JORGENSEN
GEOTECHNICAL, LLC

PO Box 9550 · 1315 HWY 89 S., Suite 201
Jackson, WY 83002
PH: 307.733.5150
www.jorgeng.com

January 18, 2016

Mr. Gordon Criswell
Talen Montana—Environmental & Engineering Compliance Dept.
P.O. Box 38
Colstrip, MT 59323

RE: 2015 SURFACE IMPOUNDMENT ANNUAL INSPECTION REPORT, COLSTRIP STEAM ELECTRIC STATION, COLSTRIP, MONTANA

Dear Mr. Criswell:

As requested by Talen Montana, the attached report summarizes the findings of the surface impoundment initial annual inspection of the Colstrip Steam Electric Station in Colstrip, Montana. We have prepared this report to comply with new coal combustion residual (CCR) regulations published in the Federal Register on April 17, 2015, specifically to Title 40 CFR 257.83(b).

This report also serves to document collection and assessment of data from instrumentation installed within the Colstrip Steam Electric Station's effluent holding pond embankments. Measurements were collected from piezometers and slope inclinometers installed at the Units 1 & 2 Second Stage Evaporation Ponds (1&2STEP), the Plantsite Units 1 & 2 Bottom Ash Pond, and the Units 3 & 4 Effluent Holding Pond (3&4EHP). Beginning in August 2015, the monitoring program was changed from a semi-annual to a monthly monitoring schedule. We will continue to perform inspections and monitor instrumentation, according to the CCR regulations, at intervals not exceeding thirty (30) days throughout 2016.

Our visual inspection and review of the 2015 monitoring data indicate the design, construction, operation, and maintenance of the CCR units are consistent with recognized and generally accepted good engineering standards. In particular, the instrumentation demonstrates the safety and reliability of the embankment dams. Engineering services relevant to the annual inspection and monitoring were conducted by or under the direct supervision of a Montana registered Professional Engineer.

Respectfully submitted,

JORGENSEN GEOTECHNICAL, LLC

Ray Womack 1/18/2016

MONTANA
WESLEY R.
WOMACK
8312PE
LICENSED
PROFESSIONAL ENGINEER

Ray Womack, P.E., P.G.

Enclosure: Report

2015 SURFACE IMPOUNDMENT ANNUAL INSPECTION REPORT COLSTRIP STEAM ELECTRIC STATION COLSTRIP, MONTANA

Prepared for:

Mr. Gordon Criswell
Talen Montana
Environmental & Engineering Compliance Dept.
P.O. Box 38
Colstrip, MT 59323

Prepared by:

Jorgensen Geotechnical, LLC
PO Box 9550
Jackson, Wyoming 83002

January 18, 2016

JORGENSEN GEOTECHNICAL, LLC

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1.0 ANNUAL INSPECTION SUMMARY

The Colstrip Steam Electric Station in Colstrip, Montana deposits and stores coal combustion residual (CCR) waste materials in surface impoundments in three main areas: the Units 1 & 2 Second Stage Evaporation Ponds (1&2STEP), the Plantsite Units 1 & 2 Bottom Ash Pond, and the Units 3 & 4 Effluent Holding Pond (3&4EHP) (See Figure 1). New regulations addressing the annual inspection and reporting requirements of §257.83(b) of the Coal Combustion Residuals (CCR) Regulations, Code of Federal Regulations Title 40, Part 257, Subpart D. These regulations were published in the federal register on April 17, 2015 and became effective on October 19, 2015.

According to the requirements of §257.83(b), the annual inspections are required to include the following components:

- A review of available information regarding the status and condition of the CCR units, including, but not limited to, files available in the operating record (e.g., CCR unit design and construction information required by §257.73(c)(1) and §257.74(c)(1), previous periodic structural stability assessments required under §257.73(d) and §257.74(d), the results of inspections by a qualified person, and results of previous annual inspections.);

- A visual inspection of the CCR units to identify signs of distress or malfunction of the CCR units and appurtenant structures;

- A visual inspection of any hydraulic structures underlying the base of the CCR units or passing through the dike of the CCR units for structural integrity and continued safe and reliable operation; and

- The production of an annual inspection report that contains the following information:
    - Any changes in geometry of the impounding structure since the pervious annual inspection;
    - The location and type of existing instrumentation and the maximum recorded readings of each instrument since the previous annual inspection;
    - The storage capacity of the impounding structure at the time of the inspection;
    - The approximate volume of the impounded water and CCR at the time of the inspection;
    - Any appearances of an actual of potential structural weakness of the CCR units, in addition to any existing conditions that are disrupting or have the potential to disrupt the operation and safety of the CCR units and appurtenant structures; and
    - Any other changes which may have affected the stability or operation of the impounding structure since the previous annual inspection.

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This report summarizes the findings of the initial annual inspection of each of the aforementioned three main areas and documents the information above, as required by §257.83(b). The site inspection was performed by Jorgensen Geotechnical, LLC (JG) on December 14-16, 2015. Table 1-1 presents a summary of the inspection requirements and the location of the report in which each is addressed.

