INTRODUCTION

Golder Associates Inc. (Golder) has prepared this revision of the Tailings Cell Water Balance for Energy Fuels Resources Corporation (EFRC) for the Piñon Ridge Project located in Montrose County, Colorado. Calculations in this document were based on the water balance originally submitted as a part of the tailings cell design by Golder (2008a) for Tailings Cell A (see Figure B-1). For completeness, input parameters and assumptions used by Golder (2008a) as well as more recent modifications to the design parameters are summarized below.

ASSUMPTIONS AND WATER BALANCE COMPONENTS

Since three tailings cells (A, B, C) of approximately equal tailings storage volume and dimensions have been designed for the Piñon Ridge Project to meet a total capacity of approximately 7.3 million tons, the probabilistic water balance has been performed for Tailings Cell A only (see Figure B-1). The water balance for Tailings Cells B and C will be similar to that of Tailings Cell A. Each of the tailings cells is designed for approximately 14 years based on a milling capacity of 500 tons per day (tpd).

The following water balance components were considered: (1) the amount of water entering Tailings Cell A from the mill [revised quantities were developed by CH2M Hill (2009) and are summarized in Figure B-2]; (2) water entering the system through meteoric precipitation; (3) the amount of water released to the atmosphere through evaporation; (4) the amount of water returning to the mill from Tailings Cell A (as provided by CH2M Hill and summarized in Figure B-2); and (5) the excess water available to be pumped from the tailings cell. As shown in Figure B-2, the volume of raw water entering the process plant averages 130 gpm. This flow rate is less than the total of 141 gpm required for operations, which also include non-processing uses such as dust suppression and truck washing.

Precipitation values are likely to exhibit the largest variations, and were therefore treated as stochastic inputs (i.e., probabilistic), while the other parameters were treated as deterministic variables. Water balance calculations were performed using the computer program *Goldsim*™. The water balance model was run for a time of operation of 14 years assuming a milling rate of 500 tpd.

The water balance model was based on the following equation:

$$\Delta S = (Q + P) - (E + RW + EW)$$

where:

ΔS	=	change in stored solution volume
Q	=	inflow from the mill
P	=	precipitation collected within the lined footprint of the tailings cell
E	=	evaporation from the tailings cell surface
RW	=	reclaimed water from the tailings cell pumped back to the mill
EW	=	excess water not required by the mill but available to be pumped from the tailings cell

INPUT PARAMETERS

Water balance assumptions and sources of input data are summarized in Table 1.

Table 1. Water Balance Model Assumptions

Property	Value	Source	Comment/Assumptions
Dimensions for Tailings Cell A	725 feet (ft) x 1,847 ft (maximum dimensions)	See Figure B-1	Designed as two cells within Tailings Cell A with a divider berm constructed at elevation 5,500 ft and with two independent leak collection and recovery systems (LCRS) and tailings underdrain systems. Internal side slopes of 3H:1V with minimum base grade of one percent (%) and 3 ft of dry freeboard.
Watershed Area for Tailings Cell A	32.5 acres	Golder (2008a)	Golder design assumptions. The watershed area includes the lined area and the area for the access road (due to slope inward toward cell).
Tailings Disposal Rate	500 tpd	CH2M Hill (2009) (see Note 2 and Figure B-2)	Use disposal rate of approximately 500 tpd (41,500 lb/hr) to achieve design flow of 252 gpm (tailings + raffinate).
Specific Gravity of Solids	2.69	CH2M Hill (2009) (Note 1)	
Solids Content	27.3%	CH2M Hill (2009) (Note 1)	
Average In-Place Tailings Dry Density	95 pounds per cubic foot (pcf)	Golder (2008a)	
Beach Slope	2 and 0.5 %	Golder (2008a)	Compound slope with 2% for approximately 500 ft in the perimeter sand zone and 0.5% in the slimes zone.
Pumping Rate (from Tailings Cell A to mill)	187 gpm	CH2M Hill (2009) (see Note 2 and Figure B-2)	Design return volume flow from Tailings Cell A to the mill
Percentage of Tailings Beach that is wet	100%	CH2M Hill (2009) & Two Lines (2009) (Note 2)	Water sprays used in summer months to maintain saturation.
Percentage of Tailings Area Covered With Bird-Balls	50%	CH2M Hill (2009) & Two Lines (2009) (Note 2)	
Climate Data	Varies	Attachment 1	Use climate date for Uravan (NCDC No. 058560)
Annual Pan Evaporation	55 to 60 inches	See Attachment 1 – Figure 10	Use pan factor of 0.7 to estimate Tailings Cell A evaporation

Notes:
1. Based on CH2M Hill (2009).
2. Based on CH2M Hill (2009) and Two Lines (2009).

The evaluation of climate data conducted by Golder for nearby weather stations indicates that the Uravan weather station is likely to provide reasonable precipitation estimates (see Attachment 1). The average monthly precipitation values for the Uravan weather station are summarized in Table 2.

The Hargreaves (1985) method, as discussed in Allen et al. (1998), was used to estimate monthly evaporation values at the Piñon Ridge site, based on the available climate data from the Uravan weather station (i.e., precipitation, air temperature, etc.). The calculated pan evaporation values were scaled by a factor of 0.7 to represent tailings cell evaporation. Monthly evaporation values used for the water balance calculations are summarized in Table 2.

Table 2. Monthly Precipitation and Evaporation Values

Month	Average* Precipitation (inches)	Minimum* Precipitation (inches)	Maximum* Precipitation (inches)	Tailings Cell A Evaporation (inches)
January	0.88	0	3.19	0.8
February	0.76	0	2.05	1.2
March	1.03	0	3.43	2.2
April	1.01	0.03	2.68	3.3
May	0.94	0	2.85	4.8
June	0.48	0	1.65	5.8
July	1.19	0.09	3.54	6.3
August	1.36	0.18	3.32	5.4
September	1.5	0.06	4.78	3.8
October	1.51	0	5.89	2.5
November	1.05	0	2.39	1.2
December	0.88	0.03	3.55	0.7

* Precipitation values obtained for Uravan weather station from 1961 to 2007.

Based on design-level process water balance information provided by CH2M Hill (2009) and summarized in Table 1 and Figure B-2 (with average flow values corresponding to a milling rate of 500 tpd), the design mass of solids discharging from the mill to the tailings cell is approximately 41,500 lb/hr.

As described in Table 1, Tailing Cell A has been designed as essentially two ponds (Cells A1 and A2) within a pond (Figure B-1). For simplicity in modeling, the tailings cell water balance was developed assuming that Cell A2 will be filled first to its maximum storage capacity prior to initiating tailings slurry discharge flow to Cell A1. Once both sub-cells are filled to the mid-height bench level, tailings slurry will then be discharged into the entire tailings cell. Tailings slurry will be discharged from several positions around the perimeter of the tailings cells.

Per the design criteria, it was assumed that 3 ft of dry freeboard will be maintained at all times to avoid overflow of the tailings cell solution. Solution will only be reclaimed from the tailings cell pool and returned to the mill when water pool depth is 5 ft or greater (the lowest assumed water depth for barge pumping operation).

DEVELOPMENT OF STOCHASTIC PRECIPITATION PARAMETERS

In order to develop the stochastic precipitation input for the *Goldsim* model, continuous probability distributions were calibrated against the available monthly precipitation data from the Uravan weather station. The Weibull distribution was selected due to its flexibility to represent a wide range of values. The distribution is truncated at its lower end and has a long tail to the upper end, making it well-suited to modeling extreme positive values, such as precipitation events with longer return periods. Separate Weibull distributions were fitted to non-zero precipitation records collected for each month. A moment estimation method was used to determine distribution parameters resulting in fitting coefficients summarized in Table 3.

Table 3. Weibull Distribution Parameters

Month	Slope Parameter (-)	Mean Minus Minimum* (inch/month)
January	1.49	0.78
February	1.35	0.71
March	1.27	0.97
April	1.32	0.93
May	1.13	0.89
June	0.98	0.44
July	1.57	1.09
August	1.51	1.28
September	1.28	1.39
October	1.25	1.46
November	1.75	0.98
December	1.48	0.76

*****Minimum monthly precipitation was set to 0.1 inches per month for all *Goldsim* simulations.

To verify the adopted probability distributions, a precipitation model was constructed in *Goldsim*™ and allowed to run for a 1-year period using Monte-Carlo sampling with 1,000 realizations. *Goldsim* results are compared against recorded values for the Uravan weather station in Figures B-3 to B-14 for the months of January through December, respectively, with annual totals in Figure B-15. *Goldsim* results show favorable agreement between the measured and calculated extreme values on both a monthly and an annual basis.

WATER BALANCE RESULTS

The adequate pool volume and additional volume of water available for reclaim were evaluated at different stages of Tailings Cell A development assuming a maximum time of operation of 14 years corresponding to a milling rate of 500-tpd. *Goldsim* calculations were based on the stochastic monthly precipitation records generated using Weibull's distribution parameters presented in Table 3, and illustrated in Figures B-3 through B-14.

The 1 in 1,000 year reoccurrence storm event was modeled to estimate the pool volume and additional volume of water available for reclaim as follows:

$$Cumulative\ probability = 1 - (1 - p)^n,$$

where

p = annual probability of occurrence
n = number of years to evaluate

Thus, the probability that the 1,000-year storm event will occur during the 14-year tailings disposal period for a 500-tpd milling rate is approximately 1.4%. Based on this probability of occurrence, the estimated pool volume capacity for Tailings Cell A was estimated for the 98.6th percentile probability. A Monte-Carlo simulation with 5,000 realizations (due to relatively high target probabilities in Monte Carlo simulations) was used to evaluate the 98.6th percentile quantities after 1, 2, 5, 7 and 14 years of operation.

Table 4 summarizes the probabilistic tailings cell pool volume during operations for the median and 98.6th percentile results at various points in time. As shown, the difference between the median value and the 98.6th percentile result is small, with the pool volume generally increasing during production. The reason for the increase in tailings pool volume is directly related to the increase in tailings area during operations, with the tailings beach maintaining saturation and the minimum depth of water over tailings to enable pumping (set to a constant value of 5 feet). These results are illustrated graphically in Figure B-16.

Table 4. Probabilistic Tailings Cell Pool Volumes

Probability	Unit	Tailings Cell Pool Volume at Different Times of Operation				
		Year 1	Year 2	Year 5	Year 7	Year 14
98.6th percentile	ft^3	1,140,490	1,767,720	3,636,150	5,200,970	7,990,870
	Acre-ft	26.2	40.6	83.5	119.4	183.4
Median	ft^3	1,140,490	1,767,720	2,811,930	4,584,920	7,697,730
	Acre-ft	26.2	40.6	64.6	105.2	176.7

* The model was run for a time of operation of 14 years and a milling rate of 500 tpd.

Table 5 presents data for the probabilistic cumulative excess water volume available during operations for the median and 98.6th percentile results at various points in time. These results are shown graphically in Figure B-19. Based on the median results, a nominal increase in excess water occurs until the beginning of Year 5 (approximately 50 months), from which point the excess volume of water is relatively constant.

Table 5. Probabilistic Cumulative Excess Water Volumes Available from the Tailings Cell

Probability	Unit	Probabilistic Cumulative Excess Water Volumes Available from the Tailings Cell at Different Times of Operation				
		Year 1	Year 2	Year 5	Year 7	Year 14
98.6th percentile	ft^3	740,432	1,561,560	6,291,930	8,015,720	14,640,000
	Acre-ft	17.0	35.8	144.4	184.0	336.1
Median	ft^3	305,920	761,941	4,064,210	4,064,210	4,535,010
	Acre-ft	7.0	17.5	93.3	93.3	104.1

* The model was run for a time of operation of 14 years and a milling rate of 500 tpd.

Table 6 summarizes the probabilistic average excess pumping rate from the tailings cell (above the design rate of 187 gpm) during operations for the median and 98.6th percentile results at various points in time. This information is presented graphically in Figure B-18. The volume of water available as excess decreases to nearly negligible amounts by Year 3 based on the median and 98.6th percentile results. Due to the smaller footprint of tailings placed early on during operations, the volume of water available for pumping is likely greater as it takes less water to achieve increased water depth (above 5 feet).

Table 6. Probabilistic Average Excess Pumping Rates

Probability	Unit	Probabilistic Average Excess Pumping Rates at Different Time Intervals of Operation				
		Years 0-1	Years 0-2	Years 3-5	Years 6-7	Years 8-14
98.6th percentile	gpm	16.4	16.4	1.7	1.8	1.2
	Acre-ft/yr	26.5	26.5	2.7	2.9	1.9
Median	gpm	2.1	2.1	0.6	0.0	0.0
	Acre-ft/yr	3.4	3.4	1.0	0.0	0.0

SUMMARY

The stochastic water balance model for the 500-tpd milling rate indicates that a maximum tailings cell pool volume of approximately 7.99 million ft^3 (Mft^3) (i.e., 183.4 acre-ft) is obtained for the 98.6th percentile (i.e., 1,000-year storm occurs during deposition), with a median pool volume of 7.70 Mft^3 (176.7 acre-ft) (Figure B-16). At all times during operations, a minimum excess volume capacity of 3.94 Mft^3 (90.4 acre-ft) of freeboard volume (corresponding to 3 ft of dry freeboard) will be available to prevent overtopping during tailings deposition.

As demonstrated on Figures B-18 and B-19, the volume of excess water available as make-up (in excess of the design return volume flow to the mill) is essentially negligible after approximately 4 years (50 months). The average excess pumping rates available to pump excess water from the tailings cell at different time intervals of the operation are summarized in Table 5. Results were estimated assuming that the mill will have a pumping rate of 187 gpm available to pump back reclaimed water from the tailings cell to the mill (per CH2M Hill [2009] as illustrated in Figure B-23), and that the available excess water can be: (1) pumped back to the mill where the water could be used as make-up water; or (2) discharged into the evaporation pond system. It should be noted that the design raffinate flow rate to the evaporation ponds, provided by CH2M

Hill, is an average value which already accounts for this potential excess flow from the tailings cells during discrete time intervals.

As shown on Figure B-17, a design return volume flow of 187 gpm might not be achievable at some time intervals over the design life of the tailings cell. The excess water available from the tailings cell during wet times, therefore, can be used to accommodate this need during the dry times. As demonstrated by the water balance, the mill is designed to maximize reclaim and re-use of water to the mill for processing.

A separate water balance has been developed to size the evaporation pond system (i.e., aerial extent) for the Piñon Ridge Project, as presented in Golder (2008b). The evaporation pond water balance was performed based on a design process water inflow (raffinate from the mill) to the evaporations ponds of 63 gpm for 500 tpd milling operations. As shown in Figure B-2, the design flow rate to the evaporation ponds has reduced nominally to 53 gpm. In effect, the volume of raffinate flowing from the mill to the evaporation ponds will be disposed of via evaporation.

REFERENCES

Allen, R.G., Pereira, L.S., Raes, D. and Smith, M., 1998, "*FAO Irrigation and Drainage Paper No. 56 – Crop Evapotranspiration*" (latest revision 2002).

CH2M Hill Engineers, Inc. (CH2M Hill), 2009, "*Basic Engineering Report and Cost Estimates, Piñon Ridge Project, Naturita, Colorado*." 4 February 2009.

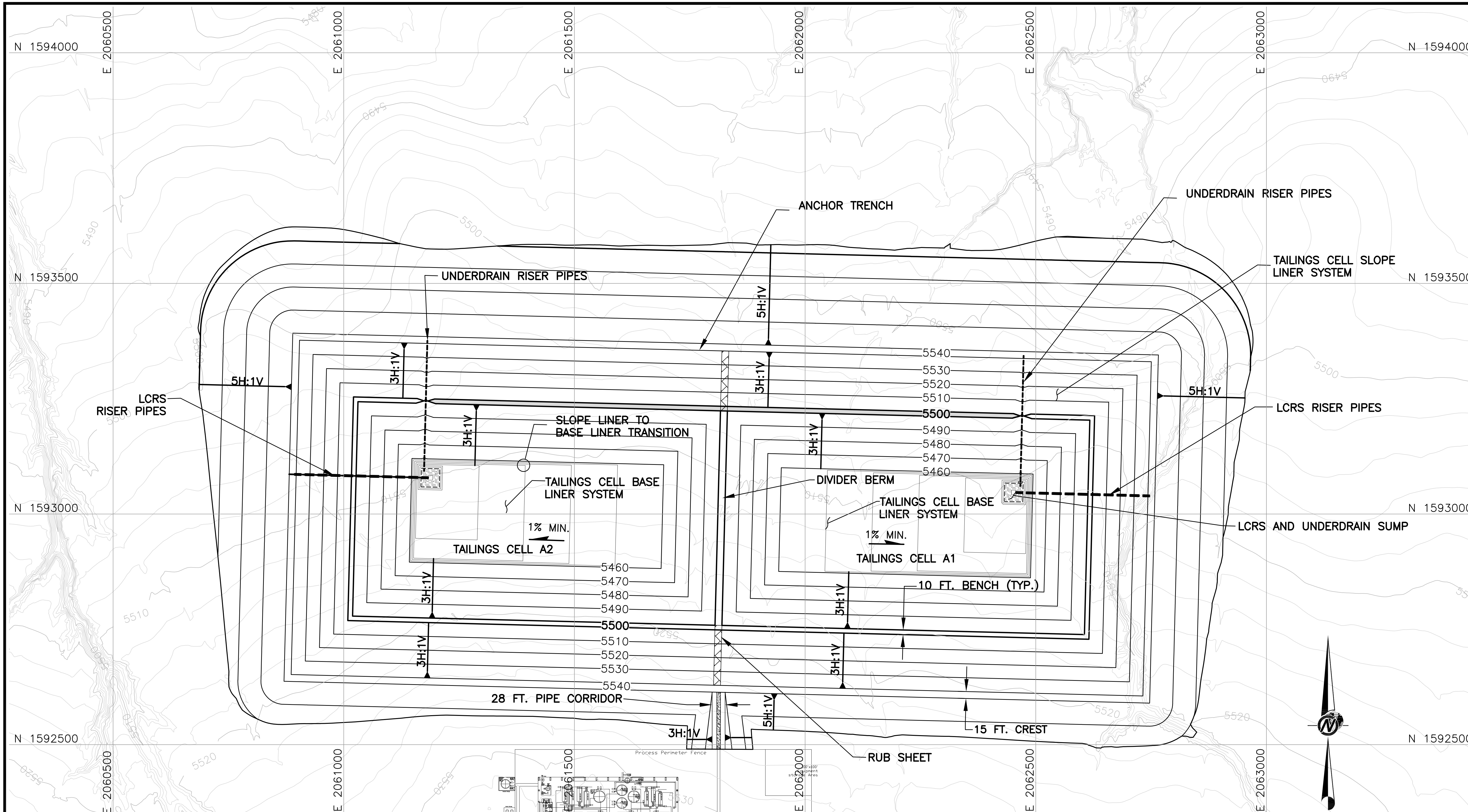
Hargreaves, G.L., Hargreaves, G.H., and Riley, J.P., 1985, "Agricultural benefits for Senegal River Basin", *Journal of Irrigation and Drainage Engrg*, ASCE 111:113-124.

