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Annual Report

This Annual Report shows information the Division has for your mine. Submit the completed document and any additional information identified in the Appendices to the Division by the date specified in the cover letter**.** During a complete inspection an inspector will check and verify the information.

GENERAL INFORMATION

Company Name	Utah American Energy	Mine Name	Horse Canyon/Lila Canyon Mine
Permit Number	C/007/0013	Permit expiration Date	5/6/2021
Operator Name	UtahAmerican Energy, Inc.	Phone Number	+1 (435) 888-4000
Mailing Address	PO Box 910	Email	kmadsen@coalsource.com
City	East Carbon		
State	UT	Zip Code	84520

		DOGM File Location or Annual Report Location
Excess Spoil Piles	☐ Required ☒ Not Required	
Refuse Piles	☐ Required ☒ Not Required	
Impoundments	☑ Required ☐ Not Required	Ponds #1 and #1 annual certification are included.
Other:		

OPERATOR COMMENTS

REVIEWER COMMENTS ☐ Met Requirements ☐ Did Not meet Requirements

COMMITMENTS AND CONDITIONS

The Permittee is responsible for ensuring annual technical commitments in the Mining and Reclamation Plan and conditions accepted with the permit are completed throughout the year. The Division has identified these commitments below and has provided space for you to report what you have done during the past year for each commitment. If additional written response is required, it should be filed as an attachment to this report.

Title: RAPTOR SURVEY & PROTECTION
Objective: Identify and monitor all raptors and nests. For possible subsidence impacts to raptor nests, develop a mitigation plan that must be submitted and approved. Apply for 'take permit' through USFWS 2 years prior to subsidence of the nests. Maintain escarpment barrier of at least 200' to prevent cliff habitat loss. **The text of Chapter 3, pg. 13, sect 332 (1) needs to be revised or clarified to demonstrate how the 200' barrier will be measured**
Frequency: Annually
Status: Ongoing since 2005. The map must clearly show raptor nests in relation to mining and subsidence.
Reports: Annual Reports
Citation: MRP, Part B, Section 322.220, page 10, Section 330, page 20, Section 358.100 page 38, Sec. 332 P.13.

Operator Comments

The 2015 Annual Raptor Survey is included in the Confidential Folder.

Reviewer Comments ☐ Met Requirements ☐ Did Not Meet Requirements

Title: COLORADO RIVER ENDANGERED FISH RECOVERY PROGRAM
Objective: Report water depletion for the CO River Endangered Fish Recovery Program
Frequency: Annually
Status: Ongoing
Reports: Annual
Citation: MRP, Section 322.220, page 11

Operator Comments

The Water Depletion Calculations for the Colorado River Endangered Fish Recovery Program is included.

Reviewer Comments ☐ Met Requirements ☐ Did Not Meet Requirements

Title: VEGETATION MONITORING

Objective: Submit color infrared photography. Submit and implement a mitigation plan, if results indicate impact from mining operations.

Frequency: Prior to any mining, and every 5 years after.

Status: Ongoing. Baseline submitted in 2011. Next round of photos are due in 2016. A comparison between 2016 and 2011 photos will be required in 2016.

Reports: Annual Report

Citation: MRP, Part B, Section 332, page 14.

Operator Comments

Infrared photography not required in 2015. Will survey in 2016.
Due to Ocular Estimation report completed by EIS in 2012 , no further vegetation testing is required. Midterm review completed by James Owen in 2013 indicated topsoil vegetation work was completed successfully.

Reviewer Comments ☐ Met Requirements ☐ Did Not Meet Requirements

Title: RAIN GAUGES

Objective: Establish on site climatological database

Frequency: No less than monthly from May 1 to October 30, monthly when feasible during the remaining months.

Status: To be implemented within 30 days of Board's approval of the Stipulation for Dismissal.

Reports: Data will be downloaded quarterly and included in the Annual Report.

Citation: Conditions to the Permit, Attachment A, Special Conditions (December 21, 2007).

Operator Comments

Rain gauge report prepared by Tom Suchoski and is included. The upper rain gauge data is missing data from 3rd and 4th quarters due to the road becoming impassible prior to retrieving data. As of 3-5-16, the road is still impassible. The missing data will be collected as soon as the road conditions improve, and included in the 2016 Annual Report, or sooner if requested.

Reviewer Comments ☐ Met Requirements ☐ Did Not Meet Requirements

Title: MAINTAIN RECORDS OF SOIL SALVAGE
Objective: Records of soil salvage will be maintained and included in the annual report. A soil specialist will oversee the soil removal. Soil pedestals will be left to verify soil removal depths.
Frequency: During phase 1 and 2 construction, the soils specialist will record topsoil salvaged and placed in the topsoil stockpile and number of acres salvaged.
Status: Ongoing, Topsoil salvage will resume in 2012.
Reports: Provide an update to the number of acres salvaged and volumes salvaged in the Annual report "Topsoil Movement and Construction Record" and include a map of salvaged and undisturbed acreage.
Citation: R645-301-232.500 and R645-301-232.100 and N10045 abatement.

Operator Comments

Included in report.

Reviewer Comments ☐ Met Requirements ☐ Did Not Meet Requirements

Title: SUBSOIL USED FOR CONSTRUCTION FILL
Objective: To record location of subsoil placement for use in reclamation. The location of subsoil with suitable reclamation characteristics will be mapped for ease of recovery and replacement during reclamation.
Frequency: During construction
Status: Ongoing
Reports: Annual report, Submit As built maps showing where subsoil materials have been used as fill material.
Citation: MRP, Section 232.500, Section 241, and Section 242.100.

Operator Comments

Thee subsoil location will be tracked when it is relocated, and the project is complete.

Reviewer Comments ☐ Met Requirements ☐ Did Not Meet Requirements

Title: MEXICAN SPOTTED OWL

Objective: Conduct two-year calling survey at least two years but no more than four years prior to undermining identified habitat. Results will be submitted to USFWS, DWR, and the Division immediately following each nighttime survey. If owls are observed, the agencies will immediately coordinate to determine appropriate measures.

Frequency: Dependent on habitat and mine plan

Status: Please keep confidential map 5-3 updated with correct mine workings to indicate when mining will occur under MSO habitat.

Reports: Submit final reports in annual report.

Citation: MRP, Part B, Section 333, page 17.

Operator Comments

MSO Survey Report two-year calling surveys were completed in 2013 and 2014. This was not required in 2015.

Reviewer Comments ☐ Met Requirements ☐ Did Not Meet Requirements

Title: REACTIVATION OF OPERATIONAL MONITORING OF SURFACE WATER SAMPLING LOCATIONS

Objective: Quarterly sampling to initiate at least two years prior to resuming underground mining activities on sites L-6-G, L-7-G, L-8-G, L-9-G, L-10-G, L-11-G, L-12-G, L-13-S, L-14-S, L-15-S, L-18-S, L-19-S, L-20-S, IPA-1, IPA-2, IPA-3

Frequency: Notify Division once, quarterly sampling

Status: Monitoring suspended as of October 2011, Division awaiting reactivation notification.

Reports: Annual Report, notify Division if/when mining is to occur.

Citation: MRP, Part B, Section 731.222, table 7-3

Operator Comments

Quarterly sampling of locations: L-7-G, L-8-G, L-9-G, L-11-G, L-12-G, L-19-S, IPA 1, IPA 2, and IPA 3 have resumed, and an updated Monitoring Location table was incorporated into the MRP and approved as of May 28, 2015. L-6-G, L-10-G, L-13-S, L-14-S, L-15-S, and L-20-S were permanently suspended in 2003. See MRP Table 7-3 for further information.

Reviewer Comments ☐ Met Requirements ☐ Did Not Meet Requirements

Title: GENEVA MINE/ LILA CANYON FAN PORTAL BARRICADES
Objective: Inspect the Geneva Mine fan portal Barricades annually and report findings to Division and BLM.
Frequency: annually
Status: Ongoing
Reports: Annual Report.
Citation: MRP, Part B, Chapter 5, Section 529, page 54 and 55

Operator Comments

A report showing the annual inspection of the Old Geneva Mine/Lila Canyon Fan Portal Barricades is included.

Reviewer Comments ☐ Met Requirements ☐ Did Not Meet Requirements

Title: North Fan Breakout As-Builts
Objective: To provide acreage of disturbance and a volume estimate and source for the fill required for reclamation of the breakout and define pre- and post mining topography.
Frequency: Within 60 days of completion
Status: Pending completion
Reports: Update the MRP Chapter 5 p. 65 with a volume estimate and source for the fill that will be required to reclaim the north breakouts and the south breakouts. 2. Create a figure for the north and south breakouts similar to Plate 5-9 which shows pre-existing, operating and final reclamation contours for the north and south breakout entries.
Citation: Conditional of approval Task 4818. Outgoing file 04162015.4818.pdf

Operator Comments

North Fan Breakout As-Built Drawings were completed in 2016, and submitted to the Division in February, 2016.

Reviewer Comments ☐ Met Requirements ☐ Did Not Meet Requirements

Title: SUBSIDENCE MONITORING
Objective: Aerial subsidence monitoring will be done annual while the significant subsidence is taking place. The subsidence monitoring will be initiated in an area prior to any 2nd mining being done within that area. Initial 12-16 control points, once per year a follow up aerial will be performed to determine the extent and degree of active subsidence for a minimum of 5 years. If any of the 3 prior years measures more than 10% of highest annual subsidence, monitoring will continue until 3 consecutive years less than 10%. A ground survey of the mine permit area where secondary extraction has occurred over the last year will be conducted in conjunction with the quarterly water monitoring program. Survey's will identify items listed within MRP Chapter 5 Section 525.440
Frequency: Annual/Quarterly
Status: Ongoing during 2nd mining or longwall mining
Reports: Annual Report
Citation: MRP Chapter 5 pg 43

Operator Comments

Longwall monitoring did not start until February, 2016. Subsidence monitoring will be conducted in 2016.

Reviewer Comments ☐ Met Requirements ☐ Did Not Meet Requirements

Title: Noxious Weed Control Program
Objective: To control invasive species in and adjacent to the disturbed area. The permittee should implement a noxious/invasive species weed control program.
Frequency: Once
Status: Need to submit program for MRP inclusion
Reports:
Citation: R645-301-357.320-.324

Operator Comments

A Noxious Weed Control Program will be submitted and implemented in 2016.

Reviewer Comments ☐ Met Requirements ☐ Did Not Meet Requirements

FUTURE COMMITMENTS AND CONDITIONS

The following commitments are not required for the current annual report year, but will be required by the permittee in the future as indicated by the "status" field. These commitments are included for information only, and do not currently require action. If you feel that the commitment is no longer relevant or needs to be revised, please contact the Division.

Title: Wildlife
Objective: Adhere to wildlife exclusionary periods: raptors (Feb 1 - July 1), bighorn sheep lambing, (May 1 - June 15), and pronghorn (May15 – June 20).
Frequency: Prior to construction of any new facility projects, structures, and roads; and prior to reclamation.
Status:
Reports:
Citation: MRP-Part B, Sec. 330, p. 20.

Title: TWO MONITORING WELLS TO BE ESTABLISHED IN FUTURE BOREHOLES
Objective: Monitor water levels and water quality within the permit and adjacent areas.
Frequency: If wells are established.
Status: To be done when and if additional holes are bored from the surface to the coal seam.
Reports: Water quality and quantity data will be included in the quarterly hydrology reports. The MRP (and CHIA) to be updated as needed.
Citation: Conditions to the Permit, attachment A, special conditions (December 21, 2007).

Title: LILA CANYON MINE SALVAGE OF CRYPTOGRAMS ON TOPSOIL PILE PRIOR TO RECLAMATION.
Objective: Salvaged cryptograms will be added to the wood fiber mulch and hydrosprayed on the surface of the reclaimed site.
Frequency: Immediately after seeding of the reclaimed site.
Status: During reclamation of the Lila Canyon Mine.
Reports: Success of cryptogamic establishment will be evaluated (by Division and Permittee) prior to collection from topsoil stockpile.
Citation: MRP, Part B, Section 232.100, and Section 234.230

Title: VEGETATION MONITORING
Objective: Submit color infrared photography. Submit and implement a mitigation plan, if results indicate impact from mining operations.
Frequency: Prior to any mining, and every 5 years after.
Status: Ongoing. Baseline submitted in 2011. Next round of photos are due in 2016. A comparison between 2016 and 2011 photos will be required in 2016.
Reports: Annual Report
Citation: MRP, Part B, Section 332, page 14.

OPERATOR COMMENTS (OPTIONAL)

REVIEWER COMMENTS

REPORTING OF OTHER TECHNICAL DATA

Please list other technical data or information that was not included in the form above, but is required under the approved plan, which must be periodically submitted to the Division.

Please list attachments:

Reviewer Comments

MAPS

Copies of mine maps, current and up-to-date, are to be provided to the Division as an attachment to this report in accordance with the requirements of R645-301-525.240. The map copies shall be made in accordance with 30 CFR 75.1200 as required by MSHA. Mine maps are not considered confidential.

Map Name	Map Number	Included		Confidential	
		Yes	No	Yes	No
Annual subsidence map	Not required	☐	☒	☐	☒
Mine Map	Included	☒	☐	☐	☒
Raptor Survey Map	Included in Confidential File	☒	☐	☐	☐
		☐	☐	☐	☐
		☐	☐	☐	☐

Reviewer Comments ☐ Met Requirements ☐ Did Not Meet Requirements

2016 PRODUCTION / 5-YEAR PROJECTIONS

LILA CANYON MINE

23415 North Lila Canyon Road
Green River, Utah 84525

MSHA MINE ID # 42-02241

DRAWN BY: PJ	SCALE: 1" = 1,500 FEET
APPROVED BY: DH	DATE: 25 MARCH 2016
SHEET: PLATE #1 of 1	

UtahAmerican Energy, Inc.

794 NORTH "C" CANYON ROAD, EAST CARBON, UTAH 84520
P.O. BOX 910, EAST CARBON, UTAH 84520
PHONE: (435) 888-4000 FAX: (435) 888-4002

2015 PRODUCTION	PROJECTIONS
JANUARY	2016 MINING
FEBRUARY	2017 MINING
MARCH	2018 MINING
APRIL	2019 MINING
MAY	2020 MINING
JUNE	
JULY	
AUGUST	
SEPTEMBER	
OCTOBER	
NOVEMBER	
DECEMBER	

NOTES:
1. FACE POSITIONS AS OF JANUARY 1, 2016.

750 0 1500 3000 FEET

TYPICAL LEASE LINE

SUBMITTAL TO THE DEPARTMENT OF OIL, GAS AND MINING HAS BEEN MADE IN ORDER TO PERMIT THIS AREA PRIOR TO ANY MINING WITHIN THE CURRENTLY NON-PERMITTED AREA

G:\Current Drawings\Volumetrics\Lila Canyon\2015\2015 Lila Canyon End-of-Year Map.dwg, Layout1, 3/25/2016 10:16:27 AM, 1:1

In-Mine Use Requiring Water Right

Lila Canyon Mine **2015**

COAL PRODUCTION

Water added to produce coal	4.50%	Inherent Moisture
	6.50%	ROM Moisture
	2.00%	moisture added to coal by the cutting operation
Projected yearly Tonnage	340,124	tons coal produced per year
Tons of Water/Year	6,802	tons of water produced per year
Lbs of Water/year	13,604,960	lbs of water/year
Gallons of Water/Year	1,629,337	gal of water /year
Acre_Feet of Water/Year	**5.00**	**ac-ft of water/year - Consumptive Use**

In Mine Dust Suppression

8 Trucks per day	1,000	per truck
	8,000	gal/day
	256	days /year
	2,048,000	gal/year
	6.29	**ac-ft of water/year - Consumptive Use**

Typical Surface Uses Requiring a Water Right

- Bath House/Office/Shop
- Exterior Roads Dust Suppression
- Equipment Washing
- Coal Washing
- Ponds - Storage/Evaporation

Other does Not Require a Water right Currently

- In-Mine Ventilation/ Evaporation
- Dewatering with no associated use

TOTAL CONSUMPTIVE USE	**11.29**	**ac-ft of water/year - Consumptive Use**
	0.044	ac-ft of water/day
	0.022264	cfs

Total Consumptive Use in cfs = 0.022 cfs

Gallon / Ton = 10.81

EIS Environmental & Engineering Consulting
31 North Main Street * Helper, Utah 84526
Office – (435) 472-3814 * Toll free – (800) 641-2927 * Fax – (435) 472-8780
eisec@preciscom.net

September 1, 2015

Karen Madsen
UtahAmerican Energy, Inc.
PO Box 910
East Carbon, UT 84520

RE: Horse Canyon Mine Portal

On August 31, 2015, Joe Via from EIS Environmental and Engineering Consulting visited the closed Horse Canyon Mine portals in Lila Canyon to inspect the portal fence and closures for signs of vandalism and general status. Several photographs were taken of the portals.