Table 1-1: Inspection Summary

Category	Regulation Reference	Section Addressed
Changes in Geometry	§257.83(b)(2)(i)	3.0
Instrumentation	§257.83(b)(2)(ii)	4.0
Depth and Elevation Estimate	§257.83(b)(2)(iii)	5.0
Estimated Storage Capacity	§257.83(b)(2)(iv)	5.0
Impounded Volume Estimate	§257.83(b)(2)(v)	5.0
Structural Weakness	§257.83(b)(2)(vi)	6.0
Other Changes	§257.83(b)(2)(vii)	7.0

2.0 REVIEW OF AVAILABLE INFORMATION

As a part of the site inspection, JG reviewed documentation related to the surface impoundments of the Units 1 & 2 Second Stage Evaporation Ponds (1&2STEP), the Plantsite Units 1 & 2 Bottom Ash Pond, and the Units 3 & 4 Effluent Holding Pond (3&4EHP).

These included results of weekly inspection reports performed by Talen Montana personnel, monthly instrumentation monitoring performed by this office, design and construction reports from Bechtel Power Corporation (Bechtel, 1979 and Bechtel, 1982), and past reports prepared by this office (DBA Womack & Associates, Inc.) regarding monitoring of instrumentation and embankment stability (see Section 9.0 for a list of pertinent references reviewed).

Additional documents required for review as part of the annual inspection are not required to be developed prior to the January 18, 2016 deadline of this inspection report. These include the History of Construction [§257.73(c)(1)] and previous Periodic Structural Stability Assessments [§257.73(d)] both of which must be compiled by October 17, 2016.

Also, as this is the initial annual inspection, there are no previous annual inspection reports to review.

Schematic Drawing Not to Scale Photo from Google 5/21/2014	2015 Initial Annual Inspection Report Colstrip Steam Electric Station Colstrip, Montana	Vicinity Map	FIGURE 1

UPDATE TIME: \ \ \ \ \ \H:\2015\2015 Monitoring Shortcut\Reporting\Fig 1 Vicinity Map

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3.0 CHANGES IN GEOMETRY

As this is the initial annual inspection, no previous inspections have been performed from which to assess changes in geometry. No changes in geometry have occurred since the effective date of the new CCR regulations (October 19, 2016).

4.0 INSTRUMENTATION

Piezometers and slope inclinometers have been installed periodically at various locations and depths within each of the embankments since 2009. In 2015, exploratory field work was completed to install new instrumentation and to characterize embankments: 13 boreholes at the 1&2STEP and 17 boreholes at the 3&4EHP. This work augmented the monitoring program performed in 2014 with 15 new slope inclinometers and 14 new vibrating wire piezometers (the number of instruments installed is one less than the number of borings because a slope inclinometer installed at the 3&4EHP Saddle Dam was discovered to be faulty and was replaced). These included two slope inclinometers at the 3&4EHP Saddle Dam recommended in the 2014 annual report to bracket SD-12-15INC, which was showing apparent movement from settlement of clinker bedrock underlying the embankment. In addition, two existing wells at the 1&2STEP (952D and 2019D) were added to the monitoring program.

This office (DBA Womack & Associates, Inc.) has historically monitored instrumentation at the Colstrip Steam Electric Station on a semi-annual basis. In coordination with Talen Montana, JG developed a monitoring program to collect data from embankment instrumentation to satisfy the requirements in the new CCR regulations. Instruments were measured in May 2015 and then monthly from August to December 2015. The data were then compared to historic records and used to assess piezometric surface elevation changes or embankment deflections that could indicate potential embankment instability. Location maps and plots of slope inclinometer and piezometer data are included with this report in Appendices A through H.

Please be aware that a vertical concrete “cutoff wall” follows the centerline of the Main and Saddle Dams at the 3&4EHP, intended to prevent seepage through permeable bedrock between and below the dams. Water pressures are typically much higher inside the cutoff wall, and location of instruments was driven in part by the need to evaluate stability both inside and outside the cutoff wall.

4.1 SLOPE INCLINOMETERS

4.1.1 General

There are 23 slope inclinometers at the site: 9 at the 1&2STEP and 15 at the 3&4EHP. Refer to the maps in Appendices A, B, C, D, and E for the slope inclinometer locations within each embankment.

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Slope inclinometers within the 1&2STEP Main Dam were installed in November 2009 and, up until 2015, have been read twice a year. The inclinometers installed in the fall of 2012 at the 3&4EHP Main and Saddle Dams were measured twice in both 2013 and 2014. Inclinometers installed prior to 2015 were measured again in May 2015 and monthly from August through December 2015. With the exception of EHP-SD-15-19INC and STEP-D-15-7INC, which were measured monthly starting in October 2015, data from inclinometers installed in 2015 were recorded monthly from August to December 2015.