Golder Associates Inc. (Golder), 2008a, "*Tailings Cell Design Report, Piñon Ridge Project, Montrose County, Colorado*," October.

Golder Associates Inc. (Golder), 2008b, "*Evaporation Pond Design Report, Piñon Ridge Project, Montrose County, Colorado*," October.

Two Lines, Inc., 2009, "*Estimation of Radiation Doses to Members of the Public from the Piñon Ridge Mill,*" Report prepared for Energy Fuels Resources Corporation, November.

FIGURES



LEGEND

EXISTING GROUND TOPOGRAPHY	
PROPOSED FINISHED GRADE TOPOGRAPHY	
TOE — CREST	SLOPE DIRECTION
------------	UNDERDRAIN RISER PIPES
— — — —	LCRS RISER PIPES

200 0 200
1" = 200' Feet

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DENVER, COLORADO

PROJECT No073-81694 CADD JDE DATE 09/26/08 FILE No. 07381694A063.dwg

TYPICAL TAILINGS CELL LAYOUT

FIGURE B-1

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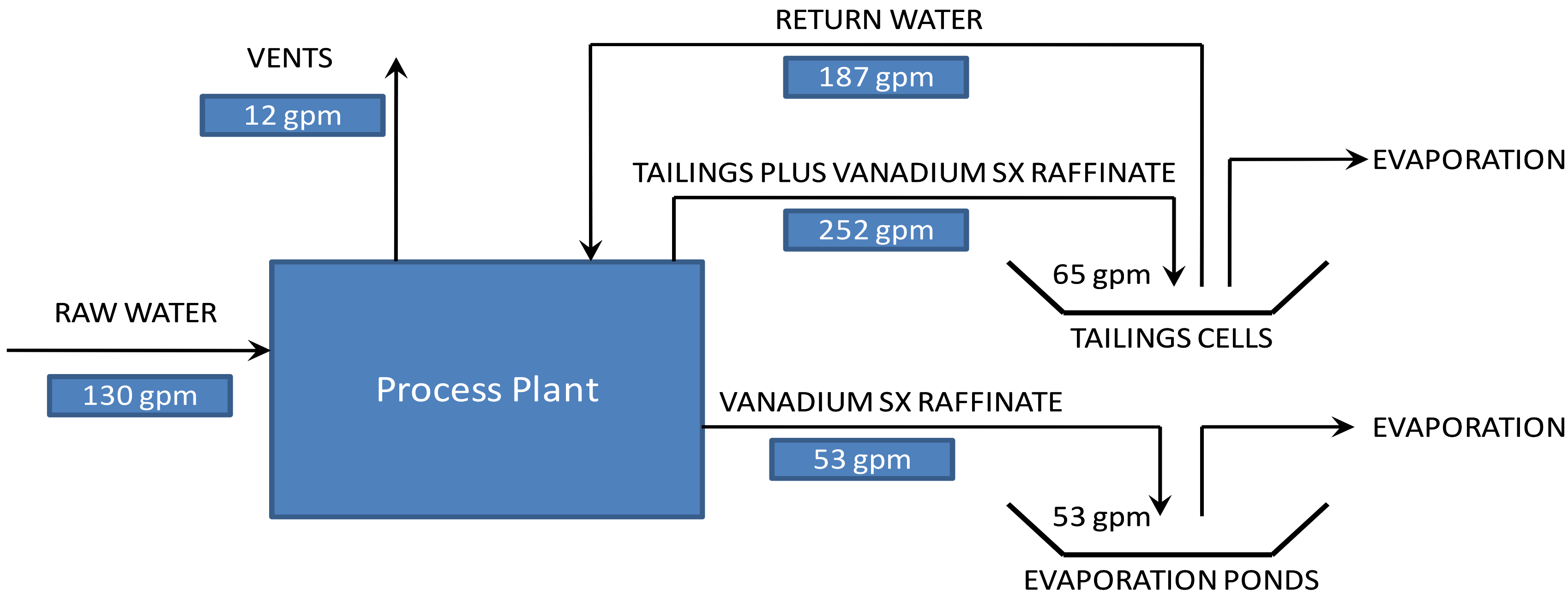

LEGEND:

BALANCE

NOTES:

1. Balance flows provided are for 500 tpd operations and are average values.
2. Refer to figure B-2 for effects of precipitation on the water balance.
3. Flow values from CH2M Hill (2009).

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TITLE
BALANCE FLOW RATES FOR 500-TPD PRODUCTION

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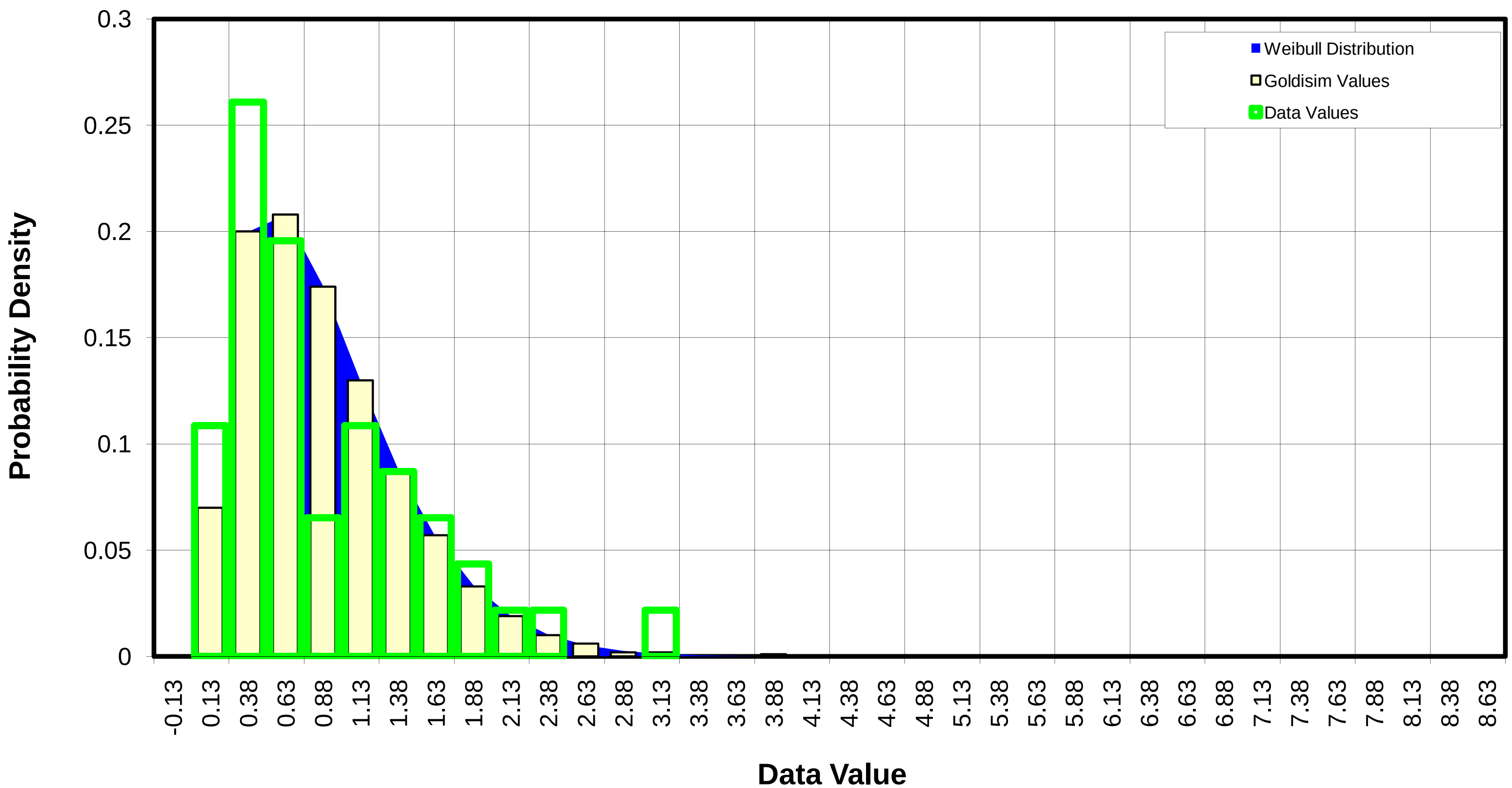
REVIEWED	KFM	FILE NO.	FiguresB-rev6May2010.xlsm	FIGURE NO.	FIGURE B-2

January Data Histograms with Weibull Distribution Fit to Uravan Historical Precipitation Data



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TITLE
URAVAN DATA, GOLDSIM RESULTS AND WEIBULL DISTRIBUTION FOR JANUARY

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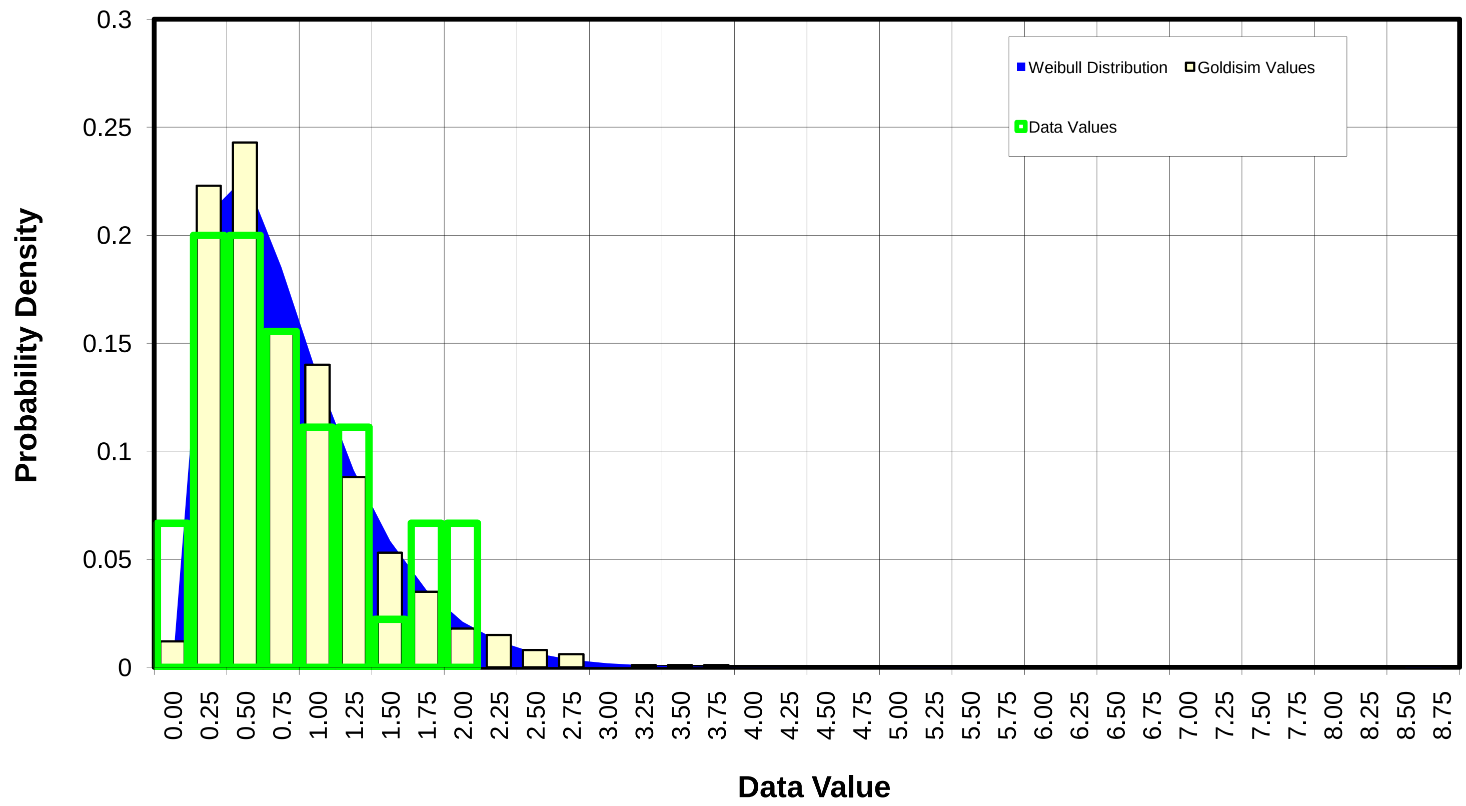
REVIEWED	KFM	FILE NO.		FIGURE NO.	FIGURE B-3

February Data Histograms with Weibull Distribution Fit to Uravan Historical Precipitation Data



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TITLE	URAVAN DATA, GOLDSIM RESULTS AND WEIBULL DISTRIBUTION FOR FEBRUARY				
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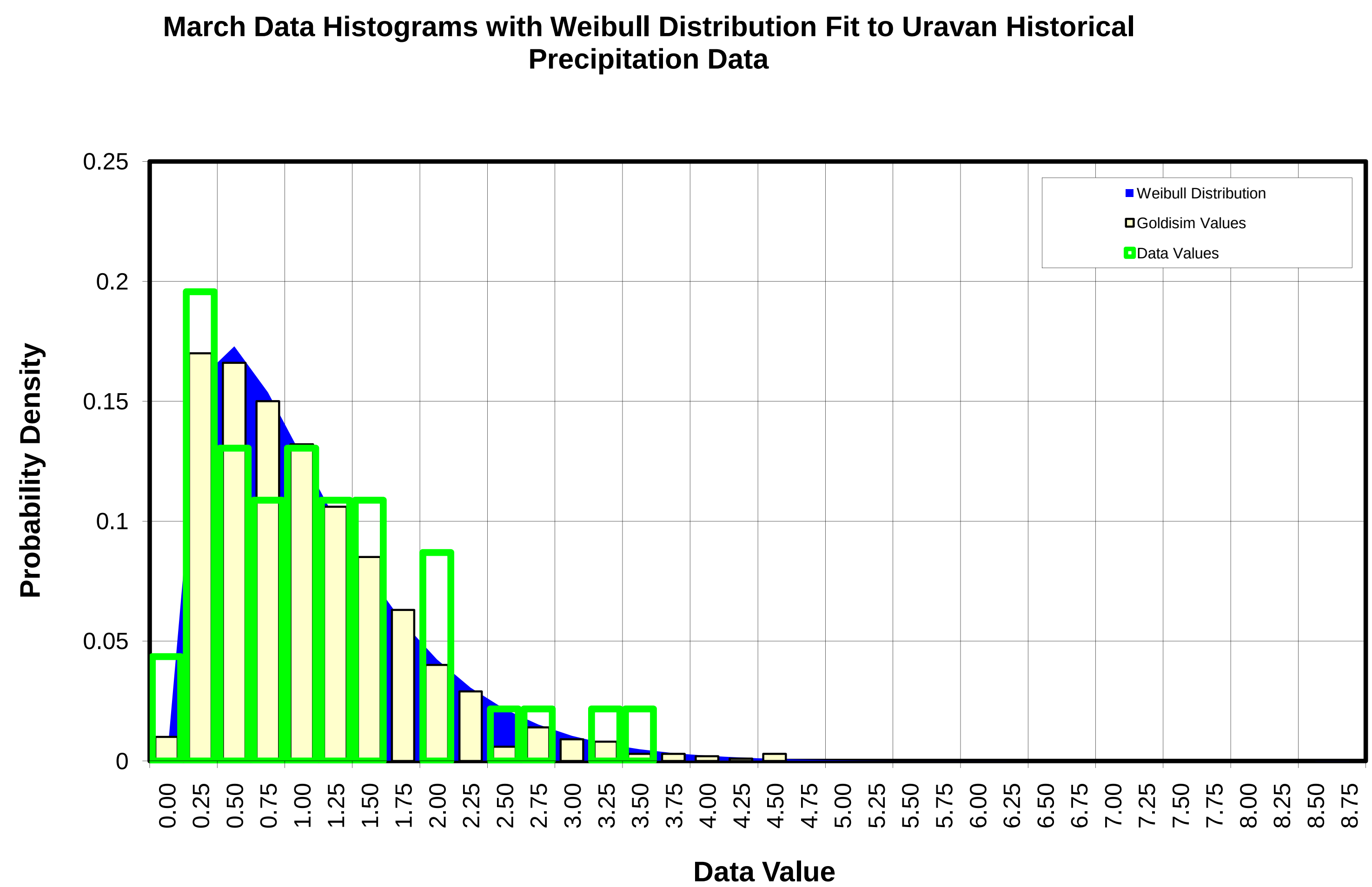

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TITLE
URAVAN DATA, GOLDSIM RESULTS AND WEIBULL DISTRIBUTION FOR MARCH

