002	0.24	3.07	0.30	-	(0.05)	-	0.24	0.51	3.16
3/1/2002	-	4.33	0.39	-	(0.05)	-	-	0.39	3.41
2002	2.72	16.85	0.91	-	(0.26)	-	2.72	3.62	19.99
9/30/2002	2.72	53.23	0.95	-	(0.35)	-	2.72	3.66	55.27
11/1/2002	0.12	5.28	0.24	-	(0.05)	-	0.12	0.35	6.46
12/1/2002	0.87	3.03	(0.45)	-	(0.05)	-	0.87	0.39	4.40
1/1/2003	0.98	2.05	0.28	-	(0.05)	-	0.98	1.30	3.40
2/1/2003	0.35	3.54	0.28	-	(0.05)	-	0.35	0.63	3.08
3/1/2003	4.96	(1.57)	(3.59)	-	(0.04)	-	4.96	1.38	3.63
2003	7.28	12.32	(3.24)	-	(0.23)	-	7.28	4.06	20.96
9/30/2003	6.02	50.08	2.28	-	(0.31)	-	6.02	8.27	54.87
11/1/2003	0.04	5.98	0.36	-	(0.05)	-	0.04	0.43	6.50
12/1/2003	0.91	2.52	(0.07)	-	(0.04)	-	0.91	0.79	4.04
1/1/2004	0.98	2.36	(0.04)	-	(0.05)	-	0.98	0.94	3.83
2/1/2004	1.42	1.54	(0.31)	-	(0.05)	-	1.42	1.14	3.15
3/1/2004	0.71	2.83	0.24	-	(0.04)	-	0.71	0.94	3.13
2004	4.06	15.24	0.18	-	(0.23)	-	4.06	4.25	20.65
9/30/2004	8.31	49.61	(0.50)	-	(0.31)	-	8.31	7.83	56.56
11/1/2004	1.22	4.29	(0.08)	-	(0.05)	-	1.22	1.10	6.73
12/1/2004	0.63	2.44	0.27	-	(0.04)	-	0.63	0.94	3.63
1/1/2005	2.76	0.47	(1.54)	-	(0.04)	-	2.76	1.22	3.03
2/1/2005	4.25	(1.42)	(2.04)	-	(0.04)	-	4.25	2.17	2.76
3/1/2005	7.24	(4.53)	(4.85)	-	(0.04)	-	7.24	2.52	2.77
2005	16.10	1.26	(8.23)	-	(0.22)	-	16.10	7.95	18.92
9/30/2005	8.07	47.20	3.22	-	(0.39)	-	8.07	11.26	53.56
11/1/2005	0.39	5.24	0.44	-	(0.06)	-	0.39	0.87	6.70
12/1/2005	-	4.06	0.43	-	(0.06)	-	-	0.43	4.40
1/1/2006	-	3.31	0.37	-	(0.06)	-	-	0.39	3.50
2/1/2006	-	4.13	0.34	-	(0.06)	-	-	0.31	3.79
3/1/2006	0.12	4.29	0.27	-	(0.05)	-	0.12	0.39	4.22
2006	0.51	21.02	1.85	-	(0.29)	-	0.51	2.40	22.62
9/30/2006	11.77	41.89	(0.77)	-	(0.38)	-	11.77	10.98	52.48

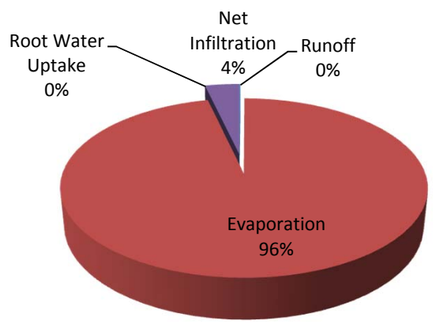
06-BC5 - 1m Cleaner_2m Beach.xlsx

Annual Water Balance - 56-Year Simulated Period (Results on October 1)



Monthly Water Balance - 9 Wet Years (1983 - 1991)





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CLIENT: Resolution Copper Mining

Klohn Crippen Berger

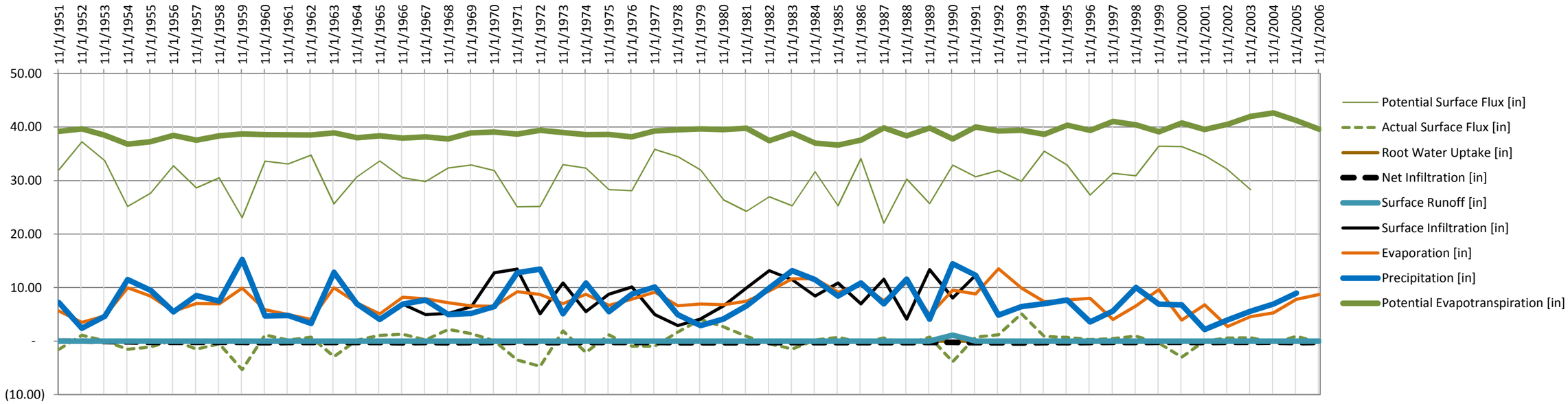
PROJECT: RESOLUTION PROJECT
NEAR WEST TAILINGS STORAGE FACILITY CLOSURE
COVER STUDY - CLOSURE COVER PREDICTIONS

TITLE: BC5 - 3.3ft Cleaner / 6.6ft Beach
Water Balance Results

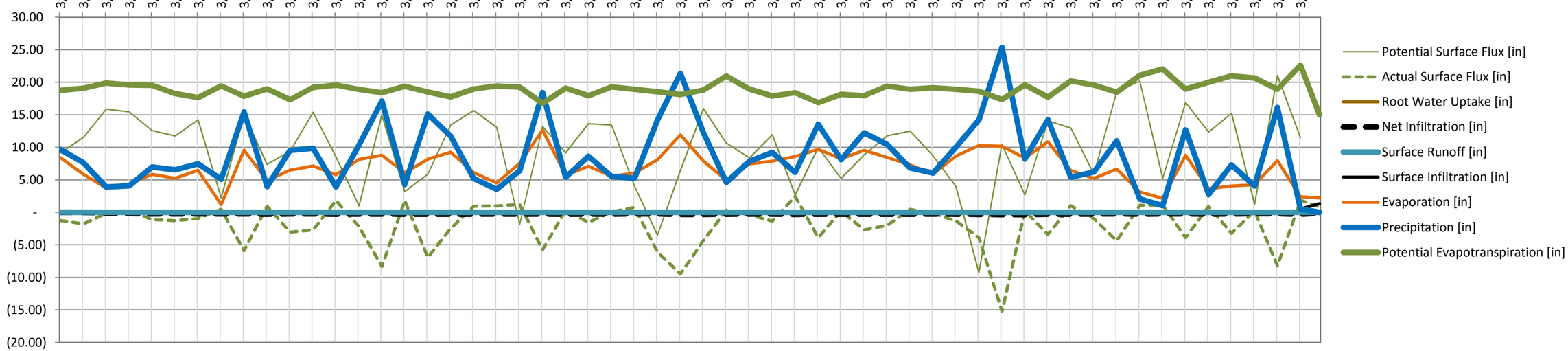
PROJECT No. M09441A16

FIG. No. III-F.1

Monsoon Season Water Balance - 56-Year Simulated Period (July-November)



Winter Storm Season Water Balance - 56-Year Simulated Period (November-March)



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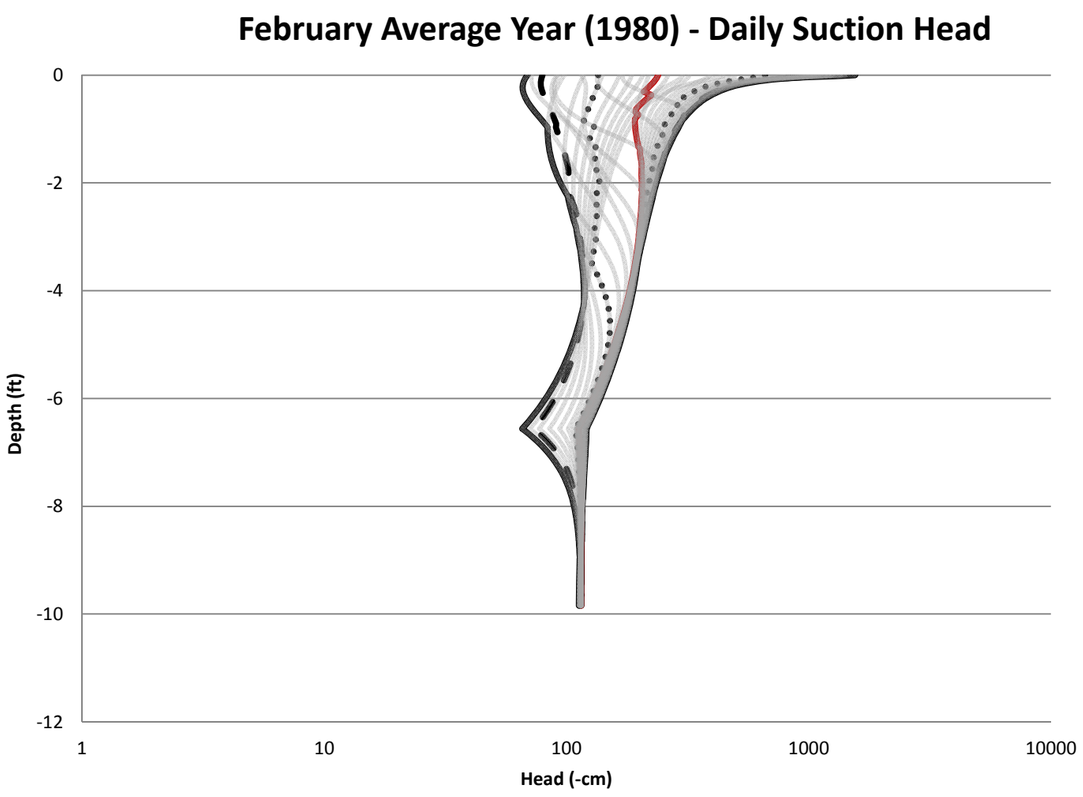
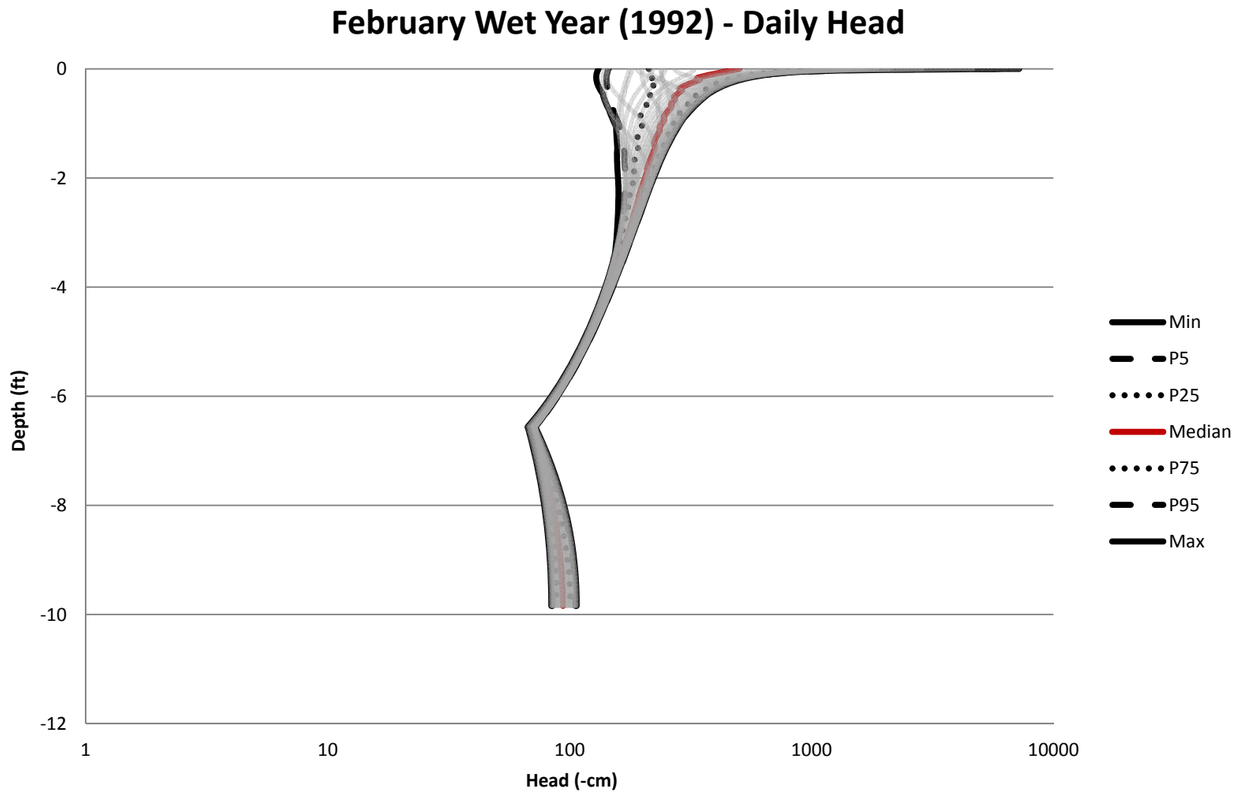
TITLE

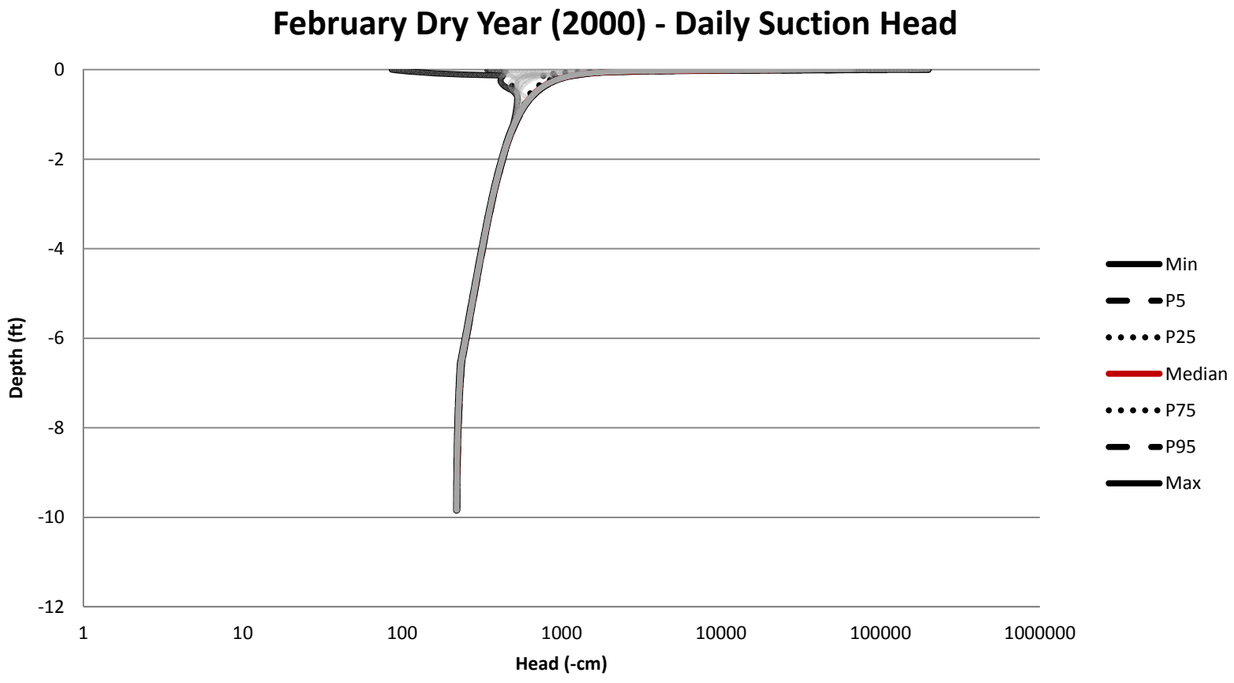
BC5 - 3.3ft Cleaner / 6.6ft Beach
Water Balance Results

PROJECT No. M09441A16

FIG. No. III-F.2







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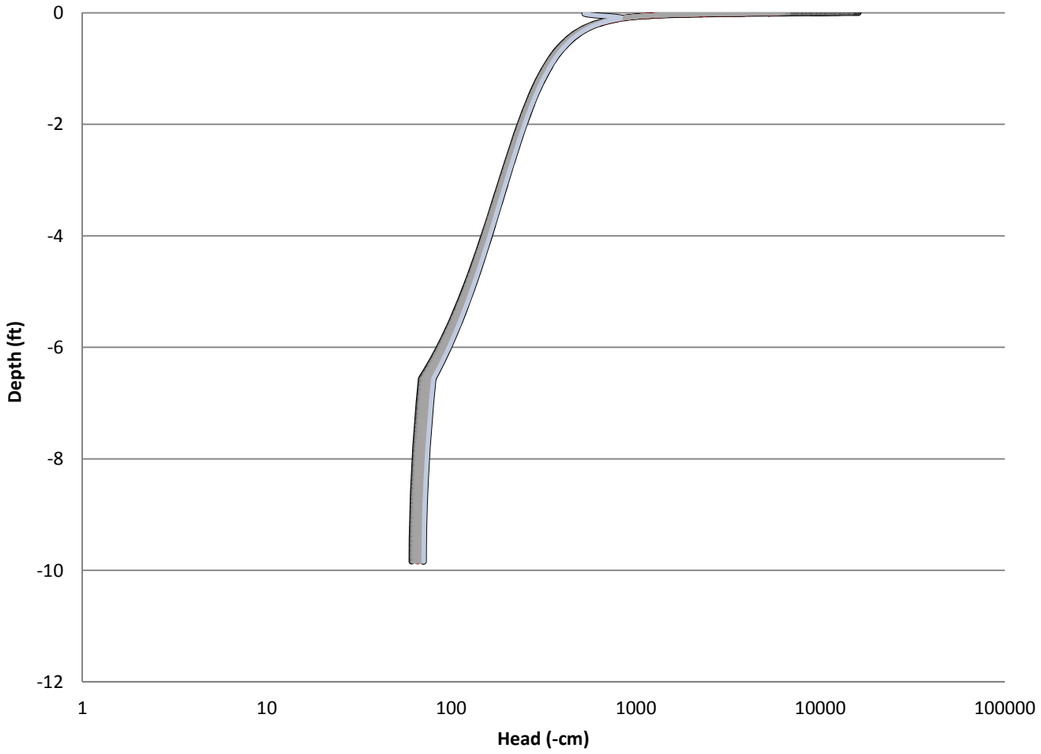
BC5 - 3.3ft Cleaner / 6.6ft Beach Suction Profiles - Winter (February)

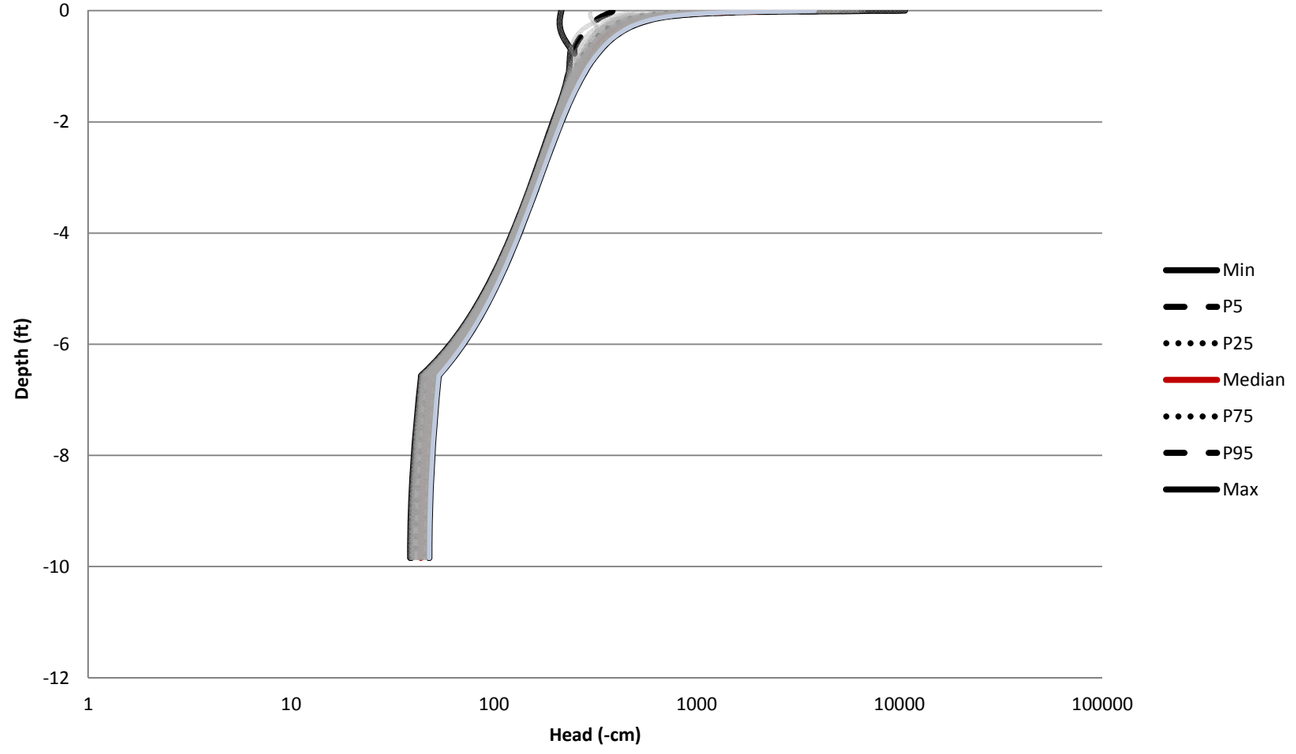
PROJECT No. M09441A16

FIG. No. III-F.3

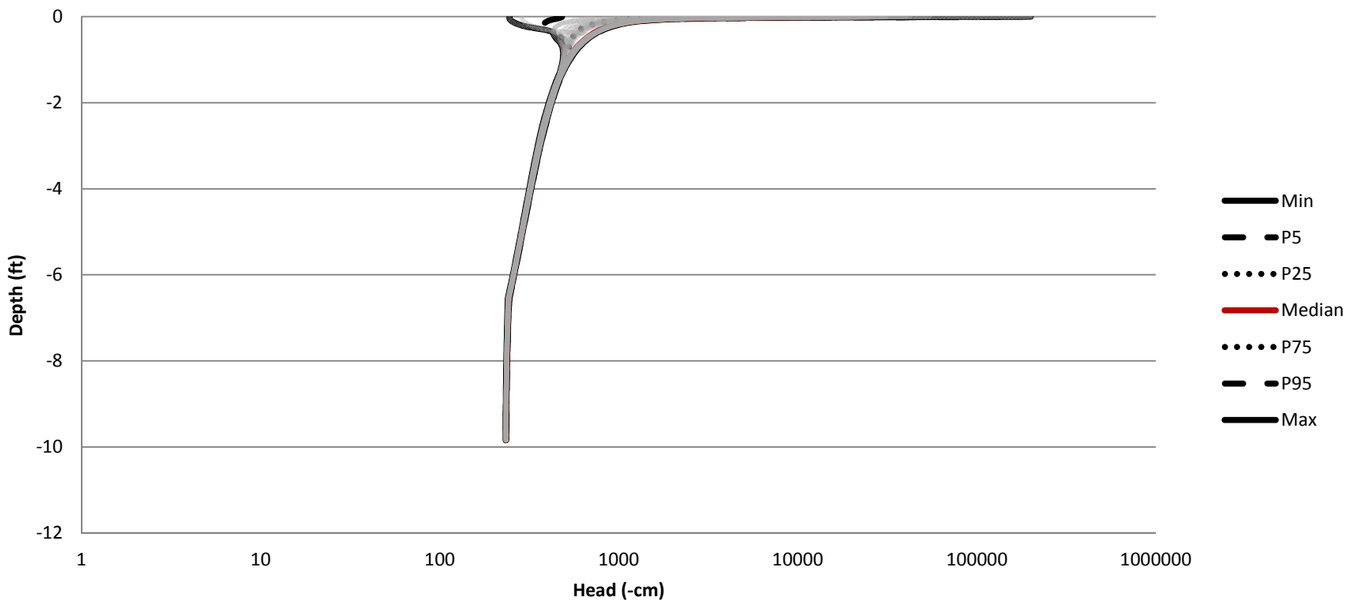
June Average Year (1980) - Daily Suction Head



June Wet Year (1992) - Daily Suction Head



June Dry Year (2000) - Daily Suction Head



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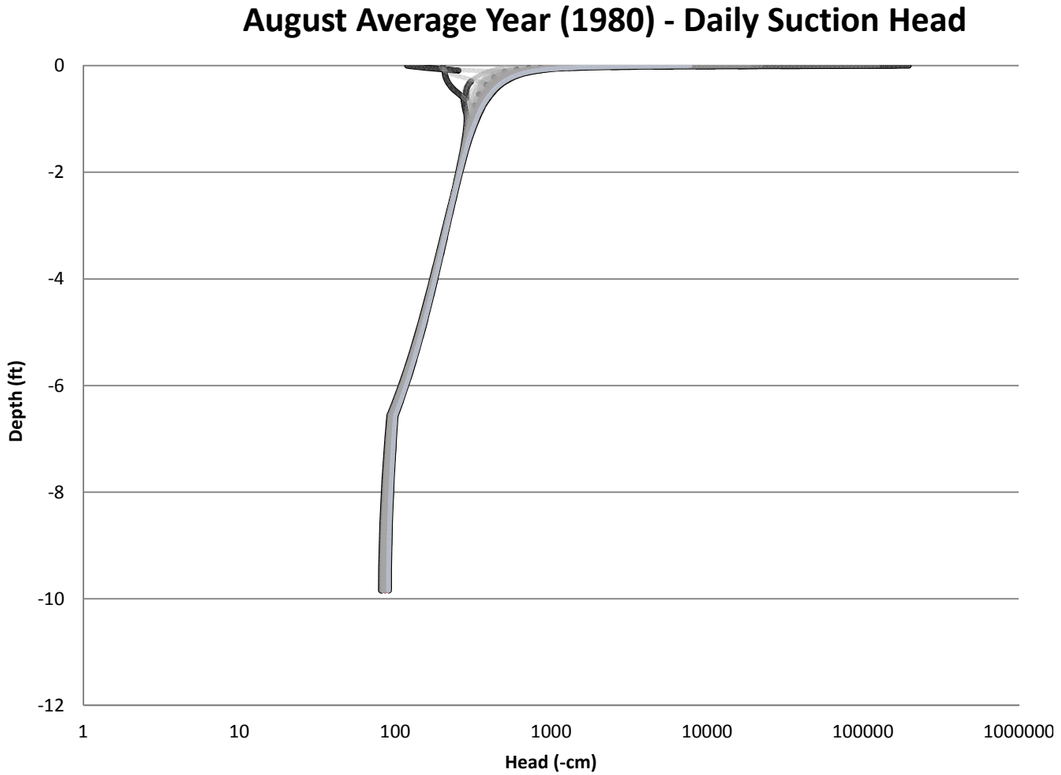
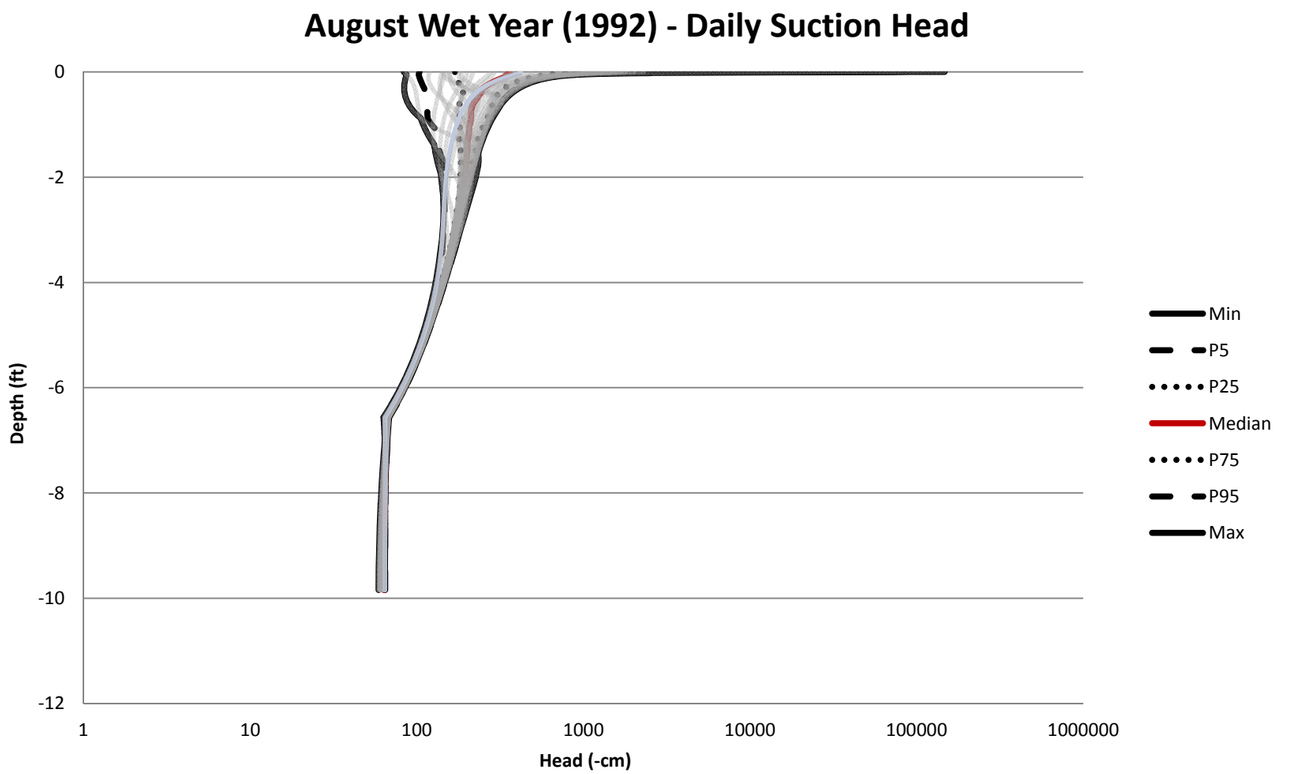
TITLE

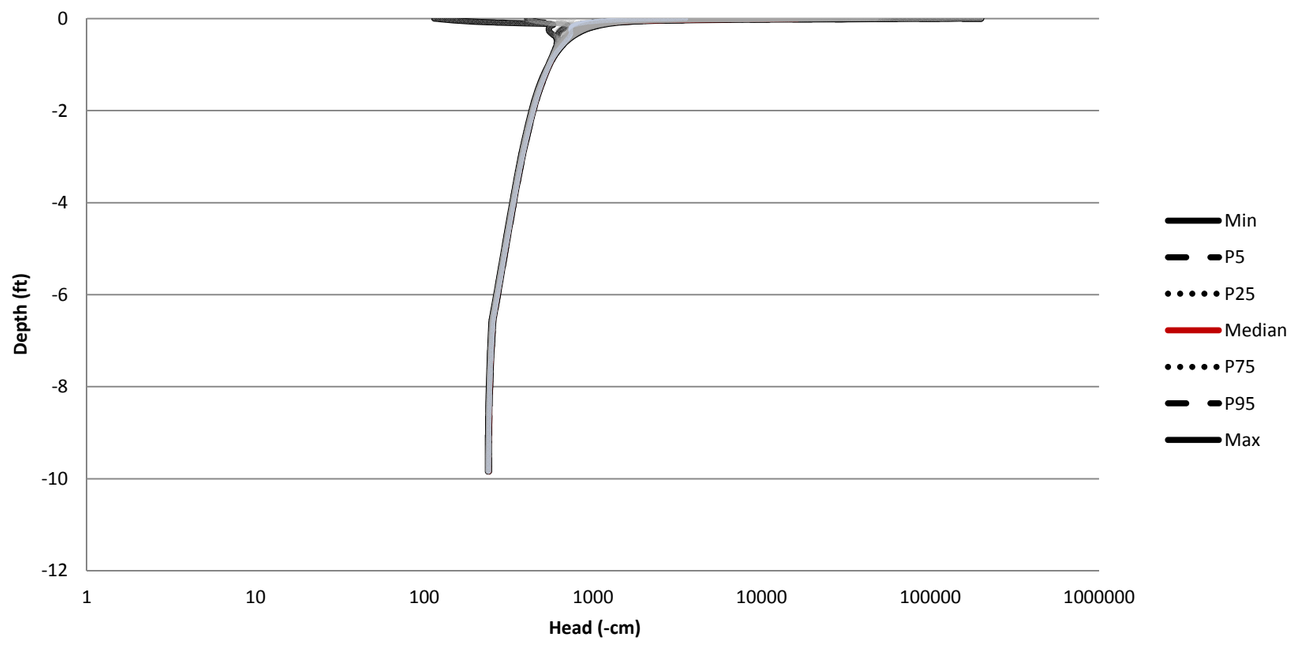
BC5 - 3.3ft Cleaner / 6.6ft Beach
Head Profiles - Dry Season (June)

PROJECT No. M09441A16

FIG. No. III-F.4







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CLIENT

Resolution Copper Mining

Klohn Crippen Berger

PROJECT

RESOLUTION PROJECT
NEAR WEST TAILINGS STORAGE FACILITY CLOSURE
COVER STUDY - CLOSURE COVER PREDICTIONS

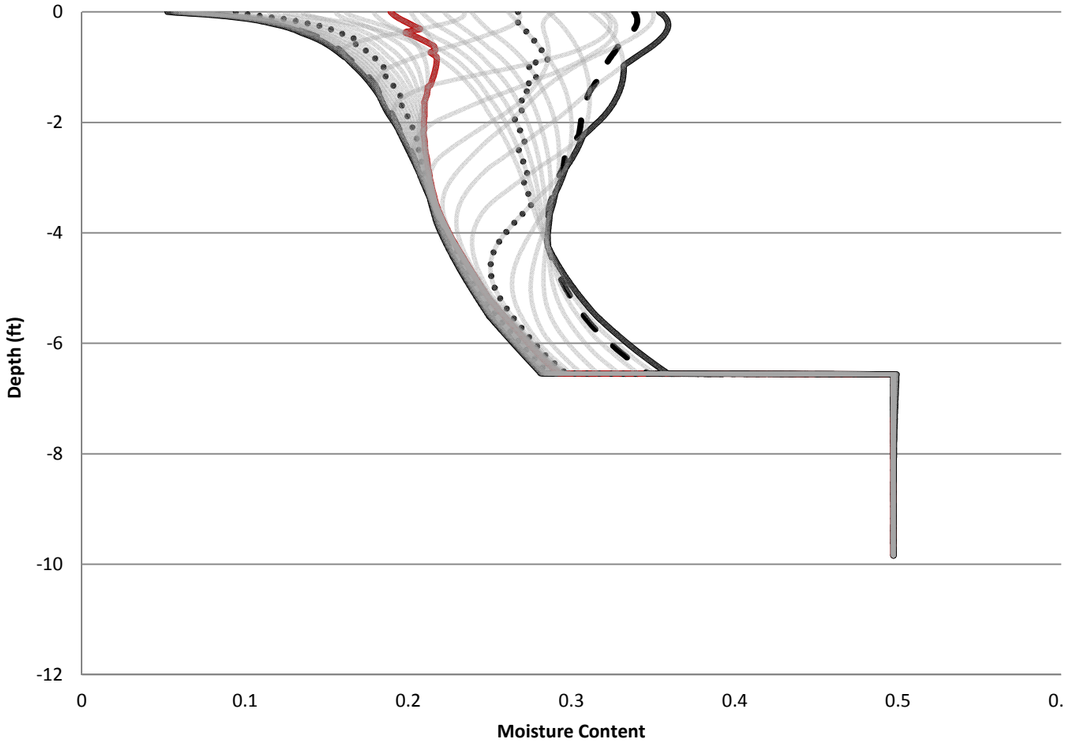
TITLE

BC5 - 3.3ft Cleaner / 6.6ft Beach
Head Profiles - Summer Monsoon (August)

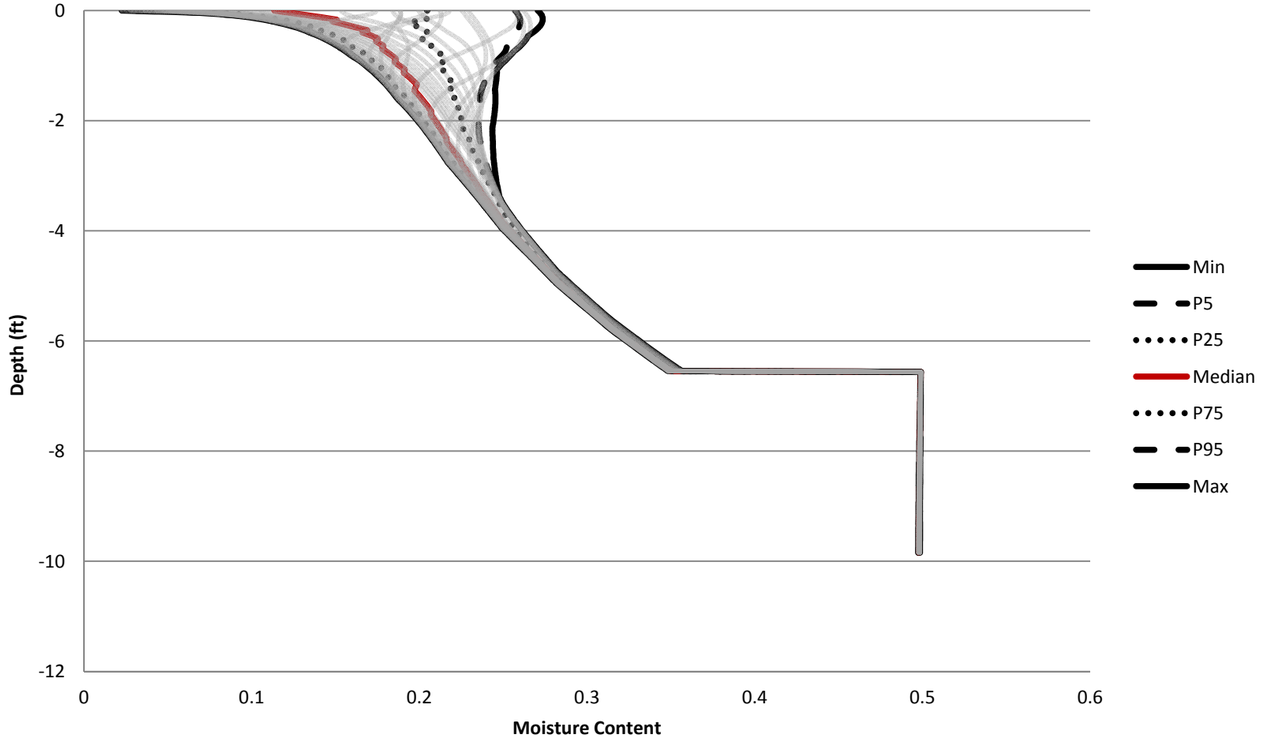
PROJECT No. M09441A16

FIG. No. III-F.5

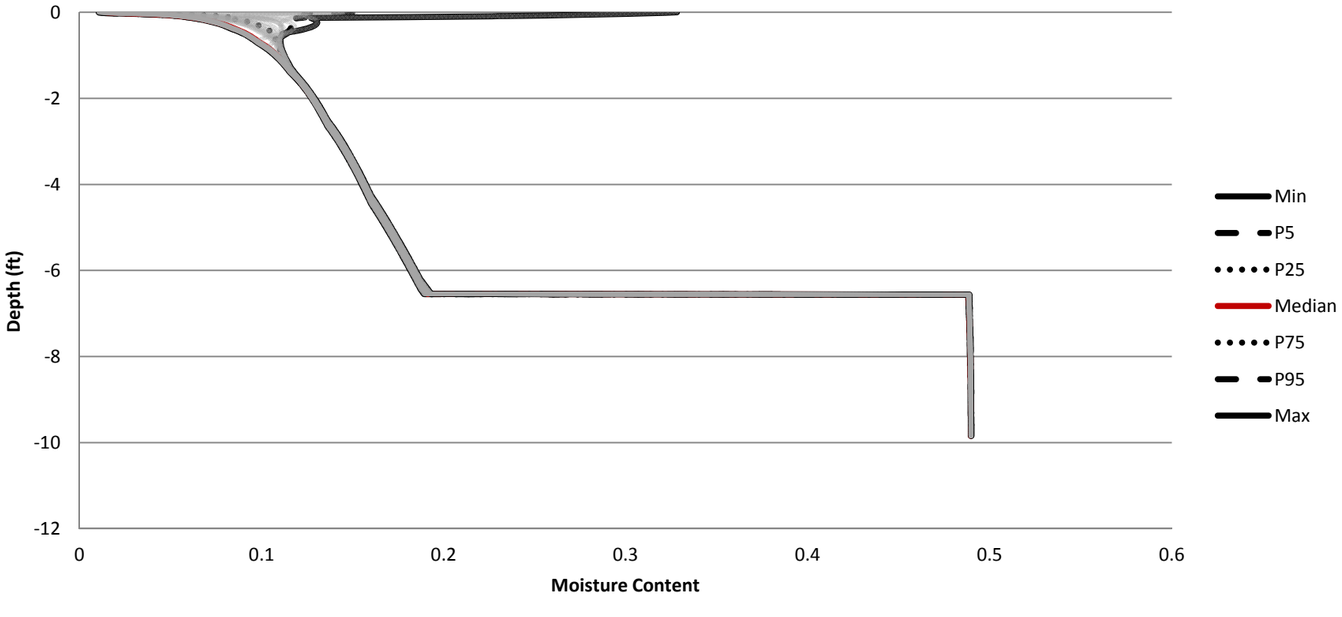
February Average Year (1980) - Daily Moisture Content



February Wet Year (1992) - Daily Moisture Content



February Dry Year (2000) - Daily Moisture Content



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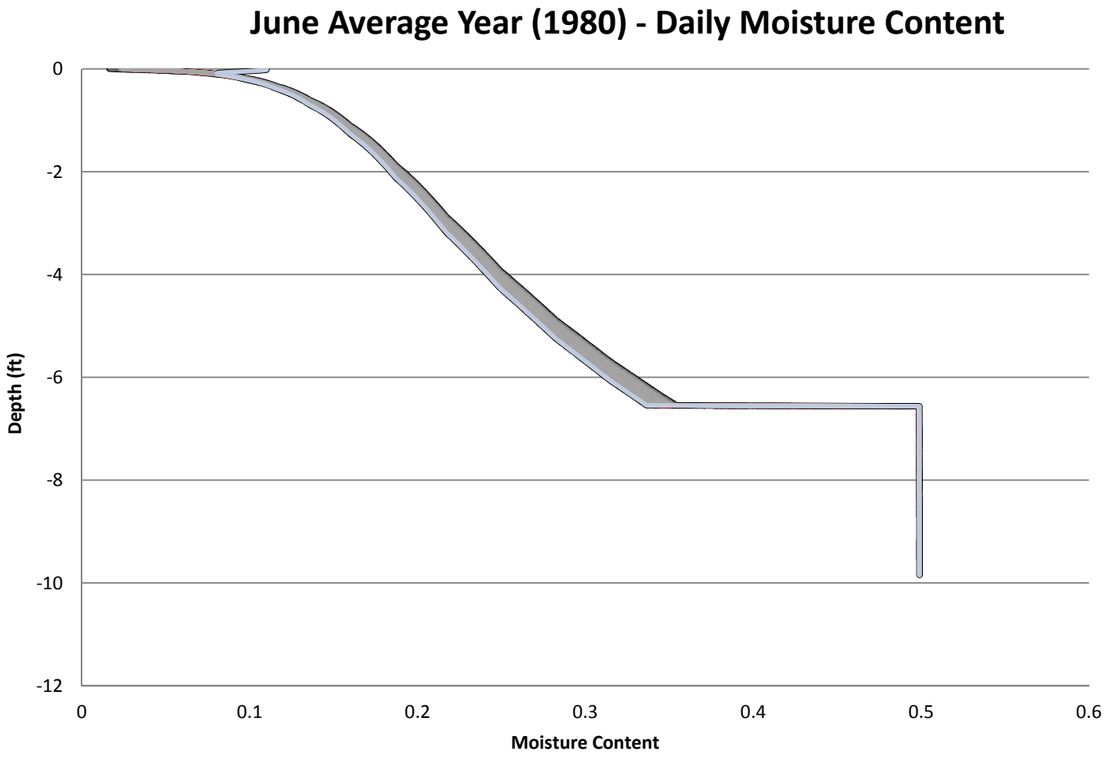
Klohn Crippen Berger

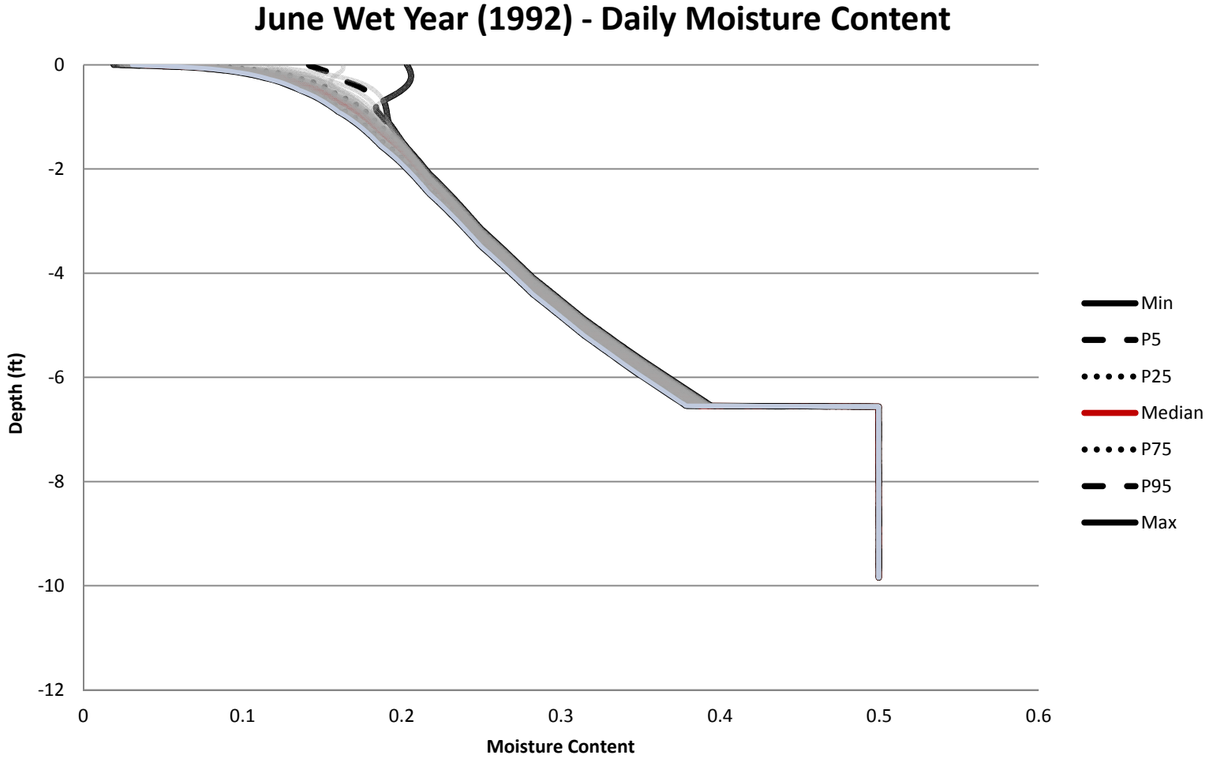
PROJECT: RESOLUTION PROJECT
NEAR WEST TAILINGS STORAGE FACILITY CLOSURE COVER STUDY - CLOSURE COVER PREDICTIONS

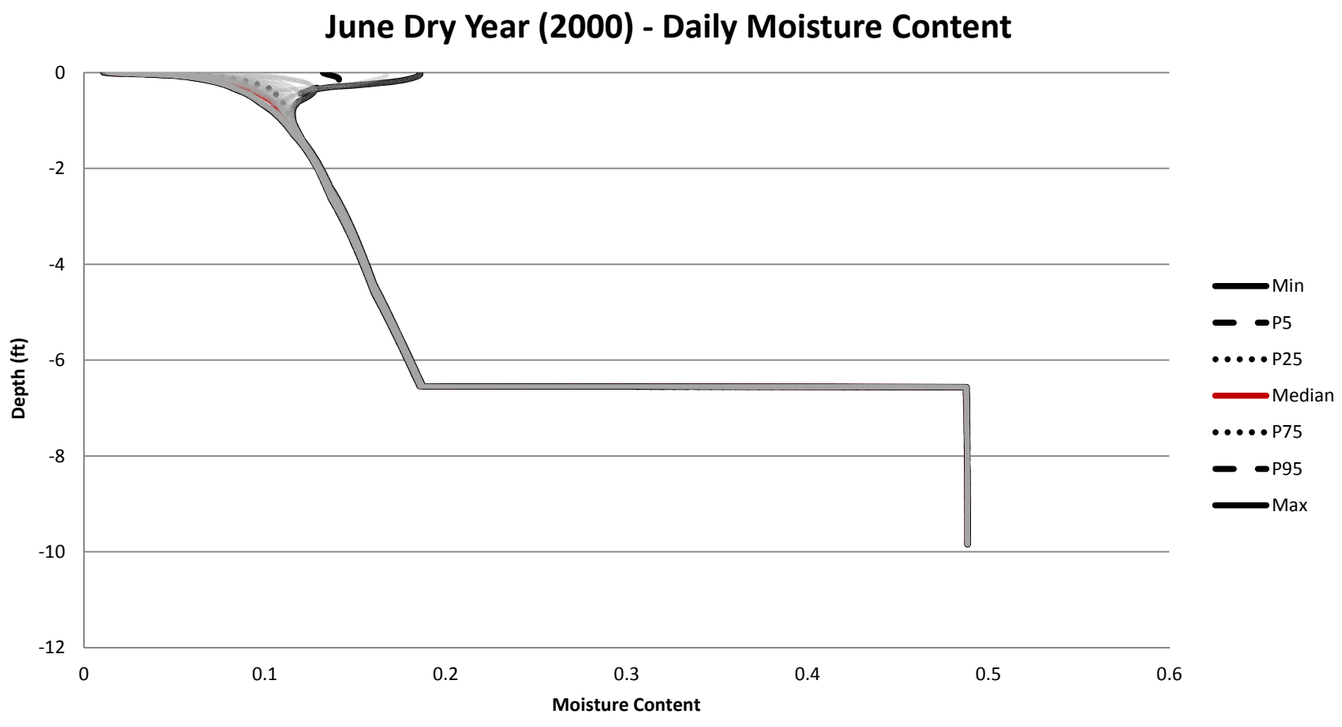
TITLE: BC5 - 3.3ft Cleaner / 6.6ft Beach
Moisture Content - Winter (February)

PROJECT No. M09441A16

FIG. No. IIIF-.6







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Klohn Crippen Berger

PROJECT

RESOLUTION PROJECT
NEAR WEST TAILINGS STORAGE FACILITY CLOSURE COVER STUDY - CLOSURE COVER PREDICTIONS

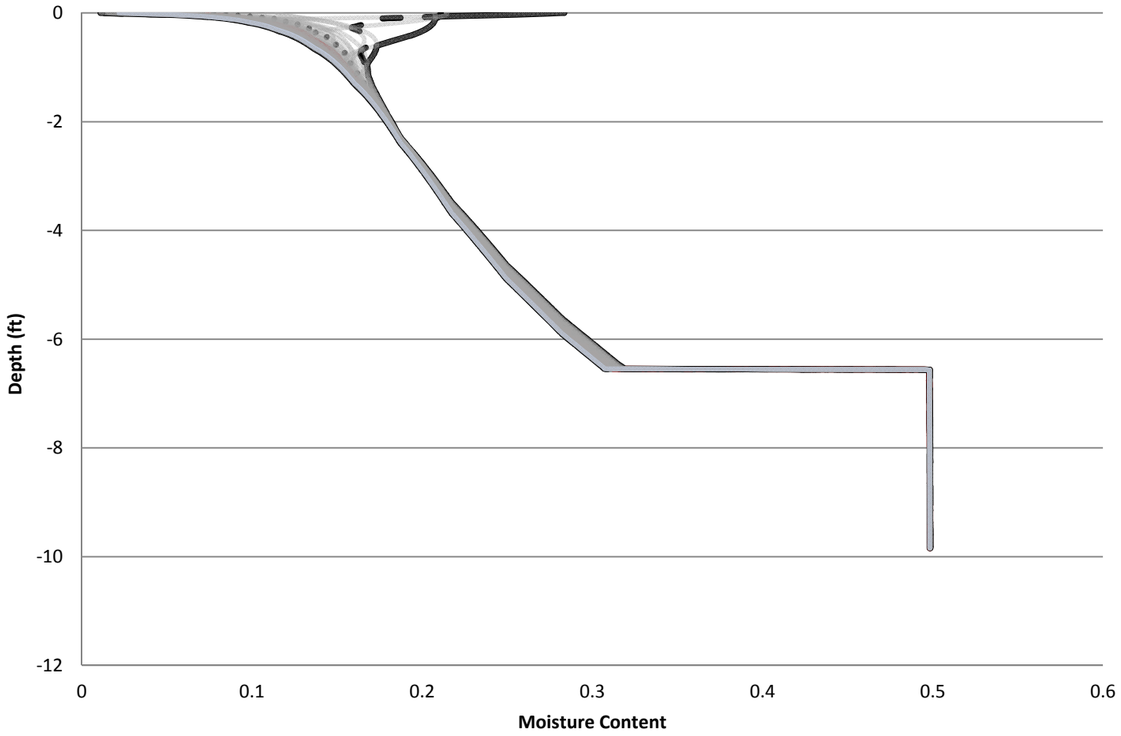
TITLE

BC5 - 3.3ft Cleaner / 6.6ft Beach
Moisture Content - Dry Season (June)

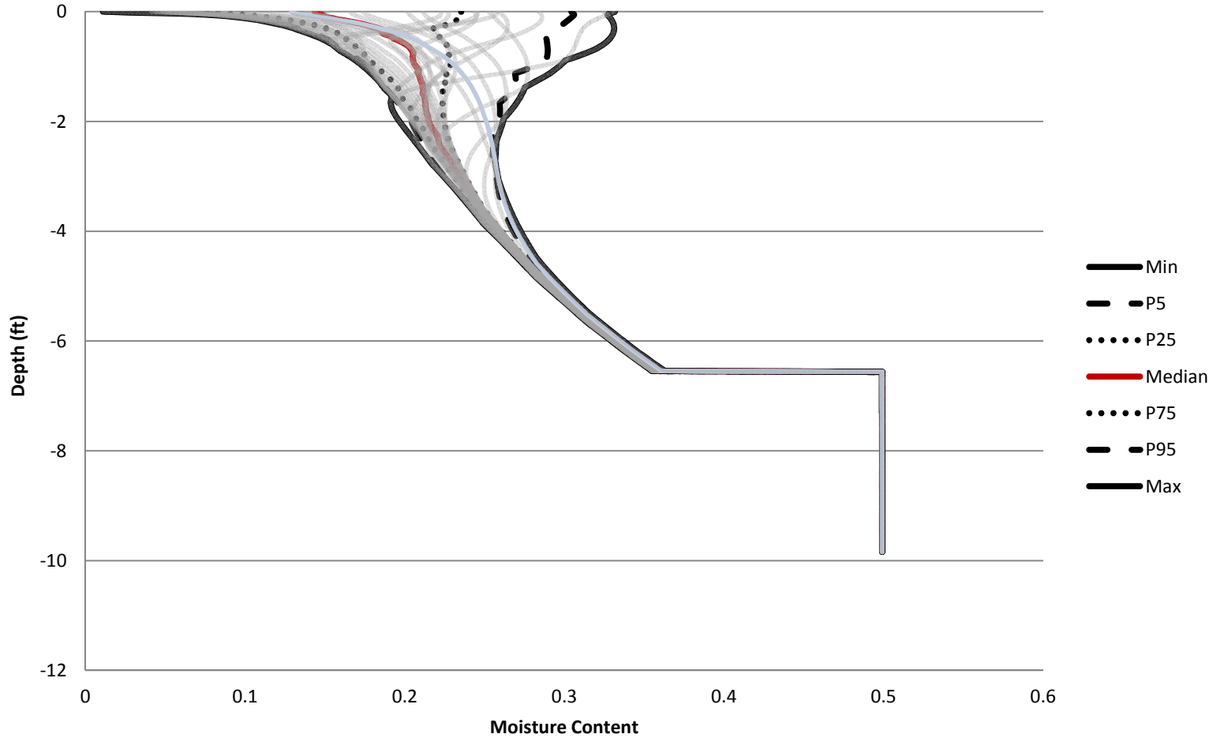
PROJECT No. M09441A16

FIG. No. III-F.7

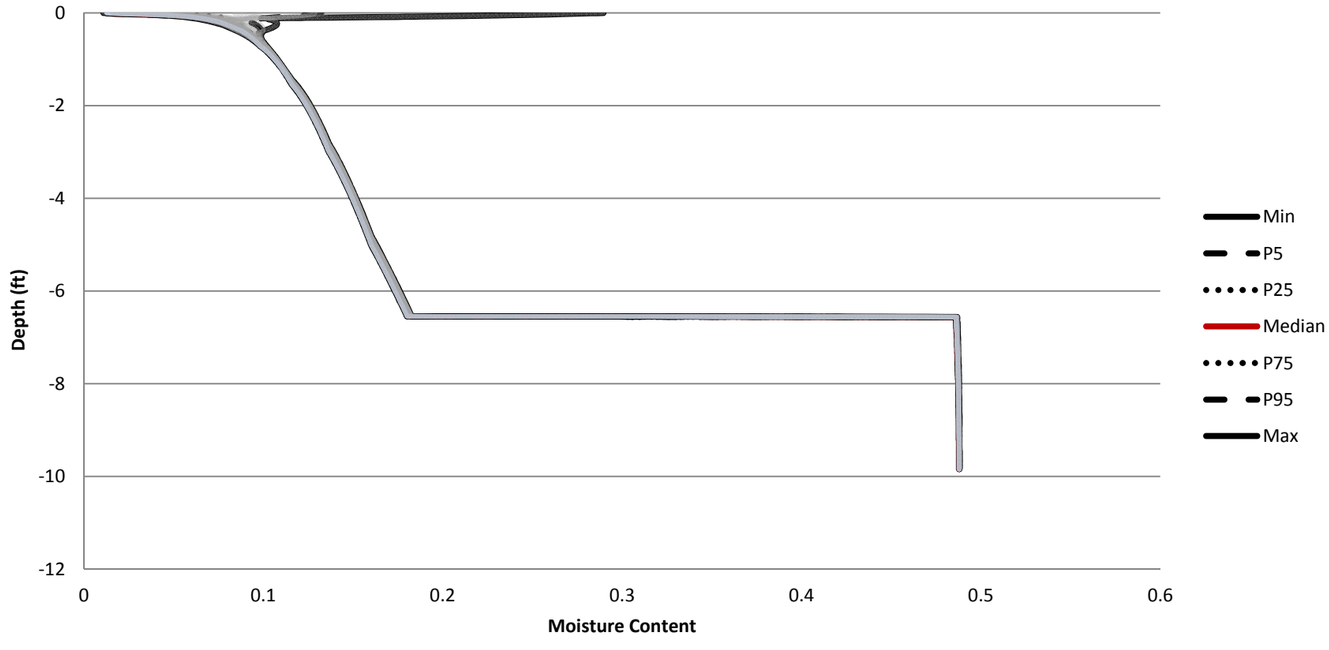
August Average Year (1980) - Daily Moisture Content



August Wet Year (1992) - Daily Moisture Content



August Dry Year (2000) - Daily Moisture Content



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PROJECT

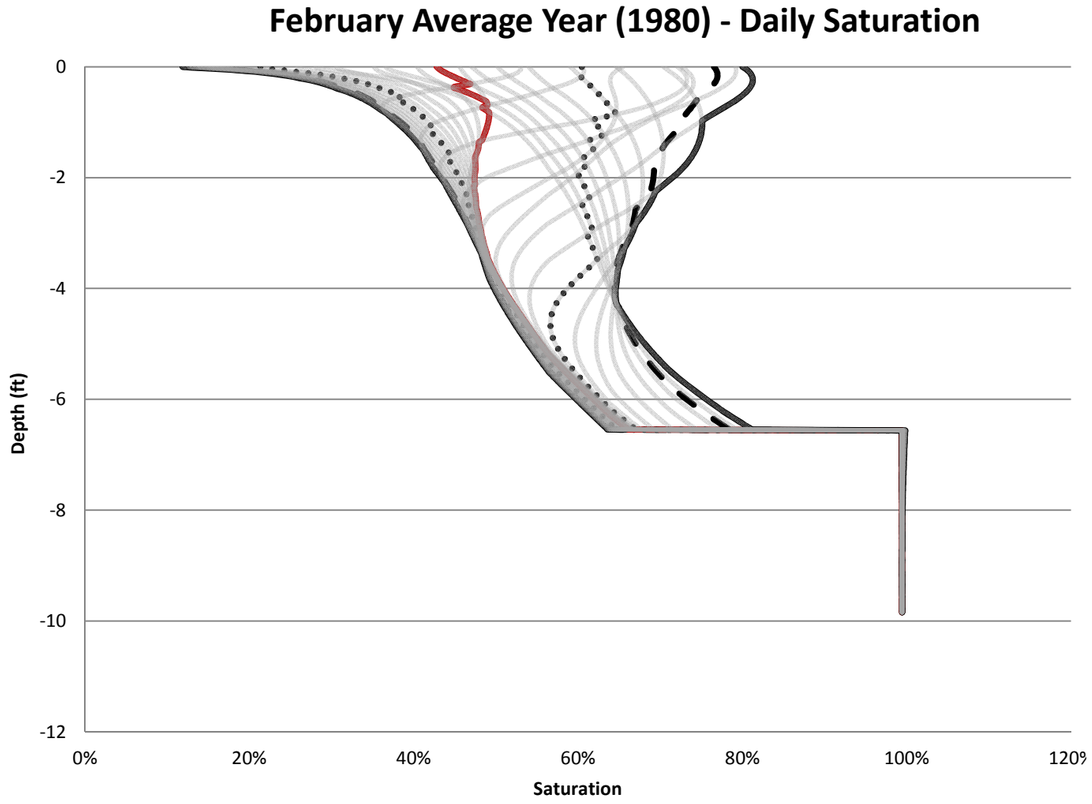
RESOLUTION PROJECT
NEAR WEST TAILINGS STORAGE FACILITY CLOSURE
COVER STUDY - CLOSURE COVER PREDICTIONS

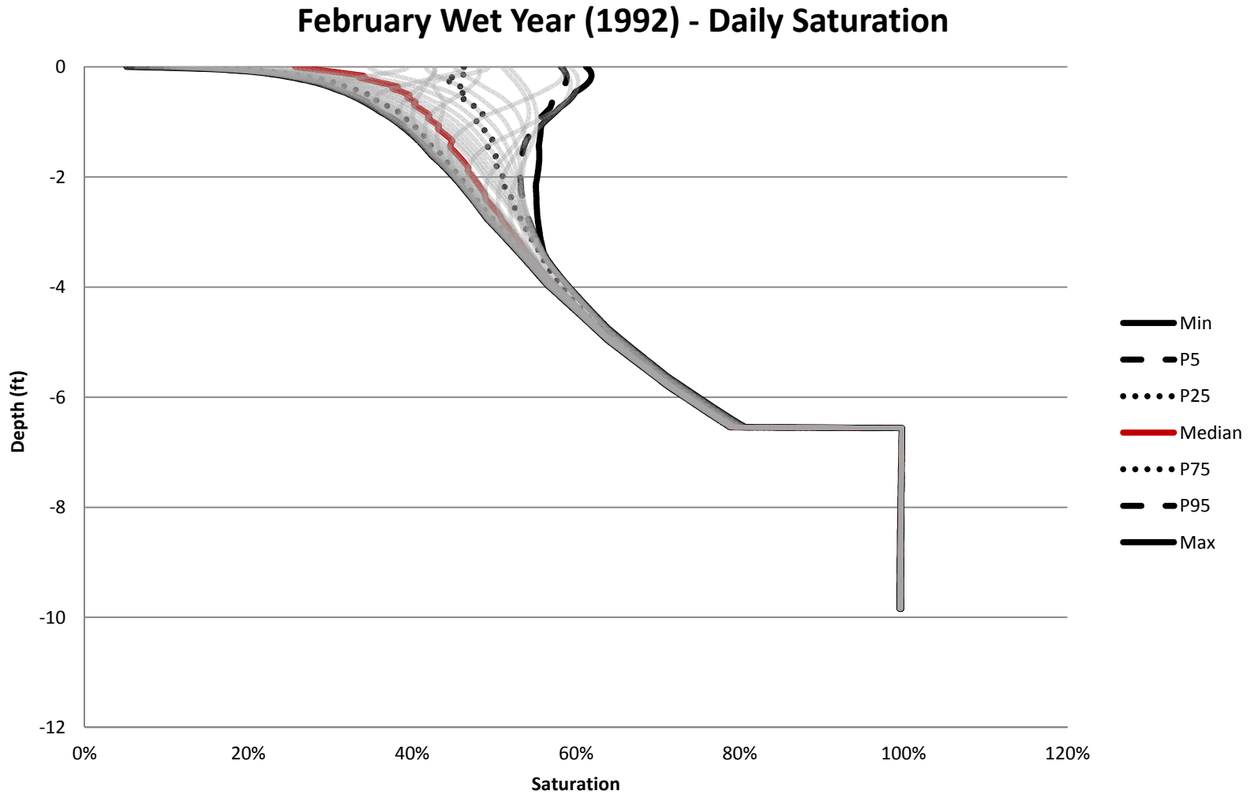
TITLE

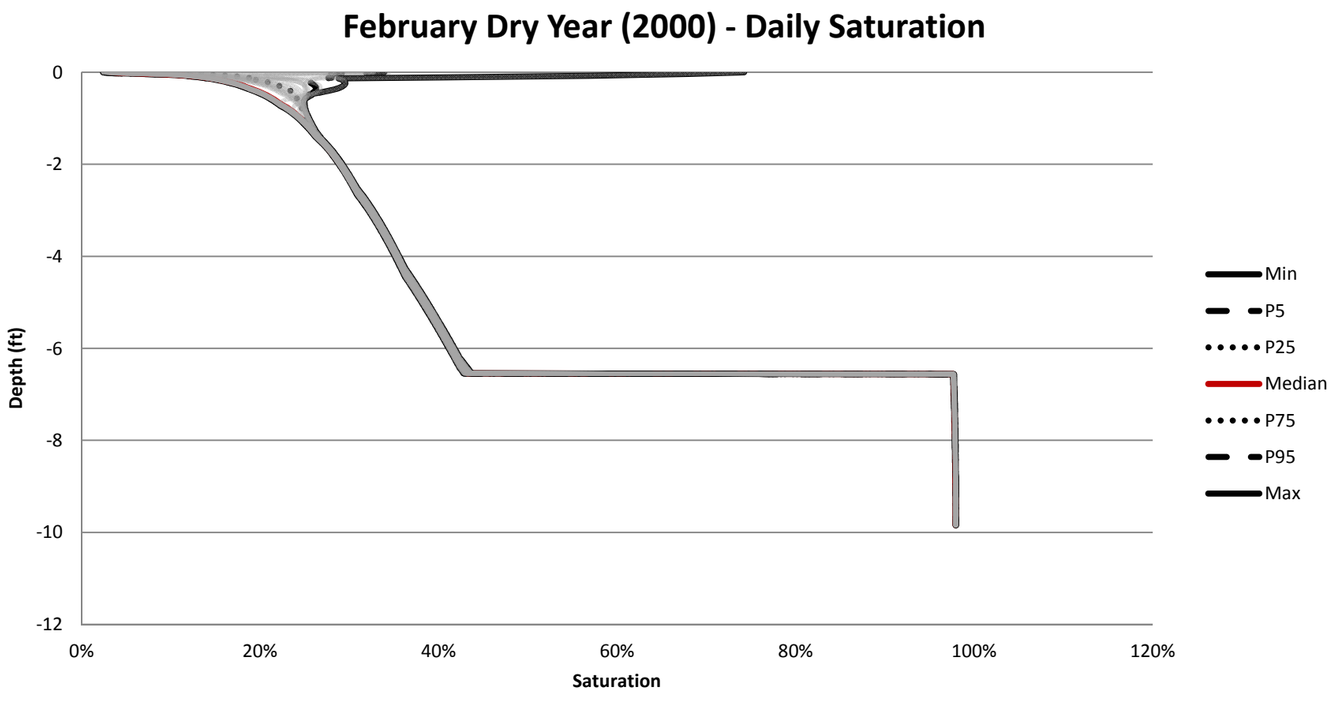
BC5 - 3.3ft Cleaner / 6.6ft Beach
Moisture Content - Summer Monsoon (August)

PROJECT No. M09441A16

FIG. No. III-F.8







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PROJECT

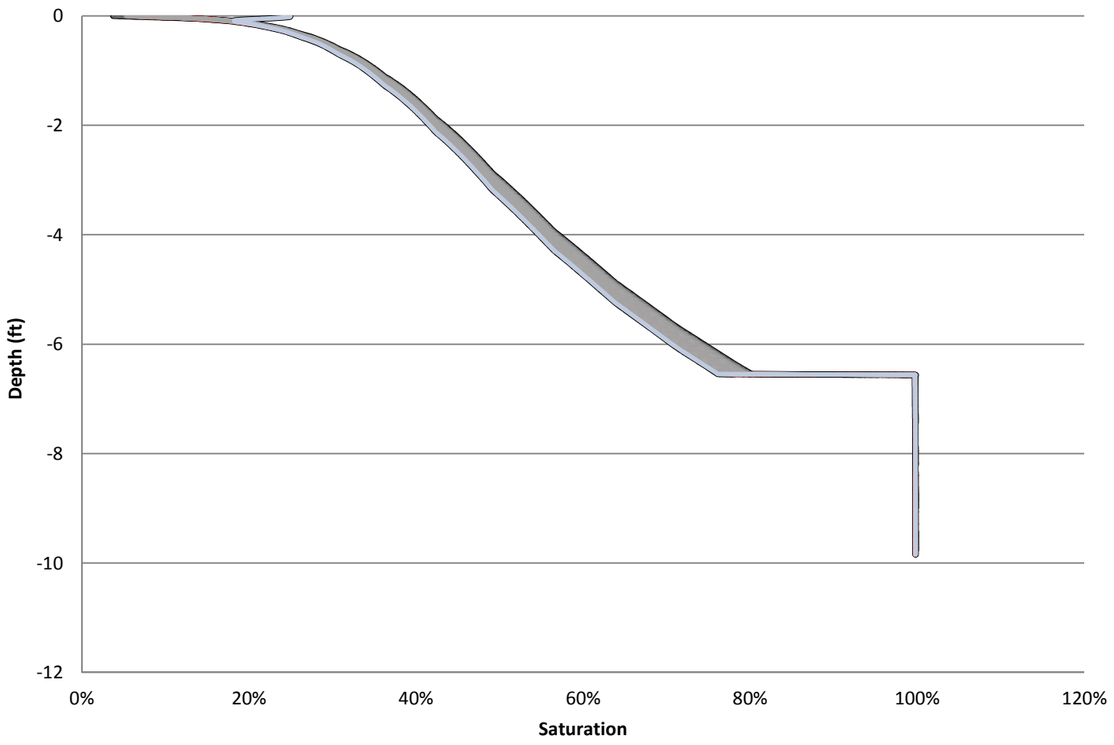
RESOLUTION PROJECT
NEAR WEST TAILINGS STORAGE FACILITY CLOSURE COVER STUDY - CLOSURE COVER PREDICTIONS

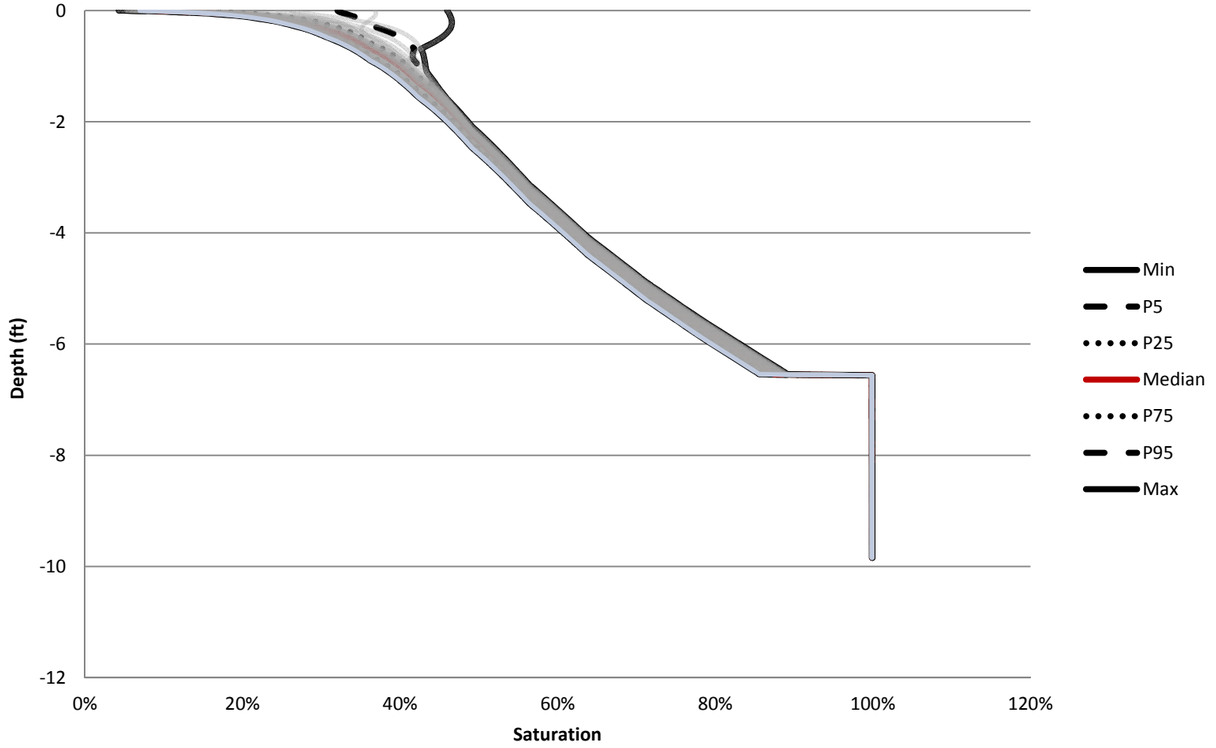
TITLE

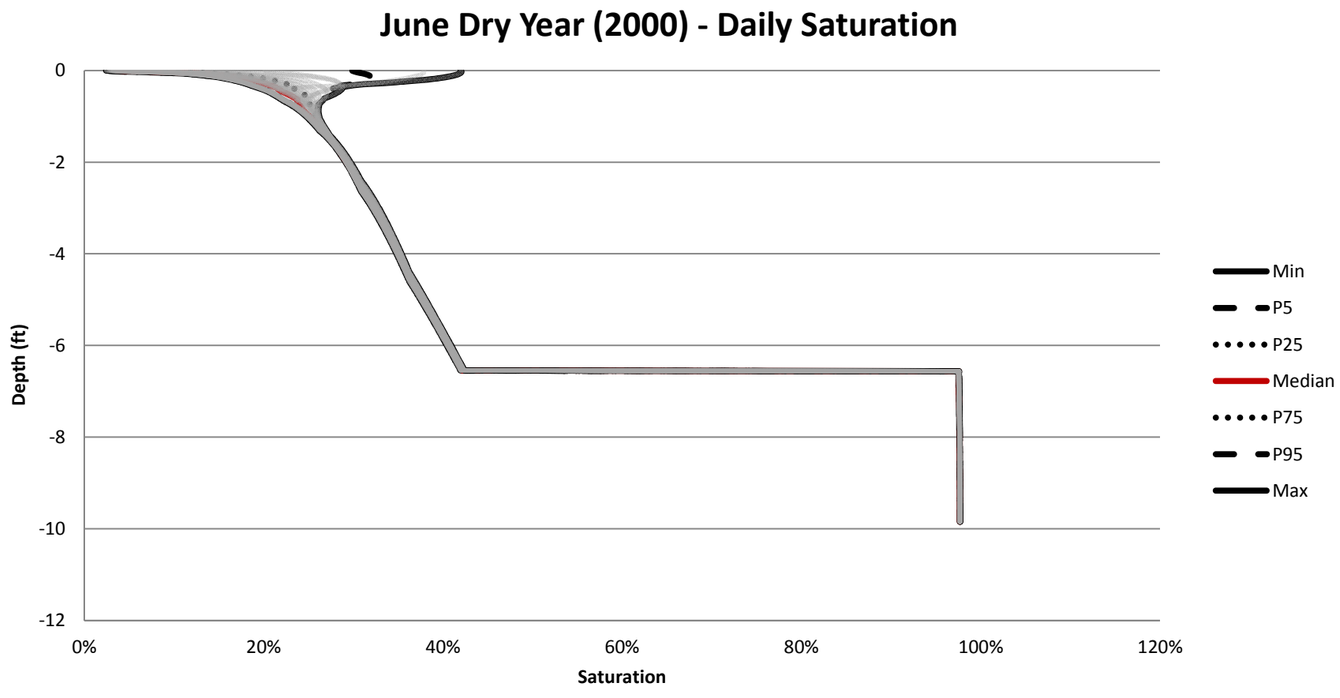
BC5 - 3.3ft Cleaner / 6.6ft Beach
Saturation - Winter (February)

PROJECT No. M09441A16

FIG. No. III-F.9







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Klohn Crippen Berger

PROJECT

RESOLUTION PROJECT
NEAR WEST TAILINGS STORAGE FACILITY CLOSURE COVER STUDY - CLOSURE COVER PREDICTIONS

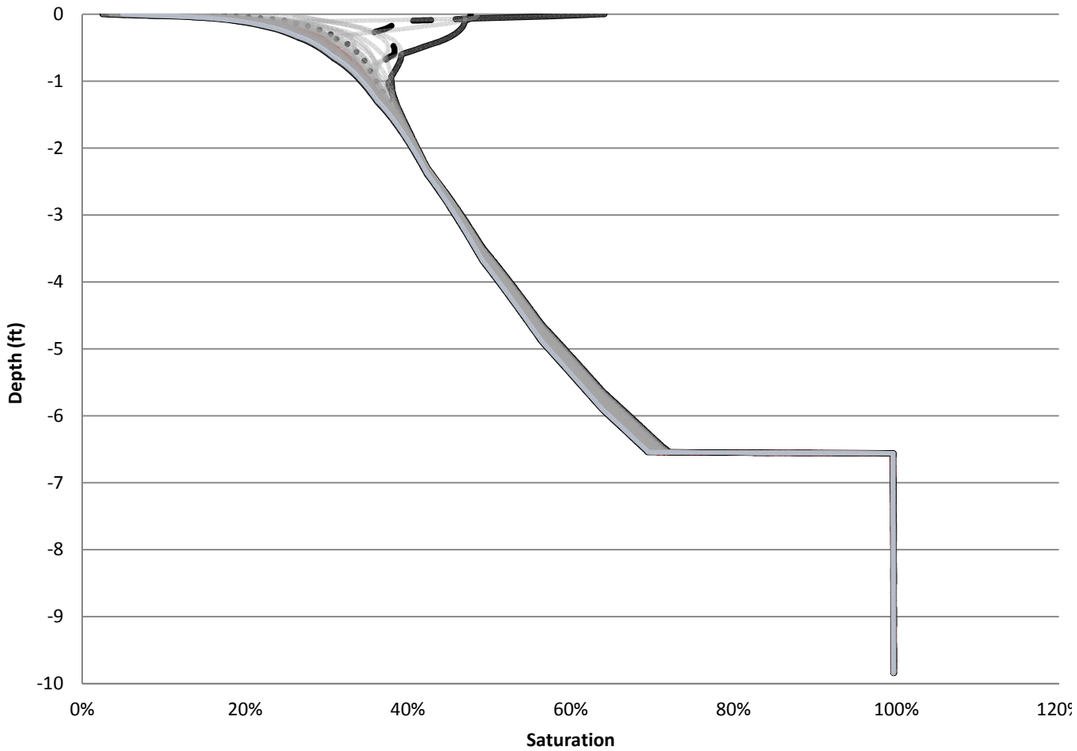
TITLE

BC5 - 3.3ft Cleaner / 6.6ft Beach
Saturation - Dry Season (June)