Measurements in 2015 were performed using two Durham Geo Slope Indicator portable measurement systems (Digitilt AT) consisting of a probe, cable, and data recorder tablet. Readings are taken every 2 feet from the bottom of the casing to 2 feet below the top of the casing. A complete measurement event consists of two separate passes of the probe. The first, called the "0" pass, is performed and then the probe is turned to face the opposite direction and data is collected again in what is called the "180" pass. The result is a profile of the casing in two perpendicular directions (i.e., A and B), which may be compared to the profile of the initial survey. Minimum and maximum readings are not applicable to slope inclinometer instrumentation.

4.1.2 **Inclinometer Results**

Inclinometer profile changes are plotted by comparing the current profile to the initial profile (i.e., Profile Change). Displacement from each measurement point is typically summed from the bottom of the casing up to the ground surface (cumulative displacement); these results are shown in Appendices A, B, C, D, and E. In general, the inclinometer profile change plots exhibit very little deviation from the baseline readings and most of the deflections observed on the graphs are more likely related to small measuring discrepancies and not actual ground movement. In some cases the inclinometer data have been adjusted for errors related to bias and rotation, which is indicated on each plot in the appendices. These corrections are important in that instrument error can be detected and separated from "real" movement.

With a few exceptions discussed below, recorded values typically indicate less than 0.25-inch of deflection and are usually greatest near the surface where the casing is likely to have been deformed slightly due to grout shrinkage or loose material around the top of the casing.

As discussed in the 2014 Annual Report (WAI, 2014), inclinometer SD-12-15INC at the 3&4EHP Saddle Dam appears to show movement indicative of slight settlement within the saturated clinker underlying the embankment inboard of the cutoff wall. The settlement apparently followed placement of Phase 2 Dam Raise fill. Recent measurements of SD-12-15INC appear to indicate settlement of clinker below the embankment has run its course. However, slight deformation was detected in the "B" axis (i.e., parallel to the long axis of the embankment) between 16 and 22-ft below the top of the casing, near the center of the Phase 2 Dam Raise fill.

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Movement is on the order of 0.25-in since the baseline survey in October 2012. This is not a cause for concern because: 1) the majority of the movement is parallel to the embankment, 2) the movement is very small and spread over about 8 to 10 vertical feet rather than in a discrete zone (as would be expected from shearing), and 3) no surface expression exists to indicate movement of the embankment.

Two additional inclinometers (SD-15-17INC and SD-15-19INC) were installed in 2015 to bracket SD-12-15INC and assess whether the small detected movements are indicative of a larger problem. At this time, measurements of the new inclinometers appear to verify movement observed in SD-12-15INC is not wide spread. SD-15-17INC may be detecting settlement-related movement in the "B" axis direction in the clinker foundation at a depth between 34 and 40 feet. This likely indicates the saturated clinker underlying the embankment inboard of the cutoff wall is still undergoing minor settlement from the weight of recent fill (see Section 4.2.3). Although this movement needs to be monitored in the future, its direction and appearance do not appear to indicate instability. SD-15-19INC was installed in September 2015 and did not appear to show movement when measured in November and December.

4.1.3 **Conclusions**

Very little deflection has been recorded in the inclinometers since their installation. The results of monitoring demonstrate that embankments are safe to operate at current water levels. Inclinometers SD-12-15INC and SD-15-17INC will be watched closely for any increase in the rate of settlement.

4.2 PIEZOMETER MONITORING

4.2.1 **General**

The 2015 monitoring program included 61 vibrating wire (VW) and standpipe piezometers. Piezometers are distributed across the facility as follows:

- 6 Units 1 & 2 STEP Main Dam
- 10 Additional Units 1 & 2 STEP (i.e., within impoundment divider dikes)
- 6 Plantsite Units 1 & 2 Bottom Ash Pond
- 19 Units 3 & 4 EHP Saddle Dam
- 12 Units 3 & 4 EHP Main Dam
- 8 Additional Units 3 & 4 EHP (i.e., A-Cell, H-Cell, and F-Cell)

Refer to Appendices F, G, and H for the piezometer location maps and data plots associated with each area within the facility. The piezometers at the 1&2STEP Main Dam and the Plantsite Units 1 & 2 Bottom Ash Pond were installed in late 2009. Piezometers within and around the 3&4EHP were installed at various times starting shortly after the pond was commissioned in 1982 and continuing to October 2012, following the dam raises. Additional piezometers were

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added at the 1&2STEP and the 3&4EHP in 2015 within embankments not previously instrumented.

In 2015, the piezometer readings were collected in May and monthly from August to December by JG personnel. The effluent holding pond surface water level readings were provided by Talen Montana.

With approximately 11.7-inches of precipitation in 2015, according to NOAA's National Climate Data Center, Colstrip was drier than usual. In fact, since 1990 only 2004, 2006, and 2012 (with 9.8-in, 11.5-in, and 7.4-in respectively) had less precipitation. Average precipitation in Colstrip per year since 1982 is 14.9 inches.