There was no evidence of vandalism or tampering to the southern portal fence and there were no openings or structural damage to the fence. There was no evidence of vandalism to the northern portal. The northern portal was sealed with rock and could not be entered. The signs at both portals remain posted. However, a rock slide from above the southern portal has occurred and multiple large rocks now remain at the opening of the portal, the fence and signs still remain with no signs of damage or tampering (see photographs).

EIS Environmental & Engineering Consulting
31 North Main Street * Helper, Utah 84526
Office – (435) 472-3814 * Toll free – (800) 641-2927 * Fax – (435) 472-8780
eisec@preciscom.net

All Photographs Taken August 31, 2015

EIS Environmental & Engineering Consulting
31 North Main Street * Helper, Utah 84526
Office – (435) 472-3814 * Toll free – (800) 641-2927 * Fax – (435) 472-8780
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eisec@preciscom.net

IMPOUNDMENT INSPECTION AND CERTIFIED REPORT			Page 1 of
Permit Number	ACT/007/013	Report Date	November 20th 2015
Mine Name	Lila Canyon		
Company Name	UtahAmerican Energy, Inc.		
Impoundment Identification	Impoundment Name	Sediment Pond #1 Large	
	Impoundment Number	Pond #1	
	UPDES Permit Number	UTG 040024	
	MSHA ID Number	NA	

IMPOUNDMENT INSPECTION

Inspection Date	November 20th 2015
Inspected By	Karin Madsen
Reason for Inspection (Annual, Quarterly or Other Periodic Inspection, Critical Installation, or Completion of Construction)	4th Quarter, Annual

1. Describe any appearance of any instability, structural weakness, or any other hazardous condition.

No appearance of instability, structural weakness, or any other hazardous condition was observed at the time of inspection.

Required for an impoundment which functions as a SEDIMENTATION POND.

2. Sediment storage capacity, including elevation of 60% and 100% sediment storage volumes, and, estimated average elevation of existing sediment.

Sediment Elevations:

60% 5838.9'
100% 5843.0'

After Surveying Adjusted levels are as follows: 60% 5843.6'
100% 5847.7'

3. Principle and emergency spillway elevations.

Principle 5841' 5853.0'

Emergency 5840' 5854.0

4. **Field Information.** Provide current water elevation, whether pond is discharging, type and number of samples taken, monitoring/instrumentation information, inlet/outlet conditions, or other related activities associated with the pond including but not limited to sediment cleanout, pond decanting, embankment erosion/repairs, monitoring information, vegetation on outslopes of embankments, etc.

Pond is dry, no discharge.

5. **Field Evaluation.** Describe any changes in the geometry of the impounding structure, average and maximum depths and elevations of impounded water, estimated sediment or slurry volume and remaining storage capacity, estimated volume of water impounded, and any other aspect of the impounding structure affecting its stability or function which has occurred during the reporting period.

No Changes. Pond is dry. Sediment marker is visible.

Pond was surveyed in October of 2015.

Current sediment level is 5838.2'

As a result of the surveys done by Ware Surveying in October of 2015, the original elevations listed in the permit and on the maps have been determined to be inaccurate. The current sediment level is 5838.2, however the other elevations on the property are incorrect. These will be recalculated and fixed with our permit revision.

Qualification Statement

I hereby certify that; I am experienced in the construction of impoundments; I am qualified and authorized under the direction of a Registered Professional Engineer to inspect the condition and appearance of impoundments in accordance with the certified and approved designs for this structure; that the impoundment has been maintained in accordance with approved design and meet or exceed the minimum design requirements under all applicable federal, state and local regulations; and, that inspections and inspection reports are made by myself and include any appearances of instability, structural weakness or other hazardous conditions of the structure affecting stability.

Signature: _____ **Date:** 11.20.15

IMPOUNDMENT INSPECTION AND CERTIFIED REPORT		Page 3 of

CERTIFIED REPORT

IMPOUNDMENT EVALUATION (If NO, explain under Comments)	YES	NO
1. Is impoundment designed and constructed in accordance with the approved plan?	XXXXX	
2. Is impoundment free of instability, structural weakness, or any other hazardous condition?	XXXXX	
3. Has the impoundment met all applicable performance standards and effluent limitations from the previous date of inspection?	XXXXX	

COMMENTS AND OTHER INFORMATION

NONE

Certification Statement:

[PE Cert. Stamp]

I hereby certify that; I am experienced in the construction of impoundments; I am qualified and authorized in the State of Utah to inspect and certify the condition and appearance of impoundments in accordance with the certified and approved designs for this structure; that the impoundment has been maintained in accordance with approved design and meet or exceed the minimum design requirements under all applicable federal, state and local regulations; and, that inspections and inspection reports are made by myself or under my direction and include any appearances of instability, structural weakness or other hazardous conditions of the structure affecting stability in accordance with the Utah R645 Coal Mining Rules.

By: David W. Hibbs, Director, Engineering
(Full Name and Title)

Signature: David W. Hibbs Date: 11/21/15

P.E. Number & State: 6449561 - Utah

IMPOUNDMENT INSPECTION AND CERTIFIED REPORT			Page 1 of
Permit Number	ACT/007/013	Report Date	November 20th 2015
Mine Name	Lila Canyon		
Company Name	UtahAmerican Energy, Inc.		
Impoundment Identification	Impoundment Name	Sediment Pond #2 Small	
	Impoundment Number	Pond #2	
	UPDES Permit Number	NA	
	MSHA ID Number	NA	

IMPOUNDMENT INSPECTION

Inspection Date	November 20th 2015
Inspected By	Karin Madsen
Reason for Inspection (Annual, Quarterly or Other Periodic Inspection, Critical Installation, or Completion of Construction)	4th Quarter, Annual

1. **Describe any appearance of any instability, structural weakness, or any other hazardous condition.**

No appearance of instability, structural weakness, or any other hazardous condition was observed at the time of inspection. New culvert diverting road water into pond is in place and functioning as designed.

Pond was cleaned in August, 2015. Cleaning was originally scheduled for June, however was delayed due to weather and scheduling issues.

Sediment levels were surveyed in October 2015

Required for an impoundment which functions as a SEDIMENTATION POND.

2. **Sediment storage capacity, including elevation of 60% and 100% sediment storage volumes, and, estimated average elevation of existing sediment.**

Sediment Elevations:

60% 5837.3'
100% 5838.4'

Approximate sediment elevation is 5843.2' *see note* After Surveying

Adjusted levels are: 60% 5847.0
100% 5848.1

3. **Principle and emergency spillway elevations.**

Principle 5824' 5849.61

Emergency 5843' 5851.25

IMPOUNDMENT INSPECTION AND CERTIFIED REPORT		Page 2 of

1. **Field Information.** Provide current water elevation, whether pond is discharging, type and number of samples taken, monitoring/instrumentation information, inlet/outlet conditions, or other related activities associated with the pond including but not limited to sediment cleanout, pond decanting, embankment erosion/repairs, monitoring information, vegetation on outslopes of embankments, etc.

Pond has a approximately 2 foot of run off water in it.

5. **Field Evaluation.** Describe any changes in the geometry of the impounding structure, average and maximum depths and elevations of impounded water, estimated sediment or slurry volume and remaining storage capacity, estimated volume of water impounded, and any other aspect of the impounding structure affecting its stability or function which has occurred during the reporting period.

No changes. Sediment marker is visible.

As a result of the surveys done by Ware Surveying in October of 2015, the original elevations listed in the permit and on the maps have been determined to be inaccurate. The current sediment level is 5838.2, however the other elevations on the property are incorrect. These will be recalculated and fixed with our permit revision.

Qualification Statement	I hereby certify that; I am experienced in the construction of impoundments; I am qualified and authorized under the direction of a Registered Professional Engineer to inspect the condition and appearance of impoundments in accordance with the certified and approved designs for this structure; that the impoundment has been maintained in accordance with approved design and meet or exceed the minimum design requirements under all applicable federal, state and local regulations; and, that inspections and inspection reports are made by myself and include any appearances of instability, structural weakness or other hazardous conditions of the structure affecting stability. **Signature:** _____ **Date:** 11.20.15

IMPOUNDMENT INSPECTION AND CERTIFIED REPORT		Page 3 of

CERTIFIED REPORT

IMPOUNDMENT EVALUATION (If NO, explain under Comments)	YES	NO
1. Is impoundment designed and constructed in accordance with the approved plan?	XXXXX	
2. Is impoundment free of instability, structural weakness, or any other hazardous condition?	XXXXX	
3. Has the impoundment met all applicable performance standards and effluent limitations from the previous date of inspection?	XXXXX	

COMMENTS AND OTHER INFORMATION

NONE

Certification Statement:

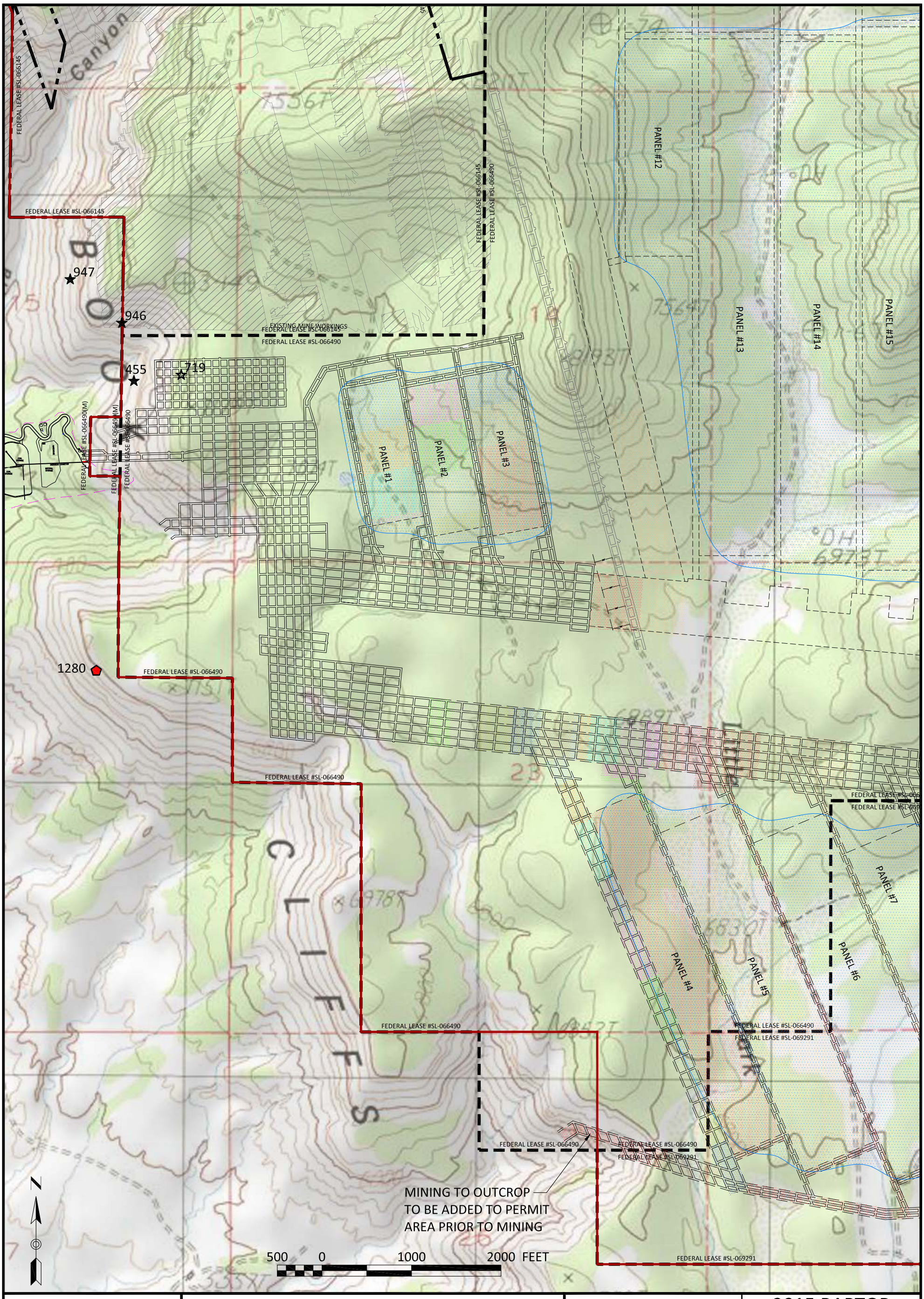
[PE Cert. Stamp]

I hereby certify that; I am experienced in the construction of impoundments; I am qualified and authorized in the State of Utah to inspect and certify the condition and appearance of impoundments in accordance with the certified and approved designs for this structure; that the impoundment has been maintained in accordance with approved design and meet or exceed the minimum design requirements under all applicable federal, state and local regulations; and, that inspections and inspection reports are made by myself or under my direction and include any appearances of instability, structural weakness or other hazardous conditions of the structure affecting stability in accordance with the Utah R645 Coal Mining Rules.

By: David W. Hibbs, Director, Engineering
(Full Name and Title)

Signature: David W. Hibbs Date: 11/21/15

P.E. Number & State: 6449561 · Utah



MINING TIMING LEGEND

JANUARY 2015/2016 — 2017
FEBRUARY 2015/2016 — 2018
MARCH 2015/2016
APRIL 2015/2016
MAY 2015/2016
JUNE 2015/2016
JULY 2015/2016
AUGUST 2015/2016
SEPTEMBER 2015/2016
OCTOBER 2015/2016
NOVEMBER 2015/2016
DECEMBER 2015/2016

MINING COLOR LEGEND

SUBSIDENCE ZONE
PERMIT BOUNDARY
LEASE LINES

RAPTOR SURVEY

GOLDEN EAGLE - Not Found
GOLDEN EAGLE - Inactive
FALCON - Active

CONFIDENTIAL

SURVEYED MAY 11, 2015 by ENVIRONMENTAL INDUSTRIAL SERVICES

UtahAmerican Energy, Inc.
794 NORTH "C" CANYON ROAD, EAST CARBON, UTAH 84520
P.O. BOX 910, EAST CARBON, UTAH 84520
PHONE: (435) 888-4000 FAX: (435) 888-4002

2015 RAPTOR SURVEY RESULTS

LILA CANYON MINE
23415 North Lila Canyon Road
Green River, Utah 84525
MSHA MINE ID # 42-02241

DRAWN BY: PJ	SCALE: 1" = 1,000 FEET
APPROVED BY: DH	DATE: 18 SEPT. 2015
SHEET: 1 of 1	

G:\Current Drawings\MRP Maps\Lila Canyon\Raptor Surveys\2015\Lila Canyon 2015 Raptors.dwg, Layout1, 9/18/2015 8:50:22 AM, 1:1

Lila Canyon Mine
East Carbon, UTAH

2015 Rain Gauge Data Evaluation

Prepared For:

UtahAmerica Energy Inc.
794 C Canyon Road
East Carbon, UT 84520
435.888.4007 Tel

Prepared by:

HydroPlot
10969 Topview Rd
South Jordan, Utah 84095
801.608.2414 Tel

Contact:
Thomas J. Suchoski

March 2016

INTRODUCTION:

The purpose of this study was to address DOGM baseline data requirements and to specifically:

- Describe the rain gauge data collection for the upper and lower areas within the Lila Canyon Mine Permit Area.
- Evaluate data and recommend future sampling activities.