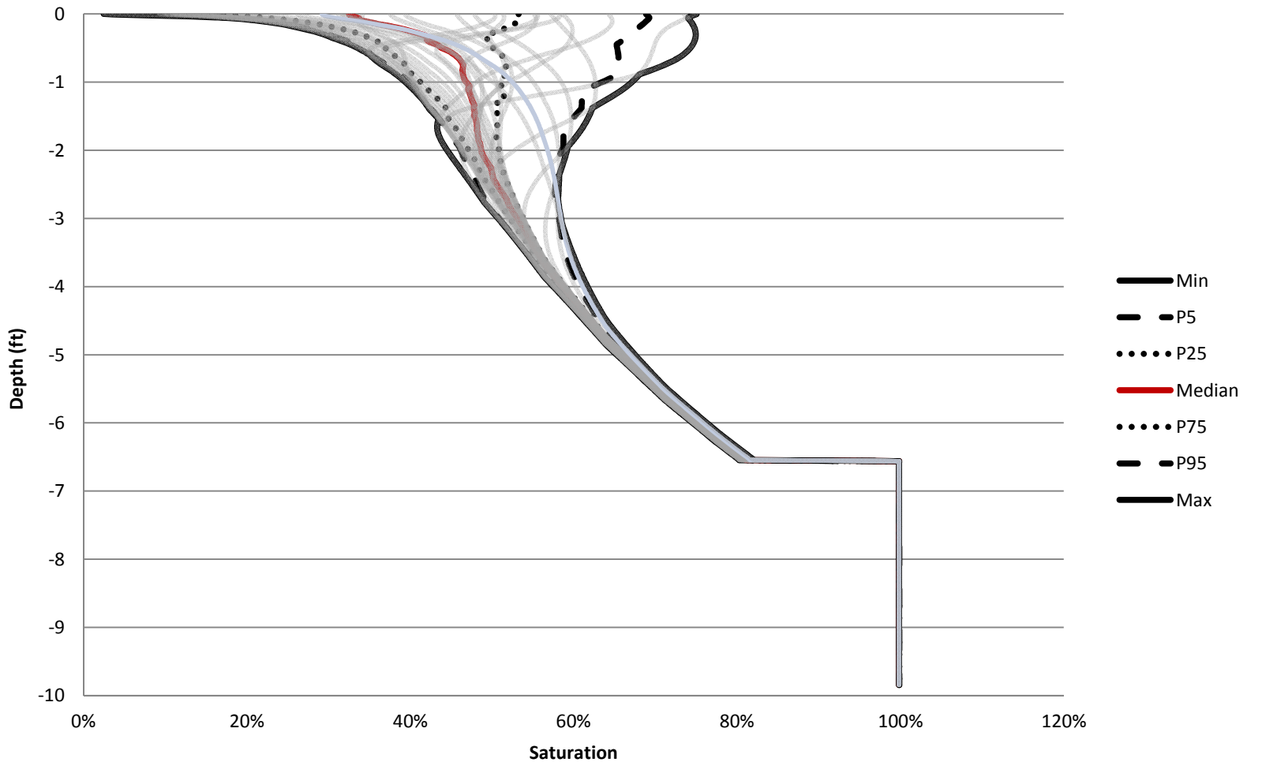
PROJECT No. M09441A16

FIG. No. III-F.10

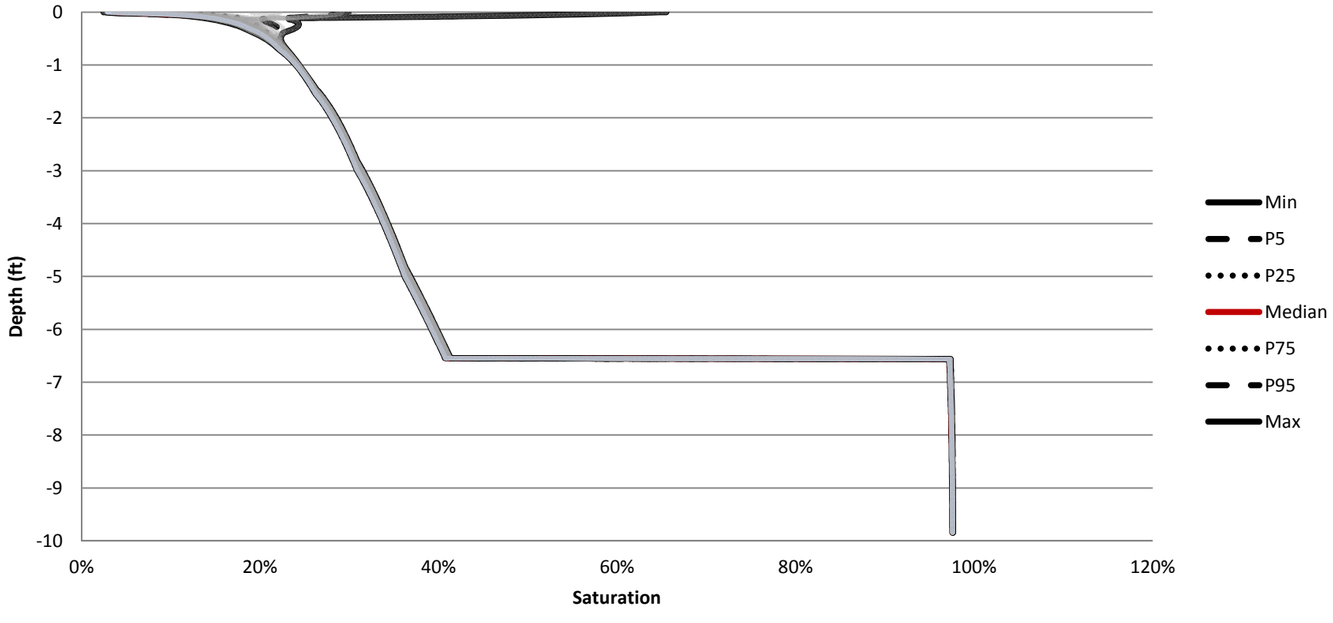
August Average Year (1980) - Daily Saturation



August Wet Year (1992) - Daily Saturation



August Dry Year (2000) - Daily Saturation



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Klohn Crippen Berger

PROJECT: RESOLUTION PROJECT
NEAR WEST TAILINGS STORAGE FACILITY CLOSURE COVER STUDY - CLOSURE COVER PREDICTIONS

TITLE: BC5 - 3.3ft Cleaner / 6.6ft Beach Saturation - Summer Monsoon (August)

PROJECT No. M09441A16

FIG. No. III-F.11

APPENDIX III-G

CT 11 Results

Table III-G.1 CT 11 Annual Water Balance

Water Year	Result Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
		[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
1951	10/1/1951	14.21	90.07	(5.19)	13.13	(0.29)	-	14.21	9.02	33.65
1952	10/1/1952	20.48	101.50	(8.76)	11.31	(0.45)	-	20.48	11.72	38.81
1953	10/1/1953	15.48	106.44	(7.72)	9.12	(0.35)	-	15.48	7.76	38.74
1954	10/1/1954	21.57	99.31	(11.33)	11.97	(0.29)	0.24	21.33	10.00	38.63
1955	10/1/1955	13.57	103.43	(6.57)	7.61	(0.24)	-	13.57	7.00	37.42
1956	10/1/1956	12.67	109.92	(5.89)	6.33	(0.21)	-	12.67	6.79	40.00
1957	10/1/1957	15.23	98.50	(6.99)	7.49	(0.19)	-	15.23	8.23	37.21
1958	10/1/1958	19.46	95.59	(8.64)	8.05	(0.17)	-	19.46	10.83	37.74
1959	10/1/1959	15.81	106.26	(7.24)	8.58	(0.15)	-	15.81	8.57	39.88
1960	10/1/1960	19.09	101.73	(9.94)	8.94	(0.14)	0.05	19.04	9.10	39.62
1961	10/1/1961	9.95	105.63	(4.35)	4.91	(0.13)	-	9.95	5.60	38.30
1962	10/1/1962	14.25	100.71	(6.61)	6.61	(0.13)	-	14.25	7.61	38.46
1963	10/1/1963	24.21	92.24	(11.63)	11.07	(0.13)	0.64	23.56	11.89	38.66
1964	10/1/1964	11.60	98.11	(4.97)	5.92	(0.12)	-	11.60	6.63	36.66
1965	10/1/1965	17.70	93.19	(8.19)	8.60	(0.12)	-	17.70	9.52	36.91
1966	10/1/1966	22.97	92.13	(12.92)	9.60	(0.11)	-	22.97	10.06	38.93
1967	10/1/1967	14.42	95.55	(6.73)	8.21	(0.13)	-	14.42	7.69	36.92
1968	10/1/1968	22.33	87.01	(12.58)	10.25	(0.16)	-	22.33	9.76	37.38
1969	10/1/1969	18.75	93.98	(8.91)	9.48	(0.22)	-	18.75	9.85	38.25
1970	10/1/1970	16.07	94.65	(7.83)	7.88	(0.22)	0.00	16.07	8.24	38.53
1971	10/1/1971	12.48	98.62	(6.89)	5.32	(0.20)	0.12	12.35	5.46	37.96
1972	10/1/1972	11.29	105.91	(4.27)	6.96	(0.18)	0.10	11.18	6.91	40.53
1973	10/1/1973	30.68	73.66	(13.31)	12.65	(0.16)	0.15	30.53	17.17	35.99
1974	10/1/1974	15.59	91.14	(7.44)	7.35	(0.16)	-	15.59	8.11	36.84
1975	10/1/1975	19.09	83.66	(8.91)	9.65	(0.14)	-	19.09	10.14	35.44
1976	10/1/1976	16.22	90.39	(8.23)	6.72	(0.14)	0.00	16.22	7.99	37.84
1977	10/1/1977	16.46	90.75	(7.92)	8.63	(0.13)	-	16.46	8.51	37.86
1978	10/1/1978	23.94	83.98	(12.56)	11.17	(0.13)	-	23.94	11.40	38.30
1979	10/1/1979	29.61	77.17	(15.49)	11.61	(0.15)	-	29.61	14.11	38.53
1980	10/1/1980	20.31	86.10	(10.21)	10.28	(0.29)	-	20.31	10.11	38.22
1981	10/1/1981	15.24	97.09	(8.08)	8.66	(0.31)	-	15.24	7.16	40.87
1982	10/1/1982	23.55	77.76	(11.10)	10.79	(0.28)	0.04	23.50	12.43	36.58
1983	10/1/1983	27.47	72.56	(14.23)	11.41	(0.22)	0.07	27.40	13.16	36.00
1984	10/1/1984	17.80	84.53	(6.47)	9.61	(0.20)	-	17.80	11.33	37.32
1985	10/1/1985	22.76	68.98	(10.71)	9.36	(0.20)	-	22.76	12.03	34.11
1986	10/1/1986	21.30	79.02	(9.78)	10.67	(0.16)	-	21.30	11.55	37.61
1987	10/1/1987	20.16	77.24	(9.30)	9.78	(0.15)	-	20.16	10.83	36.00
1988	10/1/1988	23.07	76.97	(10.67)	10.66	(0.14)	-	23.07	12.43	37.38
1989	10/1/1989	11.73	97.64	(5.76)	5.96	(0.13)	-	11.73	5.96	40.88
1990	10/1/1990	23.61	76.10	(11.48)	9.08	(0.13)	2.11	21.50	10.02	37.63
1991	10/1/1991	22.99	75.04	(11.02)	12.82	(0.13)	-	22.99	11.97	37.08
1992	10/1/1992	36.55	60.71	(17.77)	15.72	(0.13)	0.09	36.46	18.58	37.66
1993	10/1/1993	32.20	65.63	(20.02)	13.96	(0.16)	-	32.20	12.05	37.29
1994	10/1/1994	15.35	85.16	(8.07)	9.72	(0.39)	-	15.35	7.32	38.98
1995	10/1/1995	24.99	70.47	(11.85)	10.79	(0.36)	0.03	24.96	13.07	37.33
1996	10/1/1996	13.58	90.16	(6.46)	7.48	(0.31)	-	13.58	7.13	40.43
1997	10/1/1997	10.24	92.91	(5.04)	5.51	(0.26)	-	10.24	5.24	40.01
1998	10/1/1998	20.51	73.62	(9.88)	9.61	(0.21)	-	20.51	10.63	36.85
1999	10/1/1999	15.04	81.89	(7.09)	6.77	(0.20)	-	15.04	7.95	38.14
2000	10/1/2000	5.47	103.54	(2.87)	2.91	(0.18)	-	5.47	2.56	42.81
2001	10/1/2001	23.46	73.62	(10.98)	10.59	(0.15)	-	23.46	12.56	38.65
2002	10/1/2002	5.47	99.21	(2.60)	2.36	(0.14)	-	5.47	2.87	42.03
2003	10/1/2003	13.27	85.83	(6.61)	6.30	(0.13)	-	13.27	6.65	40.74
2004	10/1/2004	12.40	84.65	(5.91)	5.24	(0.13)	-	12.40	6.46	41.68
2005	10/1/2005	24.23	68.50	(12.17)	10.59	(0.13)	0.77	23.46	11.34	37.59
2006	10/1/2006	12.25	82.68	(5.87)	6.10	(0.13)	0.00	12.24	6.38	39.59

Table III-G.2 CT 11 Monthly Water Balance 9 Wet Years (1983 to 1991)

Month	Result Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
		[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
Nov-82	11/30/1982	2.52	9.76	(1.33)	0.96	(0.04)	-	2.52	1.19	4.79
Dec-82	12/30/1982	2.52	0.12	(0.92)	0.30	(0.02)	-	2.52	1.57	1.04
Jan-83	1/29/1983	0.67	2.87	(0.35)	0.50	(0.02)	-	0.67	0.33	1.12
Feb-83	2/28/1983	3.54	0.47	(1.94)	0.78	(0.02)	-	3.54	1.60	1.07
Mar-83	3/30/1983	5.39	(0.63)	(2.76)	1.22	(0.02)	-	5.39	2.65	1.71
Apr-83	4/29/1983	0.83	6.81	0.15	2.28	(0.02)	-	0.83	0.97	2.34
May-83	5/29/1983	-	11.54	0.01	1.50	(0.02)	-	-	0.01	3.88
Jun-83	6/28/1983	-	14.06	-	0.27	(0.02)	-	-	0.01	5.42
Jul-83	7/28/1983	2.13	12.09	(1.25)	0.60	(0.02)	-	2.13	0.87	5.48
Aug-83	8/27/1983	3.98	7.48	(1.45)	1.46	(0.02)	-	3.98	2.52	4.09
Sep-83	9/26/1983	1.93	10.39	(0.86)	1.43	(0.02)	-	1.93	1.07	4.50
Oct-83	10/26/1983	5.11	2.72	(3.00)	1.35	(0.02)	0.07	5.04	2.03	2.93
Nov-83	11/25/1983	1.57	3.90	(1.20)	1.01	(0.02)	-	1.57	0.41	2.15
Dec-83	12/25/1983	1.89	0.91	(0.56)	0.42	(0.02)	-	1.89	1.33	1.00
Jan-84	1/24/1984	1.54	1.38	(0.38)	0.47	(0.02)	-	1.54	1.14	0.96
Feb-84	2/23/1984	-	4.76	0.07	0.87	(0.02)	-	-	0.07	1.48
Mar-84	3/24/1984	-	7.17	0.00	1.06	(0.02)	-	-	0.00	2.09
Apr-84	4/23/1984	0.87	7.44	(0.46)	0.57	(0.02)	-	0.87	0.40	2.95
May-84	5/23/1984	0.67	10.91	(0.28)	0.33	(0.02)	-	0.67	0.38	4.08
Jun-84	6/22/1984	0.04	14.17	(0.00)	0.04	(0.02)	-	0.04	0.04	5.37
Jul-84	7/22/1984	3.62	8.50	(1.80)	0.85	(0.02)	-	3.62	1.82	5.03
Aug-84	8/21/1984	4.02	7.01	(1.31)	1.27	(0.02)	-	4.02	2.71	3.99
Sep-84	9/20/1984	1.22	11.34	(0.37)	1.29	(0.02)	-	1.22	0.85	4.18
Oct-84	10/20/1984	2.60	5.12	(1.14)	0.70	(0.02)	-	2.60	1.44	3.50
Nov-84	11/19/1984	-	5.51	0.03	0.45	(0.02)	-	-	0.03	2.00
Dec-84	12/19/1984	4.76	(2.17)	(3.46)	0.24	(0.02)	-	4.76	1.33	1.28
Jan-85	1/18/1985	3.94	(1.57)	(1.72)	0.36	(0.02)	-	3.94	2.22	0.74
Feb-85	2/17/1985	2.87	(0.31)	(1.14)	0.48	(0.02)	-	2.87	1.73	0.72
Mar-85	3/19/1985	1.69	2.72	(0.27)	1.01	(0.02)	-	1.69	1.41	1.47
Apr-85	4/18/1985	0.43	7.28	0.08	2.19	(0.02)	-	0.43	0.53	2.35
May-85	5/18/1985	0.47	8.58	(0.22)	1.06	(0.02)	-	0.47	0.24	3.46
Jun-85	6/17/1985	-	11.89	-	0.35	(0.02)	-	-	-	4.21
Jul-85	7/17/1985	0.24	12.64	(0.20)	0.19	(0.02)	-	0.24	0.03	5.06
Aug-85	8/16/1985	2.13	9.17	(1.01)	0.88	(0.02)	-	2.13	1.13	4.31
Sep-85	9/15/1985	2.28	9.45	(1.10)	0.99	(0.02)	-	2.28	1.18	4.83
Oct-85	10/15/1985	3.27	4.80	(1.50)	1.10	(0.02)	-	3.27	1.78	3.24
Nov-85	11/14/1985	1.42	4.37	(0.82)	0.78	(0.01)	-	1.42	0.60	2.00
Dec-85	12/14/1985	2.76	0.20	(1.46)	0.32	(0.01)	-	2.76	1.27	1.26
Jan-86	1/13/1986	-	3.62	0.60	0.48	(0.01)	-	-	0.60	1.25
Feb-86	2/12/1986	2.32	1.34	(1.71)	0.55	(0.01)	-	2.32	0.62	1.59
Mar-86	3/14/1986	1.93	4.21	(0.61)	1.17	(0.01)	-	1.93	1.31	1.67
Apr-86	4/13/1986	3.11	4.49	(1.42)	2.00	(0.01)	-	3.11	1.69	2.60
May-86	5/13/1986	-	11.02	0.01	1.30	(0.01)	-	-	0.01	3.91
Jun-86	6/12/1986	-	13.58	-	0.04	(0.01)	-	-	0.01	4.91
Jul-86	7/12/1986	2.20	11.85	(1.23)	0.39	(0.01)	-	2.20	0.96	5.74
Aug-86	8/11/1986	2.80	8.03	(1.02)	1.43	(0.01)	-	2.80	1.79	3.77
Sep-86	9/10/1986	3.11	8.46	(1.77)	1.07	(0.01)	-	3.11	1.35	4.48
Oct-86	10/10/1986	0.94	8.15	(0.07)	0.96	(0.01)	-	0.94	0.87	3.68
Nov-86	11/9/1986	2.76	2.99	(1.45)	0.74	(0.01)	-	2.76	1.30	2.41
Dec-86	12/9/1986	2.60	1.14	(2.08)	0.41	(0.01)	-	2.60	0.53	1.46
Jan-87	1/8/1987	1.50	1.22	0.04	0.35	(0.01)	-	1.50	1.52	1.01
Feb-87	2/7/1987	3.11	0.20	(1.19)	0.54	(0.01)	-	3.11	1.91	1.05
Mar-87	3/9/1987	2.28	2.36	(1.00)	0.98	(0.01)	-	2.28	1.28	1.32
Apr-87	4/8/1987	0.94	5.35	(0.15)	1.74	(0.01)	-	0.94	0.80	2.15
May-87	5/8/1987	-	7.64	-	1.33	(0.01)	-	-	0.02	2.78
Jun-87	6/7/1987	0.31	11.81	(0.07)	0.22	(0.01)	-	0.31	0.24	4.46
Jul-87	7/7/1987	0.20	14.65	(0.11)	0.13	(0.01)	-	0.20	0.10	5.51
Aug-87	8/6/1987	3.11	10.04	(1.96)	1.03	(0.01)	-	3.11	1.15	5.35
Sep-87	9/5/1987	2.48	9.57	(1.24)	1.40	(0.01)	-	2.48	1.24	4.21
Oct-87	10/5/1987	0.87	9.06	(0.11)	0.76	(0.01)	-	0.87	0.72	3.95
Nov-87	11/4/1987	1.38	6.65	(0.93)	0.23	(0.01)	-	1.38	0.46	3.49
Dec-87	12/4/1987	0.71	3.27	(0.06)	0.35	(0.01)	-	0.71	0.65	1.83

Table III-G.2 CT 11 Monthly Water Balance 9 Wet Years (1983 to 1991)

Month	Result Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
		[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
Jan-88	1/3/1988	4.02	(1.34)	(2.60)	0.26	(0.01)	-	4.02	1.42	1.08
Feb-88	2/2/1988	3.58	(1.26)	(1.80)	0.37	(0.01)	-	3.58	1.79	0.72
Mar-88	3/3/1988	0.75	4.41	0.15	1.06	(0.01)	-	0.75	0.88	1.35
Apr-88	4/2/1988	0.12	6.54	-	1.62	(0.01)	-	0.12	0.14	2.27
May-88	5/2/1988	2.44	6.14	(1.26)	1.41	(0.01)	-	2.44	1.17	3.34
Jun-88	6/1/1988	-	12.40	0.05	0.92	(0.01)	-	-	0.05	4.25
Jul-88	7/1/1988	0.12	13.58	(0.02)	0.13	(0.01)	-	0.12	0.11	5.30
Aug-88	7/31/1988	2.48	10.16	(1.43)	0.30	(0.01)	-	2.48	1.03	5.01
Sep-88	8/30/1988	6.97	4.25	(2.88)	1.83	(0.01)	-	6.97	4.09	4.21
Oct-88	10/29/1988	2.01	17.56	(0.69)	2.52	(0.02)	-	2.01	1.33	7.40
Nov-88	11/28/1988	1.73	3.27	(1.45)	0.41	(0.01)	-	1.73	0.28	2.23
Dec-88	12/28/1988	1.10	1.81	(0.11)	0.29	(0.01)	-	1.10	1.00	1.11
Jan-89	1/27/1989	1.97	0.83	(0.74)	0.37	(0.01)	-	1.97	1.23	0.75
Feb-89	2/26/1989	0.55	3.74	0.00	0.76	(0.01)	-	0.55	0.53	1.22
Mar-89	3/28/1989	1.69	6.38	(1.46)	1.01	(0.01)	-	1.69	0.24	2.66
Apr-89	4/27/1989	-	11.61	0.43	1.03	(0.01)	-	-	0.43	3.89
May-89	5/27/1989	0.16	12.05	(0.04)	0.06	(0.01)	-	0.16	0.12	4.76
Jun-89	6/26/1989	-	14.13	-	0.02	(0.01)	-	-	-	5.32
Jul-89	7/26/1989	0.08	13.82	(0.03)	0.03	(0.01)	-	0.08	0.05	5.71
Aug-89	8/25/1989	1.38	10.16	(0.61)	0.47	(0.01)	-	1.38	0.77	4.57
Sep-89	9/24/1989	1.57	10.31	(0.95)	0.99	(0.01)	-	1.57	0.62	4.34
Oct-89	10/24/1989	1.06	8.11	(0.51)	0.42	(0.01)	-	1.06	0.56	3.84
Nov-89	11/23/1989	0.31	5.43	(0.17)	0.12	(0.01)	-	0.31	0.12	2.30
Dec-89	12/23/1989	-	3.35	0.09	0.09	(0.01)	-	-	0.09	1.42
Jan-90	1/22/1990	2.13	0.51	(1.11)	0.17	(0.01)	-	2.13	1.04	1.02
Feb-90	2/21/1990	2.56	0.51	(1.10)	0.39	(0.01)	-	2.56	1.43	0.94
Mar-90	3/23/1990	0.79	5.00	(0.18)	1.07	(0.01)	-	0.79	0.62	1.77
Apr-90	4/22/1990	1.02	8.50	(0.39)	1.17	(0.01)	-	1.02	0.63	2.98
May-90	5/22/1990	1.06	9.33	(0.66)	0.66	(0.01)	-	1.06	0.43	4.15
Jun-90	6/21/1990	0.39	13.62	(0.22)	0.20	(0.01)	-	0.39	0.19	5.09
Jul-90	7/21/1990	0.94	11.97	(0.44)	0.33	(0.01)	-	0.94	0.49	5.37
Aug-90	8/20/1990	10.38	0.43	(6.07)	0.85	(0.01)	2.11	8.27	2.17	4.21
Sep-90	9/19/1990	2.56	9.06	(1.21)	2.86	(0.01)	-	2.56	1.38	4.00
Oct-90	10/19/1990	0.47	8.03	0.55	1.93	(0.01)	-	0.47	0.99	3.61
Nov-90	11/18/1990	1.54	4.53	(0.91)	1.01	(0.01)	-	1.54	0.63	2.52
Dec-90	12/18/1990	2.76	0.59	(1.87)	0.36	(0.01)	-	2.76	0.91	1.52
Jan-91	1/17/1991	4.69	(2.52)	(2.56)	0.33	(0.01)	-	4.69	2.11	0.89
Feb-91	2/16/1991	0.12	3.82	0.53	0.72	(0.01)	-	0.12	0.68	1.11
Mar-91	3/18/1991	3.62	1.30	(1.98)	1.13	(0.01)	-	3.62	1.63	1.80
Apr-91	4/17/1991	3.23	3.94	(1.07)	2.09	(0.01)	-	3.23	2.16	2.09
May-91	5/17/1991	-	9.84	0.02	2.08	(0.01)	-	-	0.02	3.68
Jun-91	6/16/1991	0.71	12.20	(0.28)	0.65	(0.01)	-	0.71	0.43	4.71
Jul-91	7/16/1991	0.43	12.87	(0.21)	0.47	(0.01)	-	0.43	0.24	5.29
Aug-91	8/15/1991	3.46	8.43	(1.82)	0.71	(0.01)	-	3.46	1.64	4.66
Sep-91	9/14/1991	2.13	9.45	(0.89)	1.55	(0.01)	-	2.13	1.22	4.57
Oct-91	10/1/1991	0.24	5.67	(0.05)	0.64	(0.01)	-	0.24	0.20	2.19

Table III-G.3 CT 11 Monsoon Period Water Balance

Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
6/1/1951	8.65	32.06	(2.04)	8.25	(0.13)	-	8.65	6.61	13.29
7/1/1951	-	16.19	0.01	0.70	(0.04)	-	-	0.02	5.25
8/1/1951	1.05	16.83	(0.55)	0.92	(0.04)	-	1.05	0.50	5.79
9/1/1951	3.83	11.40	(2.44)	1.12	(0.04)	-	3.83	1.39	4.84
10/1/1951	0.68	13.60	(0.18)	2.13	(0.04)	-	0.68	0.51	4.49
11/1/1951	1.64	8.59	(1.20)	0.47	(0.04)	-	1.64	0.44	3.15
1951	7.20	66.60	(4.36)	5.34	(0.20)	-	7.20	2.84	23.52
6/1/1952	16.44	32.14	(6.69)	9.37	(0.27)	-	16.44	9.75	15.54
7/1/1952	0.63	15.60	(0.15)	0.41	(0.03)	-	0.63	0.48	5.28
8/1/1952	0.56	15.71	(0.22)	0.28	(0.04)	-	0.56	0.34	5.19
9/1/1952	0.47	15.41	(0.16)	0.40	(0.03)	-	0.47	0.32	5.09
10/1/1952	0.74	14.05	(0.34)	0.38	(0.03)	-	0.74	0.40	4.56
11/1/1952	-	11.74	0.03	0.19	(0.03)	-	-	0.03	3.81
1952	2.40	72.52	(0.83)	1.66	(0.17)	-	2.40	1.57	23.93
6/1/1953	10.86	36.79	(5.36)	6.11	(0.21)	-	10.86	5.49	14.82
7/1/1953	-	16.78	0.01	0.11	(0.03)	-	-	0.01	5.51
8/1/1953	2.72	12.79	(1.69)	0.67	(0.03)	-	2.72	1.03	5.21
9/1/1953	1.90	13.28	(0.78)	1.28	(0.03)	-	1.90	1.12	4.71
10/1/1953	-	15.06	0.08	0.75	(0.03)	-	-	0.08	4.63
11/1/1953	0.01	10.29	0.01	0.04	(0.03)	-	0.01	0.02	3.39
1953	4.63	68.20	(2.37)	2.85	(0.13)	-	4.63	2.26	23.46
6/1/1954	10.05	44.58	(5.70)	6.24	(0.17)	-	10.05	4.36	17.36
7/1/1954	0.13	15.40	(0.02)	0.09	(0.02)	-	0.13	0.11	5.13
8/1/1954	4.46	9.72	(2.31)	1.19	(0.02)	-	4.46	2.16	4.63
9/1/1954	5.55	7.26	(2.69)	2.31	(0.02)	0.24	5.32	2.62	3.93
10/1/1954	1.35	12.06	(0.62)	2.10	(0.02)	-	1.35	0.73	4.18
11/1/1954	-	10.94	0.05	0.37	(0.02)	-	-	0.05	3.47
1954	11.50	55.38	(5.60)	6.06	(0.11)	0.24	11.27	5.67	21.36
6/1/1955	4.09	46.57	(1.92)	2.26	(0.14)	-	4.09	2.17	16.02
7/1/1955	2.06	13.31	(1.20)	1.09	(0.02)	-	2.06	0.86	5.17
8/1/1955	4.46	9.21	(2.56)	0.71	(0.02)	-	4.46	1.90	4.39
9/1/1955	2.83	9.69	(0.92)	2.29	(0.02)	-	2.83	1.91	3.95
10/1/1955	0.13	13.70	(0.02)	0.89	(0.02)	-	0.13	0.11	4.43
11/1/1955	0.02	11.26	0.01	0.03	(0.02)	-	0.02	0.04	3.54
1955	9.50	57.17	(4.69)	5.00	(0.09)	-	9.50	4.81	21.47
6/1/1956	7.73	43.74	(3.64)	3.95	(0.13)	-	7.73	4.09	16.91
7/1/1956	0.24	16.69	(0.15)	0.05	(0.02)	-	0.24	0.09	5.79
8/1/1956	2.77	11.89	(1.31)	0.65	(0.02)	-	2.77	1.45	4.84
9/1/1956	1.84	11.81	(0.74)	1.47	(0.02)	-	1.84	1.10	4.30
10/1/1956	0.07	14.53	(0.05)	0.19	(0.02)	-	0.07	0.02	4.61
11/1/1956	0.53	8.98	(0.25)	0.07	(0.02)	-	0.53	0.28	3.03
1956	5.46	63.90	(2.51)	2.43	(0.09)	-	5.46	2.94	22.58
6/1/1957	9.41	37.05	(4.41)	4.91	(0.11)	-	9.41	4.99	14.94
7/1/1957	0.03	16.30	0.01	0.05	(0.02)	-	0.03	0.04	5.53
8/1/1957	1.09	13.54	(0.54)	0.27	(0.02)	-	1.09	0.56	4.97
9/1/1957	3.57	10.20	(1.62)	1.18	(0.02)	-	3.57	1.95	4.44
10/1/1957	0.60	12.44	(0.18)	1.01	(0.01)	-	0.60	0.41	4.26
11/1/1957	3.23	4.69	(2.15)	0.35	(0.01)	-	3.23	1.08	2.60
1957	8.52	57.17	(4.48)	2.86	(0.08)	-	8.52	4.04	21.80
6/1/1958	10.68	36.73	(3.54)	5.61	(0.10)	-	10.68	7.14	15.40
7/1/1958	0.70	15.75	(0.35)	0.31	(0.01)	-	0.70	0.35	5.50
8/1/1958	0.78	15.12	(0.40)	0.21	(0.01)	-	0.78	0.38	5.44
9/1/1958	0.89	14.13	(0.35)	0.65	(0.01)	-	0.89	0.55	4.68
10/1/1958	3.17	9.17	(1.85)	0.90	(0.01)	-	3.17	1.33	4.12
11/1/1958	1.92	7.60	(0.90)	1.39	(0.01)	-	1.92	1.02	3.06
1958	7.46	61.77	(3.85)	3.47	(0.07)	-	7.46	3.62	22.80
6/1/1959	3.43	50.47	(1.60)	2.31	(0.09)	-	3.43	1.83	17.30
7/1/1959	1.03	15.39	(0.53)	0.50	(0.01)	-	1.03	0.50	5.64
8/1/1959	3.79	12.83	(2.50)	1.00	(0.01)	-	3.79	1.29	5.64
9/1/1959	5.58	7.17	(1.74)	2.00	(0.01)	-	5.58	3.84	3.94
10/1/1959	0.05	12.80	0.04	1.37	(0.01)	-	0.05	0.09	4.31
11/1/1959	4.79	4.80	(4.31)	0.29	(0.01)	0.05	4.74	0.43	3.20
1959	15.25	52.99	(9.04)	5.17	(0.06)	0.05	15.20	6.15	22.73

Table III-G.3 CT 11 Monsoon Period Water Balance

Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
6/1/1960	11.66	38.50	(4.50)	6.88	(0.08)	-	11.66	7.17	16.20
7/1/1960	-	17.13	0.01	0.26	(0.01)	-	-	0.01	5.76
8/1/1960	0.74	15.20	(0.39)	0.41	(0.01)	-	0.74	0.34	5.41
9/1/1960	1.62	12.48	(0.66)	0.86	(0.01)	-	1.62	0.97	4.54
10/1/1960	0.28	13.62	(0.10)	0.24	(0.01)	-	0.28	0.19	4.52
11/1/1960	2.06	6.46	(0.97)	0.52	(0.01)	-	2.06	1.08	2.80
1960	4.70	64.88	(2.11)	2.29	(0.06)	-	4.70	2.59	23.02
6/1/1961	3.57	46.65	(1.39)	2.26	(0.08)	-	3.57	2.18	16.32
7/1/1961	-	16.69	-	0.05	(0.01)	-	-	-	5.66
8/1/1961	0.67	14.65	(0.28)	0.19	(0.01)	-	0.67	0.39	5.34
9/1/1961	3.13	10.71	(2.06)	0.87	(0.01)	-	3.13	1.07	4.51
10/1/1961	0.52	10.47	0.35	1.01	(0.01)	-	0.52	0.87	3.65
11/1/1961	0.45	8.90	(0.31)	0.05	(0.01)	-	0.45	0.14	3.23
1961	4.78	61.42	(2.29)	2.17	(0.06)	-	4.78	2.48	22.38
6/1/1962	11.37	35.51	(5.30)	5.74	(0.08)	-	11.37	6.06	15.23
7/1/1962	-	15.39	0.02	0.05	(0.01)	-	-	-	5.29
8/1/1962	0.61	14.72	(0.26)	0.22	(0.01)	-	0.61	0.35	5.26
9/1/1962	0.52	15.12	(0.20)	0.27	(0.01)	-	0.52	0.31	5.21
10/1/1962	1.30	11.06	(0.56)	0.28	(0.01)	-	1.30	0.74	4.26
11/1/1962	0.87	8.27	(0.30)	0.47	(0.01)	-	0.87	0.57	2.98
1962	3.30	64.57	(1.30)	1.30	(0.06)	-	3.30	1.98	22.98
6/1/1963	11.13	40.55	(5.91)	6.18	(0.08)	-	11.13	5.19	17.00
7/1/1963	-	14.72	0.01	0.03	(0.01)	-	-	0.00	4.97
8/1/1963	0.08	15.98	(0.02)	0.04	(0.01)	-	0.08	0.06	5.61
9/1/1963	11.02	1.14	(5.80)	1.41	(0.01)	0.64	10.38	4.58	3.97
10/1/1963	1.10	11.57	0.39	2.94	(0.01)	-	1.10	1.49	4.13
11/1/1963	0.67	9.41	(0.35)	1.24	(0.01)	-	0.67	0.32	3.50
1963	12.87	52.83	(5.76)	5.66	(0.05)	0.64	12.23	6.45	22.18
6/1/1964	5.50	40.91	(2.38)	2.65	(0.07)	-	5.50	3.12	15.18
7/1/1964	-	14.65	-	0.02	(0.01)	-	-	0.00	4.97
8/1/1964	1.48	13.54	(0.69)	0.31	(0.01)	-	1.48	0.79	5.15
9/1/1964	2.29	10.87	(0.95)	1.04	(0.01)	-	2.29	1.34	4.25
10/1/1964	1.65	8.74	(0.60)	0.66	(0.01)	-	1.65	1.06	3.61
11/1/1964	1.54	9.02	(0.88)	0.63	(0.01)	-	1.54	0.66	3.51
1964	6.97	56.81	(3.12)	2.66	(0.05)	-	6.97	3.85	21.49
6/1/1965	12.57	33.19	(5.73)	6.33	(0.07)	-	12.57	6.85	14.85
7/1/1965	0.10	13.78	(0.01)	0.02	(0.01)	-	0.10	0.09	4.83
8/1/1965	1.44	12.83	(0.62)	0.36	(0.01)	-	1.44	0.81	4.98
9/1/1965	0.95	13.39	(0.43)	0.70	(0.01)	-	0.95	0.52	4.70
10/1/1965	1.09	10.98	(0.52)	0.56	(0.01)	-	1.09	0.58	4.01
11/1/1965	0.46	9.92	(0.23)	0.20	(0.01)	-	0.46	0.23	3.38
1965	4.05	60.91	(1.81)	1.84	(0.05)	-	4.05	2.24	21.90
6/1/1966	16.99	32.32	(9.78)	6.29	(0.06)	-	16.99	7.20	16.33
7/1/1966	0.18	14.92	(0.06)	0.36	(0.01)	-	0.18	0.13	5.46
8/1/1966	0.84	13.70	(0.40)	0.50	(0.01)	-	0.84	0.44	4.96
9/1/1966	1.69	12.44	(0.93)	0.67	(0.01)	-	1.69	0.76	4.76
10/1/1966	2.81	8.82	(1.52)	1.57	(0.01)	-	2.81	1.30	4.04
11/1/1966	1.36	7.44	(0.58)	1.24	(0.01)	-	1.36	0.78	2.86
1966	6.89	57.32	(3.48)	4.35	(0.04)	-	6.89	3.41	22.08
6/1/1967	5.79	42.24	(2.69)	3.33	(0.08)	-	5.79	3.10	15.89
7/1/1967	0.08	14.09	(0.02)	0.08	(0.01)	-	0.08	0.06	4.81
8/1/1967	3.96	9.45	(1.94)	1.06	(0.01)	-	3.96	2.02	4.76
9/1/1967	2.64	11.46	(1.29)	2.04	(0.01)	-	2.64	1.35	4.46
10/1/1967	0.58	10.87	(0.21)	0.46	(0.01)	-	0.58	0.37	4.14
11/1/1967	0.42	9.29	(0.19)	0.28	(0.01)	-	0.42	0.23	3.39
1967	7.69	55.16	(3.65)	3.92	(0.06)	-	7.69	4.04	21.57
6/1/1968	17.35	29.61	(10.43)	7.03	(0.09)	-	17.35	6.92	15.70
7/1/1968	-	15.75	-	0.41	(0.01)	-	-	-	5.56
8/1/1968	1.82	11.77	(1.04)	0.58	(0.01)	-	1.82	0.79	4.91
9/1/1968	2.69	8.98	(0.93)	1.50	(0.01)	-	2.69	1.76	3.78
10/1/1968	0.05	11.61	0.00	0.44	(0.02)	-	0.05	0.06	4.04
11/1/1968	0.39	8.82	(0.17)	0.26	(0.02)	-	0.39	0.22	2.90
1968	4.96	56.93	(2.14)	3.20	(0.08)	-	4.96	2.83	21.19

Table III-G.3 CT 11 Monsoon Period Water Balance

Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
6/1/1969	14.00	32.76	(6.71)	6.79	(0.13)	-	14.00	7.29	15.41
7/1/1969	-	14.37	-	0.17	(0.02)	-	-	0.00	5.23
8/1/1969	0.33	14.37	(0.09)	0.20	(0.02)	-	0.33	0.24	5.28
9/1/1969	2.71	12.44	(1.30)	1.23	(0.02)	-	2.71	1.41	5.07
10/1/1969	1.31	11.22	(0.63)	0.83	(0.02)	-	1.31	0.68	4.33
11/1/1969	0.83	7.76	(0.45)	0.27	(0.02)	-	0.83	0.37	3.11
1969	5.18	60.16	(2.48)	2.69	(0.10)	-	5.18	2.71	23.01
6/1/1970	8.79	37.72	(4.07)	4.72	(0.13)	-	8.79	4.72	15.36
7/1/1970	0.08	15.08	-	0.06	(0.02)	-	0.08	0.08	5.33
8/1/1970	1.04	13.98	(0.47)	0.48	(0.02)	-	1.04	0.57	5.56
9/1/1970	1.81	12.17	(0.87)	0.60	(0.02)	-	1.81	0.94	4.73
10/1/1970	3.53	7.95	(1.97)	1.75	(0.02)	0.00	3.52	1.56	4.45
11/1/1970	-	8.43	0.01	0.61	(0.02)	-	-	0.01	2.87
1970	6.46	57.60	(3.30)	3.50	(0.09)	0.00	6.45	3.15	22.93
6/1/1971	3.93	43.39	(1.67)	1.82	(0.12)	-	3.93	2.27	15.85
7/1/1971	-	14.84	-	0.04	(0.02)	-	-	0.00	5.06
8/1/1971	0.39	15.47	(0.15)	0.15	(0.02)	-	0.39	0.24	5.59
9/1/1971	4.92	7.32	(2.43)	1.37	(0.02)	-	4.92	2.49	4.19
10/1/1971	3.23	9.17	(2.65)	1.33	(0.02)	0.12	3.11	0.46	4.40
11/1/1971	4.21	3.11	(1.36)	1.41	(0.02)	0.10	4.10	2.74	2.80
1971	12.75	49.92	(6.59)	4.30	(0.09)	0.23	12.52	5.93	22.04
6/1/1972	2.33	49.72	(0.56)	3.11	(0.10)	-	2.33	1.77	17.30
7/1/1972	1.68	13.82	(0.98)	0.57	(0.01)	-	1.68	0.70	5.44
8/1/1972	0.27	16.10	(0.09)	0.56	(0.01)	-	0.27	0.18	5.69
9/1/1972	2.10	11.54	(1.09)	0.82	(0.01)	-	2.10	1.02	4.93
10/1/1972	0.70	11.61	(0.19)	0.50	(0.01)	-	0.70	0.51	4.37
11/1/1972	8.68	(1.50)	(5.14)	0.93	(0.01)	0.15	8.53	3.40	2.78
1972	13.43	51.57	(7.49)	3.37	(0.07)	0.15	13.28	5.80	23.21
6/1/1973	16.91	23.43	(5.78)	8.54	(0.10)	-	16.91	11.11	13.27
7/1/1973	0.87	14.65	(0.33)	0.72	(0.01)	-	0.87	0.52	5.37
8/1/1973	2.72	11.18	(1.75)	0.79	(0.01)	-	2.72	0.97	5.31
9/1/1973	1.50	13.19	(0.31)	1.50	(0.01)	-	1.50	1.18	4.93
10/1/1973	-	12.72	0.01	0.18	(0.01)	-	-	-	4.31
11/1/1973	-	8.66	-	0.06	(0.01)	-	-	-	3.27
1973	5.09	60.39	(2.39)	3.24	(0.07)	-	5.09	2.67	23.18
6/1/1974	8.15	33.94	(3.91)	4.19	(0.09)	-	8.15	4.19	13.59
7/1/1974	-	16.65	-	0.05	(0.01)	-	-	-	5.69
8/1/1974	2.44	11.54	(1.16)	0.77	(0.01)	-	2.44	1.28	5.16
9/1/1974	1.46	12.56	(0.57)	1.01	(0.01)	-	1.46	0.88	4.88
10/1/1974	3.54	7.80	(1.81)	1.28	(0.01)	-	3.54	1.77	4.26
11/1/1974	3.43	4.84	(2.50)	0.79	(0.01)	-	3.43	0.89	3.10
1974	10.87	53.39	(6.04)	3.90	(0.07)	-	10.87	4.81	23.08
6/1/1975	10.43	29.45	(4.21)	6.63	(0.09)	-	10.43	6.20	13.03
7/1/1975	-	15.16	-	0.03	(0.01)	-	-	-	5.27
8/1/1975	2.20	10.67	(0.92)	0.62	(0.01)	-	2.20	1.28	4.96
9/1/1975	2.09	12.17	(0.96)	1.14	(0.01)	-	2.09	1.14	4.65
10/1/1975	0.94	11.38	(0.32)	0.45	(0.01)	-	0.94	0.63	4.44
11/1/1975	0.28	8.39	(0.09)	0.06	(0.01)	-	0.28	0.18	3.43
1975	5.51	57.76	(2.28)	2.30	(0.06)	-	5.51	3.22	22.75
6/1/1976	8.07	36.34	(3.70)	3.71	(0.08)	-	8.07	4.39	15.22
7/1/1976	-	15.79	-	0.02	(0.01)	-	-	-	5.28
8/1/1976	2.80	10.31	(1.48)	0.62	(0.01)	0.00	2.80	1.28	5.23
9/1/1976	0.87	13.46	(0.48)	1.14	(0.01)	-	0.87	0.42	4.63
10/1/1976	4.21	6.10	(2.48)	1.16	(0.01)	-	4.21	1.72	4.06
11/1/1976	0.91	6.38	(0.29)	1.14	(0.01)	-	0.91	0.61	2.68
1976	8.78	52.05	(4.74)	4.09	(0.06)	0.00	8.78	4.03	21.87
6/1/1977	6.73	37.80	(3.13)	3.80	(0.08)	-	6.73	3.61	15.05
7/1/1977	0.08	15.75	(0.02)	0.02	(0.01)	-	0.08	0.04	5.46
8/1/1977	2.52	12.56	(1.35)	0.59	(0.01)	-	2.52	1.19	5.62
9/1/1977	2.56	11.50	(1.26)	1.65	(0.01)	-	2.56	1.31	4.92
10/1/1977	3.66	6.77	(1.86)	1.44	(0.01)	-	3.66	1.77	4.09
11/1/1977	1.30	7.76	(0.59)	0.95	(0.01)	-	1.30	0.73	3.39
1977	10.12	54.33	(5.08)	4.65	(0.06)	-	10.12	5.03	23.49

Table III-G.3 CT 11 Monsoon Period Water Balance

Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
6/1/1978	19.61	24.17	(10.52)	7.67	(0.08)	-	19.61	9.07	14.90
7/1/1978	0.51	15.12	(0.33)	0.63	(0.01)	-	0.51	0.21	5.55
8/1/1978	0.98	14.37	(0.56)	0.63	(0.01)	-	0.98	0.42	5.90
9/1/1978	1.14	11.69	(0.38)	1.00	(0.01)	-	1.14	0.74	4.26
10/1/1978	0.39	10.87	(0.18)	0.29	(0.01)	-	0.39	0.23	4.30
11/1/1978	1.93	7.52	(1.10)	0.28	(0.01)	-	1.93	0.83	4.04
1978	4.96	59.57	(2.54)	2.82	(0.05)	-	4.96	2.43	24.05
6/1/1979	25.43	15.63	(13.60)	8.67	(0.08)	-	25.43	11.85	14.22
7/1/1979	0.35	14.61	(0.04)	0.89	(0.01)	-	0.35	0.31	5.17
8/1/1979	0.16	14.92	(0.07)	0.48	(0.01)	-	0.16	0.09	5.76
9/1/1979	1.61	11.18	(0.67)	0.96	(0.02)	-	1.61	0.95	4.49
10/1/1979	0.12	13.31	(0.02)	0.33	(0.02)	-	0.12	0.09	4.85
11/1/1979	0.67	9.06	(0.38)	0.32	(0.02)	-	0.67	0.30	3.81
1979	2.91	63.07	(1.18)	2.98	(0.08)	-	2.91	1.74	24.08
6/1/1980	15.55	26.02	(7.88)	6.90	(0.17)	-	15.55	7.67	14.55
7/1/1980	0.16	15.24	(0.10)	0.53	(0.02)	-	0.16	0.04	5.23
8/1/1980	1.93	11.77	(1.02)	0.80	(0.03)	-	1.93	0.94	5.39
9/1/1980	1.38	12.17	(0.51)	1.22	(0.03)	-	1.38	0.87	4.74
10/1/1980	0.63	11.85	(0.32)	0.52	(0.03)	-	0.63	0.29	4.50
11/1/1980	0.04	9.09	(0.01)	0.10	(0.03)	-	0.04	0.03	3.67
1980	4.13	60.12	(1.96)	3.16	(0.13)	-	4.13	2.17	23.53
6/1/1981	9.61	37.80	(5.20)	5.51	(0.19)	-	9.61	4.40	16.76
7/1/1981	0.12	15.59	(0.04)	0.26	(0.02)	-	0.12	0.10	5.53
8/1/1981	2.17	11.73	(1.57)	0.49	(0.03)	-	2.17	0.59	5.49
9/1/1981	2.76	11.22	(0.92)	1.91	(0.03)	-	2.76	1.84	4.55
10/1/1981	0.55	11.65	(0.34)	0.39	(0.02)	-	0.55	0.20	4.84
11/1/1981	0.94	6.77	(0.39)	0.58	(0.03)	-	0.94	0.57	3.07
1981	6.54	56.97	(3.25)	3.62	(0.13)	-	6.54	3.30	23.48
6/1/1982	12.72	30.94	(5.67)	5.85	(0.16)	0.01	12.72	7.04	15.04
7/1/1982	0.04	13.90	(0.05)	0.05	(0.02)	-	0.04	0.00	5.04
8/1/1982	2.68	10.12	(1.38)	0.62	(0.02)	-	2.68	1.28	4.94
9/1/1982	4.01	8.11	(1.85)	1.75	(0.02)	0.04	3.98	2.13	4.25
10/1/1982	3.15	7.91	(1.77)	1.94	(0.02)	-	3.15	1.41	4.25
11/1/1982	-	8.43	0.02	0.78	(0.02)	-	-	0.02	3.10
1982	9.88	48.46	(5.03)	5.13	(0.11)	0.04	9.84	4.84	21.57
6/1/1983	15.47	23.98	(7.16)	6.81	(0.13)	-	15.47	8.31	13.33
7/1/1983	-	13.98	-	0.23	(0.02)	-	-	-	5.53
8/1/1983	2.80	11.54	(1.59)	0.75	(0.02)	-	2.80	1.21	5.41
9/1/1983	3.86	8.31	(1.63)	1.63	(0.02)	-	3.86	2.20	4.18
10/1/1983	5.34	6.34	(3.86)	1.21	(0.02)	0.07	5.28	1.43	4.46
11/1/1983	1.14	6.42	0.57	1.50	(0.02)	-	1.14	1.70	2.89
1983	13.14	46.57	(6.51)	5.33	(0.09)	0.07	13.07	6.54	22.47
6/1/1984	6.54	39.72	(2.85)	4.48	(0.12)	-	6.54	3.72	15.78
7/1/1984	1.34	12.52	(0.83)	0.09	(0.02)	-	1.34	0.50	5.38
8/1/1984	3.35	8.54	(1.15)	1.22	(0.02)	-	3.35	2.17	4.65
9/1/1984	3.46	7.95	(1.12)	1.46	(0.02)	-	3.46	2.33	4.09
10/1/1984	1.97	9.37	(1.09)	0.86	(0.02)	-	1.97	0.91	4.53
11/1/1984	1.38	5.51	(0.39)	0.77	(0.02)	-	1.38	0.96	2.68
1984	11.50	43.90	(4.59)	4.39	(0.09)	-	11.50	6.87	21.33
6/1/1985	14.17	22.72	(6.72)	5.72	(0.12)	-	14.17	7.47	13.20
7/1/1985	-	12.01	-	0.25	(0.02)	-	-	-	4.69
8/1/1985	1.22	11.93	(0.81)	0.35	(0.02)	-	1.22	0.43	4.91
9/1/1985	2.24	10.63	(1.07)	1.25	(0.02)	-	2.24	1.14	4.57
10/1/1985	3.74	6.18	(1.71)	1.03	(0.02)	-	3.74	2.03	4.02
11/1/1985	1.22	5.51	(0.23)	0.98	(0.02)	-	1.22	1.02	2.40
1985	8.43	46.26	(3.82)	3.85	(0.08)	-	8.43	4.62	20.60
6/1/1986	11.02	34.49	(5.40)	6.09	(0.09)	-	11.02	5.59	16.29
7/1/1986	-	14.84	-	0.04	(0.01)	-	-	0.02	5.54
8/1/1986	4.76	5.87	(2.13)	1.20	(0.01)	-	4.76	2.63	4.60
9/1/1986	2.13	10.47	(1.06)	1.30	(0.01)	-	2.13	1.09	4.71
10/1/1986	2.17	7.83	(0.97)	1.06	(0.01)	-	2.17	1.21	4.07
11/1/1986	1.77	5.47	(0.87)	0.87	(0.02)	-	1.77	0.88	2.44
1986	10.83	44.49	(5.02)	4.46	(0.07)	-	10.83	5.82	21.36

Table III-G.3 CT 11 Monsoon Period Water Balance

Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
6/1/1987	11.73	27.09	(4.98)	5.69	(0.09)	-	11.73	6.76	14.14
7/1/1987	0.20	14.37	(0.11)	0.13	(0.01)	-	0.20	0.10	5.17
8/1/1987	2.09	11.97	(1.24)	0.79	(0.01)	-	2.09	0.82	5.50
9/1/1987	3.03	9.41	(1.48)	1.44	(0.01)	-	3.03	1.55	4.63
10/1/1987	1.34	8.94	(0.61)	0.87	(0.01)	-	1.34	0.73	4.13
11/1/1987	0.31	8.54	(0.13)	0.30	(0.01)	-	0.31	0.21	3.69
1987	6.97	53.23	(3.57)	3.53	(0.06)	-	6.97	3.40	23.12
6/1/1988	12.68	29.57	(6.30)	6.02	(0.08)	-	12.68	6.37	15.00
7/1/1988	0.12	13.58	(0.02)	0.13	(0.01)	-	0.12	0.11	5.30
8/1/1988	3.43	9.41	(2.26)	0.32	(0.01)	-	3.43	1.14	5.15
9/1/1988	6.22	5.59	(2.03)	1.96	(0.01)	-	6.22	4.20	4.27
10/1/1988	0.31	10.28	0.08	1.94	(0.01)	-	0.31	0.41	3.96
11/1/1988	1.50	7.28	(0.78)	0.49	(0.01)	-	1.50	0.71	3.45
1988	11.57	46.14	(5.01)	4.84	(0.06)	-	11.57	6.57	22.14
6/1/1989	7.20	41.30	(3.39)	3.87	(0.08)	-	7.20	3.81	17.29
7/1/1989	-	14.37	-	0.02	(0.01)	-	-	-	5.55
8/1/1989	0.51	13.19	(0.25)	0.08	(0.01)	-	0.51	0.25	5.73
9/1/1989	0.94	11.46	(0.39)	0.54	(0.01)	-	0.94	0.58	4.32
10/1/1989	1.57	10.04	(0.96)	0.96	(0.01)	-	1.57	0.61	4.51
11/1/1989	1.06	6.77	(0.46)	0.40	(0.01)	-	1.06	0.60	3.57
1989	4.09	55.83	(2.06)	2.00	(0.06)	-	4.09	2.04	23.69
6/1/1990	8.11	35.35	(3.70)	3.63	(0.08)	-	8.11	4.39	15.31
7/1/1990	0.24	14.72	(0.15)	0.18	(0.01)	-	0.24	0.11	5.40
8/1/1990	1.50	10.31	(0.69)	0.58	(0.01)	-	1.50	0.81	5.16
9/1/1990	9.75	1.85	(5.12)	1.85	(0.01)	2.11	7.64	2.48	4.02
10/1/1990	2.95	7.09	(1.36)	2.44	(0.01)	-	2.95	1.62	4.17
11/1/1990	0.28	7.87	(0.04)	1.69	(0.01)	-	0.28	0.22	3.23
1990	14.71	41.85	(7.36)	6.74	(0.05)	2.11	12.60	5.25	21.98
6/1/1991	15.83	24.76	(7.74)	7.48	(0.08)	-	15.83	8.10	14.73
7/1/1991	0.63	12.52	(0.24)	0.49	(0.01)	-	0.63	0.38	5.21
8/1/1991	1.69	11.22	(1.06)	0.41	(0.01)	-	1.69	0.63	5.17
9/1/1991	2.91	9.65	(1.17)	1.54	(0.01)	-	2.91	1.73	4.65
10/1/1991	1.65	9.02	(0.76)	1.21	(0.01)	-	1.65	0.91	4.09
11/1/1991	1.22	7.99	(0.90)	0.09	(0.01)	-	1.22	0.31	3.99
1991	8.11	50.39	(4.14)	3.74	(0.06)	-	8.11	3.96	23.12
6/1/1992	24.25	15.28	(11.50)	8.82	(0.08)	-	24.25	12.72	14.72
7/1/1992	1.34	11.73	(0.37)	1.50	(0.01)	-	1.34	0.91	4.97
8/1/1992	3.27	9.57	(2.09)	0.85	(0.01)	-	3.27	1.18	5.44
9/1/1992	5.56	5.79	(2.53)	2.05	(0.01)	0.09	5.47	2.91	4.49
10/1/1992	0.91	10.35	(0.37)	2.42	(0.01)	-	0.91	0.55	4.06
11/1/1992	1.26	7.28	(0.74)	0.48	(0.01)	-	1.26	0.47	3.90
1992	12.34	44.72	(6.10)	7.30	(0.05)	0.09	12.24	6.02	22.85
6/1/1993	26.93	13.27	(17.50)	8.83	(0.08)	-	26.93	9.37	14.30
7/1/1993	-	13.74	-	1.18	(0.01)	-	-	-	5.07
8/1/1993	0.24	12.64	(0.12)	0.83	(0.02)	-	0.24	0.12	5.27
9/1/1993	3.62	8.15	(1.73)	1.18	(0.02)	-	3.62	1.85	4.95
10/1/1993	0.16	10.55	0.08	1.46	(0.02)	-	0.16	0.24	3.76
11/1/1993	0.79	7.13	(0.35)	0.55	(0.03)	-	0.79	0.47	3.67
1993	4.80	52.20	(2.13)	5.20	(0.10)	-	4.80	2.68	22.72
6/1/1994	9.96	31.65	(5.31)	6.14	(0.23)	-	9.96	4.65	15.17
7/1/1994	0.35	13.39	(0.20)	0.59	(0.03)	-	0.35	0.16	5.35
8/1/1994	1.50	12.17	(1.14)	0.28	(0.03)	-	1.50	0.31	5.54
9/1/1994	0.75	12.48	(0.04)	1.10	(0.03)	-	0.75	0.75	5.03
10/1/1994	2.01	8.35	(1.02)	1.06	(0.03)	-	2.01	0.98	4.23
11/1/1994	1.85	5.12	(1.10)	0.51	(0.03)	-	1.85	0.75	3.25
1994	6.46	51.50	(3.50)	3.54	(0.17)	-	6.46	2.95	23.40
6/1/1995	16.10	21.65	(6.89)	7.01	(0.21)	-	16.10	9.21	14.05
7/1/1995	-	12.99	-	0.31	(0.03)	-	-	-	4.73
8/1/1995	0.04	14.17	-	0.20	(0.03)	-	0.04	0.04	5.36
9/1/1995	4.08	8.27	(2.05)	1.18	(0.03)	0.03	4.06	1.97	5.39
10/1/1995	2.91	8.27	(1.81)	1.57	(0.03)	-	2.91	1.10	4.56
11/1/1995	-	9.06	0.24	1.02	(0.03)	-	-	0.24	3.61
1995	7.04	52.76	(3.62)	4.29	(0.14)	0.03	7.01	3.35	23.64
6/1/1996	6.30	39.76	(3.31)	3.50	(0.19)	-	6.30	3.03	17.23
7/1/1996	0.39	14.17	(0.24)	0.12	(0.02)	-	0.39	0.16	5.47
8/1/1996	2.36	10.63	(1.10)	0.94	(0.02)	-	2.36	1.22	5.32
9/1/1996	1.34	11.02	(0.75)	0.83	(0.02)	-	1.34	0.59	4.79
10/1/1996	3.19	5.51	(1.30)	1.06	(0.02)	-	3.19	1.89	4.01
11/1/1996	0.39	7.87	(0.16)	0.51	(0.02)	-	0.39	0.28	3.85
1996	7.68	49.21	(3.54)	3.46	(0.12)	-	7.68	4.13	23.44

Table III-G.3 CT 11 Monsoon Period Water Balance

Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
6/1/1997	7.01	37.40	(3.43)	3.54	(0.15)	-	7.01	3.54	15.88
7/1/1997	-	12.99	-	0.04	(0.02)	-	-	-	5.13
8/1/1997	0.12	13.78	(0.04)	0.04	(0.02)	-	0.12	0.08	5.89
9/1/1997	2.72	9.45	(1.42)	1.06	(0.02)	-	2.72	1.34	4.66
10/1/1997	-	11.42	-	0.31	(0.02)	-	-	-	4.56
11/1/1997	0.75	6.30	(0.35)	0.16	(0.02)	-	0.75	0.35	3.74
1997	3.58	53.94	(1.81)	1.61	(0.10)	-	3.58	1.77	23.98
6/1/1998	14.13	23.23	(6.85)	6.38	(0.12)	-	14.13	7.28	13.06
7/1/1998	-	12.60	-	0.28	(0.02)	-	-	-	4.83
8/1/1998	1.69	11.42	(0.91)	0.87	(0.02)	-	1.69	0.87	5.67
9/1/1998	2.56	10.24	(1.10)	1.14	(0.02)	-	2.56	1.42	4.73
10/1/1998	1.38	9.84	(0.67)	0.79	(0.02)	-	1.38	0.71	4.82
11/1/1998	-	7.48	-	0.04	(0.02)	-	-	-	3.85
1998	5.63	51.57	(2.68)	3.11	(0.09)	-	5.63	2.99	23.90
6/1/1999	5.08	37.80	(2.72)	2.60	(0.12)	-	5.08	2.36	15.57
7/1/1999	-	13.39	-	0.04	(0.02)	-	-	-	5.00
8/1/1999	5.83	5.12	(3.03)	1.02	(0.02)	-	5.83	2.80	5.16
9/1/1999	2.95	9.06	(1.26)	1.89	(0.02)	-	2.95	1.73	4.31
10/1/1999	1.18	9.06	(0.08)	1.18	(0.02)	-	1.18	1.06	4.25
11/1/1999	-	9.45	-	0.20	(0.02)	-	-	-	3.82
1999	9.96	46.06	(4.37)	4.33	(0.09)	-	9.96	5.59	22.54
6/1/2000	3.90	44.49	(2.17)	2.09	(0.11)	-	3.90	1.73	17.87
7/1/2000	0.79	12.20	(0.39)	0.28	(0.01)	-	0.79	0.39	5.86
8/1/2000	0.08	14.17	(0.04)	0.08	(0.01)	-	0.08	0.04	5.52
9/1/2000	0.71	11.02	(0.28)	0.24	(0.01)	-	0.71	0.39	5.25
10/1/2000	-	12.20	-	0.04	(0.01)	-	-	-	4.50
11/1/2000	5.31	1.18	(3.86)	0.35	(0.01)	-	5.31	1.50	3.66
2000	6.89	50.79	(4.57)	0.98	(0.07)	-	6.89	2.32	24.78
6/1/2001	11.77	28.35	(4.17)	7.17	(0.08)	-	11.77	7.60	14.56
7/1/2001	-	14.17	-	0.12	(0.01)	-	-	-	5.59
8/1/2001	2.72	9.84	(2.09)	0.16	(0.01)	-	2.72	0.63	5.87
9/1/2001	3.54	8.27	(0.83)	2.13	(0.01)	-	3.54	2.72	4.15
10/1/2001	0.12	11.81	(0.04)	0.67	(0.01)	-	0.12	0.12	4.79
11/1/2001	0.39	7.87	(0.16)	0.16	(0.01)	-	0.39	0.20	3.65
2001	6.77	51.97	(3.11)	3.23	(0.06)	-	6.77	3.66	24.04
6/1/2002	2.99	41.73	(1.50)	1.42	(0.08)	-	2.99	1.50	17.09
7/1/2002	-	14.96	-	-	(0.01)	-	-	-	5.57
8/1/2002	0.35	13.39	(0.16)	0.08	(0.01)	-	0.35	0.20	6.27
9/1/2002	0.47	11.81	(0.24)	0.08	(0.01)	-	0.47	0.24	4.90
10/1/2002	1.26	9.45	(0.55)	0.63	(0.01)	-	1.26	0.75	4.56
11/1/2002	0.08	7.48	-	0.04	(0.01)	-	0.08	0.04	3.72
2002	2.17	57.09	(0.94)	0.83	(0.06)	-	2.17	1.22	25.02
6/1/2003	9.29	32.68	(4.96)	4.80	(0.08)	-	9.29	4.37	15.60
7/1/2003	-	13.39	-	-	(0.01)	-	-	-	6.03
8/1/2003	0.51	12.60	(0.08)	0.04	(0.01)	-	0.51	0.39	6.11
9/1/2003	1.34	10.63	(0.75)	0.43	(0.01)	-	1.34	0.59	4.94
10/1/2003	2.05	9.06	(0.83)	0.98	(0.01)	-	2.05	1.26	4.33
11/1/2003	0.08	8.66	-	0.08	(0.01)	-	0.08	0.04	3.92
2003	3.98	54.33	(1.65)	1.54	(0.06)	-	3.98	2.28	25.33
6/1/2004	7.95	32.68	(3.94)	3.78	(0.08)	-	7.95	4.02	16.89
7/1/2004	-	13.39	-	-	(0.01)	-	-	-	5.46
8/1/2004	0.55	11.81	(0.24)	0.16	(0.01)	-	0.55	0.35	5.62
9/1/2004	2.20	9.84	(0.83)	0.67	(0.01)	-	2.20	1.34	4.93
10/1/2004	1.61	8.27	(0.91)	0.55	(0.01)	-	1.61	0.71	4.87
11/1/2004	1.18	5.51	(0.67)	0.51	(0.01)	-	1.18	0.55	3.51
2004	5.55	48.82	(2.64)	1.89	(0.06)	-	5.55	2.95	24.39
6/1/2005	16.56	22.05	(8.62)	6.42	(0.08)	0.77	15.79	7.17	13.86
7/1/2005	0.04	12.99	(0.04)	0.39	(0.01)	-	0.04	0.04	5.14
8/1/2005	1.42	11.81	(0.79)	0.35	(0.01)	-	1.42	0.55	6.50
9/1/2005	4.92	5.91	(2.05)	1.89	(0.01)	-	4.92	2.91	3.98
10/1/2005	0.12	10.24	-	1.02	(0.01)	-	0.12	0.12	4.57
11/1/2005	0.39	7.09	(0.24)	0.24	(0.01)	-	0.39	0.20	3.81
2005	6.89	48.03	(3.11)	3.90	(0.06)	-	6.89	3.82	23.99
6/1/2006	3.94	39.76	(2.20)	2.44	(0.08)	-	3.94	1.73	16.77
7/1/2006	0.51	12.99	(0.24)	0.08	(0.01)	-	0.51	0.24	5.71
8/1/2006	3.19	7.87	(2.20)	0.31	(0.01)	0.00	3.19	0.98	5.46
9/1/2006	3.03	7.48	(0.47)	1.85	(0.01)	-	3.03	2.56	4.04
10/1/2006	1.18	7.48	(0.51)	1.18	(0.01)	-	1.18	0.67	3.80
11/1/2006	1.06	5.91	(0.39)	0.31	(0.01)	-	1.06	0.67	3.31
2006	8.98	41.73	(3.82)	3.74	(0.06)	0.00	8.98	5.12	22.33

Table III-G.4 CT 11 Winter Storm Period Water Balance

Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
10/1/1951	14.21	90.07	(5.19)	13.13	(0.29)	-	14.21	9.02	33.65
11/1/1951	1.64	8.59	(1.20)	0.47	(0.04)	-	1.64	0.44	3.15
12/1/1951	1.71	3.44	(0.33)	0.59	(0.04)	-	1.71	1.38	1.66
1/1/1952	3.02	0.52	(1.96)	0.44	(0.04)	-	3.02	1.06	1.05
2/1/1952	2.79	0.81	(0.56)	0.59	(0.04)	-	2.79	2.24	1.08
3/1/1952	0.50	4.29	0.13	0.96	(0.04)	-	0.50	0.63	1.31
1952	9.66	17.65	(3.92)	3.05	(0.20)	-	9.66	5.74	8.25
10/1/1952	10.82	83.85	(4.84)	8.26	(0.25)	-	10.82	5.98	30.56
11/1/1952	-	11.74	0.03	0.19	(0.03)	-	-	0.03	3.81
12/1/1952	4.31	0.74	(2.94)	0.23	(0.03)	-	4.31	1.37	1.47
1/1/1953	1.98	1.22	(0.34)	0.47	(0.03)	-	1.98	1.64	0.96
2/1/1953	0.74	3.65	0.06	0.74	(0.03)	-	0.74	0.80	1.27
3/1/1953	0.60	4.11	(0.27)	0.91	(0.03)	-	0.60	0.33	1.36
1953	7.63	21.45	(3.46)	2.53	(0.16)	-	7.63	4.17	8.87
10/1/1953	7.85	84.98	(4.26)	6.58	(0.20)	-	7.85	3.59	29.79
11/1/1953	0.01	10.29	0.01	0.04	(0.03)	-	0.01	0.02	3.39
12/1/1953	0.56	5.66	(0.31)	0.11	(0.03)	-	0.56	0.26	1.91
1/1/1954	0.19	3.36	(0.01)	0.17	(0.03)	-	0.19	0.18	1.06
2/1/1954	2.41	1.96	(1.31)	0.30	(0.03)	-	2.41	1.10	1.27
3/1/1954	0.72	5.39	(0.20)	0.86	(0.02)	-	0.72	0.52	1.83
1954	3.90	26.67	(1.81)	1.48	(0.13)	-	3.90	2.08	9.46
10/1/1954	17.67	72.64	(9.52)	10.49	(0.16)	0.24	17.43	7.92	29.17
11/1/1954	-	10.94	0.05	0.37	(0.02)	-	-	0.05	3.47
12/1/1954	0.09	6.69	(0.05)	0.02	(0.02)	-	0.09	0.04	2.01
1/1/1955	0.29	3.78	(0.07)	0.08	(0.02)	-	0.29	0.22	1.30
2/1/1955	3.41	(0.59)	(1.98)	0.28	(0.02)	-	3.41	1.43	0.83
3/1/1955	0.28	4.17	0.11	0.76	(0.02)	-	0.28	0.39	1.29
1955	4.07	25.00	(1.94)	1.51	(0.11)	-	4.07	2.13	8.90
10/1/1955	9.49	78.43	(4.63)	6.09	(0.14)	-	9.49	4.87	28.52
11/1/1955	0.02	11.26	0.01	0.03	(0.02)	-	0.02	0.04	3.54
12/1/1955	0.96	4.41	(0.53)	0.17	(0.02)	-	0.96	0.43	1.72
1/1/1956	1.37	2.76	(0.68)	0.41	(0.02)	-	1.37	0.69	1.30
2/1/1956	2.62	1.54	(1.92)	0.45	(0.02)	-	2.62	0.70	1.38
3/1/1956	2.00	1.73	(0.29)	0.62	(0.02)	-	2.00	1.71	1.07
1956	6.97	21.69	(3.41)	1.68	(0.09)	-	6.97	3.56	9.01
10/1/1956	5.70	88.23	(2.48)	4.66	(0.12)	-	5.70	3.22	30.99
11/1/1956	0.53	8.98	(0.25)	0.07	(0.02)	-	0.53	0.28	3.03
12/1/1956	-	5.24	0.09	0.18	(0.02)	-	-	0.09	1.61
1/1/1957	0.47	3.35	(0.21)	0.13	(0.02)	-	0.47	0.26	1.13
2/1/1957	4.79	(1.89)	(3.40)	0.31	(0.02)	-	4.79	1.39	0.96
3/1/1957	0.73	4.69	0.50	1.00	(0.01)	-	0.73	1.24	1.51
1957	6.52	20.35	(3.27)	1.69	(0.08)	-	6.52	3.25	8.24
10/1/1957	8.71	78.15	(3.72)	5.80	(0.11)	-	8.71	4.98	28.90
11/1/1957	3.23	4.69	(2.15)	0.35	(0.01)	-	3.23	1.08	2.60
12/1/1957	0.61	3.58	0.43	0.52	(0.01)	-	0.61	1.04	1.36
1/1/1958	1.06	2.80	(0.35)	0.46	(0.01)	-	1.06	0.71	1.23
2/1/1958	0.01	4.29	0.06	0.50	(0.01)	-	0.01	0.07	1.22
3/1/1958	2.52	1.93	(1.40)	0.59	(0.01)	-	2.52	1.12	1.34
1958	7.43	17.28	(3.41)	2.42	(0.07)	-	7.43	4.02	7.74
10/1/1958	12.02	78.31	(5.23)	5.63	(0.10)	-	12.02	6.80	30.00
11/1/1958	1.92	7.60	(0.90)	1.39	(0.01)	-	1.92	1.02	3.06
12/1/1958	1.53	4.02	(0.87)	0.63	(0.01)	-	1.53	0.66	1.61
1/1/1959	-	4.72	0.09	0.44	(0.01)	-	-	0.09	1.56
2/1/1959	0.21	4.33	(0.06)	0.33	(0.01)	-	0.21	0.16	1.30
3/1/1959	1.42	2.76	(0.72)	0.30	(0.01)	-	1.42	0.70	1.23
1959	5.08	23.43	(2.46)	3.10	(0.06)	-	5.08	2.62	8.76
10/1/1959	10.73	82.83	(4.78)	5.48	(0.09)	-	10.73	5.95	31.12
11/1/1959	4.79	4.80	(4.31)	0.29	(0.01)	0.05	4.74	0.43	3.20
12/1/1959	0.38	4.80	1.08	0.87	(0.01)	-	0.38	1.46	1.62
1/1/1960	5.23	(2.01)	(3.67)	0.48	(0.01)	-	5.23	1.56	1.00
2/1/1960	4.16	(1.26)	(1.93)	0.49	(0.01)	-	4.16	2.24	0.85
3/1/1960	0.87	3.07	0.33	0.78	(0.01)	-	0.87	1.20	1.18
1960	15.43	9.41	(8.48)	2.92	(0.06)	0.05	15.38	6.90	7.86

Table III-G.4 CT 11 Winter Storm Period Water Balance

Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
10/1/1960	3.66	92.32	(1.46)	6.02	(0.08)	-	3.66	2.20	31.77
11/1/1960	2.06	6.46	(0.97)	0.52	(0.01)	-	2.06	1.08	2.80
12/1/1960	0.48	4.72	(0.15)	0.50	(0.01)	-	0.48	0.33	1.70
1/1/1961	0.47	3.27	(0.19)	0.22	(0.01)	-	0.47	0.28	1.25
2/1/1961	0.70	3.19	(0.33)	0.15	(0.01)	-	0.70	0.37	1.27
3/1/1961	0.23	4.92	0.01	0.34	(0.01)	-	0.23	0.24	1.46
1961	3.94	22.56	(1.63)	1.73	(0.05)	-	3.94	2.30	8.48
10/1/1961	6.01	83.07	(2.72)	3.17	(0.08)	-	6.01	3.30	29.75
11/1/1961	0.45	8.90	(0.31)	0.05	(0.01)	-	0.45	0.14	3.23
12/1/1961	0.32	3.90	0.03	0.15	(0.01)	-	0.32	0.35	1.27
1/1/1962	3.88	(0.91)	(2.49)	0.27	(0.01)	-	3.88	1.39	0.99
2/1/1962	3.21	(0.08)	(1.96)	0.49	(0.01)	-	3.21	1.25	0.93
3/1/1962	1.67	2.44	(0.43)	0.80	(0.01)	-	1.67	1.24	1.29
1962	9.53	14.25	(5.17)	1.77	(0.05)	-	9.53	4.36	7.71
10/1/1962	4.72	86.46	(1.44)	4.84	(0.08)	-	4.72	3.25	30.75
11/1/1962	0.87	8.27	(0.30)	0.47	(0.01)	-	0.87	0.57	2.98
12/1/1962	0.83	5.35	(0.43)	0.29	(0.01)	-	0.83	0.40	2.04
1/1/1963	1.81	2.01	(0.94)	0.23	(0.01)	-	1.81	0.87	1.37
2/1/1963	2.09	1.42	(0.74)	0.41	(0.01)	-	2.09	1.35	1.00
3/1/1963	4.23	0.87	(2.80)	0.91	(0.01)	-	4.23	1.43	1.61
1963	9.83	17.91	(5.20)	2.31	(0.06)	-	9.83	4.62	9.00
10/1/1963	14.37	74.33	(6.43)	8.76	(0.08)	0.64	13.73	7.27	29.66
11/1/1963	0.67	9.41	(0.35)	1.24	(0.01)	-	0.67	0.32	3.50
12/1/1963	2.35	2.48	(1.15)	0.39	(0.01)	-	2.35	1.19	1.61
1/1/1964	0.34	3.50	0.04	0.37	(0.01)	-	0.34	0.37	1.28
2/1/1964	0.58	2.91	(0.27)	0.36	(0.01)	-	0.58	0.31	1.02
3/1/1964	-	4.41	0.06	0.38	(0.01)	-	-	0.06	1.28
1964	3.93	22.72	(1.68)	2.74	(0.05)	-	3.93	2.26	8.69
10/1/1964	7.67	75.39	(3.29)	3.18	(0.07)	-	7.67	4.37	27.97
11/1/1964	1.54	9.02	(0.88)	0.63	(0.01)	-	1.54	0.66	3.51
12/1/1964	1.38	3.31	(0.72)	0.44	(0.01)	-	1.38	0.66	1.60
1/1/1965	1.68	1.57	(0.93)	0.30	(0.01)	-	1.68	0.75	1.21
2/1/1965	2.89	0.59	(1.15)	0.46	(0.01)	-	2.89	1.74	1.00
3/1/1965	2.83	1.61	(1.51)	0.84	(0.01)	-	2.83	1.32	1.23
1965	10.32	16.10	(5.20)	2.68	(0.05)	-	10.32	5.13	8.54
10/1/1965	7.38	77.09	(2.99)	5.93	(0.07)	-	7.38	4.39	28.31
11/1/1965	0.46	9.92	(0.23)	0.20	(0.01)	-	0.46	0.23	3.38
12/1/1965	2.35	3.23	(1.62)	0.09	(0.01)	-	2.35	0.73	2.08
1/1/1966	10.43	(7.80)	(8.69)	0.33	(0.01)	-	10.43	1.75	0.93
2/1/1966	1.83	1.30	0.49	0.52	(0.01)	-	1.83	2.32	0.95
3/1/1966	2.02	1.65	(0.13)	0.74	(0.01)	-	2.02	1.89	1.04
1966	17.10	8.31	(10.18)	1.89	(0.05)	-	17.10	6.93	8.38
10/1/1966	5.87	83.82	(2.74)	7.71	(0.06)	-	5.87	3.14	30.55
11/1/1966	1.36	7.44	(0.58)	1.24	(0.01)	-	1.36	0.78	2.86
12/1/1966	0.88	4.80	(0.48)	0.43	(0.01)	-	0.88	0.40	2.01
1/1/1967	1.25	2.13	(0.61)	0.24	(0.01)	-	1.25	0.64	1.22
2/1/1967	0.79	2.87	(0.31)	0.34	(0.01)	-	0.79	0.48	0.96
3/1/1967	-	4.69	0.09	0.49	(0.01)	-	-	0.09	1.54
1967	4.28	21.93	(1.89)	2.74	(0.05)	-	4.28	2.40	8.58
10/1/1967	10.14	73.62	(4.84)	5.47	(0.08)	-	10.14	5.29	28.34
11/1/1967	0.42	9.29	(0.19)	0.28	(0.01)	-	0.42	0.23	3.39
12/1/1967	2.11	3.46	(1.52)	0.06	(0.01)	-	2.11	0.58	2.04
1/1/1968	10.00	(7.32)	(8.21)	0.32	(0.01)	-	10.00	1.80	0.80
2/1/1968	0.63	3.23	0.86	0.65	(0.01)	-	0.63	1.48	1.18
3/1/1968	1.94	3.07	(0.48)	1.02	(0.01)	-	1.94	1.46	1.44
1968	15.11	11.73	(9.56)	2.31	(0.06)	-	15.11	5.55	8.85
10/1/1968	7.23	75.28	(3.03)	7.93	(0.10)	-	7.23	4.20	28.53
11/1/1968	0.39	8.82	(0.17)	0.26	(0.02)	-	0.39	0.22	2.90
12/1/1968	2.54	2.28	(1.36)	0.38	(0.02)	-	2.54	1.17	1.81
1/1/1969	3.27	(0.31)	(2.33)	0.35	(0.02)	-	3.27	0.94	1.04
2/1/1969	4.16	(0.98)	(2.09)	0.51	(0.02)	-	4.16	2.07	0.96
3/1/1969	1.36	2.32	0.23	0.74	(0.02)	-	1.36	1.59	1.04
1969	11.72	12.13	(5.72)	2.24	(0.08)	-	11.72	6.00	7.75