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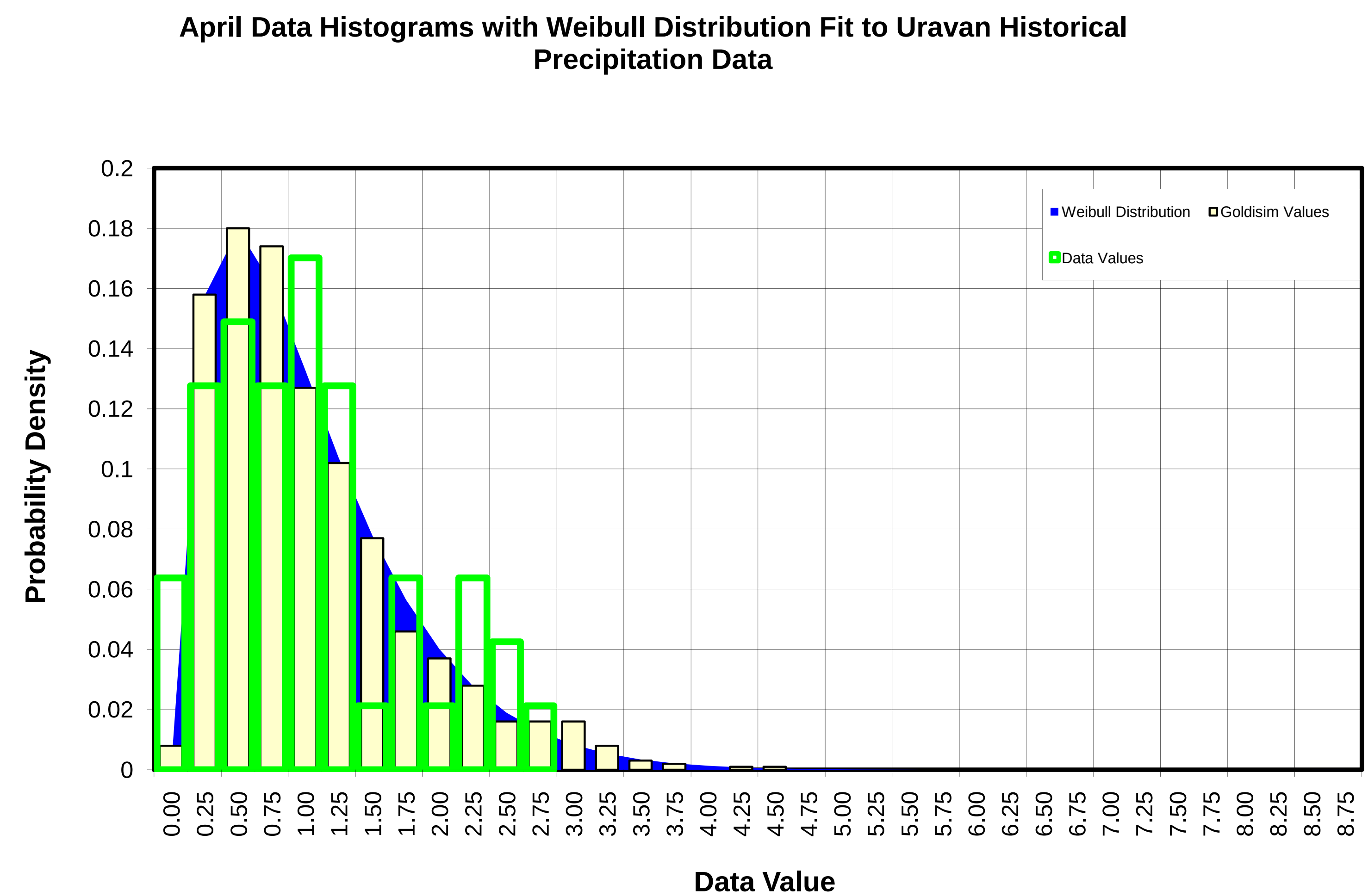

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TITLE

URAVAN DATA, GOLDSIM RESULTS AND WEIBULL DISTRIBUTION FOR APRIL

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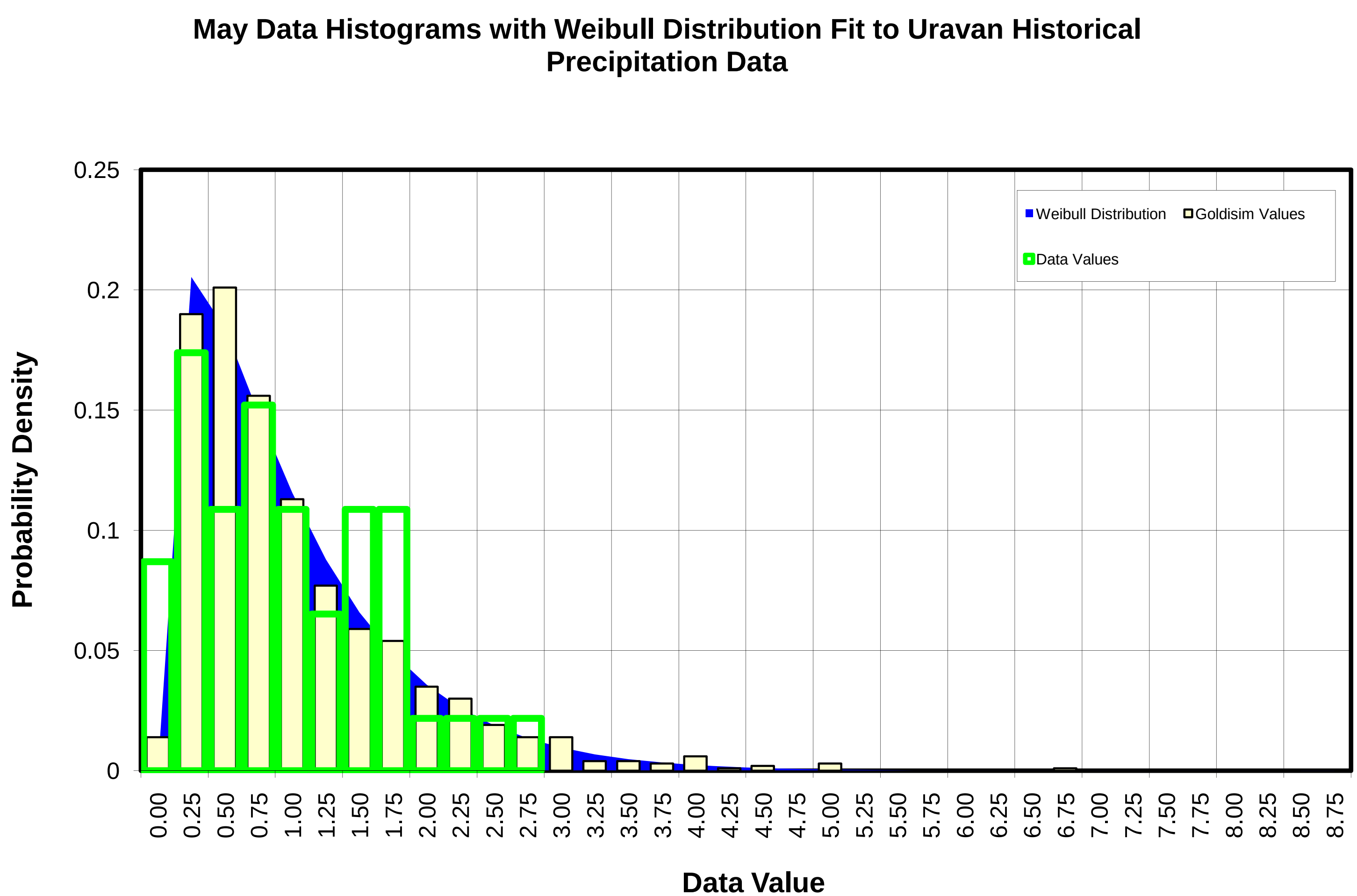

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TITLE
URAVAN DATA, GOLDSIM RESULTS AND WEIBULL DISTRIBUTION FOR MAY

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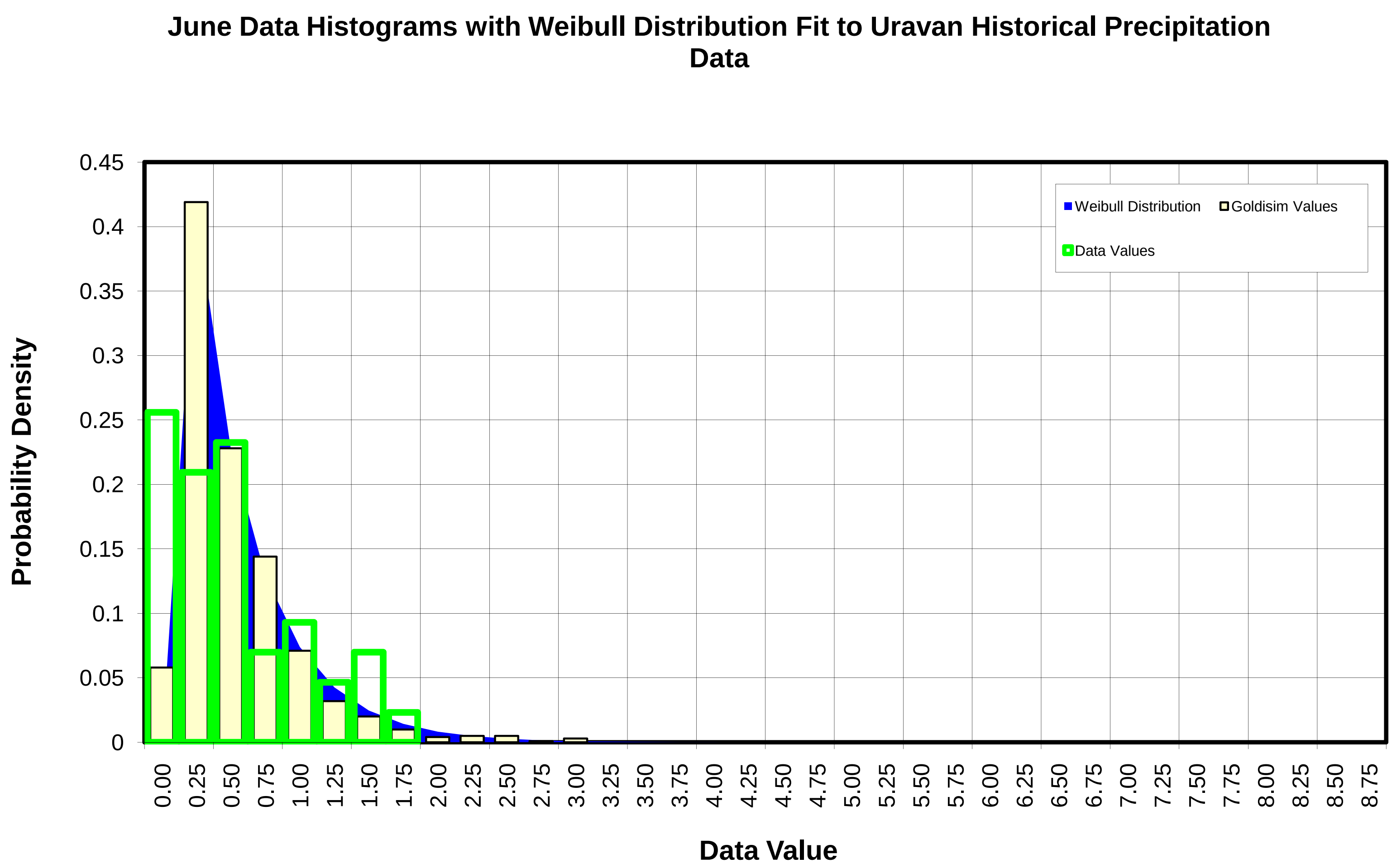

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TITLE
URAVAN DATA, GOLDSIM RESULTS AND WEIBULL DISTRIBUTION FOR JUNE

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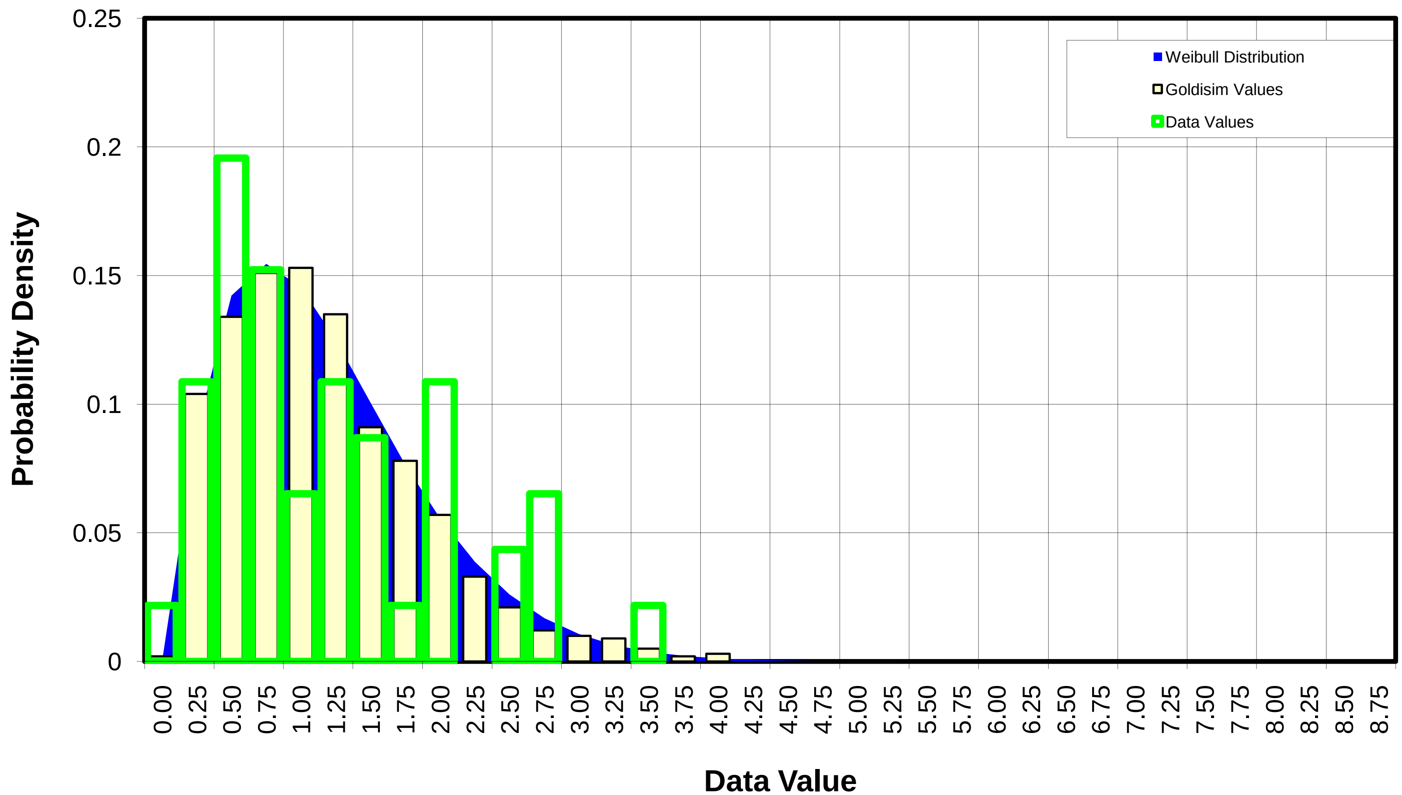
REVIEWED	KFM	FILE NO.	FiguresB-rev6May2010.xlsm	FIGURE NO.	FIGURE B-8

July Data Histograms with Weibull Distribution Fit to Uravan Historical Precipitation Data



Golder Associates, Denver, Colorado	TITLE: **URAVAN DATA, GOLDSIM RESULTS AND WEIBULL DISTRIBUTION FOR JULY**

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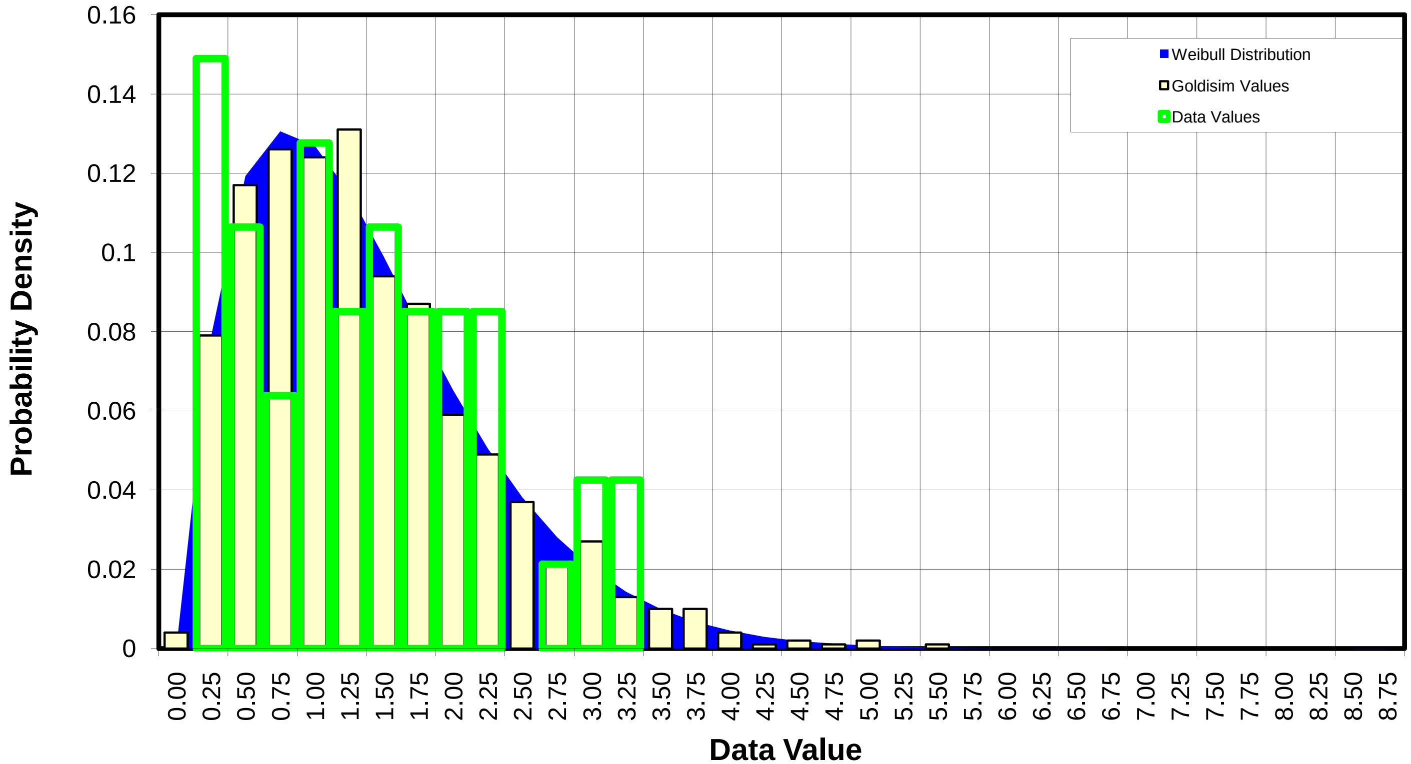
REVIEWED	KFM	FILE NO.	FiguresB-rev6May2010.xlsm	FIGURE NO.	FIGURE B-9

August Data Histograms with Weibull Distribution Fit to Uravan Historical Precipitation Data