In response to a DOGM stipulation, UEI installed the rain gauges and siphon and crest gauges to document flows on the upper portion of Little Park Wash. Once that purpose was met, the equipment purpose was shifted to collecting data for the potential expansion of the permit into the Williams Draw area.

RAIN GAUGES

As reported in the 2008 - 2014 reports, in accordance with DOGM stipulations, two rain gauges were installed within the Lila Canyon Mine Permit area. The lower elevation gauge is located to the south of the mine facilities area and the upper elevation gauge is located on top of the Book Cliffs in the Little Park Wash drainage area (near the IPA #2 well site). The locations of the rain gauges were determined by a Delorme Earthmate PN-20 GPS unit and are shown on Plate 1 and the coordinates and elevations are presented in Table 1.

METHODS: These rain gauges are tipping bucket type rain gauges with a data logger. The data are collected in 0.01" increments with a resolution of 0.01 inches per second. Readings are taken only when precipitation is recorded. The data are stored in the data logger memory until the data are downloaded. There is sufficient memory in the data loggers to store more than a year of data before a download is required.

Attempts were made to download the data regularly; however, due to difficulties in scheduling and accessing the upper sites, these periods are sometimes longer than desired. The summary tables adjust these data to the various years as appropriate.

RESULTS: Tables 2 and 3 present the rainfall data for the 4th period of 2014 and three periods of 2015 at the lower rain gauge, respectively. Table 4 and 5 present the rainfall

data for the 4th period of 2014 and two periods of 2015 at the upper rain gauge, respectively. Due to access issues, the upper gauge was not able to be downloaded in the fall of 2015. This data will be downloaded in the spring of 2016 when accessible.

EVALUATION: The breakdown of the rainfall for each of the quarters for the various gauges is:

Station ID	2012 4th	2013 1st	2013 2nd	2013 3rd	Annual
Lower	1.20"	0.98"	2.40"	7.39"	11.97"
Upper	0.48"	1.17"	2.30"	4.82"	8.77"

There were no known anomalies during this period of data collection.

The 2014-15 data, plus the data from the 2008 - 2014 reports, demonstrate the types of rainfall that are common in the mine permit area. There are three types of precipitation events recorded: short duration small isolated storms, short duration, high intensity storms, and longer frontal type storms.

The rainfall types occurring in the area were described as a combination of short duration, high intensity thunderstorms and gentle frontal storms. These are the same types of storms that were recorded in the data collected. The only difference was the additional identification of short duration small isolated storms. These storms were generally less than 0.1 inches in depth and less than 60 minutes in duration. Therefore, the precipitation regime occurring in the mine permit area is now fully documented and matches that described in the PAP.

CONCLUSIONS AND RECOMMENDATIONS:

The data presented in the 2008 - 2015 summaries demonstrate the typical rainfall conditions for the mine permit area. The conditions described by these data are consistent with the descriptions presented in the PAP for the Lila Canyon Mine.

TABLE 1

Lila Canyon - Water Monitoring Coordinate Data

Site	Latitude	Longitude	Stateplane N (feet)	Stateplane E (feet)	Elevation (ft.)	# of satellites	Error margin (+/-)	Flow Rat	Cond.	Temp	pH
IPA #1	39° 25.514' N	110° 18.439' W	399946.05	2336903.63	7049	6	22				
IPA #2	39° 25.088' N	110° 19.144' W	397316.3	2333618.88	6872	6	17				
IPA #3	39° 24.488' N	110° 18.718' W	393701.03	2335672.92	6820	7	17				
L-01-S	39° 25.6457' N	110° 20.8662' W	400595.57	2325467.03	5826	8	19				
L-02-S	39° 25.5230' N	110° 20.7040' W	399860.709	2326240.081	5934	8	19				
L-07-G	39° 26.450' N	110° 18.223' W	405640.88	2337844.49	7354	5	19				
L-08-G	39° 25.717' N	110° 17.621' W	401229.84	2340737.86	7049	5	45				
L-09-G	39° 24.958' N	110° 17.952' W	396601.96	2339241.56	7036	6	18				
L-11-G	39° 26.618' N	110° 19.781' W	406563.58	2330498.28	7220	4	35				
L-12-G	39° 24.143' N	110° 18.038' W	391649.72	2338902.98	6762	6	29				
L-13-S	39° 24.831' N	110° 19.032' W	395763.35	2334166.82	6820	6	18				
L-14-S	39° 23.960' N	110° 18.472' W	390511.64	2336874	6678	8	19				
L-16-G	39° 24.2498' N	110° 19.5893' W	392201.033	2331589.099	5792	8	19				
L-17-G	39° 24.2957' N	110° 19.4968' W	392485.352	2332021.029	5896	8	19				
L-18-S	39° 23.9966' N	110° 20.1881' W	390627.335	2328789.29	5513	8	19				
L-19-S	39° 24.228' N	110° 19.094' W	392099.45	2333923.26	6700	5	18				
L-20-S	39° 26.314' N	110° 18.916' W	404771.98	2334593.76	7153	9	15				
RAIN GAUGES - APRIL 2008 & AUGUST 2008											
RG-1	39° 25.5620' N	110° 20.8216' W	400090.286	2325683.408	5946	8	19				
RG-2	39° 25.1101' N	110° 19.1383' W	397450.92	2333644.12	6875	8	19				
SPRING & SEEP - APRIL 2008											
JS-1	39° 24.2052' N	110° 19.7143' W	391922.606	2331004.009	5793	8	19	damp	-	-	-
JS-2	39° 24.3467' N	110° 19.5807' W	392789.721	2331621.879	5932	8	19	0.01	+4000	54.3	9.03
TS-1	39° 24.2667' N	110° 19.5851' W	392303.871	2331607.531	5873	8	19	0.01	+4000	40.2	8.68
TS-2	39° 24.2848' N	110° 19.5101' W	392418.37	2331959.268	6005	8	19	damp	-	-	-
TS-3	39° 24.2899' N	110° 19.5168' W	392448.911	2331927.311	5992	8	19	damp	-	-	-
CREST GAUGES - AUGUST 2008											
Lila CG1	39° 25.6006' N	110° 21.0658' W	400309.785	2324530.799	5739	8	19				
Lila CG2	39° 26.7540' N	110° 18.7754' W	407451.416	2335220.175	7303	8	19				
Lila CG3	39° 26.3110' N	110° 18.8839' W	404755.876	2334745.274	7233	8	19				
Lila CG4	39° 25.4918' N	110° 18.8207' W	399787.62	2335108.598	6968	8	19				
Lila CG5	39° 23.9398' N	110° 18.4462' W	390390.749	2336997.324	6675	8	19				
Lila CG6	39° 24.8083' N	110° 18.9742' W	395629.264	2334440.693	6809	8	19				
Lila CG7	39° 23.9969' N	110° 18.9549' W	390705.618	2334596.861	6656	8	19				

Table 2

Lower Rain Gauge
4th Quarter 2014 and 1st, 2nd, & 3rd Quarter 2015

	Duration		
Date	Min	Hrs	Depth
11/22/2014	258	4.29	0.04
12/3/2014	38	0.63	0.01
12/13/2014	675	11.25	0.38
12/14/2014	148	2.46	0.34
12/25/2014	20	0.33	0.01
12/26/2014	49	0.81	0.08
12/29/2014	7	0.11	0.03
1/1/2015	61	1.02	0.07
1/11/2015	17	0.28	0.01
1/12/2015	282	4.70	0.06
1/13/2015	75	1.25	0.35
1/29/2015	53	0.89	0.02
1/30/2015	1245	20.75	0.34
1/31/2015	136	2.26	0.02
2/2/2015	8	0.13	0.05
2/28/2015	208	3.46	0.04
3/1/2015	44	0.74	0.12
3/2/2015	474	7.89	0.64
3/3/2015	94	1.56	0.03
4/16/2015	225	3.75	0.23
4/17/2015	17	0.28	0.02
4/18/2015	64	1.07	0.02
4/25/2015	411	6.85	0.31
4/26/2015	8	0.13	0.01
5/5/2015	552	9.20	0.04
5/6/2015	1240	20.66	0.31
5/14/2015	752	12.53	0.76
5/15/2015	948	15.80	0.31
5/16/2015	6	0.10	0.02
5/19/2015	244	4.07	0.11
5/23/2015	672	11.20	0.04
5/25/2015	4	0.07	0.01
5/26/2015	802	13.37	0.53
5/27/2015	76	1.27	0.04
5/28/2015	37	0.61	0.06
6/5/2015	1053	17.55	0.19
6/6/2015	1019	16.98	0.29
6/7/2015	11	0.18	0.02
6/10/2015	29	0.48	0.06

Table 2

Lower Rain Gauge
4th Quarter 2014 and 1st, 2nd, & 3rd Quarter 2015

	Duration		
Date	Min	Hrs	Depth
6/11/2015	369	6.14	0.43
6/13/2015	13	0.22	0.09
6/14/2015	23	0.39	0.02
6/29/2015	40	0.67	0.38
7/5/2015	15	0.25	0.01
7/5/2015	20	0.34	0.01
7/6/2015	15	0.25	0.12
7/7/2015	796	13.27	0.07
7/9/2015	59	0.98	0.19
7/10/2015	6	0.09	0.02
7/11/2015	3	0.05	0.02
7/13/2015	37	0.62	0.03
7/15/2015	56	0.94	0.14
7/18/2015	549	9.14	0.18
7/22/2015	24	0.41	0.23
8/2/2015	147	2.44	0.1
8/3/2015	313	5.22	0.56
8/7/2015	10	0.17	0.01
8/8/2015	78	1.31	0.39
8/11/2015	50	0.84	0.02
8/26/2015	439	7.32	0.18
8/28/2015	5	0.08	0.01
8/30/2015	30	0.50	0.27
9/1/2015	21	0.35	0.04
9/14/2015	127	2.12	0.15
9/15/2015	527	8.79	0.1
9/16/2015	12	0.20	0.01
10/5/2015	302	5.03	0.36
10/5/2015	260	4.33	0.3
10/6/2015	55	0.91	0.53

Table 3

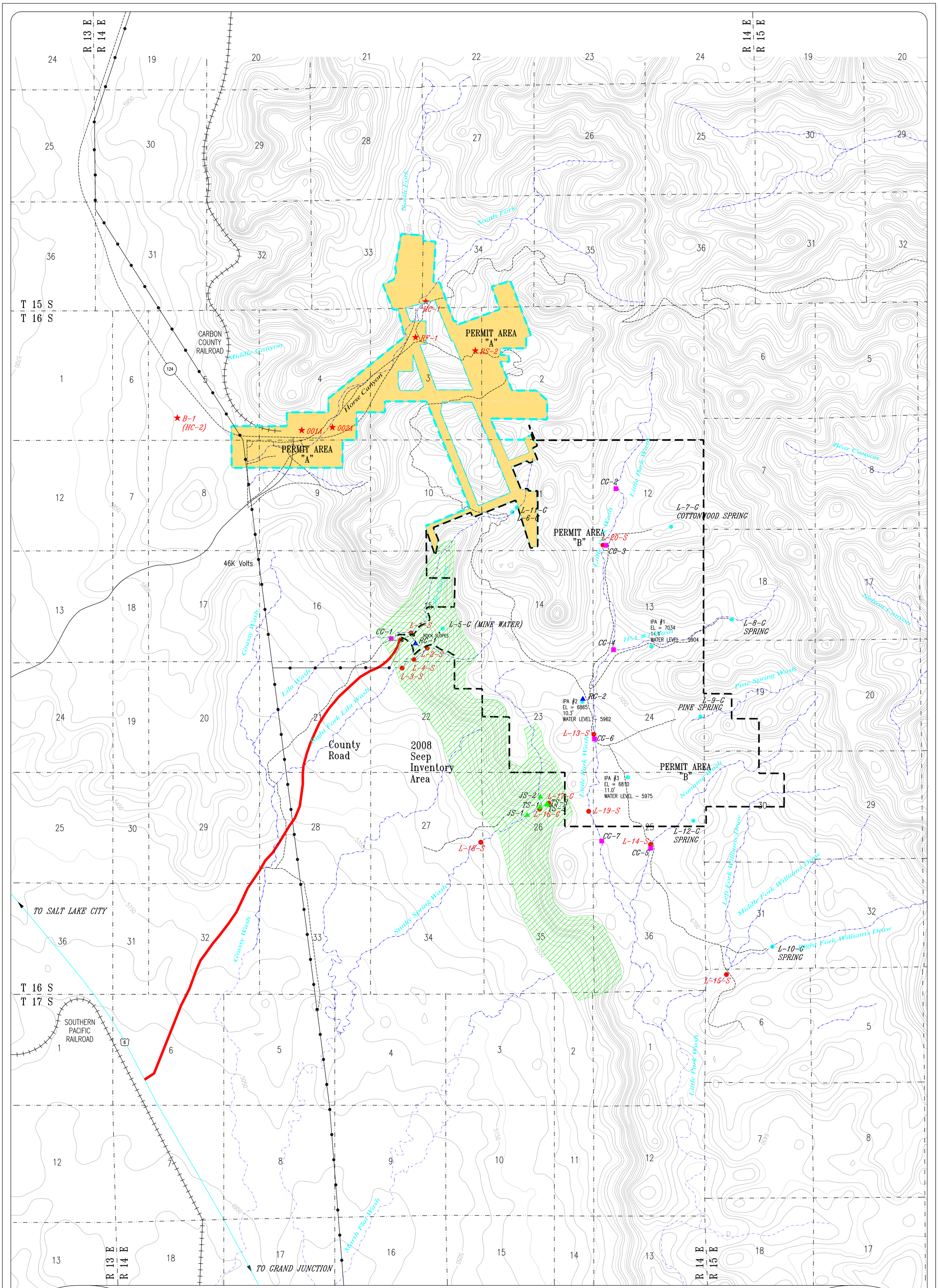
Upper Rain Gauge
4th Quarter 2014 and 1st, & 2nd Quarter 2015

	Duration		
Date	Min	Hrs	Depth
11/23/2014	86	1.44	0.12
12/3/2014	87	1.46	0.03
12/13/2014	648	10.81	0.05
12/14/2014	365	6.08	0.33
12/15/2014	536	8.93	0.15
12/16/2014	221	3.68	0.08
12/21/2014	22	0.37	0.01
12/26/2014	13	0.22	0.01
1/3/2015	212	3.53	0.07
1/11/2015	17	0.28	0.01
1/12/2015	37	0.61	0.03
1/13/2015	85	1.41	0.26
1/29/2015	104	1.73	0.03
1/30/2015	1164	19.40	0.28
1/31/2015	24	0.40	0.07
2/1/2015	24	0.40	0.01
2/16/2015	9	0.15	0.01
2/27/2015	15	0.25	0.01
2/28/2015	12	0.20	0.01
3/1/2015	272	4.53	0.09
3/2/2015	222	3.70	0.08
3/3/2015	470	7.83	0.41
3/4/2015	68	1.13	0.08
4/16/2015	274	4.57	0.27
4/18/2015	60	0.99	0.03
4/25/2015	1052	17.54	0.34
4/26/2015	762	12.69	0.05
5/5/2015	503	8.38	0.14
5/6/2015	1012	16.87	0.65
5/8/2015	9	0.15	0.01
5/14/2015	772	12.86	0.79
5/15/2015	957	15.94	0.31
5/16/2015	39	0.65	0.02
5/19/2015	38	0.64	0.14
5/23/2015	169	2.82	0.12
5/26/2015	381	6.35	0.28
5/27/2015	111	1.86	0.07
5/28/2015	1064	17.73	0.14
6/5/2015	12117	201.95	0.23