Table III-G.4 CT 11 Winter Storm Period Water Balance

Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
10/1/1969	7.03	81.85	(3.19)	7.24	(0.14)	-	7.03	3.85	30.43
11/1/1969	0.83	7.76	(0.45)	0.27	(0.02)	-	0.83	0.37	3.11
12/1/1969	2.12	2.52	(0.94)	0.39	(0.02)	-	2.12	1.18	1.64
1/1/1970	1.32	2.20	(0.54)	0.37	(0.02)	-	1.32	0.78	1.32
2/1/1970	0.50	2.91	0.02	0.41	(0.02)	-	0.50	0.52	0.94
3/1/1970	0.41	4.57	(0.06)	0.61	(0.02)	-	0.41	0.35	1.48
1970	5.17	19.96	(1.97)	2.05	(0.10)	-	5.17	3.20	8.49
10/1/1970	10.90	74.69	(5.86)	5.83	(0.13)	0.00	10.90	5.04	30.04
11/1/1970	-	8.43	0.01	0.61	(0.02)	-	-	0.01	2.87
12/1/1970	0.65	4.72	(0.51)	0.02	(0.02)	-	0.65	0.14	1.96
1/1/1971	1.21	1.85	(0.39)	0.16	(0.02)	-	1.21	0.82	1.09
2/1/1971	0.85	3.19	(0.26)	0.43	(0.02)	-	0.85	0.59	1.08
3/1/1971	0.81	3.74	(0.38)	0.55	(0.02)	-	0.81	0.44	1.55
1971	3.52	21.93	(1.53)	1.77	(0.08)	-	3.52	2.00	8.55
10/1/1971	8.95	76.69	(5.36)	3.55	(0.12)	0.12	8.83	3.47	29.41
11/1/1971	4.21	3.11	(1.36)	1.41	(0.02)	0.10	4.10	2.74	2.80
12/1/1971	0.04	4.84	0.18	0.85	(0.01)	-	0.04	0.22	1.64
1/1/1972	2.12	0.75	(0.93)	0.43	(0.01)	-	2.12	1.19	0.99
2/1/1972	-	4.06	0.21	0.66	(0.01)	-	-	0.21	1.25
3/1/1972	-	5.63	0.02	0.91	(0.01)	-	-	0.02	1.56
1972	6.36	18.39	(1.88)	4.26	(0.08)	0.10	6.26	4.38	8.23
10/1/1972	4.92	87.52	(2.39)	2.70	(0.10)	-	4.92	2.53	32.29
11/1/1972	8.68	(1.50)	(5.14)	0.93	(0.01)	0.15	8.53	3.40	2.78
12/1/1972	2.83	0.75	(0.85)	0.65	(0.01)	-	2.83	1.98	1.35
1/1/1973	2.98	(0.16)	(1.57)	0.44	(0.01)	-	2.98	1.41	0.98
2/1/1973	0.74	2.17	0.72	0.48	(0.01)	-	0.74	1.45	0.87
3/1/1973	3.17	0.31	(1.36)	0.71	(0.01)	-	3.17	1.81	0.94
1973	18.39	1.57	(8.20)	3.21	(0.07)	0.15	18.24	10.05	6.92
10/1/1973	12.29	72.09	(5.11)	9.44	(0.10)	-	12.29	7.13	29.00
11/1/1973	-	8.66	-	0.06	(0.01)	-	-	-	3.27
12/1/1973	1.77	3.35	(1.00)	0.12	(0.01)	-	1.77	0.76	1.88
1/1/1974	0.08	3.54	0.16	0.31	(0.01)	-	0.08	0.25	1.16
2/1/1974	3.43	(0.28)	(1.81)	0.42	(0.01)	-	3.43	1.59	1.02
3/1/1974	0.12	3.90	0.11	0.75	(0.01)	-	0.12	0.25	1.10
1974	5.39	19.17	(2.54)	1.65	(0.07)	-	5.39	2.85	8.42
10/1/1974	10.20	71.97	(4.90)	5.69	(0.09)	-	10.20	5.26	28.42
11/1/1974	3.43	4.84	(2.50)	0.79	(0.01)	-	3.43	0.89	3.10
12/1/1974	0.12	5.04	0.76	0.68	(0.01)	-	0.12	0.87	1.70
1/1/1975	0.75	2.24	(0.26)	0.37	(0.01)	-	0.75	0.49	1.18
2/1/1975	0.39	2.40	(0.13)	0.35	(0.01)	-	0.39	0.26	0.88
3/1/1975	3.94	0.20	(2.51)	0.67	(0.01)	-	3.94	1.43	1.04
1975	8.62	14.72	(4.63)	2.86	(0.06)	-	8.62	3.94	7.90
10/1/1975	10.47	68.94	(4.28)	6.79	(0.08)	-	10.47	6.19	27.54
11/1/1975	0.28	8.39	(0.09)	0.06	(0.01)	-	0.28	0.18	3.43
12/1/1975	2.17	2.95	(1.92)	0.02	(0.01)	-	2.17	0.23	2.12
1/1/1976	1.22	2.09	0.07	0.36	(0.01)	-	1.22	1.33	1.14
2/1/1976	0.24	2.83	0.10	0.41	(0.01)	-	0.24	0.33	0.98
3/1/1976	1.61	2.64	(0.62)	0.71	(0.01)	-	1.61	0.99	1.13
1976	5.51	18.90	(2.44)	1.57	(0.06)	-	5.51	3.06	8.80
10/1/1976	10.71	71.50	(5.78)	5.15	(0.08)	0.00	10.71	4.94	29.04
11/1/1976	0.91	6.38	(0.29)	1.14	(0.01)	-	0.91	0.61	2.68
12/1/1976	0.55	4.57	(0.23)	0.55	(0.01)	-	0.55	0.32	1.80
1/1/1977	1.85	1.38	(1.54)	0.18	(0.01)	-	1.85	0.28	1.15
2/1/1977	1.89	0.67	(0.36)	0.32	(0.01)	-	1.89	1.54	0.77
3/1/1977	0.08	5.16	0.11	0.88	(0.01)	-	0.08	0.18	1.64
1977	5.28	18.15	(2.31)	3.07	(0.05)	-	5.28	2.94	8.04
10/1/1977	11.18	72.60	(5.60)	5.56	(0.08)	-	11.18	5.57	29.75
11/1/1977	1.30	7.76	(0.59)	0.95	(0.01)	-	1.30	0.73	3.39
12/1/1977	0.35	5.08	(0.03)	0.33	(0.01)	-	0.35	0.32	1.96
1/1/1978	0.67	3.03	(0.41)	0.09	(0.01)	-	0.67	0.24	1.41
2/1/1978	6.38	(3.74)	(4.82)	0.28	(0.01)	-	6.38	1.58	0.82
3/1/1978	5.47	(2.24)	(2.94)	0.64	(0.01)	-	5.47	2.52	0.95
1978	14.17	9.88	(8.79)	2.30	(0.05)	-	14.17	5.40	8.53

Table III-G.4 CT 11 Winter Storm Period Water Balance

Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
10/1/1978	9.76	74.09	(3.77)	8.87	(0.07)	-	9.76	6.00	29.77
11/1/1978	1.93	7.52	(1.10)	0.28	(0.01)	-	1.93	0.83	4.04
12/1/1978	5.59	(1.54)	(3.91)	0.56	(0.01)	-	5.59	1.71	1.63
1/1/1979	6.57	(3.70)	(4.36)	0.44	(0.01)	-	6.57	2.20	0.93
2/1/1979	6.02	(4.13)	(4.12)	0.31	(0.01)	-	6.02	1.91	0.71
3/1/1979	1.26	3.27	0.83	0.91	(0.01)	-	1.26	2.07	1.27
1979	21.38	1.42	(12.66)	2.50	(0.05)	-	21.38	8.71	8.59
10/1/1979	8.23	75.75	(2.83)	9.11	(0.09)	-	8.23	5.40	29.94
11/1/1979	0.67	9.06	(0.38)	0.32	(0.02)	-	0.67	0.30	3.81
12/1/1979	0.67	3.82	(0.22)	0.33	(0.02)	-	0.67	0.45	1.80
1/1/1980	0.71	3.15	(0.36)	0.20	(0.02)	-	0.71	0.34	1.40
2/1/1980	4.09	(1.46)	(2.63)	0.27	(0.03)	-	4.09	1.48	0.94
3/1/1980	6.02	(2.01)	(4.06)	0.79	(0.02)	-	6.02	1.98	1.00
1980	12.17	12.56	(7.65)	1.91	(0.11)	-	12.17	4.54	8.95
10/1/1980	8.15	73.54	(2.56)	8.37	(0.18)	-	8.15	5.57	29.27
11/1/1980	0.04	9.09	(0.01)	0.10	(0.03)	-	0.04	0.03	3.67
12/1/1980	-	5.39	-	0.05	(0.03)	-	-	-	2.08
1/1/1981	0.55	3.82	(0.23)	0.17	(0.03)	-	0.55	0.32	1.38
2/1/1981	1.34	2.40	(0.76)	0.28	(0.03)	-	1.34	0.56	1.43
3/1/1981	2.56	2.17	(1.54)	0.72	(0.03)	-	2.56	1.04	1.43
1981	4.49	22.87	(2.55)	1.32	(0.14)	-	4.49	1.96	10.00
10/1/1981	10.75	74.21	(5.53)	7.34	(0.18)	-	10.75	5.20	30.81
11/1/1981	0.94	6.77	(0.39)	0.58	(0.03)	-	0.94	0.57	3.07
12/1/1981	2.32	3.46	(2.20)	0.04	(0.02)	-	2.32	0.13	2.27
1/1/1982	-	3.90	0.70	0.47	(0.03)	-	-	0.70	1.37
2/1/1982	2.76	0.35	(1.08)	0.43	(0.02)	-	2.76	1.65	0.96
3/1/1982	1.81	2.28	(0.52)	0.72	(0.02)	-	1.81	1.29	1.14
1982	7.83	16.77	(3.50)	2.24	(0.12)	-	7.83	4.33	8.81
10/1/1982	15.71	60.98	(7.61)	8.56	(0.16)	0.04	15.67	8.10	27.78
11/1/1982	-	8.43	0.02	0.78	(0.02)	-	-	0.02	3.10
12/1/1982	3.31	0.55	(2.12)	0.19	(0.02)	-	3.31	1.19	1.75
1/1/1983	1.73	1.06	(0.09)	0.31	(0.02)	-	1.73	1.61	1.04
2/1/1983	1.89	1.69	(1.44)	0.51	(0.02)	-	1.89	0.45	1.14
3/1/1983	2.32	1.65	(0.90)	0.78	(0.02)	-	2.32	1.43	1.04
1983	9.25	13.39	(4.54)	2.57	(0.10)	-	9.25	4.70	8.07
10/1/1983	18.22	59.17	(9.69)	8.84	(0.12)	0.07	18.15	8.46	27.94
11/1/1983	1.14	6.42	0.57	1.50	(0.02)	-	1.14	1.70	2.89
12/1/1983	2.01	2.68	(1.27)	0.83	(0.02)	-	2.01	0.77	1.87
1/1/1984	2.52	0.31	(1.12)	0.43	(0.02)	-	2.52	1.37	1.00
2/1/1984	0.47	3.11	0.26	0.59	(0.02)	-	0.47	0.74	0.98
3/1/1984	-	4.76	0.04	0.90	(0.02)	-	-	0.03	1.53
1984	6.14	17.28	(1.53)	4.25	(0.09)	-	6.14	4.61	8.27
10/1/1984	11.65	67.24	(4.94)	5.37	(0.12)	-	11.65	6.72	29.05
11/1/1984	1.38	5.51	(0.39)	0.77	(0.02)	-	1.38	0.96	2.68
12/1/1984	2.05	2.17	(1.58)	0.26	(0.02)	-	2.05	0.50	1.84
1/1/1985	5.79	(3.27)	(4.02)	0.30	(0.02)	-	5.79	1.77	0.90
2/1/1985	2.68	(0.31)	(0.73)	0.39	(0.02)	-	2.68	1.95	0.80
3/1/1985	1.69	1.54	0.06	0.64	(0.02)	-	1.69	1.72	0.94
1985	13.58	5.63	(6.67)	2.37	(0.08)	-	13.58	6.90	7.17
10/1/1985	9.17	63.35	(4.04)	6.99	(0.12)	-	9.17	5.13	26.87
11/1/1985	1.22	5.51	(0.23)	0.98	(0.02)	-	1.22	1.02	2.40
12/1/1985	2.76	0.98	(2.09)	0.43	(0.01)	-	2.76	0.67	1.90
1/1/1986	0.91	2.60	0.37	0.44	(0.01)	-	0.91	1.24	1.10
2/1/1986	0.08	4.25	(0.02)	0.63	(0.01)	-	0.08	0.08	1.51
3/1/1986	3.07	0.87	(1.43)	0.71	(0.01)	-	3.07	1.65	1.18
1986	8.03	14.21	(3.40)	3.18	(0.07)	-	8.03	4.65	8.09
10/1/1986	13.27	64.80	(6.38)	7.49	(0.09)	-	13.27	6.89	29.52
11/1/1986	1.77	5.47	(0.87)	0.87	(0.02)	-	1.77	0.88	2.44
12/1/1986	1.42	2.52	(0.49)	0.46	(0.01)	-	1.42	0.93	1.76
1/1/1987	2.99	(0.08)	(1.63)	0.35	(0.01)	-	2.99	1.38	1.13
2/1/1987	3.39	(0.12)	(1.69)	0.50	(0.01)	-	3.39	1.67	0.98
3/1/1987	2.68	0.83	(1.56)	0.69	(0.01)	-	2.68	1.11	1.41
1987	12.24	8.62	(6.24)	2.86	(0.07)	-	12.24	5.98	7.71
10/1/1987	7.91	68.62	(3.06)	6.92	(0.08)	-	7.91	4.85	28.29
11/1/1987	0.31	8.54	(0.13)	0.30	(0.01)	-	0.31	0.21	3.69
12/1/1987	1.77	2.44	(0.85)	0.35	(0.01)	-	1.77	0.91	1.83
1/1/1988	4.02	(1.22)	(2.73)	0.27	(0.01)	-	4.02	1.29	1.17
2/1/1988	3.58	(1.26)	(1.71)	0.37	(0.01)	-	3.58	1.87	0.76
3/1/1988	0.75	4.09	0.19	0.98	(0.01)	-	0.75	0.92	1.24
1988	10.43	12.60	(5.23)	2.28	(0.06)	-	10.43	5.20	8.69

Table III-G.4 CT 11 Winter Storm Period Water Balance

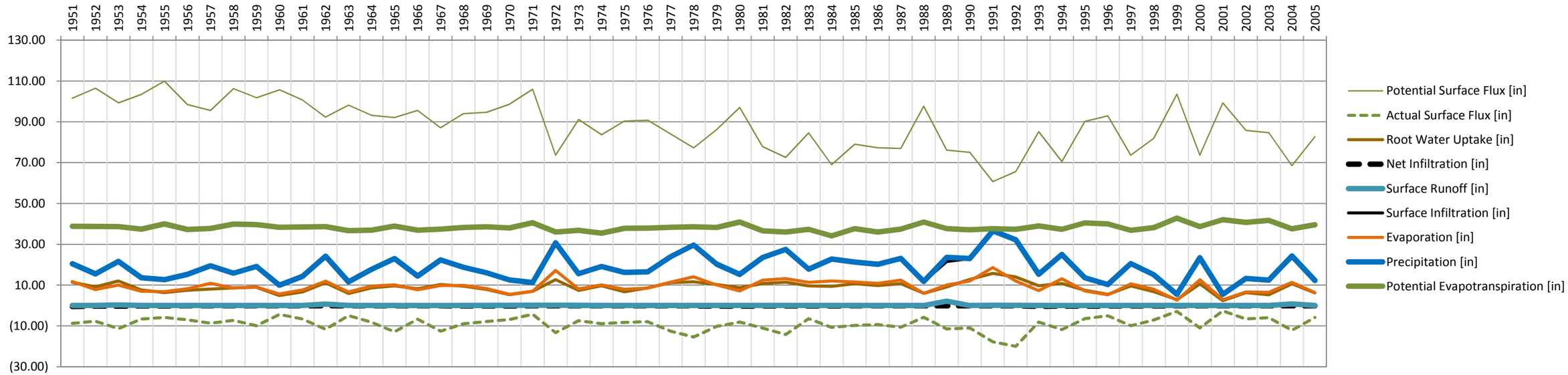
Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
10/1/1988	12.64	64.37	(5.44)	8.39	(0.08)	-	12.64	7.22	28.69
11/1/1988	1.50	7.28	(0.78)	0.49	(0.01)	-	1.50	0.71	3.45
12/1/1988	1.73	2.95	(1.20)	0.37	(0.01)	-	1.73	0.52	2.12
1/1/1989	1.10	1.81	(0.19)	0.30	(0.01)	-	1.10	0.94	1.10
2/1/1989	2.20	0.79	(0.98)	0.41	(0.01)	-	2.20	1.22	0.89
3/1/1989	0.31	4.37	0.05	0.85	(0.01)	-	0.31	0.35	1.16
1989	6.85	17.20	(3.09)	2.42	(0.05)	-	6.85	3.74	8.72
10/1/1989	4.88	80.43	(2.67)	3.54	(0.08)	-	4.88	2.22	32.08
11/1/1989	1.06	6.77	(0.46)	0.40	(0.01)	-	1.06	0.60	3.57
12/1/1989	0.31	4.92	(0.15)	0.08	(0.01)	-	0.31	0.15	2.06
1/1/1990	0.87	2.36	(0.65)	0.07	(0.01)	-	0.87	0.22	1.21
2/1/1990	1.26	1.65	(0.33)	0.28	(0.01)	-	1.26	0.95	1.04
3/1/1990	2.56	0.94	(1.02)	0.52	(0.01)	-	2.56	1.51	0.96
1990	6.06	16.65	(2.62)	1.36	(0.05)	-	6.06	3.43	8.85
10/1/1990	17.54	59.45	(8.87)	7.72	(0.08)	2.11	15.43	6.60	28.78
11/1/1990	0.28	7.87	(0.04)	1.69	(0.01)	-	0.28	0.22	3.23
12/1/1990	2.17	2.32	(1.03)	0.59	(0.01)	-	2.17	1.15	2.20
1/1/1991	4.84	(2.28)	(3.73)	0.29	(0.01)	-	4.84	1.11	1.16
2/1/1991	1.77	1.06	(0.04)	0.48	(0.01)	-	1.77	1.74	0.89
3/1/1991	0.94	3.82	(0.24)	0.95	(0.01)	-	0.94	0.70	1.35
1991	10.00	12.80	(5.08)	4.00	(0.05)	-	10.00	4.92	8.82
10/1/1991	12.99	62.24	(5.94)	8.82	(0.08)	-	12.99	7.05	28.26
11/1/1991	1.22	7.99	(0.90)	0.09	(0.01)	-	1.22	0.31	3.99
12/1/1991	3.23	0.75	(2.03)	0.41	(0.01)	-	3.23	1.18	1.66
1/1/1992	3.98	(1.57)	(1.86)	0.34	(0.01)	-	3.98	2.13	1.07
2/1/1992	3.03	(0.20)	(1.03)	0.47	(0.01)	-	3.03	2.01	0.75
3/1/1992	2.76	1.06	(1.13)	0.78	(0.01)	-	2.76	1.61	1.13
1992	14.21	8.03	(6.95)	2.09	(0.05)	-	14.21	7.24	8.60
10/1/1992	22.34	52.68	(10.82)	13.63	(0.08)	0.09	22.24	11.34	29.06
11/1/1992	1.26	7.28	(0.74)	0.48	(0.01)	-	1.26	0.47	3.90
12/1/1992	0.47	3.19	(0.01)	0.34	(0.01)	-	0.47	0.47	1.68
1/1/1993	6.34	(4.02)	(4.74)	0.30	(0.01)	-	6.34	1.57	0.78
2/1/1993	11.30	(8.90)	(8.94)	0.41	(0.01)	-	11.30	2.32	0.67
3/1/1993	6.02	(3.39)	(3.90)	0.52	(0.01)	-	6.02	2.17	1.04
1993	25.39	(5.83)	(18.32)	2.05	(0.05)	-	25.39	7.01	8.07
10/1/1993	6.81	71.46	(1.69)	11.91	(0.11)	-	6.81	5.04	29.14
11/1/1993	0.79	7.13	(0.35)	0.55	(0.03)	-	0.79	0.47	3.67
12/1/1993	4.17	(0.43)	(2.99)	0.39	(0.03)	-	4.17	1.18	1.76
1/1/1994	0.31	2.72	0.20	0.47	(0.03)	-	0.31	0.47	1.29
2/1/1994	0.28	3.39	(0.08)	0.59	(0.03)	-	0.28	0.20	1.22
3/1/1994	2.60	0.75	(1.38)	0.71	(0.03)	-	2.60	1.26	1.10
1994	8.15	13.54	(4.61)	2.72	(0.16)	-	8.15	3.58	9.05
10/1/1994	7.20	71.61	(3.46)	7.01	(0.23)	-	7.20	3.74	29.94
11/1/1994	1.85	5.12	(1.10)	0.51	(0.03)	-	1.85	0.75	3.25
12/1/1994	3.39	0.39	(1.61)	0.47	(0.03)	-	3.39	1.73	1.76
1/1/1995	2.68	-	(1.30)	0.39	(0.03)	-	2.68	1.38	1.10
2/1/1995	3.62	(1.18)	(1.57)	0.43	(0.03)	-	3.62	2.09	0.86
3/1/1995	2.72	1.57	(1.26)	0.87	(0.03)	-	2.72	1.46	1.22
1995	14.25	5.91	(6.85)	2.68	(0.16)	-	14.25	7.40	8.20
10/1/1995	10.74	64.57	(5.00)	8.11	(0.20)	0.03	10.71	5.67	29.13
11/1/1995	-	9.06	0.24	1.02	(0.03)	-	-	0.24	3.61
12/1/1995	1.30	3.54	(0.67)	0.35	(0.03)	-	1.30	0.63	2.00
1/1/1996	0.91	2.36	(0.51)	0.28	(0.03)	-	0.91	0.39	1.52
2/1/1996	-	3.54	0.04	0.31	(0.03)	-	-	0.04	1.28
3/1/1996	3.15	1.18	(1.97)	0.67	(0.03)	-	3.15	1.18	1.45
1996	5.35	19.69	(2.87)	2.64	(0.14)	-	5.35	2.48	9.86
10/1/1996	8.23	70.47	(3.58)	4.84	(0.17)	-	8.23	4.65	30.57
11/1/1996	0.39	7.87	(0.16)	0.51	(0.02)	-	0.39	0.28	3.85
12/1/1996	1.26	3.15	(0.87)	0.12	(0.02)	-	1.26	0.35	1.67
1/1/1997	-	3.15	0.31	0.24	(0.02)	-	-	0.31	1.24
2/1/1997	2.83	-	(1.61)	0.31	(0.02)	-	2.83	1.26	1.02
3/1/1997	1.69	2.36	(1.26)	0.67	(0.02)	-	1.69	0.39	1.27
1997	6.18	16.54	(3.58)	1.85	(0.11)	-	6.18	2.60	9.04
10/1/1997	4.06	76.38	(1.46)	3.66	(0.15)	-	4.06	2.64	30.90
11/1/1997	0.75	6.30	(0.35)	0.16	(0.02)	-	0.75	0.35	3.74
12/1/1997	0.79	3.94	(0.39)	0.24	(0.02)	-	0.79	0.43	1.79
1/1/1998	2.72	(0.39)	(1.42)	0.24	(0.02)	-	2.72	1.30	1.21
2/1/1998	0.39	3.15	0.16	0.39	(0.02)	-	0.39	0.51	0.93
3/1/1998	6.38	(3.94)	(4.25)	0.47	(0.02)	-	6.38	2.17	1.05
1998	11.02	9.06	(6.26)	1.50	(0.09)	-	11.02	4.76	8.73

Table III-G.4 CT 11 Winter Storm Period Water Balance

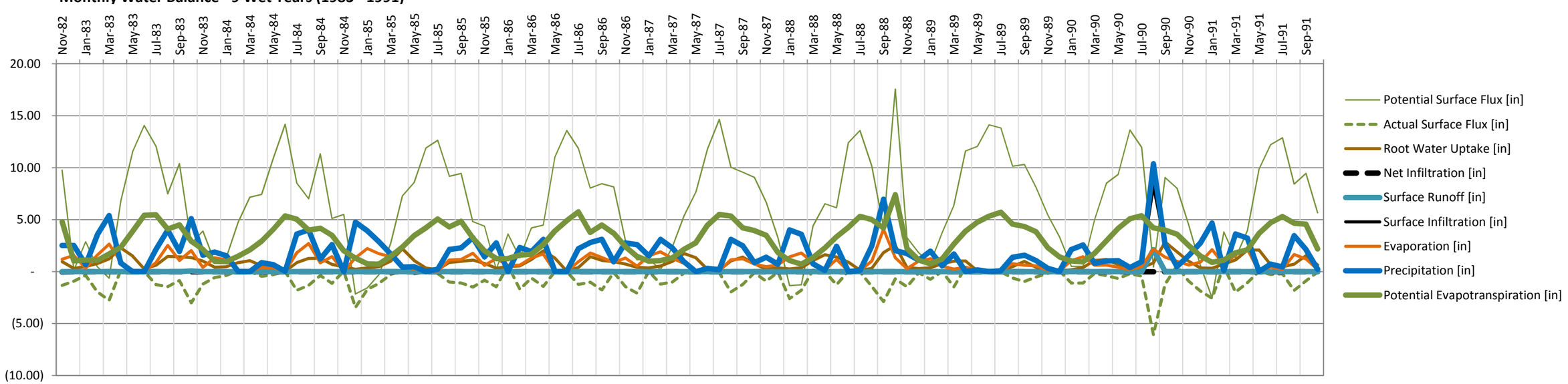
Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
10/1/1998	9.49	64.57	(3.62)	8.11	(0.12)	-	9.49	5.87	28.12
11/1/1998	-	7.48	-	0.04	(0.02)	-	-	-	3.85
12/1/1998	1.06	3.54	(0.91)	-	(0.02)	-	1.06	0.20	1.81
1/1/1999	0.75	1.97	0.08	0.24	(0.02)	-	0.75	0.79	1.30
2/1/1999	0.04	3.94	-	0.35	(0.02)	-	0.04	0.04	1.38
3/1/1999	0.24	4.33	(0.12)	0.20	(0.02)	-	0.24	0.12	1.38
1999	2.09	21.26	(0.94)	0.83	(0.08)	-	2.09	1.14	9.71
10/1/1999	12.95	60.63	(6.14)	5.94	(0.12)	-	12.95	6.81	28.42
11/1/1999	-	9.45	-	0.20	(0.02)	-	-	-	3.82
12/1/1999	-	5.91	-	-	(0.02)	-	-	-	2.67
1/1/2000	0.04	3.54	(0.04)	-	(0.02)	-	0.04	-	1.49
2/1/2000	0.28	3.54	(0.12)	0.08	(0.02)	-	0.28	0.16	1.32
3/1/2000	0.71	3.94	(0.31)	0.08	(0.02)	-	0.71	0.39	1.69
2000	1.02	26.38	(0.47)	0.35	(0.09)	-	1.02	0.55	11.00
9/30/2000	4.45	76.77	(2.40)	2.56	(0.10)	-	4.45	2.01	31.65
11/1/2000	5.31	1.57	(3.86)	0.35	(0.01)	-	5.31	1.50	3.82
12/1/2000	2.09	0.79	(0.35)	0.47	(0.01)	-	2.09	1.73	1.12
1/1/2001	0.12	3.15	0.16	0.55	(0.01)	-	0.12	0.28	1.48
2/1/2001	3.39	(0.79)	(2.09)	0.39	(0.01)	-	3.39	1.30	1.09
3/1/2001	1.73	1.57	(0.12)	0.71	(0.01)	-	1.73	1.61	1.01
2001	12.64	6.30	(6.26)	2.48	(0.06)	-	12.64	6.42	8.52
9/30/2001	10.83	67.32	(4.72)	8.11	(0.08)	-	10.83	6.14	30.06
11/1/2001	0.39	8.27	(0.16)	0.16	(0.01)	-	0.39	0.20	3.82
12/1/2001	0.28	4.33	(0.12)	0.08	(0.01)	-	0.28	0.16	2.65
1/1/2002	1.85	0.79	(1.02)	0.16	(0.01)	-	1.85	0.87	1.07
2/1/2002	0.20	3.15	(0.08)	0.39	(0.01)	-	0.20	0.12	1.22
3/1/2002	-	4.72	0.04	0.39	(0.01)	-	-	0.04	1.25
2002	2.72	21.26	(1.34)	1.18	(0.06)	-	2.72	1.38	10.00
9/30/2002	2.76	77.95	(1.26)	1.18	(0.08)	-	2.76	1.50	32.03
11/1/2002	0.08	7.87	-	0.04	(0.01)	-	0.08	0.04	3.90
12/1/2002	0.87	3.94	(0.71)	0.04	(0.01)	-	0.87	0.16	2.19
1/1/2003	0.98	1.57	(0.20)	0.16	(0.01)	-	0.98	0.83	1.34
2/1/2003	0.39	3.94	-	0.31	(0.01)	-	0.39	0.31	1.19
3/1/2003	4.92	(1.18)	(4.02)	0.43	(0.01)	-	4.92	0.98	1.50
2003	7.24	16.14	(4.92)	0.98	(0.05)	-	7.24	2.32	10.12
9/30/2003	6.02	69.69	(1.69)	5.28	(0.08)	-	6.02	4.29	30.64
11/1/2003	0.08	9.06	-	0.12	(0.01)	-	0.08	0.08	4.07
12/1/2003	0.87	2.76	(0.47)	0.16	(0.01)	-	0.87	0.39	2.31
1/1/2004	0.98	1.97	(0.47)	0.20	(0.01)	-	0.98	0.55	1.52
2/1/2004	1.42	1.18	(0.63)	0.20	(0.01)	-	1.42	0.75	1.21
3/1/2004	0.71	2.76	(0.16)	0.39	(0.01)	-	0.71	0.55	1.06
2004	4.06	17.72	(1.73)	1.06	(0.05)	-	4.06	2.32	10.16
9/30/2004	8.35	67.32	(4.17)	4.21	(0.08)	-	8.35	4.17	31.52
11/1/2004	1.18	5.51	(0.67)	0.51	(0.01)	-	1.18	0.55	3.66
12/1/2004	0.67	2.36	(0.20)	0.24	(0.01)	-	0.67	0.47	1.48
1/1/2005	2.76	-	(1.93)	0.20	(0.01)	0.00	2.76	0.83	1.02
2/1/2005	4.21	(1.57)	(2.44)	0.43	(0.01)	-	4.21	1.77	1.02
3/1/2005	7.34	(5.12)	(4.41)	0.47	(0.01)	0.77	6.57	2.17	0.94
2005	16.16	1.18	(9.65)	1.85	(0.05)	0.77	15.39	5.79	8.12
9/30/2005	8.07	66.93	(2.52)	8.74	(0.08)	-	8.07	5.55	29.40
11/1/2005	0.39	7.48	(0.24)	0.24	(0.01)	-	0.39	0.20	3.96
12/1/2005	-	5.12	-	0.04	(0.01)	-	-	-	2.27
1/1/2006	-	3.54	-	0.04	(0.01)	-	-	-	1.53
2/1/2006	-	3.54	-	-	(0.01)	-	-	-	1.56
3/1/2006	0.12	4.72	(0.04)	0.08	(0.01)	-	0.12	0.04	1.67
2006	0.51	24.41	(0.28)	0.39	(0.05)	-	0.51	0.24	10.98
9/30/2006	11.73	58.27	(5.59)	5.67	(0.08)	0.00	11.73	6.14	28.65

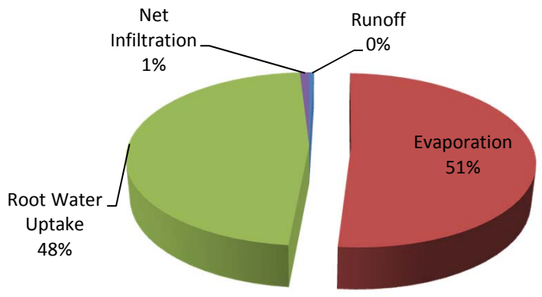
07-CT11 - 1m Cleaner_2m Beach w Veg.xlsx

Annual Water Balance - 56-Year Simulated Period (Results on October 1)



Monthly Water Balance - 9 Wet Years (1983 - 1991)





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CLIENT: Resolution Copper Mining

Klohn Crippen Berger

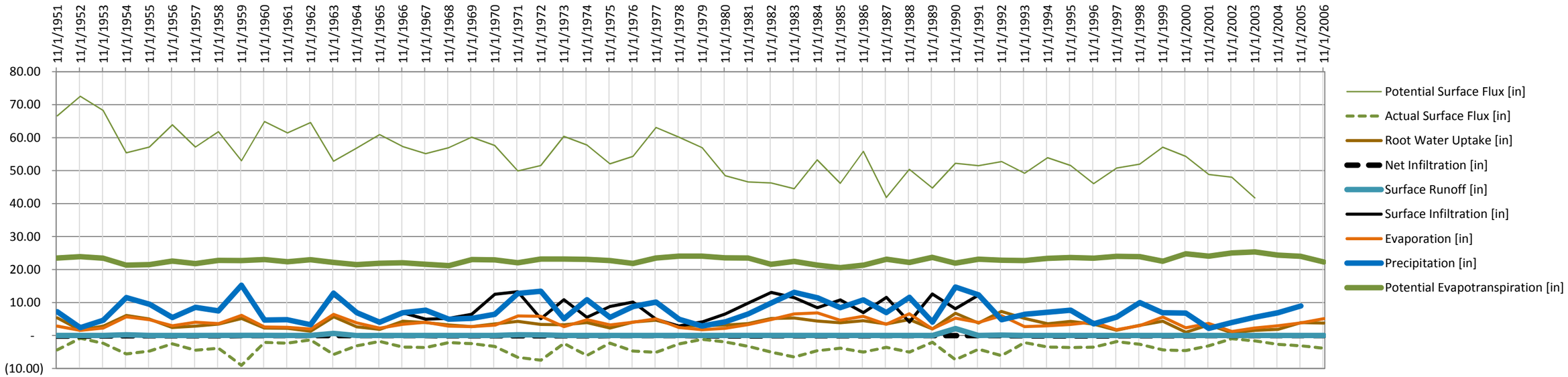
PROJECT: RESOLUTION PROJECT
NEAR WEST TAILINGS STORAGE FACILITY CLOSURE
COVER STUDY - CLOSURE COVER PREDICTIONS

TITLE: CT11 - 3.3ft Cleaner / 6.6ft Beach/Veg
Water Balance Results

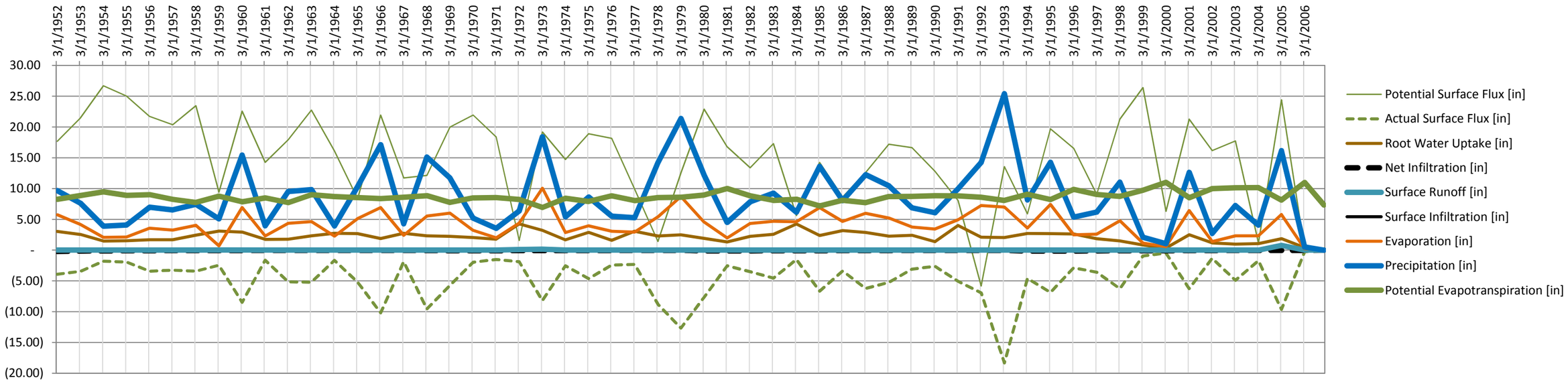
PROJECT No. M09441A16

FIG. No. III-G.1

Monsoon Season Water Balance - 56-Year Simulated Period (July-November)



Winter Storm Season Water Balance - 56-Year Simulated Period (November-March)



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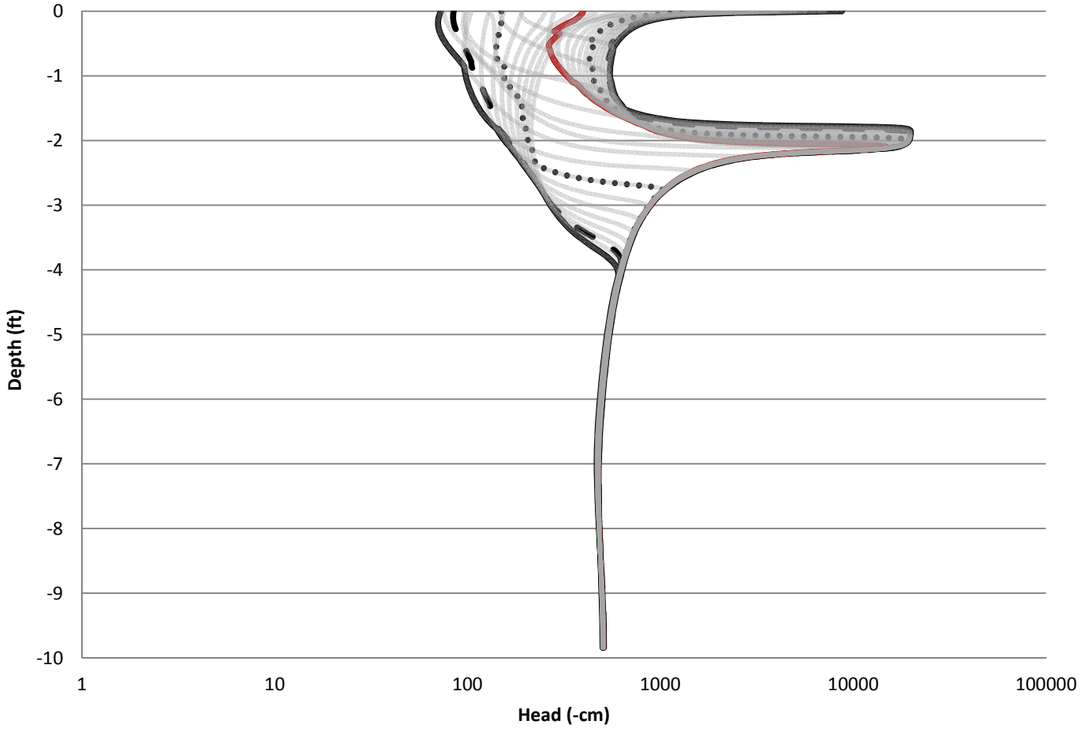
PROJECT: RESOLUTION PROJECT
NEAR WEST TAILINGS STORAGE FACILITY CLOSURE COVER STUDY - CLOSURE COVER PREDICTIONS

TITLE: CT11 - 3.3ft Cleaner / 6.6ft Beach/Veg Water Balance Results

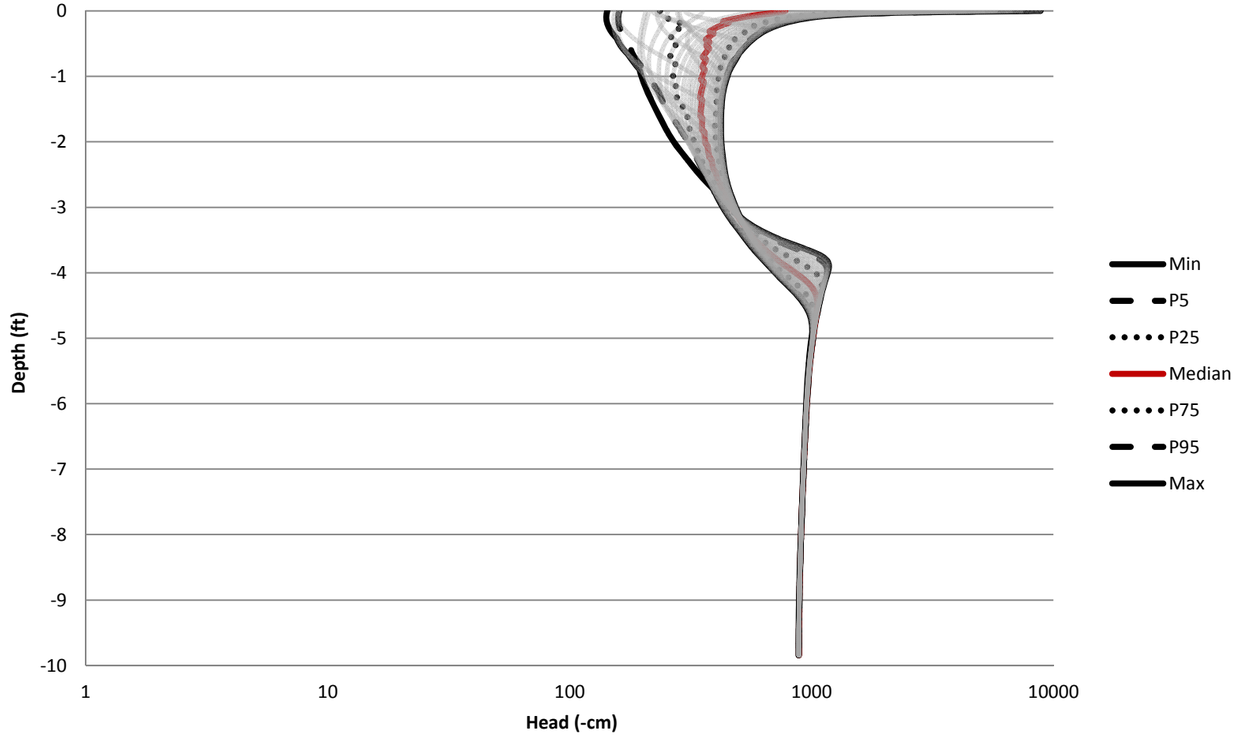
PROJECT No. M09441A16

FIG. No. III-G.2

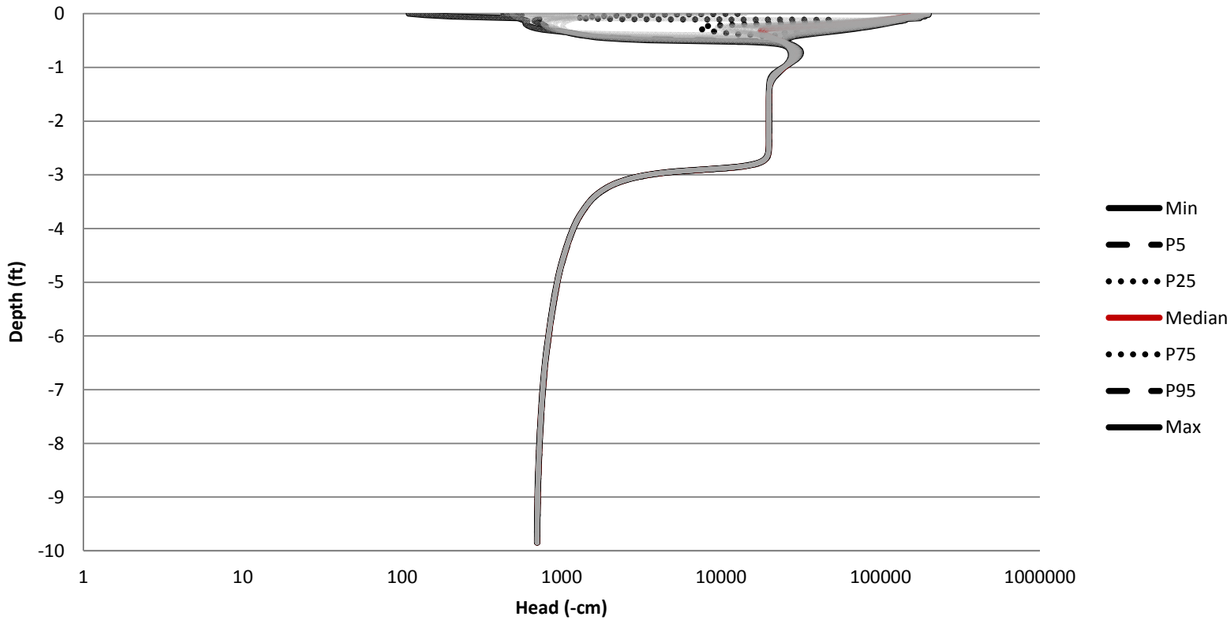
February Average Year (1980) - Daily Suction Head



February Wet Year (1992) - Daily Suction Head



February Dry Year (2000) - Daily Suction Head



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Klohn Crippen Berger

PROJECT

RESOLUTION PROJECT
NEAR WEST TAILINGS STORAGE FACILITY CLOSURE
COVER STUDY - CLOSURE COVER PREDICTIONS

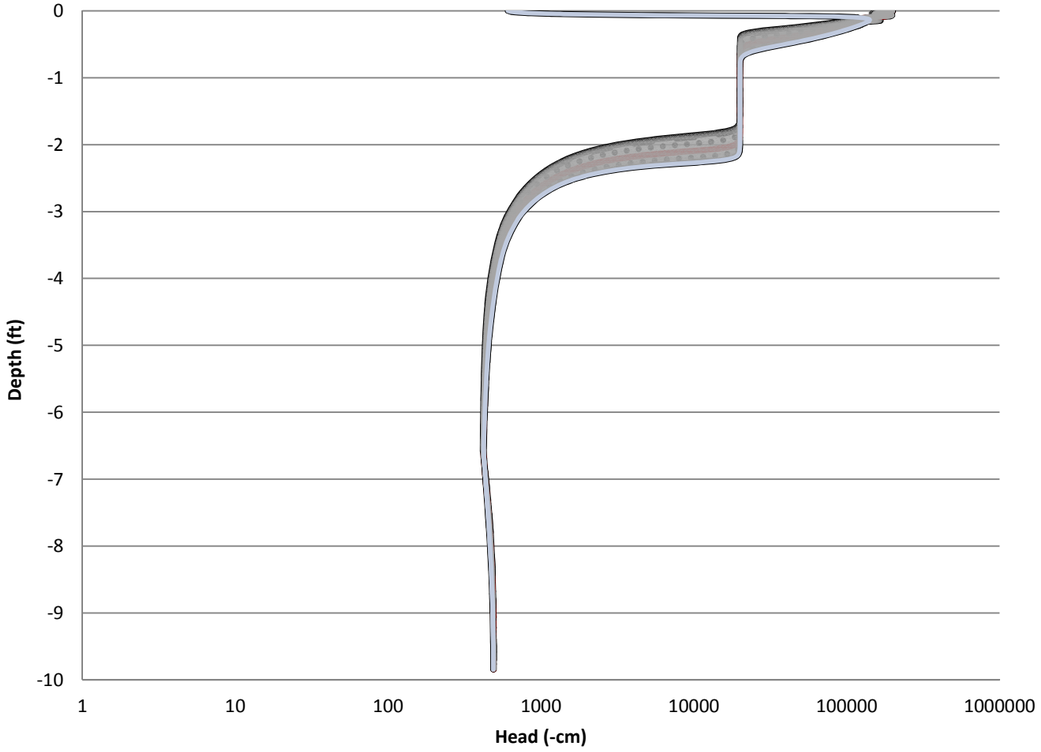
TITLE

CT11 - 3.3ft Cleaner / 6.6ft Beach/Veg
Suction Profiles - Winter (February)

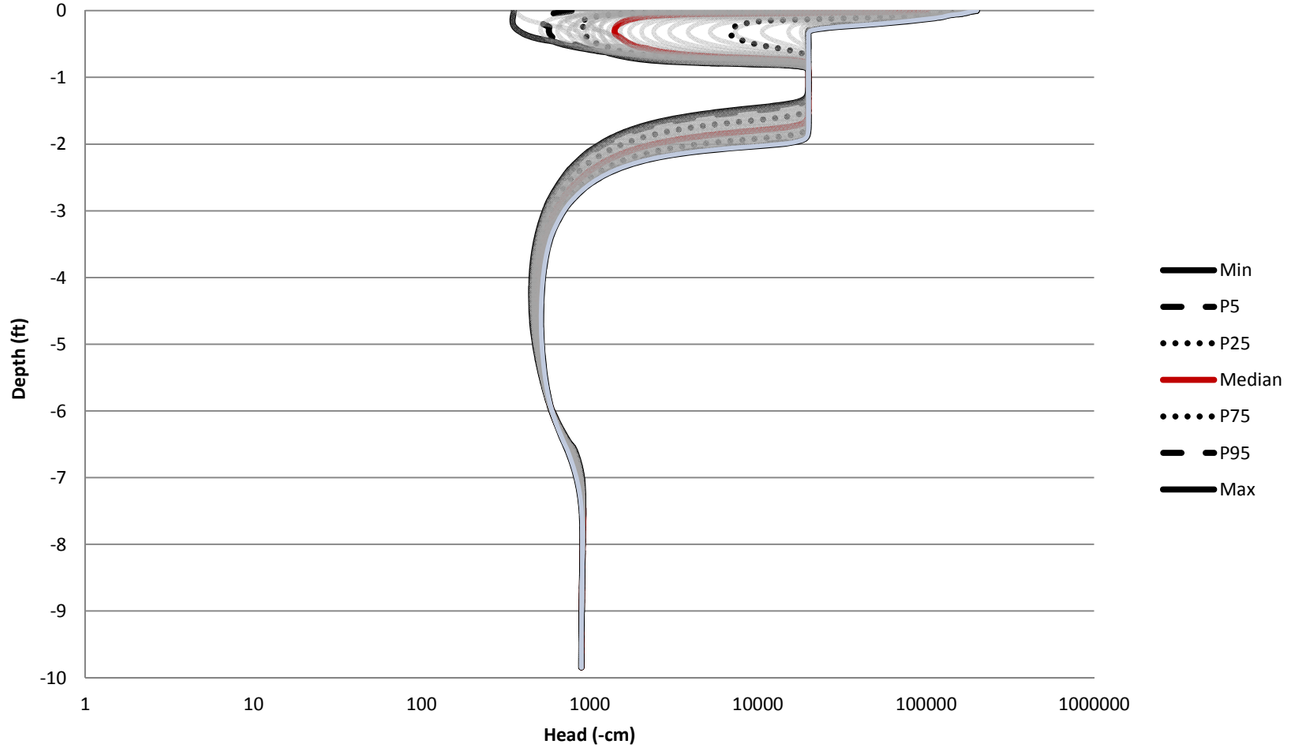
PROJECT No. M09441A16

FIG. No. III-G.3

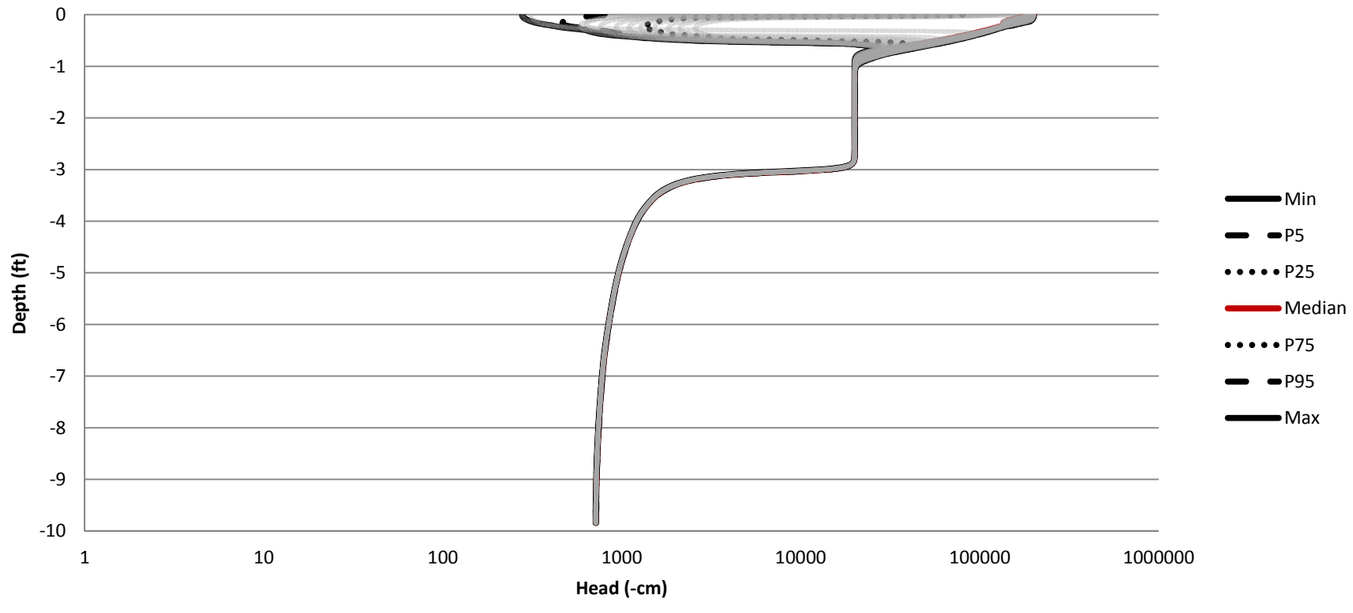
June Average Year (1980) - Daily Suction Head



June Wet Year (1992) - Daily (Suction) Head



June Dry Year (2000) - Daily Suction Head



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CLIENT

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PROJECT

RESOLUTION PROJECT
NEAR WEST TAILINGS STORAGE FACILITY CLOSURE
COVER STUDY - CLOSURE COVER PREDICTIONS

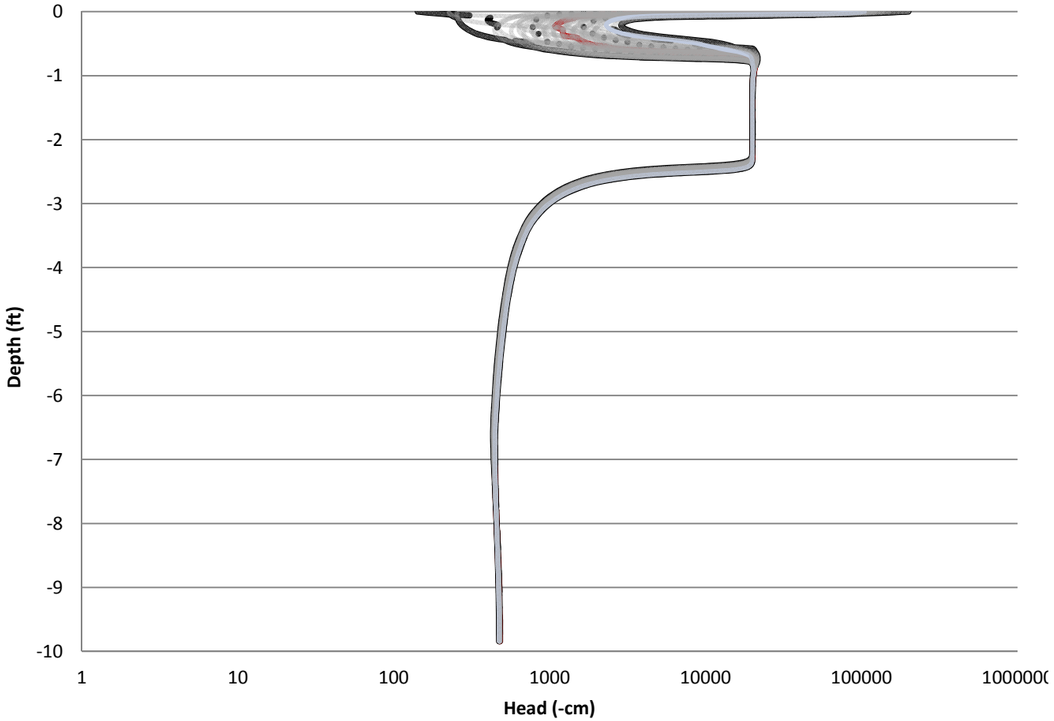
TITLE

CT11 - 3.3ft Cleaner / 6.6ft Beach/Veg
Suction Profiles - Dry Season (June)

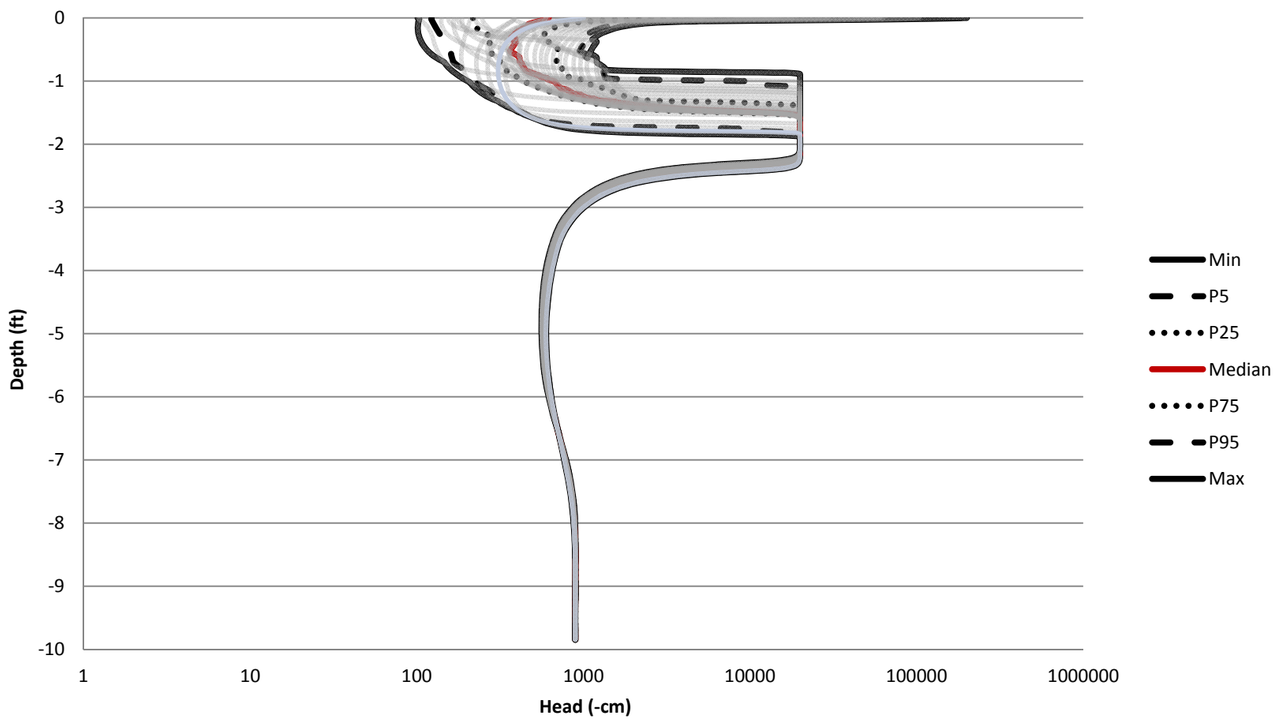
PROJECT No. M09441A16

FIG. No. III-G.4

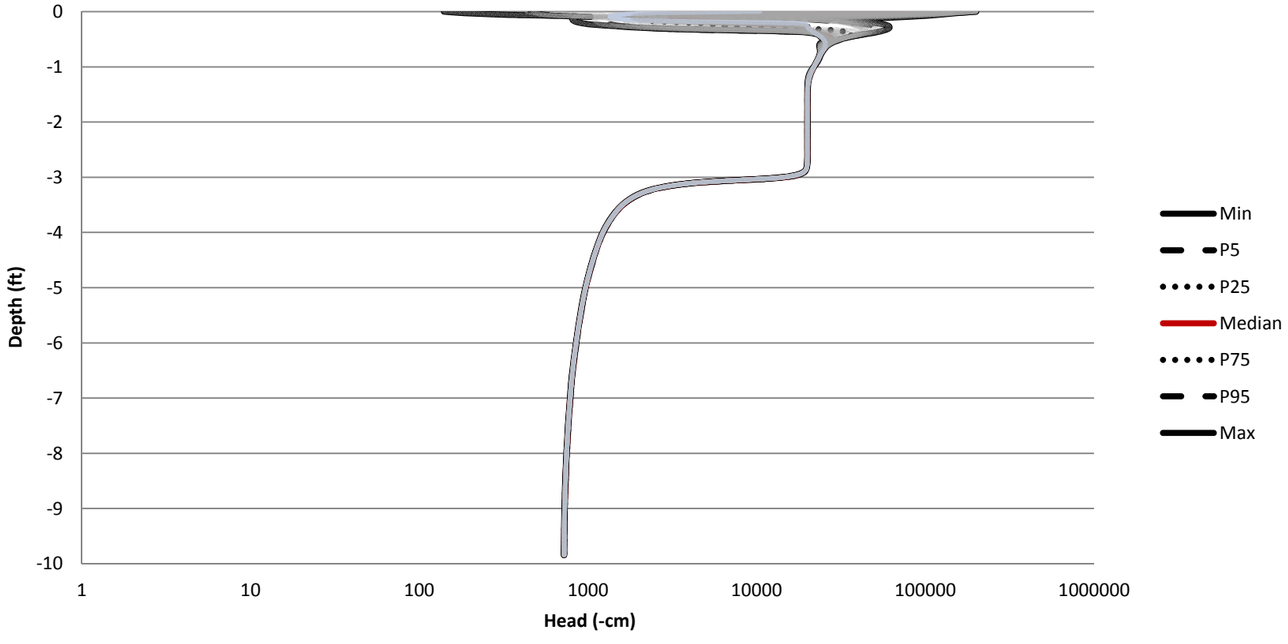
August Average Year (1980) - Daily Suction Head



August Wet Year (1992) - Daily Suction Head



August Dry Year (2000) - Daily Suction Head



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Klohn Crippen Berger

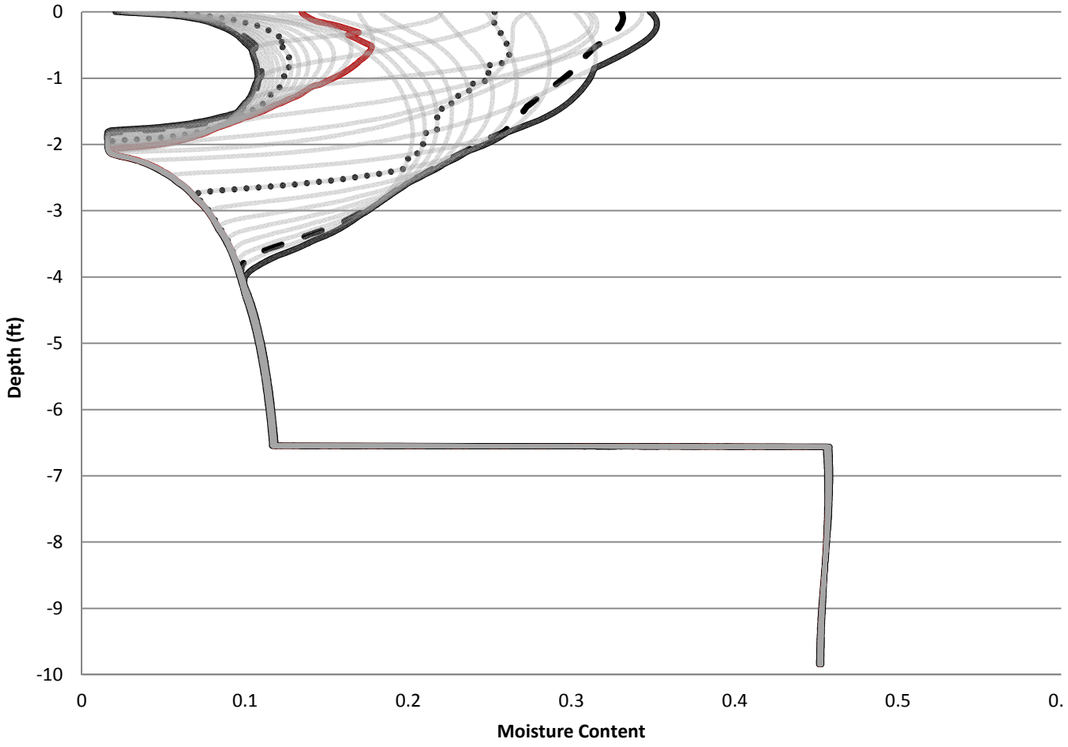
PROJECT: RESOLUTION PROJECT
NEAR WEST TAILINGS STORAGE FACILITY CLOSURE COVER STUDY - CLOSURE COVER PREDICTIONS

TITLE: CT11 - 3.3ft Cleaner / 6.6ft Beach/Veg Suction Profiles - Summer Monsoon (August)

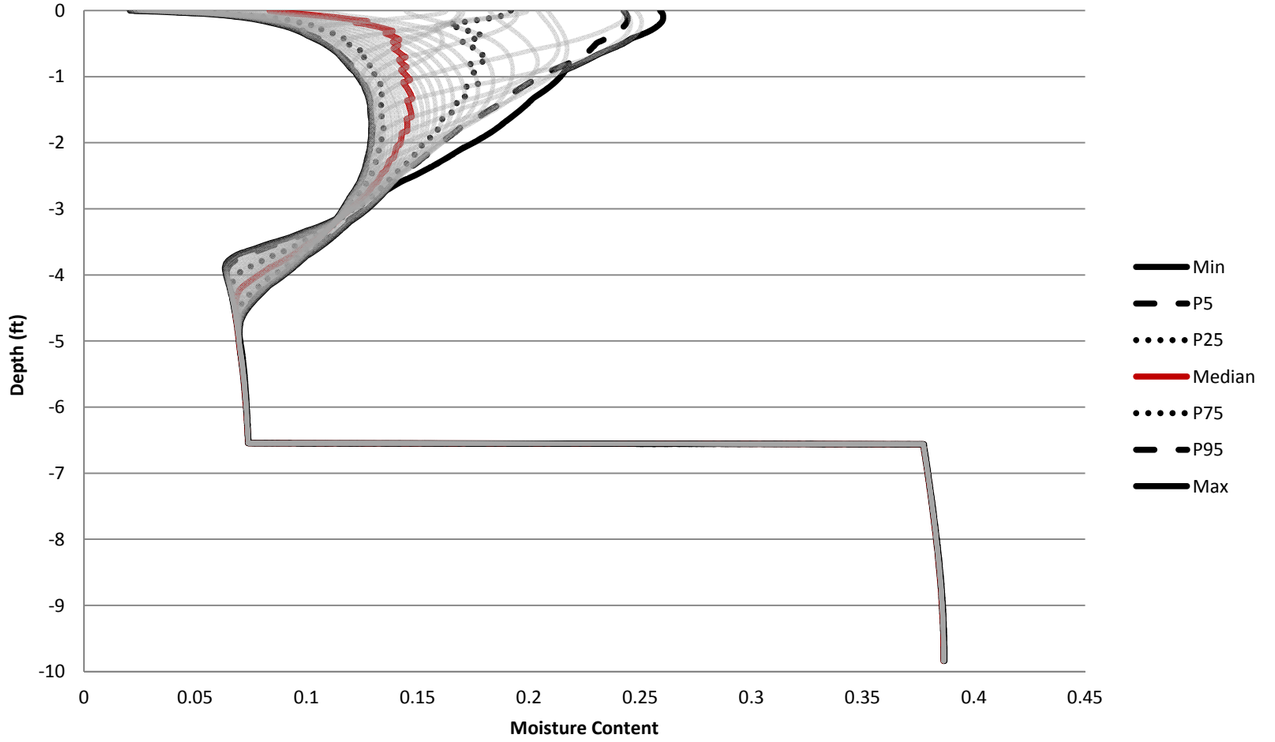
PROJECT No. M09441A16

FIG. No. III-G.5

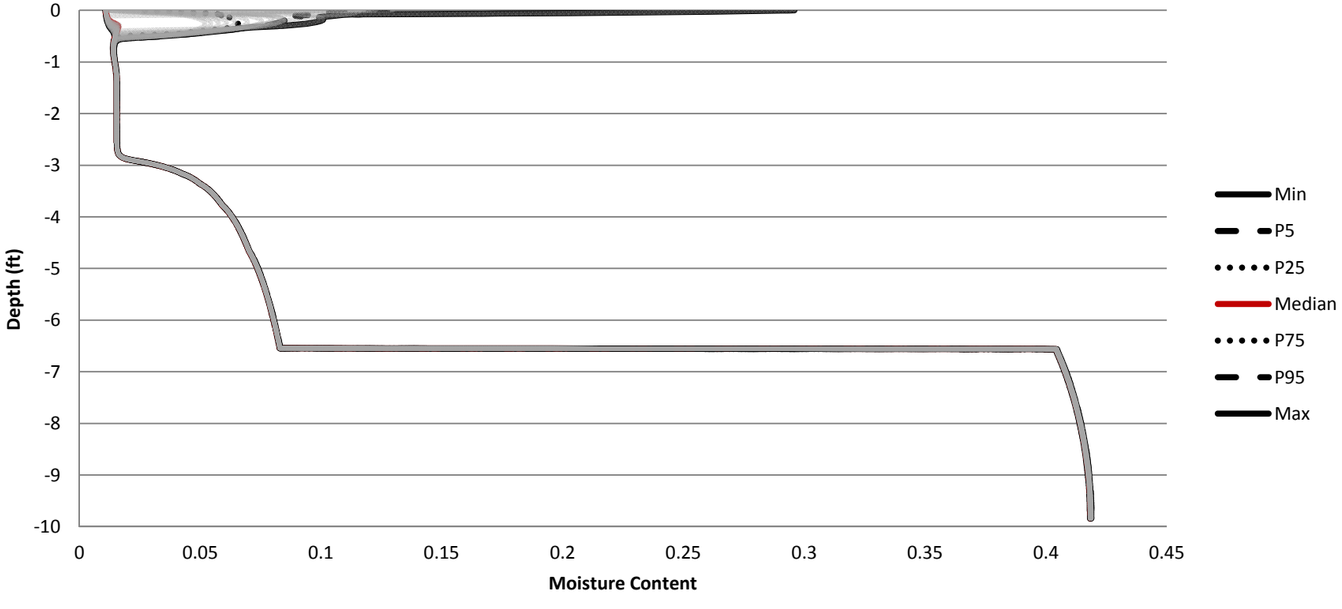
February Average Year (1980) - Daily Moisture Content



February Wet Year (1992) - Daily Moisture Content



February Dry Year (2000) - Daily Moisture Content



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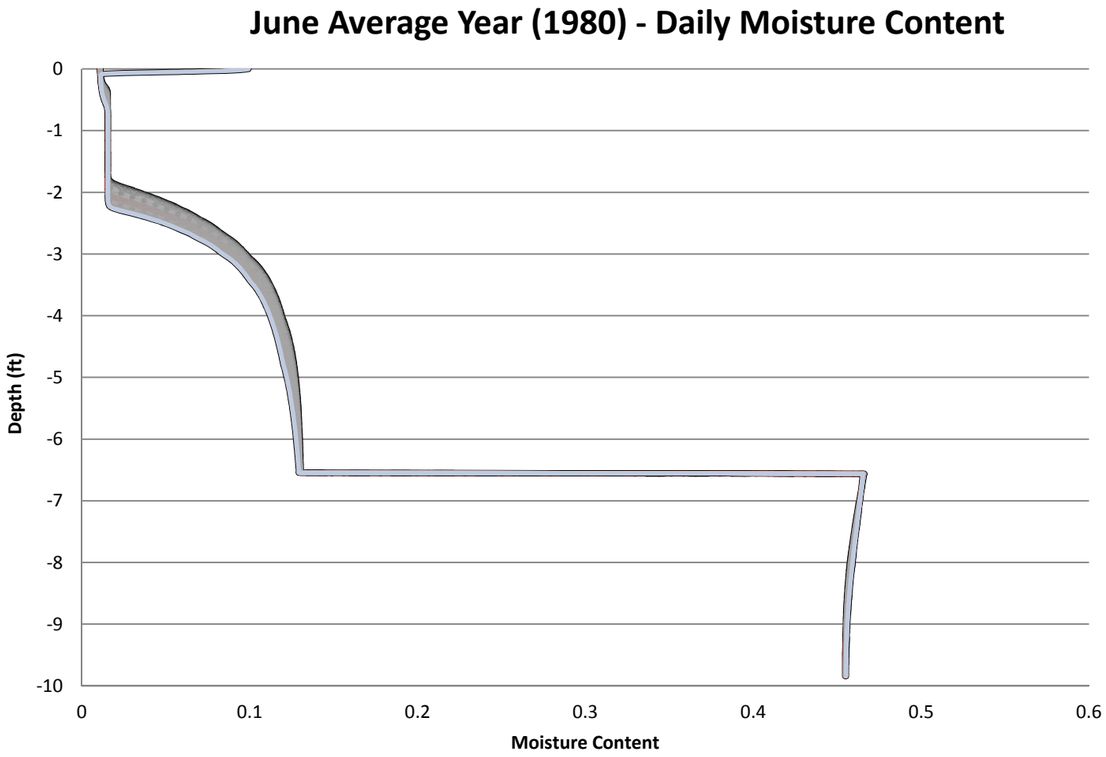
Klohn Crippen Berger

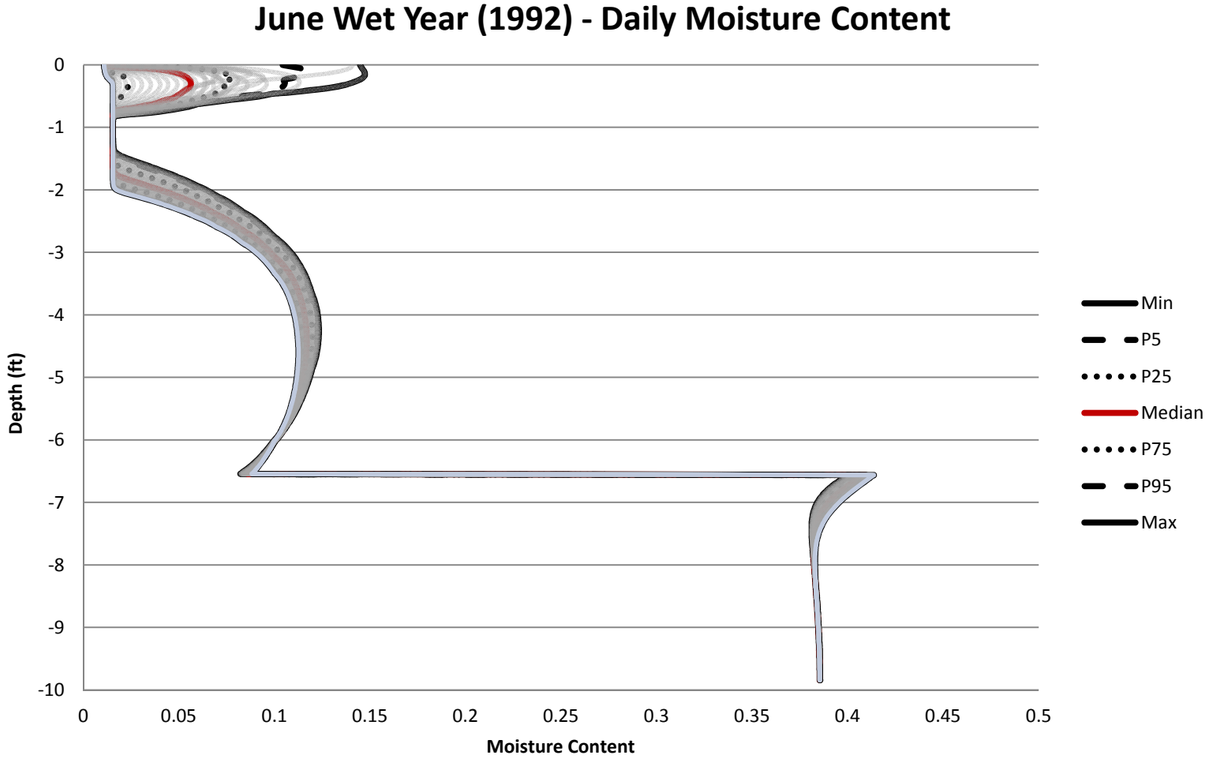
PROJECT: RESOLUTION PROJECT
NEAR WEST TAILINGS STORAGE FACILITY CLOSURE
COVER STUDY - CLOSURE COVER PREDICTIONS

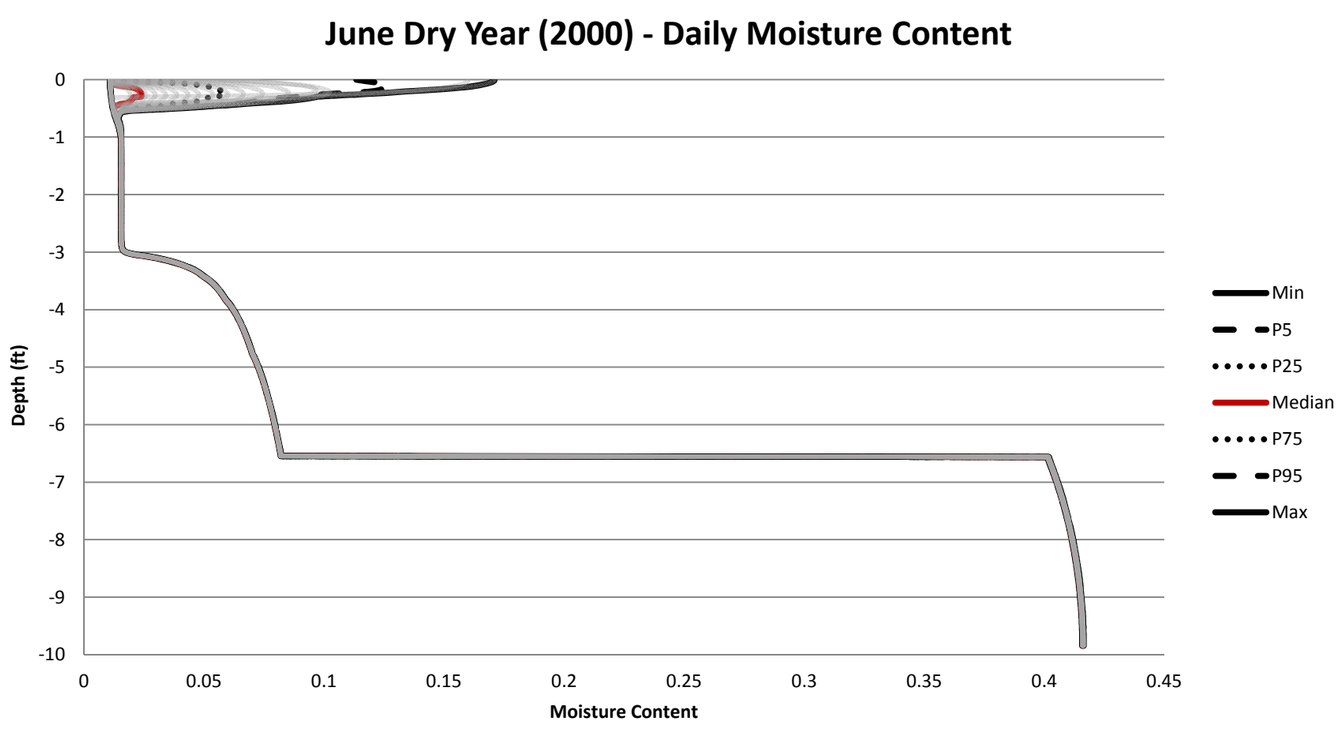
TITLE: CT11 - 3.3ft Cleaner / 6.6ft Beach/Veg
Moisture Content - Winter (February)

PROJECT No. M09441A16

FIG. No. III-G.6







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CLIENT

Resolution Copper Mining

Klohn Crippen Berger

PROJECT

RESOLUTION PROJECT
NEAR WEST TAILINGS STORAGE FACILITY CLOSURE COVER STUDY - CLOSURE COVER PREDICTIONS

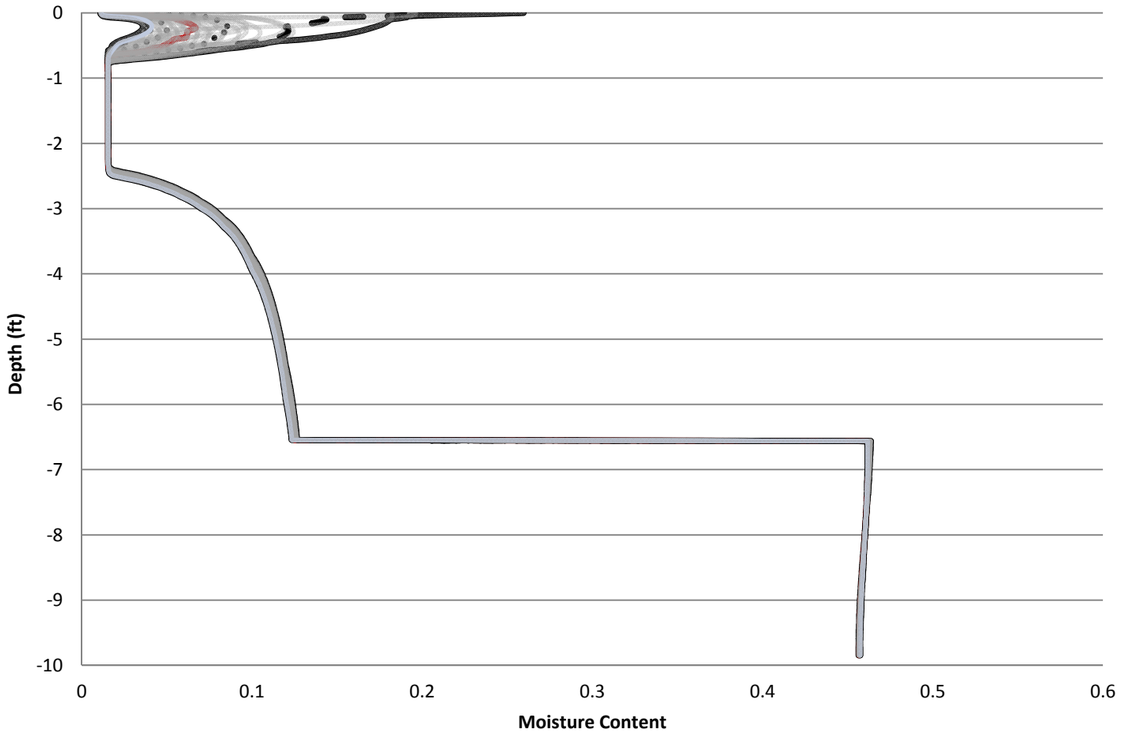
TITLE

CT11 - 3.3ft Cleaner / 6.6ft Beach/Veg
Moisture Content - Dry Season (June)