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TITLE	URAVAN DATA, GOLDSIM RESULTS AND WEIBULL DISTRIBUTION FOR AUGUST				
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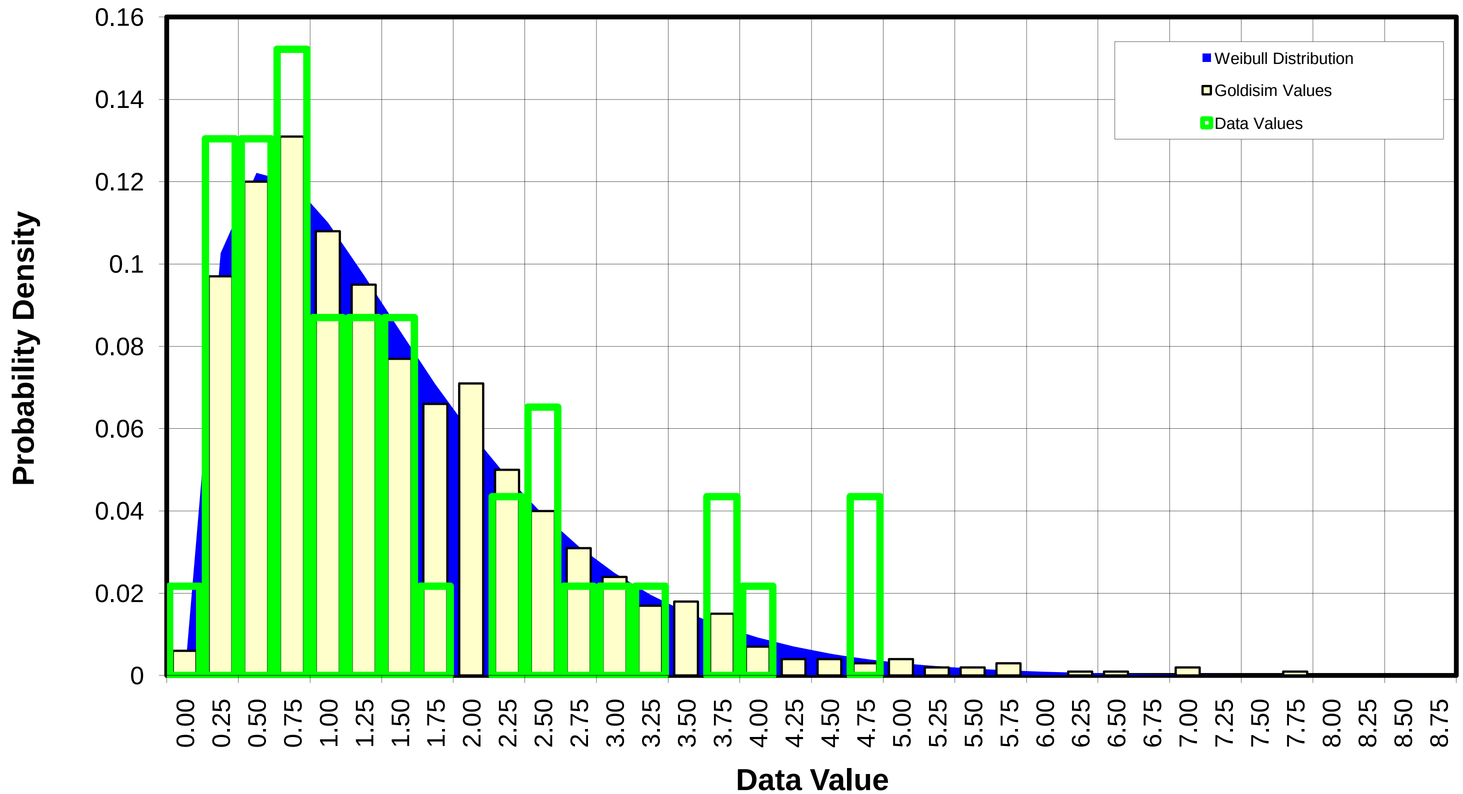
September Data Histograms with Weibull Distribution Fit to Uravan Historical Precipitation Data



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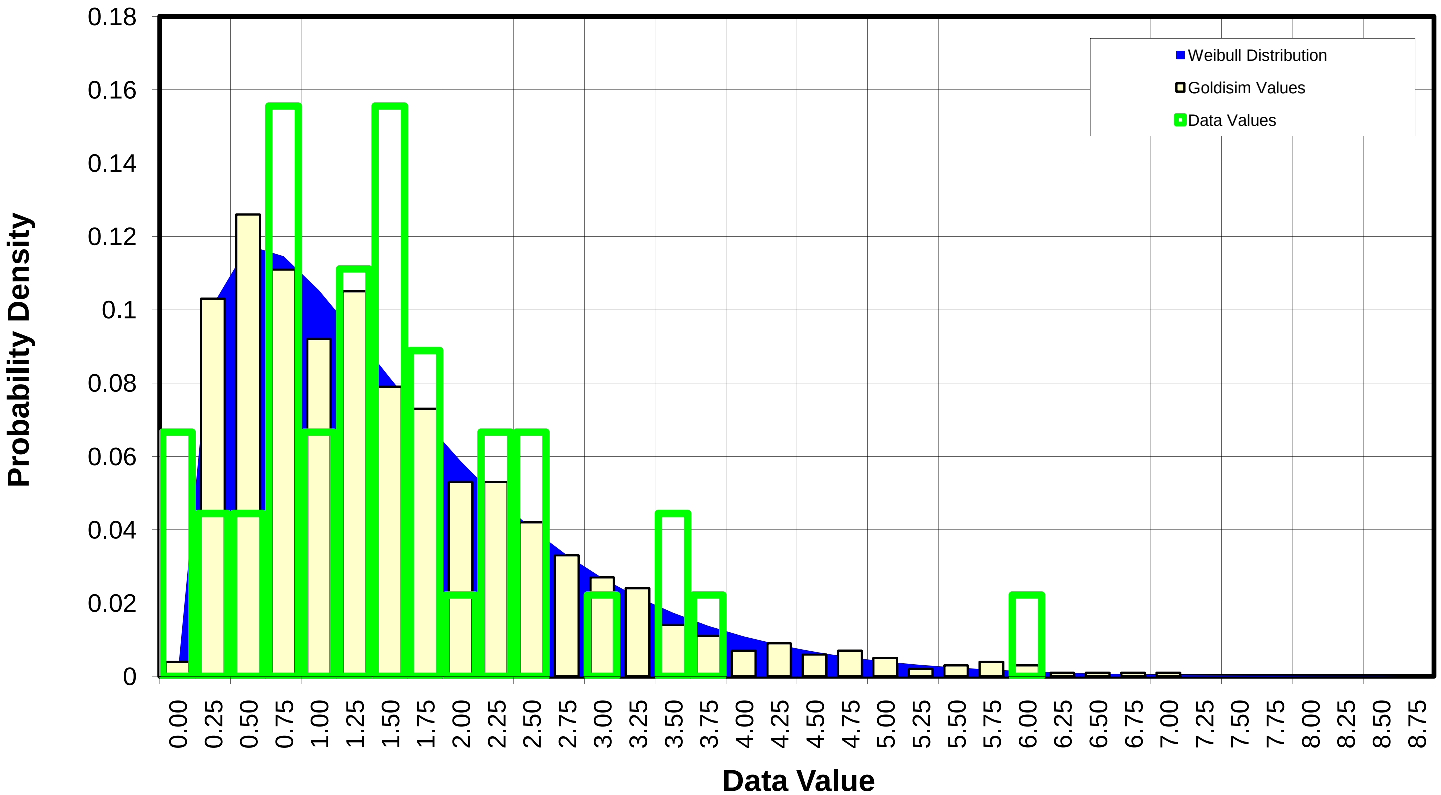
October Data Histograms with Weibull Distribution Fit to Uravan Historical Precipitation Data



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TITLE	URAVAN DATA, GOLDSIM RESULTS AND WEIBULL DISTRIBUTION FOR OCTOBER
CLIENT/PROJECT	ENERGY FUELS RESOURCES CORPORATION PIÑON RIDGE PROJECT

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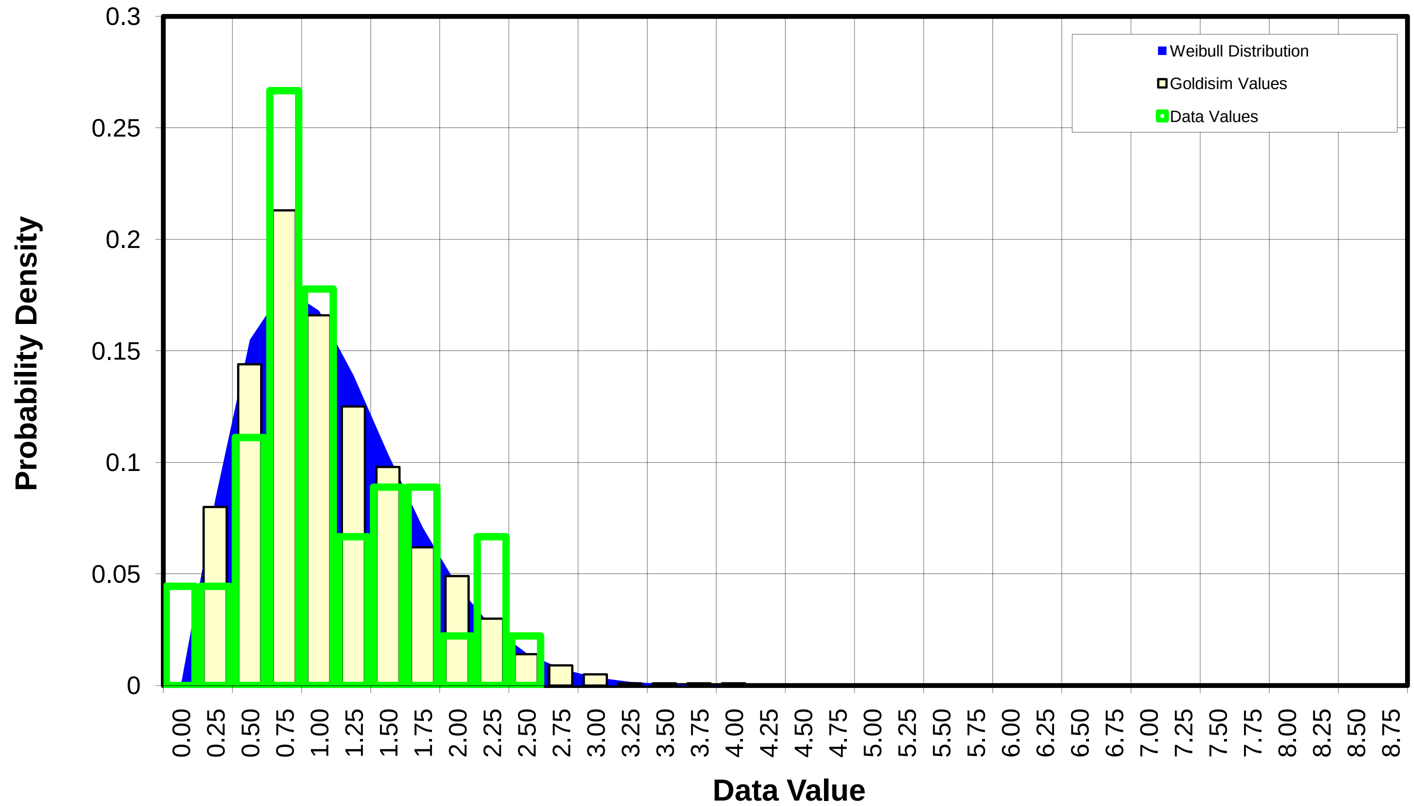
REVIEWED	KFM	FILE NO.	FiguresB-rev6May2010.xlsm	FIGURE NO.	FIGURE B-12

November Data Histograms with Weibull Distribution Fit to Uravan Historical Precipitation Data



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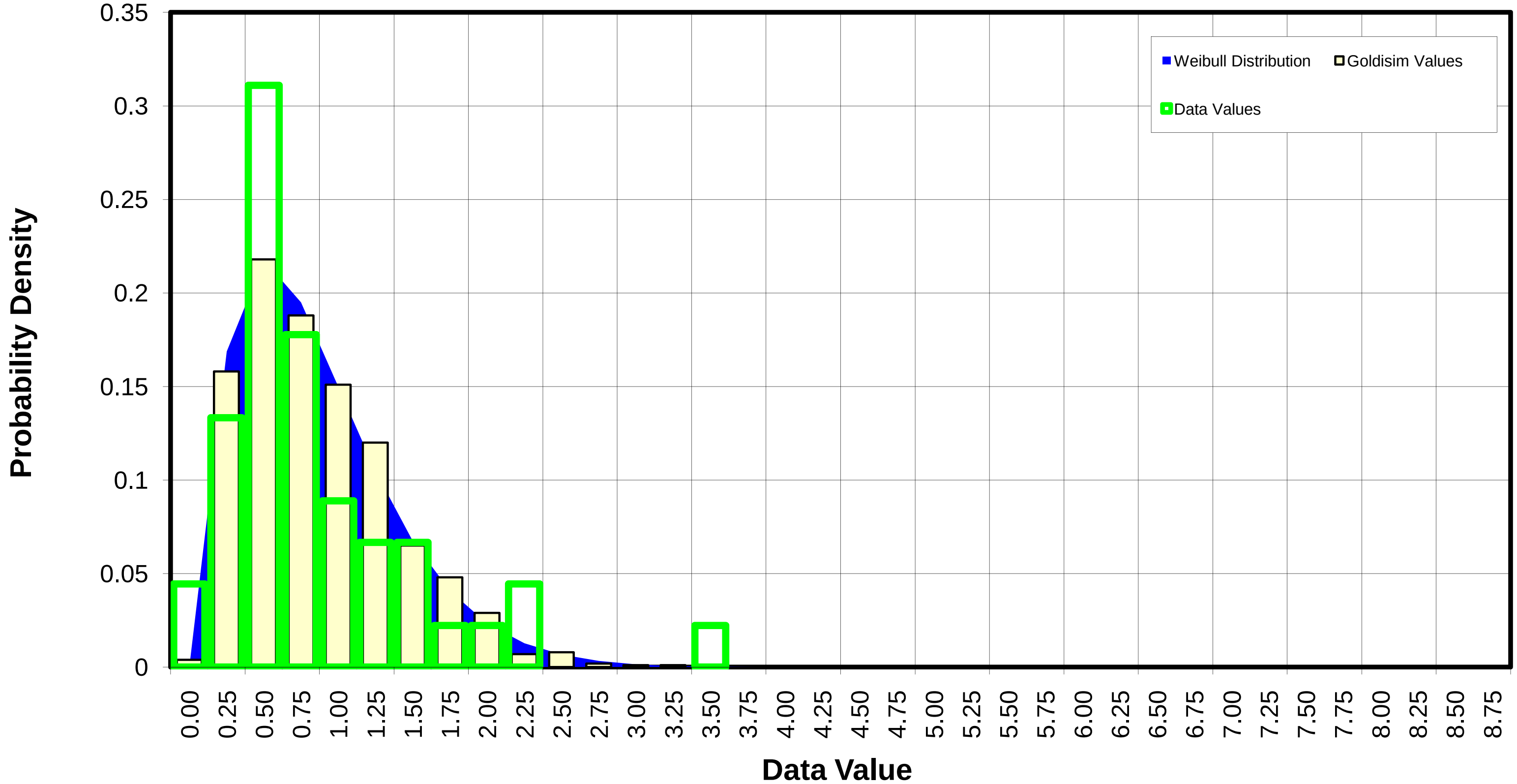
December Data Histograms with Weibull Distribution Fit to Uravan Historical Precipitation Data



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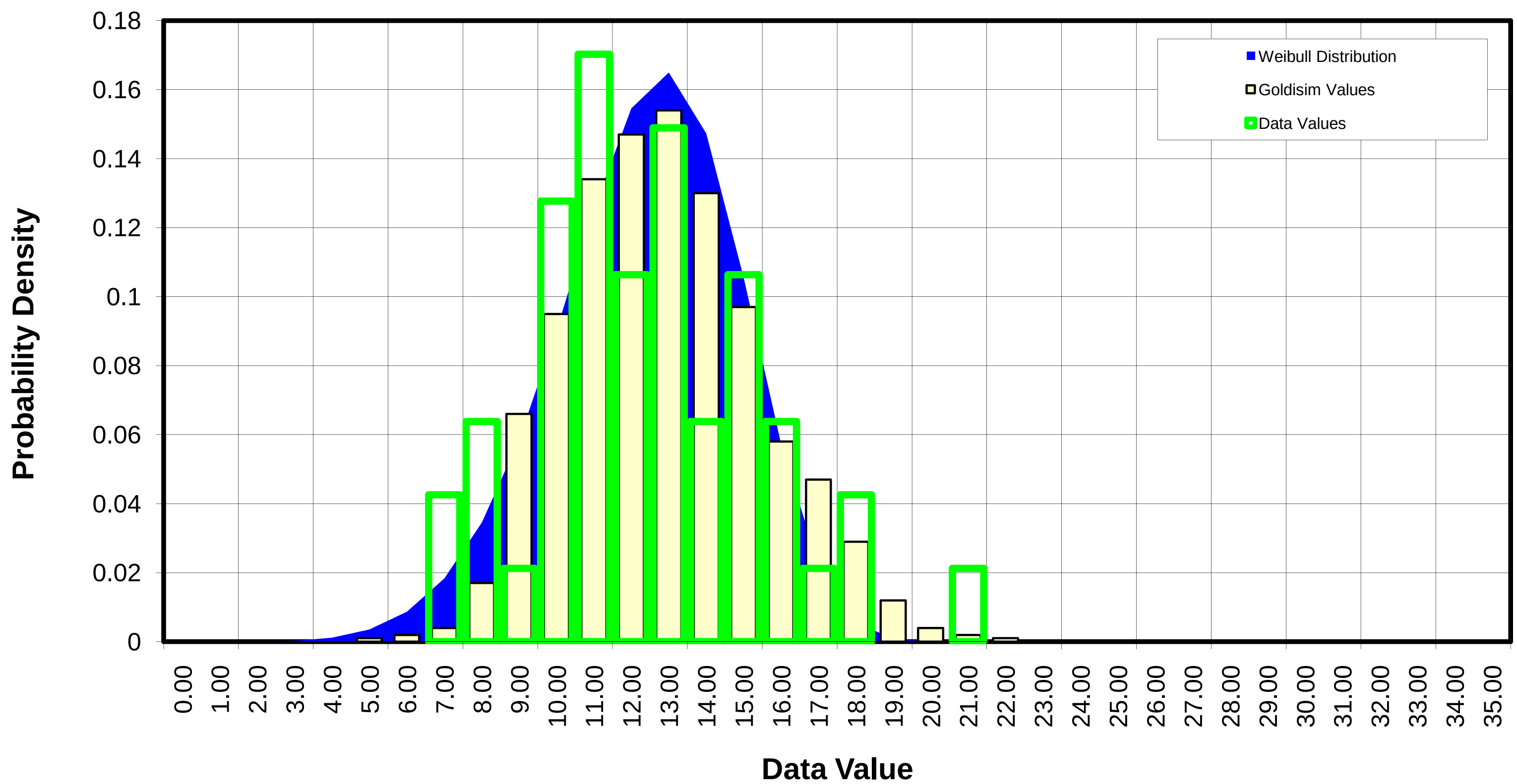
CLIENT/PROJECT	ENERGY FUELS RESOURCES CORPORATION PIÑON RIDGE PROJECT
TITLE	URAVAN DATA, GOLDSIM RESULTS AND WEIBULL DISTRIBUTION FOR DECEMBER

DRAWN	GG	DATE	May-10	JOB NO.	073-81694
CHECKED	KFM	SCALE	AS SHOWN	DWG. NO.	N/A
REVIEWED	KFM	FILE NO.	FiguresB-rev6May2010.xlsm	FIGURE NO.	FIGURE B-14