Table 3

Upper Rain Gauge
4th Quarter 2014 and 1st, & 2nd Quarter 2015

	Duration		
Date	Min	Hrs	Depth
6/6/2015	1038	17.29	0.22
6/7/2015	24	0.41	0.12
6/10/2015	41	0.68	0.1
6/11/2015	374	6.23	0.41
6/13/2015	12	0.20	0.05
6/14/2015	42	0.70	0.05
6/15/2015	6	0.10	0.01



LEGEND:

PERMIT AREA "A" (HORSE CANYON):
PERMIT AREA "B" (LILA CANYON):

WATER MONITORING:

- HORSE CANYON MONITORING:
- LILA CANYON SURFACE MONITORING:
- LILA CANYON GROUNDWATER MONITORING:
- LILA CANYON CREST GAUGE MONITORING:
- LILA CANYON SEEP LOCATIONS:
- LILA CANYON RAIN GAUGE LOCATIONS:

REVISION DATE:

DATE:	BY:	DATE:	BY:
July 1999	WJ		
November 1999	BHE	August 2008	TJS
March 2000	BHE		
August 2000	BJ		
December 2000	BJ		
July 2001	BJ		
September 2002	RJM		
November 2006	TJS		

1000' 0' 2000' 4000'

UTAH REGISTERED PROFESSIONAL ENGINEER #152606 R. Jay Marshall

LILA CANYON MINE

WATER MONITORING LOCATIONS

DATE:	DESIGNED BY:
MAY 1998	BLACKHAWK ENG.
SCALE: AS SHOWN	PLATE #: 1

ATTACHMENT A

Annual Data Summary for Upper and Lower Rain Gauges

Lower Gauge Data

Appendix A

Lower Gauge

Date/Time	Rainfall Count
11/8/2014 9:04	0
11/22/2014 16:13	1
11/22/2014 16:26	2
11/22/2014 19:05	3
11/22/2014 20:31	4
12/3/2014 4:38	5
12/13/2014 4:24	6
12/13/2014 4:39	7
12/13/2014 4:43	8
12/13/2014 4:47	9
12/13/2014 4:55	10
12/13/2014 4:59	11
12/13/2014 5:02	12
12/13/2014 5:09	13
12/13/2014 5:14	14
12/13/2014 5:19	15
12/13/2014 5:24	16
12/13/2014 5:27	17
12/13/2014 5:29	18
12/13/2014 5:31	19
12/13/2014 5:33	20
12/13/2014 5:35	21
12/13/2014 5:37	22
12/13/2014 5:40	23
12/13/2014 5:44	24
12/13/2014 5:51	25
12/13/2014 5:56	26
12/13/2014 6:00	27
12/13/2014 6:03	28
12/13/2014 6:06	29
12/13/2014 6:08	30
12/13/2014 6:11	31
12/13/2014 6:15	32
12/13/2014 6:21	33
12/13/2014 6:48	34
12/13/2014 9:55	35
12/13/2014 14:42	36
12/13/2014 14:54	37
12/13/2014 14:59	38
12/13/2014 15:05	39
12/13/2014 15:14	40
12/13/2014 15:26	41

Appendix A

Lower Gauge

Date/Time	Rainfall Count
12/13/2014 15:32	42
12/13/2014 15:40	43
12/14/2014 12:30	44
12/14/2014 12:34	45
12/14/2014 12:38	46
12/14/2014 12:41	47
12/14/2014 12:44	48
12/14/2014 12:47	49
12/14/2014 12:50	50
12/14/2014 12:52	51
12/14/2014 12:54	52
12/14/2014 12:56	53
12/14/2014 12:58	54
12/14/2014 13:00	55
12/14/2014 13:03	56
12/14/2014 13:05	57
12/14/2014 13:12	58
12/14/2014 13:15	59
12/14/2014 13:18	60
12/14/2014 13:20	61
12/14/2014 13:23	62
12/14/2014 13:28	63
12/14/2014 13:31	64
12/14/2014 13:34	65
12/14/2014 13:38	66
12/14/2014 13:42	67
12/14/2014 13:46	68
12/14/2014 13:50	69
12/14/2014 13:56	70
12/14/2014 14:02	71
12/14/2014 14:09	72
12/14/2014 14:16	73
12/14/2014 14:23	74
12/14/2014 14:32	75
12/14/2014 14:40	76
12/14/2014 14:58	77
12/25/2014 11:25	78
12/26/2014 11:37	79
12/26/2014 11:39	80
12/26/2014 11:42	81
12/26/2014 11:44	82
12/26/2014 11:52	83

Appendix A

Lower Gauge

Date/Time	Rainfall Count
12/26/2014 11:58	84
12/26/2014 12:07	85
12/26/2014 12:26	86
12/29/2014 10:52	87
12/29/2014 10:59	88
12/29/2014 10:59	89
1/1/2015 12:53	90
1/1/2015 12:58	91
1/1/2015 13:03	92
1/1/2015 13:10	93
1/1/2015 13:19	94
1/1/2015 13:34	95
1/1/2015 13:55	96
1/11/2015 9:36	97
1/12/2015 11:08	98
1/12/2015 11:12	99
1/12/2015 11:17	100
1/12/2015 11:28	101
1/12/2015 11:44	102
1/12/2015 15:50	103
1/13/2015 11:40	104
1/13/2015 11:42	105
1/13/2015 11:43	106
1/13/2015 11:44	107
1/13/2015 11:45	108
1/13/2015 11:46	109
1/13/2015 11:48	110
1/13/2015 11:49	111
1/13/2015 11:50	112
1/13/2015 11:52	113
1/13/2015 11:53	114
1/13/2015 11:54	115
1/13/2015 11:56	116
1/13/2015 11:57	117
1/13/2015 11:59	118
1/13/2015 12:01	119
1/13/2015 12:02	120
1/13/2015 12:04	121
1/13/2015 12:06	122
1/13/2015 12:07	123
1/13/2015 12:09	124
1/13/2015 12:11	125

Appendix A

Lower Gauge

Date/Time	Rainfall Count
1/13/2015 12:13	126
1/13/2015 12:15	127
1/13/2015 12:17	128
1/13/2015 12:20	129
1/13/2015 12:22	130
1/13/2015 12:26	131
1/13/2015 12:29	132
1/13/2015 12:33	133
1/13/2015 12:37	134
1/13/2015 12:41	135
1/13/2015 12:46	136
1/13/2015 12:50	137
1/13/2015 12:55	138
1/29/2015 21:35	139
1/29/2015 22:28	140
1/30/2015 1:29	141
1/30/2015 1:50	142
1/30/2015 2:13	143
1/30/2015 2:33	144
1/30/2015 3:05	145
1/30/2015 4:10	146
1/30/2015 4:45	147
1/30/2015 5:25	148
1/30/2015 6:19	149
1/30/2015 7:17	150
1/30/2015 7:56	151
1/30/2015 8:41	152
1/30/2015 9:23	153
1/30/2015 10:29	154
1/30/2015 11:51	155
1/30/2015 12:10	156
1/30/2015 12:32	157
1/30/2015 12:47	158
1/30/2015 13:03	159
1/30/2015 13:17	160
1/30/2015 13:32	161
1/30/2015 13:46	162
1/30/2015 14:11	163
1/30/2015 14:32	164
1/30/2015 14:58	165
1/30/2015 15:10	166
1/30/2015 17:09	167

Appendix A

Lower Gauge

Date/Time	Rainfall Count
1/30/2015 19:50	168
1/30/2015 20:17	169
1/30/2015 20:28	170
1/30/2015 20:44	171
1/30/2015 21:09	172
1/30/2015 21:40	173
1/30/2015 22:14	174
1/31/2015 0:11	175
1/31/2015 2:26	176
2/2/2015 12:12	177
2/2/2015 12:19	178
2/2/2015 12:19	179
2/2/2015 12:19	180
2/2/2015 12:19	181
2/28/2015 12:43	182
2/28/2015 13:48	183
2/28/2015 14:11	184
2/28/2015 16:10	185
3/1/2015 10:24	186
3/1/2015 10:26	187
3/1/2015 10:29	188
3/1/2015 10:35	189
3/1/2015 10:37	190
3/1/2015 10:44	191
3/1/2015 10:46	192
3/1/2015 10:49	193
3/1/2015 10:52	194
3/1/2015 10:57	195
3/1/2015 11:02	196
3/1/2015 11:08	197
3/2/2015 11:53	198
3/2/2015 12:56	199
3/2/2015 13:25	200
3/2/2015 14:23	201
3/2/2015 14:39	202
3/2/2015 14:41	203
3/2/2015 14:42	204
3/2/2015 14:44	205
3/2/2015 14:45	206
3/2/2015 14:47	207
3/2/2015 14:49	208
3/2/2015 14:51	209

Appendix A

Lower Gauge

Date/Time	Rainfall Count
3/2/2015 14:53	210
3/2/2015 14:55	211
3/2/2015 14:57	212
3/2/2015 14:58	213
3/2/2015 15:00	214
3/2/2015 15:01	215
3/2/2015 15:02	216
3/2/2015 15:03	217
3/2/2015 15:04	218
3/2/2015 15:05	219
3/2/2015 15:07	220
3/2/2015 15:08	221
3/2/2015 15:09	222
3/2/2015 15:11	223
3/2/2015 15:13	224
3/2/2015 15:14	225
3/2/2015 15:15	226
3/2/2015 15:17	227
3/2/2015 15:18	228
3/2/2015 15:20	229
3/2/2015 15:22	230
3/2/2015 15:24	231
3/2/2015 15:26	232
3/2/2015 15:28	233
3/2/2015 15:30	234
3/2/2015 15:33	235
3/2/2015 15:37	236
3/2/2015 15:39	237
3/2/2015 15:43	238
3/2/2015 15:46	239
3/2/2015 15:50	240
3/2/2015 15:54	241
3/2/2015 16:00	242
3/2/2015 16:07	243
3/2/2015 16:17	244
3/2/2015 16:29	245
3/2/2015 16:39	246
3/2/2015 16:45	247
3/2/2015 16:50	248
3/2/2015 16:55	249
3/2/2015 17:02	250
3/2/2015 17:09	251

Appendix A

Lower Gauge

Date/Time	Rainfall Count
3/2/2015 17:15	252
3/2/2015 17:19	253
3/2/2015 17:25	254
3/2/2015 17:34	255
3/2/2015 17:58	256
3/2/2015 18:32	257
3/2/2015 18:56	258
3/2/2015 19:21	259
3/2/2015 19:38	260
3/2/2015 19:47	261
3/3/2015 14:33	262
3/3/2015 16:05	263
3/3/2015 16:06	264
4/16/2015 10:34	265
4/16/2015 11:55	266
4/16/2015 12:02	267
4/16/2015 12:08	268
4/16/2015 12:26	269
4/16/2015 12:33	270
4/16/2015 12:41	271
4/16/2015 12:48	272
4/16/2015 13:01	273
4/16/2015 13:12	274
4/16/2015 13:24	275
4/16/2015 13:33	276
4/16/2015 13:39	277
4/16/2015 13:46	278
4/16/2015 13:58	279
4/16/2015 14:03	280
4/16/2015 14:05	281
4/16/2015 14:07	282
4/16/2015 14:09	283
4/16/2015 14:13	284
4/16/2015 14:16	285
4/16/2015 14:17	286
4/16/2015 14:19	287
4/17/2015 16:46	288
4/17/2015 17:03	289
4/18/2015 16:47	290
4/18/2015 17:52	291
4/25/2015 13:20	292
4/25/2015 13:53	293

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Lower Gauge

Date/Time	Rainfall Count
4/25/2015 13:55	294
4/25/2015 13:56	295
4/25/2015 13:58	296
4/25/2015 14:43	297
4/25/2015 14:50	298
4/25/2015 14:57	299
4/25/2015 15:01	300
4/25/2015 15:05	301
4/25/2015 15:09	302
4/25/2015 15:16	303
4/25/2015 15:33	304
4/25/2015 17:24	305
4/25/2015 17:29	306
4/25/2015 17:32	307
4/25/2015 17:36	308
4/25/2015 17:38	309
4/25/2015 17:39	310
4/25/2015 17:40	311
4/25/2015 17:42	312
4/25/2015 17:43	313
4/25/2015 17:46	314
4/25/2015 17:48	315
4/25/2015 17:50	316
4/25/2015 17:52	317
4/25/2015 17:54	318
4/25/2015 17:56	319
4/25/2015 17:59	320
4/25/2015 18:05	321
4/25/2015 20:11	322
4/26/2015 4:33	323
5/5/2015 8:26	324
5/5/2015 16:09	325
5/5/2015 17:00	326
5/5/2015 17:38	327
5/6/2015 0:20	328
5/6/2015 0:47	329
5/6/2015 0:53	330
5/6/2015 1:26	331
5/6/2015 12:38	332
5/6/2015 12:52	333
5/6/2015 13:30	334
5/6/2015 13:41	335

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Lower Gauge

Date/Time	Rainfall Count
5/6/2015 16:02	336
5/6/2015 16:08	337
5/6/2015 16:10	338
5/6/2015 16:13	339
5/6/2015 16:16	340
5/6/2015 16:19	341
5/6/2015 16:22	342
5/6/2015 16:26	343
5/6/2015 16:29	344
5/6/2015 16:34	345
5/6/2015 16:36	346
5/6/2015 16:38	347
5/6/2015 16:41	348
5/6/2015 16:44	349
5/6/2015 16:46	350
5/6/2015 16:49	351
5/6/2015 16:52	352
5/6/2015 16:53	353
5/6/2015 16:55	354
5/6/2015 16:57	355
5/6/2015 16:59	356
5/6/2015 17:02	357
5/6/2015 20:59	358
5/14/2015 10:13	359
5/14/2015 10:26	360
5/14/2015 10:31	361
5/14/2015 10:35	362
5/14/2015 10:39	363
5/14/2015 10:42	364
5/14/2015 10:43	365
5/14/2015 10:46	366
5/14/2015 10:48	367
5/14/2015 10:50	368
5/14/2015 10:52	369
5/14/2015 10:54	370
5/14/2015 10:57	371
5/14/2015 10:59	372
5/14/2015 11:01	373
5/14/2015 11:03	374
5/14/2015 11:05	375
5/14/2015 11:07	376
5/14/2015 11:09	377

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Lower Gauge

Date/Time	Rainfall Count
5/14/2015 11:13	378
5/14/2015 15:29	379
5/14/2015 15:33	380
5/14/2015 16:00	381
5/14/2015 16:10	382
5/14/2015 16:17	383
5/14/2015 16:21	384
5/14/2015 16:24	385
5/14/2015 16:26	386
5/14/2015 16:28	387
5/14/2015 16:30	388
5/14/2015 16:33	389
5/14/2015 16:34	390
5/14/2015 16:36	391
5/14/2015 16:38	392
5/14/2015 16:39	393
5/14/2015 16:41	394
5/14/2015 16:42	395
5/14/2015 16:43	396
5/14/2015 16:44	397
5/14/2015 16:45	398
5/14/2015 16:47	399
5/14/2015 16:48	400
5/14/2015 16:49	401
5/14/2015 16:51	402
5/14/2015 16:52	403
5/14/2015 16:54	404
5/14/2015 16:55	405
5/14/2015 16:56	406
5/14/2015 16:57	407
5/14/2015 16:59	408
5/14/2015 17:02	409
5/14/2015 17:06	410
5/14/2015 17:11	411
5/14/2015 17:14	412
5/14/2015 17:18	413
5/14/2015 17:25	414
5/14/2015 17:32	415
5/14/2015 22:01	416
5/14/2015 22:02	417
5/14/2015 22:03	418
5/14/2015 22:03	419