The piezometers consist of VW transducers and slotted PVC standpipes. The VW piezometers transmit frequency signals which are read by a Durham VW Data Recorder and converted to water pressures. The standpipe water levels were measured using an electronic water level meter. Appendices F, G, and H contain the plots of ground water instrumentation results alongside nearby effluent holding pond surface water elevations. Minimum and maximum piezometric surface elevations during the life of the instrument may be ascertained from the plots.

4.2.2 **Piezometer Monitoring Summaries**

4.2.2.1 Units 1 & 2 Second Stage Evaporation Ponds

All piezometers, but one, consistently reported dry conditions, as would be expected since each of the surface impoundments at the 1&2STEP are lined. During the very wet spring of 2011, piezometer STEP-09-7P indicated a water surface elevation approximately 1.75ft above piezometer elevation, presumably due to surface infiltration. Other than one reading, STEP-09-7P has been dry. Graphical results presenting the measured piezometric surface information and adjacent cell surface water elevations are in Appendix F.

4.2.2.2 Plantsite Units 1 & 2 Bottom Ash Pond

The piezometers installed along the crest of the Bottom Ash Pond (BOTASH-09-1P, BOTASH-09-4P, and PONDA-09-3P) were installed through the core into the foundation material and screened upward into the core material. BOTASH-09-1P and BOTASH-09-4P have reported dry conditions except during the very wet spring of 2011 when the piezometers reported 1.0 and 3.6 feet of water, respectively. PONDA-09-3P was installed in the foundation and has recorded water elevations above the piezometer depth since installation, with the highest water level in June 2011, following a very wet spring. Data indicate a strong correlation of PONDA-09-3P to water levels in Pond-A, with a marked decrease in 2015 corresponding with the removal of water from Pond-A prior to the effective date of the new CCR regulations. PONDA-09-3P was

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installed much deeper than the other Bottom Ash Pond piezometers and it is possible that measured water levels are influenced in part by groundwater, which likely fluctuates in response to seasonal variations in precipitation.

Piezometers BOTASH-09-2P, BOTASH-09-3P, and PONDA-09-4P, located within the shell material near the toe of the Bottom Ash Pond embankment, have been dry since their installation in 2009.

Graphical results presenting the measured piezometric surface elevations and adjacent cell surface water elevations are attached in Appendix G.

4.2.2.3 Units 3 & 4 Effluent Holding Pond

The Saddle Dam is outboard of G-Cell and J-Cell on the east side of the 3&4EHP. Surface water levels in C-Cell and G-Cell, which are currently unlined, are known to influence piezometric surface elevations inboard of the cutoff wall. G-Cell's surface water level has been limited to a maximum elevation of 3237.5-ft AMSL to reduce seepage that had bypassed the Saddle Dam core and drain system in the past.

Of the 19 VW and standpipe piezometers within the Saddle Dam, 9 are located outboard (i.e., downstream) of the cutoff wall. Each of these piezometers has reported dry conditions since their installation in 2009 and 2012. The 10 piezometers inboard (i.e., upstream) of the cutoff wall fluctuate in response to water levels in adjacent unlined cells in the 3&4EHP, particularly C-Cell, which is considered the hydraulic driver of the facility. Plots of individual wells outboard of the cutoff wall are presented in addition to a summary plot. In general, Saddle Dam piezometers are reporting some of the lowest water surface elevations since their installation. During 2015, water levels in some of piezometers rose during the summer and fall before falling in the early winter, indicating influence by seasonal precipitation.

The Main Dam is outboard of J-Cell on the north side of the 3&4EHP. The surface water level within J-Cell has been limited to a maximum elevation of 3,238-ft AMSL to reduce seepage.

A total of 12 VW and standpipe piezometers in the Main Dam embankment and abutments were measured during the 2015 monitoring effort. Two piezometers (MD-09-2P and MD-09-4P) are located within the shell material outboard of the chimney drain, and one piezometer (MD-09-5P) is located in the foundation material beyond the toe of the embankment. All of these have reported dry conditions since their installation in 2009. Of the nine piezometers reporting water, very little change occurred in 2015 compared to historic values, indicating the internal structure of the zoned-earth embankment is functioning properly.

Four new VW piezometers were installed in embankments outboard of F-Cell and H-Cell. All have reported dry conditions since installation in the summer of 2015.

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Four new piezometers were installed within the embankment outboard of A-Cell. With the exception of A-15-21P, all have reported dry conditions. Water surface elevations recorded in A-15-21P, which is located inboard of the concrete cutoff wall, are approximately 3256-ft, as would be expected, because the seepage is likely reporting from C-Cell through permeable clinker bedrock. The seepage is apparently contained by the cutoff wall. It is unexpected that a similar water surface elevation has not appeared in A-15-19P. Although 19P was installed inboard of the cutoff wall location shown on the map of the EHP, it is possible that A-15-19P is actually outboard of the cutoff wall or installed within fine-grained bedrock that isolates it from the source of water observed in A-15-21P.