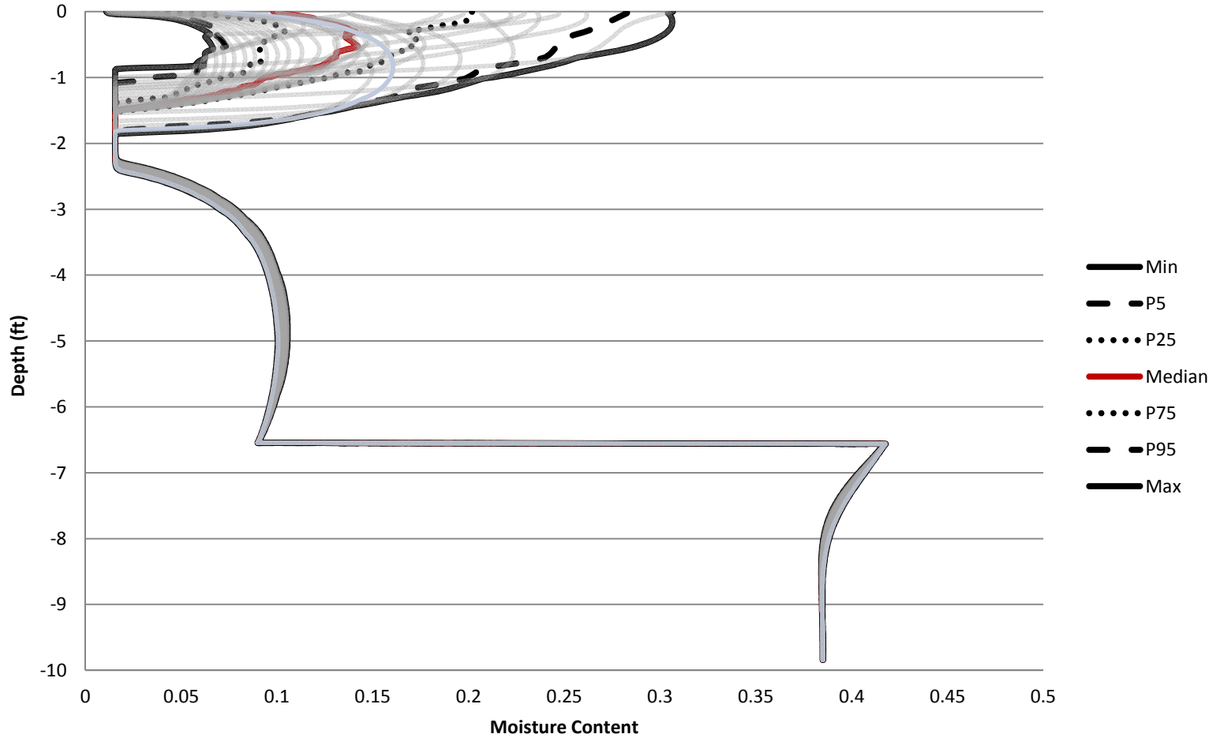
PROJECT No. M09441A16

FIG. No. III-G.7

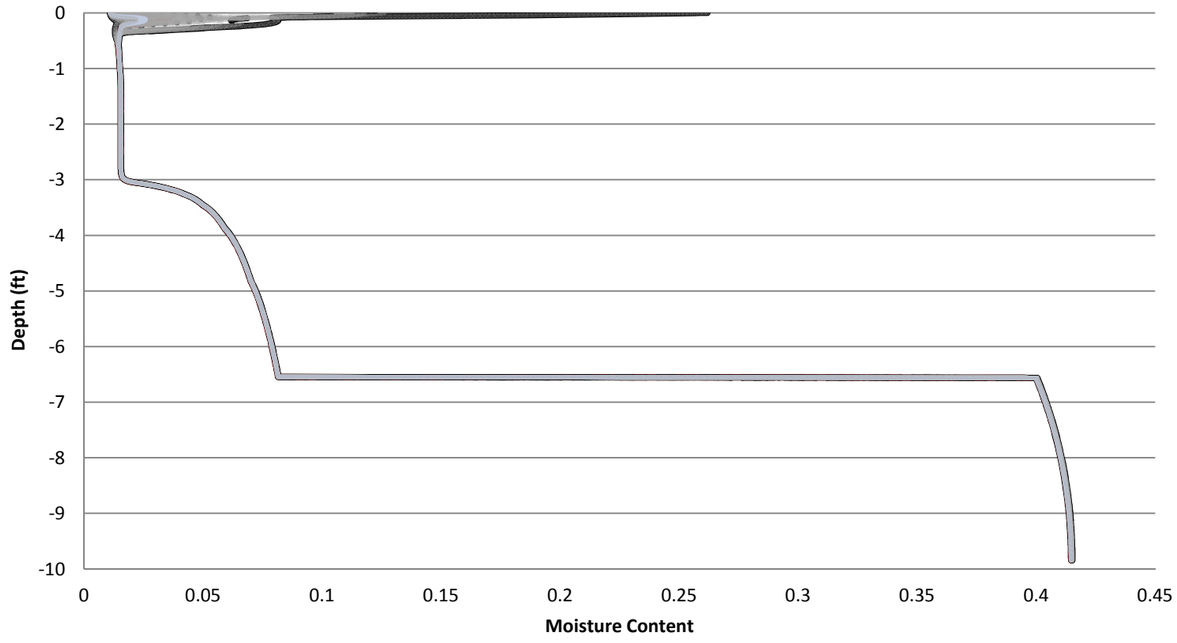
August Average Year (1980)- Daily Moisture Content



August Wet Year (1992) - Daily Moisture Content



August Dry Year (2000) - Daily Moisture Content



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Klohn Crippen Berger

PROJECT

RESOLUTION PROJECT
NEAR WEST TAILINGS STORAGE FACILITY CLOSURE
COVER STUDY - CLOSURE COVER PREDICTIONS

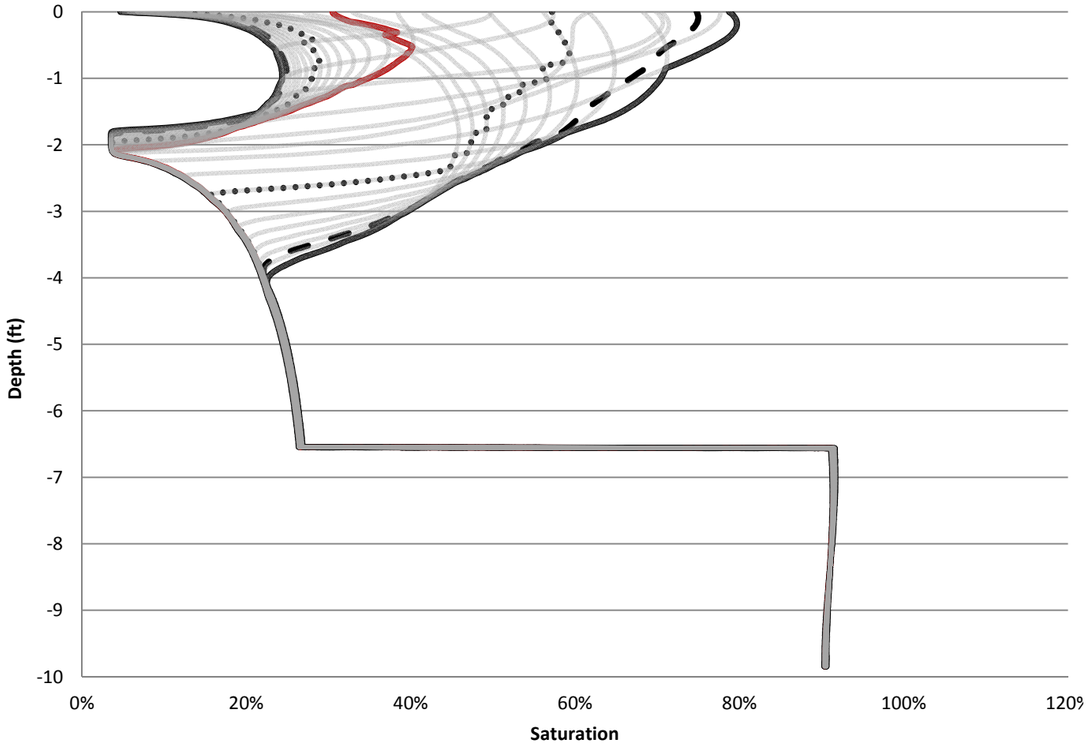
TITLE

CT11 - 3.3ft Cleaner / 6.6ft Beach/Veg
Moisture Content - Summer Monsoon (August)

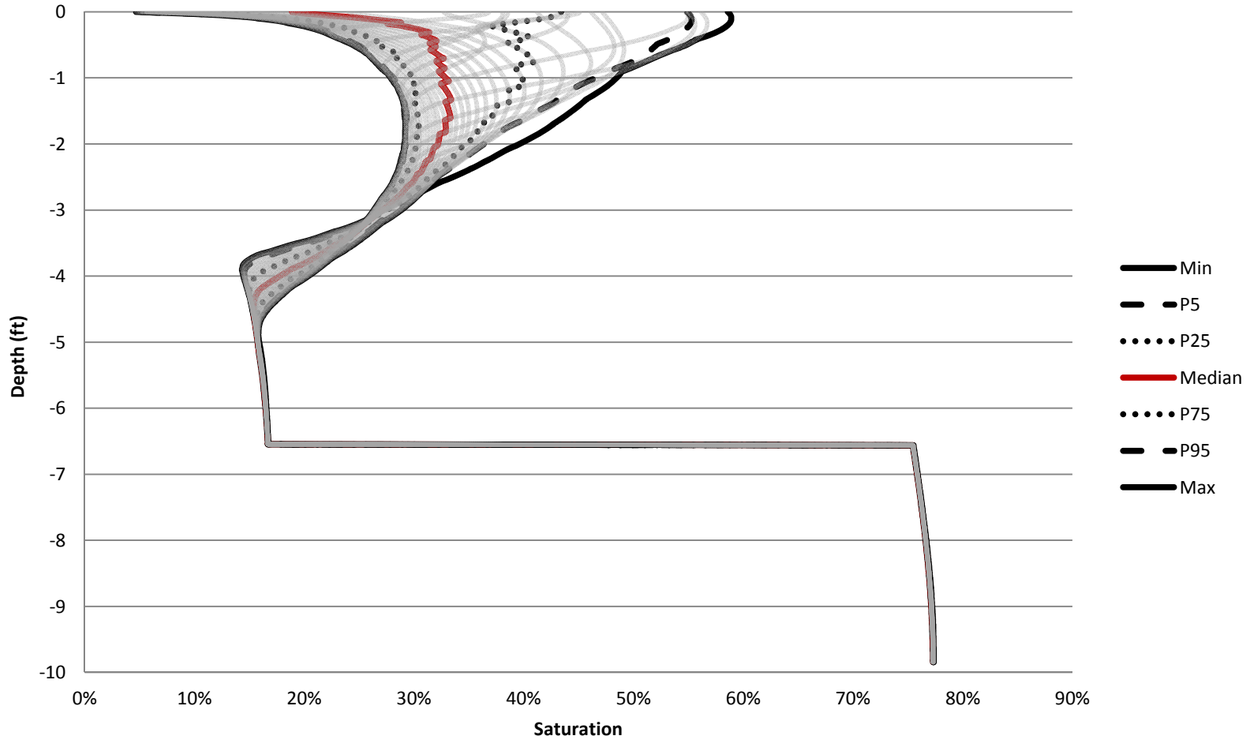
PROJECT No. M09441A16

FIG. No. III-G.8

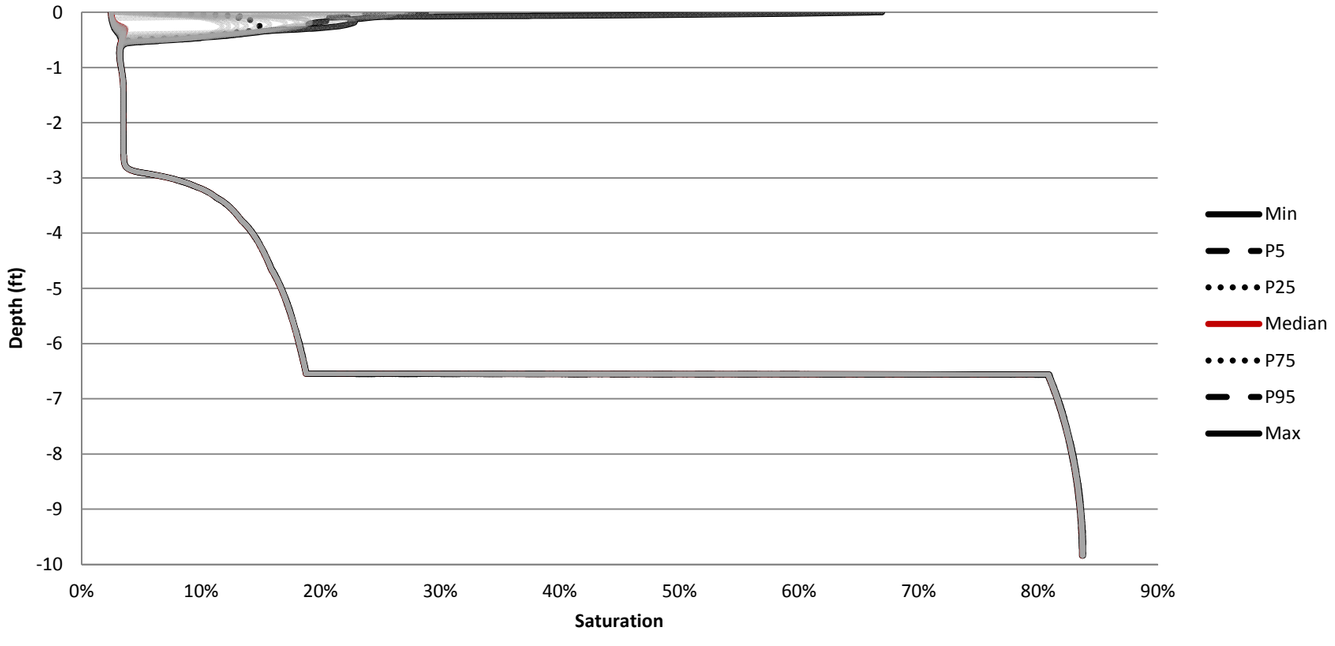
February Average Year (1980) - Daily Saturation



February Wet Year (1992) - Daily Saturation



February Dry Year (2000) - Daily Saturation



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PROJECT

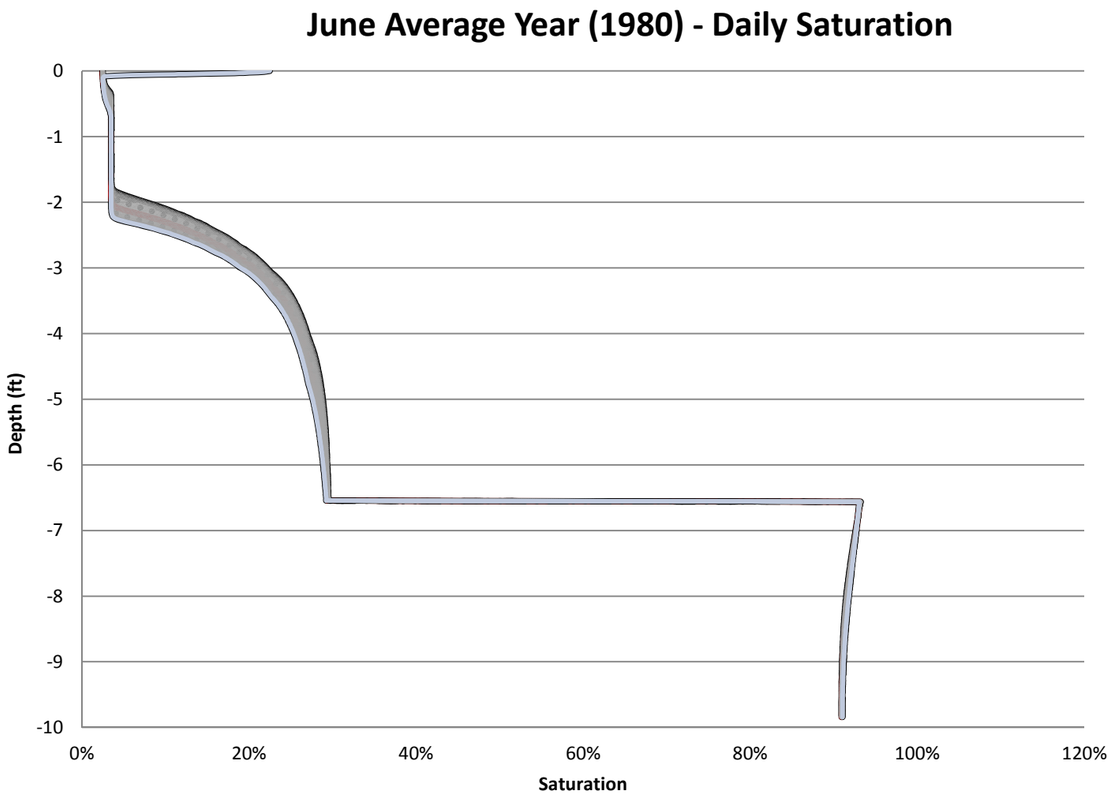
RESOLUTION PROJECT
NEAR WEST TAILINGS STORAGE FACILITY CLOSURE
COVER STUDY - CLOSURE COVER PREDICTIONS

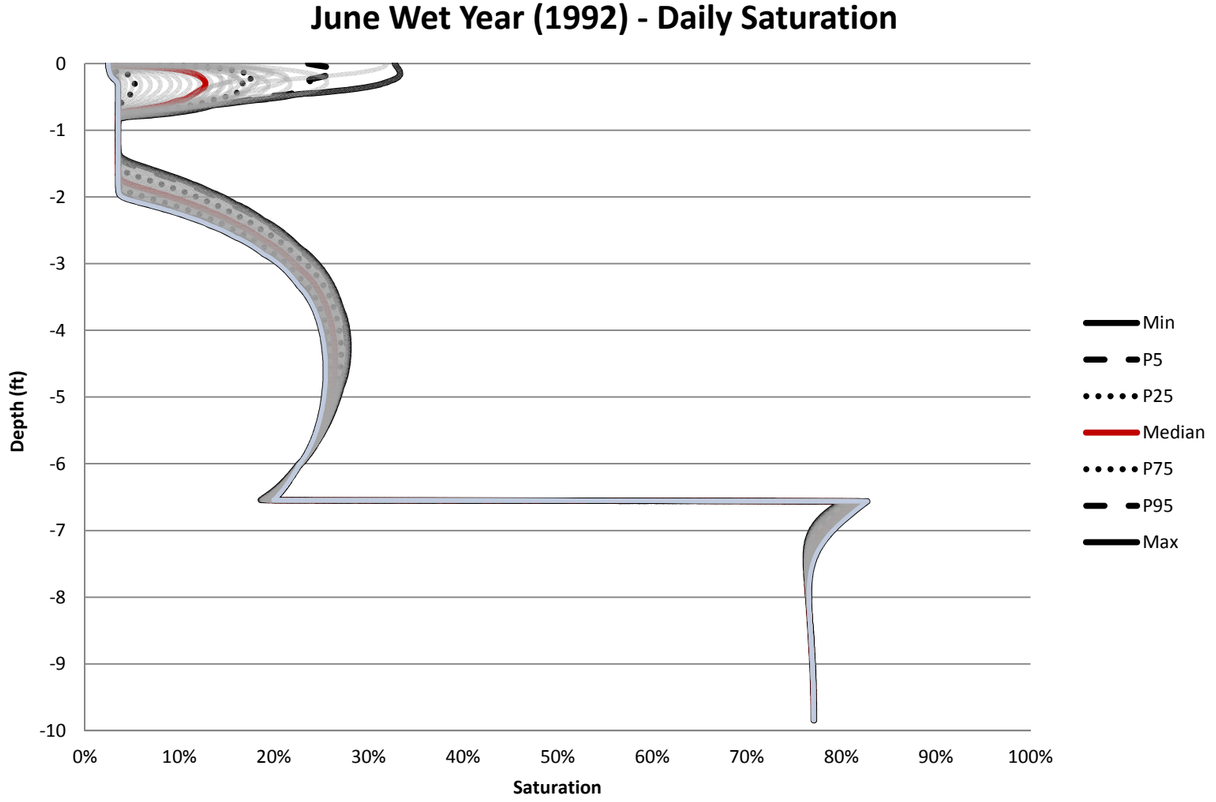
TITLE

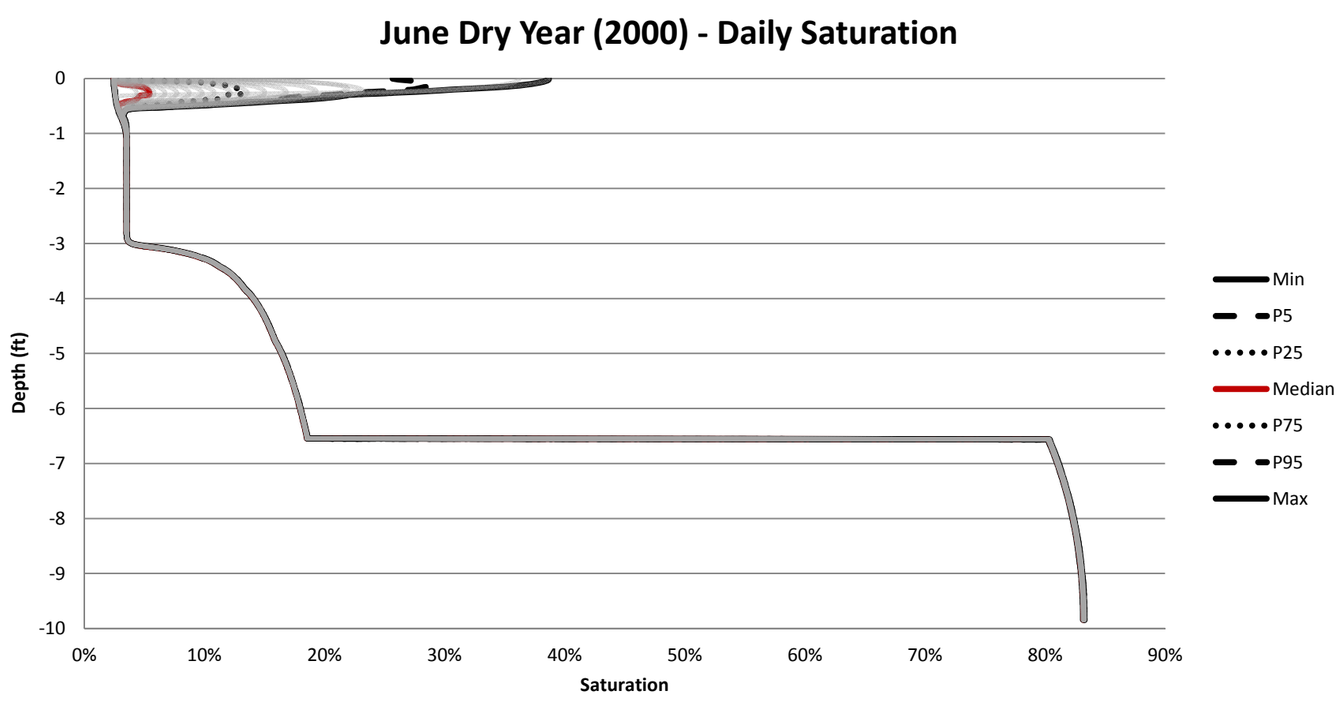
CT11 - 3.3ft Cleaner / 6.6ft Beach/Veg
Saturation - Winter (February)

PROJECT No. M09441A16

FIG. No. III-G.9







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CLIENT

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Klohn Crippen Berger

PROJECT

RESOLUTION PROJECT
NEAR WEST TAILINGS STORAGE FACILITY CLOSURE COVER STUDY - CLOSURE COVER PREDICTIONS

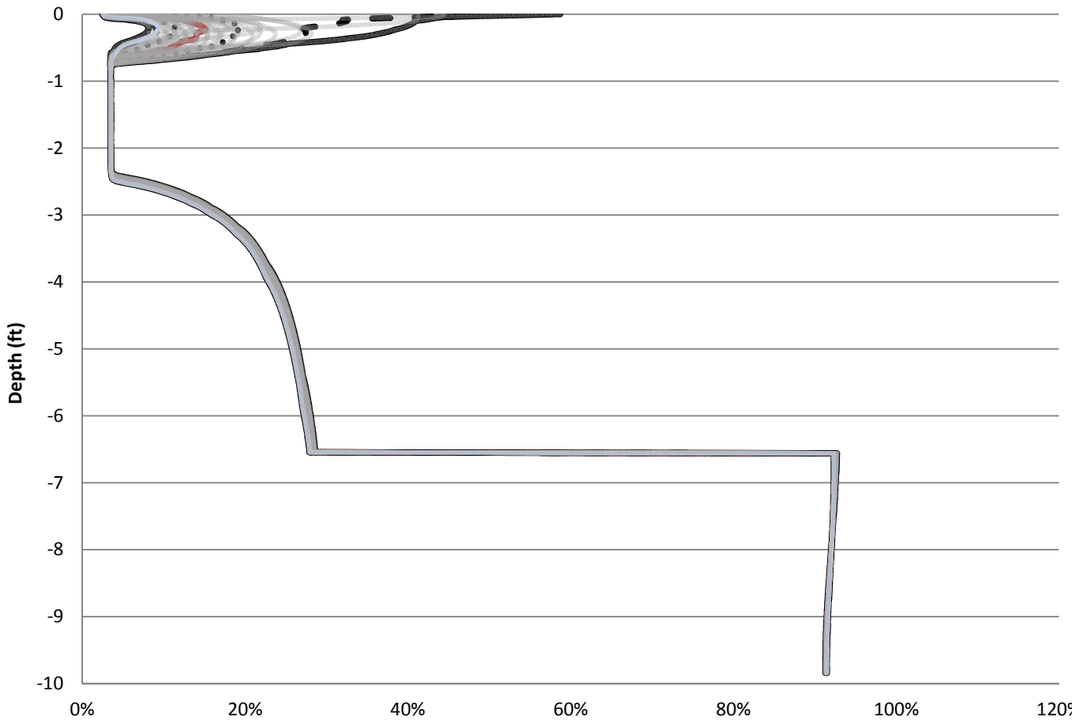
TITLE

CT11 - 3.3ft Cleaner / 6.6ft Beach/Veg
Saturation - Dry Season (June)

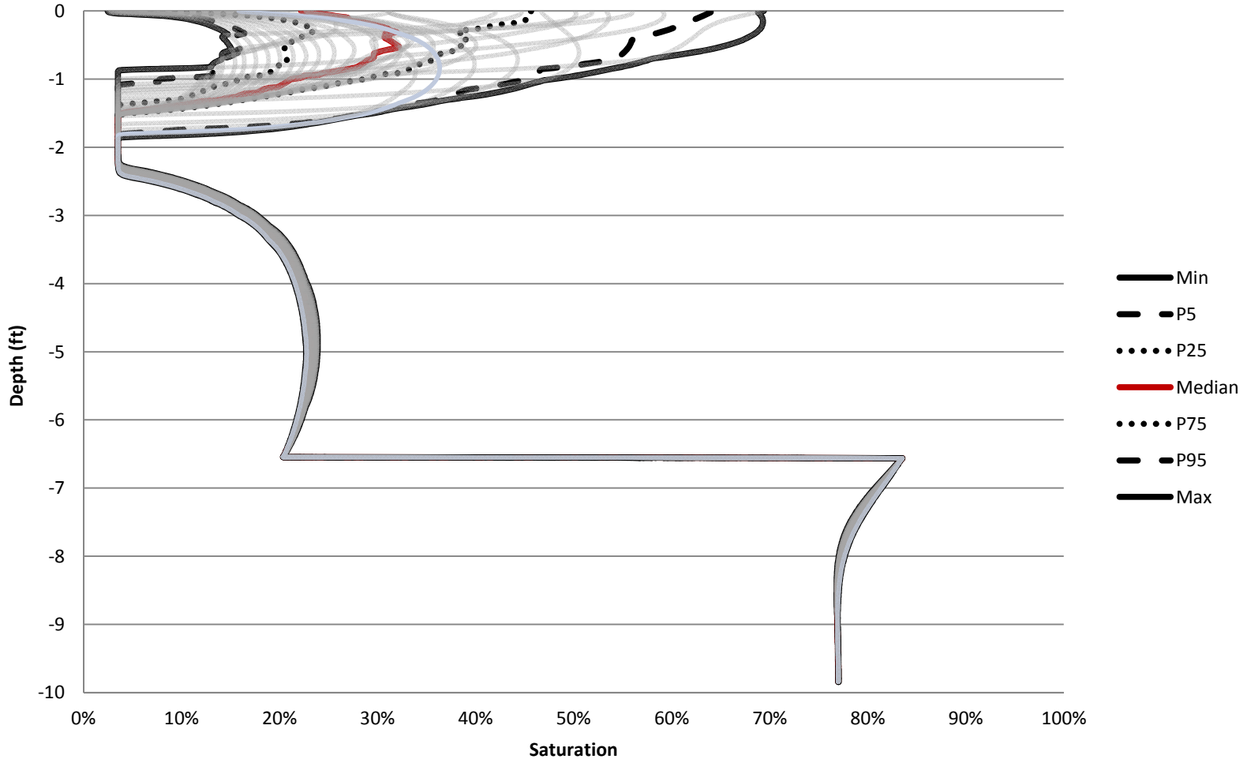
PROJECT No. M09441A16

FIG. No. III-G.10

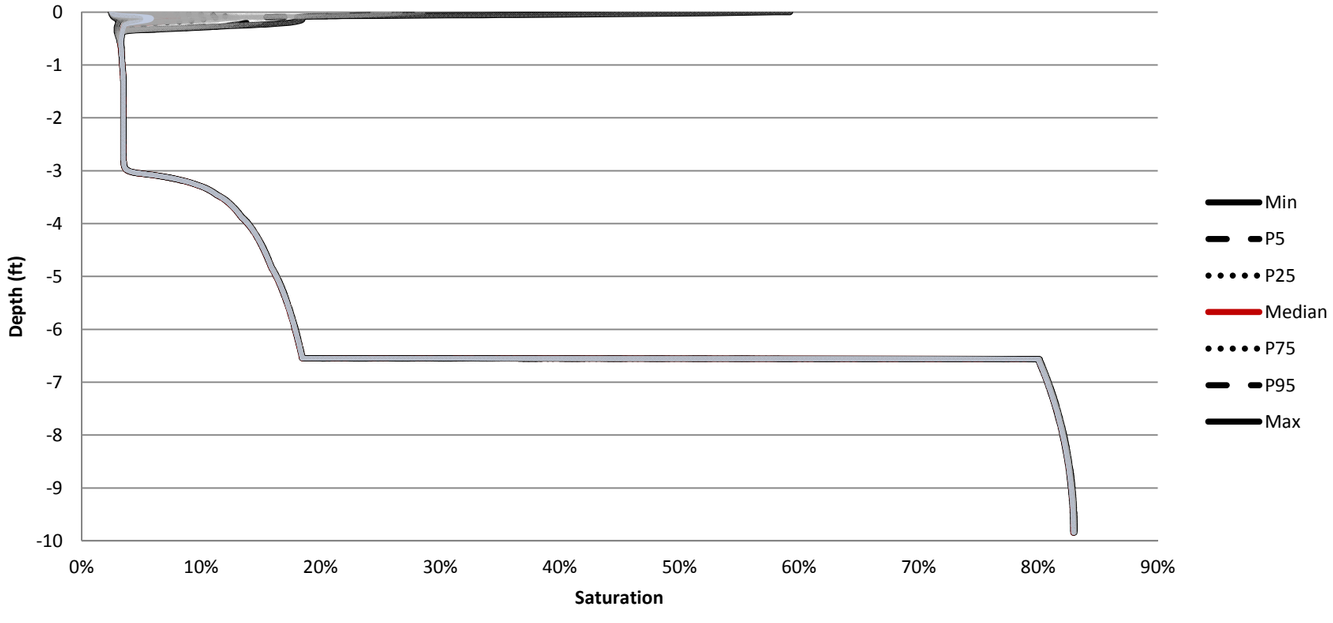
August Average Year (1980) - Daily Saturation



August Wet Year (1992) - Daily Saturation



August Dry Year (2000) - Daily Saturation



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CLIENT: Resolution Copper Mining

Klohn Crippen Berger

PROJECT: RESOLUTION PROJECT
NEAR WEST TAILINGS STORAGE FACILITY CLOSURE COVER STUDY - CLOSURE COVER PREDICTIONS

TITLE: CT11 - 3.3ft Cleaner / 6.6ft Beach/Veg Saturation - Summer Monsoon (August)

PROJECT No. M09441A16

FIG. No. III-G.11

APPENDIX III-H

CT 12 Results

Table III-H.1 CT 12 Annual Water Balance

Water Year	Result Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
		[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
1951	10/1/1951	14.21	90.07	(9.21)	13.74	(0.07)	-	14.21	5.00	33.65
1952	10/1/1952	20.54	101.44	(13.71)	14.73	(0.42)	-	20.54	6.83	38.81
1953	10/1/1953	15.47	106.44	(11.27)	12.58	(0.42)	-	15.47	4.21	38.74
1954	10/1/1954	21.85	99.05	(16.14)	15.33	(0.36)	-	21.85	5.70	38.63
1955	10/1/1955	13.57	103.43	(9.56)	12.63	(0.30)	-	13.57	4.03	37.42
1956	10/1/1956	12.67	109.92	(8.42)	9.22	(0.26)	-	12.67	4.29	40.00
1957	10/1/1957	15.21	98.50	(9.73)	9.95	(0.22)	-	15.21	5.48	37.21
1958	10/1/1958	19.46	95.59	(12.25)	11.47	(0.19)	-	19.46	7.23	37.74
1959	10/1/1959	15.85	106.22	(11.11)	12.14	(0.16)	-	15.85	4.77	39.88
1960	10/1/1960	19.17	101.69	(14.43)	11.65	(0.18)	-	19.17	4.80	39.62
1961	10/1/1961	9.95	105.59	(5.22)	5.77	(0.32)	-	9.95	4.75	38.30
1962	10/1/1962	14.25	100.71	(9.52)	9.61	(0.28)	-	14.25	4.77	38.46
1963	10/1/1963	23.48	92.99	(17.79)	13.64	(0.24)	-	23.48	5.72	38.66
1964	10/1/1964	11.60	98.11	(5.99)	9.49	(0.23)	-	11.60	5.65	36.66
1965	10/1/1965	17.60	93.31	(11.88)	12.19	(0.23)	-	17.60	5.74	36.91
1966	10/1/1966	23.01	92.09	(18.21)	11.26	(0.40)	-	23.01	4.85	38.93
1967	10/1/1967	14.53	95.43	(9.76)	13.70	(0.51)	-	14.53	4.79	36.92
1968	10/1/1968	22.55	86.69	(17.74)	13.59	(0.57)	-	22.55	4.93	37.38
1969	10/1/1969	18.79	93.94	(13.35)	13.36	(0.61)	-	18.79	5.58	38.25
1970	10/1/1970	16.07	94.65	(10.64)	11.45	(0.52)	-	16.07	5.57	38.53
1971	10/1/1971	12.65	98.39	(8.76)	8.61	(0.40)	-	12.65	4.00	37.96
1972	10/1/1972	11.30	105.94	(7.33)	10.48	(0.33)	-	11.30	4.09	40.53
1973	10/1/1973	30.97	73.39	(22.57)	16.36	(0.43)	-	30.97	8.47	35.99
1974	10/1/1974	15.87	90.87	(10.71)	11.55	(0.55)	-	15.87	5.23	36.84
1975	10/1/1975	19.09	83.62	(12.41)	14.30	(0.42)	-	19.09	6.78	35.44
1976	10/1/1976	16.50	90.12	(11.30)	9.50	(0.37)	-	16.50	5.30	37.84
1977	10/1/1977	16.42	90.71	(11.10)	11.97	(0.30)	-	16.42	5.43	37.86
1978	10/1/1978	23.94	83.94	(17.96)	14.47	(0.37)	-	23.94	6.16	38.30
1979	10/1/1979	29.65	77.13	(22.64)	14.22	(0.74)	-	29.65	7.16	38.53
1980	10/1/1980	20.31	86.06	(14.33)	14.28	(0.80)	-	20.31	6.14	38.22
1981	10/1/1981	15.24	97.09	(10.92)	15.00	(0.70)	-	15.24	4.46	40.87
1982	10/1/1982	23.58	77.56	(15.94)	15.65	(0.55)	-	23.58	7.74	36.58
1983	10/1/1983	27.44	72.56	(20.20)	16.38	(0.47)	-	27.44	7.51	36.00
1984	10/1/1984	17.80	84.53	(10.87)	14.25	(0.54)	-	17.80	7.32	37.32
1985	10/1/1985	22.83	68.90	(16.02)	12.01	(0.49)	-	22.83	7.13	34.11
1986	10/1/1986	21.30	79.02	(14.65)	15.67	(0.55)	-	21.30	7.01	37.61
1987	10/1/1987	20.16	77.13	(14.29)	13.98	(0.48)	-	20.16	6.05	36.00
1988	10/1/1988	23.07	77.01	(16.73)	14.69	(0.48)	-	23.07	6.57	37.38
1989	10/1/1989	11.73	97.76	(7.91)	10.83	(0.43)	-	11.73	4.02	40.88
1990	10/1/1990	22.99	78.15	(16.81)	11.10	(0.36)	0.00	22.99	6.50	37.63
1991	10/1/1991	22.99	75.00	(16.54)	16.10	(0.41)	-	22.99	6.69	37.08
1992	10/1/1992	36.57	60.51	(27.32)	18.58	(0.66)	-	36.57	9.43	37.66
1993	10/1/1993	32.76	65.00	(26.81)	15.91	(0.89)	-	32.76	6.15	37.29
1994	10/1/1994	15.39	85.12	(10.75)	14.76	(0.93)	-	15.39	4.94	38.98
1995	10/1/1995	24.92	70.87	(18.54)	15.24	(0.92)	-	24.92	6.60	37.33
1996	10/1/1996	13.62	90.16	(8.98)	15.94	(0.81)	-	13.62	4.92	40.43
1997	10/1/1997	10.24	92.91	(6.81)	12.24	(0.64)	-	10.24	3.68	40.01
1998	10/1/1998	20.51	73.23	(13.98)	12.60	(0.54)	-	20.51	6.76	36.85
1999	10/1/1999	15.04	82.28	(10.16)	10.43	(0.48)	-	15.04	5.09	38.14
2000	10/1/2000	5.47	103.15	(3.58)	5.51	(0.39)	-	5.47	2.05	42.81
2001	10/1/2001	23.50	74.02	(17.09)	15.39	(0.29)	-	23.50	6.67	38.65
2002	10/1/2002	5.43	98.82	(3.15)	3.46	(0.29)	-	5.43	2.55	42.03
2003	10/1/2003	13.27	86.22	(8.90)	8.39	(0.26)	-	13.27	4.63	40.74
2004	10/1/2004	12.40	84.65	(8.11)	7.72	(0.26)	-	12.40	4.56	41.68
2005	10/1/2005	24.17	68.11	(18.90)	13.50	(0.28)	-	24.17	5.56	37.59
2006	10/1/2006	12.28	82.68	(8.50)	8.94	(0.45)	-	12.28	3.89	39.59

Table III-H.2 CT 12 Monthly Water Balance 9 Wet Years (1983 to 1991)

Month	Result Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
		[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
Nov-82	11/30/1982	2.52	9.76	(1.81)	2.44	(0.08)	-	2.52	0.74	4.79
Dec-82	12/30/1982	2.48	0.12	(1.61)	0.35	(0.04)	-	2.48	0.87	1.04
Jan-83	1/29/1983	0.67	2.87	(0.51)	0.59	(0.04)	-	0.67	0.21	1.12
Feb-83	2/28/1983	3.54	0.47	(2.95)	0.83	(0.03)	-	3.54	0.63	1.07
Mar-83	3/30/1983	5.39	(0.63)	(4.21)	1.18	(0.03)	-	5.39	1.22	1.71
Apr-83	4/29/1983	0.83	6.81	(0.20)	2.32	(0.03)	-	0.83	0.67	2.34
May-83	5/29/1983	-	11.54	-	2.24	(0.03)	-	-	0.03	3.88
Jun-83	6/28/1983	0.04	14.06	-	0.94	(0.04)	-	0.04	0.01	5.42
Jul-83	7/28/1983	2.13	12.09	(1.57)	1.02	(0.04)	-	2.13	0.57	5.48
Aug-83	8/27/1983	3.94	7.48	(2.56)	1.77	(0.04)	-	3.94	1.43	4.09
Sep-83	9/26/1983	1.93	10.39	(1.06)	2.40	(0.05)	-	1.93	0.88	4.50
Oct-83	10/26/1983	5.12	2.72	(4.29)	1.65	(0.04)	-	5.12	0.83	2.93
Nov-83	11/25/1983	1.57	3.94	(1.34)	1.10	(0.05)	-	1.57	0.33	2.15
Dec-83	12/25/1983	1.89	0.87	(1.38)	0.39	(0.04)	-	1.89	0.53	1.00
Jan-84	1/24/1984	1.54	1.42	(0.87)	0.47	(0.04)	-	1.54	0.65	0.96
Feb-84	2/23/1984	-	4.76	-	0.91	(0.04)	-	-	0.07	1.48
Mar-84	3/24/1984	-	7.13	-	1.65	(0.04)	-	-	0.01	2.09
Apr-84	4/23/1984	0.87	7.44	(0.55)	1.50	(0.04)	-	0.87	0.33	2.95
May-84	5/23/1984	0.67	10.91	(0.31)	1.26	(0.05)	-	0.67	0.40	4.08
Jun-84	6/22/1984	0.04	14.17	(0.04)	0.43	(0.05)	-	0.04	0.06	5.37
Jul-84	7/22/1984	3.62	8.54	(2.32)	0.91	(0.04)	-	3.62	1.33	5.03
Aug-84	8/21/1984	4.02	6.97	(2.20)	1.50	(0.04)	-	4.02	1.81	3.99
Sep-84	9/20/1984	1.22	11.34	(0.43)	2.24	(0.05)	-	1.22	0.83	4.18
Oct-84	10/20/1984	2.60	5.12	(1.54)	1.10	(0.04)	-	2.60	1.05	3.50
Nov-84	11/19/1984	-	5.51	-	0.63	(0.03)	-	-	0.07	2.00
Dec-84	12/19/1984	4.80	(2.24)	(4.13)	0.28	(0.03)	-	4.80	0.72	1.28
Jan-85	1/18/1985	3.98	(1.61)	(3.23)	0.39	(0.03)	-	3.98	0.76	0.74
Feb-85	2/17/1985	2.87	(0.31)	(2.13)	0.43	(0.03)	-	2.87	0.76	0.72
Mar-85	3/19/1985	1.69	2.72	(0.79)	1.02	(0.03)	-	1.69	0.92	1.47
Apr-85	4/18/1985	0.43	7.28	-	2.28	(0.04)	-	0.43	0.48	2.35
May-85	5/18/1985	0.47	8.58	(0.28)	1.77	(0.05)	-	0.47	0.24	3.46
Jun-85	6/17/1985	-	11.89	-	0.87	(0.05)	-	-	-	4.21
Jul-85	7/17/1985	0.24	12.64	(0.20)	0.63	(0.05)	-	0.24	0.03	5.06
Aug-85	8/16/1985	2.13	9.17	(1.38)	0.94	(0.05)	-	2.13	0.79	4.31
Sep-85	9/15/1985	2.28	9.49	(1.30)	1.42	(0.05)	-	2.28	1.03	4.83
Oct-85	10/15/1985	3.27	4.80	(2.28)	1.26	(0.05)	-	3.27	1.02	3.24
Nov-85	11/14/1985	1.42	4.37	(0.94)	0.91	(0.05)	-	1.42	0.51	2.00
Dec-85	12/14/1985	2.76	0.20	(1.93)	0.39	(0.05)	-	2.76	0.80	1.26
Jan-86	1/13/1986	-	3.62	0.20	0.59	(0.05)	-	-	0.26	1.25
Feb-86	2/12/1986	2.32	1.30	(1.81)	0.63	(0.04)	-	2.32	0.55	1.59
Mar-86	3/14/1986	1.93	4.21	(1.38)	1.34	(0.05)	-	1.93	0.57	1.67
Apr-86	4/13/1986	3.11	4.53	(2.36)	2.17	(0.04)	-	3.11	0.79	2.60
May-86	5/13/1986	-	10.98	-	2.60	(0.05)	-	-	0.03	3.91
Jun-86	6/12/1986	-	13.62	-	0.98	(0.05)	-	-	0.02	4.91
Jul-86	7/12/1986	2.20	11.85	(1.73)	0.87	(0.04)	-	2.20	0.43	5.74
Aug-86	8/11/1986	2.80	8.03	(1.77)	1.69	(0.04)	-	2.80	1.10	3.77
Sep-86	9/10/1986	3.11	8.50	(2.01)	2.09	(0.04)	-	3.11	1.13	4.48
Oct-86	10/10/1986	0.94	8.11	(0.47)	1.22	(0.04)	-	0.94	0.52	3.68
Nov-86	11/9/1986	2.76	2.99	(2.01)	0.91	(0.04)	-	2.76	0.76	2.41
Dec-86	12/9/1986	2.60	1.14	(2.20)	0.47	(0.04)	-	2.60	0.42	1.46
Jan-87	1/8/1987	1.50	1.22	(0.63)	0.43	(0.04)	-	1.50	0.84	1.01
Feb-87	2/7/1987	3.11	0.20	(2.28)	0.55	(0.04)	-	3.11	0.82	1.05
Mar-87	3/9/1987	2.28	2.36	(1.77)	0.98	(0.04)	-	2.28	0.53	1.32
Apr-87	4/8/1987	0.94	5.35	(0.47)	1.77	(0.03)	-	0.94	0.52	2.15
May-87	5/8/1987	-	7.60	-	2.17	(0.03)	-	-	0.02	2.78
Jun-87	6/7/1987	0.31	11.85	(0.12)	1.18	(0.04)	-	0.31	0.23	4.46
Jul-87	7/7/1987	0.24	14.61	(0.12)	0.79	(0.04)	-	0.24	0.09	5.51
Aug-87	8/6/1987	3.07	9.96	(2.60)	1.22	(0.04)	-	3.07	0.53	5.35
Sep-87	9/5/1987	2.48	9.57	(1.93)	1.85	(0.04)	-	2.48	0.59	4.21
Oct-87	10/5/1987	0.87	9.09	(0.20)	1.54	(0.04)	-	0.87	0.66	3.95
Nov-87	11/4/1987	1.38	6.61	(1.02)	0.83	(0.04)	-	1.38	0.41	3.49
Dec-87	12/4/1987	0.71	3.31	(0.31)	0.35	(0.04)	-	0.71	0.38	1.83

Table III-H.2 CT 12 Monthly Water Balance 9 Wet Years (1983 to 1991)

Month	Result Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
		[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
Jan-88	1/3/1988	4.02	(1.34)	(3.15)	0.28	(0.04)	-	4.02	0.89	1.08
Feb-88	2/2/1988	3.58	(1.26)	(2.95)	0.39	(0.04)	-	3.58	0.62	0.72
Mar-88	3/3/1988	0.71	4.37	(0.43)	1.06	(0.03)	-	0.71	0.33	1.35
Apr-88	4/2/1988	0.16	6.54	(0.04)	1.73	(0.03)	-	0.16	0.12	2.27
May-88	5/2/1988	2.44	6.14	(1.57)	1.97	(0.04)	-	2.44	0.86	3.34
Jun-88	6/1/1988	-	12.44	0.04	1.97	(0.04)	-	-	0.06	4.25
Jul-88	7/1/1988	0.12	13.54	(0.04)	0.51	(0.04)	-	0.12	0.11	5.30
Aug-88	7/31/1988	2.48	10.16	(1.77)	0.47	(0.04)	-	2.48	0.70	5.01
Sep-88	8/30/1988	6.97	4.29	(5.31)	2.17	(0.04)	-	6.97	1.66	4.21
Oct-88	10/29/1988	2.01	17.60	(1.22)	4.49	(0.08)	-	2.01	0.87	7.40
Nov-88	11/28/1988	1.73	3.23	(1.46)	0.71	(0.04)	-	1.73	0.30	2.23
Dec-88	12/28/1988	1.10	1.81	(0.55)	0.39	(0.04)	-	1.10	0.56	1.11
Jan-89	1/27/1989	1.97	0.87	(1.34)	0.43	(0.03)	-	1.97	0.64	0.75
Feb-89	2/26/1989	0.55	3.74	(0.12)	0.87	(0.03)	-	0.55	0.44	1.22
Mar-89	3/28/1989	1.69	6.42	(1.46)	1.97	(0.03)	-	1.69	0.25	2.66
Apr-89	4/27/1989	-	11.57	0.12	2.36	(0.03)	-	-	0.15	3.89
May-89	5/27/1989	0.16	12.09	(0.04)	0.31	(0.03)	-	0.16	0.12	4.76
Jun-89	6/26/1989	-	14.09	-	0.20	(0.03)	-	-	0.00	5.32
Jul-89	7/26/1989	0.08	13.82	(0.04)	0.12	(0.03)	-	0.08	0.05	5.71
Aug-89	8/25/1989	1.38	10.20	(0.71)	0.39	(0.03)	-	1.38	0.72	4.57
Sep-89	9/24/1989	1.57	10.31	(1.30)	1.06	(0.03)	-	1.57	0.32	4.34
Oct-89	10/24/1989	1.06	8.11	(0.59)	0.79	(0.03)	-	1.06	0.49	3.84
Nov-89	11/23/1989	0.28	5.43	(0.20)	0.28	(0.03)	-	0.28	0.13	2.30
Dec-89	12/23/1989	-	3.35	0.08	0.16	(0.03)	-	-	0.09	1.42
Jan-90	1/22/1990	2.17	0.51	(1.38)	0.16	(0.03)	-	2.17	0.75	1.02
Feb-90	2/21/1990	2.52	0.51	(1.61)	0.35	(0.03)	-	2.52	0.94	0.94
Mar-90	3/23/1990	0.83	5.00	(0.39)	1.02	(0.03)	-	0.83	0.42	1.77
Apr-90	4/22/1990	1.02	8.50	(0.51)	2.05	(0.03)	-	1.02	0.55	2.98
May-90	5/22/1990	1.06	9.37	(0.87)	1.34	(0.03)	-	1.06	0.27	4.15
Jun-90	6/21/1990	0.39	13.62	(0.24)	0.43	(0.03)	-	0.39	0.18	5.09
Jul-90	7/21/1990	0.94	11.97	(0.51)	0.31	(0.02)	-	0.94	0.43	5.37
Aug-90	8/20/1990	9.76	2.44	(8.46)	0.79	(0.02)	0.00	9.76	1.29	4.21
Sep-90	9/19/1990	2.56	9.06	(2.13)	2.87	(0.02)	-	2.56	0.52	4.00
Oct-90	10/19/1990	0.47	8.03	0.08	1.97	(0.02)	-	0.47	0.54	3.61
Nov-90	11/18/1990	1.54	4.53	(1.06)	1.22	(0.02)	-	1.54	0.51	2.52
Dec-90	12/18/1990	2.76	0.59	(2.01)	0.51	(0.02)	-	2.76	0.76	1.52
Jan-91	1/17/1991	4.69	(2.44)	(3.70)	0.35	(0.02)	-	4.69	0.96	0.89
Feb-91	2/16/1991	0.16	3.78	-	0.71	(0.02)	-	0.16	0.19	1.11
Mar-91	3/18/1991	3.58	1.26	(2.80)	1.10	(0.03)	-	3.58	0.84	1.80
Apr-91	4/17/1991	3.23	3.94	(2.40)	2.09	(0.03)	-	3.23	0.81	2.09
May-91	5/17/1991	-	9.84	-	2.52	(0.04)	-	-	0.00	3.68
Jun-91	6/16/1991	0.71	12.20	(0.31)	1.22	(0.04)	-	0.71	0.43	4.71
Jul-91	7/16/1991	0.47	12.87	(0.31)	1.10	(0.05)	-	0.47	0.19	5.29
Aug-91	8/15/1991	3.46	8.46	(2.56)	1.14	(0.05)	-	3.46	0.91	4.66
Sep-91	9/14/1991	2.09	9.45	(1.34)	2.01	(0.05)	-	2.09	0.80	4.57
Oct-91	10/1/1991	0.24	5.63	(0.08)	0.98	(0.03)	-	0.24	0.19	2.19

Table III-H.3 CT 12 Monsoon Period Water Balance

Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
6/1/1951	8.65	32.06	(5.20)	8.43	(0.00)	-	8.65	3.45	13.29
7/1/1951	-	16.19	0.02	0.82	(0.01)	-	-	0.02	5.25
8/1/1951	1.05	16.83	(0.60)	0.76	(0.01)	-	1.05	0.45	5.79
9/1/1951	3.83	11.40	(3.07)	1.24	(0.02)	-	3.83	0.75	4.84
10/1/1951	0.68	13.59	(0.35)	2.48	(0.03)	-	0.68	0.33	4.49
11/1/1951	1.64	8.59	(1.24)	0.85	(0.03)	-	1.64	0.40	3.15
1951	7.20	66.60	(5.25)	6.16	(0.10)	-	7.20	1.95	23.52
6/1/1952	16.50	32.08	(11.57)	11.07	(0.24)	-	16.50	4.92	15.54
7/1/1952	0.63	15.60	(0.20)	1.37	(0.04)	-	0.63	0.43	5.28
8/1/1952	0.56	15.71	(0.19)	0.48	(0.04)	-	0.56	0.37	5.19
9/1/1952	0.47	15.41	(0.14)	0.52	(0.04)	-	0.47	0.34	5.09
10/1/1952	0.74	14.05	(0.36)	0.44	(0.04)	-	0.74	0.38	4.56
11/1/1952	-	11.74	0.04	0.35	(0.04)	-	-	0.04	3.81
1952	2.40	72.51	(0.84)	3.17	(0.19)	-	2.40	1.56	23.93
6/1/1953	10.86	36.80	(8.20)	7.83	(0.25)	-	10.86	2.65	14.82
7/1/1953	-	16.78	0.01	0.54	(0.03)	-	-	0.01	5.51
8/1/1953	2.71	12.79	(2.10)	0.70	(0.03)	-	2.71	0.61	5.21
9/1/1953	1.90	13.28	(1.09)	1.77	(0.03)	-	1.90	0.82	4.71
10/1/1953	-	15.06	0.07	1.39	(0.03)	-	-	0.07	4.63
11/1/1953	0.01	10.29	0.02	0.11	(0.03)	-	0.01	0.03	3.39
1953	4.63	68.20	(3.09)	4.51	(0.17)	-	4.63	1.53	23.46
6/1/1954	10.05	44.59	(7.36)	7.69	(0.22)	-	10.05	2.69	17.36
7/1/1954	0.13	15.40	(0.01)	0.39	(0.03)	-	0.13	0.12	5.13
8/1/1954	4.46	9.72	(3.33)	1.14	(0.03)	-	4.46	1.13	4.63
9/1/1954	5.83	6.98	(4.69)	2.75	(0.03)	-	5.83	1.14	3.93
10/1/1954	1.35	12.08	(0.76)	3.24	(0.03)	-	1.35	0.59	4.18
11/1/1954	-	10.94	0.06	1.55	(0.03)	-	-	0.06	3.47
1954	11.78	55.12	(8.74)	9.08	(0.14)	-	11.78	3.04	21.36
6/1/1955	4.09	46.57	(2.61)	3.74	(0.18)	-	4.09	1.50	16.02
7/1/1955	2.06	13.27	(1.73)	1.01	(0.02)	-	2.06	0.33	5.17
8/1/1955	4.46	9.21	(3.52)	1.31	(0.02)	-	4.46	0.93	4.39
9/1/1955	2.83	9.69	(1.75)	2.40	(0.02)	-	2.83	1.09	3.95
10/1/1955	0.13	13.74	(0.00)	2.62	(0.02)	-	0.13	0.12	4.43
11/1/1955	0.02	11.26	0.02	0.17	(0.02)	-	0.02	0.04	3.54
1955	9.50	57.17	(6.98)	7.52	(0.12)	-	9.50	2.52	21.47
6/1/1956	7.73	43.70	(5.24)	5.69	(0.15)	-	7.73	2.51	16.91
7/1/1956	0.24	16.73	(0.16)	0.06	(0.02)	-	0.24	0.10	5.79
8/1/1956	2.77	11.85	(1.81)	0.54	(0.02)	-	2.77	0.95	4.84
9/1/1956	1.84	11.81	(1.19)	1.56	(0.02)	-	1.84	0.66	4.30
10/1/1956	0.07	14.57	(0.04)	1.21	(0.02)	-	0.07	0.03	4.61
11/1/1956	0.54	8.94	(0.27)	0.06	(0.02)	-	0.54	0.26	3.03
1956	5.46	63.90	(3.47)	3.43	(0.10)	-	5.46	2.00	22.58
6/1/1957	9.38	37.13	(6.17)	6.41	(0.13)	-	9.38	3.22	14.94
7/1/1957	0.03	16.30	0.03	0.44	(0.02)	-	0.03	0.06	5.53
8/1/1957	1.09	13.50	(0.59)	0.19	(0.02)	-	1.09	0.51	4.97
9/1/1957	3.57	10.24	(2.45)	1.11	(0.02)	-	3.57	1.12	4.44
10/1/1957	0.60	12.40	(0.28)	1.74	(0.02)	-	0.60	0.32	4.26
11/1/1957	3.23	4.69	(2.37)	0.66	(0.02)	-	3.23	0.86	2.60
1957	8.52	57.13	(5.66)	4.14	(0.09)	-	8.52	2.86	21.80
6/1/1958	10.68	36.77	(6.28)	8.80	(0.11)	-	10.68	4.40	15.40
7/1/1958	0.70	15.75	(0.46)	0.24	(0.01)	-	0.70	0.26	5.50
8/1/1958	0.78	15.08	(0.41)	0.35	(0.02)	-	0.78	0.37	5.44
9/1/1958	0.89	14.17	(0.33)	0.54	(0.02)	-	0.89	0.57	4.68
10/1/1958	3.17	9.13	(2.41)	0.87	(0.01)	-	3.17	0.77	4.12
11/1/1958	1.92	7.64	(1.49)	1.42	(0.02)	-	1.92	0.43	3.06
1958	7.47	61.77	(5.09)	3.43	(0.08)	-	7.47	2.39	22.80
6/1/1959	3.43	50.47	(2.00)	4.07	(0.10)	-	3.43	1.44	17.30
7/1/1959	1.03	15.35	(0.64)	0.38	(0.01)	-	1.03	0.41	5.64
8/1/1959	3.79	12.87	(3.03)	1.00	(0.01)	-	3.79	0.76	5.64
9/1/1959	5.63	7.09	(3.98)	2.41	(0.01)	-	5.63	1.65	3.94
10/1/1959	0.05	12.80	0.03	2.87	(0.01)	-	0.05	0.09	4.31
11/1/1959	4.87	4.72	(4.48)	1.06	(0.01)	-	4.87	0.39	3.20
1959	15.37	52.83	(12.09)	7.72	(0.06)	-	15.37	3.29	22.73

Table III-H.3 CT 12 Monsoon Period Water Balance

Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
6/1/1960	11.66	38.54	(8.66)	8.10	(0.09)	-	11.66	3.04	16.20
7/1/1960	-	17.13	-	0.50	(0.02)	-	-	0.01	5.76
8/1/1960	0.74	15.16	(0.46)	0.45	(0.02)	-	0.74	0.28	5.41
9/1/1960	1.62	12.48	(0.77)	0.90	(0.02)	-	1.62	0.85	4.54
10/1/1960	0.28	13.66	(0.06)	0.62	(0.02)	-	0.28	0.23	4.52
11/1/1960	2.06	6.42	(1.34)	0.46	(0.03)	-	2.06	0.72	2.80
1960	4.70	64.84	(2.63)	2.94	(0.11)	-	4.70	2.09	23.02
6/1/1961	3.57	46.69	(1.45)	3.10	(0.19)	-	3.57	2.15	16.32
7/1/1961	-	16.69	-	0.09	(0.03)	-	-	-	5.66
8/1/1961	0.67	14.61	(0.28)	0.17	(0.03)	-	0.67	0.38	5.34
9/1/1961	3.13	10.75	(2.25)	0.73	(0.03)	-	3.13	0.89	4.51
10/1/1961	0.52	10.43	0.09	1.22	(0.03)	-	0.52	0.61	3.65
11/1/1961	0.45	8.90	(0.30)	0.56	(0.03)	-	0.45	0.16	3.23
1961	4.78	61.38	(2.74)	2.77	(0.13)	-	4.78	2.04	22.38
6/1/1962	11.38	35.51	(8.15)	7.76	(0.16)	-	11.38	3.25	15.23
7/1/1962	-	15.39	-	0.31	(0.02)	-	-	-	5.29
8/1/1962	0.61	14.72	(0.26)	0.33	(0.02)	-	0.61	0.35	5.26
9/1/1962	0.52	15.12	(0.22)	0.33	(0.02)	-	0.52	0.30	5.21
10/1/1962	1.29	11.06	(0.58)	0.32	(0.02)	-	1.29	0.72	4.26
11/1/1962	0.87	8.31	(0.33)	0.44	(0.02)	-	0.87	0.54	2.98
1962	3.30	64.61	(1.39)	1.74	(0.11)	-	3.30	1.90	22.98
6/1/1963	11.13	40.51	(8.60)	8.13	(0.14)	-	11.13	2.56	17.00
7/1/1963	-	14.72	-	0.27	(0.02)	-	-	-	4.97
8/1/1963	0.08	15.98	(0.02)	0.19	(0.02)	-	0.08	0.07	5.61
9/1/1963	10.30	1.85	(8.39)	1.52	(0.02)	-	10.30	1.91	3.97
10/1/1963	1.10	11.61	(0.45)	3.09	(0.02)	-	1.10	0.65	4.13
11/1/1963	0.67	9.37	(0.42)	2.07	(0.02)	-	0.67	0.26	3.50
1963	12.15	53.54	(9.28)	7.14	(0.10)	-	12.15	2.89	22.18
6/1/1964	5.50	40.94	(2.95)	5.19	(0.14)	-	5.50	2.58	15.18
7/1/1964	-	14.65	-	0.13	(0.02)	-	-	-	4.97
8/1/1964	1.48	13.54	(0.74)	0.29	(0.02)	-	1.48	0.74	5.15
9/1/1964	2.29	10.87	(1.21)	0.97	(0.02)	-	2.29	1.08	4.25
10/1/1964	1.66	8.74	(0.67)	0.85	(0.02)	-	1.66	0.98	3.61
11/1/1964	1.54	8.98	(1.20)	0.85	(0.02)	-	1.54	0.33	3.51
1964	6.97	56.77	(3.82)	3.08	(0.10)	-	6.97	3.15	21.49
6/1/1965	12.47	33.35	(8.89)	8.93	(0.14)	-	12.47	3.61	14.85
7/1/1965	0.10	13.74	(0.01)	0.33	(0.02)	-	0.10	0.10	4.83
8/1/1965	1.44	12.87	(0.73)	0.44	(0.02)	-	1.44	0.72	4.98
9/1/1965	0.95	13.35	(0.43)	0.82	(0.02)	-	0.95	0.51	4.70
10/1/1965	1.09	11.02	(0.62)	0.82	(0.02)	-	1.09	0.47	4.01
11/1/1965	0.46	9.88	(0.27)	0.38	(0.02)	-	0.46	0.20	3.38
1965	4.05	60.87	(2.06)	2.80	(0.10)	-	4.05	2.00	21.90
6/1/1966	17.03	32.32	(14.09)	6.96	(0.18)	-	17.03	2.96	16.33
7/1/1966	0.18	14.92	(0.06)	0.74	(0.05)	-	0.18	0.13	5.46
8/1/1966	0.84	13.70	(0.40)	0.63	(0.05)	-	0.84	0.44	4.96
9/1/1966	1.69	12.44	(1.13)	0.86	(0.05)	-	1.69	0.56	4.76
10/1/1966	2.81	8.82	(2.25)	1.69	(0.05)	-	2.81	0.56	4.04
11/1/1966	1.36	7.44	(0.89)	1.50	(0.05)	-	1.36	0.46	2.86
1966	6.89	57.32	(4.74)	5.41	(0.25)	-	6.89	2.15	22.08
6/1/1967	5.79	42.24	(3.46)	6.38	(0.31)	-	5.79	2.35	15.89
7/1/1967	0.08	14.09	(0.01)	0.20	(0.04)	-	0.08	0.08	4.81
8/1/1967	4.05	9.37	(3.12)	1.10	(0.04)	-	4.05	0.93	4.76
9/1/1967	2.67	11.42	(2.05)	2.50	(0.04)	-	2.67	0.62	4.46
10/1/1967	0.58	10.87	(0.22)	2.01	(0.04)	-	0.58	0.35	4.14
11/1/1967	0.42	9.25	(0.19)	0.54	(0.04)	-	0.42	0.22	3.39
1967	7.80	55.00	(5.60)	6.36	(0.19)	-	7.80	2.20	21.57
6/1/1968	17.56	29.33	(14.72)	7.84	(0.31)	-	17.56	2.93	15.70
7/1/1968	-	15.79	-	1.00	(0.06)	-	-	-	5.56
8/1/1968	1.83	11.77	(1.20)	0.81	(0.06)	-	1.83	0.64	4.91
9/1/1968	2.69	8.94	(1.65)	1.73	(0.06)	-	2.69	1.05	3.78
10/1/1968	0.05	11.61	0.01	1.67	(0.05)	-	0.05	0.09	4.04
11/1/1968	0.39	8.86	(0.20)	0.49	(0.05)	-	0.39	0.21	2.90
1968	4.96	56.97	(3.04)	5.70	(0.28)	-	4.96	1.99	21.19

Table III-H.3 CT 12 Monsoon Period Water Balance

Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
6/1/1969	14.04	32.68	(10.48)	8.95	(0.35)	-	14.04	3.65	15.41
7/1/1969	-	14.41	-	0.68	(0.05)	-	-	0.01	5.23
8/1/1969	0.33	14.33	(0.09)	0.50	(0.05)	-	0.33	0.24	5.28
9/1/1969	2.71	12.48	(1.76)	1.38	(0.05)	-	2.71	0.96	5.07
10/1/1969	1.31	11.18	(0.81)	1.37	(0.05)	-	1.31	0.51	4.33
11/1/1969	0.83	7.76	(0.54)	0.74	(0.05)	-	0.83	0.31	3.11
1969	5.18	60.16	(3.20)	4.66	(0.26)	-	5.18	2.04	23.01
6/1/1970	8.80	37.72	(5.60)	7.35	(0.31)	-	8.80	3.25	15.36
7/1/1970	0.08	15.12	(0.00)	0.27	(0.04)	-	0.08	0.07	5.33
8/1/1970	1.04	13.98	(0.51)	0.57	(0.04)	-	1.04	0.54	5.56
9/1/1970	1.81	12.17	(0.99)	0.63	(0.04)	-	1.81	0.84	4.73
10/1/1970	3.52	7.91	(2.99)	1.90	(0.04)	-	3.52	0.56	4.45
11/1/1970	-	8.43	-	1.42	(0.04)	-	-	0.01	2.87
1970	6.45	57.60	(4.50)	4.78	(0.20)	-	6.45	2.02	22.93
6/1/1971	3.94	43.39	(2.24)	3.35	(0.24)	-	3.94	1.77	15.85
7/1/1971	-	14.88	-	0.11	(0.03)	-	-	-	5.06
8/1/1971	0.39	15.43	(0.17)	0.17	(0.03)	-	0.39	0.22	5.59
9/1/1971	4.92	7.28	(3.52)	1.33	(0.03)	-	4.92	1.42	4.19
10/1/1971	3.40	8.98	(2.83)	2.23	(0.03)	-	3.40	0.58	4.40
11/1/1971	4.22	3.15	(3.25)	1.58	(0.03)	-	4.22	0.97	2.80
1971	12.94	49.72	(9.77)	5.43	(0.15)	-	12.94	3.19	22.04
6/1/1972	2.32	49.72	(1.14)	5.72	(0.20)	-	2.32	1.23	17.30
7/1/1972	1.68	13.82	(1.25)	0.57	(0.03)	-	1.68	0.46	5.44
8/1/1972	0.27	16.10	(0.12)	0.98	(0.03)	-	0.27	0.18	5.69
9/1/1972	2.10	11.54	(1.37)	0.86	(0.03)	-	2.10	0.74	4.93
10/1/1972	0.70	11.61	(0.21)	0.77	(0.02)	-	0.70	0.51	4.37
11/1/1972	8.96	(1.73)	(7.69)	1.01	(0.02)	-	8.96	1.27	2.78
1972	13.71	51.34	(10.63)	4.19	(0.12)	-	13.71	3.16	23.21
6/1/1973	16.91	23.39	(11.65)	9.29	(0.19)	-	16.91	5.30	13.27
7/1/1973	0.87	14.69	(0.47)	1.55	(0.05)	-	0.87	0.42	5.37
8/1/1973	2.72	11.14	(2.08)	1.20	(0.06)	-	2.72	0.64	5.31
9/1/1973	1.51	13.19	(0.69)	2.06	(0.06)	-	1.51	0.82	4.93
10/1/1973	-	12.72	0.01	1.25	(0.05)	-	-	0.02	4.31
11/1/1973	-	8.66	-	0.25	(0.05)	-	-	0.00	3.27
1973	5.10	60.39	(3.22)	6.31	(0.27)	-	5.10	1.90	23.18
6/1/1974	8.11	33.94	(5.57)	7.09	(0.33)	-	8.11	2.59	13.59
7/1/1974	-	16.65	-	0.31	(0.04)	-	-	0.00	5.69
8/1/1974	2.44	11.54	(1.63)	0.79	(0.04)	-	2.44	0.81	5.16
9/1/1974	1.46	12.56	(0.75)	1.59	(0.04)	-	1.46	0.72	4.88
10/1/1974	3.86	7.52	(2.76)	1.53	(0.04)	-	3.86	1.10	4.26
11/1/1974	3.39	4.84	(2.63)	1.17	(0.04)	-	3.39	0.77	3.10
1974	11.14	53.11	(7.77)	5.39	(0.21)	-	11.14	3.41	23.08
6/1/1975	10.47	29.41	(7.11)	8.83	(0.25)	-	10.47	3.40	13.03
7/1/1975	-	15.20	-	0.96	(0.03)	-	-	0.00	5.27
8/1/1975	2.20	10.63	(1.02)	0.78	(0.03)	-	2.20	1.18	4.96
9/1/1975	2.09	12.13	(1.34)	1.39	(0.03)	-	2.09	0.76	4.65
10/1/1975	0.94	11.42	(0.31)	1.17	(0.03)	-	0.94	0.66	4.44
11/1/1975	0.28	8.35	(0.08)	0.25	(0.03)	-	0.28	0.19	3.43
1975	5.51	57.72	(2.75)	4.55	(0.17)	-	5.51	2.80	22.75
6/1/1976	8.07	36.34	(5.02)	5.54	(0.22)	-	8.07	3.14	15.22
7/1/1976	-	15.79	-	0.20	(0.03)	-	-	0.01	5.28
8/1/1976	2.80	10.31	(2.06)	0.58	(0.03)	-	2.80	0.71	5.23
9/1/1976	0.87	13.46	(0.59)	1.68	(0.03)	-	0.87	0.32	4.63
10/1/1976	4.49	5.87	(3.55)	1.26	(0.03)	-	4.49	0.93	4.06
11/1/1976	0.91	6.34	(0.47)	1.23	(0.03)	-	0.91	0.43	2.68
1976	9.06	51.77	(6.68)	4.95	(0.14)	-	9.06	2.41	21.87
6/1/1977	6.73	37.83	(4.22)	6.61	(0.18)	-	6.73	2.59	15.05
7/1/1977	0.04	15.75	(0.02)	0.07	(0.02)	-	0.04	0.04	5.46
8/1/1977	2.52	12.52	(1.88)	0.51	(0.02)	-	2.52	0.66	5.62
9/1/1977	2.60	11.50	(1.91)	1.79	(0.02)	-	2.60	0.66	4.92
10/1/1977	3.62	6.77	(2.60)	1.76	(0.02)	-	3.62	1.05	4.09
11/1/1977	1.30	7.76	(0.85)	1.44	(0.02)	-	1.30	0.49	3.39
1977	10.08	54.29	(7.26)	5.57	(0.11)	-	10.08	2.89	23.49

Table III-H.3 CT 12 Monsoon Period Water Balance

Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
6/1/1978	19.61	24.13	(15.33)	9.03	(0.16)	-	19.61	4.35	14.90
7/1/1978	0.55	15.12	(0.40)	1.05	(0.04)	-	0.55	0.15	5.55
8/1/1978	0.94	14.41	(0.59)	0.99	(0.05)	-	0.94	0.42	5.90
9/1/1978	1.14	11.69	(0.61)	1.32	(0.05)	-	1.14	0.52	4.26
10/1/1978	0.39	10.83	(0.19)	0.63	(0.05)	-	0.39	0.24	4.30
11/1/1978	1.93	7.52	(1.46)	0.41	(0.05)	-	1.93	0.47	4.04
1978	4.96	59.57	(3.25)	4.40	(0.24)	-	4.96	1.79	24.05
6/1/1979	25.47	15.55	(20.28)	9.09	(0.41)	-	25.47	5.28	14.22
7/1/1979	0.35	14.61	(0.03)	1.25	(0.07)	-	0.35	0.34	5.17
8/1/1979	0.16	14.92	(0.07)	0.94	(0.07)	-	0.16	0.11	5.76
9/1/1979	1.61	11.22	(0.78)	1.31	(0.07)	-	1.61	0.85	4.49
10/1/1979	0.12	13.31	(0.02)	1.21	(0.06)	-	0.12	0.11	4.85
11/1/1979	0.67	9.02	(0.46)	0.70	(0.07)	-	0.67	0.22	3.81
1979	2.91	63.07	(1.35)	5.42	(0.34)	-	2.91	1.63	24.08
6/1/1980	15.55	26.02	(11.57)	7.84	(0.46)	-	15.55	4.08	14.55
7/1/1980	0.16	15.24	(0.10)	1.03	(0.07)	-	0.16	0.04	5.23
8/1/1980	1.97	11.81	(1.15)	1.24	(0.07)	-	1.97	0.82	5.39
9/1/1980	1.38	12.17	(0.69)	1.85	(0.07)	-	1.38	0.69	4.74
10/1/1980	0.59	11.81	(0.35)	1.62	(0.06)	-	0.59	0.29	4.50
11/1/1980	0.04	9.13	(0.01)	0.64	(0.06)	-	0.04	0.04	3.67
1980	4.13	60.16	(2.30)	6.38	(0.34)	-	4.13	1.87	23.53
6/1/1981	9.61	37.80	(6.94)	8.14	(0.41)	-	9.61	2.75	16.76
7/1/1981	0.16	15.59	(0.03)	1.17	(0.06)	-	0.16	0.12	5.53
8/1/1981	2.17	11.69	(1.72)	0.82	(0.06)	-	2.17	0.45	5.49
9/1/1981	2.76	11.26	(1.88)	2.41	(0.06)	-	2.76	0.88	4.55
10/1/1981	0.51	11.61	(0.33)	1.82	(0.05)	-	0.51	0.22	4.84
11/1/1981	0.98	6.77	(0.48)	0.65	(0.05)	-	0.98	0.50	3.07
1981	6.57	56.93	(4.45)	6.87	(0.27)	-	6.57	2.17	23.48
6/1/1982	12.68	30.87	(8.50)	9.11	(0.33)	-	12.68	4.28	15.04
7/1/1982	0.08	13.94	(0.04)	0.83	(0.04)	-	0.08	0.02	5.04
8/1/1982	2.64	10.08	(1.69)	0.72	(0.05)	-	2.64	0.98	4.94
9/1/1982	4.02	7.99	(2.87)	1.93	(0.04)	-	4.02	1.14	4.25
10/1/1982	3.19	7.91	(2.36)	2.42	(0.04)	-	3.19	0.81	4.25
11/1/1982	-	8.46	0.04	1.81	(0.04)	-	-	0.04	3.10
1982	9.92	48.39	(6.93)	7.71	(0.21)	-	9.92	3.00	21.57
6/1/1983	15.47	23.94	(11.34)	8.27	(0.25)	-	15.47	4.33	13.33
7/1/1983	-	13.94	-	0.91	(0.04)	-	-	-	5.53
8/1/1983	2.80	11.54	(2.05)	1.10	(0.05)	-	2.80	0.78	5.41
9/1/1983	3.82	8.35	(2.64)	2.05	(0.05)	-	3.82	1.24	4.18
10/1/1983	5.35	6.34	(4.21)	2.24	(0.04)	-	5.35	1.13	4.46
11/1/1983	1.14	6.46	(0.59)	1.65	(0.05)	-	1.14	0.60	2.89
1983	13.11	46.61	(9.49)	7.95	(0.22)	-	13.11	3.74	22.47
6/1/1984	6.54	39.69	(4.45)	7.20	(0.31)	-	6.54	2.33	15.78
7/1/1984	1.34	12.56	(0.98)	0.35	(0.05)	-	1.34	0.39	5.38
8/1/1984	3.35	8.50	(1.85)	1.26	(0.05)	-	3.35	1.51	4.65
9/1/1984	3.43	7.95	(1.73)	1.81	(0.05)	-	3.43	1.72	4.09
10/1/1984	2.01	9.37	(1.26)	1.97	(0.04)	-	2.01	0.78	4.53
11/1/1984	1.38	5.47	(0.71)	0.87	(0.04)	-	1.38	0.69	2.68
1984	11.50	43.86	(6.54)	6.26	(0.22)	-	11.50	5.08	21.33
6/1/1985	14.25	22.64	(10.55)	6.97	(0.26)	-	14.25	3.91	13.20
7/1/1985	-	12.01	-	0.75	(0.05)	-	-	-	4.69
8/1/1985	1.26	11.93	(0.87)	0.63	(0.05)	-	1.26	0.37	4.91
9/1/1985	2.20	10.63	(1.46)	1.54	(0.05)	-	2.20	0.84	4.57
10/1/1985	3.74	6.22	(2.44)	1.26	(0.05)	-	3.74	1.31	4.02
11/1/1985	1.26	5.51	(0.51)	1.10	(0.05)	-	1.26	0.73	2.40
1985	8.46	46.30	(5.28)	5.28	(0.23)	-	8.46	3.26	20.60
6/1/1986	10.98	34.49	(8.11)	8.70	(0.32)	-	10.98	3.13	16.29
7/1/1986	-	14.84	-	0.75	(0.05)	-	-	0.01	5.54
8/1/1986	4.76	5.87	(3.35)	1.38	(0.05)	-	4.76	1.42	4.60
9/1/1986	2.13	10.43	(1.26)	2.24	(0.05)	-	2.13	0.91	4.71
10/1/1986	2.17	7.87	(1.42)	1.50	(0.04)	-	2.17	0.81	4.07
11/1/1986	1.77	5.47	(1.34)	1.06	(0.04)	-	1.77	0.45	2.44
1986	10.83	44.49	(7.36)	6.93	(0.22)	-	10.83	3.60	21.36

Table III-H.3 CT 12 Monsoon Period Water Balance

Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
6/1/1987	11.73	27.05	(8.11)	7.52	(0.27)	-	11.73	3.74	14.14
7/1/1987	0.24	14.37	(0.12)	0.91	(0.04)	-	0.24	0.09	5.17
8/1/1987	2.05	11.89	(1.73)	1.02	(0.04)	-	2.05	0.35	5.50
9/1/1987	3.03	9.45	(2.28)	1.85	(0.04)	-	3.03	0.75	4.63
10/1/1987	1.34	8.90	(0.71)	1.61	(0.04)	-	1.34	0.66	4.13
11/1/1987	0.31	8.58	(0.16)	1.02	(0.04)	-	0.31	0.22	3.69
1987	6.97	53.19	(5.00)	6.42	(0.21)	-	6.97	2.09	23.12
6/1/1988	12.68	29.57	(9.29)	7.76	(0.27)	-	12.68	3.46	15.00
7/1/1988	0.12	13.54	(0.04)	0.51	(0.04)	-	0.12	0.11	5.30
8/1/1988	3.39	9.41	(2.68)	0.47	(0.04)	-	3.39	0.74	5.15
9/1/1988	6.26	5.67	(4.53)	2.36	(0.04)	-	6.26	1.73	4.27
10/1/1988	0.31	10.24	(0.04)	2.56	(0.04)	-	0.31	0.30	3.96
11/1/1988	1.50	7.32	(1.06)	1.85	(0.04)	-	1.50	0.47	3.45
1988	11.57	46.18	(8.35)	7.76	(0.21)	-	11.57	3.36	22.14
6/1/1989	7.20	41.30	(4.84)	6.97	(0.25)	-	7.20	2.46	17.29
7/1/1989	-	14.41	-	0.16	(0.03)	-	-	-	5.55
8/1/1989	0.51	13.19	(0.28)	0.16	(0.03)	-	0.51	0.22	5.73
9/1/1989	0.94	11.46	(0.43)	0.51	(0.03)	-	0.94	0.56	4.32
10/1/1989	1.57	10.08	(1.30)	1.18	(0.03)	-	1.57	0.31	4.51
11/1/1989	1.06	6.73	(0.59)	0.59	(0.03)	-	1.06	0.53	3.57
1989	4.09	55.87	(2.60)	2.60	(0.17)	-	4.09	1.62	23.69
6/1/1990	8.11	35.35	(5.04)	5.51	(0.22)	-	8.11	3.17	15.31
7/1/1990	0.24	14.72	(0.20)	0.24	(0.03)	-	0.24	0.11	5.40
8/1/1990	1.54	10.35	(0.83)	0.47	(0.02)	-	1.54	0.71	5.16
9/1/1990	9.09	3.86	(8.03)	1.85	(0.02)	0.00	9.09	1.07	4.02
10/1/1990	2.95	7.13	(2.13)	2.44	(0.02)	-	2.95	0.90	4.17
11/1/1990	0.28	7.83	(0.08)	1.77	(0.02)	-	0.28	0.22	3.23
1990	14.09	43.90	(11.26)	6.77	(0.12)	0.00	14.09	3.01	21.98
6/1/1991	15.87	24.76	(11.89)	8.54	(0.19)	-	15.87	4.04	14.73
7/1/1991	0.59	12.52	(0.28)	1.06	(0.04)	-	0.59	0.37	5.21
8/1/1991	1.69	11.22	(1.26)	1.02	(0.05)	-	1.69	0.47	5.17
9/1/1991	2.91	9.69	(1.97)	1.89	(0.05)	-	2.91	0.96	4.65
10/1/1991	1.65	8.98	(1.06)	1.81	(0.05)	-	1.65	0.62	4.09
11/1/1991	1.22	7.99	(0.94)	1.18	(0.05)	-	1.22	0.28	3.99
1991	8.07	50.39	(5.51)	6.97	(0.24)	-	8.07	2.71	23.12
6/1/1992	24.29	15.16	(18.31)	8.70	(0.35)	-	24.29	6.09	14.72
7/1/1992	1.30	11.73	(0.63)	2.01	(0.06)	-	1.30	0.70	4.97
8/1/1992	3.31	9.61	(2.52)	1.42	(0.07)	-	3.31	0.79	5.44
9/1/1992	5.55	5.71	(4.29)	2.56	(0.07)	-	5.55	1.28	4.49
10/1/1992	0.91	10.31	(0.63)	2.72	(0.06)	-	0.91	0.30	4.06
11/1/1992	1.22	7.28	(0.91)	1.65	(0.07)	-	1.22	0.36	3.90
1992	12.28	44.65	(8.98)	10.35	(0.33)	-	12.28	3.43	22.85
6/1/1993	27.52	12.68	(23.50)	8.66	(0.51)	-	27.52	4.11	14.30
7/1/1993	-	13.74	-	1.38	(0.08)	-	-	-	5.07
8/1/1993	0.28	12.60	(0.12)	0.91	(0.08)	-	0.28	0.11	5.27
9/1/1993	3.58	8.15	(2.32)	1.30	(0.08)	-	3.58	1.33	4.95
10/1/1993	0.16	10.55	0.04	2.01	(0.08)	-	0.16	0.22	3.76
11/1/1993	0.83	7.13	(0.39)	1.10	(0.08)	-	0.83	0.45	3.67
1993	4.84	52.17	(2.80)	6.69	(0.39)	-	4.84	2.12	22.72
6/1/1994	9.96	31.65	(7.36)	7.87	(0.54)	-	9.96	2.75	15.17
7/1/1994	0.35	13.39	(0.24)	1.30	(0.08)	-	0.35	0.17	5.35
8/1/1994	1.50	12.20	(1.22)	1.02	(0.08)	-	1.50	0.26	5.54
9/1/1994	0.71	12.48	(0.20)	1.77	(0.08)	-	0.71	0.57	5.03
10/1/1994	2.05	8.27	(1.34)	1.69	(0.08)	-	2.05	0.75	4.23
11/1/1994	1.85	5.51	(1.50)	1.10	(0.08)	-	1.85	0.36	3.25
1994	6.46	51.85	(4.49)	6.89	(0.39)	-	6.46	2.11	23.40
6/1/1995	16.10	21.65	(11.65)	8.03	(0.53)	-	16.10	4.61	14.05
7/1/1995	-	12.99	-	0.98	(0.08)	-	-	-	4.73
8/1/1995	0.04	13.78	-	0.87	(0.08)	-	0.04	0.04	5.36
9/1/1995	4.06	8.66	(3.07)	1.81	(0.08)	-	4.06	1.00	5.39
10/1/1995	2.87	8.27	(2.32)	2.44	(0.08)	-	2.87	0.60	4.56
11/1/1995	-	9.06	0.08	1.85	(0.07)	-	-	0.10	3.61
1995	6.97	52.76	(5.31)	7.95	(0.38)	-	6.97	1.73	23.64
6/1/1996	6.34	39.76	(4.53)	8.23	(0.48)	-	6.34	1.96	17.23
7/1/1996	0.39	14.17	(0.24)	0.98	(0.07)	-	0.39	0.16	5.47
8/1/1996	2.36	10.63	(1.46)	1.50	(0.07)	-	2.36	0.94	5.32
9/1/1996	1.30	11.02	(0.75)	1.73	(0.07)	-	1.30	0.57	4.79
10/1/1996	3.23	5.51	(2.09)	1.65	(0.06)	-	3.23	1.18	4.01
11/1/1996	0.39	7.87	(0.16)	1.54	(0.06)	-	0.39	0.26	3.85
1996	7.68	49.21	(4.69)	7.40	(0.32)	-	7.68	3.11	23.44