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Lower Gauge

Date/Time	Rainfall Count
5/14/2015 22:03	420
5/14/2015 22:04	421
5/14/2015 22:04	422
5/14/2015 22:04	423
5/14/2015 22:05	424
5/14/2015 22:05	425
5/14/2015 22:06	426
5/14/2015 22:06	427
5/14/2015 22:08	428
5/14/2015 22:10	429
5/14/2015 22:31	430
5/14/2015 22:33	431
5/14/2015 22:36	432
5/14/2015 22:41	433
5/14/2015 22:44	434
5/15/2015 4:53	435
5/15/2015 4:59	436
5/15/2015 5:03	437
5/15/2015 5:06	438
5/15/2015 5:08	439
5/15/2015 5:08	440
5/15/2015 5:09	441
5/15/2015 5:10	442
5/15/2015 5:11	443
5/15/2015 5:14	444
5/15/2015 5:16	445
5/15/2015 5:19	446
5/15/2015 5:28	447
5/15/2015 5:30	448
5/15/2015 5:33	449
5/15/2015 5:37	450
5/15/2015 5:40	451
5/15/2015 5:46	452
5/15/2015 5:53	453
5/15/2015 6:02	454
5/15/2015 6:06	455
5/15/2015 6:10	456
5/15/2015 6:13	457
5/15/2015 6:16	458
5/15/2015 6:19	459
5/15/2015 15:29	460
5/15/2015 19:47	461

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Lower Gauge

Date/Time	Rainfall Count
5/15/2015 19:58	462
5/15/2015 20:02	463
5/15/2015 20:09	464
5/15/2015 20:41	465
5/16/2015 17:05	466
5/16/2015 17:12	467
5/19/2015 12:36	468
5/19/2015 12:39	469
5/19/2015 12:43	470
5/19/2015 13:36	471
5/19/2015 13:55	472
5/19/2015 16:26	473
5/19/2015 16:27	474
5/19/2015 16:28	475
5/19/2015 16:33	476
5/19/2015 16:35	477
5/19/2015 16:40	478
5/23/2015 3:15	479
5/23/2015 12:07	480
5/23/2015 12:47	481
5/23/2015 14:27	482
5/25/2015 15:20	483
5/26/2015 5:58	484
5/26/2015 13:16	485
5/26/2015 13:21	486
5/26/2015 18:25	487
5/26/2015 18:26	488
5/26/2015 18:26	489
5/26/2015 18:26	490
5/26/2015 18:27	491
5/26/2015 18:27	492
5/26/2015 18:27	493
5/26/2015 18:27	494
5/26/2015 18:27	495
5/26/2015 18:28	496
5/26/2015 18:28	497
5/26/2015 18:28	498
5/26/2015 18:28	499
5/26/2015 18:28	500
5/26/2015 18:29	501
5/26/2015 18:29	502
5/26/2015 18:29	503

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Lower Gauge

Date/Time	Rainfall Count
5/26/2015 18:29	504
5/26/2015 18:29	505
5/26/2015 18:30	506
5/26/2015 18:30	507
5/26/2015 18:30	508
5/26/2015 18:30	509
5/26/2015 18:30	510
5/26/2015 18:30	511
5/26/2015 18:31	512
5/26/2015 18:31	513
5/26/2015 18:31	514
5/26/2015 18:31	515
5/26/2015 18:32	516
5/26/2015 18:32	517
5/26/2015 18:32	518
5/26/2015 18:33	519
5/26/2015 18:33	520
5/26/2015 18:33	521
5/26/2015 18:34	522
5/26/2015 18:35	523
5/26/2015 18:35	524
5/26/2015 18:37	525
5/26/2015 18:38	526
5/26/2015 18:40	527
5/26/2015 18:43	528
5/26/2015 18:51	529
5/26/2015 18:55	530
5/26/2015 19:00	531
5/26/2015 19:03	532
5/26/2015 19:08	533
5/26/2015 19:13	534
5/26/2015 19:16	535
5/26/2015 19:20	536
5/27/2015 18:12	537
5/27/2015 19:20	538
5/27/2015 19:24	539
5/27/2015 19:28	540
5/28/2015 12:33	541
5/28/2015 12:34	542
5/28/2015 12:34	543
5/28/2015 12:35	544
5/28/2015 12:36	545

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Lower Gauge

Date/Time	Rainfall Count
5/28/2015 13:10	546
6/5/2015 5:28	547
6/5/2015 5:54	548
6/5/2015 6:06	549
6/5/2015 6:09	550
6/5/2015 6:21	551
6/5/2015 14:33	552
6/5/2015 15:06	553
6/5/2015 15:12	554
6/5/2015 15:16	555
6/5/2015 15:18	556
6/5/2015 15:19	557
6/5/2015 15:21	558
6/5/2015 15:24	559
6/5/2015 15:28	560
6/5/2015 15:31	561
6/5/2015 15:36	562
6/5/2015 21:00	563
6/5/2015 21:24	564
6/5/2015 23:01	565
6/6/2015 0:39	566
6/6/2015 0:46	567
6/6/2015 0:49	568
6/6/2015 0:53	569
6/6/2015 17:00	570
6/6/2015 17:02	571
6/6/2015 17:02	572
6/6/2015 17:03	573
6/6/2015 17:04	574
6/6/2015 17:05	575
6/6/2015 17:05	576
6/6/2015 17:06	577
6/6/2015 17:07	578
6/6/2015 17:07	579
6/6/2015 17:08	580
6/6/2015 17:08	581
6/6/2015 17:09	582
6/6/2015 17:09	583
6/6/2015 17:10	584
6/6/2015 17:10	585
6/6/2015 17:10	586
6/6/2015 17:11	587

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Lower Gauge

Date/Time	Rainfall Count
6/6/2015 17:13	588
6/6/2015 17:14	589
6/6/2015 17:14	590
6/6/2015 17:16	591
6/6/2015 17:17	592
6/6/2015 17:19	593
6/6/2015 17:38	594
6/7/2015 16:56	595
6/7/2015 17:07	596
6/10/2015 17:04	597
6/10/2015 17:07	598
6/10/2015 17:10	599
6/10/2015 17:12	600
6/10/2015 17:20	601
6/10/2015 17:33	602
6/11/2015 7:09	603
6/11/2015 9:17	604
6/11/2015 9:18	605
6/11/2015 9:20	606
6/11/2015 9:21	607
6/11/2015 9:22	608
6/11/2015 9:24	609
6/11/2015 9:25	610
6/11/2015 9:26	611
6/11/2015 9:27	612
6/11/2015 9:29	613
6/11/2015 9:29	614
6/11/2015 9:30	615
6/11/2015 9:31	616
6/11/2015 9:35	617
6/11/2015 9:38	618
6/11/2015 9:46	619
6/11/2015 9:47	620
6/11/2015 9:49	621
6/11/2015 9:50	622
6/11/2015 9:52	623
6/11/2015 9:54	624
6/11/2015 9:58	625
6/11/2015 10:16	626
6/11/2015 10:20	627
6/11/2015 10:30	628
6/11/2015 10:36	629

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Lower Gauge

Date/Time	Rainfall Count
6/11/2015 10:50	630
6/11/2015 11:25	631
6/11/2015 11:26	632
6/11/2015 11:29	633
6/11/2015 12:27	634
6/11/2015 12:37	635
6/11/2015 12:40	636
6/11/2015 12:43	637
6/11/2015 12:50	638
6/11/2015 12:58	639
6/11/2015 13:01	640
6/11/2015 13:05	641
6/11/2015 13:09	642
6/11/2015 13:11	643
6/11/2015 13:14	644
6/11/2015 13:17	645
6/13/2015 17:31	646
6/13/2015 17:32	647
6/13/2015 17:33	648
6/13/2015 17:35	649
6/13/2015 17:36	650
6/13/2015 17:37	651
6/13/2015 17:40	652
6/13/2015 17:42	653
6/13/2015 17:44	654
6/14/2015 18:11	655
6/14/2015 18:34	656
6/29/2015 15:52	657
6/29/2015 15:54	658
6/29/2015 16:01	659
6/29/2015 16:03	660
6/29/2015 16:05	661
6/29/2015 16:05	662
6/29/2015 16:06	663
6/29/2015 16:06	664
6/29/2015 16:06	665
6/29/2015 16:06	666
6/29/2015 16:07	667
6/29/2015 16:07	668
6/29/2015 16:08	669
6/29/2015 16:08	670
6/29/2015 16:08	671

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Lower Gauge

Date/Time	Rainfall Count
6/29/2015 16:09	672
6/29/2015 16:09	673
6/29/2015 16:10	674
6/29/2015 16:10	675
6/29/2015 16:11	676
6/29/2015 16:11	677
6/29/2015 16:12	678
6/29/2015 16:13	679
6/29/2015 16:13	680
6/29/2015 16:13	681
6/29/2015 16:13	682
6/29/2015 16:14	683
6/29/2015 16:14	684
6/29/2015 16:14	685
6/29/2015 16:15	686
6/29/2015 16:16	687
6/29/2015 16:17	688
6/29/2015 16:17	689
6/29/2015 16:18	690
6/29/2015 16:20	691
6/29/2015 16:25	692
6/29/2015 16:28	693
6/29/2015 16:32	694
7/1/2015 6:39	694
7/1/2015 7:45	0
7/5/2015 0:32	1
7/5/2015 0:52	2
7/6/2015 16:10	3
7/6/2015 16:11	4
7/6/2015 16:12	5
7/6/2015 16:12	6
7/6/2015 16:14	7
7/6/2015 16:15	8
7/6/2015 16:16	9
7/6/2015 16:18	10
7/6/2015 16:20	11
7/6/2015 16:22	12
7/6/2015 16:24	13
7/6/2015 16:25	14
7/7/2015 5:10	15
7/7/2015 5:24	16
7/7/2015 5:34	17

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Lower Gauge

Date/Time	Rainfall Count
7/7/2015 5:45	18
7/7/2015 16:39	19
7/7/2015 17:52	20
7/7/2015 18:26	21
7/9/2015 20:49	22
7/9/2015 20:57	23
7/9/2015 21:05	24
7/9/2015 21:08	25
7/9/2015 21:09	26
7/9/2015 21:11	27
7/9/2015 21:12	28
7/9/2015 21:15	29
7/9/2015 21:16	30
7/9/2015 21:19	31
7/9/2015 21:21	32
7/9/2015 21:23	33
7/9/2015 21:25	34
7/9/2015 21:26	35
7/9/2015 21:27	36
7/9/2015 21:30	37
7/9/2015 21:33	38
7/9/2015 21:39	39
7/9/2015 21:47	40
7/10/2015 0:34	41
7/10/2015 0:39	42
7/11/2015 20:56	43
7/11/2015 20:59	44
7/13/2015 17:19	45
7/13/2015 17:28	46
7/13/2015 17:56	47
7/15/2015 14:50	48
7/15/2015 14:52	49
7/15/2015 14:54	50
7/15/2015 14:55	51
7/15/2015 14:57	52
7/15/2015 15:02	53
7/15/2015 15:05	54
7/15/2015 15:08	55
7/15/2015 15:11	56
7/15/2015 15:13	57
7/15/2015 15:15	58
7/15/2015 15:16	59

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Lower Gauge

Date/Time	Rainfall Count
7/15/2015 15:17	60
7/15/2015 15:46	61
7/18/2015 8:24	62
7/18/2015 14:41	63
7/18/2015 14:41	64
7/18/2015 14:42	65
7/18/2015 14:43	66
7/18/2015 14:44	67
7/18/2015 14:45	68
7/18/2015 14:45	69
7/18/2015 14:46	70
7/18/2015 14:48	71
7/18/2015 14:49	72
7/18/2015 14:51	73
7/18/2015 14:55	74
7/18/2015 15:06	75
7/18/2015 16:37	76
7/18/2015 16:59	77
7/18/2015 17:04	78
7/18/2015 17:33	79
7/22/2015 15:25	80
7/22/2015 15:29	81
7/22/2015 15:31	82
7/22/2015 15:32	83
7/22/2015 15:34	84
7/22/2015 15:35	85
7/22/2015 15:35	86
7/22/2015 15:36	87
7/22/2015 15:37	88
7/22/2015 15:37	89
7/22/2015 15:38	90
7/22/2015 15:41	91
7/22/2015 15:42	92
7/22/2015 15:42	93
7/22/2015 15:43	94
7/22/2015 15:44	95
7/22/2015 15:44	96
7/22/2015 15:45	97
7/22/2015 15:46	98
7/22/2015 15:47	99
7/22/2015 15:48	100
7/22/2015 15:48	101

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Lower Gauge

Date/Time	Rainfall Count
7/22/2015 15:49	102
8/2/2015 18:17	103
8/2/2015 18:51	104
8/2/2015 19:10	105
8/2/2015 19:14	106
8/2/2015 19:27	107
8/2/2015 19:35	108
8/2/2015 20:12	109
8/2/2015 20:15	110
8/2/2015 20:19	111
8/2/2015 20:43	112
8/3/2015 1:09	113
8/3/2015 1:39	114
8/3/2015 1:41	115
8/3/2015 1:42	116
8/3/2015 1:44	117
8/3/2015 1:45	118
8/3/2015 1:46	119
8/3/2015 1:47	120
8/3/2015 1:48	121
8/3/2015 1:49	122
8/3/2015 1:52	123
8/3/2015 1:53	124
8/3/2015 1:55	125
8/3/2015 1:56	126
8/3/2015 1:58	127
8/3/2015 1:59	128
8/3/2015 2:00	129
8/3/2015 2:01	130
8/3/2015 2:02	131
8/3/2015 2:05	132
8/3/2015 2:07	133
8/3/2015 2:07	134
8/3/2015 2:08	135
8/3/2015 2:08	136
8/3/2015 2:09	137
8/3/2015 2:09	138
8/3/2015 2:10	139
8/3/2015 2:10	140
8/3/2015 2:11	141
8/3/2015 2:11	142
8/3/2015 2:12	143

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Date/Time	Rainfall Count
8/3/2015 2:13	144
8/3/2015 2:14	145
8/3/2015 2:15	146
8/3/2015 2:19	147
8/3/2015 2:24	148
8/3/2015 2:42	149
8/3/2015 2:56	150
8/3/2015 2:57	151
8/3/2015 2:57	152
8/3/2015 2:57	153
8/3/2015 2:58	154
8/3/2015 2:58	155
8/3/2015 2:59	156
8/3/2015 3:00	157
8/3/2015 3:01	158
8/3/2015 3:02	159
8/3/2015 3:04	160
8/3/2015 3:08	161
8/3/2015 3:18	162
8/3/2015 6:11	163
8/3/2015 6:14	164
8/3/2015 6:18	165
8/3/2015 6:19	166
8/3/2015 6:20	167
8/3/2015 6:22	168
8/7/2015 13:06	169
8/8/2015 15:37	170
8/8/2015 15:38	171
8/8/2015 15:38	172
8/8/2015 15:38	173
8/8/2015 15:38	174
8/8/2015 15:38	175
8/8/2015 15:38	176
8/8/2015 15:39	177
8/8/2015 15:39	178
8/8/2015 15:39	179
8/8/2015 15:39	180
8/8/2015 15:39	181
8/8/2015 15:39	182
8/8/2015 15:40	183
8/8/2015 15:40	184
8/8/2015 15:40	185