Plots presenting recorded water levels within these cells alongside measured piezometric surface elevations from the instrumentation are included within Appendix H. In addition, piezometric surface elevation data are presented in a table in Appendix H. The results demonstrate little change in piezometric surface elevations, indicating stable conditions through December 2015.

4.2.3 **Conclusions**

In summary, the monitoring well levels appear to be stable and very little change was observed in the piezometric surface elevations in 2015. Lower water elevations in unlined cells (C-Cell, J-Cell, and G-Cell) appear to be influencing observed piezometric surface elevations. Recorded piezometric surface elevations do not indicate adverse conditions that would likely lead to embankment instability.

4.3 Hydraulic Structure Instrumentation

Toe drains were visually inspected at the 3&4EHP Main Dam (MD) and Saddle Dam (SD) and the 1&2STEP Main Dam (STEP-MD). Water observed in the MD toe drain and the STEP-MD toe drain has always appeared clear. The toe drain of the SD is dry and has not seen water during the period of observation by this office.

Flow rates through the STEP-MD and MD toe drains are measured with a Telog Model 2109E pressure flow recorder and a Greyline Instruments Model AVFM 5.0 area-velocity flow meter, respectively. The flow rate through the STEP-MD and MD systems during the inspection were approximately 3.4 gpm and 21 gpm, respectively. As this is the initial inspection, minimums and maximums since the previous inspection report could not be assessed.

5.0 CAPACITY, IMPOUNDED VOLUME, DEPTH, AND ELEVATION

The estimated storage capacity and impounded volume for each surface impoundment during the December 14-16, 2015 inspection are presented in Tables 2, 3, and 4 for the three areas

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inspected. Also included are the approximate depths of impounded water and CCR. These volumes and depths were estimated using existing topographic maps, observations made during the inspection, and surface water measurements provided by Talen Montana.

Table 5-1: Units 1 & 2 Second Stage Evaporation Ponds

Surface Impoundment	Storage Capacity[1] (yd^3)	Impounded Volume[2] (yd^3)	Depth[3] (ft)	Elevation[3] (ft)
A-Cell	0	N/A[4]	N/A[4]	N/A[4]
Clearwell	330,000	238,000	28.3	3260.3
E-Cell	700,000	818,000	24.4	3267.4
B-Cell	350,000	311,000	20.0	3265.0
D-Cell	800,000	744,000	32.1	3264.1

Notes:

1. Approximate storage capacity estimated using the currently available topographic and bathymetric data of each surface impoundment assuming a maximum operational water elevation of 3,267-ft in the surface impoundments of Units 1 & 2 STEP.
2. Approximate impounded volume estimated using the currently available topographic and bathymetric data of each surface impoundment using the measured water surface elevation at the time of the inspection. Small changes in water surface elevation can result in large increases in impounded volume. In the case of E-Cell, the elevation is 0.2-ft above that of the assumed maximum operational water elevation.
3. As this is the initial inspection report, minimum and maximum depths and elevations from the previous inspection are not assessed.
4. Unit not impounding water at the time of the inspection.

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Table 5-2: Units 3 & 4 Effluent Holding Pond

Surface Impoundment	Storage Capacity[1] (yd^3)	Impounded Volume[2] (yd^3)	Depth[3] (ft)	Elevation[3] (ft)
C-Cell	900,000	15,000	6.0	3267.0
A-Cell	0	N/A[4]	N/A[4]	N/A[4]
B-Cell	850,000	824,000	20.2	3286.2
G-Cell	2,000,000	N/A[4]	N/A[4]	N/A[4]
F-Cell	900,000	906,000	15.2	3287.2
H-Cell	1,100,000	962,000	19.2	3285.2
J-Cell	2,300,000	N/A[4]	N/A[4]	N/A[4]

Notes:

1. Approximate storage capacity estimated using the currently available topographic and bathymetric data of each surface impoundment assuming a maximum operational water elevation of 3,287-ft in the surface impoundments of Units 3 & 4 EHP.
2. Approximate impounded volume estimated using the currently available topographic and bathymetric data of each surface impoundment using the measured water surface elevation at the time of the inspection. Small changes in water surface elevation can result in large increases in impounded volume. In the case of F-Cell, the elevation is 0.2-ft above that of the assumed maximum operational water elevation.
3. As this is the initial inspection report, minimum and maximum depths and elevations from the previous inspection are not assessed.
4. Unit not impounding water at the time of the inspection.

Table 5-3: Plantsite Units 1 & 2 Bottom Ash Pond

Surface Impoundment	Storage Capacity[1] (yd^3)	Impounded Volume[1] (yd^3)	Depth[1,2] (ft)	Elevation[1,2] (ft)
Bottom Ash Pond	25,000	25,000	19.5	3261

Notes:

1. Approximate storage capacity, impounded volume, depth, and elevation estimated using visual inspection and a review of the design drawings. The surface impoundment appeared full at the time of the inspection.
2. As this is the initial inspection report, minimum and maximum depths and elevations from the previous inspection are not assessed.