Table III-H.3 CT 12 Monsoon Period Water Balance

Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
6/1/1997	6.97	37.40	(4.72)	7.68	(0.39)	-	6.97	2.44	15.88
7/1/1997	0.04	12.99	-	0.39	(0.05)	-	0.04	0.02	5.13
8/1/1997	0.12	13.78	(0.04)	0.35	(0.05)	-	0.12	0.07	5.89
9/1/1997	2.72	9.45	(1.89)	1.10	(0.05)	-	2.72	0.87	4.66
10/1/1997	-	11.42	-	1.18	(0.05)	-	-	0.02	4.56
11/1/1997	0.75	6.30	(0.47)	0.24	(0.05)	-	0.75	0.29	3.74
1997	3.62	53.94	(2.40)	3.27	(0.24)	-	3.62	1.27	23.98
6/1/1998	14.13	22.83	(10.04)	7.28	(0.31)	-	14.13	4.21	13.06
7/1/1998	-	12.99	-	0.83	(0.05)	-	-	0.00	4.83
8/1/1998	1.69	11.42	(1.10)	1.30	(0.05)	-	1.69	0.63	5.67
9/1/1998	2.56	9.84	(1.46)	1.61	(0.05)	-	2.56	1.11	4.73
10/1/1998	1.38	9.84	(0.91)	1.34	(0.05)	-	1.38	0.52	4.82
11/1/1998	-	7.87	-	0.59	(0.05)	-	-	0.00	3.85
1998	5.63	51.97	(3.46)	5.67	(0.23)	-	5.63	2.27	23.90
6/1/1999	5.08	37.80	(3.46)	4.29	(0.30)	-	5.08	1.73	15.57
7/1/1999	-	13.39	-	0.16	(0.03)	-	-	-	5.00
8/1/1999	5.83	5.12	(4.41)	1.06	(0.03)	-	5.83	1.44	5.16
9/1/1999	2.99	8.66	(1.93)	2.36	(0.03)	-	2.99	1.08	4.31
10/1/1999	1.14	9.45	(0.35)	1.97	(0.03)	-	1.14	0.83	4.25
11/1/1999	-	9.06	-	1.30	(0.03)	-	-	0.01	3.82
1999	9.96	45.67	(6.69)	6.85	(0.17)	-	9.96	3.37	22.54
6/1/2000	3.90	44.49	(2.76)	3.31	(0.24)	-	3.90	1.19	17.87
7/1/2000	0.79	12.60	(0.47)	0.28	(0.03)	-	0.79	0.34	5.86
8/1/2000	0.08	14.17	(0.04)	0.28	(0.03)	-	0.08	0.04	5.52
9/1/2000	0.71	11.02	(0.31)	0.24	(0.03)	-	0.71	0.44	5.25
10/1/2000	-	11.81	-	0.12	(0.03)	-	-	0.02	4.50
11/1/2000	5.31	1.57	(4.37)	0.28	(0.02)	-	5.31	0.94	3.66
2000	6.89	51.18	(5.20)	1.18	(0.14)	-	6.89	1.78	24.78
6/1/2001	11.77	28.35	(7.76)	9.33	(0.17)	-	11.77	4.20	14.56
7/1/2001	0.04	14.17	-	0.55	(0.02)	-	0.04	0.03	5.59
8/1/2001	2.68	9.84	(2.40)	0.35	(0.02)	-	2.68	0.35	5.87
9/1/2001	3.54	8.27	(2.48)	2.52	(0.02)	-	3.54	1.05	4.15
10/1/2001	0.16	11.81	(0.08)	2.36	(0.02)	-	0.16	0.10	4.79
11/1/2001	0.35	7.48	(0.20)	0.39	(0.02)	-	0.35	0.20	3.65
2001	6.77	51.57	(5.16)	6.18	(0.12)	-	6.77	1.72	24.04
6/1/2002	3.03	42.13	(1.89)	2.20	(0.17)	-	3.03	1.27	17.09
7/1/2002	-	14.57	-	0.08	(0.02)	-	-	-	5.57
8/1/2002	0.31	13.78	(0.12)	0.12	(0.02)	-	0.31	0.22	6.27
9/1/2002	0.47	11.81	(0.24)	0.12	(0.02)	-	0.47	0.25	4.90
10/1/2002	1.26	9.06	(0.71)	0.55	(0.02)	-	1.26	0.61	4.56
11/1/2002	0.12	7.87	(0.04)	0.28	(0.02)	-	0.12	0.07	3.72
2002	2.17	57.09	(1.10)	1.14	(0.12)	-	2.17	1.15	25.02
6/1/2003	9.25	32.28	(6.81)	6.38	(0.15)	-	9.25	2.66	15.60
7/1/2003	-	13.78	-	0.24	(0.02)	-	-	-	6.03
8/1/2003	0.51	12.60	(0.12)	0.12	(0.02)	-	0.51	0.39	6.11
9/1/2003	1.34	10.63	(0.87)	0.43	(0.02)	-	1.34	0.51	4.94
10/1/2003	2.05	9.06	(1.06)	0.94	(0.02)	-	2.05	0.99	4.33
11/1/2003	0.08	8.66	(0.04)	0.59	(0.02)	-	0.08	0.09	3.92
2003	3.98	54.72	(2.09)	2.32	(0.11)	-	3.98	1.99	25.33
6/1/2004	7.95	32.28	(5.39)	5.43	(0.15)	-	7.95	2.70	16.89
7/1/2004	-	13.39	-	-	(0.02)	-	-	-	5.46
8/1/2004	0.55	12.20	(0.24)	0.12	(0.02)	-	0.55	0.35	5.62
9/1/2004	2.20	9.84	(1.30)	0.67	(0.02)	-	2.20	0.94	4.93
10/1/2004	1.61	8.27	(1.14)	0.91	(0.02)	-	1.61	0.48	4.87
11/1/2004	1.18	5.51	(0.79)	0.55	(0.02)	-	1.18	0.44	3.51
2004	5.55	49.21	(3.46)	2.24	(0.10)	-	5.55	2.21	24.39
6/1/2005	16.50	22.05	(13.31)	6.81	(0.11)	-	16.50	3.35	13.86
7/1/2005	0.08	12.60	(0.04)	0.87	(0.03)	-	0.08	0.04	5.14
8/1/2005	1.42	11.81	(1.10)	0.55	(0.04)	-	1.42	0.31	6.50
9/1/2005	4.92	5.91	(3.62)	2.28	(0.04)	-	4.92	1.31	3.98
10/1/2005	0.08	10.24	(0.04)	2.44	(0.04)	-	0.08	0.11	4.57
11/1/2005	0.43	7.48	(0.28)	0.67	(0.04)	-	0.43	0.17	3.81
2005	6.93	48.03	(5.08)	6.81	(0.19)	-	6.93	1.94	23.99
6/1/2006	3.94	39.37	(2.99)	4.02	(0.27)	-	3.94	0.97	16.77
7/1/2006	0.51	12.99	(0.24)	0.16	(0.03)	-	0.51	0.27	5.71
8/1/2006	3.19	7.87	(2.44)	0.43	(0.03)	-	3.19	0.76	5.46
9/1/2006	3.03	7.48	(1.85)	1.93	(0.03)	-	3.03	1.24	4.04
10/1/2006	1.18	7.48	(0.71)	1.73	(0.03)	-	1.18	0.48	3.80
11/1/2006	1.02	5.91	(0.43)	1.14	(0.03)	-	1.02	0.63	3.31
2006	8.94	41.73	(5.67)	5.39	(0.17)	-	8.94	3.38	22.33

Table III-H.4 CT 12 Winter Storm Period Water Balance

Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[cm]	[cm]	[cm]	[cm]	[cm]	[cm]	[cm]	[cm]	[cm]
10/1/1951	14.21	90.07	(9.21)	13.74	(0.07)	-	14.21	5.00	33.65
11/1/1951	1.64	8.59	(1.24)	0.85	(0.03)	-	1.64	0.40	3.15
12/1/1951	1.71	3.44	(1.01)	0.47	(0.03)	-	1.71	0.70	1.66
1/1/1952	3.02	0.52	(2.33)	0.39	(0.04)	-	3.02	0.69	1.05
2/1/1952	2.79	0.81	(1.94)	0.60	(0.04)	-	2.79	0.85	1.08
3/1/1952	0.50	4.29	(0.11)	0.96	(0.03)	-	0.50	0.39	1.31
1952	9.66	17.65	(6.63)	3.28	(0.17)	-	9.66	3.02	8.25
10/1/1952	10.88	83.79	(7.07)	11.45	(0.25)	-	10.88	3.81	30.56
11/1/1952	-	11.74	0.04	0.35	(0.04)	-	-	0.04	3.81
12/1/1952	4.31	0.74	(3.67)	0.23	(0.04)	-	4.31	0.64	1.47
1/1/1953	1.98	1.22	(1.25)	0.49	(0.04)	-	1.98	0.73	0.96
2/1/1953	0.74	3.65	(0.30)	0.74	(0.04)	-	0.74	0.44	1.27
3/1/1953	0.60	4.11	(0.30)	0.92	(0.03)	-	0.60	0.30	1.36
1953	7.63	21.45	(5.48)	2.73	(0.18)	-	7.63	2.15	8.87
10/1/1953	7.84	84.99	(5.79)	9.85	(0.24)	-	7.84	2.06	29.79
11/1/1953	0.01	10.29	0.02	0.11	(0.03)	-	0.01	0.03	3.39
12/1/1953	0.56	5.67	(0.35)	0.10	(0.03)	-	0.56	0.21	1.91
1/1/1954	0.19	3.36	0.00	0.13	(0.03)	-	0.19	0.20	1.06
2/1/1954	2.41	1.97	(1.79)	0.29	(0.03)	-	2.41	0.62	1.27
3/1/1954	0.72	5.39	(0.35)	0.78	(0.03)	-	0.72	0.37	1.83
1954	3.90	26.67	(2.46)	1.42	(0.16)	-	3.90	1.43	9.46
10/1/1954	17.95	72.38	(13.68)	13.91	(0.20)	-	17.95	4.27	29.17
11/1/1954	-	10.94	0.06	1.55	(0.03)	-	-	0.06	3.47
12/1/1954	0.09	6.69	(0.05)	0.27	(0.03)	-	0.09	0.04	2.01
1/1/1955	0.29	3.74	(0.09)	0.12	(0.03)	-	0.29	0.20	1.30
2/1/1955	3.41	(0.55)	(2.55)	0.29	(0.03)	-	3.41	0.86	0.83
3/1/1955	0.28	4.13	0.01	0.73	(0.02)	-	0.28	0.29	1.29
1955	4.07	24.96	(2.62)	2.96	(0.13)	-	4.07	1.46	8.90
10/1/1955	9.49	78.46	(6.94)	9.66	(0.17)	-	9.49	2.57	28.52
11/1/1955	0.02	11.26	0.02	0.17	(0.02)	-	0.02	0.04	3.54
12/1/1955	0.96	4.37	(0.66)	0.12	(0.02)	-	0.96	0.31	1.72
1/1/1956	1.37	2.76	(1.01)	0.33	(0.02)	-	1.37	0.36	1.30
2/1/1956	2.62	1.57	(2.09)	0.38	(0.02)	-	2.62	0.52	1.38
3/1/1956	2.00	1.69	(1.19)	0.65	(0.02)	-	2.00	0.82	1.07
1956	6.98	21.65	(4.93)	1.65	(0.11)	-	6.98	2.06	9.01
10/1/1956	5.70	88.27	(3.50)	7.57	(0.14)	-	5.70	2.23	30.99
11/1/1956	0.54	8.94	(0.27)	0.06	(0.02)	-	0.54	0.26	3.03
12/1/1956	-	5.24	0.09	0.13	(0.02)	-	-	0.09	1.61
1/1/1957	0.47	3.35	(0.24)	0.10	(0.02)	-	0.47	0.23	1.13
2/1/1957	4.76	(1.85)	(4.06)	0.29	(0.02)	-	4.76	0.71	0.96
3/1/1957	0.73	4.69	(0.05)	1.02	(0.02)	-	0.73	0.69	1.51
1957	6.50	20.35	(4.53)	1.61	(0.09)	-	6.50	1.98	8.24
10/1/1957	8.71	78.15	(5.20)	8.35	(0.12)	-	8.71	3.51	28.90
11/1/1957	3.23	4.69	(2.37)	0.66	(0.02)	-	3.23	0.86	2.60
12/1/1957	0.61	3.62	(0.08)	0.48	(0.02)	-	0.61	0.53	1.36
1/1/1958	1.06	2.80	(0.55)	0.40	(0.02)	-	1.06	0.52	1.23
2/1/1958	0.01	4.25	0.07	0.48	(0.02)	-	0.01	0.09	1.22
3/1/1958	2.52	1.97	(1.83)	0.63	(0.01)	-	2.52	0.69	1.34
1958	7.43	17.32	(4.76)	2.65	(0.08)	-	7.43	2.68	7.74
10/1/1958	12.03	78.27	(7.49)	8.82	(0.11)	-	12.03	4.55	30.00
11/1/1958	1.92	7.64	(1.49)	1.42	(0.02)	-	1.92	0.43	3.06
12/1/1958	1.52	3.98	(1.16)	0.75	(0.01)	-	1.52	0.37	1.61
1/1/1959	-	4.76	0.08	0.55	(0.01)	-	-	0.08	1.56
2/1/1959	0.21	4.33	(0.04)	0.56	(0.01)	-	0.21	0.17	1.30
3/1/1959	1.42	2.76	(0.86)	0.60	(0.01)	-	1.42	0.56	1.23
1959	5.08	23.46	(3.47)	3.87	(0.07)	-	5.08	1.61	8.76
10/1/1959	10.77	82.76	(7.63)	8.27	(0.09)	-	10.77	3.16	31.12
11/1/1959	4.87	4.72	(4.48)	1.06	(0.01)	-	4.87	0.39	3.20
12/1/1959	0.38	4.84	0.13	0.94	(0.01)	-	0.38	0.51	1.62
1/1/1960	5.23	(2.05)	(4.51)	0.49	(0.01)	-	5.23	0.73	1.00
2/1/1960	4.16	(1.22)	(3.46)	0.49	(0.01)	-	4.16	0.71	0.85
3/1/1960	0.87	3.03	(0.34)	0.78	(0.01)	-	0.87	0.53	1.18
1960	15.52	9.33	(12.67)	3.78	(0.06)	-	15.52	2.87	7.86

Table III-H.4 CT 12 Winter Storm Period Water Balance

Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[cm]	[cm]	[cm]	[cm]	[cm]	[cm]	[cm]	[cm]	[cm]
10/1/1960	3.66	92.36	(1.76)	7.87	(0.12)	-	3.66	1.93	31.77
11/1/1960	2.06	6.42	(1.34)	0.46	(0.03)	-	2.06	0.72	2.80
12/1/1960	0.48	4.76	(0.18)	0.44	(0.03)	-	0.48	0.31	1.70
1/1/1961	0.47	3.23	(0.17)	0.28	(0.03)	-	0.47	0.30	1.25
2/1/1961	0.70	3.19	(0.32)	0.30	(0.03)	-	0.70	0.38	1.27
3/1/1961	0.23	4.92	0.02	0.43	(0.03)	-	0.23	0.25	1.46
1961	3.94	22.52	(1.99)	1.90	(0.13)	-	3.94	1.96	8.48
10/1/1961	6.02	83.07	(3.23)	3.87	(0.19)	-	6.02	2.79	29.75
11/1/1961	0.45	8.90	(0.30)	0.56	(0.03)	-	0.45	0.16	3.23
12/1/1961	0.32	3.90	0.02	0.10	(0.02)	-	0.32	0.33	1.27
1/1/1962	3.88	(0.87)	(3.20)	0.26	(0.03)	-	3.88	0.68	0.99
2/1/1962	3.21	(0.08)	(2.63)	0.50	(0.02)	-	3.21	0.58	0.93
3/1/1962	1.67	2.44	(0.99)	0.81	(0.02)	-	1.67	0.68	1.29
1962	9.52	14.29	(7.10)	2.22	(0.12)	-	9.52	2.44	7.71
10/1/1962	4.72	86.42	(2.41)	7.39	(0.16)	-	4.72	2.33	30.75
11/1/1962	0.87	8.31	(0.33)	0.44	(0.02)	-	0.87	0.54	2.98
12/1/1962	0.83	5.31	(0.52)	0.30	(0.02)	-	0.83	0.31	2.04
1/1/1963	1.81	2.01	(1.11)	0.20	(0.02)	-	1.81	0.70	1.37
2/1/1963	2.09	1.46	(1.50)	0.43	(0.02)	-	2.09	0.59	1.00
3/1/1963	4.22	0.83	(3.86)	0.95	(0.02)	-	4.22	0.37	1.61
1963	9.83	17.91	(7.32)	2.32	(0.11)	-	9.83	2.51	9.00
10/1/1963	13.65	75.08	(10.47)	11.32	(0.13)	-	13.65	3.22	29.66
11/1/1963	0.67	9.37	(0.42)	2.07	(0.02)	-	0.67	0.26	3.50
12/1/1963	2.35	2.52	(1.52)	0.58	(0.02)	-	2.35	0.83	1.61
1/1/1964	0.34	3.46	(0.04)	0.48	(0.02)	-	0.34	0.30	1.28
2/1/1964	0.57	2.91	(0.31)	0.48	(0.02)	-	0.57	0.27	1.02
3/1/1964	-	4.41	0.08	0.72	(0.02)	-	-	0.08	1.28
1964	3.93	22.68	(2.20)	4.32	(0.10)	-	3.93	1.74	8.69
10/1/1964	7.67	75.43	(3.79)	5.17	(0.14)	-	7.67	3.90	27.97
11/1/1964	1.54	8.98	(1.20)	0.85	(0.02)	-	1.54	0.33	3.51
12/1/1964	1.38	3.35	(0.94)	0.43	(0.02)	-	1.38	0.44	1.60
1/1/1965	1.57	1.65	(1.12)	0.30	(0.02)	-	1.57	0.45	1.21
2/1/1965	2.90	0.59	(2.16)	0.53	(0.02)	-	2.90	0.74	1.00
3/1/1965	2.83	1.61	(2.38)	0.90	(0.02)	-	2.83	0.45	1.23
1965	10.22	16.18	(7.80)	3.00	(0.10)	-	10.22	2.42	8.54
10/1/1965	7.38	77.13	(4.08)	9.20	(0.14)	-	7.38	3.32	28.31
11/1/1965	0.46	9.88	(0.27)	0.38	(0.02)	-	0.46	0.20	3.38
12/1/1965	2.35	3.27	(1.93)	0.19	(0.02)	-	2.35	0.44	2.08
1/1/1966	10.47	(7.87)	(9.54)	0.32	(0.02)	-	10.47	0.94	0.93
2/1/1966	1.83	1.34	(1.27)	0.52	(0.02)	-	1.83	0.56	0.95
3/1/1966	2.03	1.65	(1.39)	0.74	(0.02)	-	2.03	0.65	1.04
1966	17.14	8.27	(14.39)	2.15	(0.10)	-	17.14	2.79	8.38
10/1/1966	5.87	83.82	(3.82)	9.10	(0.30)	-	5.87	2.06	30.55
11/1/1966	1.36	7.44	(0.89)	1.50	(0.05)	-	1.36	0.46	2.86
12/1/1966	0.88	4.80	(0.57)	0.81	(0.05)	-	0.88	0.30	2.01
1/1/1967	1.25	2.13	(0.72)	0.41	(0.05)	-	1.25	0.54	1.22
2/1/1967	0.79	2.87	(0.44)	0.50	(0.05)	-	0.79	0.35	0.96
3/1/1967	-	4.69	0.09	0.72	(0.04)	-	-	0.09	1.54
1967	4.28	21.93	(2.54)	3.94	(0.23)	-	4.28	1.75	8.58
10/1/1967	10.25	73.50	(7.22)	9.76	(0.28)	-	10.25	3.04	28.34
11/1/1967	0.42	9.25	(0.19)	0.54	(0.04)	-	0.42	0.22	3.39
12/1/1967	2.11	3.50	(1.65)	0.12	(0.04)	-	2.11	0.47	2.04
1/1/1968	10.06	(7.48)	(9.41)	0.30	(0.04)	-	10.06	0.66	0.80
2/1/1968	0.63	3.27	(0.25)	0.64	(0.03)	-	0.63	0.38	1.18
3/1/1968	2.11	2.91	(1.51)	1.02	(0.04)	-	2.11	0.61	1.44
1968	15.32	11.46	(13.01)	2.62	(0.18)	-	15.32	2.35	8.85
10/1/1968	7.23	75.24	(4.73)	10.97	(0.39)	-	7.23	2.59	28.53
11/1/1968	0.39	8.86	(0.20)	0.49	(0.05)	-	0.39	0.21	2.90
12/1/1968	2.54	2.24	(1.94)	0.41	(0.05)	-	2.54	0.59	1.81
1/1/1969	3.30	(0.35)	(2.71)	0.35	(0.05)	-	3.30	0.60	1.04
2/1/1969	4.16	(0.94)	(3.41)	0.53	(0.05)	-	4.16	0.76	0.96
3/1/1969	1.36	2.32	(0.56)	0.74	(0.04)	-	1.36	0.81	1.04
1969	11.75	12.13	(8.83)	2.52	(0.25)	-	11.75	2.97	7.75

Table III-H.4 CT 12 Winter Storm Period Water Balance

Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[cm]	[cm]	[cm]	[cm]	[cm]	[cm]	[cm]	[cm]	[cm]
10/1/1969	7.04	81.81	(4.52)	10.85	(0.36)	-	7.04	2.61	30.43
11/1/1969	0.83	7.76	(0.54)	0.74	(0.05)	-	0.83	0.31	3.11
12/1/1969	2.12	2.56	(1.41)	0.40	(0.05)	-	2.12	0.72	1.64
1/1/1970	1.32	2.20	(0.69)	0.39	(0.05)	-	1.32	0.63	1.32
2/1/1970	0.50	2.87	(0.07)	0.44	(0.05)	-	0.50	0.44	0.94
3/1/1970	0.41	4.57	(0.02)	0.80	(0.04)	-	0.41	0.38	1.48
1970	5.18	19.96	(2.73)	2.76	(0.23)	-	5.18	2.49	8.49
10/1/1970	10.90	74.69	(7.91)	8.69	(0.29)	-	10.90	3.08	30.04
11/1/1970	-	8.43	-	1.42	(0.04)	-	-	0.01	2.87
12/1/1970	0.65	4.72	(0.54)	0.46	(0.03)	-	0.65	0.11	1.96
1/1/1971	1.21	1.89	(0.56)	0.20	(0.04)	-	1.21	0.65	1.09
2/1/1971	0.85	3.15	(0.53)	0.42	(0.03)	-	0.85	0.32	1.08
3/1/1971	0.82	3.74	(0.46)	0.54	(0.03)	-	0.82	0.39	1.55
1971	3.53	21.93	(2.08)	3.03	(0.17)	-	3.53	1.48	8.55
10/1/1971	9.12	76.46	(6.67)	5.58	(0.22)	-	9.12	2.52	29.41
11/1/1971	4.22	3.15	(3.25)	1.58	(0.03)	-	4.22	0.97	2.80
12/1/1971	0.04	4.84	0.09	0.91	(0.03)	-	0.04	0.13	1.64
1/1/1972	2.11	0.75	(1.33)	0.44	(0.03)	-	2.11	0.80	0.99
2/1/1972	-	4.06	0.15	0.67	(0.03)	-	-	0.15	1.25
3/1/1972	-	5.63	0.01	1.11	(0.03)	-	-	0.04	1.56
1972	6.38	18.43	(4.33)	4.72	(0.15)	-	6.38	2.09	8.23
10/1/1972	4.93	87.52	(2.99)	5.77	(0.18)	-	4.93	2.01	32.29
11/1/1972	8.96	(1.73)	(7.69)	1.01	(0.02)	-	8.96	1.27	2.78
12/1/1972	2.83	0.71	(2.03)	0.65	(0.02)	-	2.83	0.81	1.35
1/1/1973	2.97	(0.12)	(2.33)	0.44	(0.02)	-	2.97	0.65	0.98
2/1/1973	0.74	2.13	0.02	0.48	(0.02)	-	0.74	0.77	0.87
3/1/1973	3.18	0.31	(2.21)	0.71	(0.02)	-	3.18	0.96	0.94
1973	18.67	1.30	(14.23)	3.28	(0.11)	-	18.67	4.46	6.92
10/1/1973	12.30	72.09	(8.34)	13.08	(0.32)	-	12.30	4.01	29.00
11/1/1973	-	8.66	-	0.25	(0.05)	-	-	0.00	3.27
12/1/1973	1.77	3.35	(1.19)	0.20	(0.05)	-	1.77	0.59	1.88
1/1/1974	0.08	3.54	0.09	0.31	(0.05)	-	0.08	0.17	1.16
2/1/1974	3.39	(0.28)	(2.59)	0.48	(0.05)	-	3.39	0.81	1.02
3/1/1974	0.16	3.90	0.05	0.81	(0.04)	-	0.16	0.20	1.10
1974	5.39	19.17	(3.65)	2.04	(0.25)	-	5.39	1.77	8.42
10/1/1974	10.47	71.69	(7.06)	9.51	(0.30)	-	10.47	3.46	28.42
11/1/1974	3.39	4.84	(2.63)	1.17	(0.04)	-	3.39	0.77	3.10
12/1/1974	0.12	5.04	0.26	0.76	(0.04)	-	0.12	0.38	1.70
1/1/1975	0.75	2.24	(0.36)	0.43	(0.04)	-	0.75	0.41	1.18
2/1/1975	0.43	2.40	(0.11)	0.44	(0.04)	-	0.43	0.30	0.88
3/1/1975	3.94	0.16	(3.31)	0.81	(0.03)	-	3.94	0.64	1.04
1975	8.62	14.69	(6.15)	3.61	(0.19)	-	8.62	2.50	7.90
10/1/1975	10.47	68.94	(6.26)	10.69	(0.23)	-	10.47	4.28	27.54
11/1/1975	0.28	8.35	(0.08)	0.25	(0.03)	-	0.28	0.19	3.43
12/1/1975	2.13	2.99	(1.96)	0.09	(0.03)	-	2.13	0.20	2.12
1/1/1976	1.26	2.09	(0.58)	0.32	(0.03)	-	1.26	0.68	1.14
2/1/1976	0.24	2.83	0.04	0.38	(0.03)	-	0.24	0.27	0.98
3/1/1976	1.61	2.60	(0.93)	0.67	(0.03)	-	1.61	0.68	1.13
1976	5.51	18.86	(3.51)	1.71	(0.16)	-	5.51	2.01	8.80
10/1/1976	10.98	71.26	(7.79)	7.80	(0.20)	-	10.98	3.29	29.04
11/1/1976	0.91	6.34	(0.47)	1.23	(0.03)	-	0.91	0.43	2.68
12/1/1976	0.55	4.61	(0.21)	0.74	(0.03)	-	0.55	0.34	1.80
1/1/1977	1.81	1.34	(1.52)	0.39	(0.03)	-	1.81	0.30	1.15
2/1/1977	1.89	0.67	(0.98)	0.37	(0.03)	-	1.89	0.93	0.77
3/1/1977	0.08	5.16	0.04	1.00	(0.02)	-	0.08	0.13	1.64
1977	5.24	18.11	(3.15)	3.72	(0.13)	-	5.24	2.14	8.04
10/1/1977	11.18	72.60	(7.95)	8.25	(0.16)	-	11.18	3.29	29.75
11/1/1977	1.30	7.76	(0.85)	1.44	(0.02)	-	1.30	0.49	3.39
12/1/1977	0.35	5.08	(0.04)	0.69	(0.02)	-	0.35	0.32	1.96
1/1/1978	0.67	3.03	(0.43)	0.37	(0.02)	-	0.67	0.24	1.41
2/1/1978	6.38	(3.78)	(5.64)	0.36	(0.02)	-	6.38	0.77	0.82
3/1/1978	5.47	(2.24)	(4.48)	0.65	(0.02)	-	5.47	1.00	0.95
1978	14.17	9.84	(11.43)	3.52	(0.11)	-	14.17	2.82	8.53

Table III-H.4 CT 12 Winter Storm Period Water Balance

Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[cm]	[cm]	[cm]	[cm]	[cm]	[cm]	[cm]	[cm]	[cm]
10/1/1978	9.76	74.09	(6.53)	10.95	(0.26)	-	9.76	3.34	29.77
11/1/1978	1.93	7.52	(1.46)	0.41	(0.05)	-	1.93	0.47	4.04
12/1/1978	5.63	(1.54)	(4.88)	0.56	(0.05)	-	5.63	0.74	1.63
1/1/1979	6.54	(3.70)	(5.81)	0.44	(0.04)	-	6.54	0.76	0.93
2/1/1979	6.02	(4.13)	(4.81)	0.31	(0.05)	-	6.02	1.21	0.71
3/1/1979	1.26	3.23	(0.72)	0.91	(0.06)	-	1.26	0.53	1.27
1979	21.38	1.38	(17.69)	2.63	(0.25)	-	21.38	3.72	8.59
10/1/1979	8.27	75.75	(4.95)	11.59	(0.49)	-	8.27	3.44	29.94
11/1/1979	0.67	9.02	(0.46)	0.70	(0.07)	-	0.67	0.22	3.81
12/1/1979	0.71	3.82	(0.25)	0.41	(0.06)	-	0.71	0.43	1.80
1/1/1980	0.67	3.15	(0.39)	0.31	(0.06)	-	0.67	0.34	1.40
2/1/1980	4.13	(1.46)	(3.22)	0.32	(0.06)	-	4.13	0.89	0.94
3/1/1980	6.02	(2.01)	(5.42)	0.80	(0.06)	-	6.02	0.63	1.00
1980	12.20	12.52	(9.74)	2.55	(0.31)	-	12.20	2.51	8.95
10/1/1980	8.11	73.54	(4.59)	11.74	(0.48)	-	8.11	3.63	29.27
11/1/1980	0.04	9.13	(0.01)	0.64	(0.06)	-	0.04	0.04	3.67
12/1/1980	-	5.35	-	0.28	(0.06)	-	-	-	2.08
1/1/1981	0.55	3.86	(0.27)	0.26	(0.06)	-	0.55	0.31	1.38
2/1/1981	1.34	2.36	(0.96)	0.35	(0.06)	-	1.34	0.39	1.43
3/1/1981	2.60	2.20	(2.09)	0.86	(0.05)	-	2.60	0.50	1.43
1981	4.53	22.91	(3.33)	2.39	(0.30)	-	4.53	1.23	10.00
10/1/1981	10.71	74.17	(7.59)	12.61	(0.39)	-	10.71	3.23	30.81
11/1/1981	0.98	6.77	(0.48)	0.65	(0.05)	-	0.98	0.50	3.07
12/1/1981	2.32	3.46	(2.20)	0.37	(0.05)	-	2.32	0.13	2.27
1/1/1982	-	3.90	0.23	0.47	(0.05)	-	-	0.23	1.37
2/1/1982	2.72	0.35	(1.72)	0.45	(0.05)	-	2.72	1.01	0.96
3/1/1982	1.81	2.28	(1.00)	0.82	(0.04)	-	1.81	0.81	1.14
1982	7.83	16.77	(5.18)	2.76	(0.24)	-	7.83	2.70	8.81
10/1/1982	15.75	60.79	(10.77)	12.90	(0.31)	-	15.75	5.04	27.78
11/1/1982	-	8.46	0.04	1.81	(0.04)	-	-	0.04	3.10
12/1/1982	3.31	0.55	(2.60)	0.63	(0.04)	-	3.31	0.71	1.75
1/1/1983	1.69	1.02	(0.87)	0.39	(0.04)	-	1.69	0.87	1.04
2/1/1983	1.89	1.69	(1.57)	0.59	(0.04)	-	1.89	0.35	1.14
3/1/1983	2.32	1.65	(1.89)	0.79	(0.03)	-	2.32	0.48	1.04
1983	9.21	13.39	(6.89)	4.21	(0.19)	-	9.21	2.44	8.07
10/1/1983	18.23	59.17	(13.31)	12.17	(0.28)	-	18.23	5.07	27.94
11/1/1983	1.14	6.46	(0.59)	1.65	(0.05)	-	1.14	0.60	2.89
12/1/1983	2.01	2.64	(1.57)	0.91	(0.05)	-	2.01	0.51	1.87
1/1/1984	2.52	0.35	(1.93)	0.43	(0.05)	-	2.52	0.55	1.00
2/1/1984	0.47	3.07	(0.08)	0.59	(0.04)	-	0.47	0.44	0.98
3/1/1984	-	4.76	-	0.91	(0.04)	-	-	0.06	1.53
1984	6.14	17.28	(4.17)	4.49	(0.22)	-	6.14	2.16	8.27
10/1/1984	11.65	67.24	(6.69)	9.76	(0.32)	-	11.65	5.16	29.05
11/1/1984	1.38	5.47	(0.71)	0.87	(0.04)	-	1.38	0.69	2.68
12/1/1984	2.05	2.17	(1.81)	0.47	(0.03)	-	2.05	0.30	1.84
1/1/1985	5.87	(3.35)	(5.00)	0.31	(0.03)	-	5.87	0.87	0.90
2/1/1985	2.68	(0.31)	(1.89)	0.39	(0.03)	-	2.68	0.81	0.80
3/1/1985	1.69	1.54	(1.02)	0.63	(0.03)	-	1.69	0.65	0.94
1985	13.66	5.51	(10.43)	2.68	(0.17)	-	13.66	3.32	7.17
10/1/1985	9.17	63.39	(5.59)	9.33	(0.31)	-	9.17	3.80	26.87
11/1/1985	1.26	5.51	(0.51)	1.10	(0.05)	-	1.26	0.73	2.40
12/1/1985	2.76	0.94	(2.24)	0.55	(0.05)	-	2.76	0.53	1.90
1/1/1986	0.87	2.64	(0.31)	0.51	(0.05)	-	0.87	0.61	1.10
2/1/1986	0.08	4.25	(0.08)	0.75	(0.05)	-	0.08	0.08	1.51
3/1/1986	3.07	0.87	(2.20)	0.79	(0.04)	-	3.07	0.87	1.18
1986	8.03	14.21	(5.35)	3.70	(0.23)	-	8.03	2.83	8.09
10/1/1986	13.27	64.80	(9.29)	11.97	(0.32)	-	13.27	4.18	29.52
11/1/1986	1.77	5.47	(1.34)	1.06	(0.04)	-	1.77	0.45	2.44
12/1/1986	1.42	2.52	(0.71)	0.55	(0.04)	-	1.42	0.70	1.76
1/1/1987	2.99	(0.08)	(2.28)	0.39	(0.04)	-	2.99	0.75	1.13
2/1/1987	3.39	(0.12)	(2.56)	0.55	(0.04)	-	3.39	0.79	0.98
3/1/1987	2.68	0.83	(2.09)	0.71	(0.03)	-	2.68	0.62	1.41
1987	12.24	8.62	(8.98)	3.27	(0.20)	-	12.24	3.31	7.71
10/1/1987	7.91	68.50	(5.31)	10.71	(0.28)	-	7.91	2.74	28.29
11/1/1987	0.31	8.58	(0.16)	1.02	(0.04)	-	0.31	0.22	3.69
12/1/1987	1.77	2.40	(1.18)	0.31	(0.04)	-	1.77	0.57	1.83
1/1/1988	4.02	(1.18)	(3.15)	0.31	(0.04)	-	4.02	0.88	1.17
2/1/1988	3.58	(1.26)	(2.95)	0.35	(0.04)	-	3.58	0.64	0.76
3/1/1988	0.71	4.09	(0.43)	0.98	(0.03)	-	0.71	0.33	1.24
1988	10.39	12.64	(7.87)	2.99	(0.20)	-	10.39	2.65	8.69

Table III-H.4 CT 12 Winter Storm Period Water Balance

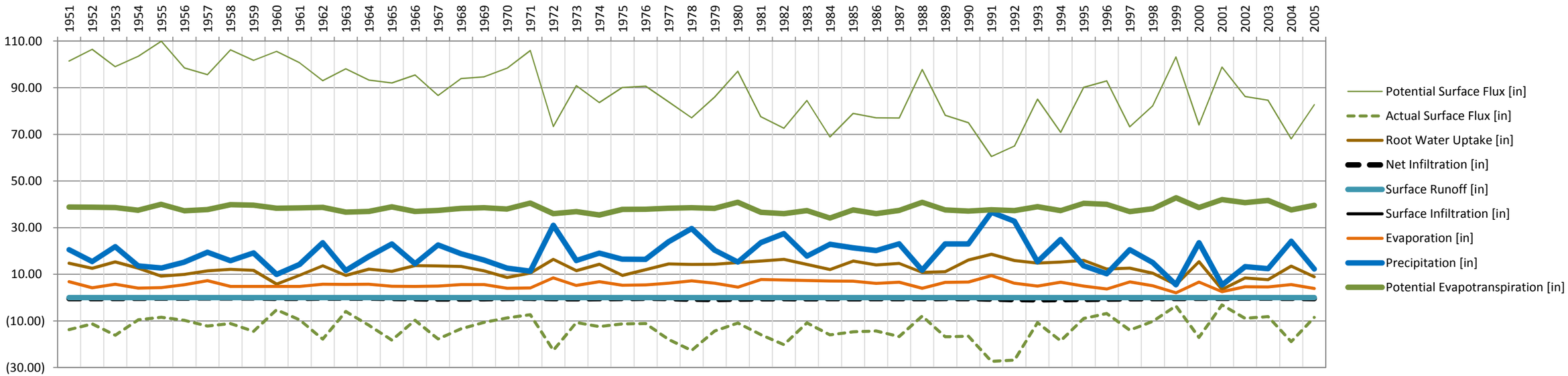
Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[cm]	[cm]	[cm]	[cm]	[cm]	[cm]	[cm]	[cm]	[cm]
10/1/1988	12.68	64.37	(8.86)	11.69	(0.28)	-	12.68	3.93	28.69
11/1/1988	1.50	7.32	(1.06)	1.85	(0.04)	-	1.50	0.47	3.45
12/1/1988	1.73	2.95	(1.38)	0.63	(0.04)	-	1.73	0.38	2.12
1/1/1989	1.10	1.77	(0.47)	0.39	(0.04)	-	1.10	0.62	1.10
2/1/1989	2.20	0.83	(1.57)	0.47	(0.03)	-	2.20	0.64	0.89
3/1/1989	0.31	4.37	(0.04)	0.94	(0.03)	-	0.31	0.29	1.16
1989	6.85	17.24	(4.53)	4.29	(0.19)	-	6.85	2.40	8.72
10/1/1989	4.88	80.51	(3.39)	6.54	(0.24)	-	4.88	1.62	32.08
11/1/1989	1.06	6.73	(0.59)	0.59	(0.03)	-	1.06	0.53	3.57
12/1/1989	0.28	4.92	(0.16)	0.28	(0.03)	-	0.28	0.15	2.06
1/1/1990	0.91	2.36	(0.67)	0.08	(0.03)	-	0.91	0.21	1.21
2/1/1990	1.26	1.65	(0.63)	0.24	(0.03)	-	1.26	0.65	1.04
3/1/1990	2.52	0.94	(1.61)	0.51	(0.03)	-	2.52	0.95	0.96
1990	6.02	16.61	(3.66)	1.69	(0.17)	-	6.02	2.48	8.85
10/1/1990	16.97	61.54	(13.15)	9.41	(0.19)	0.00	16.97	4.01	28.78
11/1/1990	0.28	7.83	(0.08)	1.77	(0.02)	-	0.28	0.22	3.23
12/1/1990	2.17	2.36	(1.30)	0.83	(0.02)	-	2.17	0.87	2.20
1/1/1991	4.84	(2.28)	(4.02)	0.39	(0.02)	-	4.84	0.81	1.16
2/1/1991	1.77	1.06	(1.30)	0.47	(0.02)	-	1.77	0.50	0.89
3/1/1991	0.94	3.78	(0.47)	0.94	(0.02)	-	0.94	0.50	1.35
1991	10.00	12.76	(7.17)	4.41	(0.11)	-	10.00	2.91	8.82
10/1/1991	12.99	62.24	(9.37)	11.69	(0.30)	-	12.99	3.77	28.26
11/1/1991	1.22	7.99	(0.94)	1.18	(0.05)	-	1.22	0.28	3.99
12/1/1991	3.23	0.79	(2.72)	0.43	(0.04)	-	3.23	0.54	1.66
1/1/1992	3.98	(1.61)	(3.03)	0.39	(0.04)	-	3.98	0.93	1.07
2/1/1992	3.03	(0.20)	(2.01)	0.43	(0.04)	-	3.03	1.01	0.75
3/1/1992	2.76	1.02	(2.05)	0.79	(0.04)	-	2.76	0.76	1.13
1992	14.21	7.99	(10.75)	3.23	(0.22)	-	14.21	3.52	8.60
10/1/1992	22.36	52.52	(16.57)	15.35	(0.44)	-	22.36	5.91	29.06
11/1/1992	1.22	7.28	(0.91)	1.65	(0.07)	-	1.22	0.36	3.90
12/1/1992	0.51	3.23	(0.12)	0.47	(0.06)	-	0.51	0.35	1.68
1/1/1993	6.34	(4.06)	(5.43)	0.35	(0.07)	-	6.34	0.95	0.78
2/1/1993	11.26	(8.86)	(10.39)	0.39	(0.07)	-	11.26	0.87	0.67
3/1/1993	6.02	(3.39)	(5.00)	0.51	(0.07)	-	6.02	1.02	1.04
1993	25.35	(5.79)	(21.85)	3.39	(0.34)	-	25.35	3.56	8.07
10/1/1993	7.40	70.79	(4.96)	12.52	(0.55)	-	7.40	2.58	29.14
11/1/1993	0.83	7.13	(0.39)	1.10	(0.08)	-	0.83	0.45	3.67
12/1/1993	4.17	(0.43)	(3.82)	0.43	(0.08)	-	4.17	0.37	1.76
1/1/1994	0.28	2.76	(0.08)	0.47	(0.08)	-	0.28	0.26	1.29
2/1/1994	0.28	3.39	(0.12)	0.63	(0.08)	-	0.28	0.19	1.22
3/1/1994	2.64	0.71	(2.01)	0.67	(0.07)	-	2.64	0.60	1.10
1994	8.19	13.54	(6.42)	3.31	(0.39)	-	8.19	1.86	9.05
10/1/1994	7.20	71.57	(4.33)	11.46	(0.55)	-	7.20	3.08	29.94
11/1/1994	1.85	5.51	(1.50)	1.10	(0.08)	-	1.85	0.36	3.25
12/1/1994	3.39	-	(2.52)	0.59	(0.07)	-	3.39	0.85	1.76
1/1/1995	2.68	-	(2.01)	0.43	(0.07)	-	2.68	0.66	1.10
2/1/1995	3.62	(0.79)	(2.80)	0.43	(0.08)	-	3.62	0.87	0.86
3/1/1995	2.72	1.57	(2.17)	0.87	(0.07)	-	2.72	0.57	1.22
1995	14.25	6.30	(10.98)	3.43	(0.37)	-	14.25	3.31	8.20
10/1/1995	10.67	64.57	(7.56)	11.81	(0.55)	-	10.67	3.29	29.13
11/1/1995	-	9.06	0.08	1.85	(0.07)	-	-	0.10	3.61
12/1/1995	1.34	3.54	(0.91)	0.83	(0.07)	-	1.34	0.44	2.00
1/1/1996	0.91	2.36	(0.63)	0.51	(0.07)	-	0.91	0.27	1.52
2/1/1996	-	3.54	-	0.55	(0.07)	-	-	0.09	1.28
3/1/1996	3.15	1.18	(2.60)	0.87	(0.06)	-	3.15	0.57	1.45
1996	5.39	19.69	(4.06)	4.61	(0.35)	-	5.39	1.47	9.86
10/1/1996	8.23	70.47	(4.92)	11.34	(0.47)	-	8.23	3.45	30.57
11/1/1996	0.39	7.87	(0.16)	1.54	(0.06)	-	0.39	0.26	3.85
12/1/1996	1.26	3.15	(0.94)	0.63	(0.06)	-	1.26	0.31	1.67
1/1/1997	-	3.15	0.20	0.35	(0.06)	-	-	0.26	1.24
2/1/1997	2.83	-	(2.13)	0.39	(0.06)	-	2.83	0.72	1.02
3/1/1997	1.65	2.36	(1.38)	0.83	(0.05)	-	1.65	0.33	1.27
1997	6.14	16.54	(4.41)	3.74	(0.28)	-	6.14	1.88	9.04
10/1/1997	4.09	76.38	(2.40)	8.50	(0.36)	-	4.09	1.80	30.90
11/1/1997	0.75	6.30	(0.47)	0.24	(0.05)	-	0.75	0.29	3.74
12/1/1997	0.79	3.94	(0.43)	0.28	(0.05)	-	0.79	0.39	1.79
1/1/1998	2.72	(0.39)	(1.85)	0.20	(0.05)	-	2.72	0.86	1.21
2/1/1998	0.35	2.76	-	0.47	(0.05)	-	0.35	0.40	0.93
3/1/1998	6.42	(3.54)	(5.31)	0.47	(0.04)	-	6.42	1.12	1.05
1998	11.02	9.06	(8.07)	1.65	(0.23)	-	11.02	3.05	8.73

Table III-H.4 CT 12 Winter Storm Period Water Balance

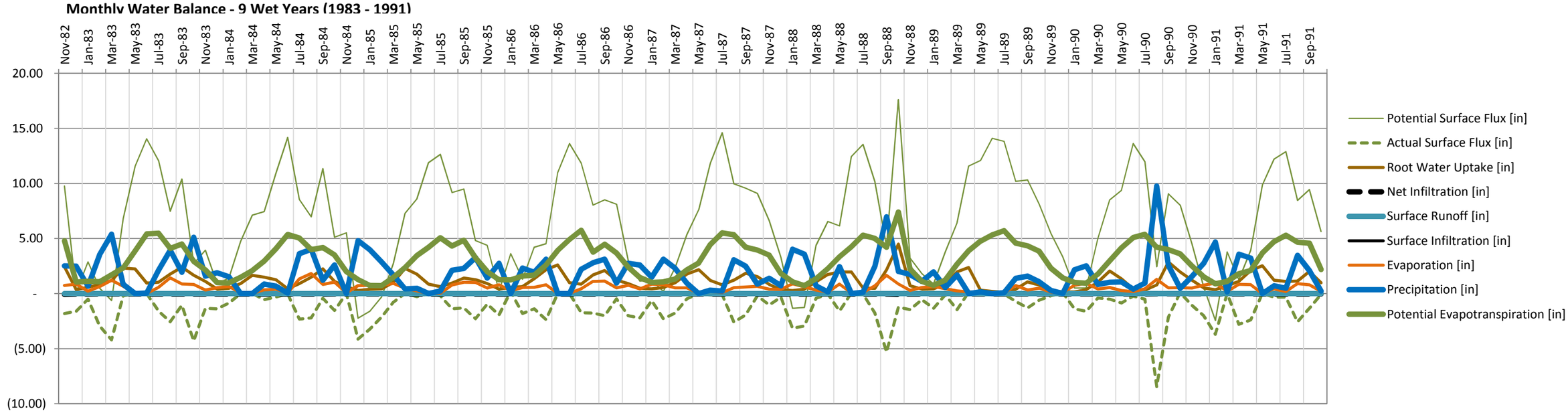
Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[cm]	[cm]	[cm]	[cm]	[cm]	[cm]	[cm]	[cm]	[cm]
10/1/1998	9.49	64.17	(5.91)	10.94	(0.32)	-	9.49	3.71	28.12
11/1/1998	-	7.87	-	0.59	(0.05)	-	-	0.00	3.85
12/1/1998	1.06	3.15	(0.91)	0.08	(0.05)	-	1.06	0.18	1.81
1/1/1999	0.75	2.36	(0.16)	0.24	(0.05)	-	0.75	0.59	1.30
2/1/1999	0.04	3.54	(0.04)	0.31	(0.05)	-	0.04	0.07	1.38
3/1/1999	0.20	4.72	(0.08)	0.51	(0.04)	-	0.20	0.13	1.38
1999	2.05	21.65	(1.18)	1.73	(0.23)	-	2.05	0.98	9.71
10/1/1999	12.99	60.63	(8.98)	8.70	(0.25)	-	12.99	4.12	28.42
11/1/1999	-	9.06	-	1.30	(0.03)	-	-	0.01	3.82
12/1/1999	-	6.30	-	0.28	(0.03)	-	-	-	2.67
1/1/2000	0.04	3.54	(0.04)	-	(0.03)	-	0.04	0.00	1.49
2/1/2000	0.28	3.54	(0.16)	0.12	(0.03)	-	0.28	0.15	1.32
3/1/2000	0.71	3.94	(0.31)	0.12	(0.03)	-	0.71	0.37	1.69
2000	1.02	26.38	(0.51)	1.81	(0.17)	-	1.02	0.54	11.00
9/30/2000	4.45	76.38	(3.07)	3.70	(0.21)	-	4.45	1.51	31.65
11/1/2000	5.31	1.97	(4.37)	0.28	(0.03)	-	5.31	0.94	3.82
12/1/2000	2.13	0.79	(1.50)	0.51	(0.02)	-	2.13	0.67	1.12
1/1/2001	0.08	3.15	-	0.51	(0.02)	-	0.08	0.14	1.48
2/1/2001	3.39	(0.79)	(2.52)	0.43	(0.02)	-	3.39	0.87	1.09
3/1/2001	1.73	1.57	(0.98)	0.67	(0.02)	-	1.73	0.78	1.01
2001	12.64	6.69	(9.37)	2.40	(0.12)	-	12.64	3.40	8.52
9/30/2001	10.87	67.32	(7.72)	12.95	(0.17)	-	10.87	3.28	30.06
11/1/2001	0.35	7.87	(0.20)	0.43	(0.03)	-	0.35	0.20	3.82
12/1/2001	0.28	4.72	(0.12)	0.12	(0.02)	-	0.28	0.18	2.65
1/1/2002	1.85	0.79	(1.30)	0.16	(0.02)	-	1.85	0.57	1.07
2/1/2002	0.24	3.15	(0.12)	0.28	(0.02)	-	0.24	0.15	1.22
3/1/2002	-	4.72	0.08	0.51	(0.02)	-	-	0.08	1.25
2002	2.72	21.26	(1.65)	1.50	(0.12)	-	2.72	1.17	10.00
9/30/2002	2.72	77.95	(1.50)	2.01	(0.17)	-	2.72	1.37	32.03
11/1/2002	0.12	7.87	(0.04)	0.28	(0.02)	-	0.12	0.07	3.90
12/1/2002	0.83	3.94	(0.71)	0.04	(0.02)	-	0.83	0.17	2.19
1/1/2003	0.98	1.57	(0.39)	0.12	(0.02)	-	0.98	0.62	1.34
2/1/2003	0.39	3.54	(0.04)	0.28	(0.02)	-	0.39	0.35	1.19
3/1/2003	4.92	(1.18)	(4.41)	0.35	(0.02)	-	4.92	0.54	1.50
2003	7.24	15.75	(5.59)	1.06	(0.11)	-	7.24	1.76	10.12
9/30/2003	6.02	70.08	(3.31)	7.28	(0.15)	-	6.02	2.86	30.64
11/1/2003	0.08	9.06	(0.04)	0.63	(0.02)	-	0.08	0.09	4.07
12/1/2003	0.87	2.76	(0.59)	0.12	(0.02)	-	0.87	0.29	2.31
1/1/2004	0.98	1.97	(0.55)	0.16	(0.02)	-	0.98	0.43	1.52
2/1/2004	1.46	1.18	(0.87)	0.16	(0.02)	-	1.46	0.61	1.21
3/1/2004	0.67	2.76	(0.24)	0.35	(0.02)	-	0.67	0.49	1.06
2004	4.06	17.72	(2.28)	1.42	(0.11)	-	4.06	1.92	10.16
9/30/2004	8.35	66.93	(5.87)	6.30	(0.15)	-	8.35	2.64	31.52
11/1/2004	1.18	5.91	(0.75)	0.59	(0.02)	-	1.18	0.44	3.66
12/1/2004	0.67	2.36	(0.28)	0.20	(0.02)	-	0.67	0.39	1.48
1/1/2005	2.76	(0.39)	(2.24)	0.24	(0.02)	-	2.76	0.55	1.02
2/1/2005	4.21	(1.57)	(3.58)	0.43	(0.02)	-	4.21	0.65	1.02
3/1/2005	7.32	(5.12)	(6.34)	0.47	(0.01)	-	7.32	1.04	0.94
2005	16.14	1.18	(13.19)	1.93	(0.09)	-	16.14	3.07	8.12
9/30/2005	8.03	66.93	(5.67)	11.54	(0.20)	-	8.03	2.49	29.40
11/1/2005	0.43	7.87	(0.28)	0.75	(0.05)	-	0.43	0.17	3.96
12/1/2005	-	4.72	-	0.20	(0.04)	-	-	0.00	2.27
1/1/2006	-	3.54	0.04	0.08	(0.04)	-	-	0.00	1.53
2/1/2006	-	3.94	-	0.08	(0.04)	-	-	-	1.56
3/1/2006	0.12	4.33	(0.08)	0.16	(0.04)	-	0.12	0.07	1.67
2006	0.55	24.41	(0.31)	1.26	(0.21)	-	0.55	0.25	10.98
9/30/2006	11.73	58.27	(8.19)	7.72	(0.24)	-	11.73	3.64	28.65

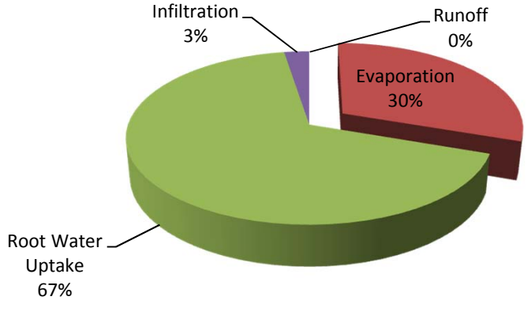
08-CT12 - 0.5m Cleaner_2m Beach_0.5m Mixed Cover w Veg.xlsx

Annual Water Balance - 56-Year Simulated Period (Results on October 1)



Monthly Water Balance - 9 Wet Years (1983 - 1991)





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CLIENT: Resolution Copper Mining

Klohn Crippen Berger

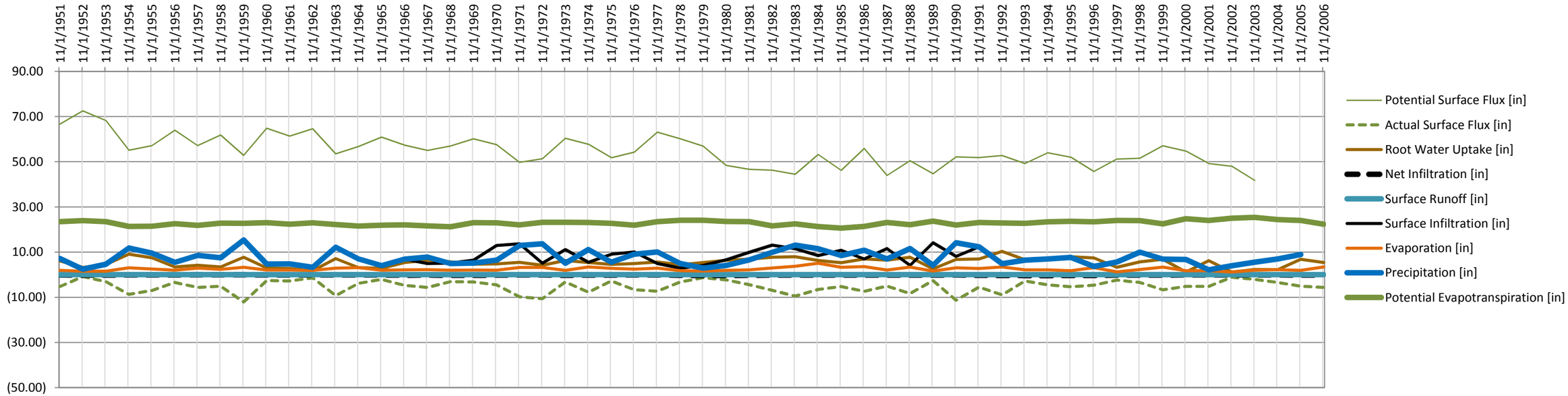
PROJECT: RESOLUTION PROJECT
NEAR WEST TAILINGS STORAGE FACILITY CLOSURE COVER STUDY - CLOSURE COVER PREDICTIONS

TITLE: CT12 - 1.6ft Cleaner / 6.6ft Beach / 1.6ft 25% / 75% Lab Composite / Veg
Water Balance Results

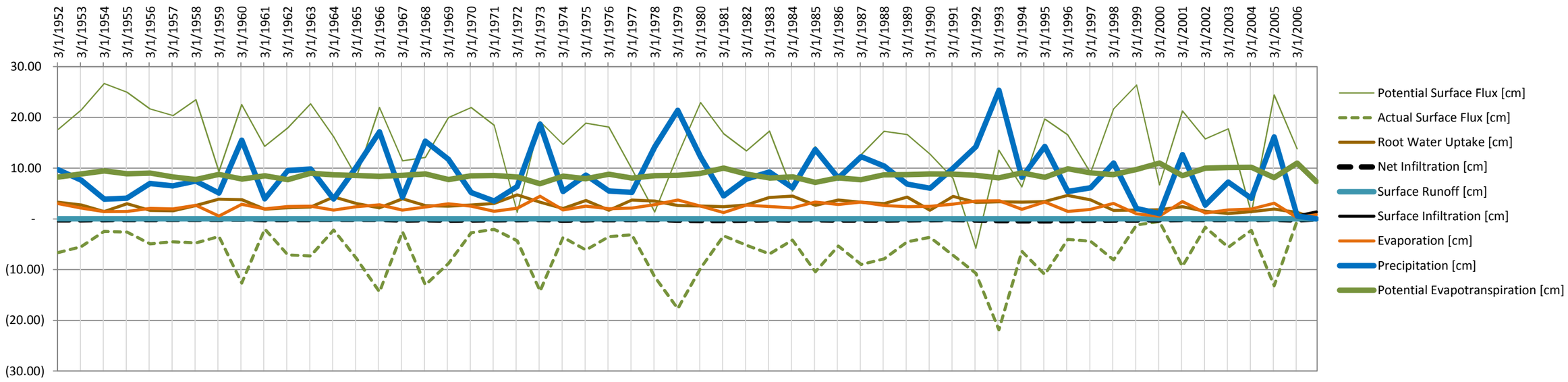
PROJECT No. M09441A16

FIG. No. III-H.1

Monsoon Season Water Balance - 56-Year Simulated Period (July-November)



Winter Storm Season Water Balance - 56-Year Simulated Period (November-March)



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CLIENT

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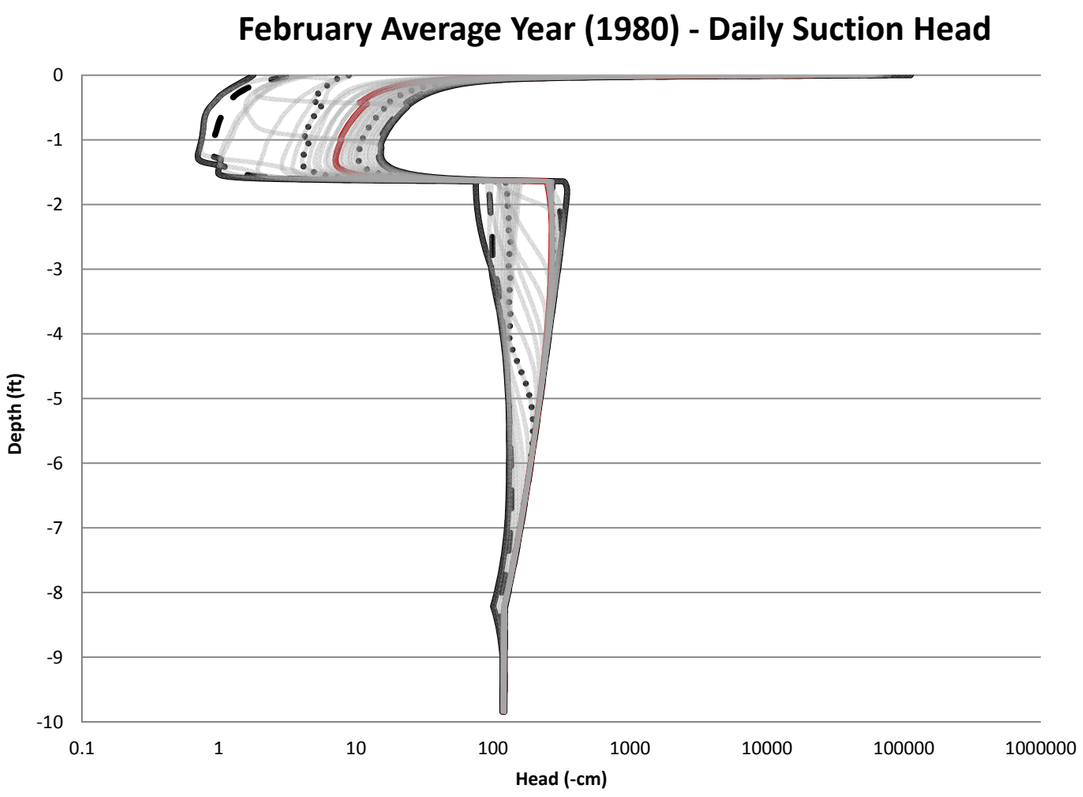
NEAR WEST TAILINGS STORAGE FACILITY CLOSURE COVER STUDY - CLOSURE COVER PREDICTIONS

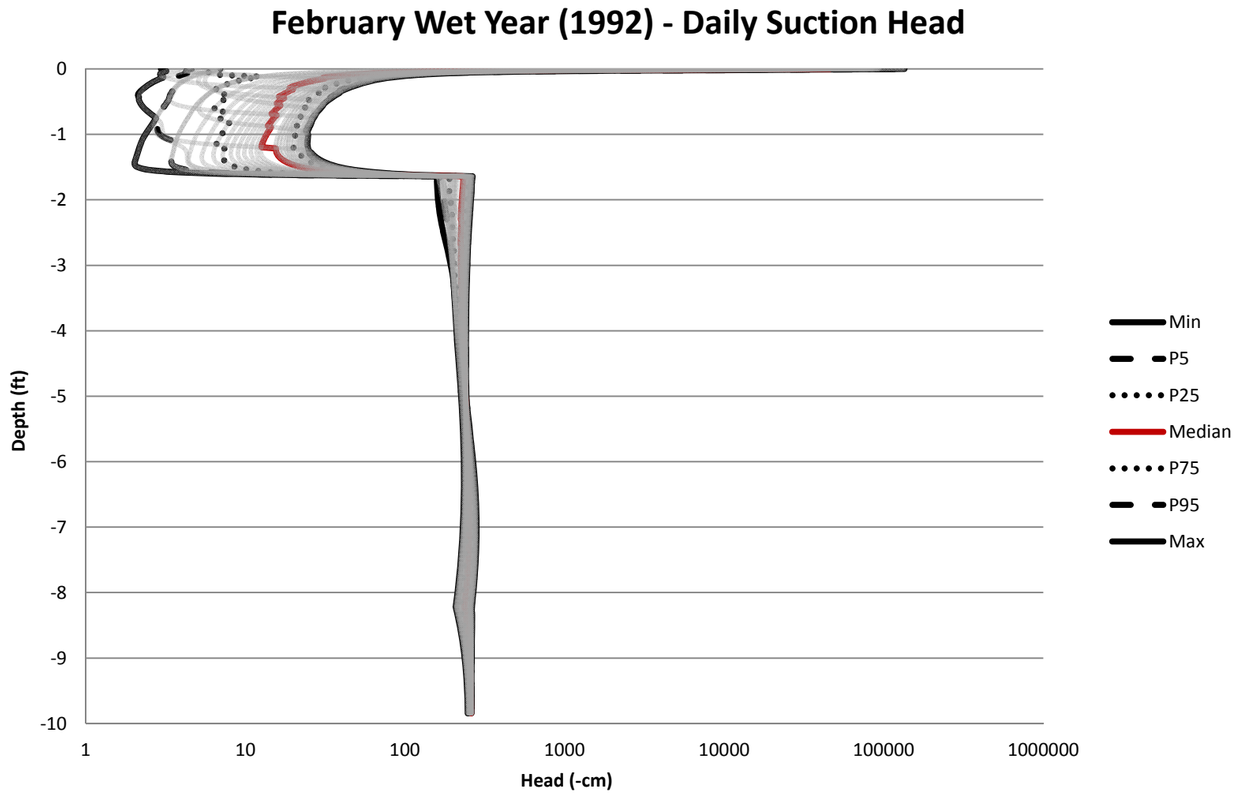
TITLE

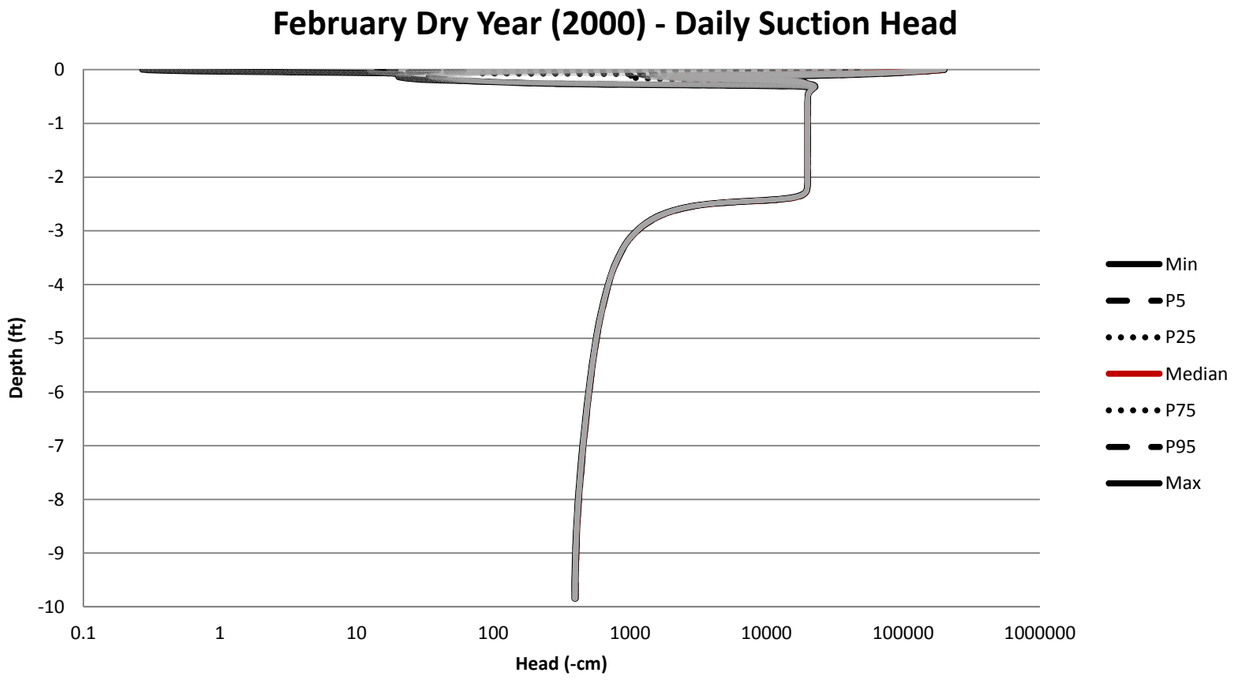
CT12 - 1.6ft Cleaner / 6.6ft Beach / 1.6ft 25% / 75% Lab Composite / Veg
Water Balance Results

PROJECT No. M09441A16

FIG. No. III-H.2







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PROJECT

RESOLUTION PROJECT
NEAR WEST TAILINGS STORAGE FACILITY CLOSURE COVER STUDY - CLOSURE COVER PREDICTIONS

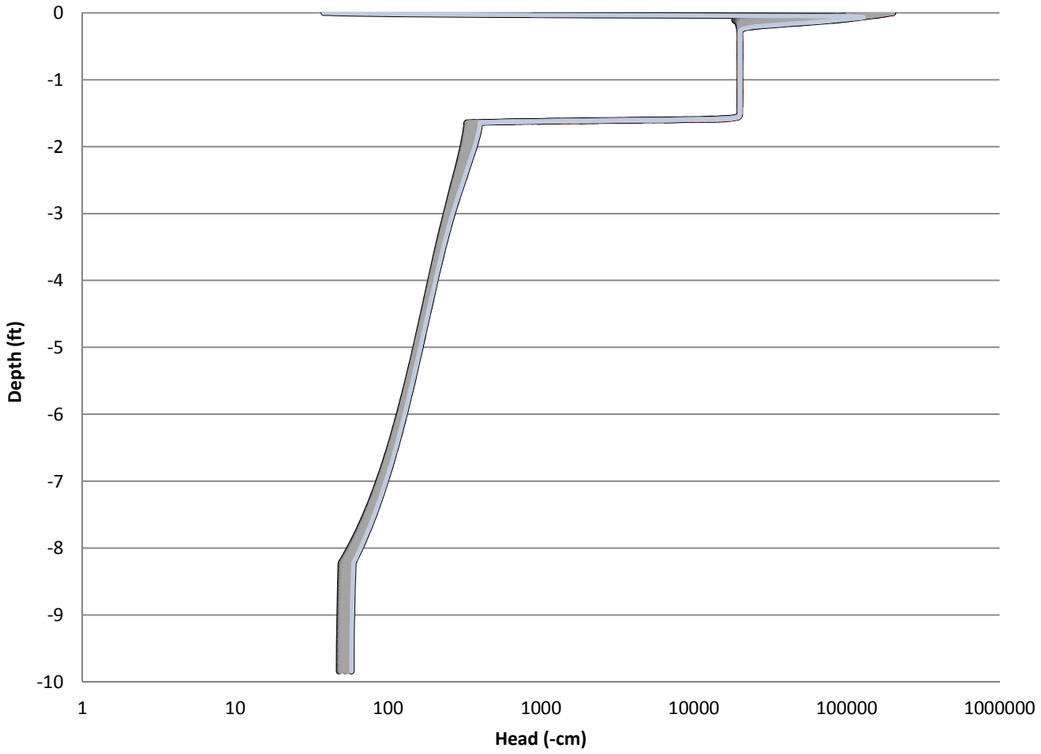
TITLE

CT12 - 1.6ft Cleaner / 6.6ft Beach / 1.6ft 25% / 75% Lab Composite / Veg
Suction Profiles - Winter (February)

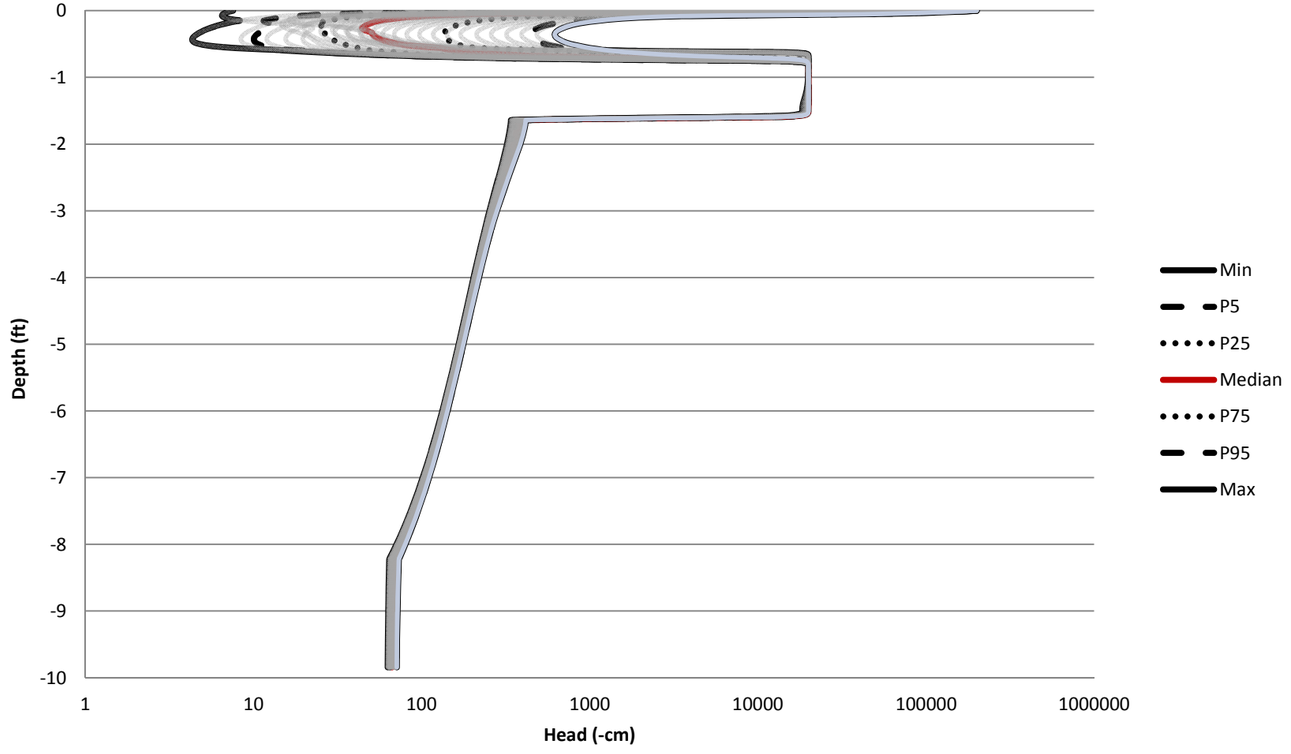
PROJECT No. M09441A16

FIG. No. III-H.3

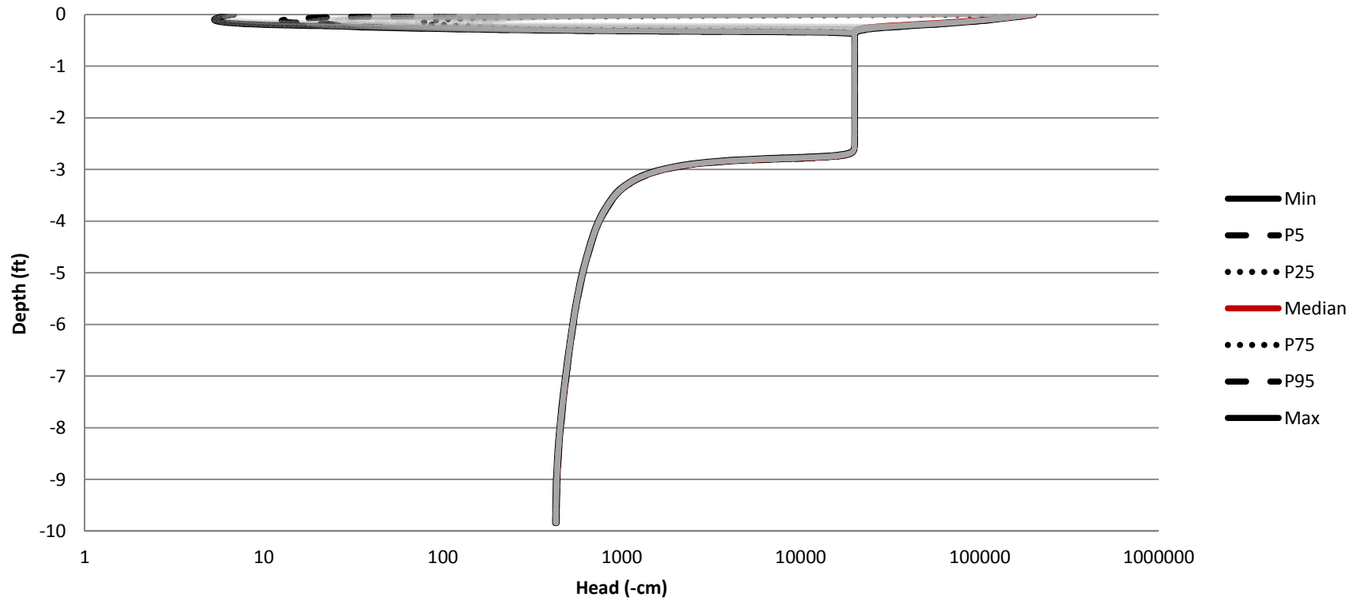
June Average Year (1980) - Daily Suction Head



June Wet Year (1992) - Daily Suction Head



June Dry Year (2000) - Daily Suction Head



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CLIENT

Resolution Copper Mining

Klohn Crippen Berger

PROJECT

RESOLUTION PROJECT
NEAR WEST TAILINGS STORAGE FACILITY CLOSURE COVER STUDY - CLOSURE COVER PREDICTIONS

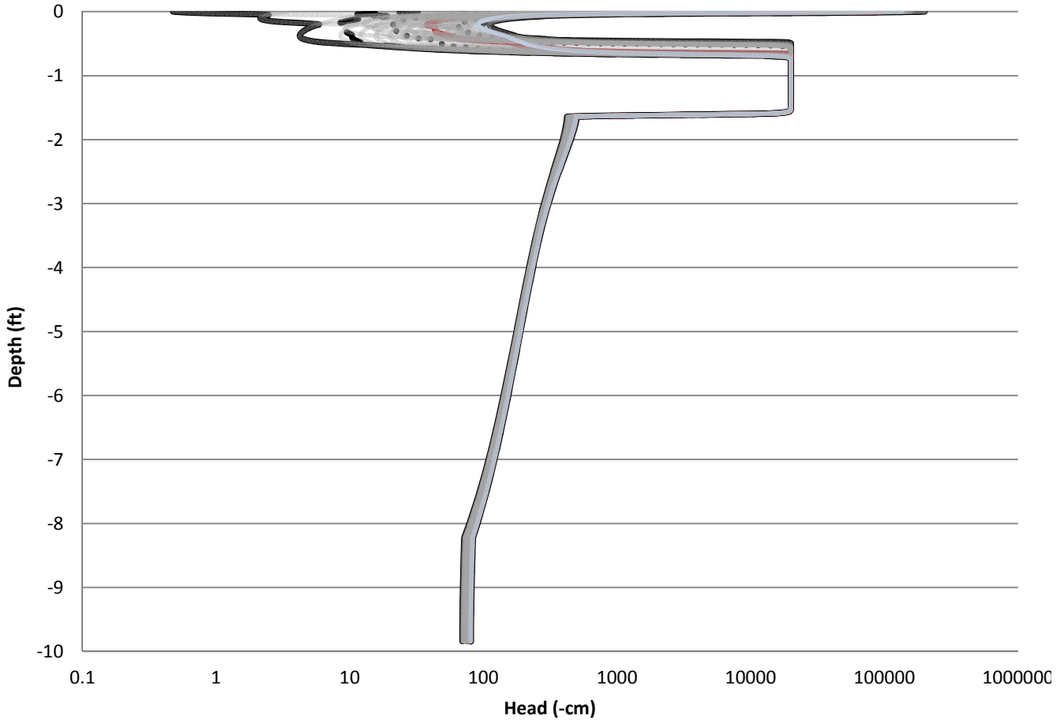
TITLE

CT12 - 1.6ft Cleaner / 6.6ft Beach / 1.6ft 25% / 75% Lab Composite / Veg
Suction Profiles - Dry Season (June)