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Date/Time	Rainfall Count
8/8/2015 15:40	186
8/8/2015 15:40	187
8/8/2015 15:40	188
8/8/2015 15:41	189
8/8/2015 15:41	190
8/8/2015 15:41	191
8/8/2015 15:42	192
8/8/2015 15:42	193
8/8/2015 15:42	194
8/8/2015 15:42	195
8/8/2015 15:42	196
8/8/2015 15:43	197
8/8/2015 15:43	198
8/8/2015 15:43	199
8/8/2015 15:43	200
8/8/2015 15:44	201
8/8/2015 15:44	202
8/8/2015 15:49	203
8/8/2015 15:50	204
8/8/2015 15:50	205
8/8/2015 15:51	206
8/8/2015 15:51	207
8/8/2015 16:56	208
8/11/2015 13:45	209
8/11/2015 14:35	210
8/26/2015 7:01	211
8/26/2015 10:55	212
8/26/2015 11:00	213
8/26/2015 11:02	214
8/26/2015 11:09	215
8/26/2015 12:05	216
8/26/2015 12:08	217
8/26/2015 12:19	218
8/26/2015 12:27	219
8/26/2015 13:44	220
8/26/2015 13:46	221
8/26/2015 13:54	222
8/26/2015 13:59	223
8/26/2015 14:01	224
8/26/2015 14:01	225
8/26/2015 14:01	226
8/26/2015 14:02	227

Appendix A

Lower Gauge

Date/Time	Rainfall Count
8/26/2015 14:21	228
8/28/2015 13:55	229
8/30/2015 19:53	230
8/30/2015 19:53	231
8/30/2015 19:54	232
8/30/2015 19:54	233
8/30/2015 19:54	234
8/30/2015 19:55	235
8/30/2015 19:55	236
8/30/2015 19:56	237
8/30/2015 20:00	238
8/30/2015 20:03	239
8/30/2015 20:05	240
8/30/2015 20:06	241
8/30/2015 20:07	242
8/30/2015 20:08	243
8/30/2015 20:08	244
8/30/2015 20:08	245
8/30/2015 20:08	246
8/30/2015 20:08	247
8/30/2015 20:09	248
8/30/2015 20:09	249
8/30/2015 20:10	250
8/30/2015 20:10	251
8/30/2015 20:11	252
8/30/2015 20:11	253
8/30/2015 20:11	254
8/30/2015 20:12	255
8/30/2015 20:23	256
9/1/2015 15:21	257
9/1/2015 15:23	258
9/1/2015 15:26	259
9/1/2015 15:42	260
9/14/2015 13:43	261
9/14/2015 13:45	262
9/14/2015 15:02	263
9/14/2015 15:06	264
9/14/2015 15:07	265
9/14/2015 15:10	266
9/14/2015 15:16	267
9/14/2015 15:17	268
9/14/2015 15:18	269

Appendix A

Lower Gauge

Date/Time	Rainfall Count
9/14/2015 15:20	270
9/14/2015 15:21	271
9/14/2015 15:23	272
9/14/2015 15:26	273
9/14/2015 15:31	274
9/14/2015 15:50	275
9/15/2015 4:02	276
9/15/2015 7:50	277
9/15/2015 8:31	278
9/15/2015 11:24	279
9/15/2015 11:53	280
9/15/2015 12:06	281
9/15/2015 12:33	282
9/15/2015 12:39	283
9/15/2015 12:40	284
9/15/2015 12:49	285
9/16/2015 19:30	286
10/5/2015 3:54	287
10/5/2015 3:55	288
10/5/2015 3:55	289
10/5/2015 3:56	290
10/5/2015 3:56	291
10/5/2015 3:57	292
10/5/2015 3:57	293
10/5/2015 3:58	294
10/5/2015 3:59	295
10/5/2015 4:02	296
10/5/2015 4:05	297
10/5/2015 4:08	298
10/5/2015 4:12	299
10/5/2015 4:16	300
10/5/2015 4:19	301
10/5/2015 4:55	302
10/5/2015 5:30	303
10/5/2015 5:38	304
10/5/2015 5:46	305
10/5/2015 5:51	306
10/5/2015 5:58	307
10/5/2015 7:16	308
10/5/2015 7:20	309
10/5/2015 7:23	310
10/5/2015 7:24	311

Appendix A

Lower Gauge

Date/Time	Rainfall Count
10/5/2015 7:25	312
10/5/2015 7:26	313
10/5/2015 7:28	314
10/5/2015 7:34	315
10/5/2015 7:54	316
10/5/2015 8:00	317
10/5/2015 8:07	318
10/5/2015 8:11	319
10/5/2015 8:17	320
10/5/2015 8:23	321
10/5/2015 8:56	322
10/5/2015 11:06	323
10/5/2015 11:15	324
10/5/2015 11:19	325
10/5/2015 11:21	326
10/5/2015 11:23	327
10/5/2015 11:26	328
10/5/2015 11:28	329
10/5/2015 11:29	330
10/5/2015 11:30	331
10/5/2015 11:32	332
10/5/2015 11:35	333
10/5/2015 11:47	334
10/5/2015 11:49	335
10/5/2015 12:47	336
10/5/2015 13:20	337
10/5/2015 13:34	338
10/5/2015 13:36	339
10/5/2015 13:38	340
10/5/2015 13:40	341
10/5/2015 13:51	342
10/5/2015 13:56	343
10/5/2015 13:58	344
10/5/2015 14:02	345
10/5/2015 14:07	346
10/5/2015 14:13	347
10/5/2015 14:20	348
10/5/2015 14:29	349
10/5/2015 14:34	350
10/5/2015 14:48	351
10/5/2015 15:26	352
10/6/2015 12:54	353

Appendix A

Lower Gauge

Date/Time	Rainfall Count
10/6/2015 12:55	354
10/6/2015 12:56	355
10/6/2015 12:57	356
10/6/2015 12:57	357
10/6/2015 12:58	358
10/6/2015 12:58	359
10/6/2015 12:59	360
10/6/2015 13:00	361
10/6/2015 13:00	362
10/6/2015 13:01	363
10/6/2015 13:01	364
10/6/2015 13:01	365
10/6/2015 13:01	366
10/6/2015 13:02	367
10/6/2015 13:02	368
10/6/2015 13:02	369
10/6/2015 13:02	370
10/6/2015 13:03	371
10/6/2015 13:03	372
10/6/2015 13:03	373
10/6/2015 13:04	374
10/6/2015 13:04	375
10/6/2015 13:04	376
10/6/2015 13:04	377
10/6/2015 13:05	378
10/6/2015 13:05	379
10/6/2015 13:05	380
10/6/2015 13:06	381
10/6/2015 13:06	382
10/6/2015 13:07	383
10/6/2015 13:07	384
10/6/2015 13:08	385
10/6/2015 13:09	386
10/6/2015 13:11	387
10/6/2015 13:12	388
10/6/2015 13:13	389
10/6/2015 13:14	390
10/6/2015 13:14	391
10/6/2015 13:14	392
10/6/2015 13:15	393
10/6/2015 13:15	394
10/6/2015 13:15	395

Appendix A

Lower Gauge

Date/Time	Rainfall Count
10/6/2015 13:16	396
10/6/2015 13:17	397
10/6/2015 13:18	398
10/6/2015 13:19	399
10/6/2015 13:21	400
10/6/2015 13:42	401
10/6/2015 13:43	402
10/6/2015 13:44	403
10/6/2015 13:46	404
10/6/2015 13:48	405
10/14/2015 14:43	405

Upper Gauge Data

Appendix A

Upper Gauge

Date/Time	Rainfall Count
11/8/2014 10:18	0
11/23/2014 11:11	1
11/23/2014 11:17	2
11/23/2014 11:20	3
11/23/2014 11:27	4
11/23/2014 11:31	5
11/23/2014 11:39	6
11/23/2014 11:44	7
11/23/2014 11:53	8
11/23/2014 11:58	9
11/23/2014 12:09	10
11/23/2014 12:15	11
11/23/2014 12:37	12
12/3/2014 6:26	13
12/3/2014 7:12	14
12/3/2014 7:53	15
12/13/2014 4:17	16
12/13/2014 9:15	17
12/13/2014 14:53	18
12/13/2014 14:57	19
12/13/2014 15:06	20
12/14/2014 9:33	21
12/14/2014 9:47	22
12/14/2014 10:09	23
12/14/2014 10:09	24
12/14/2014 10:34	25
12/14/2014 10:34	26
12/14/2014 10:50	27
12/14/2014 10:50	28
12/14/2014 11:20	29
12/14/2014 11:35	30
12/14/2014 11:35	31
12/14/2014 11:54	32
12/14/2014 11:57	33
12/14/2014 12:09	34
12/14/2014 12:14	35
12/14/2014 12:18	36
12/14/2014 12:21	37
12/14/2014 12:54	38
12/14/2014 12:55	39
12/14/2014 12:59	40
12/14/2014 13:07	41

Appendix A

Upper Gauge

Date/Time	Rainfall Count
12/14/2014 13:17	42
12/14/2014 13:23	43
12/14/2014 13:32	44
12/14/2014 14:41	45
12/14/2014 14:48	46
12/14/2014 14:53	47
12/14/2014 15:00	48
12/14/2014 15:05	49
12/14/2014 15:13	50
12/14/2014 15:18	51
12/14/2014 15:28	52
12/14/2014 15:38	53
12/15/2014 10:30	54
12/15/2014 10:56	55
12/15/2014 11:04	56
12/15/2014 11:17	57
12/15/2014 11:38	58
12/15/2014 11:50	59
12/15/2014 12:06	60
12/15/2014 12:16	61
12/15/2014 12:33	62
12/15/2014 12:43	63
12/15/2014 12:58	64
12/15/2014 13:10	65
12/15/2014 13:33	66
12/15/2014 13:51	67
12/15/2014 19:26	68
12/16/2014 11:40	69
12/16/2014 12:08	70
12/16/2014 12:38	71
12/16/2014 13:01	72
12/16/2014 13:41	73
12/16/2014 14:06	74
12/16/2014 14:57	75
12/16/2014 15:21	76
12/21/2014 15:34	77
12/26/2014 9:54	78
1/3/2015 11:11	79
1/3/2015 11:25	80
1/3/2015 11:52	81
1/3/2015 12:09	82
1/3/2015 12:32	83

Appendix A

Upper Gauge

Date/Time	Rainfall Count
1/3/2015 13:10	84
1/3/2015 14:43	85
1/11/2015 9:45	86
1/12/2015 12:17	87
1/12/2015 12:29	88
1/12/2015 12:53	89
1/13/2015 12:35	90
1/13/2015 12:37	91
1/13/2015 12:40	92
1/13/2015 12:42	93
1/13/2015 12:45	94
1/13/2015 12:47	95
1/13/2015 12:50	96
1/13/2015 12:51	97
1/13/2015 12:54	98
1/13/2015 12:56	99
1/13/2015 12:59	100
1/13/2015 13:01	101
1/13/2015 13:04	102
1/13/2015 13:06	103
1/13/2015 13:09	104
1/13/2015 13:11	105
1/13/2015 13:14	106
1/13/2015 13:16	107
1/13/2015 13:21	108
1/13/2015 13:23	109
1/13/2015 13:28	110
1/13/2015 13:33	111
1/13/2015 13:41	112
1/13/2015 13:45	113
1/13/2015 13:54	114
1/13/2015 14:00	115
1/29/2015 21:06	116
1/29/2015 22:00	117
1/29/2015 22:49	118
1/30/2015 0:59	119
1/30/2015 1:50	120
1/30/2015 2:11	121
1/30/2015 2:37	122
1/30/2015 2:58	123
1/30/2015 4:14	124
1/30/2015 4:37	125

Appendix A

Upper Gauge

Date/Time	Rainfall Count
1/30/2015 5:17	126
1/30/2015 5:58	127
1/30/2015 6:37	128
1/30/2015 7:23	129
1/30/2015 8:13	130
1/30/2015 9:02	131
1/30/2015 10:33	132
1/30/2015 11:45	133
1/30/2015 12:10	134
1/30/2015 12:28	135
1/30/2015 12:56	136
1/30/2015 13:09	137
1/30/2015 13:33	138
1/30/2015 13:47	139
1/30/2015 14:25	140
1/30/2015 14:38	141
1/30/2015 15:05	142
1/30/2015 15:15	143
1/30/2015 17:15	144
1/30/2015 18:17	145
1/30/2015 20:23	146
1/31/2015 10:08	147
1/31/2015 10:13	148
1/31/2015 10:16	149
1/31/2015 10:20	150
1/31/2015 10:23	151
1/31/2015 10:29	152
1/31/2015 10:32	153
2/1/2015 3:01	154
2/16/2015 12:08	155
2/27/2015 10:17	156
2/28/2015 13:50	157
3/1/2015 9:52	158
3/1/2015 11:06	159
3/1/2015 11:11	160
3/1/2015 11:16	161
3/1/2015 11:16	162
3/1/2015 11:23	163
3/1/2015 11:35	164
3/1/2015 11:35	165
3/1/2015 14:24	166
3/2/2015 14:10	167

Appendix A

Upper Gauge

Date/Time	Rainfall Count
3/2/2015 16:47	168
3/2/2015 16:58	169
3/2/2015 17:05	170
3/2/2015 17:18	171
3/2/2015 17:24	172
3/2/2015 17:36	173
3/2/2015 17:53	174
3/3/2015 9:07	175
3/3/2015 9:13	176
3/3/2015 9:18	177
3/3/2015 9:26	178
3/3/2015 9:43	179
3/3/2015 9:52	180
3/3/2015 10:09	181
3/3/2015 10:16	182
3/3/2015 10:29	183
3/3/2015 10:33	184
3/3/2015 10:46	185
3/3/2015 10:48	186
3/3/2015 11:00	187
3/3/2015 11:04	188
3/3/2015 11:12	189
3/3/2015 11:20	190
3/3/2015 11:36	191
3/3/2015 11:45	192
3/3/2015 11:51	193
3/3/2015 11:53	194
3/3/2015 11:57	195
3/3/2015 12:01	196
3/3/2015 12:11	197
3/3/2015 12:17	198
3/3/2015 12:29	199
3/3/2015 12:35	200
3/3/2015 12:46	201
3/3/2015 12:52	202
3/3/2015 13:08	203
3/3/2015 13:15	204
3/3/2015 13:27	205
3/3/2015 13:32	206
3/3/2015 13:39	207
3/3/2015 13:42	208
3/3/2015 13:49	209

Appendix A

Upper Gauge

Date/Time	Rainfall Count
3/3/2015 13:54	210
3/3/2015 14:06	211
3/3/2015 14:16	212
3/3/2015 15:01	213
3/3/2015 16:15	214
3/3/2015 16:57	215
3/4/2015 11:06	216
3/4/2015 11:09	217
3/4/2015 11:15	218
3/4/2015 11:38	219
3/4/2015 11:41	220
3/4/2015 11:50	221
3/4/2015 11:57	222
3/4/2015 12:14	223
4/16/2015 10:34	224
4/16/2015 14:20	225
4/16/2015 14:24	226
4/16/2015 14:29	227
4/16/2015 14:30	228
4/16/2015 14:32	229
4/16/2015 14:33	230
4/16/2015 14:35	231
4/16/2015 14:36	232
4/16/2015 14:37	233
4/16/2015 14:38	234
4/16/2015 14:39	235
4/16/2015 14:40	236
4/16/2015 14:41	237
4/16/2015 14:42	238
4/16/2015 14:44	239
4/16/2015 14:44	240
4/16/2015 14:46	241
4/16/2015 14:47	242
4/16/2015 14:49	243
4/16/2015 14:50	244
4/16/2015 14:52	245
4/16/2015 14:53	246
4/16/2015 14:56	247
4/16/2015 14:58	248
4/16/2015 15:03	249
4/16/2015 15:08	250
4/18/2015 16:51	251