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6.0 STRUCTURAL WEAKNESS

Signs of actual or potential structural weakness including, but not limited to, cracks, subsidence, seepage, excessive moisture, and ponding were not observed along the embankments, surface, or crest areas. The cracks that have been previously monitored at the Saddle Dam (WAI, 2010) occurred before 1999. They are now covered with 30 feet of Phase 2 Dam Raise fill and are not visible.

At the time of inspection, JG did not observe any conditions that are disrupting or have the potential to disrupt the operation and safety of the CCR units and appurtenant structures inspected.

7.0 OTHER CHANGES

As this is the initial annual inspection, no previous inspections have been performed from which to assess changes. To our knowledge, no changes which may have affected the stability or operation of the impounding structures have occurred since the effective date of the new CCR regulations (October 19, 2016).

8.0 LIMITATIONS

These services have been performed in a manner consistent with the level of care and skill ordinarily exercised by members of the profession currently practicing in this area under similar conditions. The contents of this report are based solely on the observations of the conditions made by Jorgensen Geotechnical personnel and information provided to Jorgensen Geotechnical by Talen Montana personnel. No other warranty is made or implied regarding any professional opinions contained in this report.

9.0 REFERENCES

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Womack & Associates, 2010 Geotechnical Investigation & Analyses Memo for the Surge Pond Dam Inspection Issue.

Womack & Associates, 2011 Annual Report for Instrumentation Measurements and Assessment for PPLM'S Colstrip Effluent Holding Ponds (EHP).

Womack & Associates, 2012 Annual Report for Instrumentation Measurements and Assessment for PPLM'S Colstrip Effluent Holding Ponds (EHP).

Womack & Associates, 2013 Annual Report for Instrumentation Measurements and Assessment for PPLM'S Colstrip Effluent Holding Ponds (EHP).

Womack & Associates, 2014 Annual Report for Instrumentation Measurements and Assessment for PPLM'S Colstrip Effluent Holding Ponds (EHP).

APPENDIX A

Units 1 & 2 STEP Main Dam
Inclinometer Plots

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307.733.5150
www.jorgensenassociates.com

PROJECT TITLE:
2015 Annual Inspection Report
Talen Energy
Colstrip, Montana

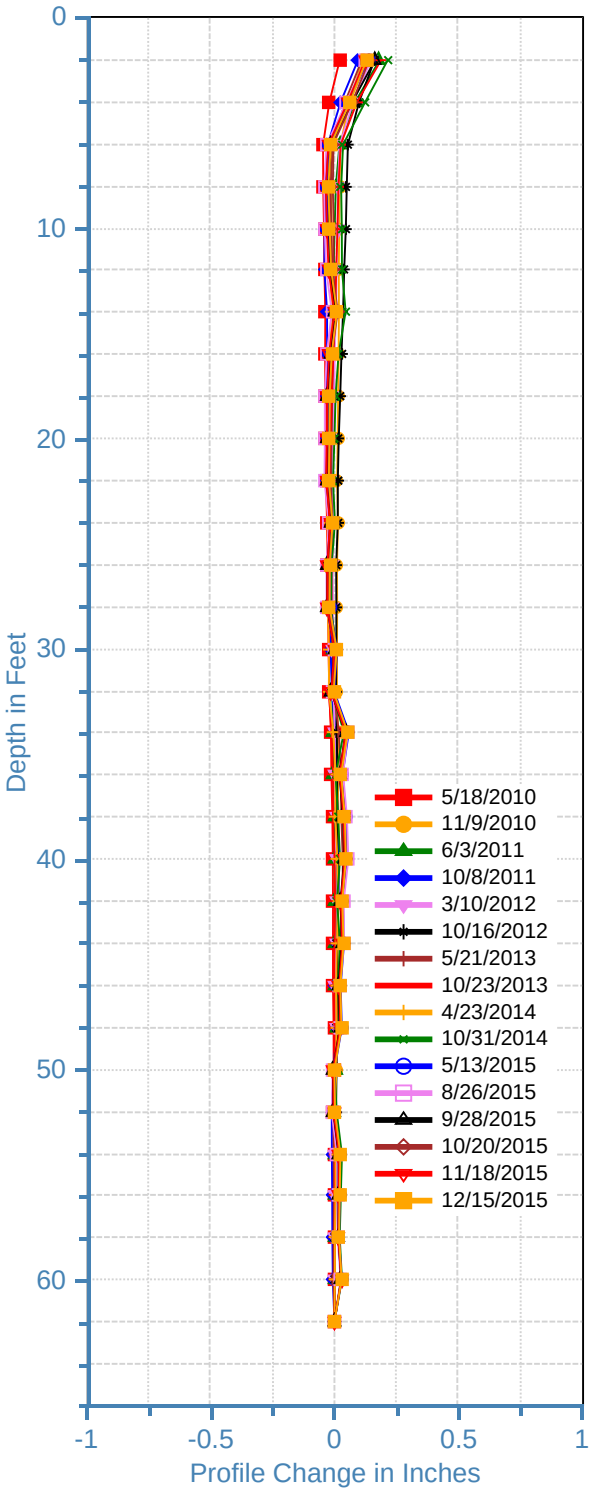
SHEET TITLE:
Units 1 & 2 STEP Main Dam
Inclinometer Location Map