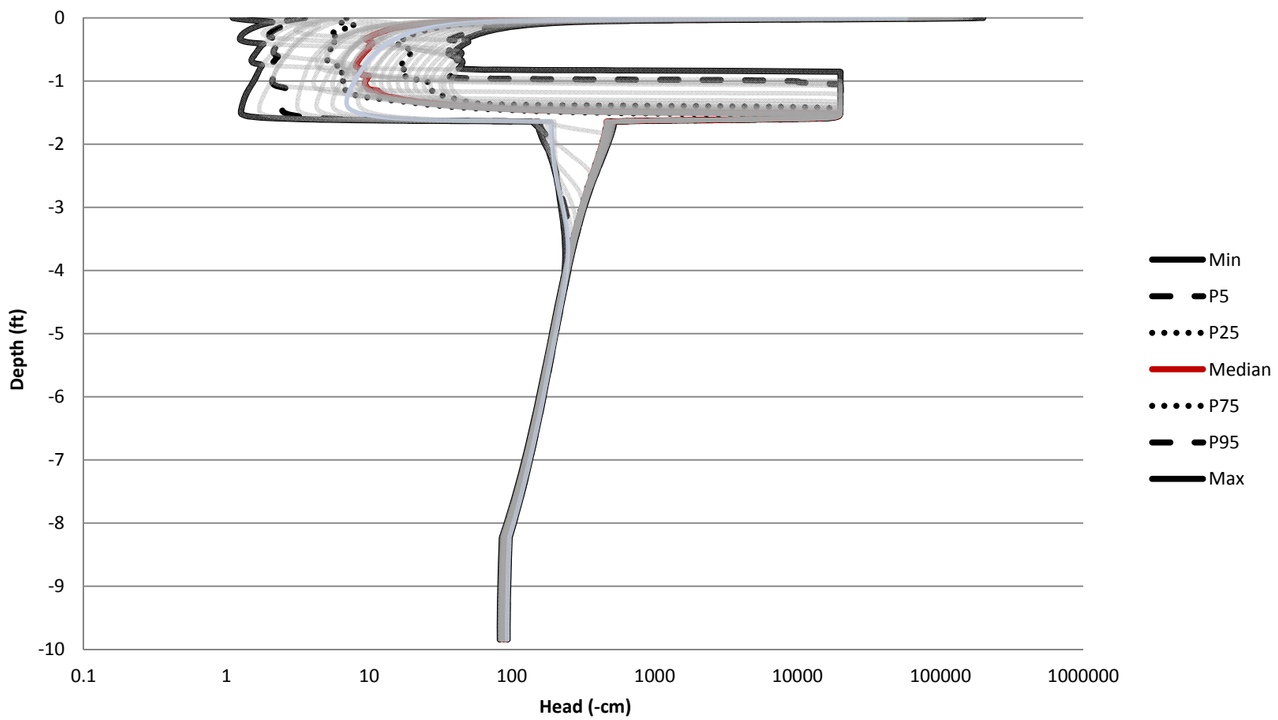
PROJECT No. M09441A16

FIG. No. III-H.4

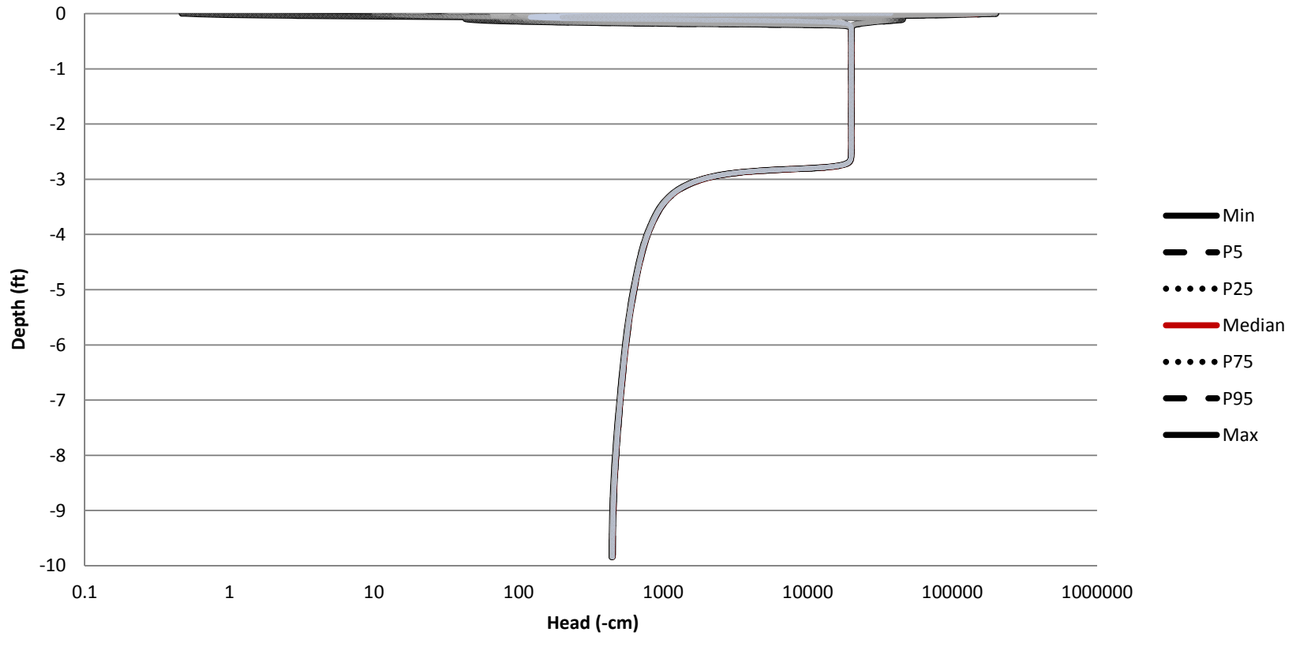
August Average Year (1980) - Daily Suction Head



August Wet Year (1992) - Daily Suction Head



August Dry Year (2000) - Daily Suction Head



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CLIENT: Resolution Copper Mining

Klohn Crippen Berger

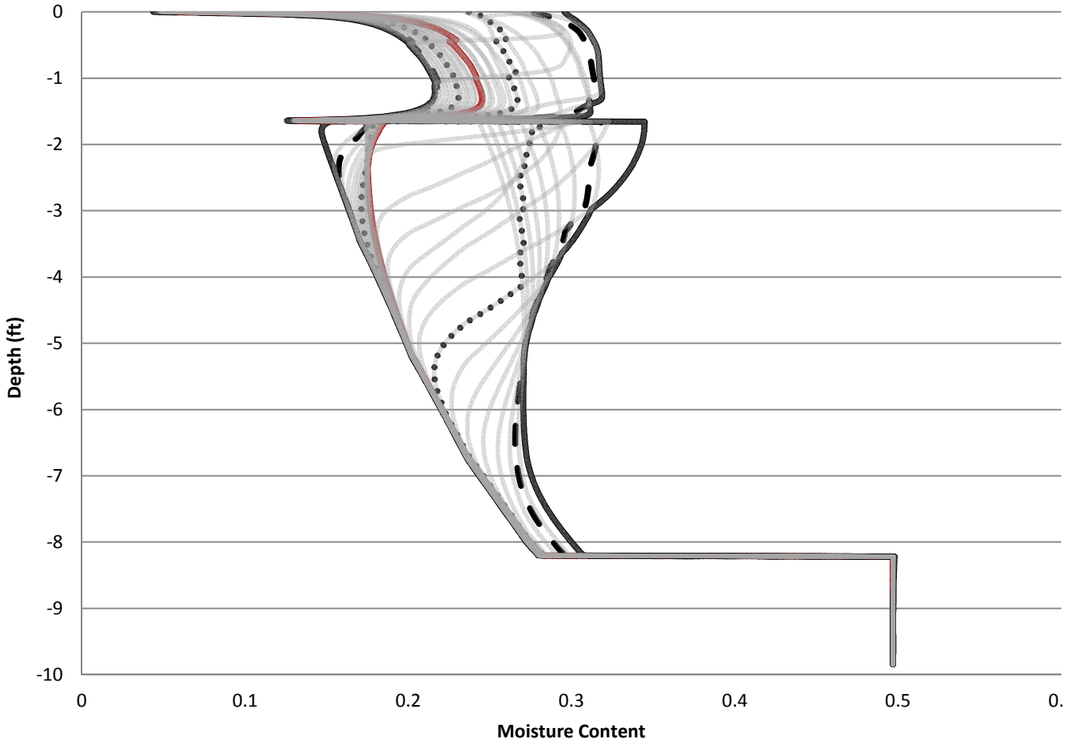
PROJECT: RESOLUTION PROJECT
NEAR WEST TAILINGS STORAGE FACILITY CLOSURE COVER STUDY - CLOSURE COVER PREDICTIONS

TITLE: CT12 - 1.6ft Cleaner / 6.6ft Beach / 1.6ft 25% / 75% Lab Composite / Veg
Suction Profiles - Summer Monsoon (August)

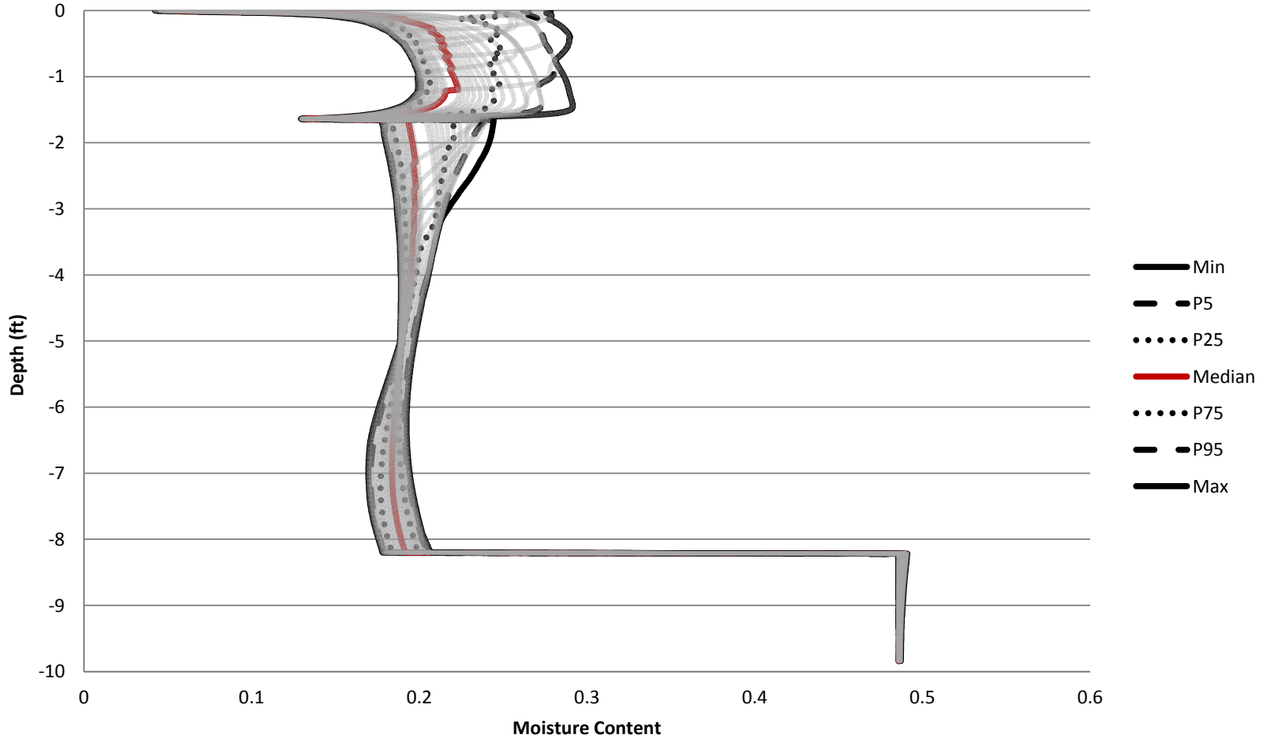
PROJECT No. M09441A16

FIG. No. III-H.5

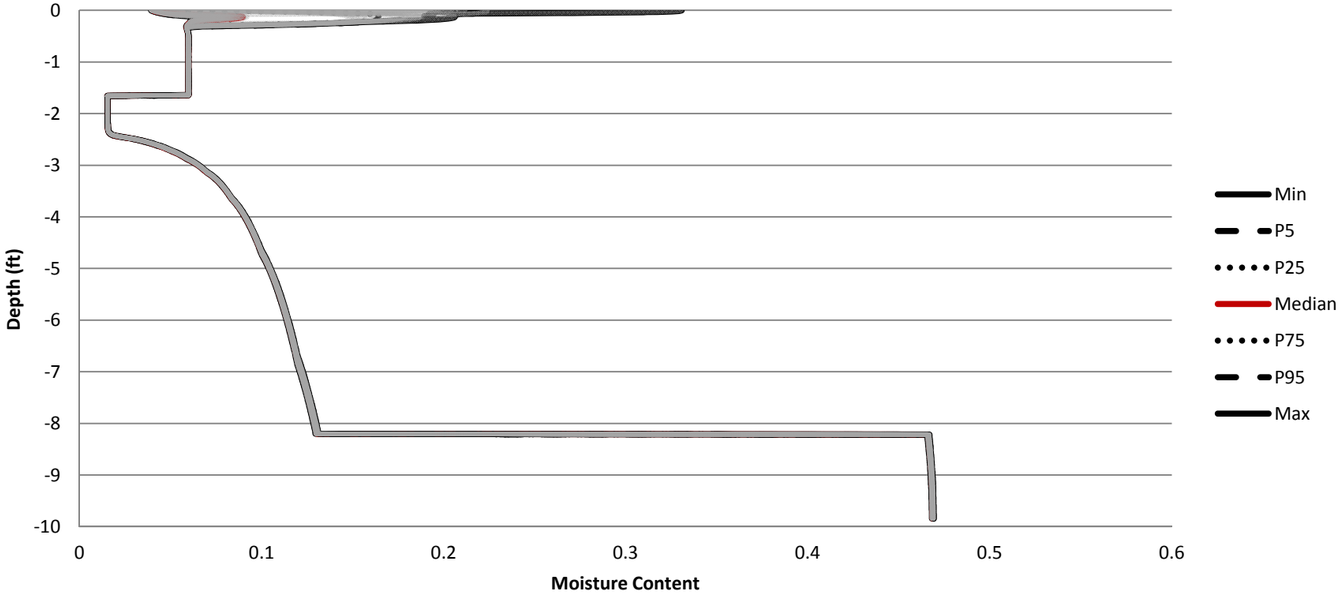
February Average Year (1980) - Daily Moisture Content



February Wet Year (1992) - Daily Moisture Content



February Dry Year (2000) - Daily Moisture Content



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CLIENT: Resolution Copper Mining

Klohn Crippen Berger

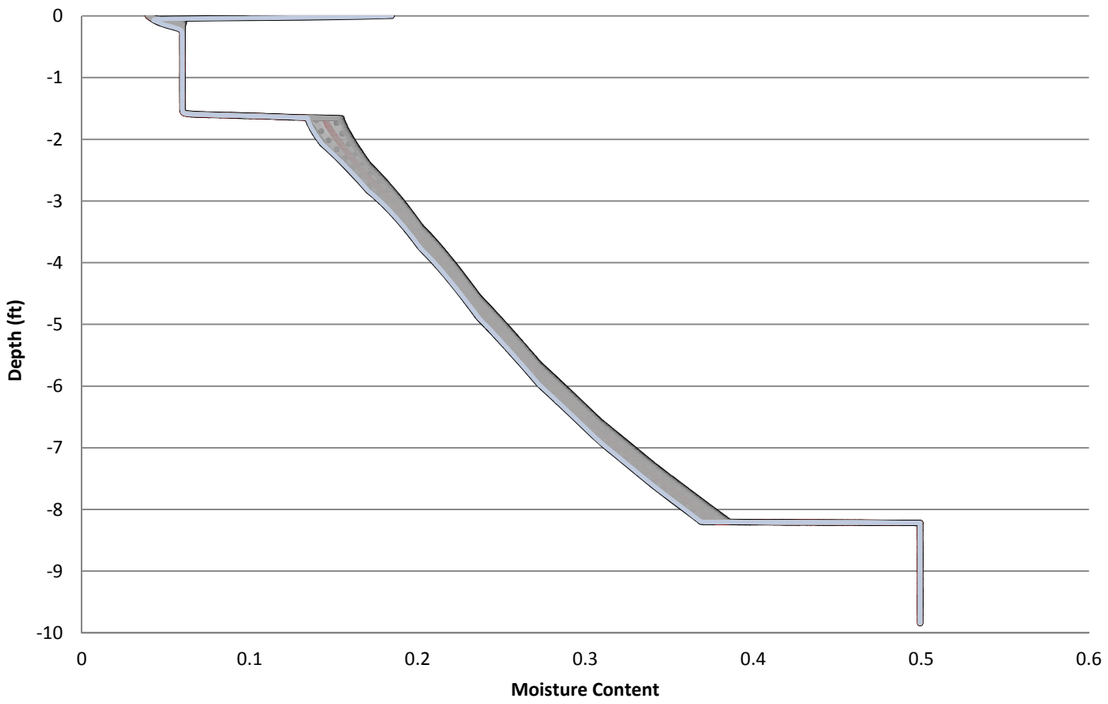
PROJECT: RESOLUTION PROJECT
NEAR WEST TAILINGS STORAGE FACILITY CLOSURE COVER STUDY - CLOSURE COVER PREDICTIONS

TITLE: CT12 - 1.6ft Cleaner / 6.6ft Beach / 1.6ft 25% / 75% Lab Composite / Veg
Moisture Content - Winter (February)

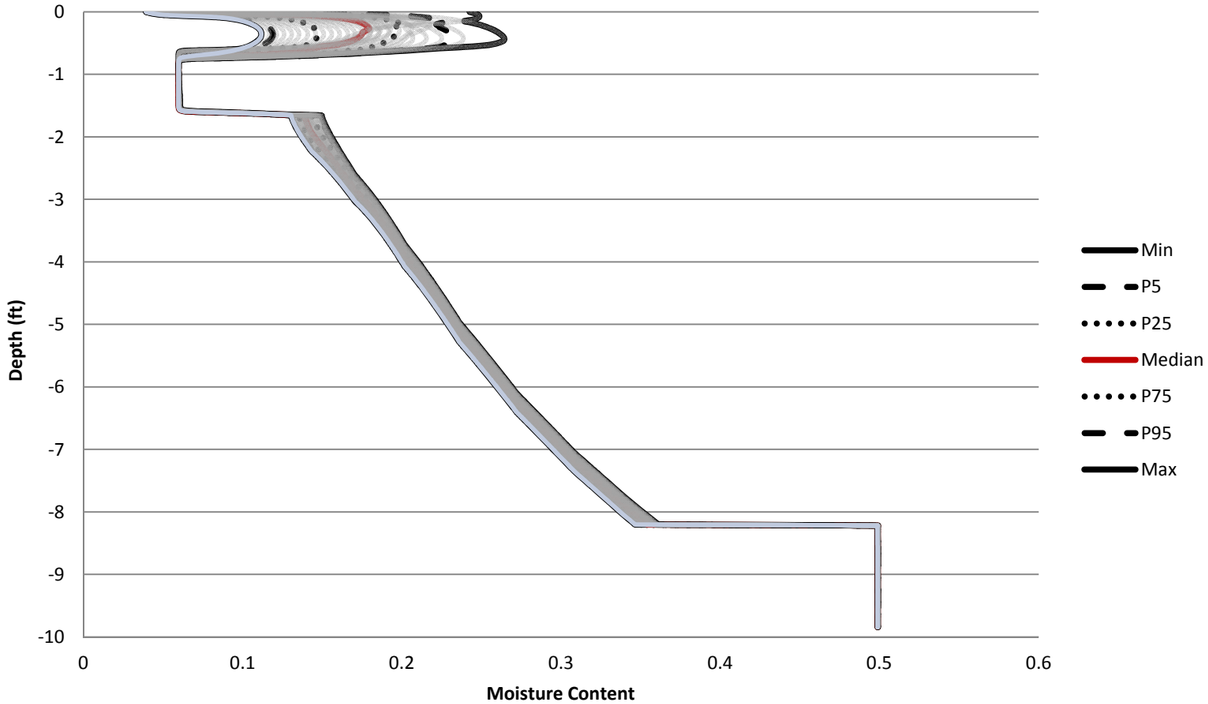
PROJECT No. M09441A16

FIG. No. III-H.6

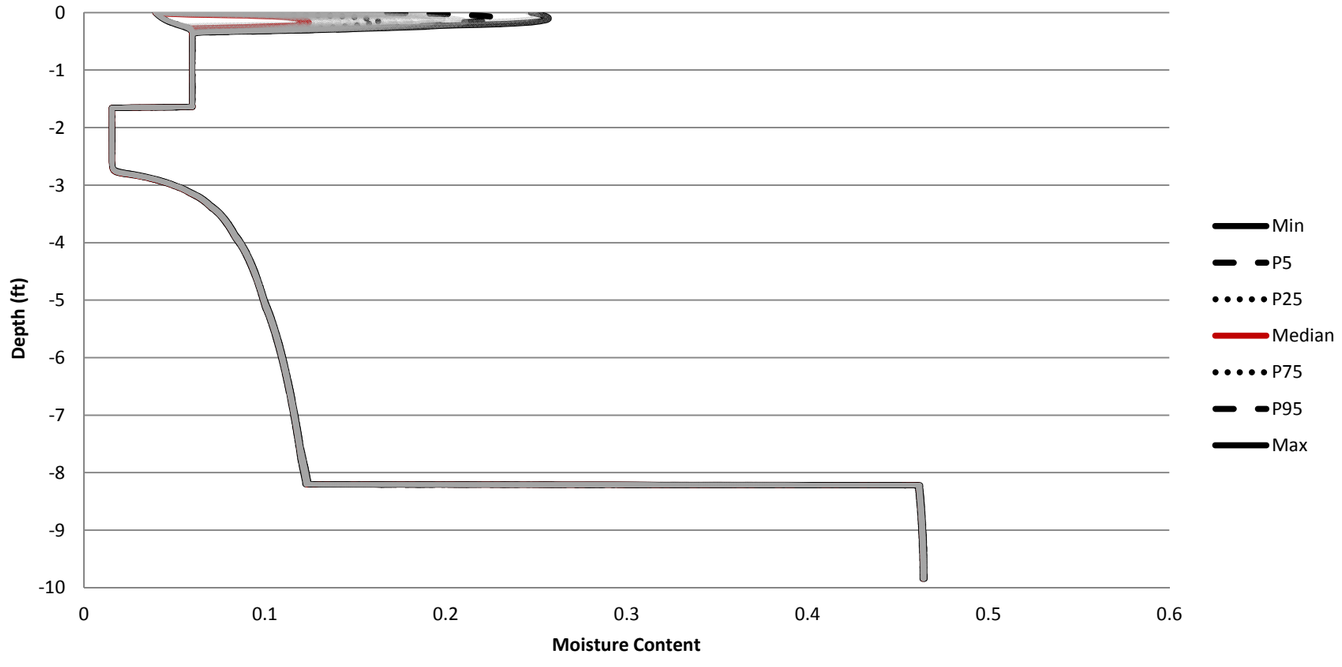
June Average Year (1980) - Daily Moisture Content



June Wet Year (1992) - Daily Moisture Content



June Dry Year (2000) - Daily Moisture Content



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CLIENT

Resolution Copper Mining

Klohn Crippen Berger

PROJECT

RESOLUTION PROJECT
NEAR WEST TAILINGS STORAGE FACILITY CLOSURE
COVER STUDY - CLOSURE COVER PREDICTIONS

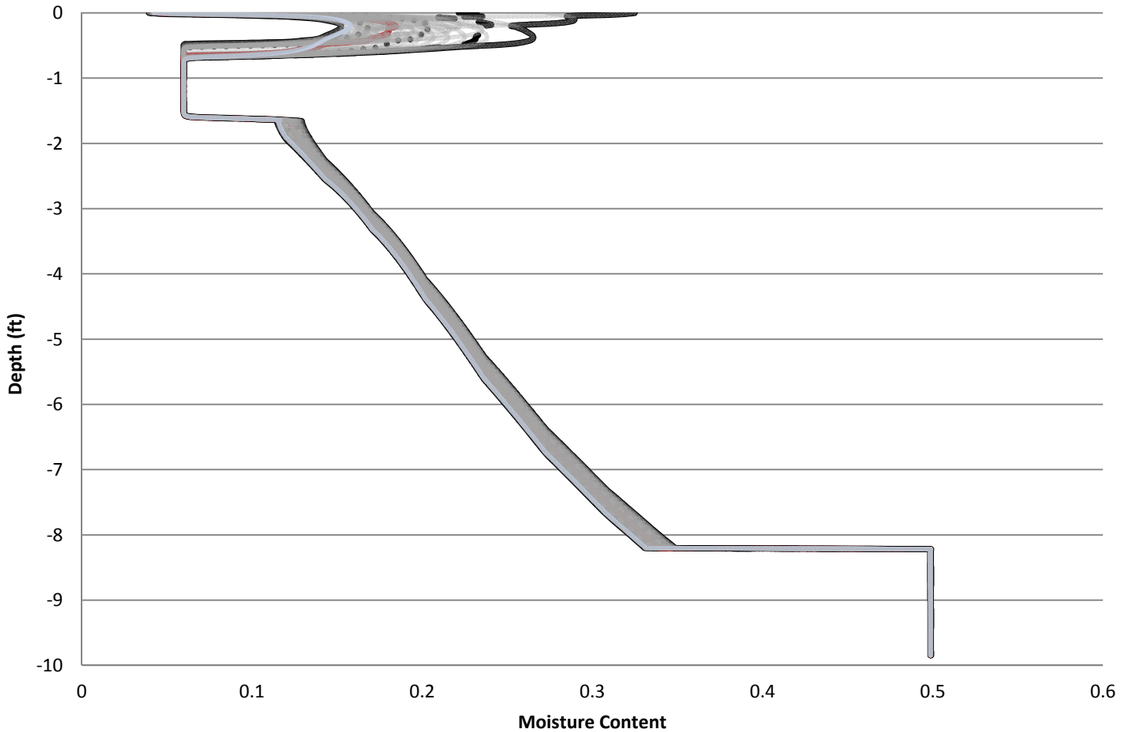
TITLE

CT12 - 1.6ft Cleaner / 6.6ft Beach / 1.6ft 25% / 75% Lab Composite / Veg
Moisture Content - Dry Season (June)

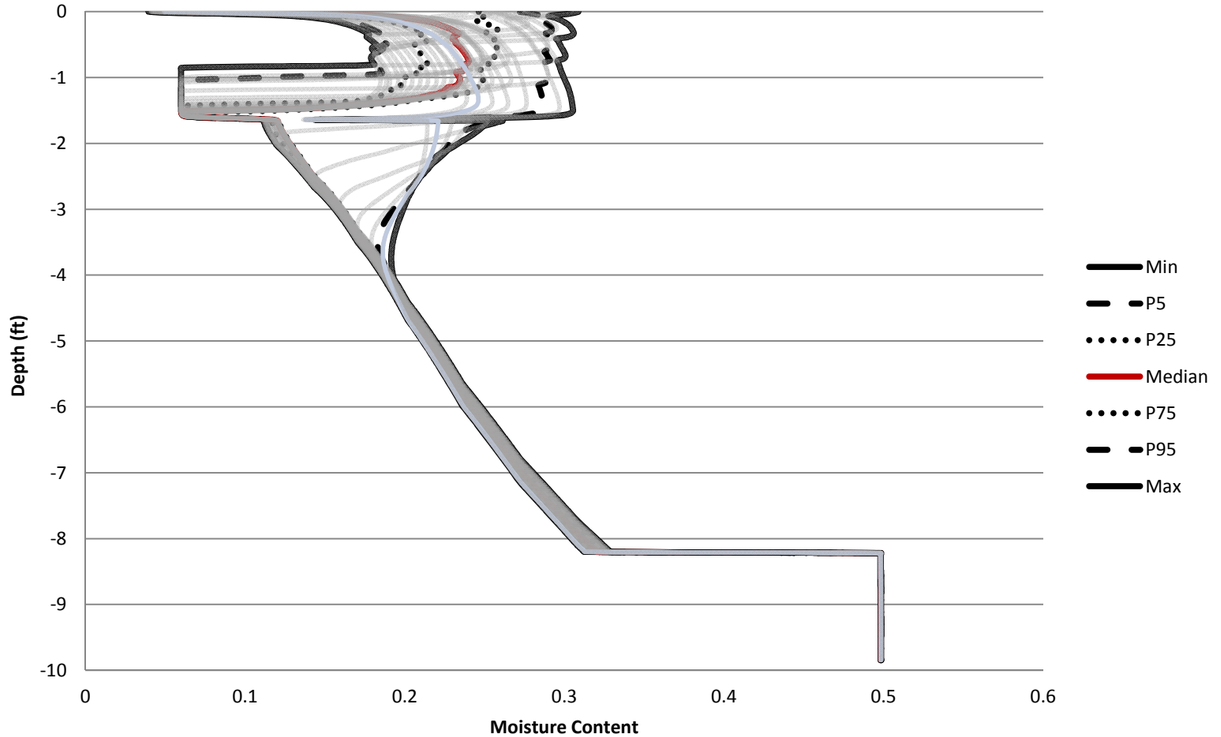
PROJECT No. M09441A16

FIG. No. III-H.7

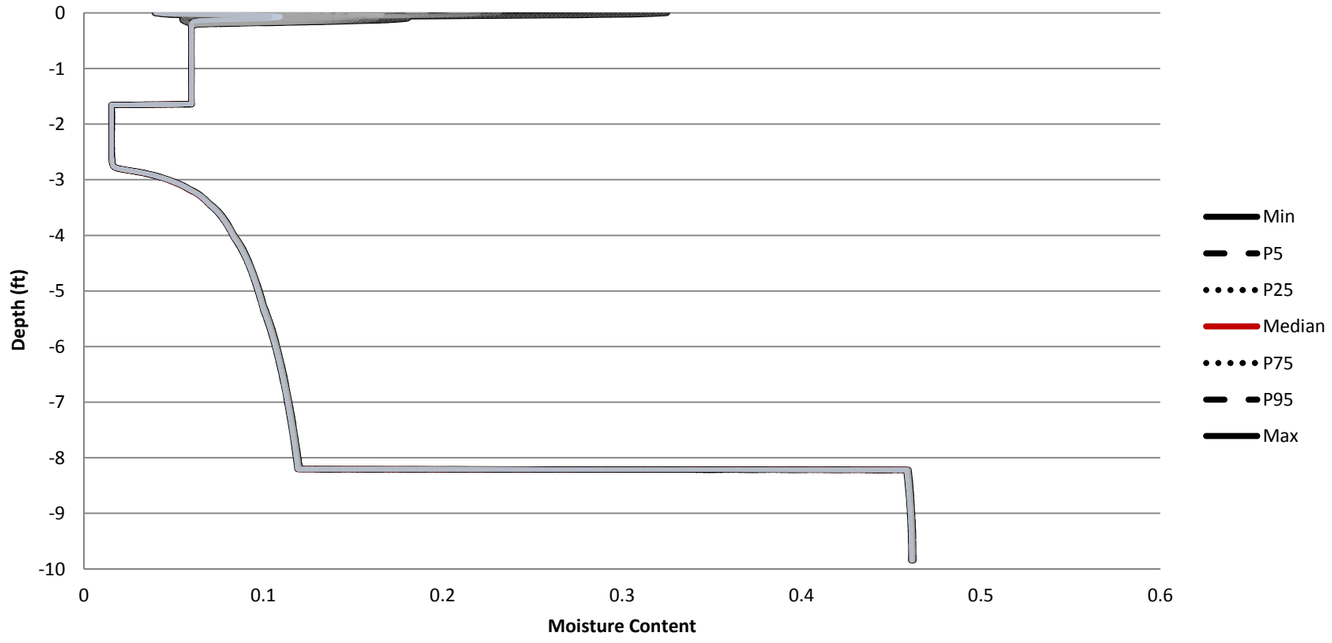
August Average Year (1980) - Daily Moisture Content



August Wet Year (1992) - Daily Moisture Content



August Dry Year (2000) - Daily Moisture Content



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Klohn Crippen Berger

PROJECT

RESOLUTION PROJECT
NEAR WEST TAILINGS STORAGE FACILITY CLOSURE COVER STUDY - CLOSURE COVER PREDICTIONS

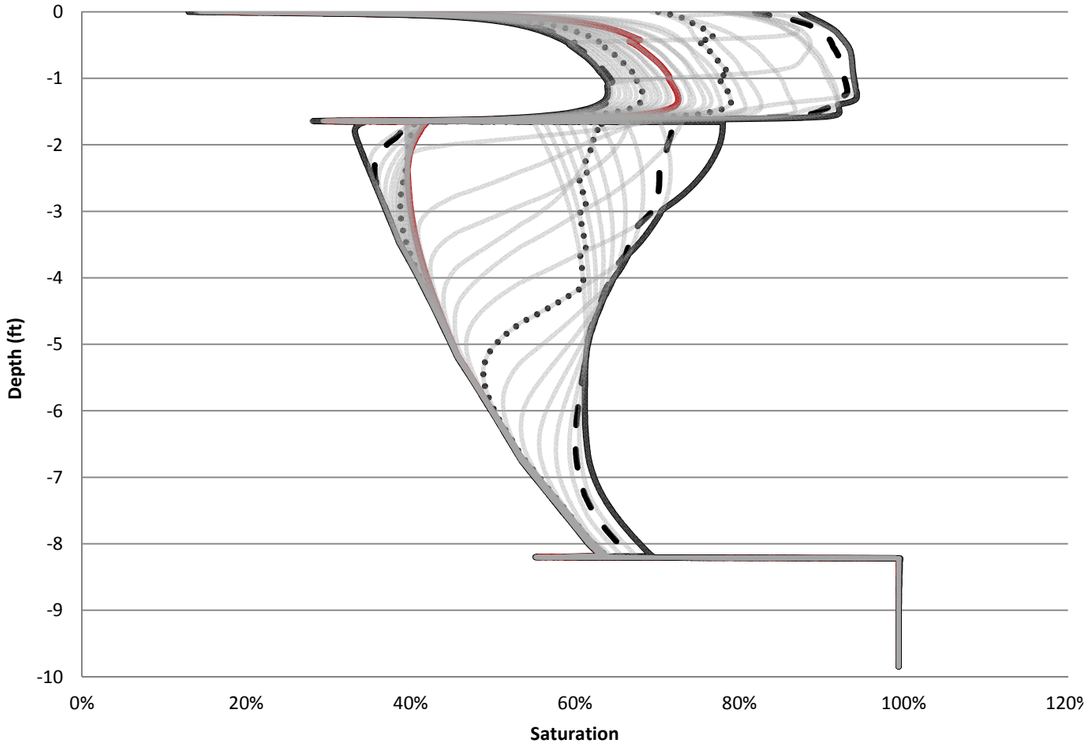
TITLE

CT12 - 1.6ft Cleaner / 6.6ft Beach / 1.6ft 25% / 75% Lab Composite / Veg
Moisture Content - Summer Monsoon (August)

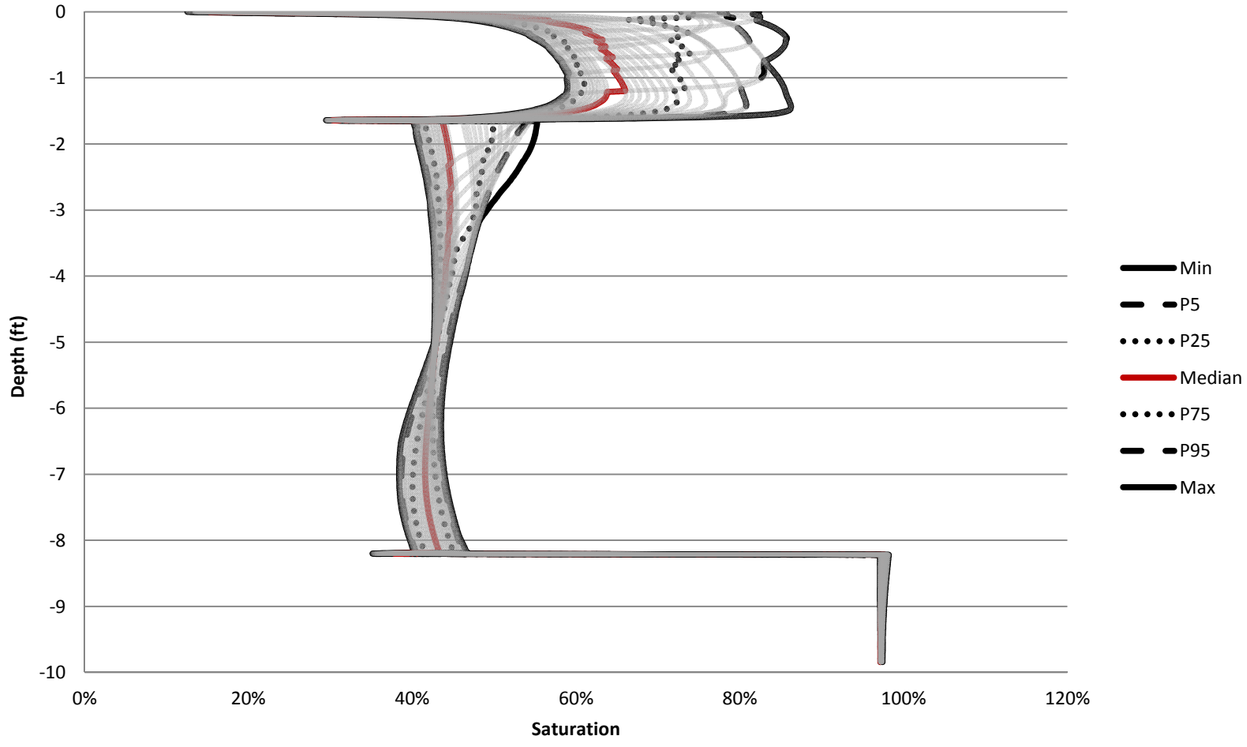
PROJECT No. M09441A16

FIG. No. III-H.8

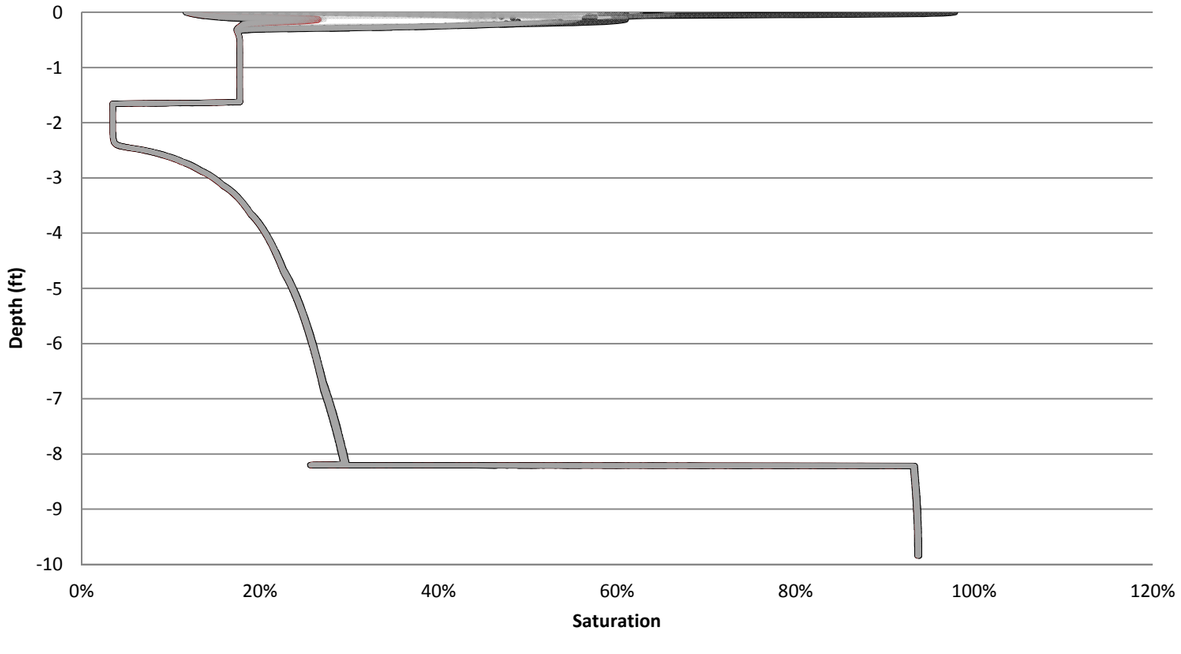
February Average Year (1980) - Daily Saturation



February Wet Year (1992) - Daily Saturation



February Dry Year (2000) - Daily Saturation



NOT FOR CONSTRUCTION

TO BE READ WITH KLOHN CRIPPEN BERGER REPORT DATED MARCH 2016

AS A MUTUAL PROTECTION TO OUR CLIENT, THE PUBLIC AND OURSELVES, ALL REPORTS AND DRAWINGS ARE SUBMITTED FOR THE CONFIDENTIAL INFORMATION OF OUR CLIENT FOR A SPECIFIC PROJECT AND AUTHORIZATION FOR USE AND/OR PUBLICATION OF DATA,STATEMENTS,CONCLUSIONS OR ABSTRACTS FROM OR REGARDING OUR REPORTS AND DRAWINGS IS RESERVED PENDING OUR WRITTEN APPROVAL.

CLIENT

Resolution Copper Mining

Klohn Crippen Berger

PROJECT

RESOLUTION PROJECT
NEAR WEST TAILINGS STORAGE FACILITY CLOSURE
COVER STUDY - CLOSURE COVER PREDICTIONS

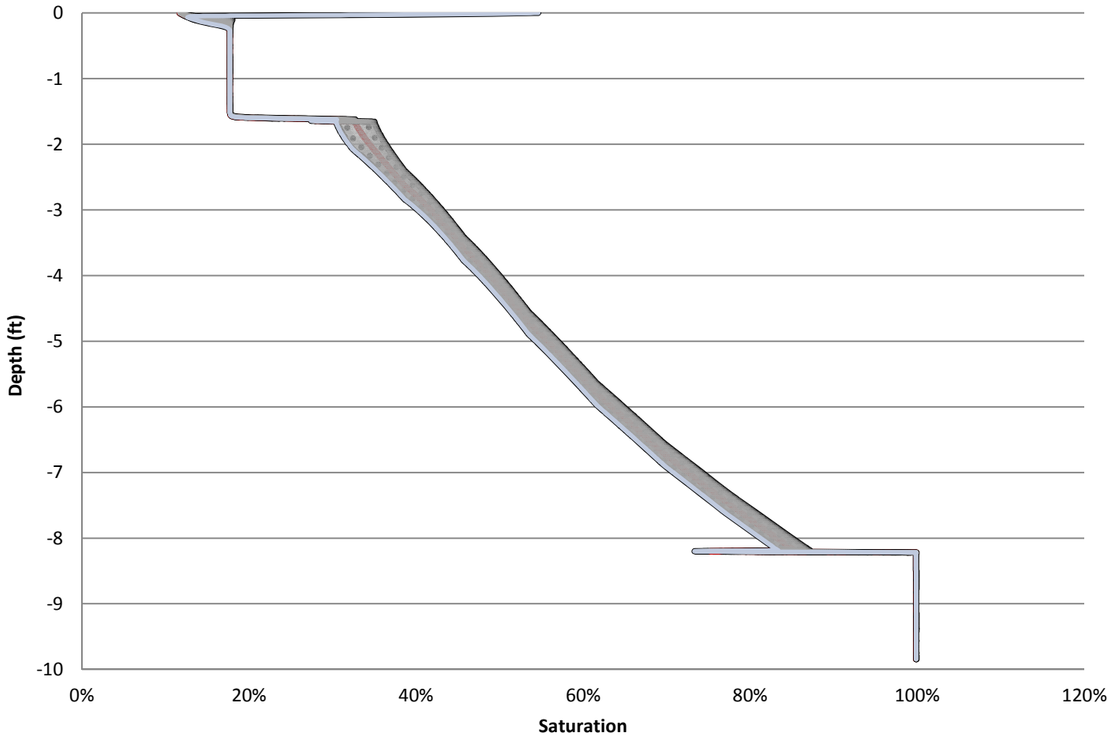
TITLE

CT12 - 1.6ft Cleaner / 6.6ft Beach / 1.6ft 25% / 75% Lab Composite / Veg
Saturation - Winter (February)

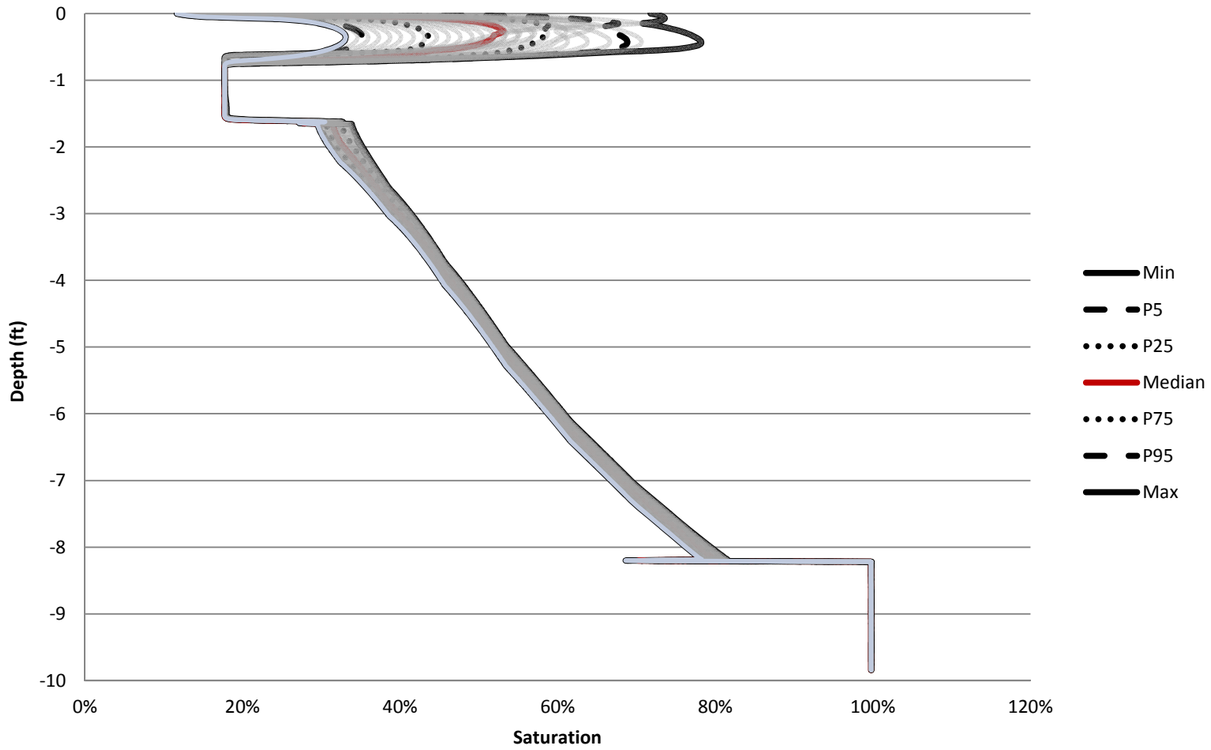
PROJECT No. M09441A16

FIG. No. III-H.9

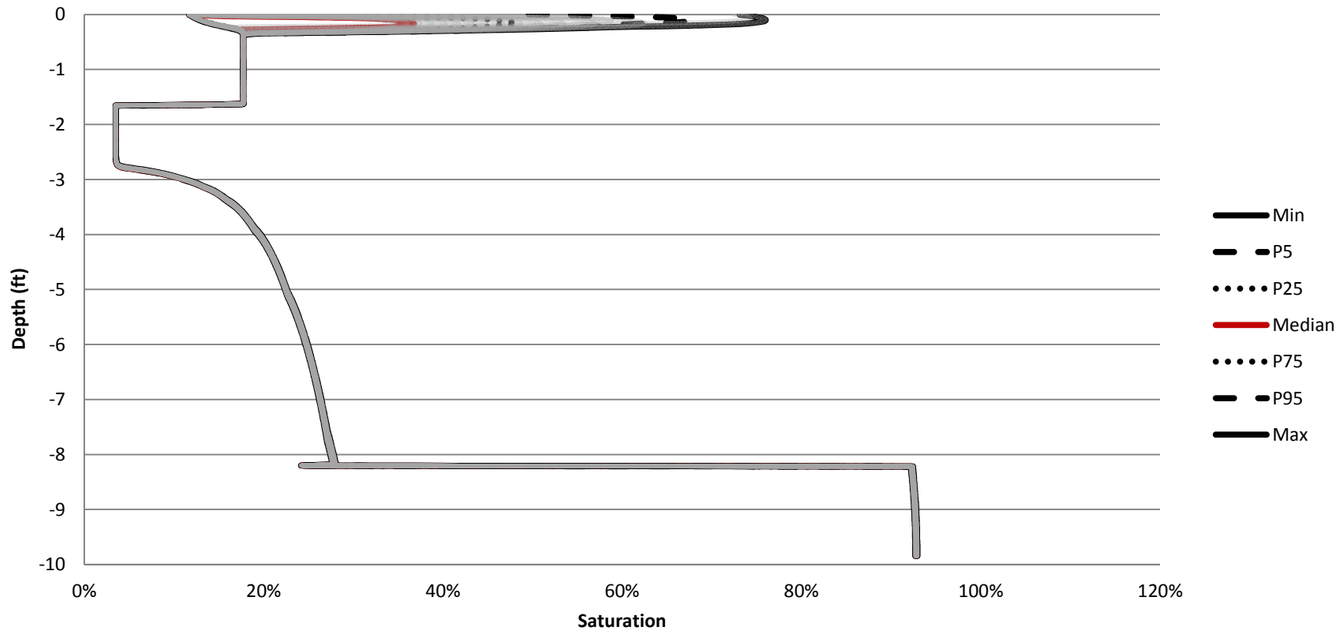
June Average Year (1980) - Daily Saturation



June Wet Year (1992) - Daily Saturation



June Dry Year (2000) - Daily Saturation



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CLIENT

Resolution Copper Mining

Klohn Crippen Berger

PROJECT

RESOLUTION PROJECT
NEAR WEST TAILINGS STORAGE FACILITY CLOSURE
COVER STUDY - CLOSURE COVER PREDICTIONS

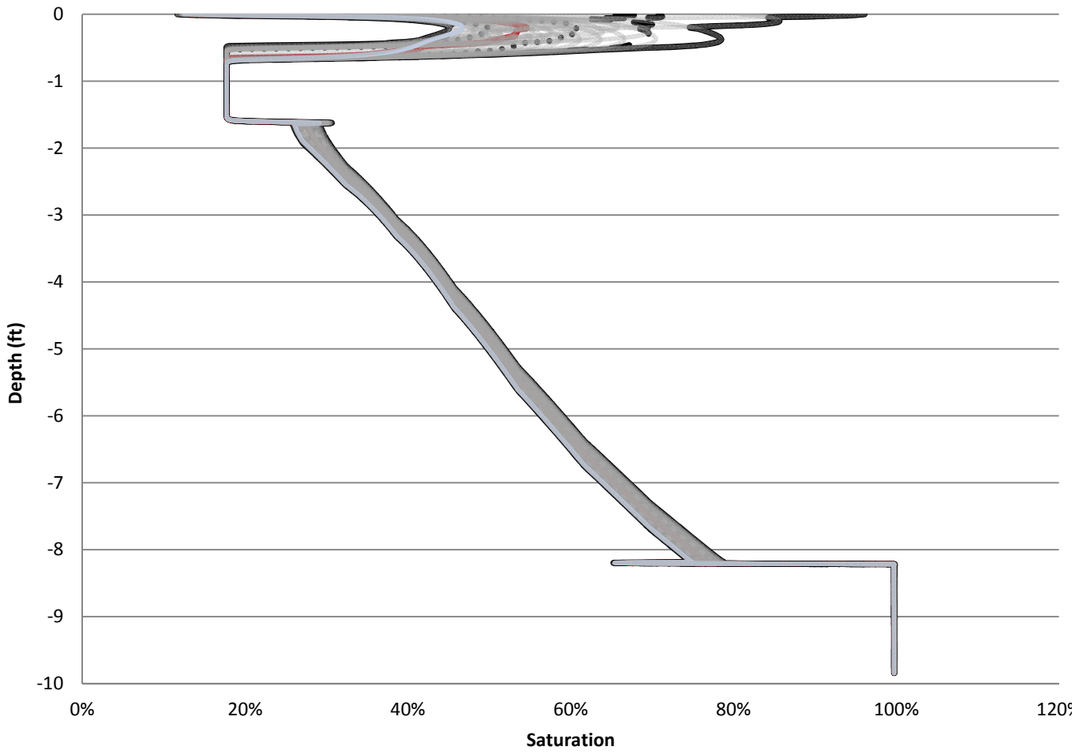
TITLE

CT12 - 1.6ft Cleaner / 6.6ft Beach / 1.6ft 25% / 75% Lab Composite / Veg
Saturation - Dry Season (June)

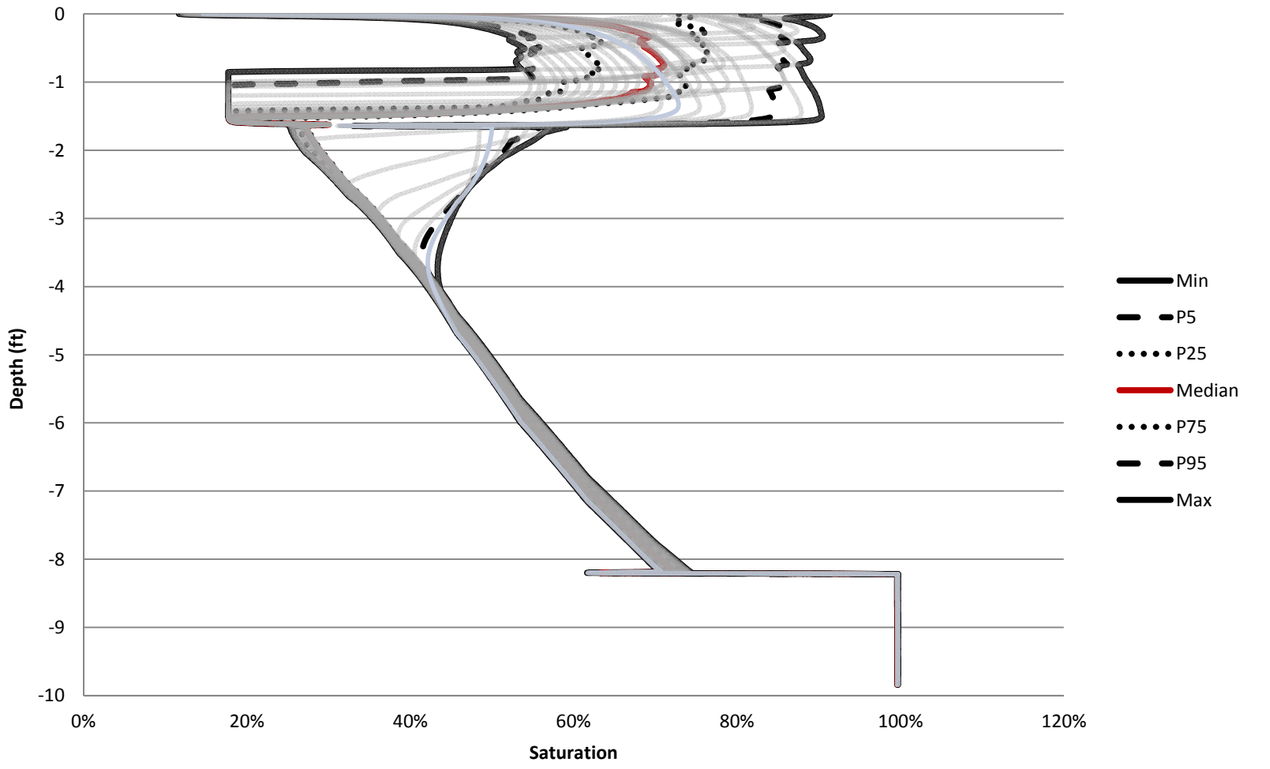
PROJECT No. M09441A16

FIG. No. III-H.10

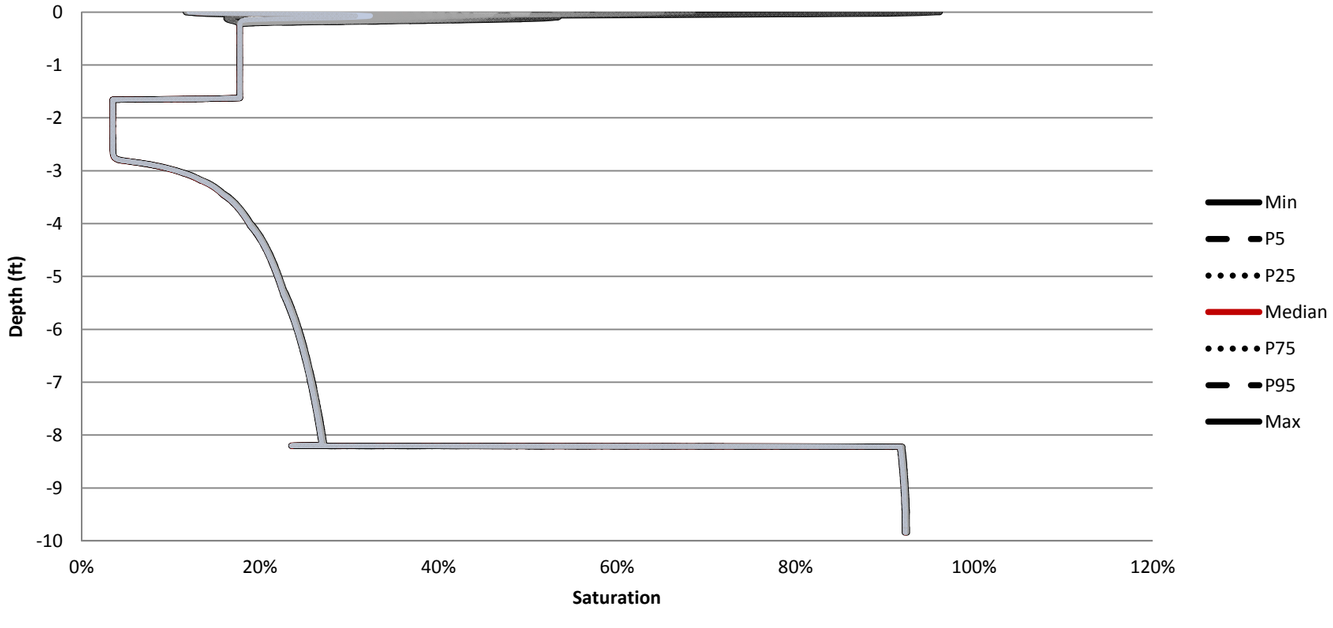
August Average Year (1980) - Daily Saturation



August Wet Year (1992) - Daily Saturation



August Dry Year (2000) - Daily Saturation



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CLIENT: Resolution Copper Mining

Klohn Crippen Berger

PROJECT: RESOLUTION PROJECT
NEAR WEST CLOSURE COVER
COVER MODELLING REPORT

TITLE: CT12 - 1.6ft Cleaner / 6.6ft Beach / 1.6ft 25% / 75% Lab Composite / Veg
Saturation - Summer Monsoon (August)

PROJECT No. M09441A16

FIG. No. III-H.11

APPENDIX III-I

CT 5 Results

Table III-I.1 CT 5 Annual Water Balance

Water Year	Result Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
		[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
1951	10/1/1951	14.21	90.07	(9.62)	12.93	(0.40)	-	14.21	4.59	33.65
1952	10/1/1952	20.54	101.44	(14.32)	14.24	(0.60)	-	20.54	6.21	38.81
1953	10/1/1953	15.47	106.44	(11.63)	12.68	(0.59)	-	15.47	3.84	38.74
1954	10/1/1954	21.57	99.33	(16.46)	15.98	(0.53)	-	21.57	5.11	38.63
1955	10/1/1955	13.57	103.43	(9.94)	13.52	(0.46)	-	13.57	3.66	37.42
1956	10/1/1956	12.67	109.92	(8.83)	10.21	(0.38)	-	12.67	3.86	40.00
1957	10/1/1957	15.21	98.50	(10.17)	10.76	(0.30)	-	15.21	5.05	37.21
1958	10/1/1958	19.46	95.59	(12.92)	12.19	(0.25)	-	19.46	6.55	37.74
1959	10/1/1959	15.85	106.22	(11.60)	12.46	(0.21)	-	15.85	4.28	39.88
1960	10/1/1960	19.18	101.65	(14.85)	11.08	(0.32)	-	19.18	4.41	39.62
1961	10/1/1961	9.95	105.63	(5.55)	6.61	(0.45)	-	9.95	4.48	38.30
1962	10/1/1962	14.25	100.71	(9.86)	9.68	(0.37)	-	14.25	4.43	38.46
1963	10/1/1963	24.21	92.24	(19.17)	13.77	(0.34)	-	24.21	5.07	38.66
1964	10/1/1964	11.60	98.11	(6.44)	9.78	(0.43)	-	11.60	5.20	36.66
1965	10/1/1965	17.59	93.27	(12.48)	12.67	(0.41)	-	17.59	5.17	36.91
1966	10/1/1966	23.01	92.13	(18.62)	10.13	(0.61)	-	23.01	4.45	38.93
1967	10/1/1967	14.53	95.43	(10.32)	14.74	(0.66)	-	14.53	4.28	36.92
1968	10/1/1968	22.12	87.20	(17.81)	12.34	(0.72)	-	22.12	4.47	37.38
1969	10/1/1969	18.85	93.90	(13.97)	12.46	(0.78)	-	18.85	5.04	38.25
1970	10/1/1970	16.07	94.65	(11.10)	12.16	(0.72)	-	16.07	5.12	38.53
1971	10/1/1971	12.48	98.58	(9.04)	10.52	(0.61)	-	12.48	3.61	37.96
1972	10/1/1972	11.28	105.94	(7.68)	11.35	(0.52)	-	11.28	3.76	40.53
1973	10/1/1973	31.09	73.27	(23.54)	15.11	(0.65)	-	31.09	7.64	35.99
1974	10/1/1974	15.91	90.83	(11.26)	12.20	(0.71)	-	15.91	4.73	36.84
1975	10/1/1975	19.09	83.66	(13.04)	14.43	(0.64)	-	19.09	6.16	35.44
1976	10/1/1976	16.50	90.16	(11.78)	11.33	(0.58)	-	16.50	4.81	37.84
1977	10/1/1977	16.42	90.71	(11.65)	13.47	(0.46)	-	16.42	4.86	37.86
1978	10/1/1978	24.13	83.82	(18.68)	13.40	(0.55)	-	24.13	5.60	38.30
1979	10/1/1979	29.61	77.17	(23.22)	11.91	(0.86)	-	29.61	6.50	38.53
1980	10/1/1980	20.31	86.10	(14.82)	11.39	(0.94)	-	20.31	5.61	38.22
1981	10/1/1981	15.24	97.13	(11.24)	12.93	(0.93)	-	15.24	4.10	40.87
1982	10/1/1982	23.54	77.76	(16.81)	15.70	(0.91)	-	23.54	7.02	36.58
1983	10/1/1983	27.48	72.52	(20.91)	15.67	(0.89)	-	27.48	6.72	36.00
1984	10/1/1984	17.80	84.57	(11.42)	14.41	(0.94)	-	17.80	6.66	37.32
1985	10/1/1985	22.72	68.98	(16.54)	11.42	(0.93)	-	22.72	6.43	34.11
1986	10/1/1986	20.87	79.57	(15.04)	15.24	(0.95)	-	20.87	6.08	37.61
1987	10/1/1987	20.12	77.20	(14.92)	13.70	(0.92)	-	20.12	5.48	36.00
1988	10/1/1988	23.07	76.93	(17.36)	14.29	(0.92)	-	23.07	6.01	37.38
1989	10/1/1989	11.73	97.68	(8.15)	11.81	(0.91)	-	11.73	3.81	40.88
1990	10/1/1990	23.39	76.42	(17.64)	12.95	(0.86)	-	23.39	5.95	37.63
1991	10/1/1991	22.99	74.96	(17.13)	15.00	(0.92)	-	22.99	6.07	37.08
1992	10/1/1992	36.57	60.75	(28.11)	17.32	(0.97)	-	36.57	8.56	37.66
1993	10/1/1993	23.68	75.00	(13.50)	10.71	(0.99)	1.20	22.48	9.12	37.28
1994	10/1/1994	15.39	85.24	(10.98)	12.64	(1.00)	-	15.39	4.57	38.98
1995	10/1/1995	24.95	70.87	(17.56)	11.30	(0.87)	0.26	24.69	7.32	37.33
1996	10/1/1996	13.58	90.16	(9.33)	13.62	(0.87)	-	13.58	4.44	40.43
1997	10/1/1997	10.24	92.91	(7.05)	11.02	(0.87)	-	10.24	3.37	40.01
1998	10/1/1998	20.55	73.23	(14.53)	12.01	(0.87)	-	20.55	6.13	36.85
1999	10/1/1999	15.00	81.89	(10.59)	11.73	(0.87)	-	15.00	4.62	38.14
2000	10/1/2000	5.47	103.54	(3.62)	7.44	(0.87)	-	5.47	1.95	42.81
2001	10/1/2001	23.50	73.62	(17.72)	15.16	(0.84)	-	23.50	5.96	38.65
2002	10/1/2002	5.43	99.21	(3.23)	5.75	(0.82)	-	5.43	2.43	42.03
2003	10/1/2003	13.27	85.83	(9.17)	9.69	(0.81)	-	13.27	4.30	40.74
2004	10/1/2004	12.40	85.04	(8.43)	10.20	(0.79)	-	12.40	4.20	41.68
2005	10/1/2005	24.25	68.11	(19.37)	12.64	(0.72)	-	24.25	4.98	37.59
2006	10/1/2006	12.28	83.07	(8.82)	10.24	(0.81)	-	12.28	3.52	39.59

Table III-I.2 CT 5 Monthly Water Balance 9 Wet Years (1983 to 1991)

Month	Result Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
		[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
Nov-82	11/30/1982	2.52	9.76	(1.89)	2.28	(0.14)	-	2.52	0.67	4.79
Dec-82	12/30/1982	2.48	0.12	(1.73)	0.43	(0.07)	-	2.48	0.75	1.04
Jan-83	1/29/1983	0.71	2.87	(0.51)	0.55	(0.07)	-	0.71	0.19	1.12
Feb-83	2/28/1983	3.54	0.47	(2.99)	0.83	(0.07)	-	3.54	0.56	1.07
Mar-83	3/30/1983	5.39	(0.63)	(4.33)	1.22	(0.08)	-	5.39	1.09	1.71
Apr-83	4/29/1983	0.83	6.81	(0.20)	2.28	(0.08)	-	0.83	0.63	2.34
May-83	5/29/1983	-	11.54	-	2.01	(0.08)	-	-	0.03	3.88
Jun-83	6/28/1983	-	14.06	-	0.51	(0.08)	-	-	0.01	5.42
Jul-83	7/28/1983	2.13	12.09	(1.61)	0.79	(0.08)	-	2.13	0.53	5.48
Aug-83	8/27/1983	3.98	7.48	(2.72)	1.85	(0.08)	-	3.98	1.26	4.09
Sep-83	9/26/1983	1.93	10.39	(1.18)	2.60	(0.08)	-	1.93	0.77	4.50
Oct-83	10/26/1983	5.08	2.72	(4.37)	1.69	(0.08)	-	5.08	0.75	2.93
Nov-83	11/25/1983	1.61	3.90	(1.34)	1.06	(0.08)	-	1.61	0.30	2.15
Dec-83	12/25/1983	1.89	0.87	(1.46)	0.43	(0.08)	-	1.89	0.46	1.00
Jan-84	1/24/1984	1.54	1.42	(0.94)	0.47	(0.08)	-	1.54	0.57	0.96
Feb-84	2/23/1984	-	4.76	0.04	0.87	(0.08)	-	-	0.07	1.48
Mar-84	3/24/1984	-	7.17	-	1.61	(0.08)	-	-	0.01	2.09
Apr-84	4/23/1984	0.87	7.40	(0.59)	1.38	(0.08)	-	0.87	0.30	2.95
May-84	5/23/1984	0.67	10.94	(0.31)	0.91	(0.08)	-	0.67	0.39	4.08
Jun-84	6/22/1984	0.04	14.17	(0.04)	0.39	(0.08)	-	0.04	0.06	5.37
Jul-84	7/22/1984	3.62	8.50	(2.40)	1.06	(0.08)	-	3.62	1.22	5.03
Aug-84	8/21/1984	4.02	7.01	(2.40)	1.73	(0.07)	-	4.02	1.62	3.99
Sep-84	9/20/1984	1.22	11.34	(0.47)	2.56	(0.07)	-	1.22	0.78	4.18
Oct-84	10/20/1984	2.56	5.12	(1.65)	1.22	(0.07)	-	2.56	0.94	3.50
Nov-84	11/19/1984	-	5.55	0.04	0.75	(0.07)	-	-	0.07	2.00
Dec-84	12/19/1984	4.80	(2.20)	(4.17)	0.31	(0.07)	-	4.80	0.64	1.28
Jan-85	1/18/1985	3.94	(1.57)	(3.31)	0.35	(0.07)	-	3.94	0.66	0.74
Feb-85	2/17/1985	2.87	(0.28)	(2.17)	0.47	(0.08)	-	2.87	0.70	0.72
Mar-85	3/19/1985	1.69	2.68	(0.87)	1.02	(0.08)	-	1.69	0.83	1.47
Apr-85	4/18/1985	0.43	7.28	-	2.24	(0.08)	-	0.43	0.44	2.35
May-85	5/18/1985	0.47	8.62	(0.28)	1.61	(0.08)	-	0.47	0.23	3.46
Jun-85	6/17/1985	-	11.85	-	0.39	(0.08)	-	-	-	4.21
Jul-85	7/17/1985	0.20	12.64	(0.20)	0.35	(0.08)	-	0.20	0.04	5.06
Aug-85	8/16/1985	2.17	9.21	(1.46)	0.94	(0.08)	-	2.17	0.71	4.31
Sep-85	9/15/1985	2.28	9.41	(1.38)	1.46	(0.08)	-	2.28	0.93	4.83
Oct-85	10/15/1985	3.27	4.80	(2.40)	1.34	(0.08)	-	3.27	0.89	3.24
Nov-85	11/14/1985	1.42	4.37	(0.98)	0.98	(0.08)	-	1.42	0.46	2.00
Dec-85	12/14/1985	2.72	0.24	(2.01)	0.43	(0.08)	-	2.72	0.72	1.26
Jan-86	1/13/1986	-	3.58	0.16	0.59	(0.08)	-	-	0.22	1.25
Feb-86	2/12/1986	2.32	1.38	(1.85)	0.59	(0.08)	-	2.32	0.51	1.59
Mar-86	3/14/1986	1.93	4.17	(1.46)	1.38	(0.08)	-	1.93	0.50	1.67
Apr-86	4/13/1986	3.11	4.53	(2.40)	2.17	(0.08)	-	3.11	0.72	2.60
May-86	5/13/1986	-	11.02	-	2.32	(0.08)	-	-	0.03	3.91
Jun-86	6/12/1986	0.04	13.58	-	0.63	(0.08)	-	0.04	0.02	4.91
Jul-86	7/12/1986	2.17	11.89	(1.81)	0.71	(0.08)	-	2.17	0.37	5.74
Aug-86	8/11/1986	2.68	8.15	(1.77)	1.85	(0.08)	-	2.68	0.94	3.77
Sep-86	9/10/1986	2.80	8.86	(1.93)	2.17	(0.08)	-	2.80	0.87	4.48
Oct-86	10/10/1986	0.94	8.11	(0.51)	1.26	(0.08)	-	0.94	0.45	3.68
Nov-86	11/9/1986	2.72	2.99	(2.09)	0.94	(0.08)	-	2.72	0.69	2.41
Dec-86	12/9/1986	2.64	1.14	(2.24)	0.55	(0.08)	-	2.64	0.38	1.46
Jan-87	1/8/1987	1.46	1.22	(0.75)	0.39	(0.08)	-	1.46	0.75	1.01
Feb-87	2/7/1987	3.11	0.16	(2.40)	0.59	(0.08)	-	3.11	0.72	1.05
Mar-87	3/9/1987	2.28	2.40	(1.77)	0.98	(0.08)	-	2.28	0.48	1.32
Apr-87	4/8/1987	0.94	5.35	(0.51)	1.73	(0.08)	-	0.94	0.47	2.15
May-87	5/8/1987	-	7.60	-	2.05	(0.08)	-	-	0.05	2.78
Jun-87	6/7/1987	0.31	11.81	(0.12)	0.87	(0.08)	-	0.31	0.24	4.46
Jul-87	7/7/1987	0.24	14.65	(0.12)	0.47	(0.08)	-	0.24	0.11	5.51
Aug-87	8/6/1987	3.11	10.04	(2.68)	1.26	(0.08)	-	3.11	0.46	5.35
Sep-87	9/5/1987	2.48	9.57	(1.97)	2.01	(0.08)	-	2.48	0.51	4.21
Oct-87	10/5/1987	0.83	9.09	(0.28)	1.73	(0.08)	-	0.83	0.61	3.95
Nov-87	11/4/1987	1.38	6.57	(1.02)	0.83	(0.08)	-	1.38	0.40	3.49
Dec-87	12/4/1987	0.71	3.31	(0.39)	0.39	(0.08)	-	0.71	0.34	1.83

Table III-I.2 CT 5 Monthly Water Balance 9 Wet Years (1983 to 1991)

Month	Result Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
		[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
Jan-88	1/3/1988	4.02	(1.34)	(3.23)	0.31	(0.08)	-	4.02	0.80	1.08
Feb-88	2/2/1988	3.58	(1.30)	(3.03)	0.39	(0.08)	-	3.58	0.55	0.72
Mar-88	3/3/1988	0.75	4.41	(0.47)	1.02	(0.08)	-	0.75	0.30	1.35
Apr-88	4/2/1988	0.12	6.54	(0.04)	1.73	(0.08)	-	0.12	0.13	2.27
May-88	5/2/1988	2.44	6.14	(1.65)	1.81	(0.08)	-	2.44	0.80	3.34
Jun-88	6/1/1988	-	12.40	0.04	1.57	(0.08)	-	-	0.07	4.25
Jul-88	7/1/1988	0.12	13.58	-	0.39	(0.08)	-	0.12	0.12	5.30
Aug-88	7/31/1988	2.48	10.12	(1.85)	0.47	(0.08)	-	2.48	0.65	5.01
Sep-88	8/30/1988	6.97	4.33	(5.55)	2.36	(0.08)	-	6.97	1.43	4.21
Oct-88	10/29/1988	2.01	17.52	(1.26)	4.37	(0.15)	-	2.01	0.83	7.40
Nov-88	11/28/1988	1.73	3.31	(1.46)	0.71	(0.08)	-	1.73	0.30	2.23
Dec-88	12/28/1988	1.10	1.81	(0.63)	0.39	(0.08)	-	1.10	0.49	1.11
Jan-89	1/27/1989	2.01	0.83	(1.42)	0.43	(0.08)	-	2.01	0.57	0.75
Feb-89	2/26/1989	0.51	3.74	(0.12)	0.87	(0.08)	-	0.51	0.42	1.22
Mar-89	3/28/1989	1.69	6.38	(1.46)	1.93	(0.08)	-	1.69	0.27	2.66
Apr-89	4/27/1989	-	11.61	0.12	2.40	(0.08)	-	-	0.14	3.89
May-89	5/27/1989	0.16	12.05	(0.04)	0.43	(0.08)	-	0.16	0.14	4.76
Jun-89	6/26/1989	-	14.13	-	0.39	(0.07)	-	-	-	5.32
Jul-89	7/26/1989	0.08	13.82	(0.04)	0.31	(0.07)	-	0.08	0.06	5.71
Aug-89	8/25/1989	1.38	10.16	(0.75)	0.63	(0.07)	-	1.38	0.68	4.57
Sep-89	9/24/1989	1.57	10.31	(1.30)	1.34	(0.07)	-	1.57	0.30	4.34
Oct-89	10/24/1989	1.06	8.07	(0.67)	0.98	(0.07)	-	1.06	0.47	3.84
Nov-89	11/23/1989	0.31	5.47	(0.16)	0.39	(0.07)	-	0.31	0.15	2.30
Dec-89	12/23/1989	-	3.35	0.08	0.16	(0.07)	-	-	0.09	1.42
Jan-90	1/22/1990	2.13	0.51	(1.50)	0.20	(0.07)	-	2.13	0.68	1.02
Feb-90	2/21/1990	2.56	0.51	(1.69)	0.43	(0.07)	-	2.56	0.84	0.94
Mar-90	3/23/1990	0.79	5.00	(0.43)	1.18	(0.07)	-	0.79	0.37	1.77
Apr-90	4/22/1990	1.02	8.50	(0.55)	2.40	(0.07)	-	1.02	0.50	2.98
May-90	5/22/1990	1.06	9.33	(0.87)	1.57	(0.07)	-	1.06	0.24	4.15
Jun-90	6/21/1990	0.43	13.62	(0.24)	0.67	(0.07)	-	0.43	0.19	5.09
Jul-90	7/21/1990	0.91	11.97	(0.55)	0.55	(0.07)	-	0.91	0.41	5.37
Aug-90	8/20/1990	10.12	0.71	(8.94)	1.06	(0.07)	-	10.12	1.16	4.21
Sep-90	9/19/1990	2.60	9.06	(2.13)	2.87	(0.07)	-	2.60	0.48	4.00
Oct-90	10/19/1990	0.43	8.03	-	1.93	(0.07)	-	0.43	0.48	3.61
Nov-90	11/18/1990	1.54	4.53	(1.06)	1.22	(0.07)	-	1.54	0.46	2.52
Dec-90	12/18/1990	2.80	0.55	(2.13)	0.51	(0.07)	-	2.80	0.69	1.52
Jan-91	1/17/1991	4.69	(2.52)	(3.82)	0.35	(0.07)	-	4.69	0.86	0.89
Feb-91	2/16/1991	0.16	3.78	-	0.71	(0.08)	-	0.16	0.18	1.11
Mar-91	3/18/1991	3.62	1.34	(2.83)	1.10	(0.08)	-	3.62	0.75	1.80
Apr-91	4/17/1991	3.19	3.94	(2.52)	2.09	(0.08)	-	3.19	0.74	2.09
May-91	5/17/1991	-	9.84	-	2.28	(0.08)	-	-	0.00	3.68
Jun-91	6/16/1991	0.75	12.20	(0.31)	0.94	(0.08)	-	0.75	0.42	4.71
Jul-91	7/16/1991	0.43	12.87	(0.28)	0.63	(0.08)	-	0.43	0.19	5.29
Aug-91	8/15/1991	3.46	8.43	(2.68)	0.94	(0.08)	-	3.46	0.80	4.66
Sep-91	9/14/1991	2.09	9.45	(1.42)	2.13	(0.08)	-	2.09	0.71	4.57
Oct-91	10/1/1991	0.24	5.67	(0.08)	0.98	(0.05)	-	0.24	0.19	2.19

Table III-I.3 CT 5 Monsoon Period Water Balance

Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
6/1/1951	8.65	32.06	(5.50)	7.78	(0.20)	-	8.65	3.15	13.29
7/1/1951	-	16.19	0.02	0.41	(0.05)	-	-	0.02	5.25
8/1/1951	1.05	16.82	(0.63)	0.70	(0.05)	-	1.05	0.42	5.79
9/1/1951	3.83	11.41	(3.14)	1.33	(0.05)	-	3.83	0.69	4.84
10/1/1951	0.68	13.59	(0.37)	2.71	(0.05)	-	0.68	0.31	4.49
11/1/1951	1.64	8.59	(1.27)	0.80	(0.05)	-	1.64	0.37	3.15
1951	7.20	66.60	(5.39)	5.95	(0.26)	-	7.20	1.81	23.52
6/1/1952	16.50	32.08	(12.14)	10.89	(0.33)	-	16.50	4.36	15.54
7/1/1952	0.63	15.60	(0.21)	0.93	(0.05)	-	0.63	0.42	5.28
8/1/1952	0.56	15.71	(0.19)	0.44	(0.05)	-	0.56	0.36	5.19
9/1/1952	0.47	15.41	(0.14)	0.60	(0.05)	-	0.47	0.33	5.09
10/1/1952	0.74	14.05	(0.37)	0.58	(0.05)	-	0.74	0.37	4.56
11/1/1952	-	11.74	0.05	0.47	(0.05)	-	-	0.05	3.81
1952	2.40	72.51	(0.87)	3.01	(0.26)	-	2.40	1.53	23.93
6/1/1953	10.86	36.80	(8.46)	7.36	(0.34)	-	10.86	2.40	14.82
7/1/1953	-	16.78	0.02	0.42	(0.05)	-	-	0.01	5.51
8/1/1953	2.71	12.80	(2.16)	0.84	(0.05)	-	2.71	0.56	5.21
9/1/1953	1.90	13.28	(1.14)	2.07	(0.05)	-	1.90	0.76	4.71
10/1/1953	-	15.06	0.06	1.52	(0.05)	-	-	0.07	4.63
11/1/1953	0.01	10.29	0.02	0.23	(0.05)	-	0.01	0.03	3.39
1953	4.63	68.20	(3.20)	5.08	(0.25)	-	4.63	1.42	23.46
6/1/1954	10.05	44.58	(7.57)	7.78	(0.31)	-	10.05	2.48	17.36
7/1/1954	0.13	15.40	(0.01)	0.50	(0.04)	-	0.13	0.12	5.13
8/1/1954	4.46	9.72	(3.45)	1.43	(0.04)	-	4.46	1.01	4.63
9/1/1954	5.56	7.26	(4.63)	2.91	(0.04)	-	5.56	0.92	3.93
10/1/1954	1.35	12.07	(0.81)	3.13	(0.04)	-	1.35	0.55	4.18
11/1/1954	-	10.94	0.06	1.41	(0.04)	-	-	0.06	3.47
1954	11.50	55.40	(8.84)	9.38	(0.21)	-	11.50	2.66	21.36
6/1/1955	4.09	46.57	(2.71)	4.18	(0.27)	-	4.09	1.40	16.02
7/1/1955	2.06	13.27	(1.78)	1.24	(0.04)	-	2.06	0.29	5.17
8/1/1955	4.46	9.21	(3.63)	1.40	(0.04)	-	4.46	0.82	4.39
9/1/1955	2.83	9.69	(1.87)	2.58	(0.04)	-	2.83	0.97	3.95
10/1/1955	0.13	13.74	(0.01)	2.71	(0.03)	-	0.13	0.12	4.43
11/1/1955	0.02	11.26	0.02	0.29	(0.03)	-	0.02	0.04	3.54
1955	9.50	57.17	(7.26)	8.22	(0.18)	-	9.50	2.24	21.47
6/1/1956	7.73	43.70	(5.47)	6.21	(0.22)	-	7.73	2.27	16.91
7/1/1956	0.24	16.73	(0.17)	0.11	(0.03)	-	0.24	0.09	5.79
8/1/1956	2.77	11.85	(1.92)	0.63	(0.03)	-	2.77	0.85	4.84
9/1/1956	1.84	11.85	(1.26)	1.77	(0.03)	-	1.84	0.58	4.30
10/1/1956	0.07	14.53	(0.04)	1.20	(0.03)	-	0.07	0.03	4.61
11/1/1956	0.53	8.94	(0.28)	0.08	(0.03)	-	0.53	0.25	3.03
1956	5.45	63.90	(3.67)	3.79	(0.14)	-	5.45	1.81	22.58
6/1/1957	9.38	37.13	(6.41)	6.85	(0.18)	-	9.38	2.97	14.94
7/1/1957	0.03	16.26	0.03	0.44	(0.02)	-	0.03	0.06	5.53
8/1/1957	1.09	13.54	(0.61)	0.22	(0.02)	-	1.09	0.49	4.97
9/1/1957	3.57	10.20	(2.58)	1.25	(0.02)	-	3.57	0.99	4.44
10/1/1957	0.60	12.44	(0.31)	1.92	(0.02)	-	0.60	0.29	4.26
11/1/1957	3.23	4.69	(2.44)	0.61	(0.02)	-	3.23	0.79	2.60
1957	8.52	57.13	(5.91)	4.44	(0.12)	-	8.52	2.61	21.80
6/1/1958	10.68	36.73	(6.75)	9.20	(0.15)	-	10.68	3.93	15.40
7/1/1958	0.70	15.79	(0.48)	0.41	(0.02)	-	0.70	0.24	5.50
8/1/1958	0.78	15.08	(0.43)	0.39	(0.02)	-	0.78	0.36	5.44
9/1/1958	0.89	14.17	(0.35)	0.61	(0.02)	-	0.89	0.54	4.68
10/1/1958	3.17	9.13	(2.48)	0.96	(0.02)	-	3.17	0.69	4.12
11/1/1958	1.92	7.64	(1.54)	1.54	(0.02)	-	1.92	0.37	3.06
1958	7.46	61.81	(5.28)	3.91	(0.10)	-	7.46	2.20	22.80
6/1/1959	3.43	50.43	(2.11)	4.18	(0.12)	-	3.43	1.34	17.30
7/1/1959	1.03	15.39	(0.67)	0.43	(0.02)	-	1.03	0.37	5.64
8/1/1959	3.79	12.87	(3.13)	1.10	(0.02)	-	3.79	0.66	5.64
9/1/1959	5.63	7.09	(4.17)	2.54	(0.02)	-	5.63	1.45	3.94
10/1/1959	0.05	12.80	0.03	2.67	(0.02)	-	0.05	0.09	4.31
11/1/1959	4.87	4.72	(4.49)	1.02	(0.02)	-	4.87	0.38	3.20
1959	15.37	52.87	(12.44)	7.76	(0.08)	-	15.37	2.95	22.73