Appendix A

Upper Gauge

Date/Time	Rainfall Count
4/18/2015 16:53	252
4/18/2015 17:50	253
4/25/2015 2:36	254
4/25/2015 13:43	255
4/25/2015 13:53	256
4/25/2015 13:58	257
4/25/2015 14:01	258
4/25/2015 14:46	259
4/25/2015 14:51	260
4/25/2015 14:59	261
4/25/2015 15:02	262
4/25/2015 15:06	263
4/25/2015 15:09	264
4/25/2015 15:22	265
4/25/2015 15:27	266
4/25/2015 15:37	267
4/25/2015 15:54	268
4/25/2015 17:24	269
4/25/2015 17:28	270
4/25/2015 17:31	271
4/25/2015 17:33	272
4/25/2015 17:37	273
4/25/2015 17:38	274
4/25/2015 17:40	275
4/25/2015 17:41	276
4/25/2015 17:44	277
4/25/2015 17:45	278
4/25/2015 17:47	279
4/25/2015 17:48	280
4/25/2015 17:52	281
4/25/2015 17:54	282
4/25/2015 17:58	283
4/25/2015 18:01	284
4/25/2015 18:13	285
4/25/2015 19:49	286
4/25/2015 20:09	287
4/26/2015 1:41	288
4/26/2015 5:07	289
4/26/2015 5:20	290
4/26/2015 6:05	291
4/26/2015 14:22	292
5/5/2015 8:52	293

Appendix A

Upper Gauge

Date/Time	Rainfall Count
5/5/2015 14:14	294
5/5/2015 16:09	295
5/5/2015 16:10	296
5/5/2015 16:12	297
5/5/2015 16:14	298
5/5/2015 16:15	299
5/5/2015 16:15	300
5/5/2015 16:16	301
5/5/2015 16:16	302
5/5/2015 16:22	303
5/5/2015 16:33	304
5/5/2015 17:05	305
5/5/2015 17:15	306
5/6/2015 0:18	307
5/6/2015 0:47	308
5/6/2015 0:55	309
5/6/2015 1:00	310
5/6/2015 1:36	311
5/6/2015 5:03	312
5/6/2015 12:31	313
5/6/2015 12:33	314
5/6/2015 12:34	315
5/6/2015 12:35	316
5/6/2015 12:36	317
5/6/2015 12:37	318
5/6/2015 12:38	319
5/6/2015 12:38	320
5/6/2015 12:39	321
5/6/2015 12:40	322
5/6/2015 12:41	323
5/6/2015 12:42	324
5/6/2015 12:43	325
5/6/2015 12:43	326
5/6/2015 12:44	327
5/6/2015 12:45	328
5/6/2015 12:46	329
5/6/2015 12:47	330
5/6/2015 12:48	331
5/6/2015 12:48	332
5/6/2015 12:50	333
5/6/2015 12:50	334
5/6/2015 12:52	335

Appendix A

Upper Gauge

Date/Time	Rainfall Count
5/6/2015 12:52	336
5/6/2015 12:54	337
5/6/2015 12:55	338
5/6/2015 12:56	339
5/6/2015 12:57	340
5/6/2015 12:58	341
5/6/2015 12:59	342
5/6/2015 13:01	343
5/6/2015 13:02	344
5/6/2015 13:04	345
5/6/2015 13:06	346
5/6/2015 13:08	347
5/6/2015 13:11	348
5/6/2015 13:28	349
5/6/2015 13:44	350
5/6/2015 16:08	351
5/6/2015 16:10	352
5/6/2015 16:13	353
5/6/2015 16:15	354
5/6/2015 16:18	355
5/6/2015 16:20	356
5/6/2015 16:23	357
5/6/2015 16:25	358
5/6/2015 16:29	359
5/6/2015 16:32	360
5/6/2015 16:39	361
5/6/2015 16:42	362
5/6/2015 16:47	363
5/6/2015 16:49	364
5/6/2015 16:52	365
5/6/2015 16:55	366
5/6/2015 16:58	367
5/6/2015 17:00	368
5/6/2015 17:03	369
5/6/2015 17:06	370
5/6/2015 17:10	371
5/8/2015 21:45	372
5/14/2015 10:18	373
5/14/2015 10:20	374
5/14/2015 10:24	375
5/14/2015 10:26	376
5/14/2015 10:30	377

Appendix A

Upper Gauge

Date/Time	Rainfall Count
5/14/2015 10:32	378
5/14/2015 10:34	379
5/14/2015 10:35	380
5/14/2015 10:38	381
5/14/2015 10:39	382
5/14/2015 10:41	383
5/14/2015 10:43	384
5/14/2015 10:46	385
5/14/2015 10:49	386
5/14/2015 10:54	387
5/14/2015 10:56	388
5/14/2015 11:00	389
5/14/2015 11:02	390
5/14/2015 11:05	391
5/14/2015 11:07	392
5/14/2015 11:10	393
5/14/2015 11:12	394
5/14/2015 11:20	395
5/14/2015 15:30	396
5/14/2015 15:36	397
5/14/2015 15:52	398
5/14/2015 16:10	399
5/14/2015 16:16	400
5/14/2015 16:23	401
5/14/2015 16:26	402
5/14/2015 16:30	403
5/14/2015 16:32	404
5/14/2015 16:36	405
5/14/2015 16:38	406
5/14/2015 16:42	407
5/14/2015 16:43	408
5/14/2015 16:46	409
5/14/2015 16:48	410
5/14/2015 16:51	411
5/14/2015 16:52	412
5/14/2015 16:55	413
5/14/2015 16:56	414
5/14/2015 16:59	415
5/14/2015 17:01	416
5/14/2015 17:03	417
5/14/2015 17:05	418
5/14/2015 17:08	419

Appendix A

Upper Gauge

Date/Time	Rainfall Count
5/14/2015 17:10	420
5/14/2015 17:13	421
5/14/2015 17:15	422
5/14/2015 17:18	423
5/14/2015 17:20	424
5/14/2015 17:24	425
5/14/2015 17:26	426
5/14/2015 17:30	427
5/14/2015 17:33	428
5/14/2015 17:37	429
5/14/2015 17:39	430
5/14/2015 17:44	431
5/14/2015 17:48	432
5/14/2015 17:54	433
5/14/2015 17:59	434
5/14/2015 22:05	435
5/14/2015 22:08	436
5/14/2015 22:12	437
5/14/2015 22:14	438
5/14/2015 22:18	439
5/14/2015 22:21	440
5/14/2015 22:25	441
5/14/2015 22:28	442
5/14/2015 22:33	443
5/14/2015 22:36	444
5/14/2015 22:41	445
5/14/2015 22:44	446
5/14/2015 22:48	447
5/14/2015 22:52	448
5/14/2015 22:57	449
5/14/2015 23:02	450
5/14/2015 23:10	451
5/15/2015 4:50	452
5/15/2015 4:56	453
5/15/2015 4:59	454
5/15/2015 5:04	455
5/15/2015 5:08	456
5/15/2015 5:13	457
5/15/2015 5:16	458
5/15/2015 5:20	459
5/15/2015 5:23	460
5/15/2015 5:28	461

Appendix A

Upper Gauge

Date/Time	Rainfall Count
5/15/2015 5:31	462
5/15/2015 5:36	463
5/15/2015 5:39	464
5/15/2015 5:45	465
5/15/2015 5:48	466
5/15/2015 5:54	467
5/15/2015 5:57	468
5/15/2015 6:03	469
5/15/2015 6:07	470
5/15/2015 6:13	471
5/15/2015 6:16	472
5/15/2015 6:22	473
5/15/2015 6:27	474
5/15/2015 6:33	475
5/15/2015 11:16	476
5/15/2015 19:57	477
5/15/2015 20:04	478
5/15/2015 20:15	479
5/15/2015 20:20	480
5/15/2015 20:32	481
5/15/2015 20:46	482
5/16/2015 21:40	483
5/16/2015 22:19	484
5/19/2015 16:24	485
5/19/2015 16:28	486
5/19/2015 16:32	487
5/19/2015 16:33	488
5/19/2015 16:37	489
5/19/2015 16:39	490
5/19/2015 16:42	491
5/19/2015 16:44	492
5/19/2015 16:47	493
5/19/2015 16:49	494
5/19/2015 16:52	495
5/19/2015 16:54	496
5/19/2015 16:59	497
5/19/2015 17:02	498
5/23/2015 11:54	499
5/23/2015 11:57	500
5/23/2015 12:04	501
5/23/2015 12:11	502
5/23/2015 12:23	503

Appendix A

Upper Gauge

Date/Time	Rainfall Count
5/23/2015 12:26	504
5/23/2015 13:09	505
5/23/2015 14:08	506
5/23/2015 14:17	507
5/23/2015 14:24	508
5/23/2015 14:33	509
5/23/2015 14:43	510
5/26/2015 13:16	511
5/26/2015 13:19	512
5/26/2015 13:22	513
5/26/2015 13:24	514
5/26/2015 13:27	515
5/26/2015 13:29	516
5/26/2015 13:34	517
5/26/2015 18:29	518
5/26/2015 18:33	519
5/26/2015 18:36	520
5/26/2015 18:39	521
5/26/2015 18:41	522
5/26/2015 18:45	523
5/26/2015 18:47	524
5/26/2015 18:50	525
5/26/2015 18:53	526
5/26/2015 18:56	527
5/26/2015 18:59	528
5/26/2015 19:03	529
5/26/2015 19:06	530
5/26/2015 19:10	531
5/26/2015 19:13	532
5/26/2015 19:18	533
5/26/2015 19:20	534
5/26/2015 19:25	535
5/26/2015 19:28	536
5/26/2015 19:33	537
5/26/2015 19:37	538
5/27/2015 17:46	539
5/27/2015 18:14	540
5/27/2015 18:58	541
5/27/2015 19:23	542
5/27/2015 19:28	543
5/27/2015 19:30	544
5/27/2015 19:38	545

Appendix A

Upper Gauge

Date/Time	Rainfall Count
5/28/2015 3:40	546
5/28/2015 12:31	547
5/28/2015 12:33	548
5/28/2015 12:36	549
5/28/2015 12:37	550
5/28/2015 12:40	551
5/28/2015 12:42	552
5/28/2015 12:44	553
5/28/2015 12:46	554
5/28/2015 12:49	555
5/28/2015 12:52	556
5/28/2015 12:56	557
5/28/2015 13:13	558
5/28/2015 13:22	559
6/5/2015 5:27	560
6/5/2015 6:01	561
6/5/2015 6:06	562
6/5/2015 6:10	563
6/5/2015 6:19	564
6/5/2015 14:33	565
6/5/2015 14:52	566
6/5/2015 15:04	567
6/5/2015 15:06	568
6/5/2015 15:10	569
6/5/2015 15:13	570
6/5/2015 15:18	571
6/5/2015 15:21	572
6/5/2015 15:25	573
6/5/2015 15:28	574
6/5/2015 15:33	575
6/5/2015 15:35	576
6/5/2015 20:55	577
6/5/2015 21:05	578
6/5/2015 21:21	579
6/5/2015 21:31	580
6/5/2015 22:56	581
6/5/2015 23:18	582
6/6/2015 0:29	583
6/6/2015 0:38	584
6/6/2015 0:53	585
6/6/2015 1:01	586
6/6/2015 17:06	587

Appendix A

Upper Gauge

Date/Time	Rainfall Count
6/6/2015 17:08	588
6/6/2015 17:10	589
6/6/2015 17:12	590
6/6/2015 17:14	591
6/6/2015 17:16	592
6/6/2015 17:18	593
6/6/2015 17:20	594
6/6/2015 17:22	595
6/6/2015 17:24	596
6/6/2015 17:26	597
6/6/2015 17:28	598
6/6/2015 17:30	599
6/6/2015 17:32	600
6/6/2015 17:35	601
6/6/2015 17:37	602
6/6/2015 17:42	603
6/6/2015 17:46	604
6/7/2015 16:45	605
6/7/2015 16:47	606
6/7/2015 16:51	607
6/7/2015 16:53	608
6/7/2015 16:55	609
6/7/2015 16:57	610
6/7/2015 16:59	611
6/7/2015 17:00	612
6/7/2015 17:02	613
6/7/2015 17:04	614
6/7/2015 17:07	615
6/7/2015 17:09	616
6/10/2015 17:05	617
6/10/2015 17:08	618
6/10/2015 17:12	619
6/10/2015 17:15	620
6/10/2015 17:19	621
6/10/2015 17:22	622
6/10/2015 17:26	623
6/10/2015 17:29	624
6/10/2015 17:37	625
6/10/2015 17:46	626
6/11/2015 6:58	627
6/11/2015 7:40	628
6/11/2015 8:39	629

Appendix A

Upper Gauge

Date/Time	Rainfall Count
6/11/2015 9:38	630
6/11/2015 9:42	631
6/11/2015 9:44	632
6/11/2015 9:46	633
6/11/2015 9:48	634
6/11/2015 9:50	635
6/11/2015 9:51	636
6/11/2015 9:53	637
6/11/2015 9:54	638
6/11/2015 9:55	639
6/11/2015 9:56	640
6/11/2015 9:58	641
6/11/2015 9:59	642
6/11/2015 10:00	643
6/11/2015 10:01	644
6/11/2015 10:02	645
6/11/2015 10:03	646
6/11/2015 10:05	647
6/11/2015 10:06	648
6/11/2015 10:08	649
6/11/2015 10:09	650
6/11/2015 10:11	651
6/11/2015 10:13	652
6/11/2015 10:18	653
6/11/2015 10:20	654
6/11/2015 10:23	655
6/11/2015 10:26	656
6/11/2015 10:34	657
6/11/2015 10:46	658
6/11/2015 11:24	659
6/11/2015 11:27	660
6/11/2015 11:30	661
6/11/2015 11:31	662
6/11/2015 11:33	663
6/11/2015 11:35	664
6/11/2015 12:25	665
6/11/2015 13:03	666
6/11/2015 13:12	667
6/13/2015 17:41	668
6/13/2015 17:43	669
6/13/2015 17:44	670
6/13/2015 17:49	671

Appendix A

Upper Gauge

Date/Time	Rainfall Count
6/13/2015 17:53	672
6/14/2015 17:55	673
6/14/2015 18:02	674
6/14/2015 18:16	675
6/14/2015 18:18	676
6/14/2015 18:37	677
6/15/2015 13:21	678
6/23/2015 10:27	678

TOPSOIL MOVEMENT & CONSTRUCTION RECORD

UTAHAMERICAN ENERGY

LILA CANYON MINE

December 2008-June 2015

Report Updated June 2015

Prepared by

J. T. Paluso, P. E.

EIS ENVIRONMENTAL & ENGINEERING CONSULTING
31 North Main, Helper, Utah 84526

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Scope of Work

EIS Environmental & Engineering Consulting (EIS) was hired by UtahAmerican Energy, Inc (UEI) to monitor the removal of topsoil from the Lila Canyon Mine for Phase I construction activities.

Phase I consisted of the following activities:

- Construct stormwater detention ponds. These ponds are needed to contain all runoff coming from disturbed areas.

- Construct portal access road. Due to the length of time required to construct the underground rock slopes, it was necessary to construct the portal access road during Phase I of the construction activities.

- Remove topsoil from the west portion of the coal stockpile area. This area was needed to provide storage space for material generated during the construction of the underground rock slopes.

- Remove topsoil from the warehouse pad area. This area was also needed to provide storage space for material generated from the rock slope construction work.

- Construct employee parking and temporary bathhouse area. This area was needed to provide parking space and bathhouse facilities for the crews developing the rock slopes.

During Phase I activities the follow amounts of topsoil were generated from the various locations:

LOCATION	LOADS	VOLUME (Yd^3)
Employee Parking Lot	378	12,110
Portal Road	238	7,622
Storm Water Detention Pond	154	4,943
Small Detention Pond	61	1,940
Coal Stockpile	269	8,601
Warehouse Pad	137	4,385
Topsoil Area	Push with Dozer	646
TOTAL		**40,247 Yd^3**

LILA CANYON MINE
TOPSOIL & CONSTRUCTION ACTIVITY RECORD

December 24, 2008 (Mel Coonrod & Matt Serfustini)

The following activities were observed during this visit:

1. Fill material was being removed from the stormwater detention pond. Some topsoil still remains to be removed from the pond area.
2. Work on portal access road was proceeding.
3. Topsoil was being removed from employee parking area.
4. Topsoil had been removed from west end of coal pile area.