Annual Data Histograms with Weibull Distribution Fit to Uravan Historical Precipitation Data

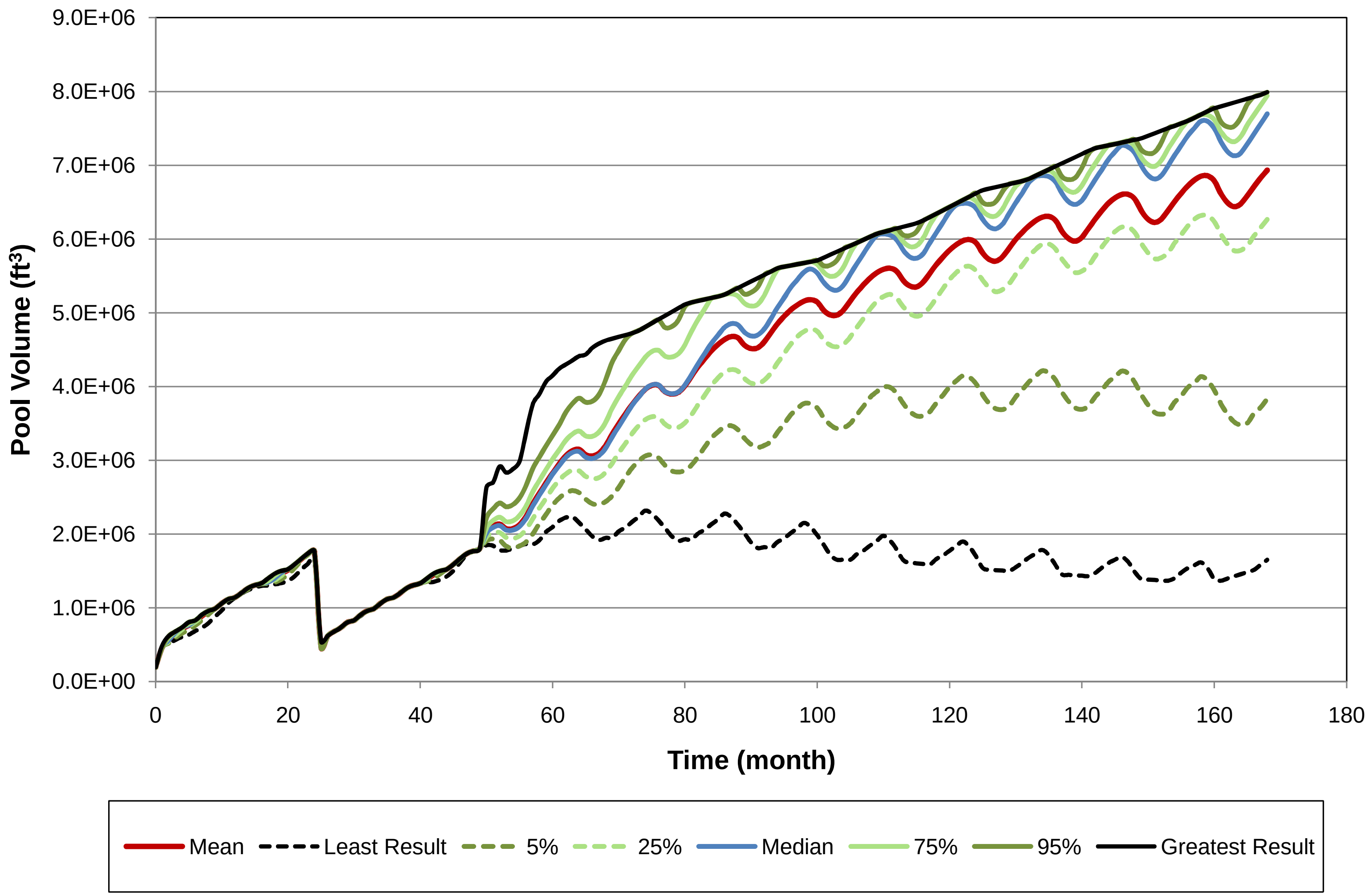


Golder Associates — Denver, Colorado

TITLE	URAVAN DATA, GOLDSIM RESULTS AND WEIBULL DISTRIBUTION FOR ANNUAL PRECIPITATION				
DRAWN	GG	DATE	May-10	JOB NO.	073-81694
CHECKED	KFM	SCALE	AS SHOWN	DWG. NO.	N/A
REVIEWED	KFM	FILE NO.	FiguresB-rev6May2010.xlsm	FIGURE NO.	FIGURE B-15

CLIENT/PROJECT

ENERGY FUELS RESOURCES CORPORATION
PIÑON RIDGE PROJECT



Golder Associates

Denver, Colorado

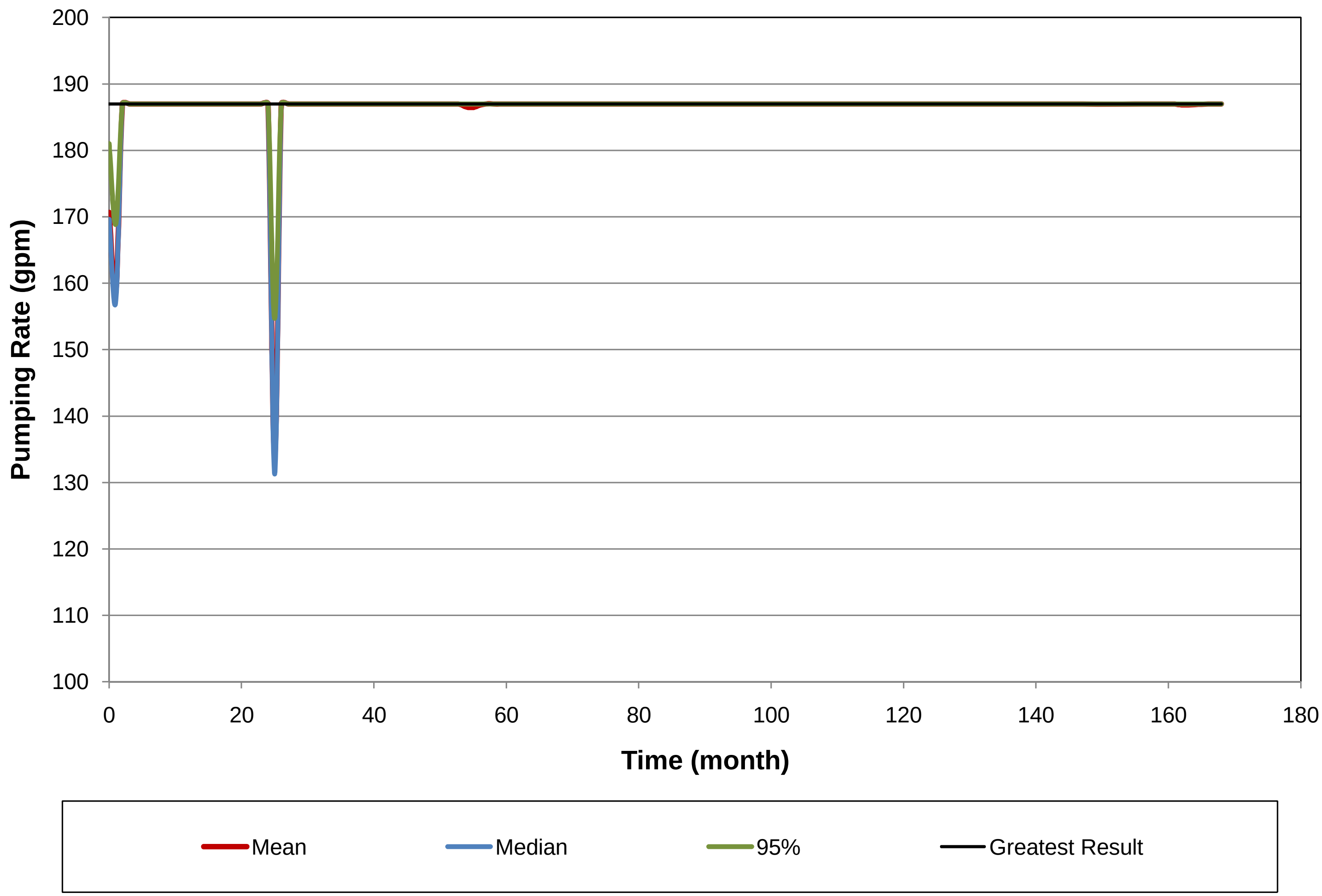
TITLE

TAILINGS CELL POOL VOLUME FOR 500-TPD MILLING RATE

CLIENT/PROJECT

ENERGY FUELS RESOURCES CORPORATION
PIÑON RIDGE PROJECT

DRAWN	GG	DATE	May-10	JOB NO.	073-81694
CHECKED	KFM	SCALE	AS SHOWN	DWG. NO.	N/A
REVIEWED	KFM	FILE NO.	FiguresB-rev6May2010.xlsm	FIGURE NO.	FIGURE B-16



Golder Associates

Denver, Colorado

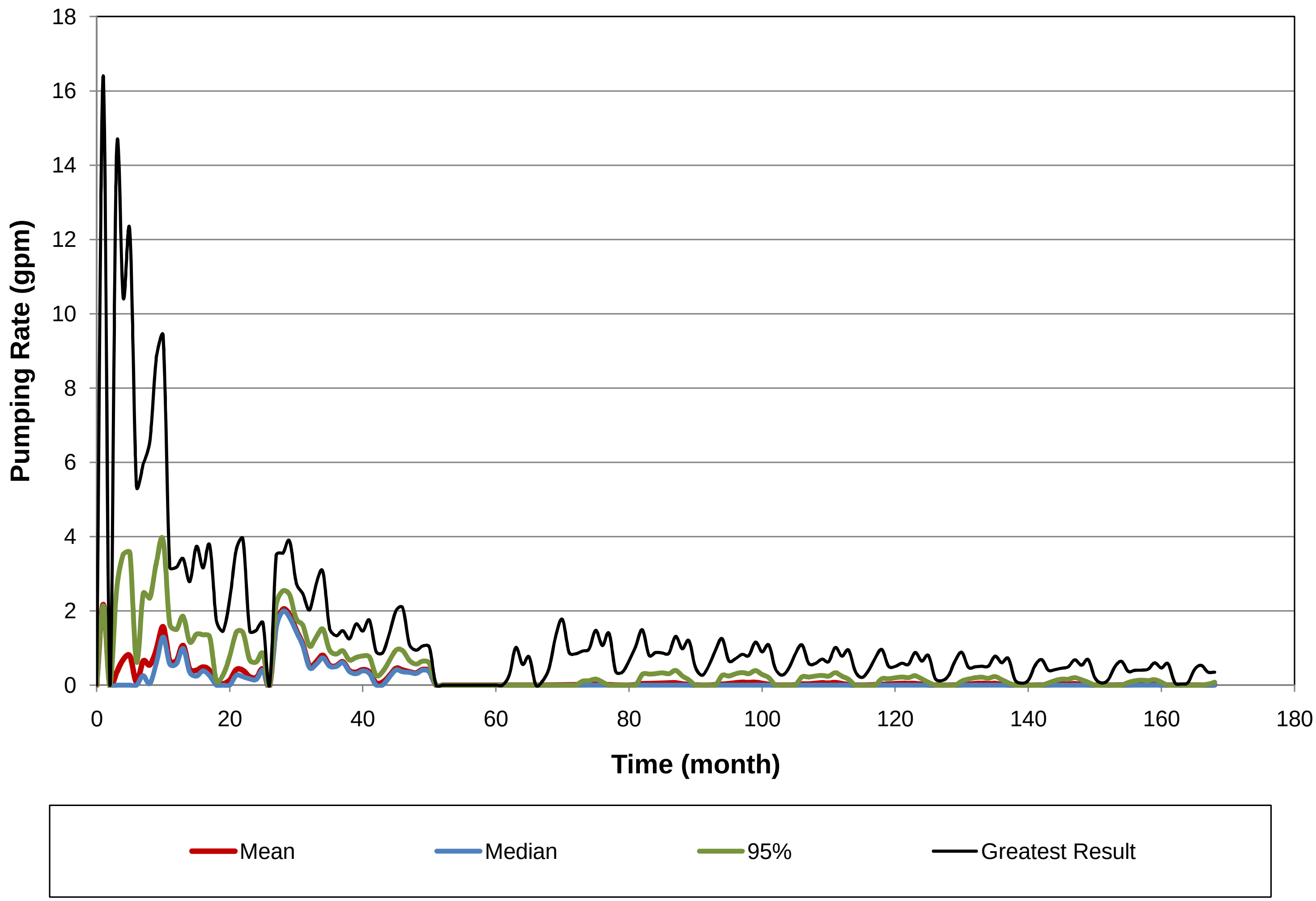
TITLE

PUMPING RATE AVAILABLE TO RETURN RECLAIMED WATER TO MILL FOR 500-TPD MILLING RATE

CLIENT/PROJECT

ENERGY FUELS RESOURCES CORPORATION
PIÑON RIDGE PROJECT

DRAWN	GG	DATE	May-10	JOB NO.	073-81694
CHECKED	KFM	SCALE	AS SHOWN	DWG. NO.	N/A
REVIEWED	KFM	FILE NO.	FiguresB-rev6May2010.xlsm	FIGURE NO.	FIGURE B-17



Golder Associates

Denver, Colorado

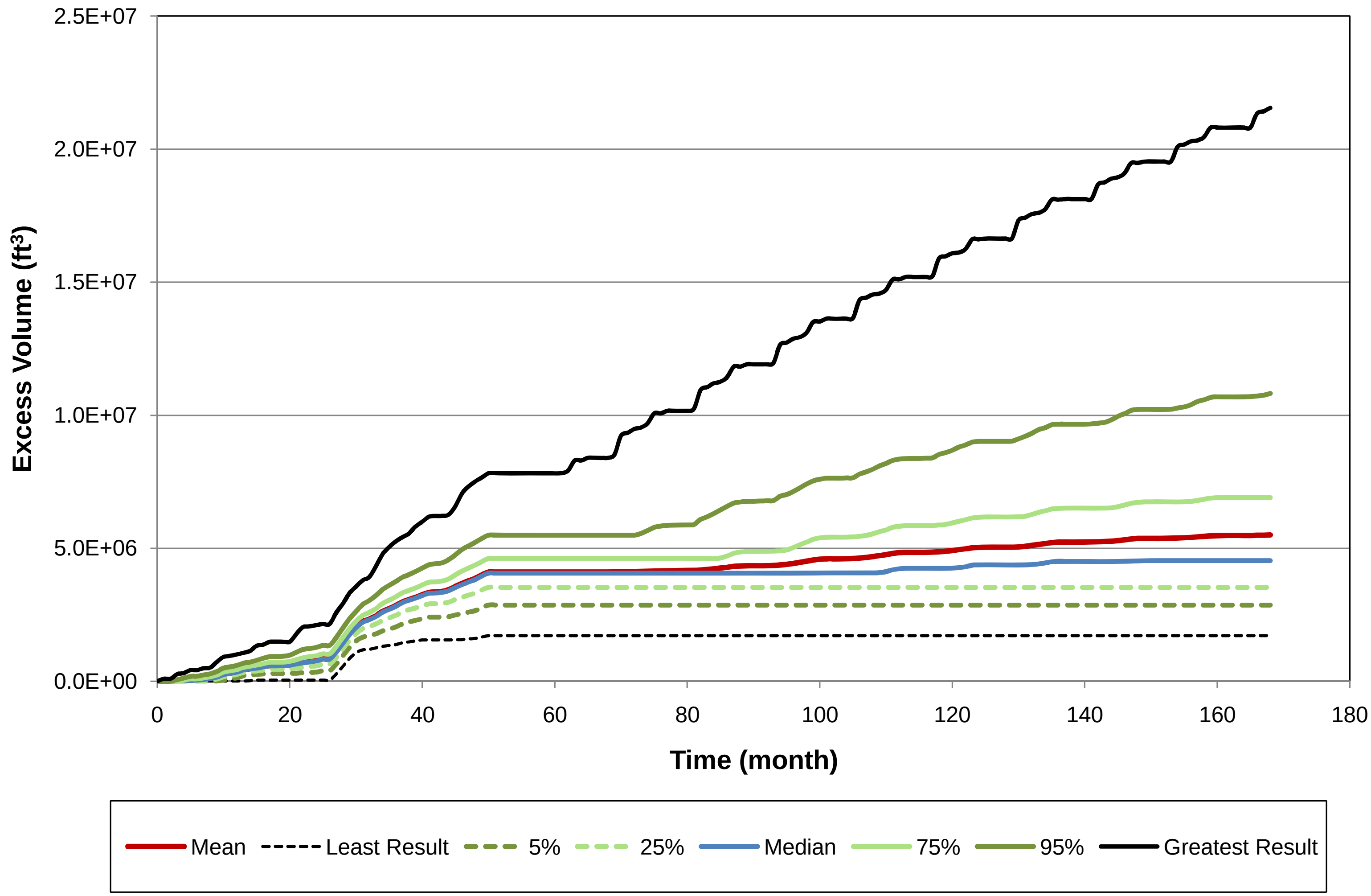
TITLE

EXCESS PUMPING RATE FOR 500-TPD MILLING RATE

CLIENT/PROJECT

ENERGY FUELS RESOURCES CORPORATION
PIÑON RIDGE PROJECT

DRAWN	GG	DATE	May-10	JOB NO.	073-81694
CHECKED	KFM	SCALE	AS SHOWN	DWG. NO.	N/A
REVIEWED	KFM	FILE NO.	FiguresB-rev6May2010.xlsm	FIGURE NO.	FIGURE B-18



Golder Associates

Denver, Colorado

TITLE

AVAILABLE EXCESS MAKE-UP WATER VOLUME FOR 500-TPD MILLING RATE

CLIENT/PROJECT

ENERGY FUELS RESOURCES CORPORATION
PIÑON RIDGE PROJECT

DRAWN	GG	DATE	May-10	JOB NO.	073-81694
CHECKED	KFM	SCALE	AS SHOWN	DWG. NO.	N/A
REVIEWED	KFM	FILE NO.	FiguresB-rev6May2010.xlsm	FIGURE NO.	FIGURE B-19

ATTACHMENT 1 TO APPENDIX B

WEATHER DATA ANALYSIS

OBJECTIVE:

Evaluate the available weather data for the Piñon Ridge site and select a data set to be used in the design of facilities for the project.

GIVEN:

- Daily weather data obtained from the Western Regional Climate Center from the following locations:
    - Uravan
    - Nucla
    - Grand Junction
    - Montrose

ANALYSIS:

Site-Specific Data

Piñon Ridge site is located at 38°15' latitude, 108°45' longitude, elevation 5,480 feet. The site rests in the middle of a narrow valley near Monogram Mesa (see Figure 1). Due to the limitations of obtaining site specific weather data, nearby weather stations are used to estimate or approximate the climatic conditions for the Piñon Ridge site.