DRAFTED BY:	HC
REVIEWED BY:	
PLAN VERSION	DATE
	1/11/2016

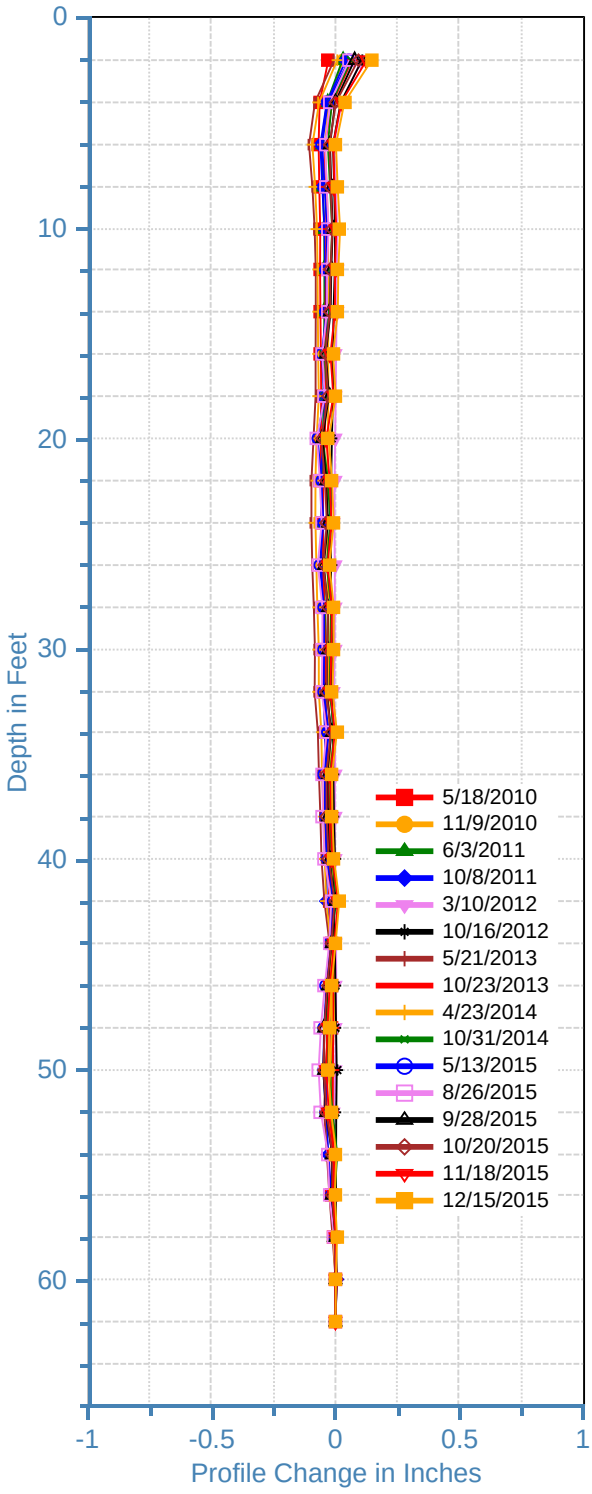
PROJECT NUMBER
15419

SHEET
A1

STEP 09-1INC A
Initial: 11/19/2009



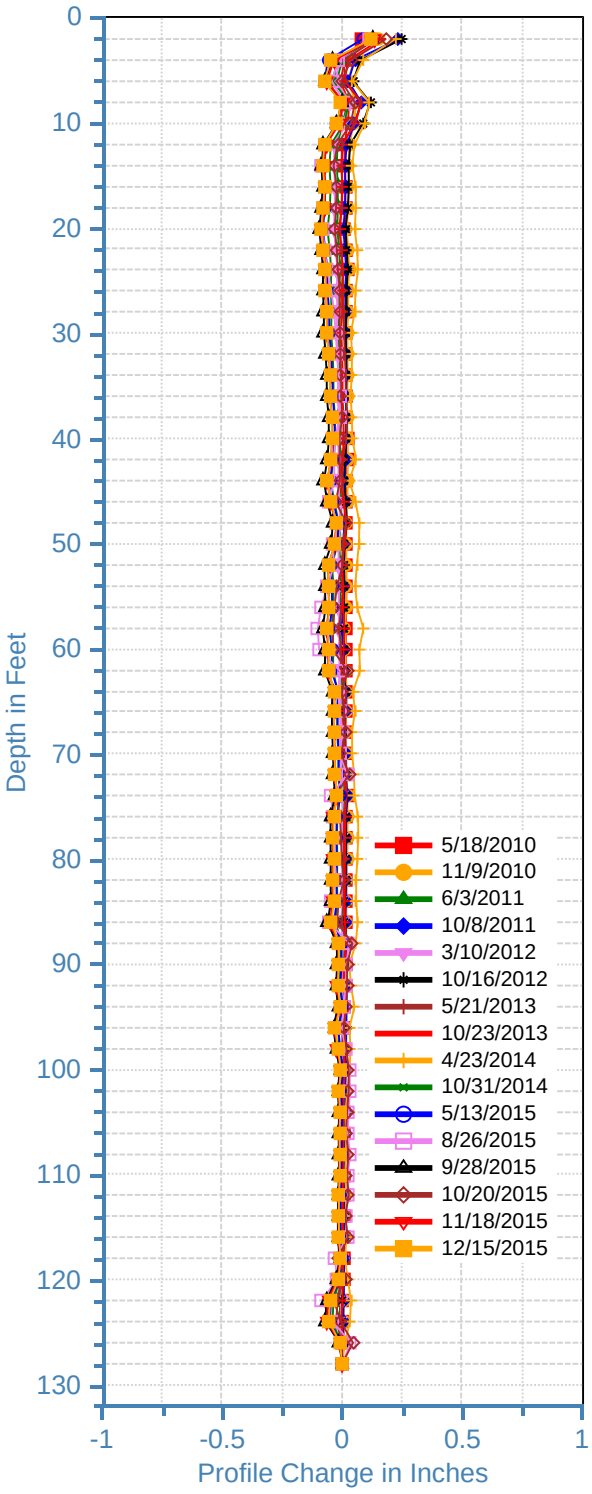
STEP 09-1INC B
Initial: 11/19/2009