Table III-I.3 CT 5 Monsoon Period Water Balance

Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
6/1/1960	11.66	38.50	(8.98)	7.29	(0.14)	-	11.66	2.73	16.20
7/1/1960	-	17.13	0.00	0.43	(0.04)	-	-	0.02	5.76
8/1/1960	0.74	15.16	(0.48)	0.54	(0.04)	-	0.74	0.28	5.41
9/1/1960	1.62	12.48	(0.84)	1.08	(0.04)	-	1.62	0.78	4.54
10/1/1960	0.28	13.66	(0.07)	0.73	(0.04)	-	0.28	0.22	4.52
11/1/1960	2.06	6.42	(1.40)	0.54	(0.04)	-	2.06	0.66	2.80
1960	4.70	64.84	(2.78)	3.30	(0.21)	-	4.70	1.96	23.02
6/1/1961	3.57	46.69	(1.58)	3.52	(0.27)	-	3.57	2.04	16.32
7/1/1961	-	16.69	-	0.15	(0.04)	-	-	0.02	5.66
8/1/1961	0.67	14.65	(0.29)	0.21	(0.04)	-	0.67	0.38	5.34
9/1/1961	3.13	10.71	(2.31)	0.83	(0.03)	-	3.13	0.82	4.51
10/1/1961	0.52	10.47	0.04	1.36	(0.03)	-	0.52	0.56	3.65
11/1/1961	0.45	8.86	(0.30)	0.51	(0.03)	-	0.45	0.15	3.23
1961	4.78	61.38	(2.87)	3.06	(0.17)	-	4.78	1.93	22.38
6/1/1962	11.37	35.51	(8.46)	7.48	(0.21)	-	11.37	2.96	15.23
7/1/1962	-	15.43	-	0.38	(0.03)	-	-	-	5.29
8/1/1962	0.61	14.72	(0.27)	0.48	(0.03)	-	0.61	0.34	5.26
9/1/1962	0.52	15.12	(0.23)	0.44	(0.03)	-	0.52	0.29	5.21
10/1/1962	1.30	11.06	(0.61)	0.39	(0.03)	-	1.30	0.69	4.26
11/1/1962	0.87	8.27	(0.35)	0.51	(0.03)	-	0.87	0.52	2.98
1962	3.30	64.61	(1.46)	2.20	(0.15)	-	3.30	1.84	22.98
6/1/1963	11.13	40.55	(8.89)	7.85	(0.19)	-	11.13	2.28	17.00
7/1/1963	-	14.72	0.00	0.36	(0.03)	-	-	-	4.97
8/1/1963	0.08	15.94	(0.02)	0.32	(0.03)	-	0.08	0.07	5.61
9/1/1963	11.03	1.14	(9.39)	1.65	(0.03)	-	11.03	1.63	3.97
10/1/1963	1.10	11.61	(0.52)	3.09	(0.03)	-	1.10	0.59	4.13
11/1/1963	0.67	9.37	(0.44)	1.91	(0.03)	-	0.67	0.24	3.50
1963	12.88	52.80	(10.37)	7.32	(0.14)	-	12.88	2.52	22.18
6/1/1964	5.50	40.91	(3.17)	4.95	(0.25)	-	5.50	2.37	15.18
7/1/1964	-	14.69	-	0.32	(0.04)	-	-	-	4.97
8/1/1964	1.48	13.54	(0.79)	0.43	(0.04)	-	1.48	0.70	5.15
9/1/1964	2.29	10.87	(1.31)	1.18	(0.04)	-	2.29	0.98	4.25
10/1/1964	1.66	8.74	(0.74)	0.99	(0.04)	-	1.66	0.92	3.61
11/1/1964	1.54	8.98	(1.24)	0.97	(0.04)	-	1.54	0.30	3.51
1964	6.97	56.81	(4.07)	3.89	(0.19)	-	6.97	2.90	21.49
6/1/1965	12.47	33.35	(9.32)	8.76	(0.24)	-	12.47	3.19	14.85
7/1/1965	0.10	13.74	(0.01)	0.35	(0.03)	-	0.10	0.10	4.83
8/1/1965	1.44	12.87	(0.78)	0.58	(0.04)	-	1.44	0.67	4.98
9/1/1965	0.95	13.35	(0.47)	1.05	(0.04)	-	0.95	0.48	4.70
10/1/1965	1.09	10.98	(0.66)	0.97	(0.04)	-	1.09	0.43	4.01
11/1/1965	0.46	9.92	(0.28)	0.42	(0.04)	-	0.46	0.19	3.38
1965	4.04	60.87	(2.20)	3.37	(0.18)	-	4.04	1.87	21.90
6/1/1966	17.03	32.28	(14.37)	6.12	(0.33)	-	17.03	2.69	16.33
7/1/1966	0.18	14.92	(0.06)	0.39	(0.06)	-	0.18	0.13	5.46
8/1/1966	0.84	13.74	(0.43)	0.53	(0.06)	-	0.84	0.42	4.96
9/1/1966	1.69	12.40	(1.17)	0.85	(0.06)	-	1.69	0.52	4.76
10/1/1966	2.81	8.86	(2.31)	1.83	(0.06)	-	2.81	0.50	4.04
11/1/1966	1.36	7.44	(0.95)	1.60	(0.06)	-	1.36	0.41	2.86
1966	6.89	57.36	(4.92)	5.20	(0.31)	-	6.89	1.98	22.08
6/1/1967	5.79	42.20	(3.73)	6.40	(0.39)	-	5.79	2.09	15.89
7/1/1967	0.08	14.13	(0.01)	0.36	(0.05)	-	0.08	0.08	4.81
8/1/1967	4.05	9.37	(3.24)	1.36	(0.05)	-	4.05	0.81	4.76
9/1/1967	2.67	11.42	(2.13)	2.87	(0.05)	-	2.67	0.55	4.46
10/1/1967	0.58	10.87	(0.26)	2.14	(0.05)	-	0.58	0.34	4.14
11/1/1967	0.42	9.25	(0.22)	0.64	(0.05)	-	0.42	0.21	3.39
1967	7.80	55.04	(5.86)	7.37	(0.26)	-	7.80	1.99	21.57
6/1/1968	17.13	29.84	(14.56)	7.39	(0.41)	-	17.13	2.67	15.70
7/1/1968	-	15.75	-	0.41	(0.07)	-	-	-	5.56
8/1/1968	1.82	11.77	(1.26)	0.59	(0.07)	-	1.82	0.58	4.91
9/1/1968	2.70	8.98	(1.78)	1.73	(0.06)	-	2.70	0.92	3.78
10/1/1968	0.05	11.61	0.00	1.59	(0.06)	-	0.05	0.09	4.04
11/1/1968	0.39	8.82	(0.20)	0.40	(0.06)	-	0.39	0.21	2.90
1968	4.96	56.93	(3.23)	4.71	(0.32)	-	4.96	1.80	21.19

Table III-I.3 CT 5 Monsoon Period Water Balance

Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
6/1/1969	14.11	32.64	(10.96)	8.37	(0.45)	-	14.11	3.24	15.41
7/1/1969	-	14.41	-	0.38	(0.07)	-	-	0.01	5.23
8/1/1969	0.33	14.37	(0.09)	0.40	(0.07)	-	0.33	0.24	5.28
9/1/1969	2.71	12.44	(1.86)	1.44	(0.06)	-	2.71	0.87	5.07
10/1/1969	1.31	11.22	(0.86)	1.47	(0.06)	-	1.31	0.46	4.33
11/1/1969	0.83	7.76	(0.56)	0.76	(0.06)	-	0.83	0.29	3.11
1969	5.18	60.20	(3.37)	4.45	(0.33)	-	5.18	1.88	23.01
6/1/1970	8.79	37.72	(5.90)	7.24	(0.43)	-	8.79	2.97	15.36
7/1/1970	0.08	15.12	(0.00)	0.39	(0.06)	-	0.08	0.09	5.33
8/1/1970	1.04	13.94	(0.53)	0.76	(0.06)	-	1.04	0.51	5.56
9/1/1970	1.81	12.20	(1.04)	0.84	(0.06)	-	1.81	0.78	4.73
10/1/1970	3.52	7.91	(3.06)	2.17	(0.06)	-	3.52	0.48	4.45
11/1/1970	-	8.39	-	1.53	(0.06)	-	-	0.03	2.87
1970	6.45	57.56	(4.63)	5.69	(0.29)	-	6.45	1.89	22.93
6/1/1971	3.94	43.43	(2.37)	3.99	(0.37)	-	3.94	1.67	15.85
7/1/1971	-	14.84	-	0.37	(0.05)	-	-	0.00	5.06
8/1/1971	0.39	15.47	(0.18)	0.43	(0.05)	-	0.39	0.21	5.59
9/1/1971	4.93	7.32	(3.68)	1.68	(0.05)	-	4.93	1.26	4.19
10/1/1971	3.23	9.13	(2.81)	2.52	(0.05)	-	3.23	0.43	4.40
11/1/1971	4.20	3.15	(3.35)	1.61	(0.05)	-	4.20	0.85	2.80
1971	12.75	49.92	(10.02)	6.61	(0.24)	-	12.75	2.76	22.04
6/1/1972	2.33	49.69	(1.25)	5.85	(0.30)	-	2.33	1.16	17.30
7/1/1972	1.68	13.86	(1.28)	0.82	(0.04)	-	1.68	0.42	5.44
8/1/1972	0.27	16.10	(0.13)	1.12	(0.04)	-	0.27	0.18	5.69
9/1/1972	2.10	11.54	(1.43)	1.04	(0.04)	-	2.10	0.68	4.93
10/1/1972	0.70	11.61	(0.24)	0.91	(0.04)	-	0.70	0.48	4.37
11/1/1972	8.96	(1.81)	(7.83)	1.09	(0.04)	-	8.96	1.13	2.78
1972	13.71	51.30	(10.91)	4.98	(0.21)	-	13.71	2.88	23.21
6/1/1973	16.91	23.46	(12.21)	9.05	(0.35)	-	16.91	4.76	13.27
7/1/1973	0.87	14.65	(0.49)	0.96	(0.06)	-	0.87	0.39	5.37
8/1/1973	2.83	11.06	(2.23)	0.83	(0.07)	-	2.83	0.61	5.31
9/1/1973	1.52	13.19	(0.78)	2.03	(0.07)	-	1.52	0.72	4.93
10/1/1973	-	12.72	0.01	1.15	(0.06)	-	-	0.02	4.31
11/1/1973	-	8.66	-	0.20	(0.06)	-	-	-	3.27
1973	5.22	60.28	(3.49)	5.18	(0.32)	-	5.22	1.75	23.18
6/1/1974	8.15	33.90	(5.86)	6.92	(0.42)	-	8.15	2.35	13.59
7/1/1974	-	16.61	-	0.42	(0.06)	-	-	-	5.69
8/1/1974	2.44	11.57	(1.71)	1.00	(0.06)	-	2.44	0.74	5.16
9/1/1974	1.46	12.56	(0.82)	1.89	(0.06)	-	1.46	0.65	4.88
10/1/1974	3.86	7.52	(2.86)	1.77	(0.05)	-	3.86	0.99	4.26
11/1/1974	3.39	4.84	(2.70)	1.34	(0.06)	-	3.39	0.70	3.10
1974	11.14	53.11	(8.10)	6.41	(0.29)	-	11.14	3.07	23.08
6/1/1975	10.47	29.45	(7.46)	8.68	(0.36)	-	10.47	3.06	13.03
7/1/1975	-	15.20	0.00	0.72	(0.05)	-	-	0.00	5.27
8/1/1975	2.20	10.63	(1.11)	0.77	(0.06)	-	2.20	1.10	4.96
9/1/1975	2.09	12.17	(1.42)	1.57	(0.06)	-	2.09	0.68	4.65
10/1/1975	0.94	11.38	(0.35)	1.35	(0.05)	-	0.94	0.62	4.44
11/1/1975	0.28	8.39	(0.08)	0.31	(0.05)	-	0.28	0.18	3.43
1975	5.51	57.76	(2.95)	4.73	(0.27)	-	5.51	2.59	22.75
6/1/1976	8.07	36.38	(5.31)	6.34	(0.35)	-	8.07	2.85	15.22
7/1/1976	-	15.79	-	0.45	(0.05)	-	-	0.01	5.28
8/1/1976	2.76	10.28	(2.13)	0.82	(0.05)	-	2.76	0.64	5.23
9/1/1976	0.91	13.46	(0.62)	1.95	(0.04)	-	0.91	0.30	4.63
10/1/1976	4.49	5.87	(3.64)	1.46	(0.04)	-	4.49	0.83	4.06
11/1/1976	0.91	6.34	(0.52)	1.38	(0.04)	-	0.91	0.39	2.68
1976	9.06	51.73	(6.90)	6.06	(0.22)	-	9.06	2.17	21.87
6/1/1977	6.73	37.83	(4.45)	7.32	(0.28)	-	6.73	2.34	15.05
7/1/1977	0.04	15.71	(0.02)	0.16	(0.03)	-	0.04	0.04	5.46
8/1/1977	2.52	12.56	(1.97)	0.63	(0.03)	-	2.52	0.57	5.62
9/1/1977	2.56	11.50	(1.99)	2.03	(0.03)	-	2.56	0.58	4.92
10/1/1977	3.66	6.77	(2.70)	1.95	(0.03)	-	3.66	0.94	4.09
11/1/1977	1.30	7.76	(0.91)	1.57	(0.03)	-	1.30	0.42	3.39
1977	10.08	54.29	(7.59)	6.34	(0.17)	-	10.08	2.55	23.49

Table III-I.3 CT 5 Monsoon Period Water Balance

Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
6/1/1978	19.76	24.02	(15.91)	8.74	(0.28)	-	19.76	3.94	14.90
7/1/1978	0.55	15.12	(0.41)	0.45	(0.06)	-	0.55	0.13	5.55
8/1/1978	0.98	14.37	(0.60)	0.75	(0.06)	-	0.98	0.40	5.90
9/1/1978	1.10	11.69	(0.66)	1.33	(0.06)	-	1.10	0.47	4.26
10/1/1978	0.43	10.87	(0.19)	0.57	(0.06)	-	0.43	0.23	4.30
11/1/1978	1.93	7.52	(1.52)	0.43	(0.06)	-	1.93	0.42	4.04
1978	5.00	59.57	(3.38)	3.52	(0.29)	-	5.00	1.65	24.05
6/1/1979	25.43	15.59	(20.76)	8.85	(0.49)	-	25.43	4.74	14.22
7/1/1979	0.35	14.65	(0.03)	0.72	(0.08)	-	0.35	0.33	5.17
8/1/1979	0.16	14.92	(0.07)	0.39	(0.08)	-	0.16	0.11	5.76
9/1/1979	1.61	11.18	(0.83)	0.86	(0.08)	-	1.61	0.78	4.49
10/1/1979	0.12	13.31	(0.02)	0.67	(0.08)	-	0.12	0.12	4.85
11/1/1979	0.67	9.06	(0.48)	0.35	(0.08)	-	0.67	0.20	3.81
1979	2.91	63.11	(1.43)	2.98	(0.39)	-	2.91	1.55	24.08
6/1/1980	15.55	26.02	(11.91)	7.25	(0.54)	-	15.55	3.73	14.55
7/1/1980	0.12	15.20	(0.10)	0.44	(0.08)	-	0.12	0.04	5.23
8/1/1980	1.97	11.81	(1.20)	0.77	(0.08)	-	1.97	0.76	5.39
9/1/1980	1.38	12.17	(0.76)	1.44	(0.08)	-	1.38	0.61	4.74
10/1/1980	0.63	11.85	(0.36)	1.15	(0.08)	-	0.63	0.26	4.50
11/1/1980	0.04	9.09	(0.00)	0.28	(0.08)	-	0.04	0.04	3.67
1980	4.13	60.12	(2.43)	4.07	(0.39)	-	4.13	1.72	23.53
6/1/1981	9.61	37.80	(7.14)	7.17	(0.54)	-	9.61	2.54	16.76
7/1/1981	0.12	15.59	(0.04)	0.64	(0.08)	-	0.12	0.12	5.53
8/1/1981	2.17	11.73	(1.73)	0.67	(0.08)	-	2.17	0.42	5.49
9/1/1981	2.76	11.26	(2.01)	2.47	(0.08)	-	2.76	0.77	4.55
10/1/1981	0.55	11.65	(0.31)	1.70	(0.08)	-	0.55	0.22	4.84
11/1/1981	0.94	6.77	(0.51)	0.65	(0.08)	-	0.94	0.47	3.07
1981	6.54	57.01	(4.61)	6.13	(0.39)	-	6.54	1.99	23.48
6/1/1982	12.72	30.94	(8.98)	8.90	(0.54)	-	12.72	3.88	15.04
7/1/1982	0.04	13.90	(0.04)	0.58	(0.08)	-	0.04	0.02	5.04
8/1/1982	2.68	10.12	(1.81)	0.79	(0.08)	-	2.68	0.89	4.94
9/1/1982	4.02	8.11	(2.99)	2.18	(0.07)	-	4.02	1.01	4.25
10/1/1982	3.15	7.91	(2.48)	2.59	(0.07)	-	3.15	0.75	4.25
11/1/1982	-	8.43	0.04	1.73	(0.07)	-	-	0.05	3.10
1982	9.88	48.46	(7.28)	7.88	(0.36)	-	9.88	2.72	21.57
6/1/1983	15.47	23.98	(11.69)	7.95	(0.51)	-	15.47	3.88	13.33
7/1/1983	-	13.98	-	0.47	(0.08)	-	-	-	5.53
8/1/1983	2.83	11.54	(2.13)	0.91	(0.08)	-	2.83	0.71	5.41
9/1/1983	3.82	8.31	(2.76)	2.17	(0.08)	-	3.82	1.10	4.18
10/1/1983	5.35	6.30	(4.37)	2.44	(0.08)	-	5.35	0.99	4.46
11/1/1983	1.10	6.46	(0.63)	1.65	(0.08)	-	1.10	0.54	2.89
1983	13.11	46.57	(9.88)	7.64	(0.39)	-	13.11	3.34	22.47
6/1/1984	6.57	39.72	(4.61)	6.61	(0.56)	-	6.57	2.11	15.78
7/1/1984	1.34	12.52	(1.02)	0.39	(0.08)	-	1.34	0.36	5.38
8/1/1984	3.31	8.54	(1.97)	1.50	(0.08)	-	3.31	1.37	4.65
9/1/1984	3.46	7.95	(1.89)	2.05	(0.07)	-	3.46	1.56	4.09
10/1/1984	2.01	9.37	(1.30)	2.20	(0.07)	-	2.01	0.70	4.53
11/1/1984	1.34	5.51	(0.79)	1.02	(0.07)	-	1.34	0.62	2.68
1984	11.46	43.90	(6.97)	7.17	(0.38)	-	11.46	4.63	21.33
6/1/1985	14.21	22.72	(10.75)	6.65	(0.54)	-	14.21	3.54	13.20
7/1/1985	-	12.05	-	0.31	(0.08)	-	-	-	4.69
8/1/1985	1.22	11.93	(0.91)	0.43	(0.08)	-	1.22	0.35	4.91
9/1/1985	2.20	10.59	(1.50)	1.65	(0.08)	-	2.20	0.76	4.57
10/1/1985	3.74	6.18	(2.60)	1.34	(0.08)	-	3.74	1.16	4.02
11/1/1985	1.26	5.51	(0.63)	1.18	(0.08)	-	1.26	0.65	2.40
1985	8.43	46.26	(5.63)	4.92	(0.40)	-	8.43	2.92	20.60
6/1/1986	10.98	34.53	(8.35)	8.31	(0.56)	-	10.98	2.82	16.29
7/1/1986	0.04	14.84	-	0.39	(0.08)	-	0.04	0.01	5.54
8/1/1986	4.72	5.91	(3.50)	1.46	(0.08)	-	4.72	1.24	4.60
9/1/1986	1.65	10.94	(1.06)	2.40	(0.08)	-	1.65	0.64	4.71
10/1/1986	2.20	7.83	(1.50)	1.50	(0.08)	-	2.20	0.72	4.07
11/1/1986	1.73	5.47	(1.38)	1.14	(0.08)	-	1.73	0.41	2.44
1986	10.35	45.00	(7.44)	6.89	(0.39)	-	10.35	3.02	21.36

Table III-I.3 CT 5 Monsoon Period Water Balance

Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
6/1/1987	11.73	27.05	(8.46)	7.24	(0.53)	-	11.73	3.41	14.14
7/1/1987	0.24	14.37	(0.12)	0.47	(0.08)	-	0.24	0.11	5.17
8/1/1987	2.05	11.97	(1.77)	1.06	(0.08)	-	2.05	0.31	5.50
9/1/1987	3.03	9.41	(2.40)	2.01	(0.08)	-	3.03	0.65	4.63
10/1/1987	1.34	8.94	(0.79)	1.77	(0.08)	-	1.34	0.60	4.13
11/1/1987	0.31	8.58	(0.12)	1.06	(0.08)	-	0.31	0.24	3.69
1987	6.97	53.27	(5.20)	6.38	(0.39)	-	6.97	1.91	23.12
6/1/1988	12.68	29.49	(9.65)	7.24	(0.54)	-	12.68	3.17	15.00
7/1/1988	0.12	13.58	-	0.39	(0.08)	-	0.12	0.12	5.30
8/1/1988	3.43	9.41	(2.76)	0.51	(0.08)	-	3.43	0.69	5.15
9/1/1988	6.22	5.63	(4.76)	2.56	(0.08)	-	6.22	1.48	4.27
10/1/1988	0.31	10.24	(0.08)	2.52	(0.08)	-	0.31	0.30	3.96
11/1/1988	1.50	7.32	(1.06)	1.73	(0.08)	-	1.50	0.45	3.45
1988	11.57	46.18	(8.66)	7.72	(0.39)	-	11.57	3.04	22.14
6/1/1989	7.20	41.30	(5.00)	7.13	(0.53)	-	7.20	2.32	17.29
7/1/1989	-	14.37	-	0.35	(0.07)	-	-	-	5.55
8/1/1989	0.51	13.19	(0.31)	0.39	(0.08)	-	0.51	0.22	5.73
9/1/1989	0.94	11.46	(0.47)	0.75	(0.08)	-	0.94	0.54	4.32
10/1/1989	1.57	10.04	(1.30)	1.46	(0.07)	-	1.57	0.29	4.51
11/1/1989	1.06	6.77	(0.63)	0.75	(0.08)	-	1.06	0.50	3.57
1989	4.09	55.83	(2.72)	3.70	(0.38)	-	4.09	1.55	23.69
6/1/1990	8.11	35.35	(5.28)	6.50	(0.50)	-	8.11	2.90	15.31
7/1/1990	0.24	14.69	(0.20)	0.55	(0.07)	-	0.24	0.12	5.40
8/1/1990	1.54	10.35	(0.83)	0.71	(0.07)	-	1.54	0.67	5.16
9/1/1990	9.45	2.13	(8.54)	2.01	(0.07)	-	9.45	0.94	4.02
10/1/1990	2.99	7.13	(2.17)	2.44	(0.07)	-	2.99	0.81	4.17
11/1/1990	0.24	7.83	(0.08)	1.77	(0.07)	-	0.24	0.21	3.23
1990	14.45	42.13	(11.81)	7.48	(0.35)	-	14.45	2.76	21.98
6/1/1991	15.91	24.72	(12.28)	8.19	(0.53)	-	15.91	3.63	14.73
7/1/1991	0.63	12.52	(0.28)	0.67	(0.08)	-	0.63	0.37	5.21
8/1/1991	1.69	11.22	(1.30)	0.63	(0.08)	-	1.69	0.44	5.17
9/1/1991	2.87	9.69	(2.05)	1.85	(0.08)	-	2.87	0.84	4.65
10/1/1991	1.65	8.98	(1.14)	1.89	(0.08)	-	1.65	0.57	4.09
11/1/1991	1.22	7.99	(0.94)	1.14	(0.08)	-	1.22	0.25	3.99
1991	8.07	50.39	(5.71)	6.18	(0.41)	-	8.07	2.48	23.12
6/1/1992	24.29	15.31	(18.78)	7.56	(0.56)	-	24.29	5.56	14.72
7/1/1992	1.30	11.69	(0.67)	2.13	(0.08)	-	1.30	0.64	4.97
8/1/1992	3.31	9.61	(2.60)	1.34	(0.08)	-	3.31	0.72	5.44
9/1/1992	5.55	5.83	(4.45)	2.44	(0.08)	-	5.55	1.12	4.49
10/1/1992	0.91	10.31	(0.67)	2.72	(0.08)	-	0.91	0.27	4.06
11/1/1992	1.22	7.28	(0.94)	1.54	(0.08)	-	1.22	0.33	3.90
1992	12.28	44.72	(9.33)	10.16	(0.41)	-	12.28	3.08	22.85
6/1/1993	18.45	22.68	(10.04)	3.19	(0.56)	1.20	17.24	7.25	14.29
7/1/1993	-	13.74	0.04	1.34	(0.08)	-	-	-	5.07
8/1/1993	0.24	12.60	(0.16)	1.14	(0.09)	-	0.24	0.12	5.27
9/1/1993	3.62	8.19	(2.40)	1.46	(0.09)	-	3.62	1.21	4.95
10/1/1993	0.16	10.51	-	2.05	(0.09)	-	0.16	0.22	3.76
11/1/1993	0.79	7.13	(0.39)	1.14	(0.09)	-	0.79	0.43	3.67
1993	4.80	52.17	(2.91)	7.13	(0.43)	-	4.80	1.98	22.72
6/1/1994	9.96	31.69	(7.52)	5.98	(0.61)	-	9.96	2.53	15.17
7/1/1994	0.39	13.35	(0.24)	1.30	(0.08)	-	0.39	0.17	5.35
8/1/1994	1.46	12.17	(1.22)	0.94	(0.07)	-	1.46	0.24	5.54
9/1/1994	0.75	12.64	(0.28)	1.81	(0.07)	-	0.75	0.52	5.03
10/1/1994	2.05	8.27	(1.34)	1.46	(0.07)	-	2.05	0.69	4.23
11/1/1994	1.85	5.12	(1.54)	0.94	(0.07)	-	1.85	0.32	3.25
1994	6.50	51.54	(4.61)	6.46	(0.37)	-	6.50	1.94	23.40
6/1/1995	16.09	22.05	(10.39)	3.90	(0.50)	0.26	15.83	5.57	14.05
7/1/1995	-	12.99	-	1.42	(0.07)	-	-	-	4.73
8/1/1995	0.04	13.78	-	1.02	(0.07)	-	0.04	0.04	5.36
9/1/1995	4.06	8.66	(3.19)	1.81	(0.07)	-	4.06	0.87	5.39
10/1/1995	2.91	8.27	(2.44)	2.20	(0.07)	-	2.91	0.52	4.56
11/1/1995	-	9.06	0.08	1.69	(0.07)	-	-	0.09	3.61
1995	7.01	52.76	(5.55)	8.15	(0.36)	-	7.01	1.52	23.64
6/1/1996	6.30	39.76	(4.65)	7.48	(0.51)	-	6.30	1.76	17.23
7/1/1996	0.43	13.78	(0.24)	0.47	(0.07)	-	0.43	0.15	5.47
8/1/1996	2.36	10.63	(1.54)	1.10	(0.07)	-	2.36	0.86	5.32
9/1/1996	1.30	11.02	(0.83)	1.42	(0.07)	-	1.30	0.52	4.79
10/1/1996	3.19	5.91	(2.17)	1.46	(0.07)	-	3.19	1.06	4.01
11/1/1996	0.43	7.48	(0.16)	1.34	(0.07)	-	0.43	0.25	3.85
1996	7.72	48.82	(4.92)	5.79	(0.36)	-	7.72	2.84	23.44

Table III-I.3 CT 5 Monsoon Period Water Balance

Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
6/1/1997	6.97	37.40	(4.88)	6.46	(0.50)	-	6.97	2.24	15.88
7/1/1997	-	12.99	-	0.35	(0.07)	-	-	0.02	5.13
8/1/1997	0.12	13.78	(0.04)	0.35	(0.07)	-	0.12	0.07	5.89
9/1/1997	2.72	9.45	(1.97)	1.26	(0.07)	-	2.72	0.77	4.66
10/1/1997	-	11.81	-	1.26	(0.07)	-	-	0.02	4.56
11/1/1997	0.75	6.30	(0.47)	0.28	(0.07)	-	0.75	0.28	3.74
1997	3.58	54.33	(2.48)	3.50	(0.36)	-	3.58	1.16	23.98
6/1/1998	14.13	22.83	(10.35)	7.09	(0.51)	-	14.13	3.82	13.06
7/1/1998	-	12.60	-	0.51	(0.07)	-	-	-	4.83
8/1/1998	1.73	11.42	(1.18)	1.06	(0.07)	-	1.73	0.59	5.67
9/1/1998	2.52	10.24	(1.57)	1.61	(0.07)	-	2.52	0.98	4.73
10/1/1998	1.42	9.84	(0.94)	1.46	(0.07)	-	1.42	0.47	4.82
11/1/1998	-	7.48	-	0.55	(0.07)	-	-	0.00	3.85
1998	5.67	51.57	(3.70)	5.20	(0.36)	-	5.67	2.04	23.90
6/1/1999	5.04	38.19	(3.54)	4.49	(0.50)	-	5.04	1.63	15.57
7/1/1999	-	12.99	-	0.35	(0.07)	-	-	0.00	5.00
8/1/1999	5.83	5.51	(4.57)	1.30	(0.07)	-	5.83	1.26	5.16
9/1/1999	2.99	8.66	(2.01)	2.64	(0.07)	-	2.99	0.96	4.31
10/1/1999	1.14	9.06	(0.47)	2.40	(0.07)	-	1.14	0.76	4.25
11/1/1999	-	9.45	0.04	1.50	(0.08)	-	-	0.01	3.82
1999	9.96	45.67	(7.01)	8.19	(0.37)	-	9.96	3.00	22.54
6/1/2000	3.90	44.49	(2.83)	4.02	(0.52)	-	3.90	1.12	17.87
7/1/2000	0.79	12.60	(0.47)	0.55	(0.07)	-	0.79	0.32	5.86
8/1/2000	0.08	14.17	(0.04)	0.55	(0.07)	-	0.08	0.05	5.52
9/1/2000	0.71	11.02	(0.31)	0.47	(0.07)	-	0.71	0.43	5.25
10/1/2000	-	11.81	-	0.35	(0.07)	-	-	0.02	4.50
11/1/2000	5.31	1.18	(4.45)	0.47	(0.07)	-	5.31	0.85	3.66
2000	6.89	50.79	(5.28)	2.40	(0.34)	-	6.89	1.67	24.78
6/1/2001	11.77	28.35	(8.15)	9.02	(0.50)	-	11.77	3.77	14.56
7/1/2001	0.04	14.17	-	0.39	(0.07)	-	0.04	0.03	5.59
8/1/2001	2.68	9.84	(2.40)	0.39	(0.07)	-	2.68	0.32	5.87
9/1/2001	3.54	8.66	(2.68)	2.64	(0.07)	-	3.54	0.89	4.15
10/1/2001	0.16	11.42	(0.04)	2.24	(0.07)	-	0.16	0.10	4.79
11/1/2001	0.35	7.87	(0.20)	0.71	(0.07)	-	0.35	0.19	3.65
2001	6.77	51.97	(5.31)	6.38	(0.35)	-	6.77	1.53	24.04
6/1/2002	3.03	41.73	(1.93)	3.07	(0.47)	-	3.03	1.20	17.09
7/1/2002	-	14.96	-	0.35	(0.07)	-	-	-	5.57
8/1/2002	0.31	13.39	(0.16)	0.39	(0.07)	-	0.31	0.22	6.27
9/1/2002	0.47	11.81	(0.24)	0.39	(0.07)	-	0.47	0.24	4.90
10/1/2002	1.26	9.45	(0.71)	0.83	(0.07)	-	1.26	0.57	4.56
11/1/2002	0.12	7.48	(0.04)	0.43	(0.07)	-	0.12	0.07	3.72
2002	2.17	57.09	(1.14)	2.40	(0.34)	-	2.17	1.10	25.02
6/1/2003	9.25	32.68	(6.97)	6.57	(0.47)	-	9.25	2.46	15.60
7/1/2003	-	13.39	-	0.35	(0.07)	-	-	-	6.03
8/1/2003	0.51	12.99	(0.12)	0.35	(0.07)	-	0.51	0.39	6.11
9/1/2003	1.34	10.63	(0.91)	0.71	(0.07)	-	1.34	0.48	4.94
10/1/2003	2.05	8.66	(1.14)	1.26	(0.07)	-	2.05	0.89	4.33
11/1/2003	0.08	8.66	-	0.79	(0.07)	-	0.08	0.09	3.92
2003	3.98	54.33	(2.17)	3.46	(0.34)	-	3.98	1.87	25.33
6/1/2004	7.95	32.68	(5.63)	6.50	(0.47)	-	7.95	2.45	16.89
7/1/2004	-	13.39	-	0.35	(0.06)	-	-	-	5.46
8/1/2004	0.55	12.20	(0.24)	0.35	(0.06)	-	0.55	0.35	5.62
9/1/2004	2.20	9.45	(1.34)	0.98	(0.06)	-	2.20	0.87	4.93
10/1/2004	1.61	8.66	(1.22)	1.22	(0.06)	-	1.61	0.44	4.87
11/1/2004	1.22	5.12	(0.83)	0.75	(0.06)	-	1.22	0.39	3.51
2004	5.59	48.82	(3.62)	3.66	(0.30)	-	5.59	2.05	24.39
6/1/2005	16.54	22.44	(13.54)	6.50	(0.39)	-	16.54	3.00	13.86
7/1/2005	0.08	12.60	(0.04)	0.35	(0.07)	-	0.08	0.05	5.14
8/1/2005	1.38	11.81	(1.14)	0.39	(0.07)	-	1.38	0.28	6.50
9/1/2005	4.92	5.91	(3.78)	2.28	(0.07)	-	4.92	1.15	3.98
10/1/2005	0.12	10.24	(0.04)	2.36	(0.07)	-	0.12	0.11	4.57
11/1/2005	0.43	7.48	(0.24)	0.79	(0.07)	-	0.43	0.16	3.81
2005	6.93	48.03	(5.24)	6.18	(0.34)	-	6.93	1.75	23.99
6/1/2006	3.90	39.37	(3.11)	4.29	(0.47)	-	3.90	0.88	16.77
7/1/2006	0.51	12.99	(0.24)	0.35	(0.07)	-	0.51	0.26	5.71
8/1/2006	3.19	7.87	(2.52)	0.59	(0.07)	-	3.19	0.70	5.46
9/1/2006	3.07	7.48	(1.97)	2.20	(0.07)	-	3.07	1.08	4.04
10/1/2006	1.18	7.87	(0.75)	2.01	(0.07)	-	1.18	0.43	3.80
11/1/2006	1.02	5.51	(0.47)	1.34	(0.07)	-	1.02	0.59	3.31
2006	8.98	41.73	(5.94)	6.50	(0.34)	-	8.98	3.06	22.33

Table III-I.4 CT 5 Winter Storm Period Water Balance

Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
10/1/1951	14.21	90.07	(9.62)	12.93	(0.40)	-	14.21	4.59	33.65
11/1/1951	1.64	8.59	(1.27)	0.80	(0.05)	-	1.64	0.37	3.15
12/1/1951	1.71	3.44	(1.11)	0.54	(0.05)	-	1.71	0.60	1.66
1/1/1952	3.02	0.52	(2.42)	0.44	(0.05)	-	3.02	0.60	1.05
2/1/1952	2.79	0.81	(2.04)	0.60	(0.05)	-	2.79	0.75	1.08
3/1/1952	0.50	4.29	(0.14)	0.96	(0.04)	-	0.50	0.36	1.31
1952	9.66	17.65	(6.98)	3.34	(0.24)	-	9.66	2.68	8.25
10/1/1952	10.88	83.79	(7.35)	10.90	(0.36)	-	10.88	3.53	30.56
11/1/1952	-	11.74	0.05	0.47	(0.05)	-	-	0.05	3.81
12/1/1952	4.31	0.74	(3.74)	0.28	(0.05)	-	4.31	0.57	1.47
1/1/1953	1.98	1.22	(1.33)	0.49	(0.05)	-	1.98	0.64	0.96
2/1/1953	0.74	3.65	(0.35)	0.74	(0.05)	-	0.74	0.39	1.27
3/1/1953	0.60	4.11	(0.32)	0.92	(0.04)	-	0.60	0.28	1.36
1953	7.62	21.45	(5.69)	2.90	(0.24)	-	7.62	1.93	8.87
10/1/1953	7.85	84.99	(5.94)	9.78	(0.35)	-	7.85	1.91	29.79
11/1/1953	0.01	10.29	0.02	0.23	(0.05)	-	0.01	0.03	3.39
12/1/1953	0.56	5.66	(0.36)	0.17	(0.05)	-	0.56	0.20	1.91
1/1/1954	0.19	3.36	0.00	0.16	(0.05)	-	0.19	0.20	1.06
2/1/1954	2.41	1.96	(1.85)	0.34	(0.05)	-	2.41	0.56	1.27
3/1/1954	0.72	5.40	(0.39)	0.89	(0.04)	-	0.72	0.34	1.83
1954	3.90	26.67	(2.57)	1.80	(0.23)	-	3.90	1.32	9.46
10/1/1954	17.67	72.65	(13.89)	14.19	(0.30)	-	17.67	3.78	29.17
11/1/1954	-	10.94	0.06	1.41	(0.04)	-	-	0.06	3.47
12/1/1954	0.09	6.69	(0.06)	0.22	(0.04)	-	0.09	0.04	2.01
1/1/1955	0.29	3.74	(0.09)	0.12	(0.04)	-	0.29	0.20	1.30
2/1/1955	3.41	(0.55)	(2.63)	0.30	(0.04)	-	3.41	0.78	0.83
3/1/1955	0.28	4.13	(0.01)	0.78	(0.04)	-	0.28	0.27	1.29
1955	4.07	24.96	(2.72)	2.83	(0.20)	-	4.07	1.36	8.90
10/1/1955	9.49	78.46	(7.22)	10.69	(0.26)	-	9.49	2.30	28.52
11/1/1955	0.02	11.26	0.02	0.29	(0.03)	-	0.02	0.04	3.54
12/1/1955	0.96	4.37	(0.68)	0.15	(0.03)	-	0.96	0.29	1.72
1/1/1956	1.37	2.76	(1.05)	0.38	(0.03)	-	1.37	0.32	1.30
2/1/1956	2.62	1.57	(2.15)	0.44	(0.03)	-	2.62	0.47	1.38
3/1/1956	2.00	1.69	(1.28)	0.70	(0.03)	-	2.00	0.72	1.07
1956	6.98	21.65	(5.13)	1.96	(0.17)	-	6.98	1.85	9.01
10/1/1956	5.70	88.27	(3.70)	8.25	(0.21)	-	5.70	2.01	30.99
11/1/1956	0.53	8.94	(0.28)	0.08	(0.03)	-	0.53	0.25	3.03
12/1/1956	-	5.24	0.09	0.16	(0.03)	-	-	0.09	1.61
1/1/1957	0.47	3.35	(0.25)	0.11	(0.03)	-	0.47	0.22	1.13
2/1/1957	4.77	(1.85)	(4.11)	0.32	(0.03)	-	4.77	0.66	0.96
3/1/1957	0.73	4.69	(0.11)	1.04	(0.02)	-	0.73	0.62	1.51
1957	6.50	20.35	(4.66)	1.70	(0.13)	-	6.50	1.84	8.24
10/1/1957	8.71	78.15	(5.50)	9.06	(0.17)	-	8.71	3.21	28.90
11/1/1957	3.23	4.69	(2.44)	0.61	(0.02)	-	3.23	0.79	2.60
12/1/1957	0.61	3.62	(0.14)	0.53	(0.02)	-	0.61	0.47	1.36
1/1/1958	1.06	2.80	(0.61)	0.45	(0.02)	-	1.06	0.46	1.23
2/1/1958	0.01	4.25	0.07	0.53	(0.02)	-	0.01	0.09	1.22
3/1/1958	2.52	1.93	(1.91)	0.70	(0.02)	-	2.52	0.61	1.34
1958	7.43	17.28	(5.02)	2.82	(0.11)	-	7.43	2.42	7.74
10/1/1958	12.02	78.31	(7.90)	9.37	(0.14)	-	12.02	4.14	30.00
11/1/1958	1.92	7.64	(1.54)	1.54	(0.02)	-	1.92	0.37	3.06
12/1/1958	1.53	3.98	(1.20)	0.81	(0.02)	-	1.53	0.33	1.61
1/1/1959	-	4.76	0.08	0.59	(0.02)	-	-	0.08	1.56
2/1/1959	0.21	4.29	(0.05)	0.60	(0.02)	-	0.21	0.17	1.30
3/1/1959	1.42	2.80	(0.91)	0.65	(0.02)	-	1.42	0.51	1.23
1959	5.08	23.46	(3.63)	4.20	(0.09)	-	5.08	1.45	8.76
10/1/1959	10.77	82.76	(7.97)	8.26	(0.12)	-	10.77	2.83	31.12
11/1/1959	4.87	4.72	(4.49)	1.02	(0.02)	-	4.87	0.38	3.20
12/1/1959	0.38	4.80	0.06	0.95	(0.02)	-	0.38	0.45	1.62
1/1/1960	5.23	(2.01)	(4.59)	0.49	(0.02)	-	5.23	0.64	1.00
2/1/1960	4.16	(1.26)	(3.53)	0.49	(0.02)	-	4.16	0.64	0.85
3/1/1960	0.87	3.03	(0.40)	0.78	(0.01)	-	0.87	0.48	1.18
1960	15.52	9.29	(12.96)	3.74	(0.08)	-	15.52	2.58	7.86

Table III-I.4 CT 5 Winter Storm Period Water Balance

Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
10/1/1960	3.66	92.36	(1.89)	7.34	(0.24)	-	3.66	1.83	31.77
11/1/1960	2.06	6.42	(1.40)	0.54	(0.04)	-	2.06	0.66	2.80
12/1/1960	0.48	4.76	(0.21)	0.51	(0.04)	-	0.48	0.28	1.70
1/1/1961	0.47	3.27	(0.18)	0.31	(0.04)	-	0.47	0.29	1.25
2/1/1961	0.70	3.15	(0.33)	0.33	(0.04)	-	0.70	0.37	1.27
3/1/1961	0.23	4.92	0.00	0.46	(0.04)	-	0.23	0.24	1.46
1961	3.94	22.52	(2.12)	2.15	(0.20)	-	3.94	1.85	8.48
10/1/1961	6.02	83.11	(3.43)	4.45	(0.25)	-	6.02	2.63	29.75
11/1/1961	0.45	8.86	(0.30)	0.51	(0.03)	-	0.45	0.15	3.23
12/1/1961	0.32	3.90	0.00	0.12	(0.03)	-	0.32	0.33	1.27
1/1/1962	3.88	(0.87)	(3.26)	0.28	(0.03)	-	3.88	0.61	0.99
2/1/1962	3.21	(0.08)	(2.70)	0.50	(0.03)	-	3.21	0.52	0.93
3/1/1962	1.67	2.44	(1.04)	0.81	(0.03)	-	1.67	0.63	1.29
1962	9.52	14.25	(7.30)	2.21	(0.16)	-	9.52	2.24	7.71
10/1/1962	4.73	86.46	(2.56)	7.47	(0.21)	-	4.73	2.19	30.75
11/1/1962	0.87	8.27	(0.35)	0.51	(0.03)	-	0.87	0.52	2.98
12/1/1962	0.83	5.35	(0.56)	0.34	(0.03)	-	0.83	0.28	2.04
1/1/1963	1.81	2.01	(1.18)	0.24	(0.03)	-	1.81	0.63	1.37
2/1/1963	2.09	1.42	(1.58)	0.48	(0.03)	-	2.09	0.52	1.00
3/1/1963	4.23	0.87	(3.90)	0.97	(0.03)	-	4.23	0.33	1.61
1963	9.83	17.91	(7.57)	2.54	(0.14)	-	9.83	2.26	9.00
10/1/1963	14.38	74.33	(11.60)	11.23	(0.19)	-	14.38	2.81	29.66
11/1/1963	0.67	9.37	(0.44)	1.91	(0.03)	-	0.67	0.24	3.50
12/1/1963	2.34	2.52	(1.61)	0.56	(0.03)	-	2.34	0.74	1.61
1/1/1964	0.34	3.46	(0.06)	0.47	(0.03)	-	0.34	0.28	1.28
2/1/1964	0.58	2.91	(0.33)	0.43	(0.04)	-	0.58	0.25	1.02
3/1/1964	-	4.41	0.08	0.63	(0.04)	-	-	0.08	1.28
1964	3.93	22.68	(2.36)	4.00	(0.16)	-	3.93	1.59	8.69
10/1/1964	7.67	75.43	(4.08)	5.78	(0.27)	-	7.67	3.62	27.97
11/1/1964	1.54	8.98	(1.24)	0.97	(0.04)	-	1.54	0.30	3.51
12/1/1964	1.38	3.35	(1.00)	0.48	(0.04)	-	1.38	0.38	1.60
1/1/1965	1.57	1.65	(1.18)	0.33	(0.04)	-	1.57	0.40	1.21
2/1/1965	2.90	0.59	(2.26)	0.55	(0.03)	-	2.90	0.64	1.00
3/1/1965	2.83	1.61	(2.43)	0.90	(0.03)	-	2.83	0.40	1.23
1965	10.22	16.18	(8.11)	3.24	(0.17)	-	10.22	2.12	8.54
10/1/1965	7.38	77.09	(4.37)	9.44	(0.24)	-	7.38	3.04	28.31
11/1/1965	0.46	9.92	(0.28)	0.42	(0.04)	-	0.46	0.19	3.38
12/1/1965	2.35	3.23	(1.97)	0.22	(0.04)	-	2.35	0.39	2.08
1/1/1966	10.47	(7.83)	(9.61)	0.34	(0.03)	-	10.47	0.86	0.93
2/1/1966	1.83	1.30	(1.35)	0.52	(0.03)	-	1.83	0.49	0.95
3/1/1966	2.03	1.65	(1.45)	0.74	(0.04)	-	2.03	0.57	1.04
1966	17.14	8.27	(14.66)	2.24	(0.18)	-	17.14	2.51	8.38
10/1/1966	5.87	83.86	(3.96)	7.89	(0.43)	-	5.87	1.94	30.55
11/1/1966	1.36	7.44	(0.95)	1.60	(0.06)	-	1.36	0.41	2.86
12/1/1966	0.88	4.80	(0.61)	0.85	(0.06)	-	0.88	0.27	2.01
1/1/1967	1.25	2.09	(0.78)	0.42	(0.06)	-	1.25	0.48	1.22
2/1/1967	0.79	2.91	(0.49)	0.49	(0.06)	-	0.79	0.31	0.96
3/1/1967	-	4.69	0.08	0.67	(0.05)	-	-	0.09	1.54
1967	4.28	21.93	(2.75)	4.04	(0.28)	-	4.28	1.55	8.58
10/1/1967	10.25	73.50	(7.57)	10.70	(0.38)	-	10.25	2.73	28.34
11/1/1967	0.42	9.25	(0.22)	0.64	(0.05)	-	0.42	0.21	3.39
12/1/1967	2.11	3.50	(1.70)	0.17	(0.05)	-	2.11	0.43	2.04
1/1/1968	9.79	(7.13)	(9.21)	0.32	(0.05)	-	9.79	0.59	0.80
2/1/1968	0.63	3.23	(0.29)	0.64	(0.05)	-	0.63	0.35	1.18
3/1/1968	1.94	3.07	(1.41)	1.01	(0.06)	-	1.94	0.54	1.44
1968	14.89	11.93	(12.83)	2.78	(0.26)	-	14.89	2.13	8.85
10/1/1968	7.23	75.28	(4.98)	9.56	(0.46)	-	7.23	2.34	28.53
11/1/1968	0.39	8.82	(0.20)	0.40	(0.06)	-	0.39	0.21	2.90
12/1/1968	2.56	2.28	(2.03)	0.39	(0.06)	-	2.56	0.54	1.81
1/1/1969	3.30	(0.35)	(2.77)	0.35	(0.06)	-	3.30	0.54	1.04
2/1/1969	4.21	(1.02)	(3.57)	0.53	(0.06)	-	4.21	0.66	0.96
3/1/1969	1.36	2.32	(0.64)	0.74	(0.06)	-	1.36	0.72	1.04
1969	11.81	12.05	(9.21)	2.42	(0.31)	-	11.81	2.66	7.75

Table III-I.4 CT 5 Winter Storm Period Water Balance

Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
10/1/1969	7.04	81.85	(4.76)	10.04	(0.47)	-	7.04	2.37	30.43
11/1/1969	0.83	7.76	(0.56)	0.76	(0.06)	-	0.83	0.29	3.11
12/1/1969	2.12	2.52	(1.50)	0.42	(0.06)	-	2.12	0.63	1.64
1/1/1970	1.32	2.20	(0.76)	0.40	(0.06)	-	1.32	0.57	1.32
2/1/1970	0.50	2.91	(0.11)	0.44	(0.06)	-	0.50	0.39	0.94
3/1/1970	0.41	4.57	(0.04)	0.79	(0.06)	-	0.41	0.37	1.48
1970	5.17	19.96	(2.97)	2.80	(0.31)	-	5.17	2.27	8.49
10/1/1970	10.90	74.69	(8.13)	9.36	(0.41)	-	10.90	2.85	30.04
11/1/1970	-	8.39	-	1.53	(0.06)	-	-	0.03	2.87
12/1/1970	0.65	4.76	(0.54)	0.46	(0.05)	-	0.65	0.11	1.96
1/1/1971	1.21	1.85	(0.61)	0.24	(0.05)	-	1.21	0.61	1.09
2/1/1971	0.85	3.19	(0.57)	0.48	(0.05)	-	0.85	0.28	1.08
3/1/1971	0.82	3.74	(0.50)	0.61	(0.05)	-	0.82	0.35	1.55
1971	3.53	21.93	(2.22)	3.33	(0.27)	-	3.53	1.38	8.55
10/1/1971	8.95	76.65	(6.82)	7.19	(0.35)	-	8.95	2.22	29.41
11/1/1971	4.20	3.15	(3.35)	1.61	(0.05)	-	4.20	0.85	2.80
12/1/1971	0.04	4.84	0.08	0.90	(0.05)	-	0.04	0.13	1.64
1/1/1972	2.12	0.75	(1.42)	0.44	(0.05)	-	2.12	0.71	0.99
2/1/1972	-	4.06	0.13	0.67	(0.04)	-	-	0.15	1.25
3/1/1972	-	5.63	0.01	1.10	(0.04)	-	-	0.04	1.56
1972	6.36	18.43	(4.55)	4.73	(0.22)	-	6.36	1.88	8.23
10/1/1972	4.92	87.52	(3.13)	6.62	(0.29)	-	4.92	1.89	32.29
11/1/1972	8.96	(1.81)	(7.83)	1.09	(0.04)	-	8.96	1.13	2.78
12/1/1972	2.83	0.75	(2.12)	0.65	(0.04)	-	2.83	0.72	1.35
1/1/1973	2.97	(0.12)	(2.41)	0.44	(0.04)	-	2.97	0.57	0.98
2/1/1973	0.74	2.13	(0.03)	0.48	(0.05)	-	0.74	0.71	0.87
3/1/1973	3.18	0.35	(2.31)	0.71	(0.05)	-	3.18	0.86	0.94
1973	18.67	1.30	(14.70)	3.37	(0.21)	-	18.67	4.00	6.92
10/1/1973	12.42	71.97	(8.83)	11.75	(0.45)	-	12.42	3.64	29.00
11/1/1973	-	8.66	-	0.20	(0.06)	-	-	-	3.27
12/1/1973	1.77	3.35	(1.24)	0.17	(0.06)	-	1.77	0.54	1.88
1/1/1974	0.08	3.54	0.07	0.30	(0.06)	-	0.08	0.16	1.16
2/1/1974	3.35	(0.24)	(2.63)	0.46	(0.06)	-	3.35	0.72	1.02
3/1/1974	0.16	3.90	0.04	0.80	(0.06)	-	0.16	0.19	1.10
1974	5.35	19.21	(3.76)	1.93	(0.30)	-	5.35	1.61	8.42
10/1/1974	10.55	71.61	(7.49)	10.27	(0.41)	-	10.55	3.12	28.42
11/1/1974	3.39	4.84	(2.70)	1.34	(0.06)	-	3.39	0.70	3.10
12/1/1974	0.12	5.04	0.21	0.84	(0.05)	-	0.12	0.34	1.70
1/1/1975	0.79	2.24	(0.40)	0.44	(0.05)	-	0.79	0.36	1.18
2/1/1975	0.39	2.40	(0.12)	0.44	(0.05)	-	0.39	0.29	0.88
3/1/1975	3.94	0.20	(3.37)	0.81	(0.05)	-	3.94	0.58	1.04
1975	8.62	14.72	(6.39)	3.87	(0.26)	-	8.62	2.27	7.90
10/1/1975	10.47	68.94	(6.65)	10.56	(0.37)	-	10.47	3.89	27.54
11/1/1975	0.28	8.39	(0.08)	0.31	(0.05)	-	0.28	0.18	3.43
12/1/1975	2.13	2.99	(1.98)	0.13	(0.05)	-	2.13	0.19	2.12
1/1/1976	1.26	2.09	(0.66)	0.37	(0.05)	-	1.26	0.59	1.14
2/1/1976	0.24	2.83	0.02	0.43	(0.05)	-	0.24	0.25	0.98
3/1/1976	1.61	2.60	(1.00)	0.75	(0.05)	-	1.61	0.62	1.13
1976	5.51	18.90	(3.70)	2.00	(0.26)	-	5.51	1.83	8.80
10/1/1976	10.98	71.26	(8.08)	9.33	(0.32)	-	10.98	2.98	29.04
11/1/1976	0.91	6.34	(0.52)	1.38	(0.04)	-	0.91	0.39	2.68
12/1/1976	0.51	4.57	(0.23)	0.83	(0.04)	-	0.51	0.32	1.80
1/1/1977	1.85	1.38	(1.55)	0.44	(0.04)	-	1.85	0.28	1.15
2/1/1977	1.89	0.67	(1.09)	0.40	(0.04)	-	1.89	0.81	0.77
3/1/1977	0.08	5.16	0.04	1.02	(0.04)	-	0.08	0.13	1.64
1977	5.24	18.11	(3.35)	4.08	(0.21)	-	5.24	1.93	8.04
10/1/1977	11.18	72.60	(8.30)	9.39	(0.25)	-	11.18	2.93	29.75
11/1/1977	1.30	7.76	(0.91)	1.57	(0.03)	-	1.30	0.42	3.39
12/1/1977	0.35	5.12	(0.07)	0.75	(0.03)	-	0.35	0.29	1.96
1/1/1978	0.67	3.03	(0.46)	0.41	(0.03)	-	0.67	0.22	1.41
2/1/1978	6.38	(3.74)	(5.71)	0.37	(0.03)	-	6.38	0.69	0.82
3/1/1978	5.55	(2.32)	(4.63)	0.64	(0.03)	-	5.55	0.91	0.95
1978	14.25	9.84	(11.78)	3.75	(0.17)	-	14.25	2.54	8.53

Table III-I.4 CT 5 Winter Storm Period Water Balance

Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
10/1/1978	9.88	73.98	(6.90)	9.65	(0.38)	-	9.88	3.07	29.77
11/1/1978	1.93	7.52	(1.52)	0.43	(0.06)	-	1.93	0.42	4.04
12/1/1978	5.59	(1.54)	(4.97)	0.58	(0.06)	-	5.59	0.66	1.63
1/1/1979	6.57	(3.70)	(5.90)	0.44	(0.06)	-	6.57	0.67	0.93
2/1/1979	6.02	(4.13)	(4.93)	0.31	(0.07)	-	6.02	1.09	0.71
3/1/1979	1.26	3.27	(0.77)	0.91	(0.07)	-	1.26	0.48	1.27
1979	21.38	1.42	(18.09)	2.67	(0.31)	-	21.38	3.31	8.59
10/1/1979	8.23	75.75	(5.13)	9.24	(0.55)	-	8.23	3.19	29.94
11/1/1979	0.67	9.06	(0.48)	0.35	(0.08)	-	0.67	0.20	3.81
12/1/1979	0.67	3.82	(0.28)	0.30	(0.08)	-	0.67	0.39	1.80
1/1/1980	0.71	3.15	(0.41)	0.22	(0.08)	-	0.71	0.32	1.40
2/1/1980	4.09	(1.46)	(3.30)	0.28	(0.08)	-	4.09	0.81	0.94
3/1/1980	6.02	(2.01)	(5.47)	0.80	(0.07)	-	6.02	0.57	1.00
1980	12.17	12.56	(9.94)	1.93	(0.39)	-	12.17	2.30	8.95
10/1/1980	8.15	73.54	(4.88)	9.46	(0.55)	-	8.15	3.31	29.27
11/1/1980	0.04	9.09	(0.00)	0.28	(0.08)	-	0.04	0.04	3.67
12/1/1980	-	5.39	-	0.11	(0.08)	-	-	-	2.08
1/1/1981	0.55	3.82	(0.27)	0.16	(0.08)	-	0.55	0.30	1.38
2/1/1981	1.30	2.40	(1.00)	0.26	(0.08)	-	1.30	0.35	1.43
3/1/1981	2.60	2.20	(2.13)	0.75	(0.07)	-	2.60	0.46	1.43
1981	4.49	22.91	(3.41)	1.56	(0.39)	-	4.49	1.14	10.00
10/1/1981	10.75	74.21	(7.83)	11.37	(0.55)	-	10.75	2.96	30.81
11/1/1981	0.94	6.77	(0.51)	0.65	(0.08)	-	0.94	0.47	3.07
12/1/1981	2.32	3.46	(2.20)	0.34	(0.08)	-	2.32	0.14	2.27
1/1/1982	-	3.90	0.16	0.46	(0.08)	-	-	0.19	1.37
2/1/1982	2.76	0.35	(1.85)	0.44	(0.08)	-	2.76	0.90	0.96
3/1/1982	1.77	2.24	(1.06)	0.81	(0.07)	-	1.77	0.73	1.14
1982	7.80	16.73	(5.47)	2.70	(0.39)	-	7.80	2.43	8.81
10/1/1982	15.75	61.02	(11.34)	13.00	(0.53)	-	15.75	4.59	27.78
11/1/1982	-	8.43	0.04	1.73	(0.07)	-	-	0.05	3.10
12/1/1982	3.31	0.55	(2.68)	0.55	(0.07)	-	3.31	0.63	1.75
1/1/1983	1.69	1.02	(0.98)	0.43	(0.07)	-	1.69	0.75	1.04
2/1/1983	1.93	1.73	(1.57)	0.59	(0.07)	-	1.93	0.31	1.14
3/1/1983	2.32	1.61	(1.93)	0.83	(0.06)	-	2.32	0.43	1.04
1983	9.25	13.35	(7.13)	4.13	(0.34)	-	9.25	2.17	8.07
10/1/1983	18.23	59.17	(13.78)	11.54	(0.55)	-	18.23	4.55	27.94
11/1/1983	1.10	6.46	(0.63)	1.65	(0.08)	-	1.10	0.54	2.89
12/1/1983	2.05	2.68	(1.61)	0.87	(0.08)	-	2.05	0.46	1.87
1/1/1984	2.48	0.31	(2.01)	0.43	(0.08)	-	2.48	0.48	1.00
2/1/1984	0.51	3.07	(0.12)	0.59	(0.08)	-	0.51	0.39	0.98
3/1/1984	-	4.80	0.04	0.94	(0.08)	-	-	0.06	1.53
1984	6.14	17.32	(4.33)	4.49	(0.40)	-	6.14	1.93	8.27
10/1/1984	11.65	67.24	(7.09)	9.92	(0.54)	-	11.65	4.73	29.05
11/1/1984	1.34	5.51	(0.79)	1.02	(0.07)	-	1.34	0.62	2.68
12/1/1984	2.09	2.17	(1.81)	0.47	(0.07)	-	2.09	0.28	1.84
1/1/1985	5.79	(3.27)	(5.04)	0.35	(0.07)	-	5.79	0.77	0.90
2/1/1985	2.68	(0.31)	(1.93)	0.39	(0.08)	-	2.68	0.74	0.80
3/1/1985	1.65	1.54	(1.10)	0.63	(0.07)	-	1.65	0.58	0.94
1985	13.54	5.63	(10.67)	2.87	(0.37)	-	13.54	2.98	7.17
10/1/1985	9.17	63.35	(5.87)	8.54	(0.56)	-	9.17	3.44	26.87
11/1/1985	1.26	5.51	(0.63)	1.18	(0.08)	-	1.26	0.65	2.40
12/1/1985	2.76	0.98	(2.28)	0.59	(0.08)	-	2.76	0.47	1.90
1/1/1986	0.87	2.60	(0.35)	0.51	(0.08)	-	0.87	0.54	1.10
2/1/1986	0.12	4.29	(0.08)	0.75	(0.08)	-	0.12	0.07	1.51
3/1/1986	3.07	0.87	(2.32)	0.79	(0.07)	-	3.07	0.78	1.18
1986	8.07	14.25	(5.67)	3.82	(0.40)	-	8.07	2.52	8.09
10/1/1986	12.80	65.31	(9.37)	11.42	(0.56)	-	12.80	3.56	29.52
11/1/1986	1.73	5.47	(1.38)	1.14	(0.08)	-	1.73	0.41	2.44
12/1/1986	1.42	2.52	(0.79)	0.59	(0.08)	-	1.42	0.63	1.76
1/1/1987	3.03	(0.12)	(2.36)	0.43	(0.08)	-	3.03	0.67	1.13
2/1/1987	3.35	(0.12)	(2.68)	0.55	(0.08)	-	3.35	0.70	0.98
3/1/1987	2.68	0.87	(2.13)	0.67	(0.07)	-	2.68	0.56	1.41
1987	12.20	8.62	(9.33)	3.39	(0.38)	-	12.20	2.97	7.71
10/1/1987	7.91	68.58	(5.59)	10.31	(0.54)	-	7.91	2.52	28.29
11/1/1987	0.31	8.58	(0.12)	1.06	(0.08)	-	0.31	0.24	3.69
12/1/1987	1.77	2.36	(1.26)	0.39	(0.08)	-	1.77	0.51	1.83
1/1/1988	4.02	(1.22)	(3.23)	0.28	(0.08)	-	4.02	0.80	1.17
2/1/1988	3.58	(1.22)	(3.03)	0.39	(0.08)	-	3.58	0.56	0.76
3/1/1988	0.75	4.06	(0.47)	0.98	(0.07)	-	0.75	0.30	1.24
1988	10.43	12.56	(8.11)	3.11	(0.38)	-	10.43	2.41	8.69

Table III-I.4 CT 5 Winter Storm Period Water Balance

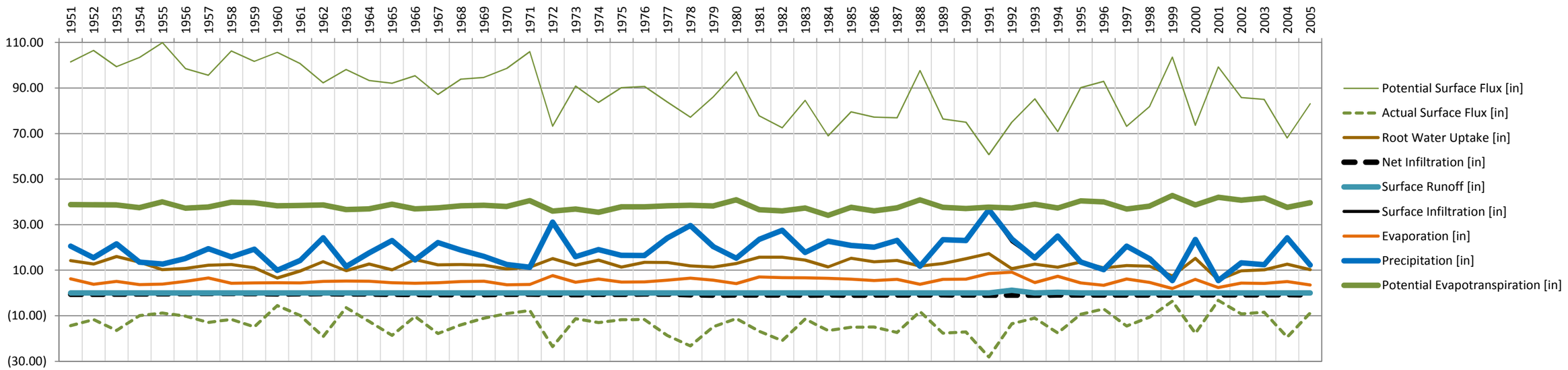
Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
10/1/1988	12.64	64.37	(9.25)	11.18	(0.54)	-	12.64	3.59	28.69
11/1/1988	1.50	7.32	(1.06)	1.73	(0.08)	-	1.50	0.45	3.45
12/1/1988	1.73	2.95	(1.38)	0.63	(0.08)	-	1.73	0.36	2.12
1/1/1989	1.10	1.77	(0.59)	0.39	(0.08)	-	1.10	0.56	1.10
2/1/1989	2.20	0.79	(1.61)	0.47	(0.08)	-	2.20	0.58	0.89
3/1/1989	0.31	4.41	(0.04)	0.94	(0.07)	-	0.31	0.28	1.16
1989	6.85	17.24	(4.69)	4.17	(0.38)	-	6.85	2.23	8.72
10/1/1989	4.88	80.43	(3.46)	7.64	(0.53)	-	4.88	1.59	32.08
11/1/1989	1.06	6.77	(0.63)	0.75	(0.08)	-	1.06	0.50	3.57
12/1/1989	0.31	4.92	(0.16)	0.31	(0.07)	-	0.31	0.17	2.06
1/1/1990	0.87	2.36	(0.67)	0.16	(0.08)	-	0.87	0.19	1.21
2/1/1990	1.26	1.61	(0.71)	0.28	(0.08)	-	1.26	0.59	1.04
3/1/1990	2.56	0.98	(1.69)	0.59	(0.07)	-	2.56	0.84	0.96
1990	6.06	16.65	(3.86)	2.09	(0.37)	-	6.06	2.29	8.85
10/1/1990	17.32	59.76	(13.78)	10.87	(0.49)	-	17.32	3.66	28.78
11/1/1990	0.24	7.83	(0.08)	1.77	(0.07)	-	0.24	0.21	3.23
12/1/1990	2.17	2.36	(1.42)	0.83	(0.07)	-	2.17	0.77	2.20
1/1/1991	4.92	(2.36)	(4.13)	0.35	(0.07)	-	4.92	0.75	1.16
2/1/1991	1.77	1.06	(1.34)	0.47	(0.08)	-	1.77	0.45	0.89
3/1/1991	0.94	3.82	(0.47)	0.94	(0.07)	-	0.94	0.46	1.35
1991	10.04	12.72	(7.44)	4.37	(0.36)	-	10.04	2.64	8.82
10/1/1991	12.95	62.24	(9.69)	10.63	(0.57)	-	12.95	3.43	28.26
11/1/1991	1.22	7.99	(0.94)	1.14	(0.08)	-	1.22	0.25	3.99
12/1/1991	3.23	0.75	(2.76)	0.43	(0.08)	-	3.23	0.48	1.66
1/1/1992	4.02	(1.54)	(3.19)	0.35	(0.08)	-	4.02	0.82	1.07
2/1/1992	2.99	(0.24)	(2.09)	0.47	(0.08)	-	2.99	0.91	0.75
3/1/1992	2.76	1.06	(2.05)	0.79	(0.08)	-	2.76	0.70	1.13
1992	14.21	8.03	(11.02)	3.19	(0.40)	-	14.21	3.17	8.60
10/1/1992	22.36	52.72	(17.09)	14.13	(0.57)	-	22.36	5.38	29.06
11/1/1992	1.22	7.28	(0.94)	1.54	(0.08)	-	1.22	0.33	3.90
12/1/1992	0.51	3.23	(0.16)	0.47	(0.08)	-	0.51	0.31	1.68
1/1/1993	6.34	(4.06)	(5.47)	0.31	(0.08)	-	6.34	0.86	0.78
2/1/1993	5.51	(2.60)	(2.87)	0.08	(0.08)	0.74	4.76	1.91	0.67
3/1/1993	3.33	(0.35)	(0.91)	0.04	(0.07)	0.42	2.91	2.03	1.04
1993	16.91	3.50	(10.35)	2.44	(0.40)	1.16	15.75	5.44	8.07
10/1/1993	6.77	71.50	(3.15)	8.27	(0.59)	0.04	6.73	3.69	29.13
11/1/1993	0.79	7.13	(0.39)	1.14	(0.09)	-	0.79	0.43	3.67
12/1/1993	4.21	(0.43)	(3.86)	0.43	(0.09)	-	4.21	0.33	1.76
1/1/1994	0.28	2.76	(0.04)	0.31	(0.09)	-	0.28	0.24	1.29
2/1/1994	0.28	3.35	(0.16)	0.43	(0.09)	-	0.28	0.17	1.22
3/1/1994	2.60	0.75	(2.05)	0.39	(0.08)	-	2.60	0.55	1.10
1994	8.15	13.54	(6.50)	2.72	(0.43)	-	8.15	1.72	9.05
10/1/1994	7.24	71.69	(4.49)	9.92	(0.56)	-	7.24	2.85	29.94
11/1/1994	1.85	5.12	(1.54)	0.94	(0.07)	-	1.85	0.32	3.25
12/1/1994	3.35	0.39	(2.64)	0.55	(0.07)	-	3.35	0.75	1.76
1/1/1995	2.68	-	(2.09)	0.43	(0.07)	-	2.68	0.59	1.10
2/1/1995	3.66	(1.18)	(2.91)	0.28	(0.07)	-	3.66	0.76	0.86
3/1/1995	2.68	1.57	(2.13)	0.35	(0.07)	-	2.68	0.57	1.22
1995	14.21	5.91	(11.30)	2.56	(0.36)	-	14.21	2.99	8.20
10/1/1995	10.74	64.96	(6.26)	8.74	(0.51)	0.26	10.47	4.33	29.13
11/1/1995	-	9.06	0.08	1.69	(0.07)	-	-	0.09	3.61
12/1/1995	1.30	3.15	(0.94)	0.75	(0.07)	-	1.30	0.39	2.00
1/1/1996	0.91	2.36	(0.67)	0.47	(0.07)	-	0.91	0.23	1.52
2/1/1996	-	3.94	0.04	0.59	(0.07)	-	-	0.08	1.28
3/1/1996	3.19	0.79	(2.64)	0.75	(0.07)	-	3.19	0.52	1.45
1996	5.39	19.29	(4.13)	4.25	(0.36)	-	5.39	1.30	9.86
10/1/1996	8.19	70.87	(5.20)	9.37	(0.51)	-	8.19	3.13	30.57
11/1/1996	0.43	7.48	(0.16)	1.34	(0.07)	-	0.43	0.25	3.85
12/1/1996	1.22	3.15	(0.98)	0.47	(0.07)	-	1.22	0.29	1.67
1/1/1997	-	3.15	0.20	0.31	(0.07)	-	-	0.23	1.24
2/1/1997	2.83	-	(2.20)	0.31	(0.07)	-	2.83	0.66	1.02
3/1/1997	1.69	2.36	(1.34)	0.75	(0.07)	-	1.69	0.30	1.27
1997	6.18	16.14	(4.49)	3.19	(0.36)	-	6.18	1.73	9.04
10/1/1997	4.06	76.77	(2.56)	7.83	(0.51)	-	4.06	1.65	30.90
11/1/1997	0.75	6.30	(0.47)	0.28	(0.07)	-	0.75	0.28	3.74
12/1/1997	0.83	3.54	(0.47)	0.28	(0.07)	-	0.83	0.36	1.79
1/1/1998	2.68	-	(1.89)	0.24	(0.07)	-	2.68	0.78	1.21
2/1/1998	0.39	2.76	(0.04)	0.47	(0.07)	-	0.39	0.37	0.93
3/1/1998	6.38	(3.94)	(5.39)	0.47	(0.07)	-	6.38	1.00	1.05
1998	11.02	8.66	(8.27)	1.73	(0.36)	-	11.02	2.78	8.73

Table III-I.4 CT 5 Winter Storm Period Water Balance

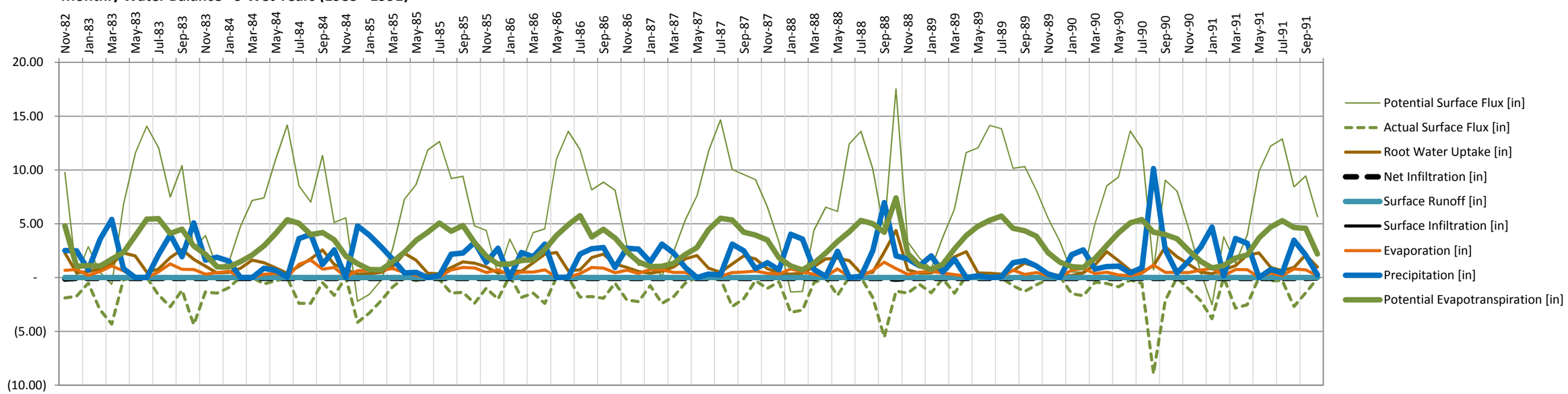
Date	Precipitation	Potential Surface Flux	Actual Surface Flux	Root Water Uptake	Net Infiltration	Surface Runoff	Surface Infiltration	Evaporation	Potential Evapotranspiration
	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]	[in]
10/1/1998	9.53	64.57	(6.26)	10.28	(0.51)	-	9.53	3.35	28.12
11/1/1998	-	7.48	-	0.55	(0.07)	-	-	0.00	3.85
12/1/1998	1.06	3.54	(0.91)	0.12	(0.07)	-	1.06	0.17	1.81
1/1/1999	0.71	2.36	(0.20)	0.20	(0.07)	-	0.71	0.53	1.30
2/1/1999	0.08	3.54	(0.04)	0.35	(0.07)	-	0.08	0.07	1.38
3/1/1999	0.20	4.72	(0.08)	0.51	(0.07)	-	0.20	0.13	1.38
1999	2.05	21.65	(1.22)	1.73	(0.36)	-	2.05	0.91	9.71
10/1/1999	12.95	60.24	(9.37)	10.00	(0.51)	-	12.95	3.70	28.42
11/1/1999	-	9.45	0.04	1.50	(0.08)	-	-	0.01	3.82
12/1/1999	-	6.30	-	0.20	(0.08)	-	-	-	2.67
1/1/2000	0.04	3.15	(0.04)	0.04	(0.08)	-	0.04	-	1.49
2/1/2000	0.31	3.54	(0.16)	0.16	(0.08)	-	0.31	0.15	1.32
3/1/2000	0.67	3.94	(0.35)	0.16	(0.07)	-	0.67	0.35	1.69
2000	1.02	26.38	(0.51)	2.05	(0.38)	-	1.02	0.52	11.00
9/30/2000	4.45	76.77	(3.11)	5.39	(0.49)	-	4.45	1.43	31.65
11/1/2000	5.31	1.57	(4.45)	0.47	(0.07)	-	5.31	0.85	3.82
12/1/2000	2.13	0.79	(1.54)	0.51	(0.07)	-	2.13	0.59	1.12
1/1/2001	0.08	3.15	(0.04)	0.51	(0.07)	-	0.08	0.13	1.48
2/1/2001	3.39	(0.79)	(2.60)	0.39	(0.07)	-	3.39	0.79	1.09
3/1/2001	1.73	1.57	(1.06)	0.71	(0.07)	-	1.73	0.69	1.01
2001	12.64	6.30	(9.69)	2.60	(0.35)	-	12.64	3.04	8.52
9/30/2001	10.87	67.32	(8.03)	12.52	(0.49)	-	10.87	2.92	30.06
11/1/2001	0.35	8.27	(0.20)	0.75	(0.07)	-	0.35	0.19	3.82
12/1/2001	0.28	4.72	(0.12)	0.24	(0.07)	-	0.28	0.18	2.65
1/1/2002	1.85	0.39	(1.34)	0.20	(0.07)	-	1.85	0.52	1.07
2/1/2002	0.24	3.54	(0.12)	0.35	(0.07)	-	0.24	0.14	1.22
3/1/2002	-	4.33	0.04	0.59	(0.06)	-	-	0.08	1.25
2002	2.72	21.26	(1.73)	2.13	(0.34)	-	2.72	1.11	10.00
9/30/2002	2.72	77.95	(1.50)	3.62	(0.48)	-	2.72	1.31	32.03
11/1/2002	0.12	7.87	(0.04)	0.47	(0.07)	-	0.12	0.07	3.90
12/1/2002	0.87	3.94	(0.71)	0.12	(0.07)	-	0.87	0.18	2.19
1/1/2003	0.98	1.57	(0.43)	0.16	(0.07)	-	0.98	0.56	1.34
2/1/2003	0.35	3.94	(0.04)	0.35	(0.07)	-	0.35	0.34	1.19
3/1/2003	4.92	(1.18)	(4.49)	0.47	(0.06)	-	4.92	0.50	1.50
2003	7.24	16.14	(5.71)	1.57	(0.34)	-	7.24	1.65	10.12
9/30/2003	6.02	69.69	(3.46)	8.11	(0.48)	-	6.02	2.65	30.64
11/1/2003	0.08	9.06	-	0.83	(0.07)	-	0.08	0.10	4.07
12/1/2003	0.87	3.15	(0.63)	0.20	(0.07)	-	0.87	0.26	2.31
1/1/2004	0.98	1.97	(0.59)	0.20	(0.07)	-	0.98	0.39	1.52
2/1/2004	1.46	1.18	(0.91)	0.20	(0.07)	-	1.46	0.56	1.21
3/1/2004	0.67	2.36	(0.28)	0.47	(0.06)	-	0.67	0.45	1.06
2004	4.06	17.72	(2.40)	1.89	(0.34)	-	4.06	1.77	10.16
9/30/2004	8.35	67.32	(6.02)	8.31	(0.45)	-	8.35	2.44	31.52
11/1/2004	1.22	5.51	(0.83)	0.79	(0.06)	-	1.22	0.40	3.66
12/1/2004	0.63	2.36	(0.31)	0.28	(0.05)	-	0.63	0.35	1.48
1/1/2005	2.80	-	(2.24)	0.28	(0.04)	-	2.80	0.49	1.02
2/1/2005	4.21	(1.57)	(3.66)	0.43	(0.05)	-	4.21	0.57	1.02
3/1/2005	7.32	(5.12)	(6.42)	0.47	(0.04)	-	7.32	0.93	0.94
2005	16.18	1.18	(13.46)	2.24	(0.24)	-	16.18	2.74	8.12
9/30/2005	8.07	66.93	(5.91)	10.39	(0.48)	-	8.07	2.25	29.40
11/1/2005	0.43	7.87	(0.24)	0.83	(0.07)	-	0.43	0.16	3.96
12/1/2005	-	4.72	-	0.24	(0.07)	-	-	0.01	2.27
1/1/2006	-	3.54	-	0.08	(0.07)	-	-	-	1.53
2/1/2006	-	3.94	-	0.08	(0.07)	-	-	-	1.56
3/1/2006	0.12	4.33	(0.08)	0.12	(0.06)	-	0.12	0.08	1.67
2006	0.55	24.41	(0.31)	1.34	(0.34)	-	0.55	0.25	10.98
9/30/2006	11.73	58.66	(8.50)	8.86	(0.47)	-	11.73	3.27	28.65

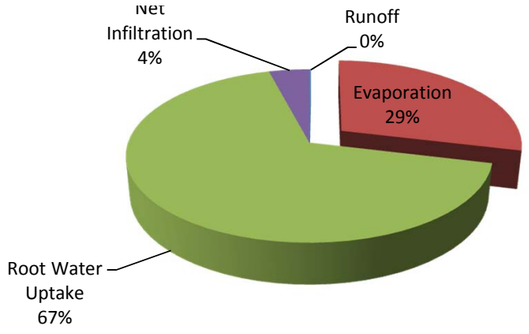
09 - CT5 - 0.3m Cleaner_2m Beach_0.7m Fine Gila w Veg.xlsx

Annual Water Balance - 56-Year Simulated Period (Results on October 1)



Monthly Water Balance - 9 Wet Years (1983 - 1991)





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CLIENT: Resolution Copper Mining