Regional Data

The weather data from the following weather stations are considered due to proximity to the investigated site, and the available data inventory:

- *Uravan* (NCDC No. 058560)
- *Nucla* (NCDC No. 053807)
- *Grand Junction* (NCDC No. 053488)
- *Grand Junction 6 ESE* (NCDC No. 053489)
- *Montrose 1* (NCDC No. 055717)
- *Montrose 2* (NCDC No. 055722)

Data for above sites were obtained from the Western Regional Climate Center. The locations of the nearby weather stations and the Piñon Ridge site are illustrated in Figure 2. In the following section, a brief description is presented for each weather station.

Uravan

Uravan is located at 38°22' latitude 108°45' longitude, elevation 5,010 feet, about 8.5 miles North of the Piñon Ridge site. The difference in elevation between the sites is 470 feet. This weather station provides the following daily weather data between the years of 1960 to 2007:

- Precipitation
- Air temperature
- Snow cover

The average total annual precipitation is equal to 12.6 inches. The months of September and October are generally the wettest months of the year. The maximum total annual precipitation of 21.4 in was recorded in 1965. The driest year was 1989 with a total annual rainfall equal to 7.3 inches. The average annual temperature is equal to 53.1 °F, and the average total annual snowfall is equal to 9.4 inches. The maximum snowfall was recorded during 1978-1979 with a total 40.4 in. Table A.1 shows the average monthly and annual data for this weather station.

Nucla

Nucla is located at 38°13' latitude 108°33' longitude, elevation 5,860 feet, about 11 miles East of the Piñon Ridge site. The difference in elevation between the sites is 380 feet. This weather station provides the following daily weather data for the years 1999 to 2007:

- Air temperature
- Solar radiation
- Wind velocity
- Relative humidity
- Precipitation

The average annual temperature at the Nucla site is 53 °F. The solar radiation has been increasing during the period of record (i.e., 1999 to 2007) from 746 langleys (ly) in 1999 to 827 ly in 2007. The maximum solar radiation was collected during June 2007 at 828 ly. The average relative humidity (RH) for this site is equal to 42%, where the driest season corresponds to summer time (RH =31 %) . The average total annual precipitation for this location is 9.3 inches. The wettest month is September with an average accumulated precipitation of 1.8 inches. The driest month corresponds to January with 0.3 inches of precipitation. The wettest year correspond to 2006 with a total accumulated precipitation equal to 10.4 inches. Table A.2 shows the average monthly and annual data for this weather station.

Grand Junction Airport

Grand Junction Airport is located at 39° 8' latitude 108°32' longitude, elevation 4,840 feet, about 62 miles North of the Piñon Ridge site. The difference in elevation between the sites is 640 feet. This weather station provides the following daily weather data for the years 1900 to 2007:

- Air temperature
- Precipitation
- Snow cover
- PAN evaporation
- Relative humidity
- Cloud cover
- Wind velocity

PAN evaporation data is available only for years 1948 to 1960 for this location, with an average total annual PAN evaporation equal to 82.4 inches. The annual average relative humidity is equal to 53.1%. An annual average of

22 inches of snowfall was recorded at Grand Junction airport, with a maximum snowfall of 6.3 inches recorded in December of 1998. The wettest year was in 1957 with 15.7 in of total precipitation. Grand Junction airport average annual precipitation is 8.8 in. The average cloud cover is 6%. The average annual data for Grand Junction are summarized in Table A.3.

Grand Junction 6ESE

Grand Junction 6ESE weather station is located at 39° 2' latitude 108°27' longitude, and elevation of 4,760 feet. The weather station is located 7.8 miles south of the Grand Junction Airport weather station. This weather station complements the data provided by the Grand Junction airport weather station. The Grand Junction 6ESE weather station provides the following daily weather data for the years 1962 to 2007:

- Air temperature
- Precipitation
- PAN evaporation
- Snow cover

The total average annual PAN evaporation is equal to 57.9 inches. The average annual precipitation is equal to 8.9 inches. The wettest year was in 1957 with 16 inches of total precipitation. The average annual snowfall for this station is 12.3 inches with a maximum snow fall recorded in December of 1978. Table A.4 shows the average annual data for this weather station.

Montrose

Two weather stations are used to obtain climate data for this location: one located at 38°28' latitude 107°52' longitude, elevation 5,786 feet and the second located at 38°29' latitude 107°52' longitude, elevation 5,785 feet. The first weather station provides data from 1905 to 1982; the second weather station provides data from 1895 to 2007. Montrose is located 50 miles southeast from the Piñon Ridge site. These weather stations provide the following daily weather data:

- Air temperature
- Precipitation
- Snow cover
- Average monthly PAN evaporation

The average total annual snowfall recorded at this location is 25.9 inches. With a maximum snowfall of 72 inches recorded in 1918. Montrose records show that the average annual precipitation is 9.6 in. The maximum precipitation was in 1941 with 17 inches of rainfall. The annual average PAN evaporation is 55.8 inches. Table A.5 shows the average monthly annual data for this weather station.

Data Analysis

Precipitation Data

Figure 3 shows a comparison in total annual precipitation for years 1999 through 2007. Note that the Uravan weather station exhibits higher average annual precipitation than the rest of the sites. Table 1 compares the accumulated precipitation from 1999 to 2007 for all sites. Uravan weather station, which is the closest station to the Piñon Ridge site, provides the maximum precipitation. Also, historical data shows that the Uravan weather station provides the most critical rainfall event (year 1965). For reference purposes, Figure 4 presents the annual precipitation as a function of station elevation for all regional stations considered in this report. Note that there is no clear correlation between elevation and precipitation for the considered weather stations. Figure 5 shows the monthly precipitation for the driest and wettest years for the Uravan weather station. A comparison of monthly precipitation between Uravan and Grand Junction airport weather stations for the years 1965 (wettest year) and 1989 (driest year), show that these sites present different precipitation events (Figure 6 and Figure 7).

Table 1
General Statistics for Selected Weather Sstations

	Elevation (ft)	Difference in Elevation (ft)[1]	Distance to Piñon Ridge (miles)	Accumulated Precipitation (in) from 1999-2007	Average Max. Temp (°F)	Average Min. Temp (°F)
Uravan	5010	-470	8.5	100	69	37
Nucla	5860	380	11	74	68	39
Grand Junction	4840	-640	62	81	67	41
Montrose	5786	306	49.5	87	63	35

[1]Compared to Piñon Ridge site, EL. 5,480 ft

Temperature Data

A comparison between different weather stations is shown is Figure 8. Correlation between elevation and temperature is shown in Figure 9. A summary of temperature data is presented in Table 1.

Evaporation/Evapotranspiration data

Due to the limitation of weather data, the potential evapotranspiration (PET) for the Uravan weather station was calculated using the Hargreaves (1985) method as discussed by Allen et al. (1998). The estimated PET was then scaled by a factor of 0.7, to meet the average annual evaporation from shallow lakes for the Piñon Ridge site (Figure 10). Figure 11 shows a comparison between PAN evaporation and analytical PET estimates for different sites. Table 2 summarizes the scaled monthly PET for the Uravan weather station.

Table 2
Scaled Average Monthly PET Evaporation for the Uravan Weather Station

Month	Avg. PET (in)
January	0.8
February	1.2
March	2.2
April	3.2
May	4.6
June	5.5
July	5.9
August	5.0
September	3.7
October	2.5
November	1.2
December	0.7
Total Annual	35.8

Wind data

Table A.6 shows the maximum annual wind speed for various years for the Grand Junction airport and Nucla weather stations. The maximum wind speed was recorded in Grand Junction weather station at 23.4 miles per hour (mph) in the year 2007. The average wind speed for this weather station is 7.8 mph. The prevalent wind direction is ESE for Grand Junction, SE for Montrose and E for the Nucla station.

CONCLUSIONS:

A review of available climate records for nearby weather stations indicates that Uravan weather station is likely to represent conservative precipitation estimates for the Piñon Ridge site.

REFERENCES:

Western Regional Climate Center online data source: http://www.raws.dri.edu/cgi-bin/rawMAIN.pl?coCNUC

Kleinfelder (2007). "Climatological Report, Piñon Ridge Mill Site Montrose County, Colorado." Kleinfelder project no. 83088

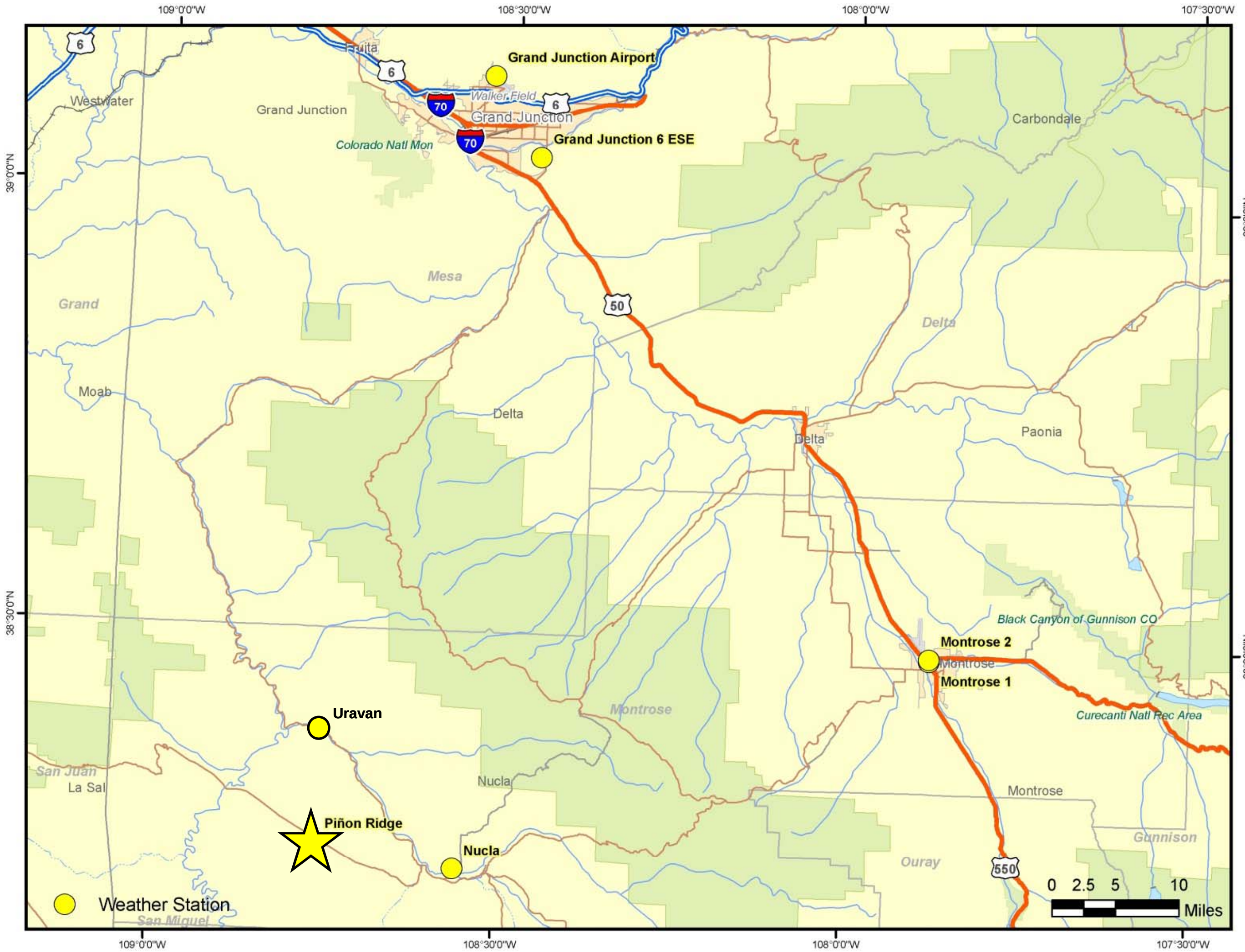
Allen, R. G., Pereira, L. S., Raes, D., and Smith, M. (1998). "Crop evapotranspiration - Guidelines for computing crop water requirements." Irrigation and drainage paper 56, FAO, Rome.

Golder Associates Denver, Colorado	TITLE **SITE VIEW PIÑON RIDGE**

CLIENT/PROJECT

ENERGY FUELS RESOURCES CORPORATION
PIÑON RIDGE PROJECT

DRAWN	EF	DATE	1/16/2008	JOB NO.	073-81694
CHECKED	GG	SCALE	N.T.S	DWG. NO.	N/A
REVIEWED	KFM	FILE NO.	FIGURE.PPT	FIGURE NO.	**1**



Denver, Colorado

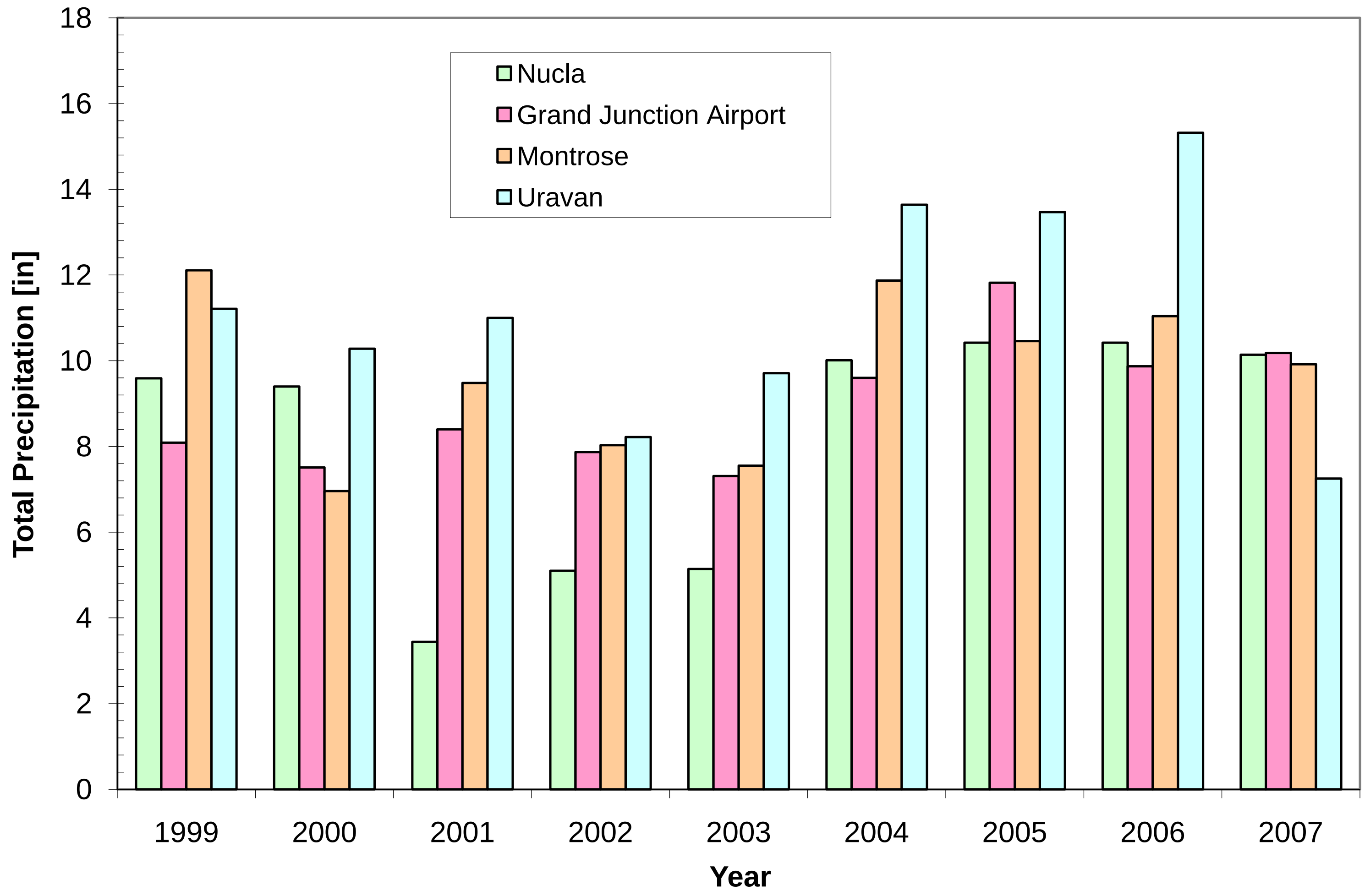
TITLE

WEATHER STATION LOCATIONS

CLIENT/PROJECT

ENERGY FUELS RESOURCES CORPORATION
PIÑON RIDGE PROJECT

DRAWN	EF	DATE	1/16/2008	JOB NO.	073-81694
CHECKED	GG	SCALE	N.T.S	DWG. NO.	N/A
REVIEWED	KFM	FILE NO.	FIGURE.PPT	FIGURE NO.	2