PHOTOGRAPHS

LOOKING SOUTH TOWARDS TOPSOIL STORAGE AREA

MATERIAL REMOVED FROM TOPSOIL STORAGE SITE

PORTAL ACCESS ROAD TOPSOIL NORTH OF COAL STOCKPILE, PHOTO TAKEN LOOKING EAST

SOIL PROFILE ON PORTAL ACCESS ROAD LOOKING NORTH, TAKEN ADJACENT TO PRIOR PHOTOGRAPH

TOPSOIL REMOVAL SOUTH END OF EMPLOYEE PARKING LOT LOOKING SOUTH EAST

SOUTH OF LOADOUT STATION LOOKING NORTH

SOUTH OF LOADOUT STATION LOOKING SOUTH

SOIL PROFILE AT THE SAME LOCATION AS THE TWO PREVIOUS PHOTOGRAPHS

BOULDER REMOVAL SOUTH OF LOADOUT STATION LOOKING NORTH

EMPLOYEE PARKING AREA LOOKING SOUTH

December 30, 2008(Tom Paluso)

The following activities were observed during my site visit:

1. Fill material was being removed from portal access road. Contractor was working on side slopes on the portal access road.
2. Topsoil was being removed from employee parking area and delivered to the topsoil storage area.
3. Contractor was breaking large rocks on west end of coal storage pile. The large rocks were being reduced to make it easier to obtain necessary compaction with fill material being deposited in this area.

PHOTOGRAPHS

TOPSOIL REMOVAL FROM EMPLOYEE PARKING AREA

LOOKING SOUTHWEST OVER PROJECT AREA

January 7, 2009 (Tom Paluso)

The following activities were observed during site visit:

1. Contractor was transporting topsoil from office area to topsoil site.
2. Portal access road grade was being lowered northeast of employee's parking area.
3. Hydraulic hoes were working on portal area.

The stormwater detention pond still has approximately 15 percent of the topsoil to be removed. This material is located in the southeast corner of the pond. According to Shane Campbell this material was intentionally left to provide work during bad weather conditions. Shane also mentioned that topsoil removal at the warehouse site should probably start on January 15 or 16.

PHOTOGRAPHS

TOPSOIL REMOVAL FROM OFFICE AREA

BOULDERS BEING SEPARATED FROM TOPSOIL MATERIAL

LOWER PORTAL ACCESS ROAD GRADE

FILL MATERIAL BEING REMOVED FROM PORTAL ACCESS ROAD

HYDRAULIC BACKHOES WORKING ON PORTAL AREA

<u>January 15, 2009 (Tom Paluso)</u>

The following activities were observed during site visit:

1. Large boulders are being crushed to make gravel for this project.
2. Boulders are being stockpiled at future coal stockpile site. These boulders will be crushed into gravel.
3. Work on the portal area is still in progress.

PHOTOGRAPHS

BOULDERS BEING CRUSHED INTO GRAVEL

CRUSHED GRAVEL PILE

BOULDERS BEING STOCKPILED FOR CRUSHING

<u>January 28, 2009 (Tom Paluso)</u>

The following activities were observed during site visit:

1. Removing material from north end of parking lot.
2. Removing topsoil from stacking tube area.
3. Employee parking lot grading.

PHOTOGRAPHS

PARKING LOT MATERIAL REMOVAL

FINAL GRADING WEST END OF EMPLOYEE PARKING AREA

EMPLOYEE PARKING LOOKING NORTH WITH CRUSHED GRAVEL PILE

BOULDER REMOVAL FROM STACKING TUBE AREA LOOKING EAST

TOPSOIL REMOVAL FROM STACKING TUBE AREA LOOKING NORTH

STACKING TUBE AREA LOOKING EAST TOWARDS PORTALS

EAST OF STACKING TUBE LOOKING WEST

<u>January 29, 2009 (Tom Paluso)</u>

The following activities were observed during site visit:

1 Removing material from north end of parking lot.
2 Removing topsoil from stacking tube area.
3 Employee parking lot grading.

PHOTOGRAPHS

TOPSOIL PROFILE BY STACKING TUBE AREA

CLOSE-UP OF TOPSOIL PROFILE

February 6, 2009 (Tom Paluso)

The following activities were observed during site visit:

1. Removing topsoil from shop-warehouse area.
2. Completing work around silo area.

PHOTOGRAPHS

LOOKING SOUTHEAST FROM SILO AREA, TOPSOIL IS BEING COLLECTED

COLLECTING BOULDERS AND VEGETATION

LOOKING NORTHEAST FROM SILO AREA, TOPSOIL HAS BEEN REMOVED

February 18, 2009 (Tom Paluso)

The following activities were observed during site visit:

1. Removing topsoil from small Stormwater Detention Pond.
2. Removing remaining topsoil from large Stormwater Detention Pond.
3. Working on final grade for Portal Access Road

PHOTOGRAPHS

SIGN LOCATED BY CONSTRUCTION OFFICE & NEAR SMALL STORMWATER DETENTION POND

COLLECTING TOPSOIL AT SMALL STORMWATER RETENTION POND (SRP)

COLLECTING TOPSOIL AT SMALL SRP

REMOVING BOULDER FROM SMALL SRP

NORTHEAST SOIL PROFILE

SOUTHEAST SOIL PROFILE

REMOVE REMAINING MATERIAL FROM LARGE STORMWATER RETENTION POND (SRP)

WEST END LARGE SRP

FINAL WORK ON PORTAL ROAD

TOPSOIL PILE LOOKING NORTHEAST

TOPSOIL PILE LOOKING SOUTH EAST

FOR TOPSOIL TRACKING PURPOSES, PHASE I OPERATIONS ENDS HERE

September 30, 2009 (Tom Paluso)

Lila Canyon Mine is in the process of installing a temporary coal conveyor belt that will be used to remove coal from the mine while the permanent conveyor belt is installed. According to Jay Marshall, this temporary conveyor belt may be used for up to five years while the permanent system is completed.

The construction of this temporary conveyor belt will require concrete supports for bent installations. Topsoil removal at this point is necessary to provide access for equipment required for bent construction. During this phase of topsoil removal 9,324 cubic yards of topsoil was salvaged.

REMOVAL OF TOPSOIL NEAR PORTAL

SOIL PROFILE

TOPSOIL BEING DELIVERED TO TOPSOIL PILE

April 28, 2010 (Tom Paluso)

Scamp Excavation was removing topsoil from the warehouse pad and temporary coal pad. During this section of topsoil removal, 3,772 cubic yards of topsoil was salvaged.

TOPSOIL REMOVAL NEAR PORTAL ROAD

CLOSEUP VIEW OF TOPSOIL MATERIAL

DISTRIBUTION OF TOPSOIL AT TOPSOIL STORAGE AREA

May 26, 2010 (Tom Paluso)

Nielson Construction is removing topsoil from the substation pad area. Approximately 2,100 cubic yards of topsoil was salvaged from this area.

TOPSOIL PROFILE

SUBSTATION PAD LOOKING TOWARDS PORTAL

TOPSOIL PILE AT SUBSTATION SITE

VEGETATION REMOVED FROM TOPSOIL AT SUBSTATION SITE

<u>July 15, 2010 (Tom Paluso)</u>

Scamp Excavation salvaging topsoil at stockpile pad and warehouse pad. Both of these pads are being enlarged to accommodate next phase of construction activities. A total of 6,930 cubic yards of topsoil was salvaged during this section of topsoil removal.

WAREHOUSE PAD BELOW PORTALS

VEGETATION SEPARATION AT SITE

TOPSOIL PLACED AT TOPSOIL PILE

TOPSOIL AT TOPSOIL PILE

June 23, 2014 (Tom Paluso)

Scamp Excavation removed topsoil from the Portal Borrow Area. This area is adjacent to portal road. The area on which the topsoil was removed was approximately 120' x 100'. A total of 333 cubic yards were removed and placed in the topsoil pile. Refer to the pictures below.

TOPSOIL REMOVAL PORTAL BORROW AREA (JULY 23, 2014)

LOOKING TOWARDS LILA CANYON

SOIL PROFILE AT TOP OF CUT

August 20, 2014 (Tom Paluso)

Scamp Excavation from August 20 through August 22, 2014, removed topsoil from the south end of the Upper Pad Area and the Middle Pad Area. A total of 1040 cubic yards were removed from these two areas. The pH of the soil was 7.1. The Upper Pad Area is approximately 500' long.

On August 25- 26, topsoil removal was moved to the Truck Loop Area. The Truck Loop Area is north and adjacent to the Access Road going to the portals. A total of 720 cubic yards were removed and sent to the topsoil pile.

UPPER PAD AREA LOOKING SOUTH WEST

UPPER PAD AREA LOOKING SOUTHEAST

TRUCK LOOP AREA LOOKING TOWARDS PORTAL

TRUCK LOOP AREA CLOSER TO PORTALS

March 30, 2015 (Tom Paluso

Topsoil removal on the Future Parking Lot and Material Storage area was started on March 30, 2015. This area is located between the material storage yard and the west sediment pond. Removal of the large boulders and stockpiling of the topsoil was handled by foreman Mike Allred. This work continued until April 23, 2015, when Scamp Excavation hauled the topsoil and placed it into the topsoil storage area. A total of 32 truckloads or 1280 cubic yards of topsoil was moved to the topsoil storage area.

An access road leading to the west sediment pond, previously had topsoil removed. This road provided access to the west sediment pond from the material storage yard. This road was inside of this topsoil removal project.

LOOKING EAST AT STORAGE AREA FROM WEST SEDIMENT POND

LOOKING WEST FROM STORAGE YARD

LOOKING NORTH

ROCK PILE

LOOKING NORTH WEST OF MATERIAL STORAGE YARD

LOKING WEST AFTER TOPSOIL HAS BEEN REMOVED

TOTAL TOPSOIL REMOVAL TABLE AS OF JUNE 2015

LOCATION	LOADS	VOLUME (Yd^3)
Employee Parking Lot	378	12,110
Portal Road	238	7,622
Storm Water Detention Pond	154	4,943
Small Detention Pond	61	1,940
Coal Stockpile/Warehouse pads	793*	33,012
Topsoil Area	Push with Dozer	646
Substation Area	*	2,100
Portal Borrow Area	*	333
Upper & Middle Pod	26	1,040
Truck Loop Area	18	720
Future Truck Loop/Storage Yd.	32	1280
TOTAL		**65,746**

*** Total Truck Count Not Reported**

APPENDIX 1

TOPSOIL REMOVAL MAP

TOTAL PERMIT AREA	42.6 ACRES
UNDISTURBED AREA	8.7 ACRES
TOTAL DISTURBED AREA	33.9 ACRES
AREA DISTURBED TO DATE	31.88 ACRES
AREA STILL TO BE DISTURBED	2.02 ACRES

TOPSOIL REMOVAL TABLE

LOCATION	LOADS	VOLUME (cubic yards)
Employee Parking Lot	378	12,110
Portal Road	238	7,622
Storm Water Detention Pond	154	4,943
Small Detention Pond	61	1,940
Coal Stockpile/Warehouse Pad	793*	33,012
Substation	*	2,100
Portal Borrow Area	*	333
Topsoil Area	Push with Dozer	646
Upper and Middle Pad	26	1,040
Temporary Truck Loop Area	18	720
Future Truck Loop Area	*	1,280
Total Cubic Yards:		65,746

Notes:
* Total truck count not reported.

PORTAL ROAD
7,622cu.yds.
(2.73 ACRES)

333 cu.yds.

720 cu.yds.

1,280 cu.yds
(0.86 ACRES)

12,110 cu.yds.
(4.55 ACRES)

33,012 cu.yds.
(20.75 ACRES)

1,940
cu.yds.
(0.31 ACRES)

1,040 cu.yds.

2,100 cu.yds.
(1.40 ACRES)

646 cu.yds.
(2.90 ACRES)

4,943 cu.yds.
(1.84 ACRES)

AREA BETWEEN ROADS DISTURBED, BUT NO TOPSOIL STRIPPED.

20' EACH SIDE OF CONVEYOR DISTURBED, BUT NO TOPSOIL STRIPPED.

DISTURBED

UNDISTURBED

UNDISTURBED

UNDISTURBED

A.S.C.A.
Disturbed

Water Treatment Plant

Powder and Cap Magazines

Mine Portal Road

Truck Loadout Road

Existing County Road
RS-2477 ROW
Width of Disturbance

6' High
Chain Link
Fence

TOPSOIL COLLECTED FROM ROAD AROUND TOPSOIL PILE WILL BE PLACED IN BERM
BERM 10' WIDE x 2' HIGH WITH 2:1 SIDE SLOPES

Topsoil Storage Area
Bot. pile = 5856
Top pile = 5930
Volume req. = 66,000 c.y. at 31 feet

CONTROL POINT DELTA
NORTHING: 6,962,108.13
EASTING: 1,967,118.62
ELEVATION: 6129.72

CONTROL POINT
SCATTERED BRUSH AND TREES / BETA
NORTHING: 6,961,805.36
EASTING: 1,968,344.64
ELEVATION: 5859.34

Coal Stockpile

Interburden Material Cover
28,000 cyd

48" RECLAIM CONVEYOR

60" Conveyor

EMERG RECLAIM FEEDER

RECLAIM FEEDERS

ELECTRICAL SUB-STATION

ESCAPE TUNNEL AND FAN

MINE PARKING 51 SPACES

EMPLOYEE PARKING LOT

SCATTERED BRUSH AND TREES

OUTCROP

R 14 E, T 16 S

Mine Facility List

1. Office/Bathhouse
2. Shop/Warehouse
3. Security Shack
4. Mine Substation
5. Water Treatment Plant
6. Potable Water Tank
7. Process Water tank
8. Sewer Tank
9. Ventilation Fan
10. 60" Conveyor Tunnels to Coal Stockpile
11. (ROM) Underground Belt from Stockpile to Crusher
12. 48" Conveyor from Crusher to Loadout Bin
13. Reclaim Tunnel, Escape Tunnel, Fan and Fan House
14. (ROM) Storage Pile, Coal Stacking Tube
15. Crusher Screen Plant
16. Truck Scale and Loadout
17. Coal Loadout Storage Bin
18. Guardrails
19. Underground Pipes
20. Chain Link Fence
21. Warehouse Storage Area
22. Equipment & Supplies Storage Area
23. Topsoil Pile
24. Temporary Mine Development Waste
25. Sediment Pond #1
26. Topsoil Access Road/Portal Access Road
27. Rock Slopes
28. Truck Loadout Road
29. Office/Bathhouse/Warehouse Asphalt Parking Area
30. Mine Parking
31. Water Tanks
32. Powder and Cap Magazines
33. Containment Pond #2
34. 50'x30' Pole Barn

LEGEND:

- UNDISTURBED WITHIN THE DISTURBED AREA
- PROJECTED DISTURBED AREA BOUNDARY: — TEMP. REFUSE PILE (COAL MINE WASTE)
- CURRENT DISTURBED AREA BOUNDARY: — TOPSOIL BERM
- NATURAL DRAINAGE: — Stream Buffer Zone — Ditch — Culvert
- 6' HIGH CHAIN LINK FENCE
- INCIDENTAL ROCK DISTRIBUTION:
- STREAM BUFFER ZONE SIGNS

NOTES:
(1) REFER TO PLATE 5-7A&B FOR CROSS-SECTIONS.

REVISION DATE:

BY:	DATE:
PJJ	JUNE 2011
RJM	February 2015
PJJ	JUNE 2015

LILA CANYON MINE

TOPSOIL REMOVAL MAP

DRAWN BY: P. Jensen
PLATE #: 1 of 1
DATE: 19 July 2010
SCALE: AS SHOWN

UTAH REGISTERED PROFESSIONAL ENGINEER #153606 R. Jay Marshall

0' 100' 200'
50'