Klohn Crippen Berger

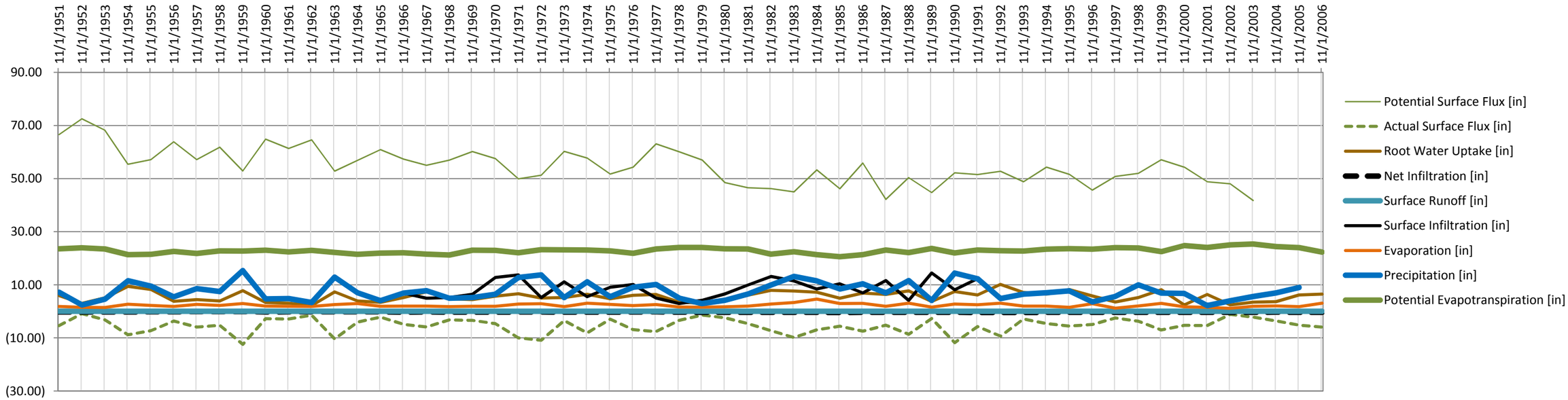
PROJECT: RESOLUTION PROJECT
NEAR WEST TAILINGS STORAGE FACILITY CLOSURE COVER STUDY - CLOSURE COVER PREDICTIONS

TITLE: CT5 - 1ft Cleaner / 6.6ft Beach / 2.3ft Fine GIla / Veg
Water Balance Results

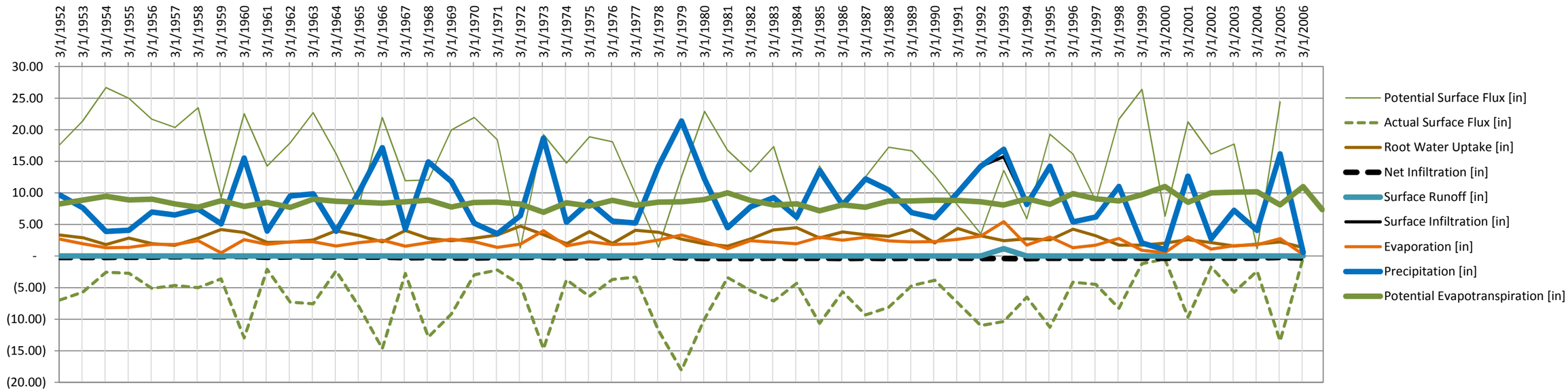
PROJECT No. M09441A16

FIG. No. III-I.1

Monsoon Season Water Balance - 56-Year Simulated Period (July-November)



Winter Storm Season Water Balance - 56-Year Simulated Period (November-March)



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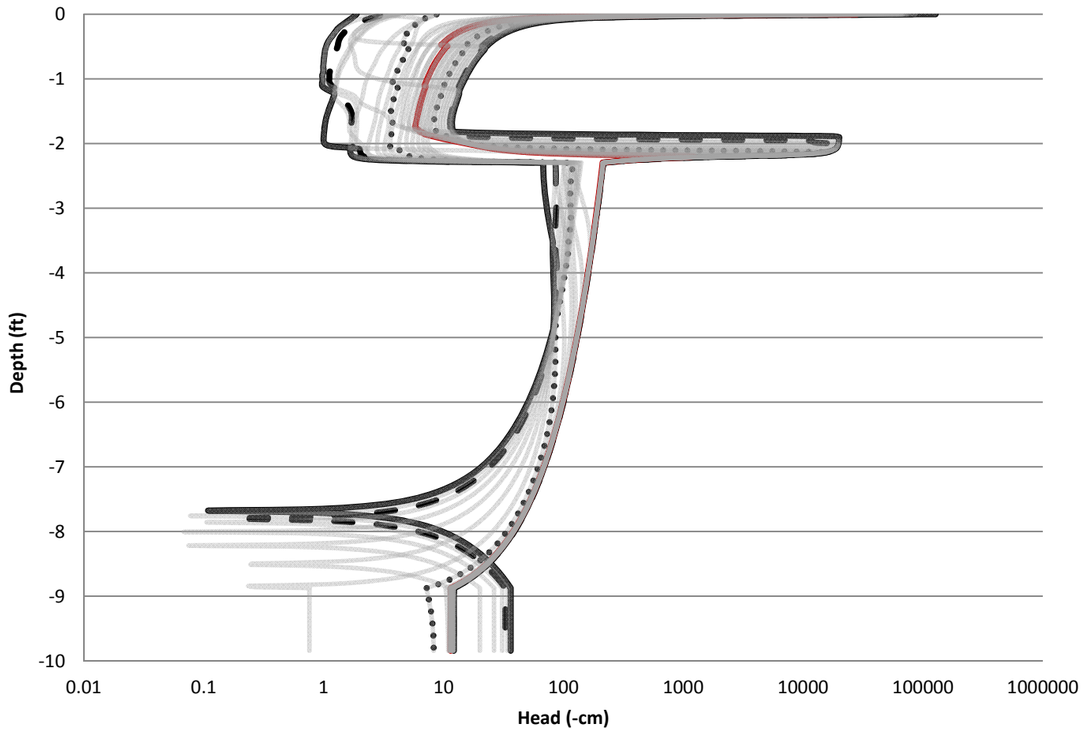
TITLE

CT5 - 1ft Cleaner / 6.6ft Beach / 2.3ft Fine GIla / Veg
Water Balance Results

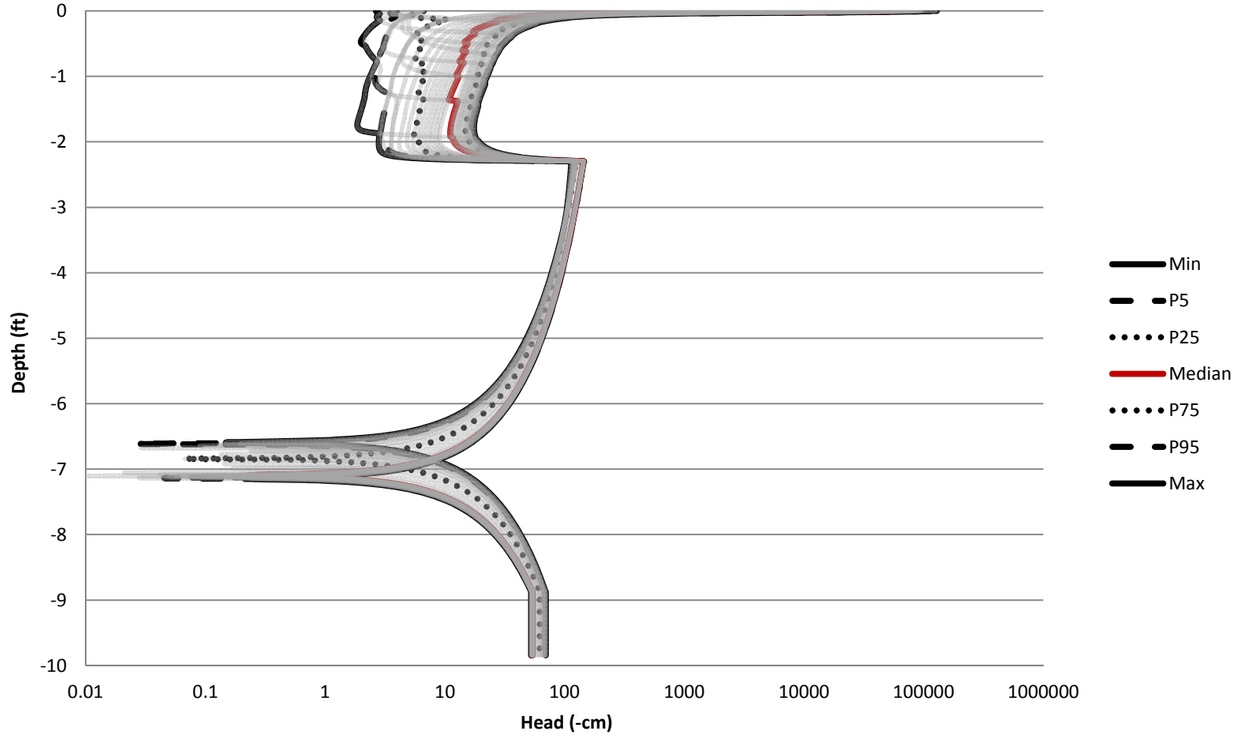
PROJECT No. M09441A16

FIG. No. III-I.2

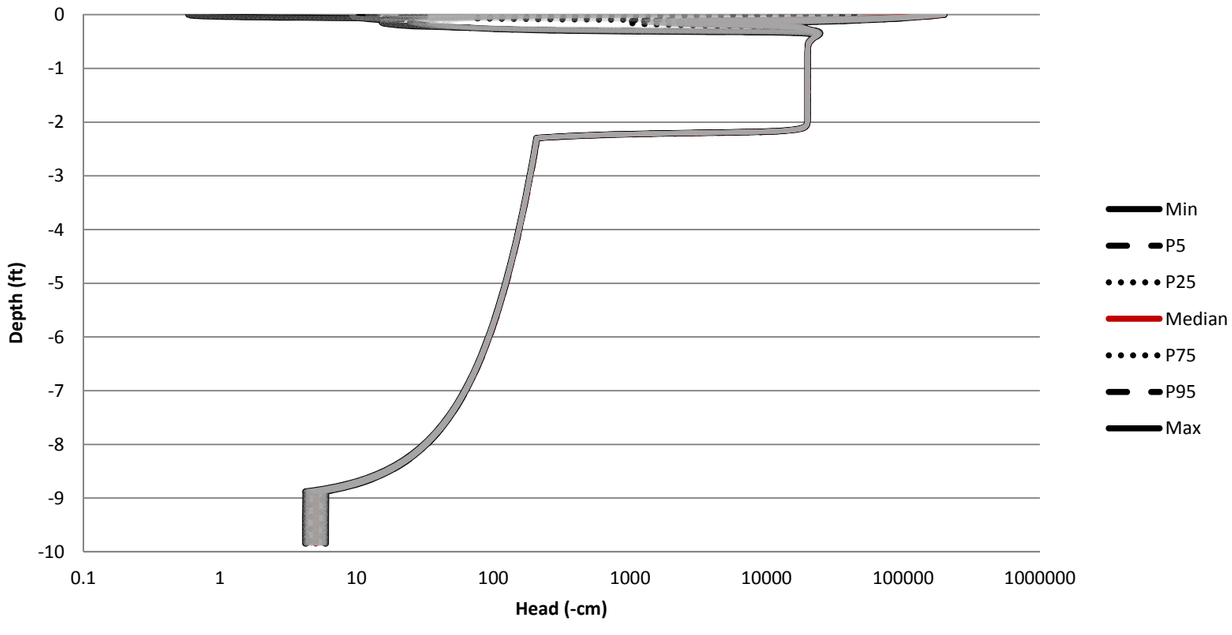
February Average Year (1980) - Suction Head



February Wet Year (1992) - Daily Suction Head



February Dry Year (2000) - Daily Suction Head



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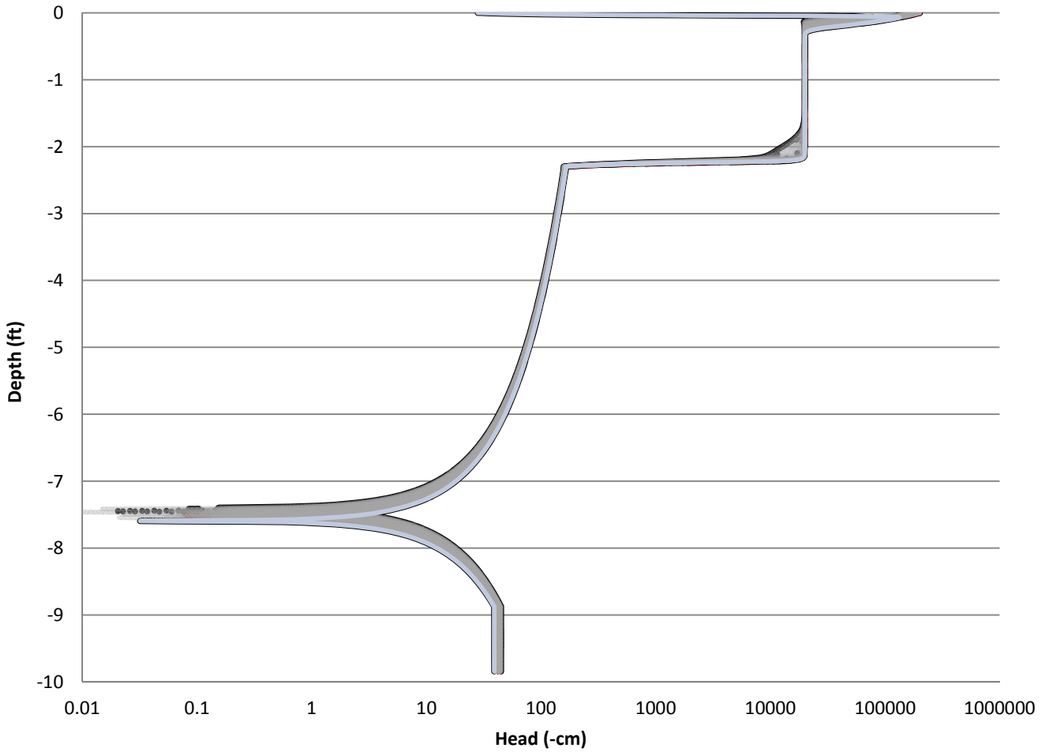
TITLE

CT5 - 1ft Cleaner / 6.6ft Beach / 2.3ft Fine GIla / Veg
Suction Profiles - Winter (February)

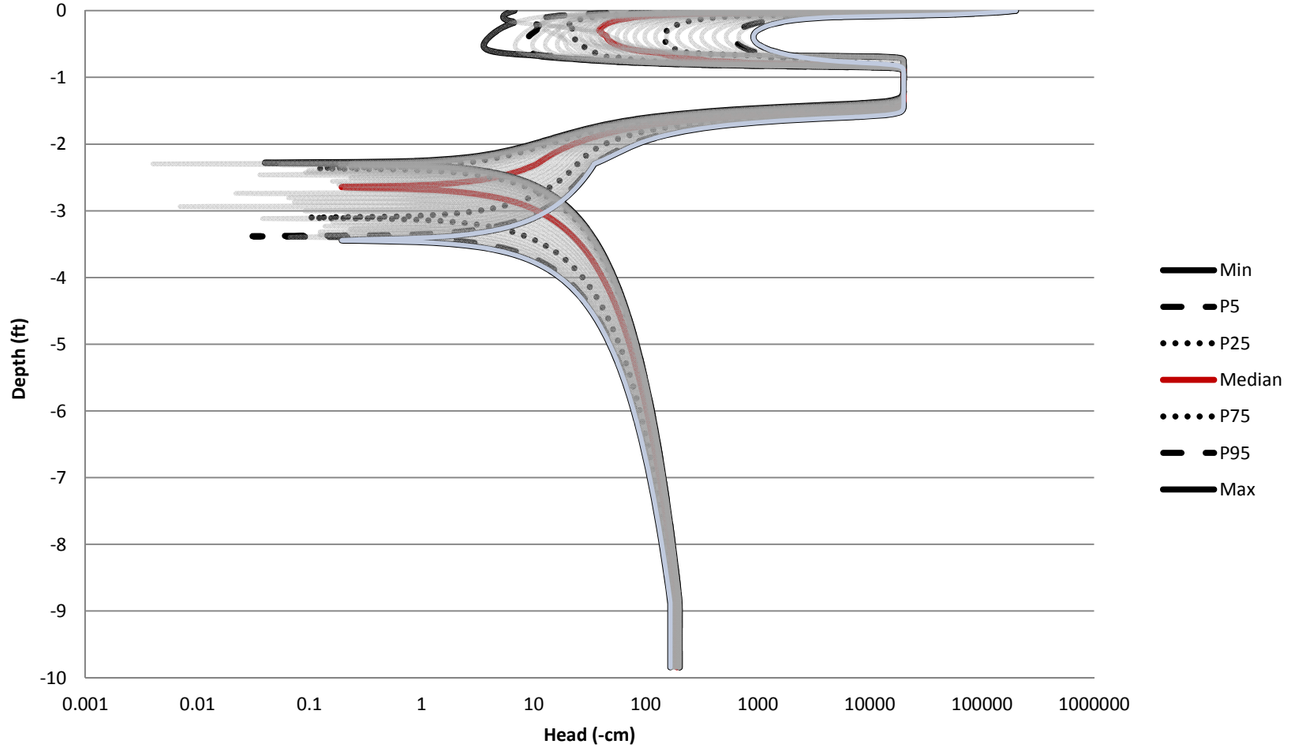
PROJECT No. M09441A16

FIG. No. III-I.3

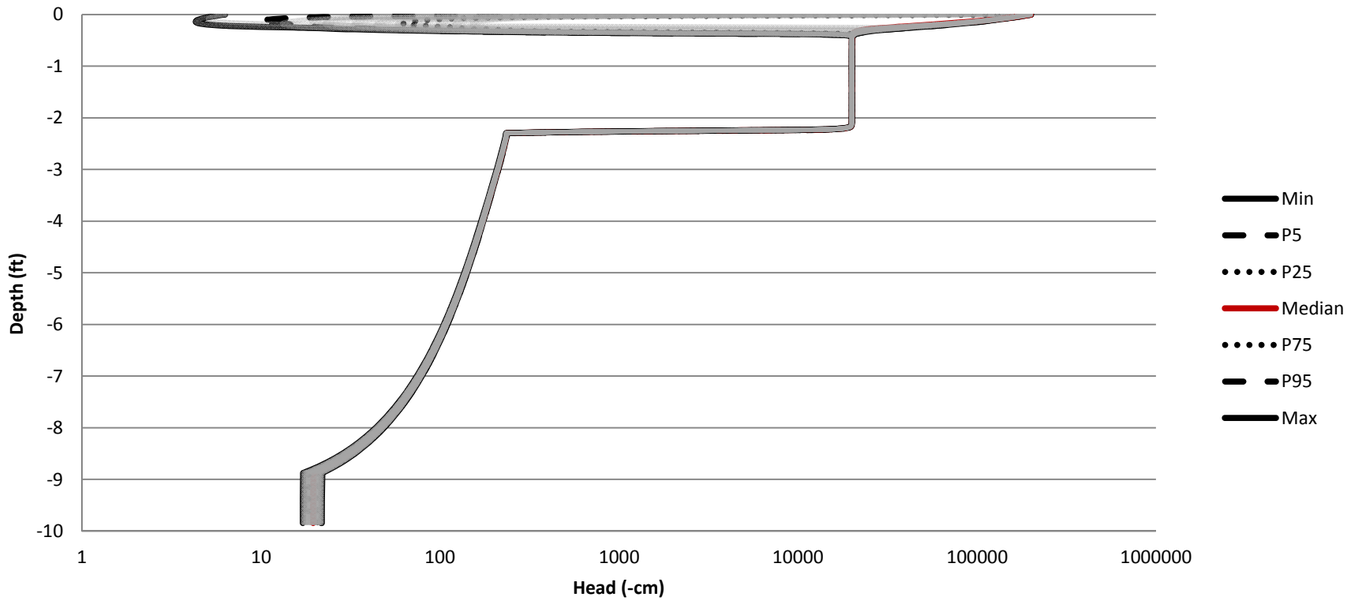
June Average Year (1980) - Daily Suction Head



June Wet Year (1992) - Daily Suction Head



June Dry Year (2000) - Daily Suction Head



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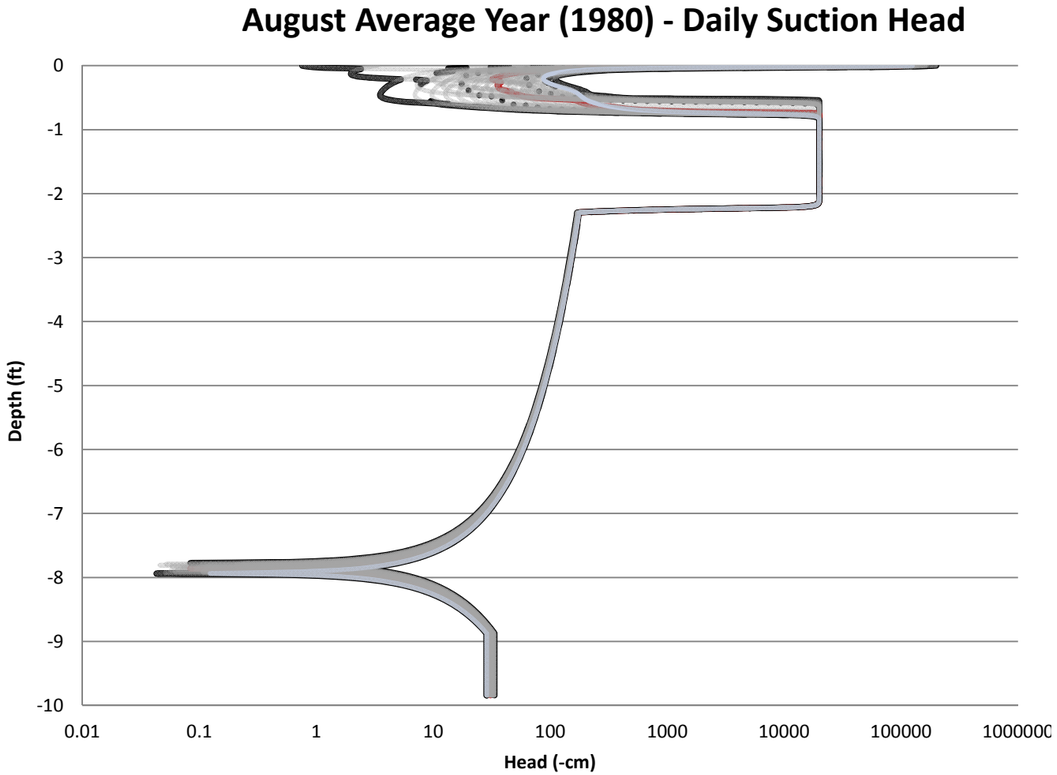
TITLE

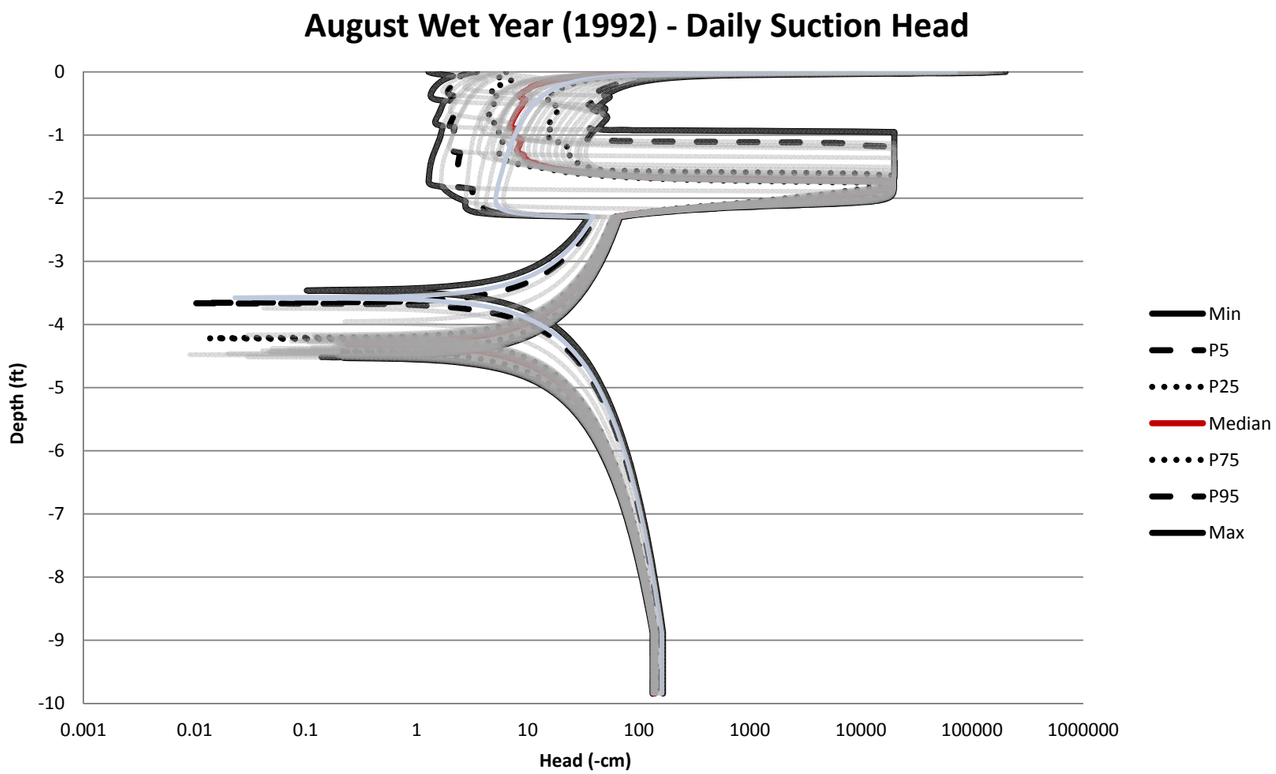
CT5 - 1ft Cleaner / 6.6ft Beach / 2.3ft Fine GIla / Veg

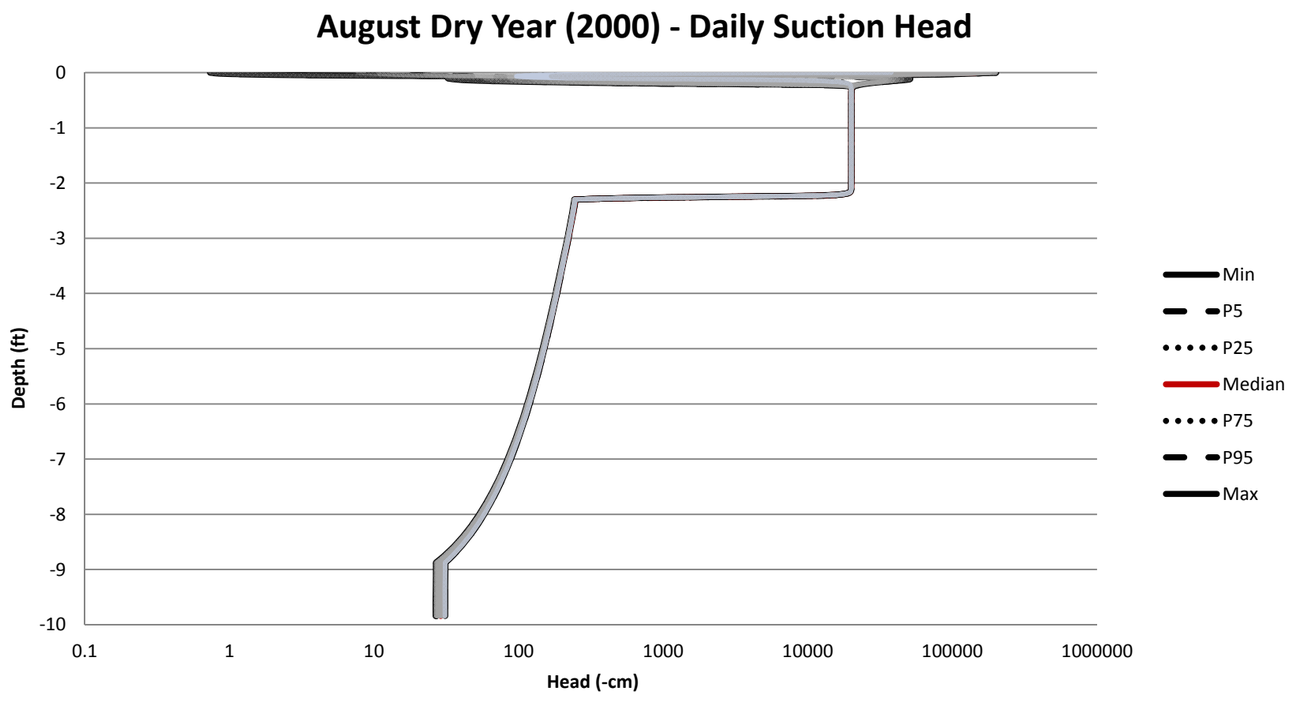
Suction Profiles - Dry Season (June)

PROJECT No. M09441A16

FIG. No. III-I.4







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CLIENT

Resolution Copper Mining

Klohn Crippen Berger

PROJECT

RESOLUTION PROJECT
NEAR WEST TAILINGS STORAGE FACILITY CLOSURE COVER STUDY - CLOSURE COVER PREDICTIONS

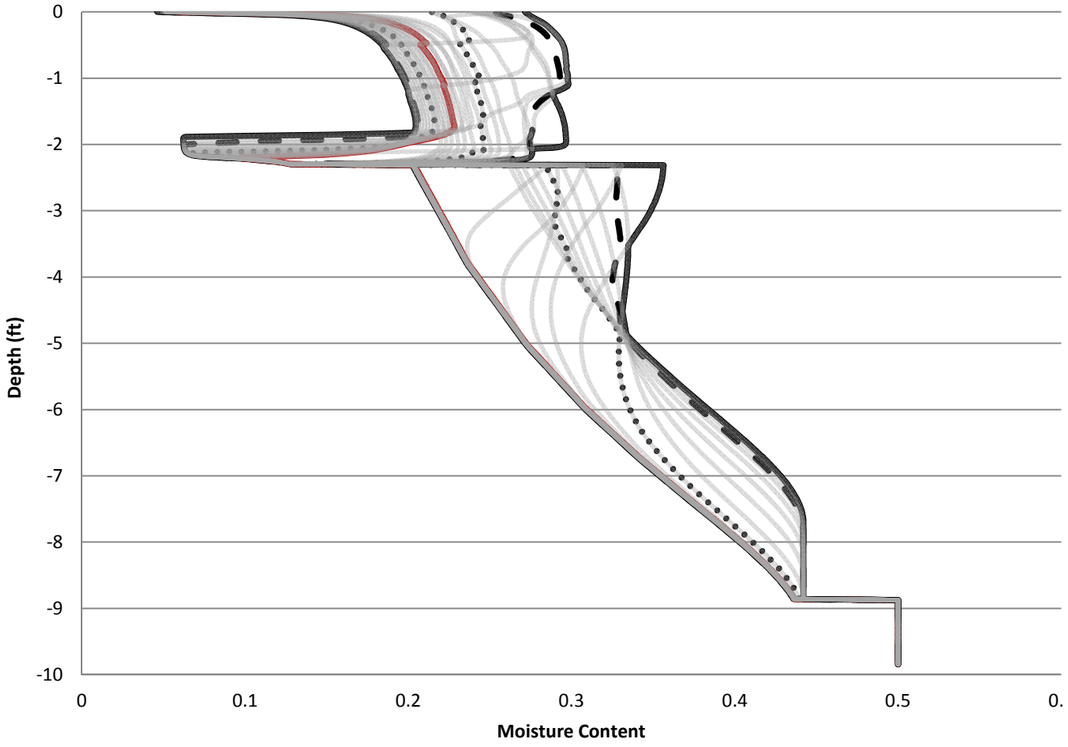
TITLE

CT5 - 1ft Cleaner / 6.6ft Beach / 2.3ft Fine GIla / Veg
Suction Profiles - Summer Monsoon (August)

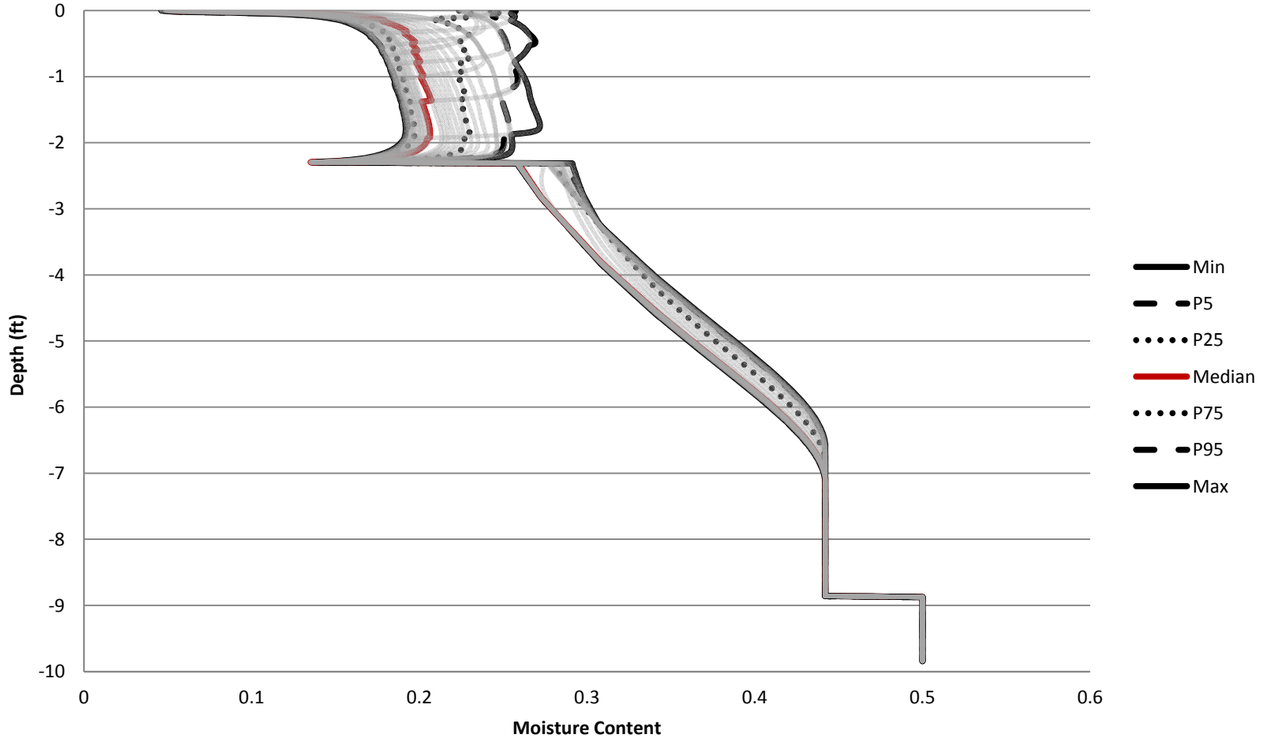
PROJECT No. M09441A16

FIG. No. III-I.5

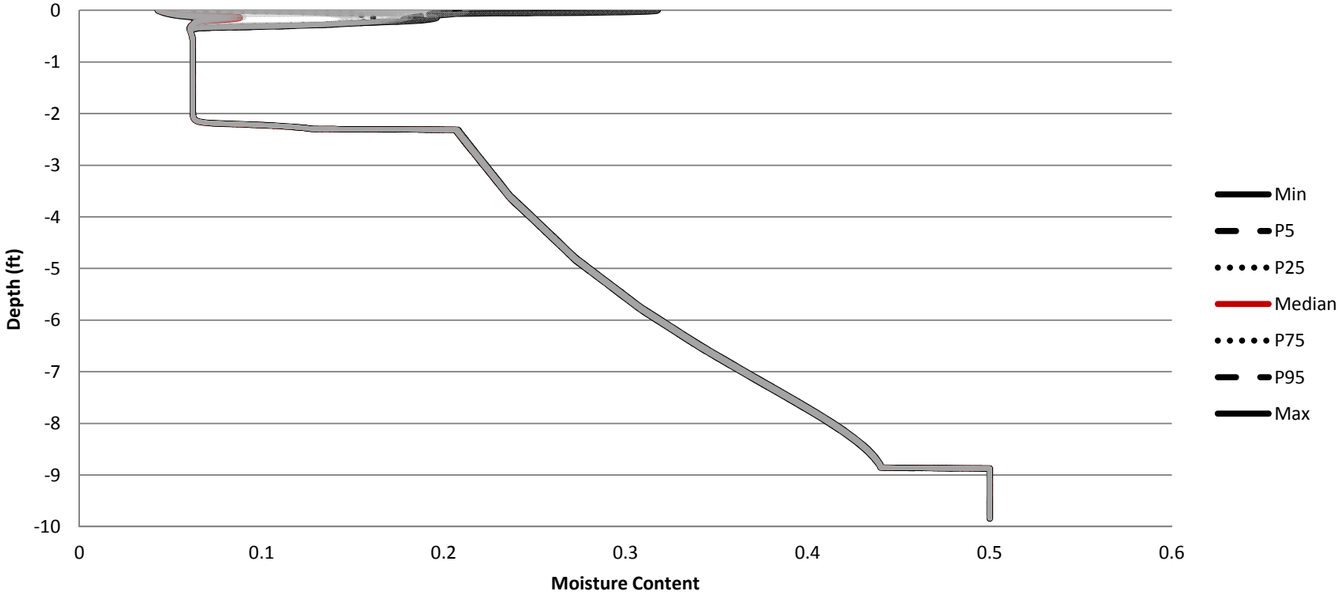
February Average Year (1980) - Daily Moisture Content



February Wet Year (1992) - Daily Moisture Content



February Dry Year (2000) - Daily Moisture Content



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Klohn Crippen Berger

PROJECT

RESOLUTION PROJECT
NEAR WEST TAILINGS STORAGE FACILITY CLOSURE COVER STUDY - CLOSURE COVER PREDICTIONS

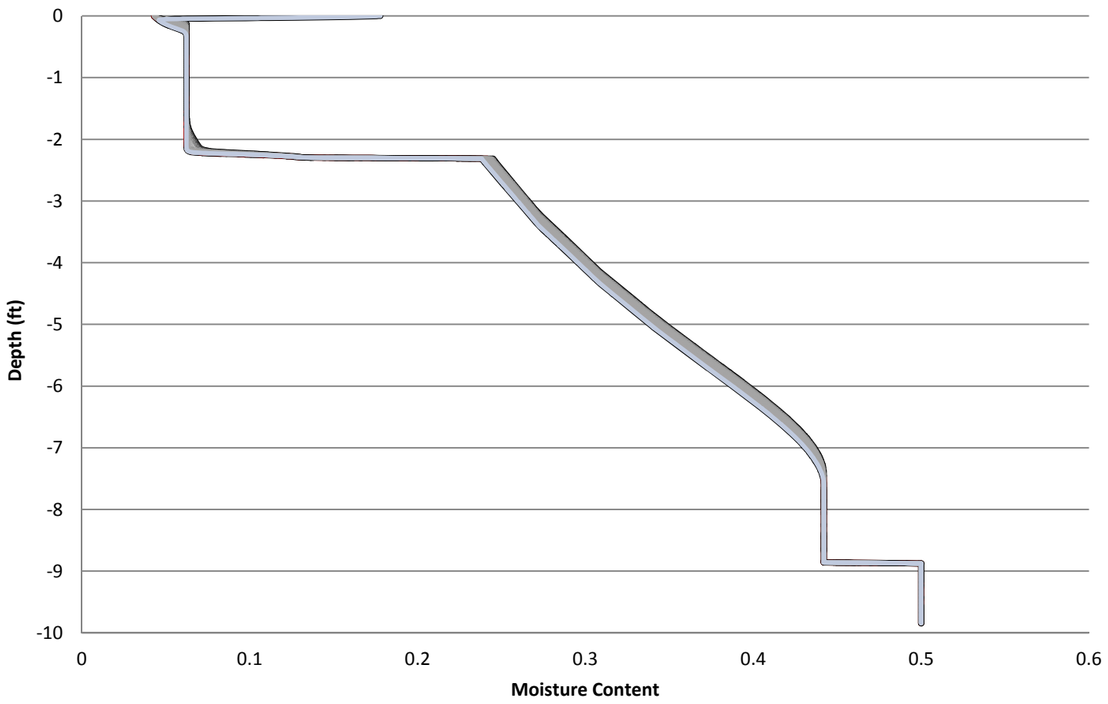
TITLE

CT5 - 1ft Cleaner / 6.6ft Beach / 2.3ft Fine GIla / Veg
Moisture Content - Winter (February)

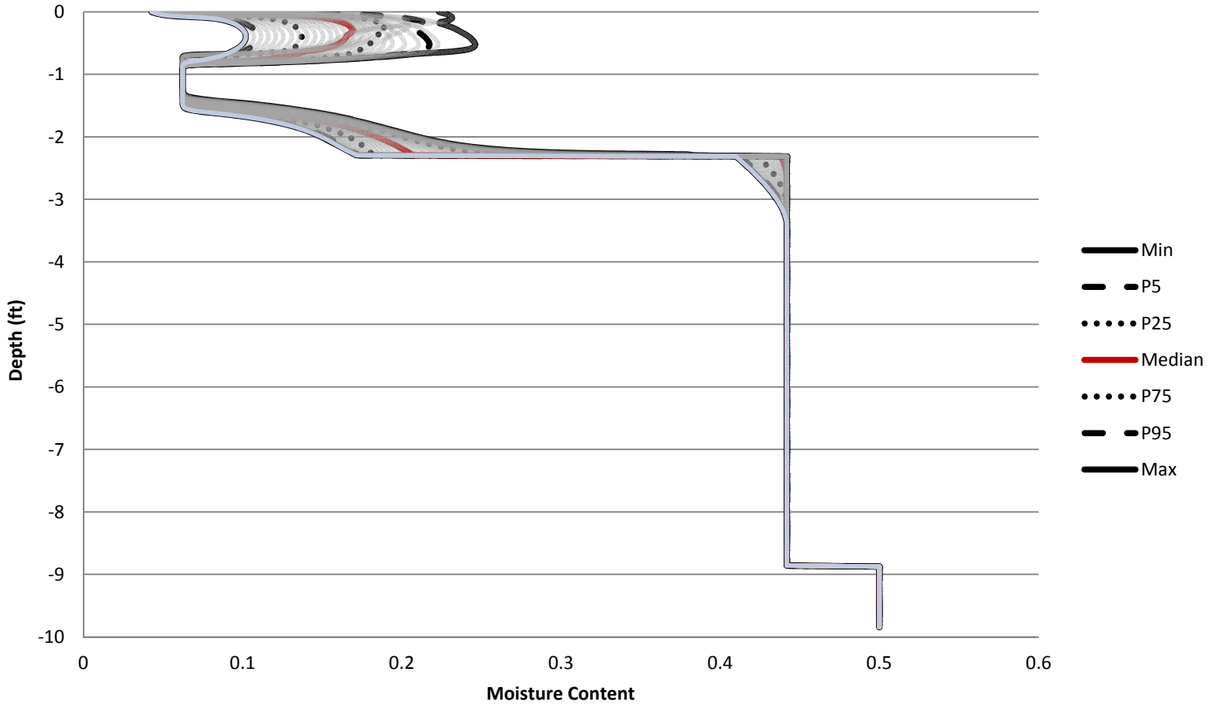
PROJECT No. M09441A16

FIG. No. III-I.6

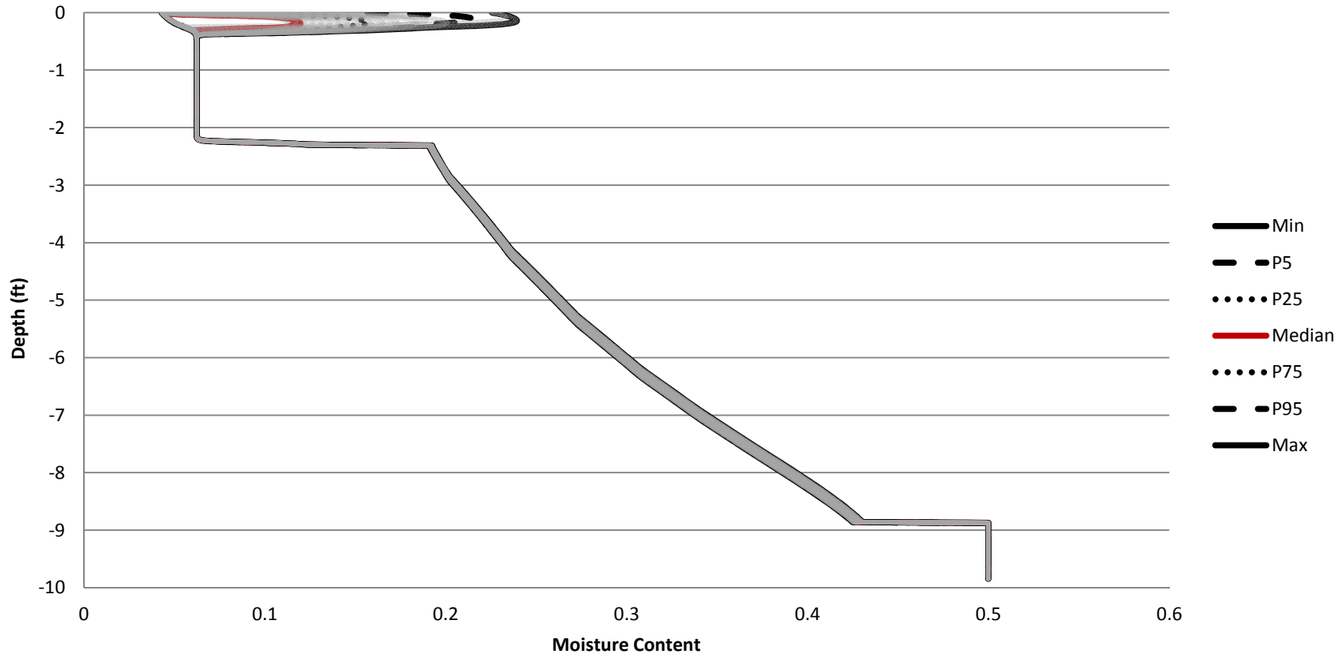
June Average Year (1980) - Daily Moisture Content



June Wet Year (1992) - Daily Moisture Content



June Dry Year (2000) - Daily Moisture Content



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Resolution Copper Mining

Klohn Crippen Berger

PROJECT

RESOLUTION PROJECT
NEAR WEST TAILINGS STORAGE FACILITY CLOSURE COVER STUDY - CLOSURE COVER PREDICTIONS

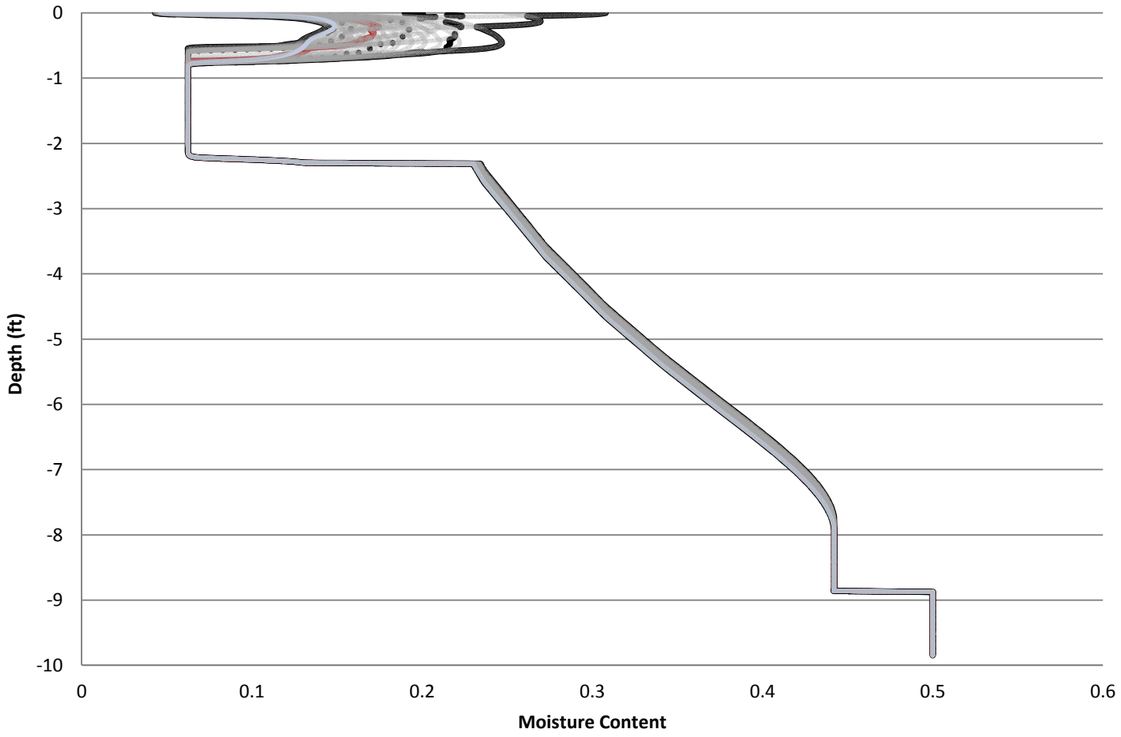
TITLE

CT5 - 1ft Cleaner / 6.6ft Beach / 2.3ft Fine GIla / Veg
Moisture Content - Dry Season (June)

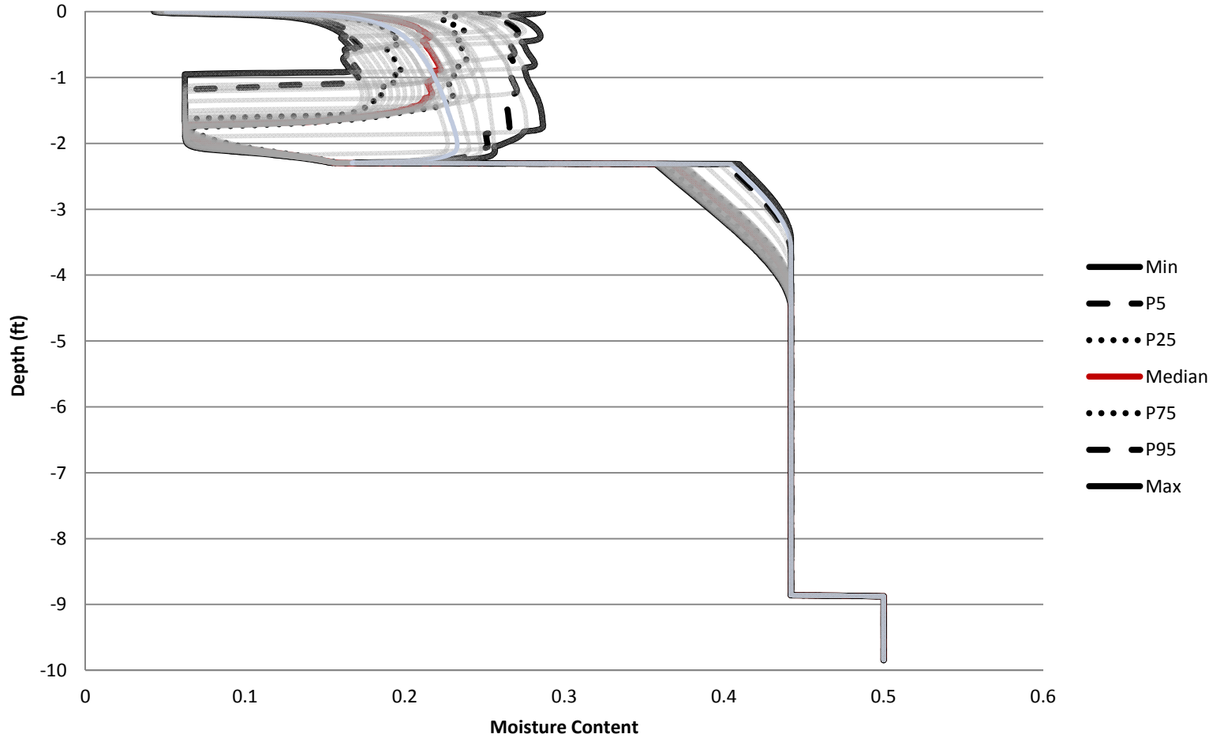
PROJECT No. M09441A16

FIG. No. III-I.7

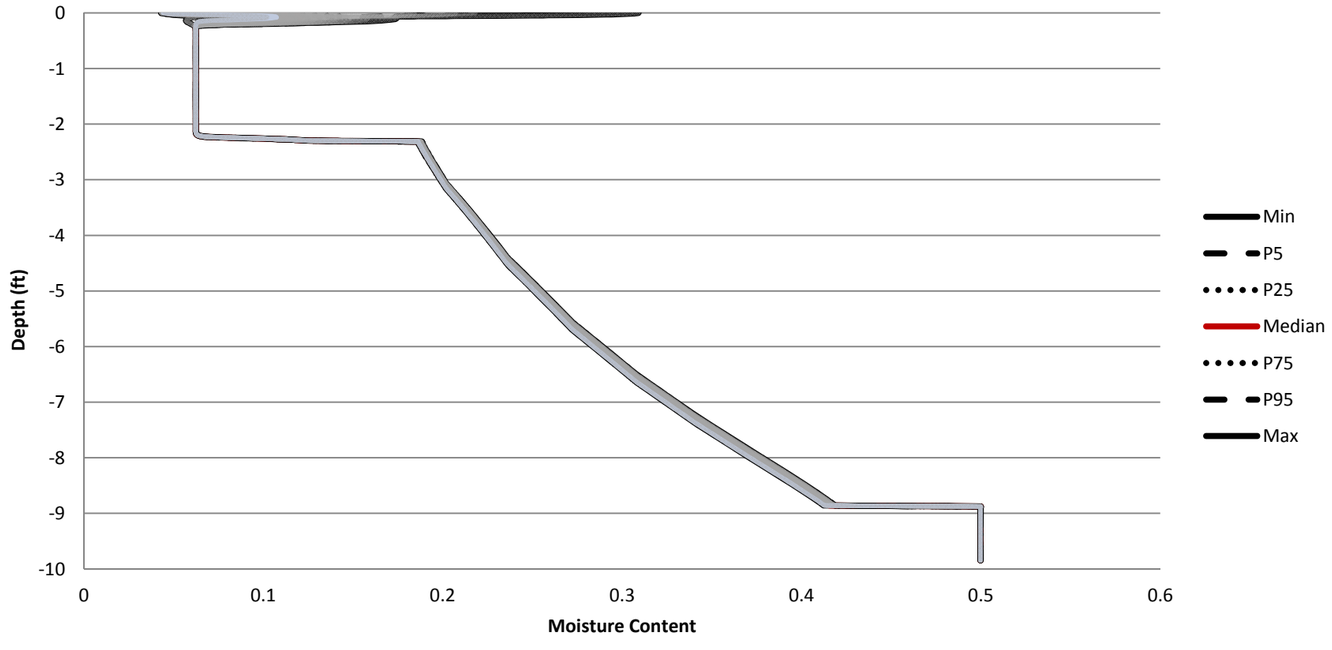
August Average Year (1980) - Daily Moisture Content



August Wet Year (1992) - Daily Moisture Content



August Dry Year (2000) - Daily Moisture Content



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CLIENT

Resolution Copper Mining

Klohn Crippen Berger

PROJECT

RESOLUTION PROJECT
NEAR WEST TAILINGS STORAGE FACILITY CLOSURE COVER STUDY - CLOSURE COVER PREDICTIONS

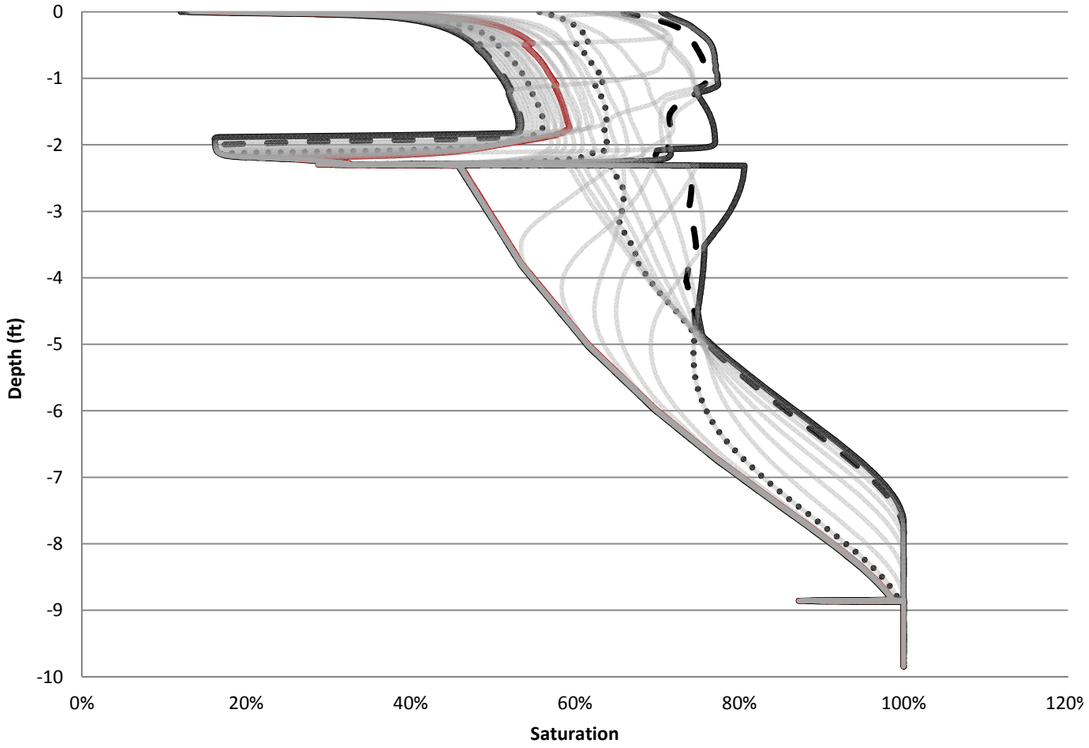
TITLE

CT5 - 1ft Cleaner / 6.6ft Beach / 2.3ft Fine GIla / Veg
Moisture Content - Summer Monsoon (August)

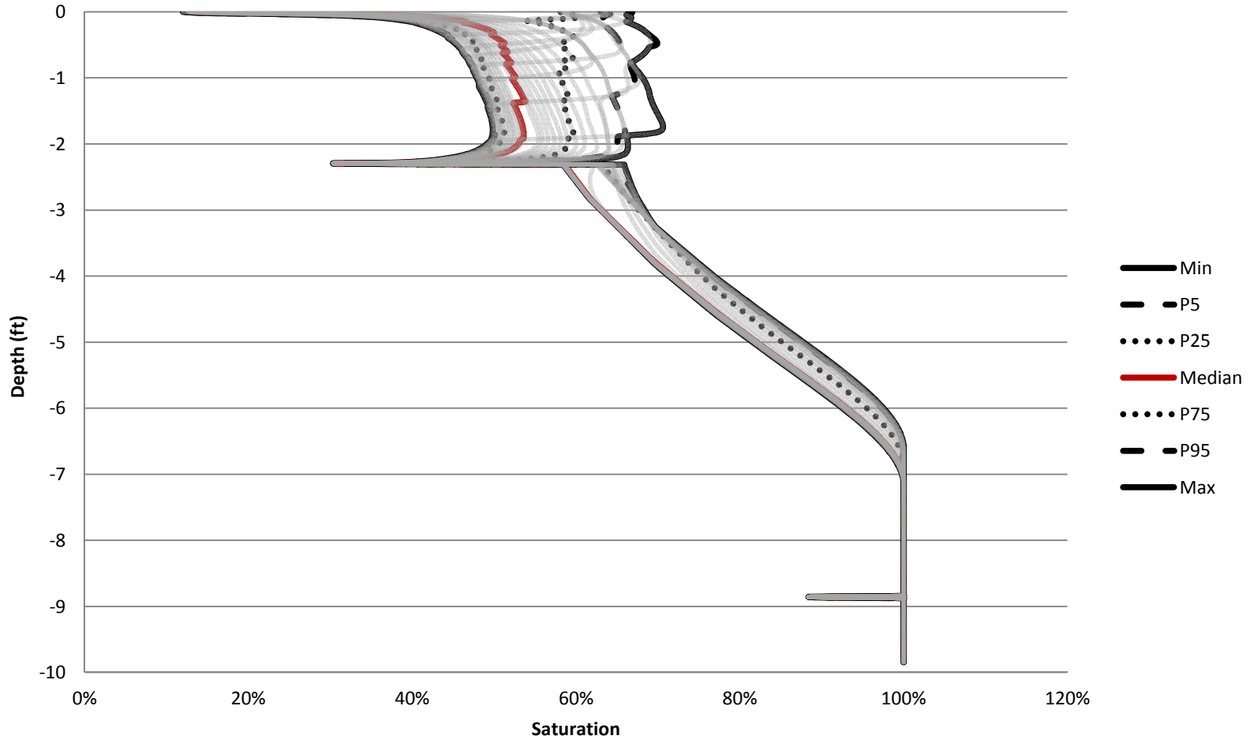
PROJECT No. M09441A16

FIG. No. III-I.8

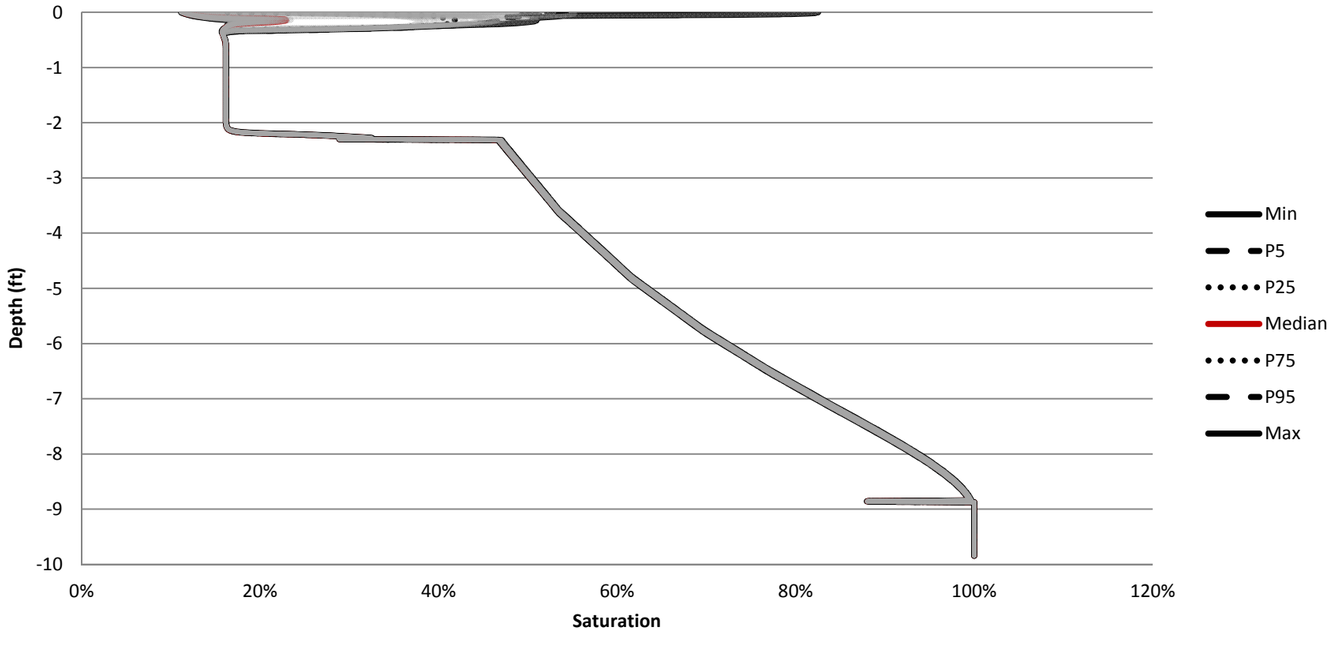
February Average Year (1980) - Daily Saturation



February Wet Year (1992) - Daily Saturation



February Dry Year (2000) - Daily Saturation



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CLIENT

Resolution Copper Mining

Klohn Crippen Berger

PROJECT

RESOLUTION PROJECT
NEAR WEST TAILINGS STORAGE FACILITY CLOSURE COVER STUDY - CLOSURE COVER PREDICTIONS

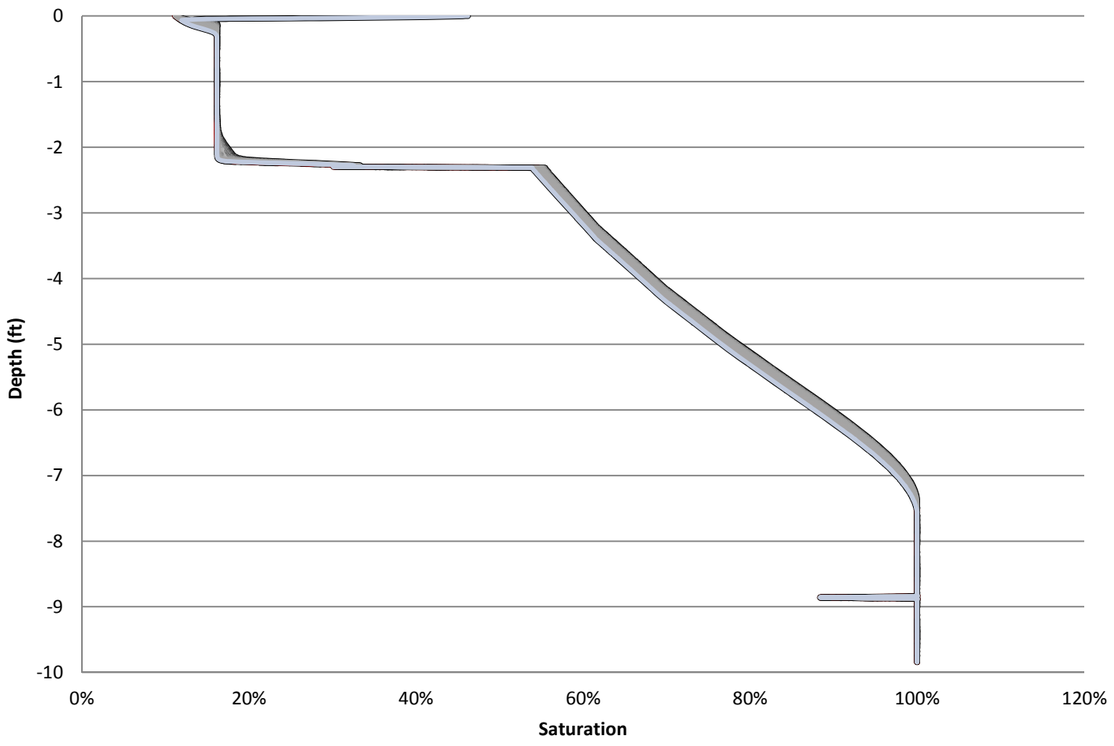
TITLE

CT5 - 1ft Cleaner / 6.6ft Beach / 2.3ft Fine GIla / Veg
Saturation - Winter (February)

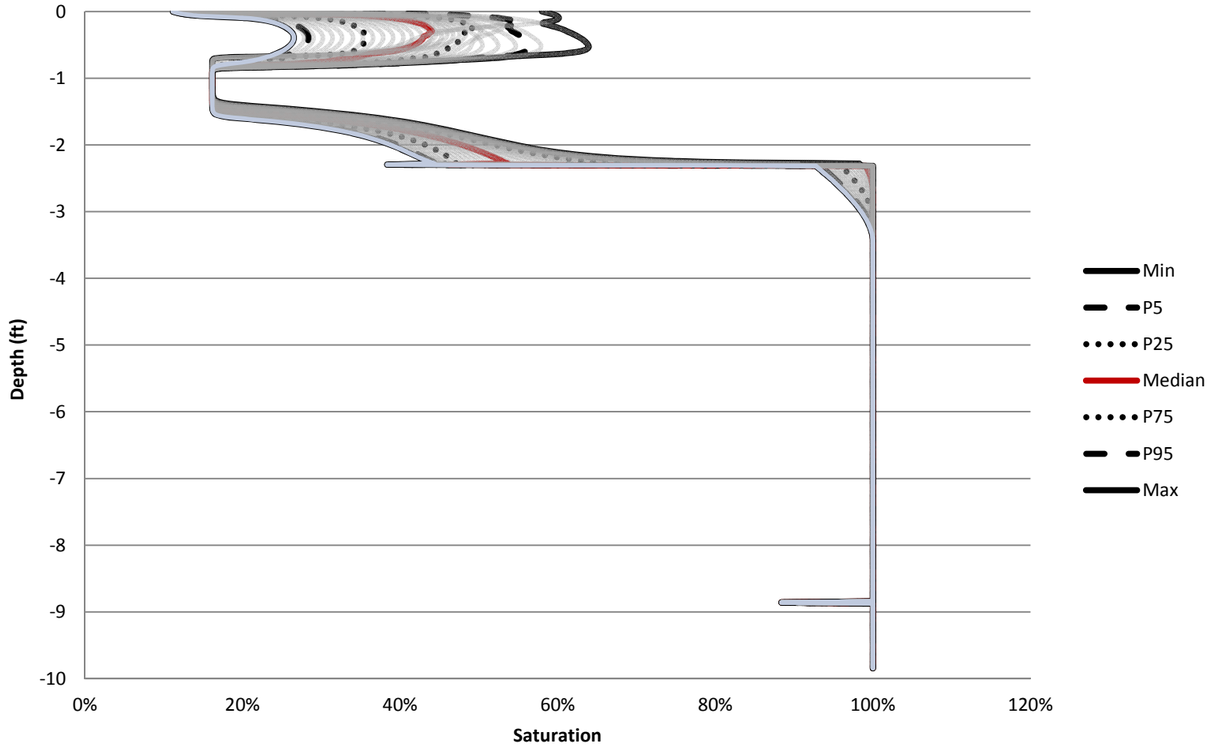
PROJECT No. M09441A16

FIG. No. III-I.9

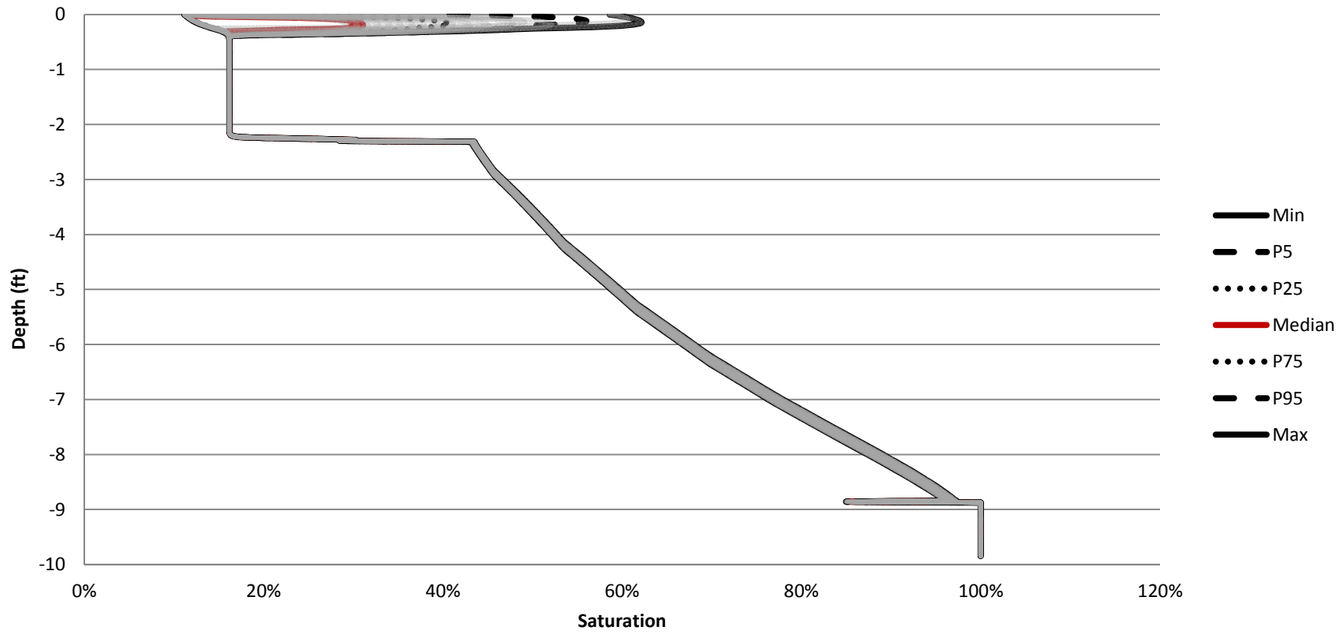
June Average Year (1980) - Daily Saturation



June Wet Year (1992) - Daily Saturation



June Dry Year (2000) - Daily Saturation



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CLIENT: Resolution Copper Mining

Klohn Crippen Berger

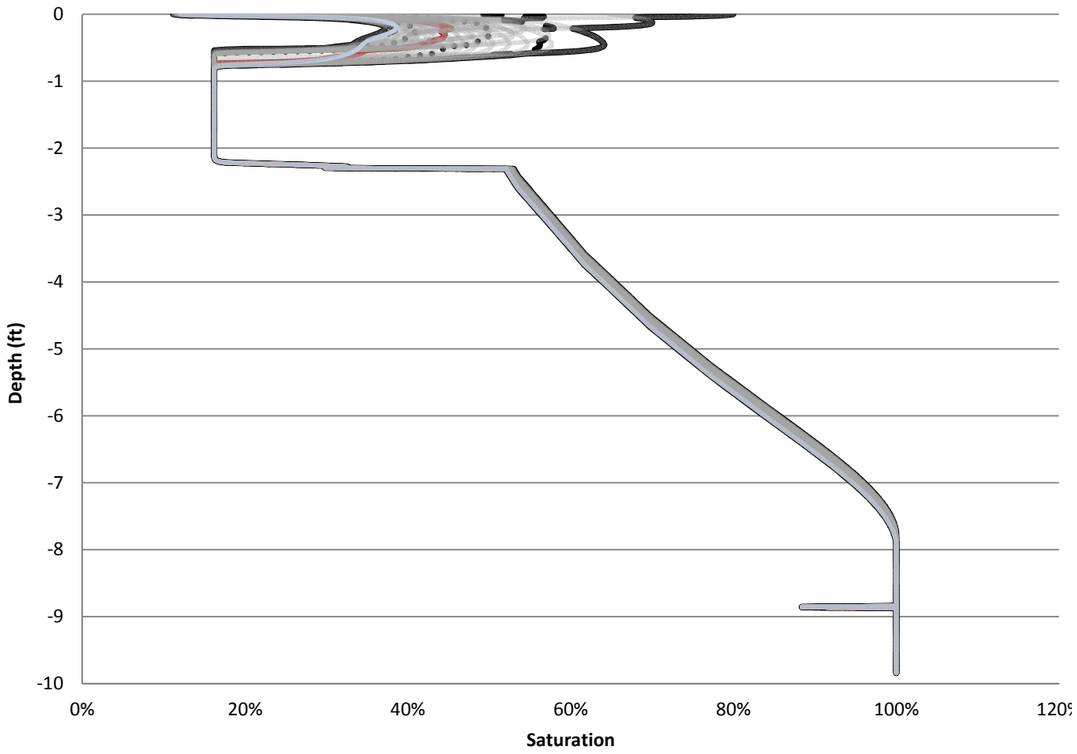
PROJECT: RESOLUTION PROJECT
NEAR WEST TAILINGS STORAGE FACILITY CLOSURE COVER STUDY - CLOSURE COVER PREDICTIONS

TITLE: CT5 - 1ft Cleaner / 6.6ft Beach / 2.3ft Fine GIla / Veg
Saturation - Dry Season (June)

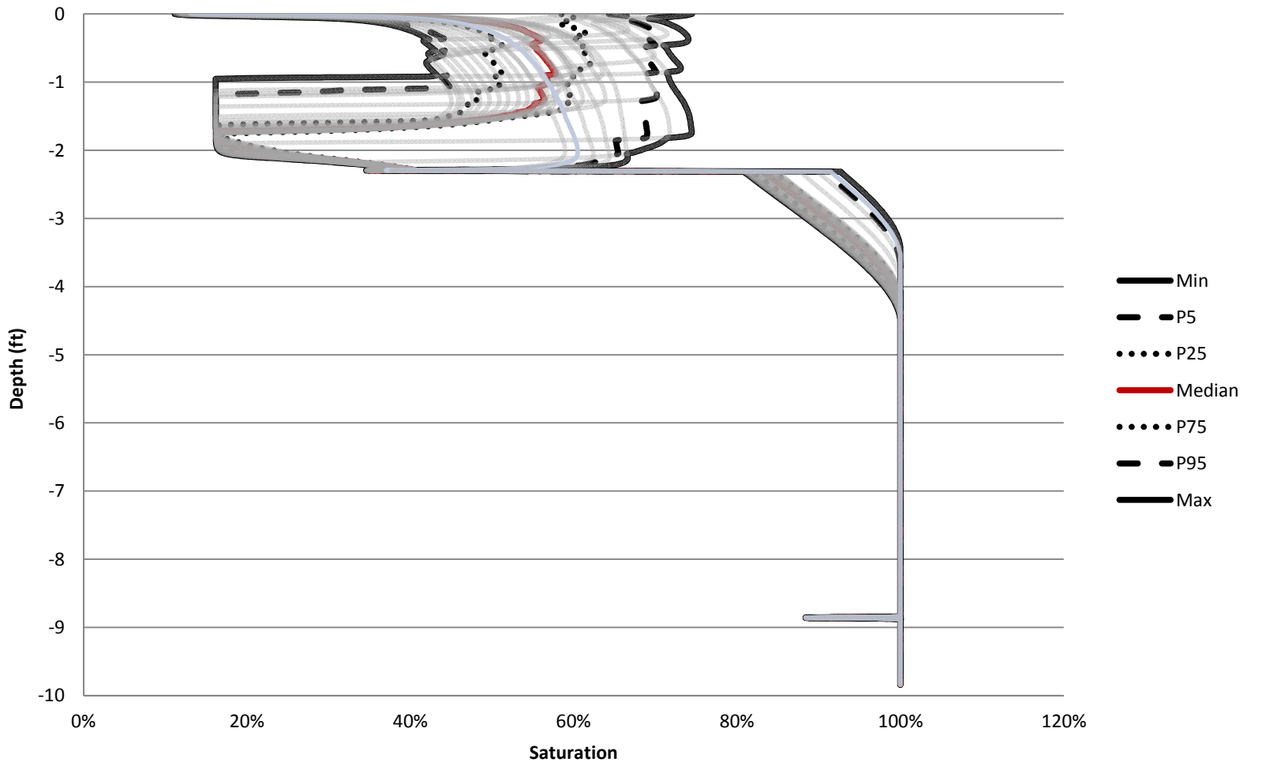
PROJECT No. M09441A16

FIG. No. III-I.10

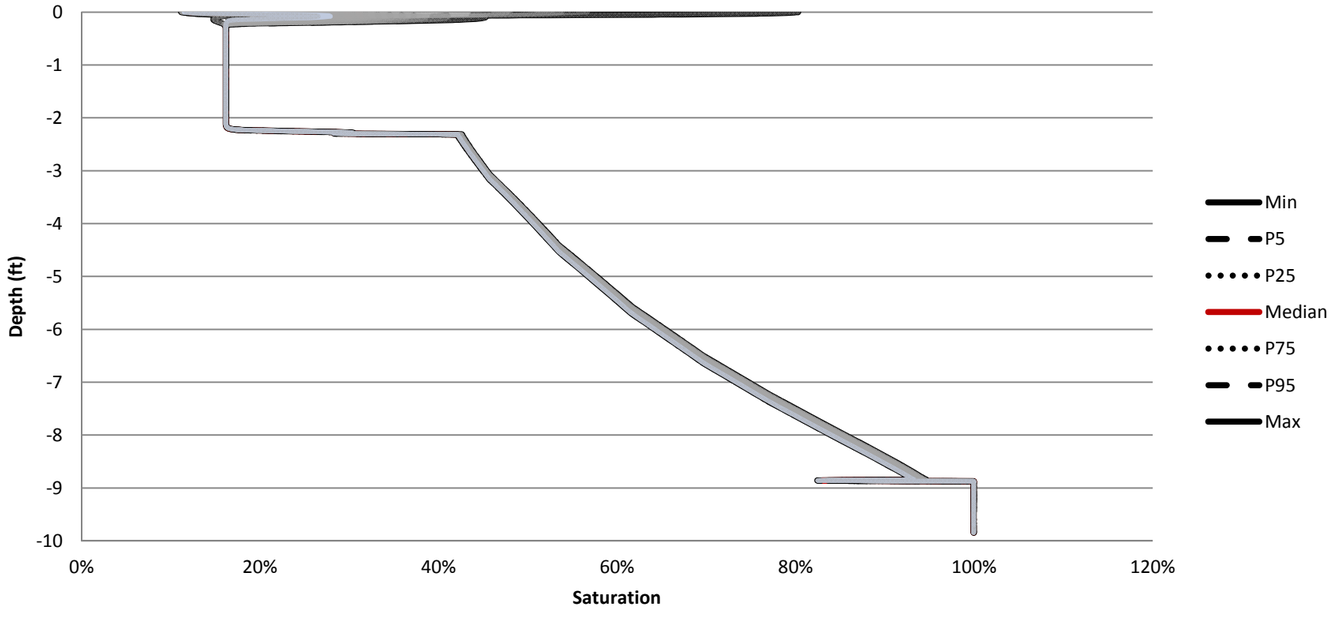
August Average Year (1980) - Daily Saturation



August Wet Year (1992) - Daily Saturation



August Dry Year (2000) - Daily Saturation



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Klohn Crippen Berger

PROJECT

RESOLUTION PROJECT
NEAR WEST TAILINGS STORAGE FACILITY CLOSURE COVER STUDY - CLOSURE COVER PREDICTIONS

TITLE

CT5 - 1ft Cleaner / 6.6ft Beach / 2.3ft Fine GIla / Veg
Saturation - Summer Monsoon (August)

PROJECT No. M09441A16

FIG. No. III-I.11