Golder Associates
Denver, Colorado

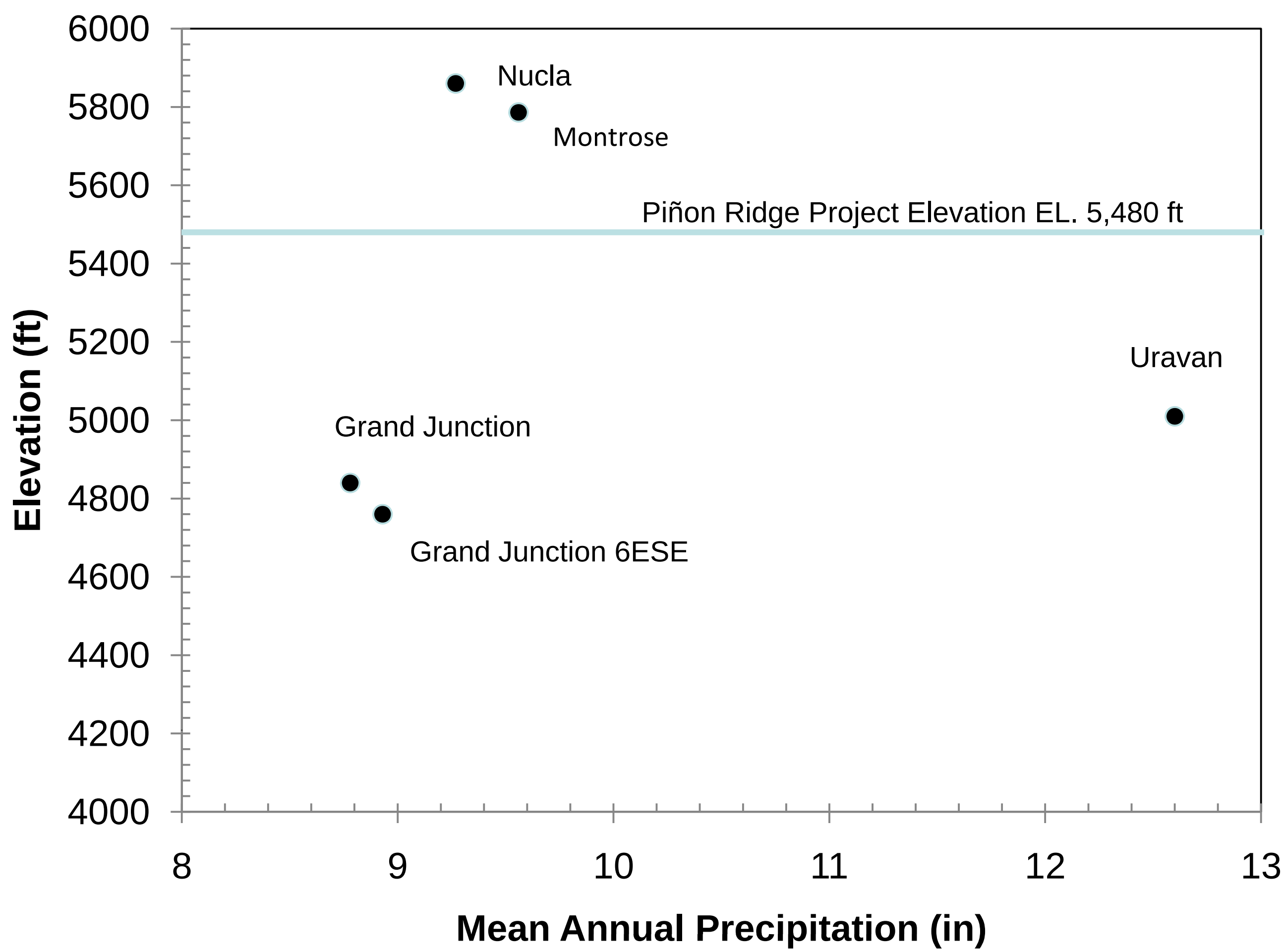
TITLE

TOTAL ANNUAL PRECIPITATION COMPARISON
1999 TO 2007

CLIENT/PROJECT

ENERGY FUELS RESOURCES CORPORATION
PIÑON RIDGE PROJECT

DRAWN	EF	DATE	1/16/2008	JOB NO.	073-81694
CHECKED	GG	SCALE	N.T.S	DWG. NO.	N/A
REVIEWED	KFM	FILE NO.	FIGURE.PPT	FIGURE NO.	**3**



Golder Associates

Denver, Colorado

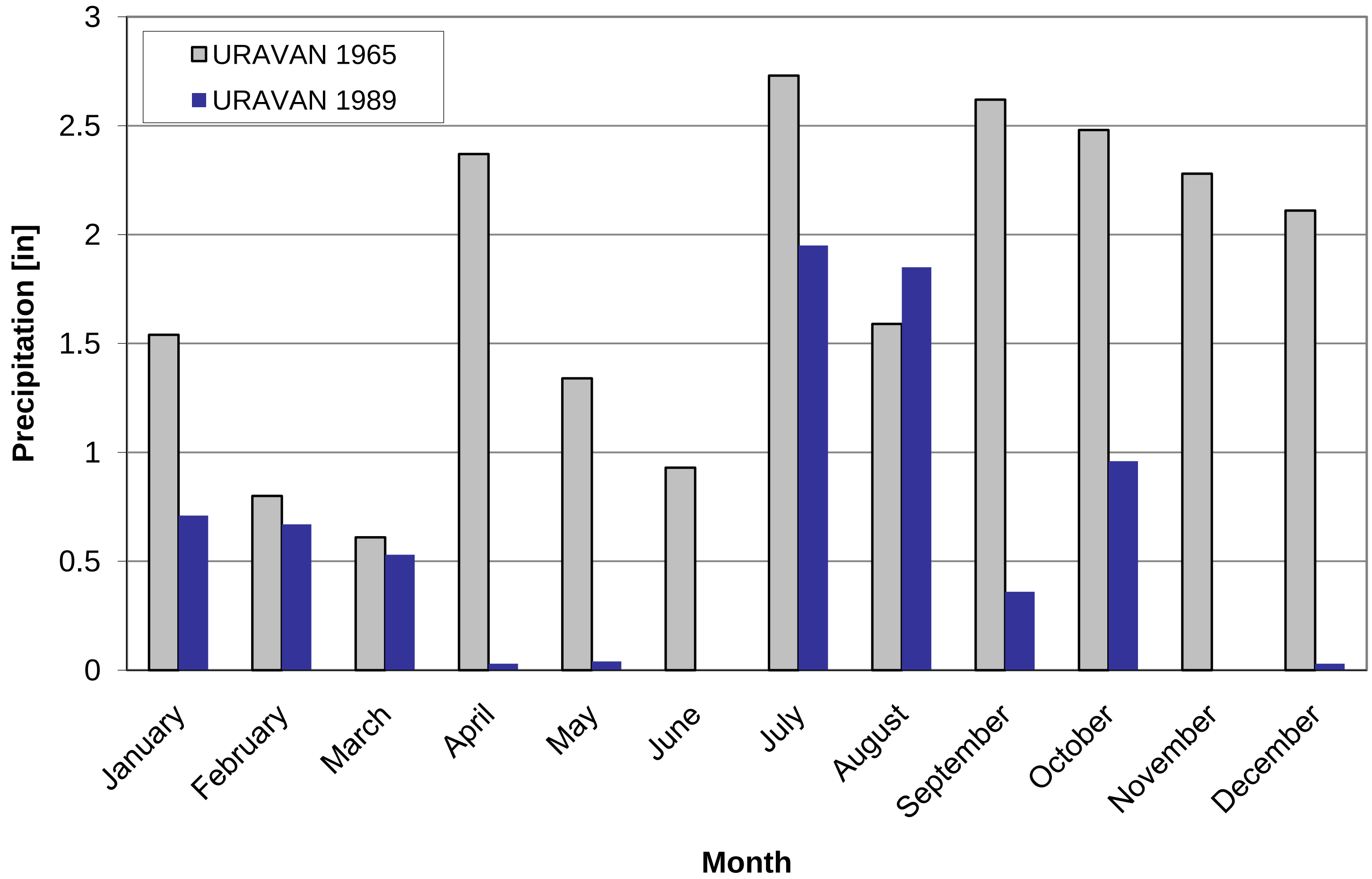
TITLE

VARIATION IN ANNUAL PRECIPITATION vs. ELEVATION FOR REGIONAL METEOROLOGICAL STATIONS

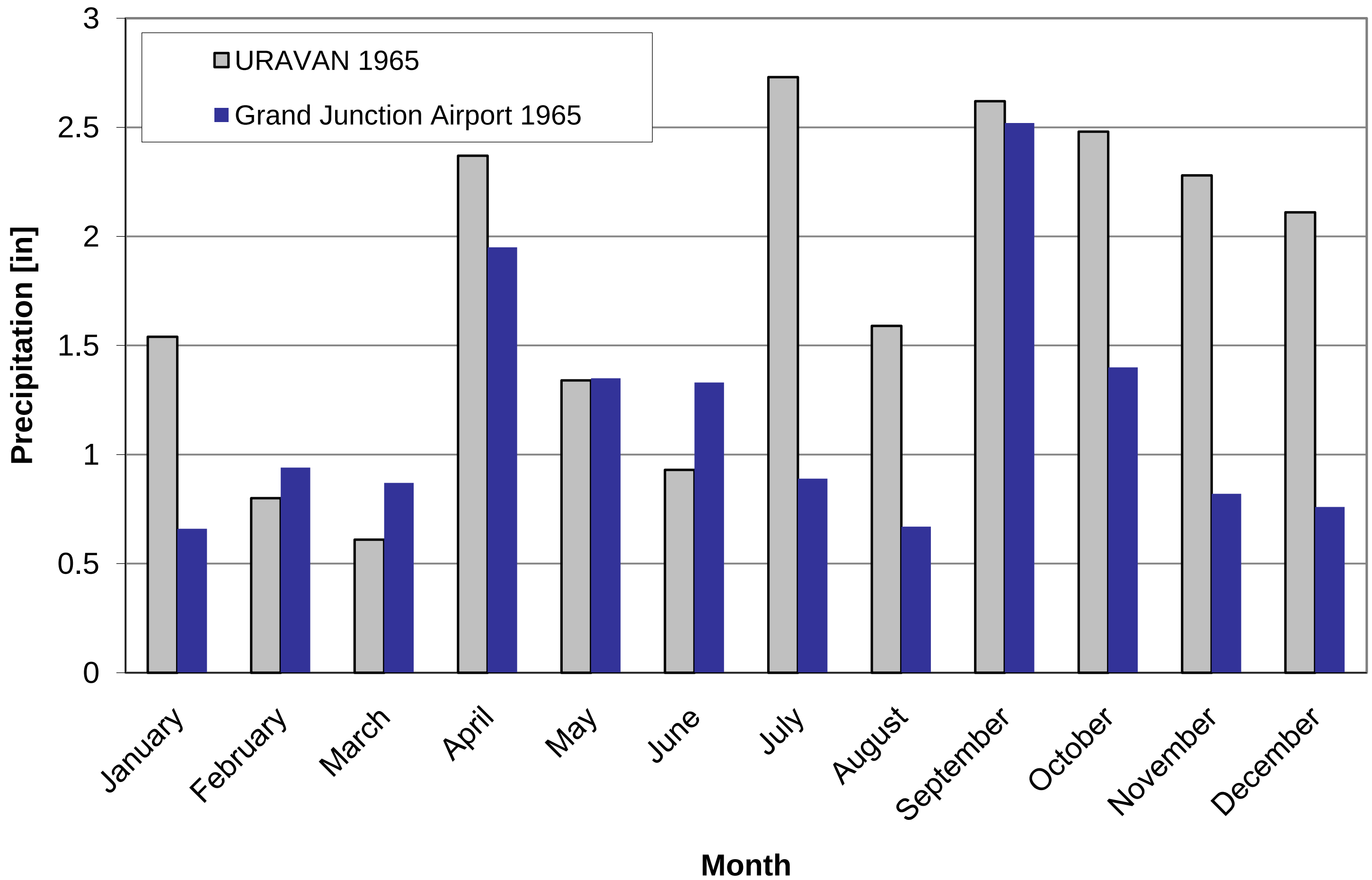
CLIENT/PROJECT

ENERGY FUELS RESOURCES CORPORATION
PIÑON RIDGE PROJECT

DRAWN	EF	DATE	1/16/2008	JOB NO.	073-81694
CHECKED	GG	SCALE	N.T.S	DWG. NO.	N/A
REVIEWED	KFM	FILE NO.	FIGURE.PPT	FIGURE NO.	**4**



Golder Associates, Denver, Colorado		TITLE: MONTHLY PRECIPITATION FOR DRIEST AND WETTEST YEAR FOR URAVAN SITE			
CLIENT/PROJECT: ENERGY FUELS RESOURCES CORPORATION PIÑON RIDGE PROJECT	DRAWN: EF	DATE: 1/16/2008	JOB NO. 073-81694		
	CHECKED: GG	SCALE: N.T.S	DWG. NO. N/A		
	REVIEWED: KFM	FILE NO. FIGURE.PPT	FIGURE NO. 5		



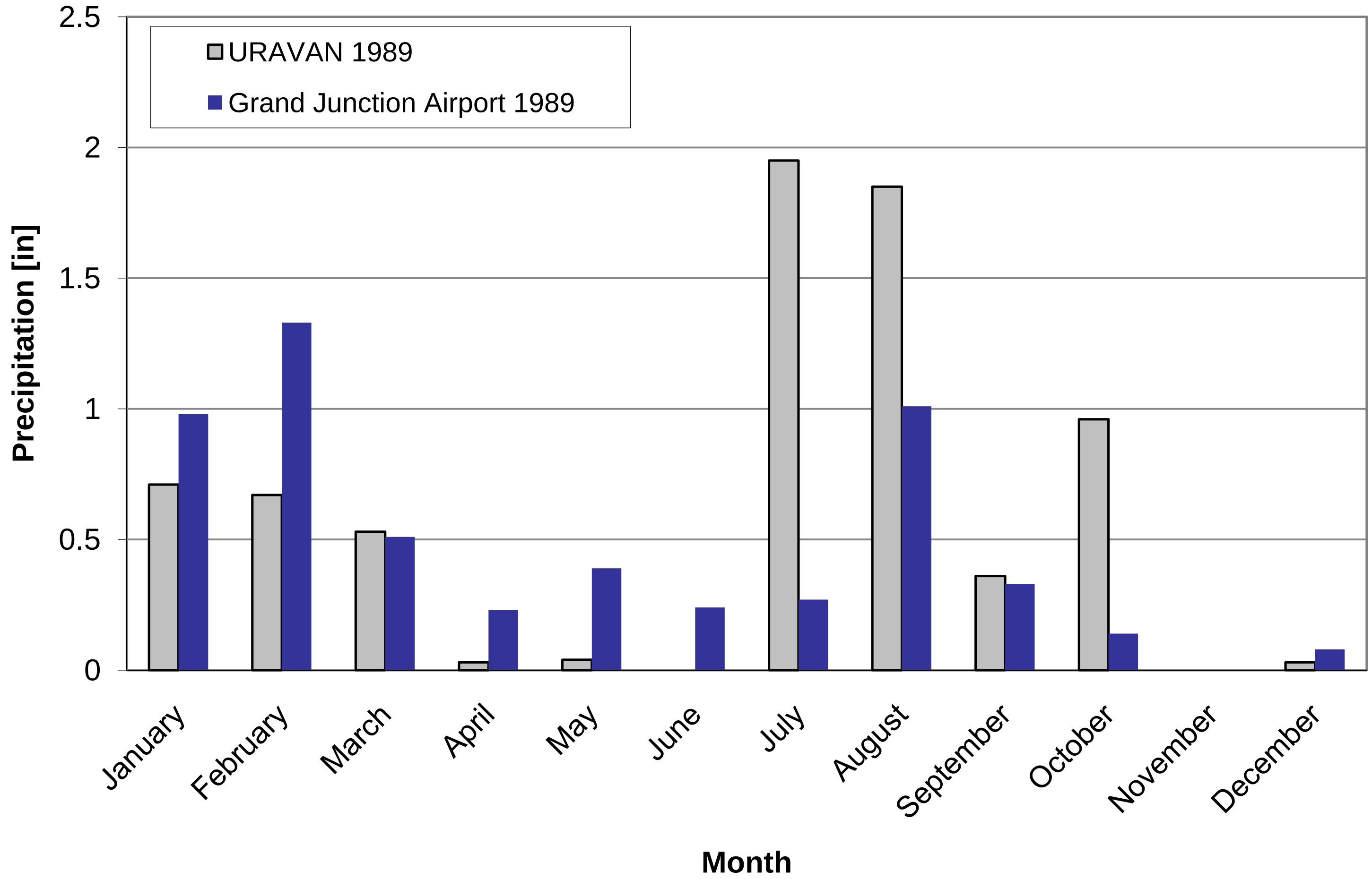
Golder Associates
Denver, Colorado

TITLE

MONTHLY PRECIPITATION COMPARISON FOR URAVAN AND GRAND JUNCTION FOR YEAR 1965

CLIENT/PROJECT
ENERGY FUELS RESOURCES CORPORATION
PIÑON RIDGE PROJECT

DRAWN	EF	DATE	1/16/2008	JOB NO.	073-81694
CHECKED	GG	SCALE	N.T.S	DWG. NO.	N/A
REVIEWED	KFM	FILE NO.	FIGURE.PPT	FIGURE NO.	6



Golder Associates
Denver, Colorado

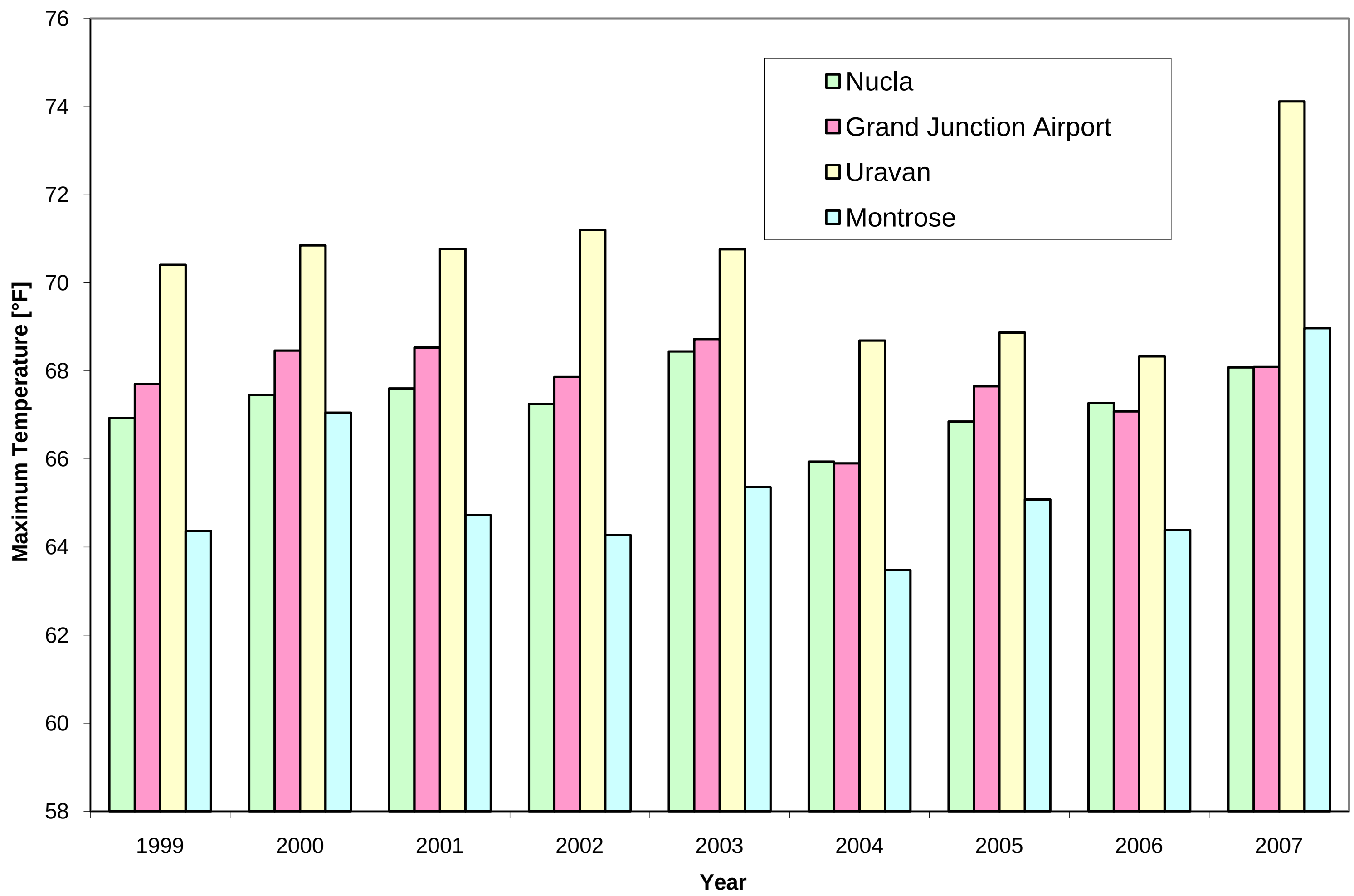
TITLE

MONTHLY MAXIMUM TEMPERATURE COMPARISON FOR URAVAN AND GRAND JUNCTION

CLIENT/PROJECT

ENERGY FUELS RESOURCES CORPORATION
PIÑON RIDGE PROJECT

DRAWN	EF	DATE	1/16/2008	JOB NO.	073-81694
CHECKED	GG	SCALE	N.T.S	DWG. NO.	N/A
REVIEWED	KFM	FILE NO.	FIGURE.PPT	FIGURE NO.	7



Golder Associates
Denver, Colorado

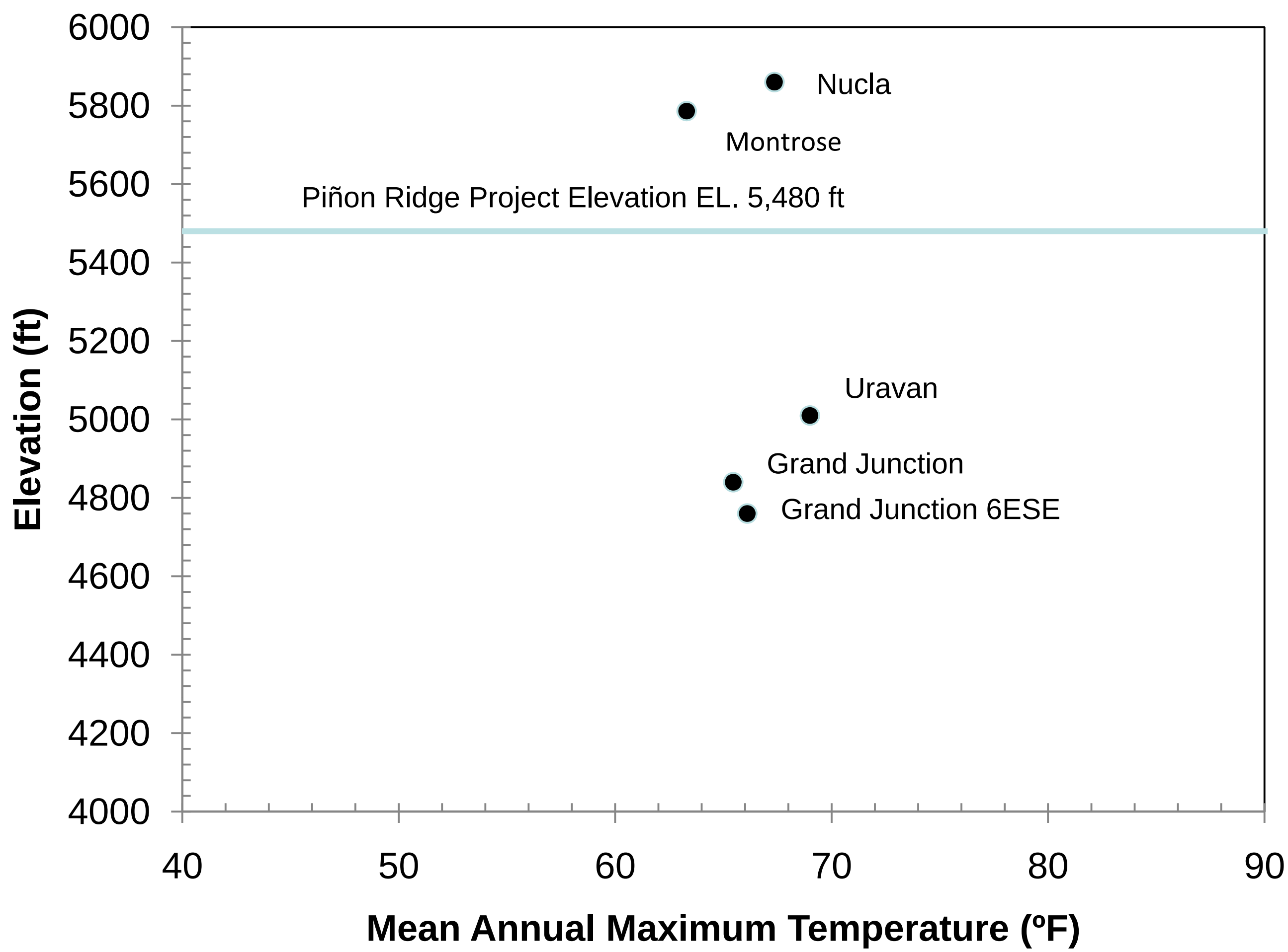
TITLE

ANNUAL MAXIMUM TEMPERATURE COMPARISON
1999 TO 2007

CLIENT/PROJECT

ENERGY FUELS RESOURCES CORPORATION
PIÑON RIDGE PROJECT

DRAWN	EF	DATE	1/16/2008	JOB NO.	073-81694
CHECKED	GG	SCALE	N.T.S	DWG. NO.	N/A
REVIEWED	KFM	FILE NO.	FIGURE.PPT	FIGURE NO.	**8**



Golder Associates Denver, Colorado	TITLE VARIATION IN ANNUAL MAX. TEMPERATURE vs. ELEVATION FOR REGIONAL METEOROLOGICAL STATIONS

CLIENT/PROJECT						
ENERGY FUELS RESOURCES CORPORATION PIÑON RIDGE PROJECT	DRAWN	EF	DATE	1/16/2008	JOB NO.	073-81694
	CHECKED	GG	SCALE	N.T.S	DWG. NO.	N/A
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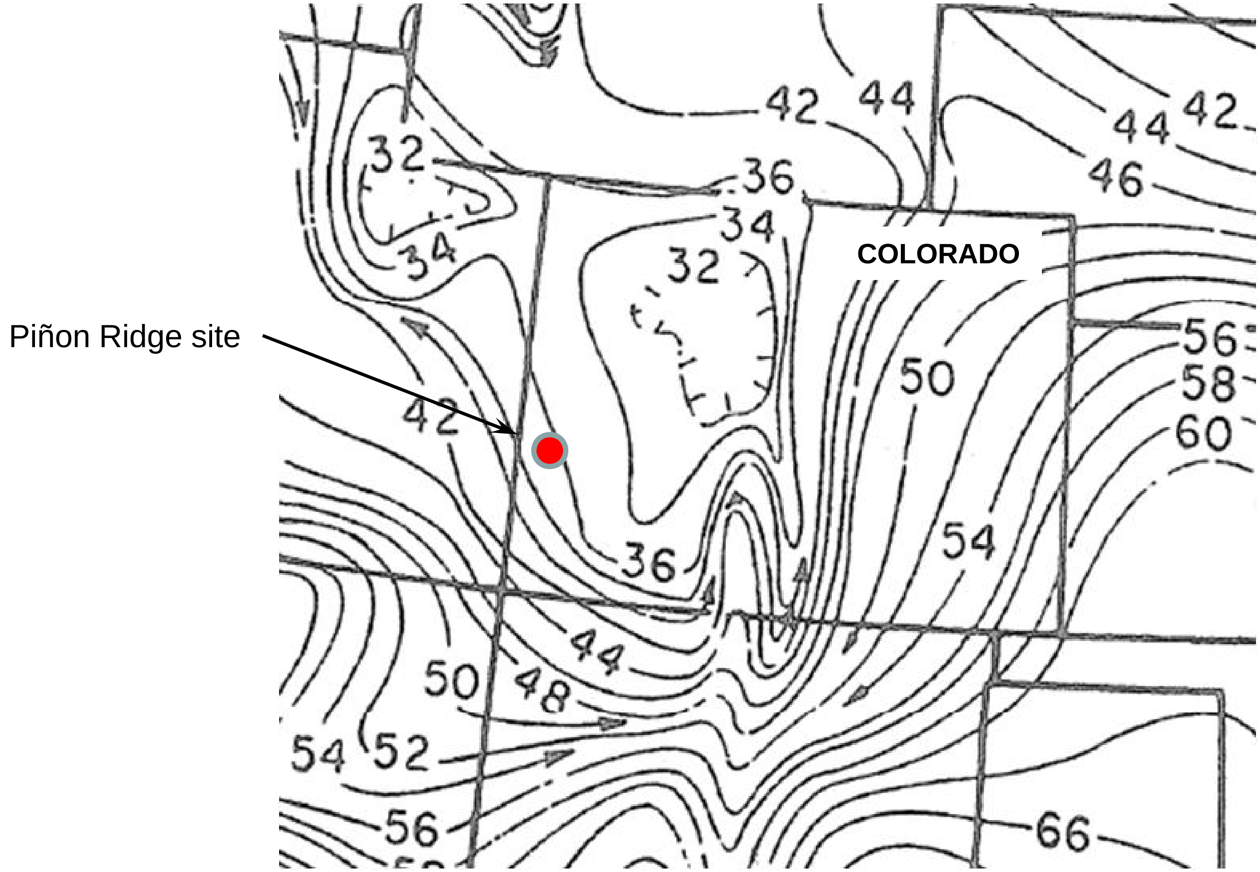
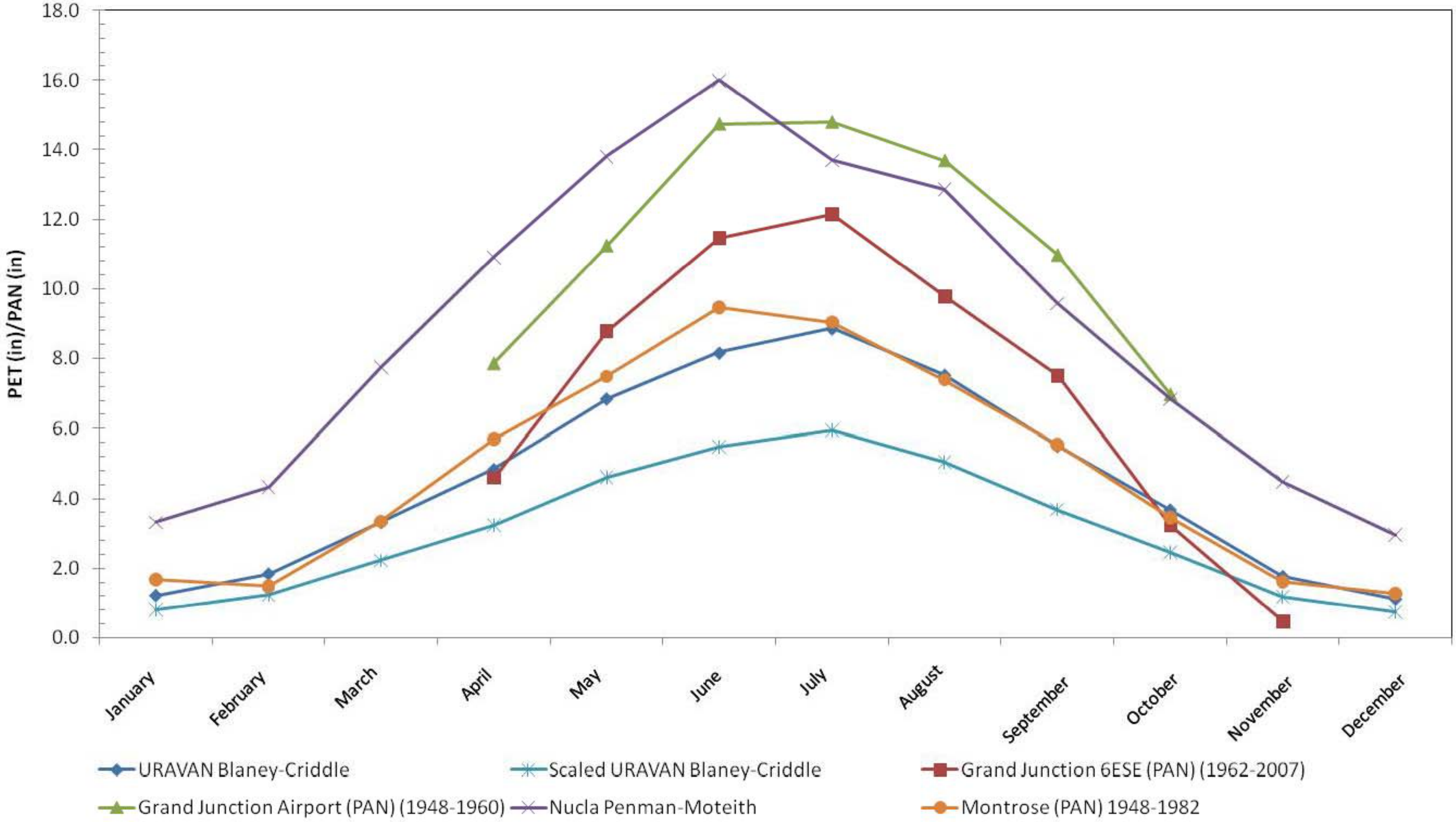


Golder Associates Denver, Colorado	TITLE **AVERAGE ANNUAL EVAPORATION (INCHES) FROM SHALLOW LAKES**

CLIENT/PROJECT
ENERGY FUELS RESOURCES CORPORATION
PIÑON RIDGE PROJECT

DRAWN	EF	DATE	1/16/2008	JOB NO.	073-81694
CHECKED	GG	SCALE	N.T.S	DWG. NO.	N/A
REVIEWED	KFM	FILE NO.	FIGURE.PPT	FIGURE NO.	**10**



Golder Associates

Denver, Colorado

TITLE

MONTHLY EVAPOTRANSPIRATION AND PAN EVAPORATION

CLIENT/PROJECT

ENERGY FUELS RESOURCES CORPORATION
PIÑON RIDGE PROJECT

DRAWN	EF	DATE	1/16/2008	JOB NO.	073-81694
CHECKED	GG	SCALE	N.T.S	DWG. NO.	N/A
REVIEWED	KFM	FILE NO.	FIGURE.PPT	FIGURE NO.	**11**

TABLE A.1
URAVAN WEATHER STATION DATA

Period of record : 11/17/1960 to 6/30/2007

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Max. Temperature (F)	42.7	49.9	58.7	67.6	78.6	89.4	95.4	92.2	83.5	71.4	54.7	43.4	69
Average Min. Temperature (F)	15.6	22.4	29.2	35.7	44.5	52.4	59.3	58.1	48.3	36.9	26.5	17.8	37.2
Average Total Precipitation (in.)	0.88	0.76	1.03	1.01	0.94	0.48	1.2	1.35	1.5	1.51	1.05	0.88	12.6
Average Total SnowFall (in.)	3.8	0.8	0.5	0.2	0	0	0	0	0	0.1	0.6	3.5	9.4

TABLE A.2
NUCLEA WEATHER STATION DATA

Period of Record : 5/ 1/1999 to 12/31/2007

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Max. Temperature (°F)	44.8	48.5	57.4	65.3	76.5	87.3	93.5	88.4	79.8	67.7	54.2	43.3	67.4
Average Min. Temperature (°F)	19.7	23.2	29.6	37.1	45.3	53.7	60.6	58.0	18.6	38.3	26.9	18.6	38.4
Average Total Precipitation (in)	0.3	0.5	0.6	0.8	0.5	0.4	0.8	1.1	1.8	1.5	0.4	0.5	9.3

TABLE A.3
GRAND JUNCTION WEATHER STATION DATA

Period of Record : 1/ 1/1900 to 12/31/2007

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Max. Temperature (°F)	36.7	44.7	55.1	65.2	75.6	86.9	92.8	89.4	80.5	67.3	51.2	38.9	65.5
Average Min. Temperature (°F)	16.0	23.3	31.2	39.3	4826.0	54.2	64.1	62.0	53.0	41.1	28.3	18.7	40.4
Average Total Precipitation (in)	0.6	0.6	0.8	0.8	0.8	0.4	0.6	1.0	1.0	0.9	0.7	0.6	8.8
Average Total SnowFall (in)	6.1	4.0	3.2	0.9	0.1	0.0	0.0	0.0	0.0	0.4	2.5	4.9	22.0

TABLE A.4
GRAND JUNCTION 6ESE WEATHER STATION DATA

Period of Record : 3/26/1962 to 6/30/2007

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Max. Temperature (°F)	38.6	46.3	56.6	65.6	75.9	86.8	92.7	89.7	80.7	67.8	51.9	40.4	66.1
Average Min. Temperature (°F)	17.5	23.9	32.3	39.5	48.4	57.2	63.5	61.3	52.4	40.8	29.2	19.7	40.5
Average Total Precipitation (in)	0.48	0.45	0.87	0.84	0.94	0.5	0.75	0.83	0.97	0.98	0.76	0.55	8.93
Average Total SnowFall (in)	3.4	1.8	1.6	0.3	0.1	0	0	0	0	0.3	1.4	3.5	12.3

TABLE A.5
MONTROSE WEATHER STATION DATA

Period of Record : 1/ 1/1900 to 6/30/2007

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Max. Temperature (°F)	38	43.9	52.9	62.4	72.4	83.1	88.6	85.7	77.9	65.7	50.3	39.3	63.3
Average Min. Temperature (°F)	13.7	19.7	26.6	34	42.1	49.7	55.6	53.9	45.6	35	23.9	15.3	34.6
Average Total Precipitation (in)	0.6	0.5	0.7	0.9	0.9	0.5	0.9	1.3	1.1	1.0	0.7	0.6	9.6
Average Total SnowFall (in)	6.5	4.3	3.5	1.8	0.1	0	0	0	0	0.6	2.7	6.4	25.9

TABLE A.6
MAXIMUM ANNUAL WIND SPEED DATA

year	Grand Junction Airport	Nucla
	wind speed (mph)	
1984	16.3	-
1985	18.3	-
1986	22.0	-
1987	14.8	-
1988	18.6	-
1989	17.3	-
1990	17.8	-
1991	18.1	-
1992	17.1	-
1993	17.2	-
1994	19.4	-
1995	16.8	-
1996	17.7	-
1997	18.1	-
1998	18.0	16.4
1999	17.1	18.2
2000	18.8	18.6
2001	19.7	14.6
2002	21.2	17.2
2003	19.8	16.8
2004	19.9	14.3
2005	18.0	14.0
2006	21.9	14.8
2007	23.4	15.1
Maximum W(mph)	**23.4**	**18.6**