Talen Energy - Inclinometer Monitoring
JORGENSEN GEOTECHNICAL, LLC
Jackson, WY

Location: Units 1&2 STEP
Instrument: STEP-09-1INC

STEP 09-2INC A
Initial: 11/20/2009



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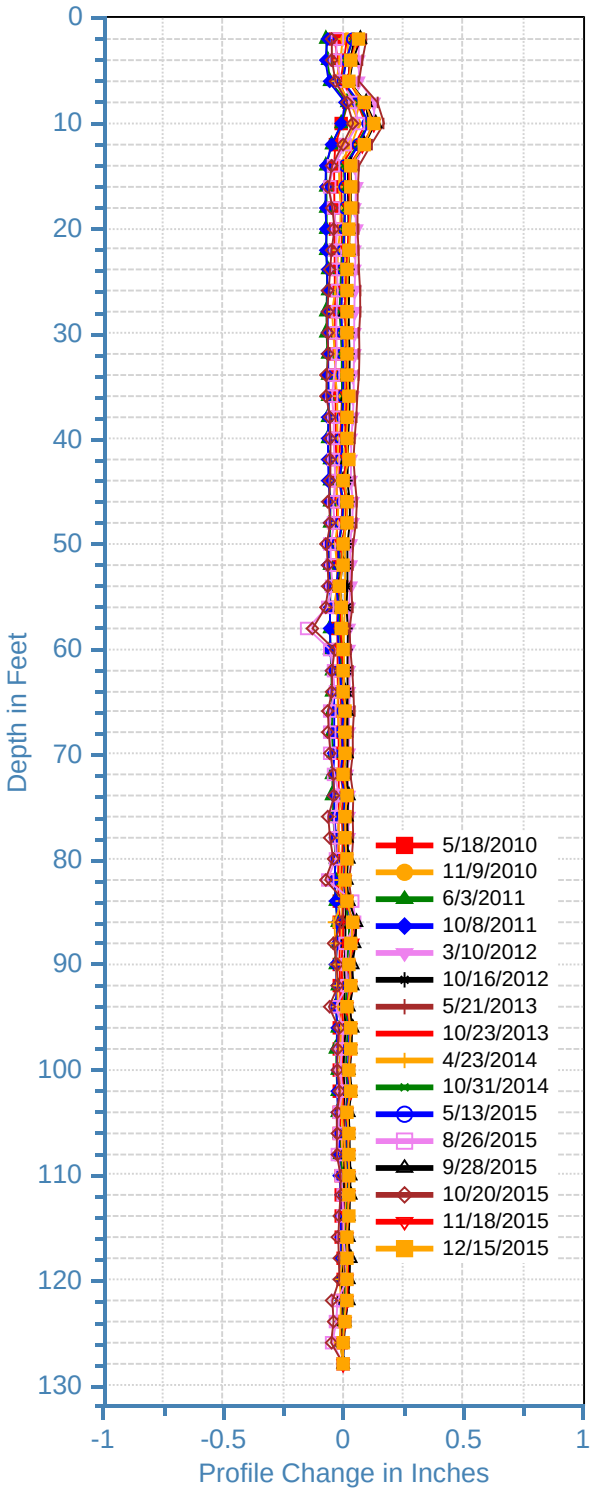
Initial: 11/20/2009

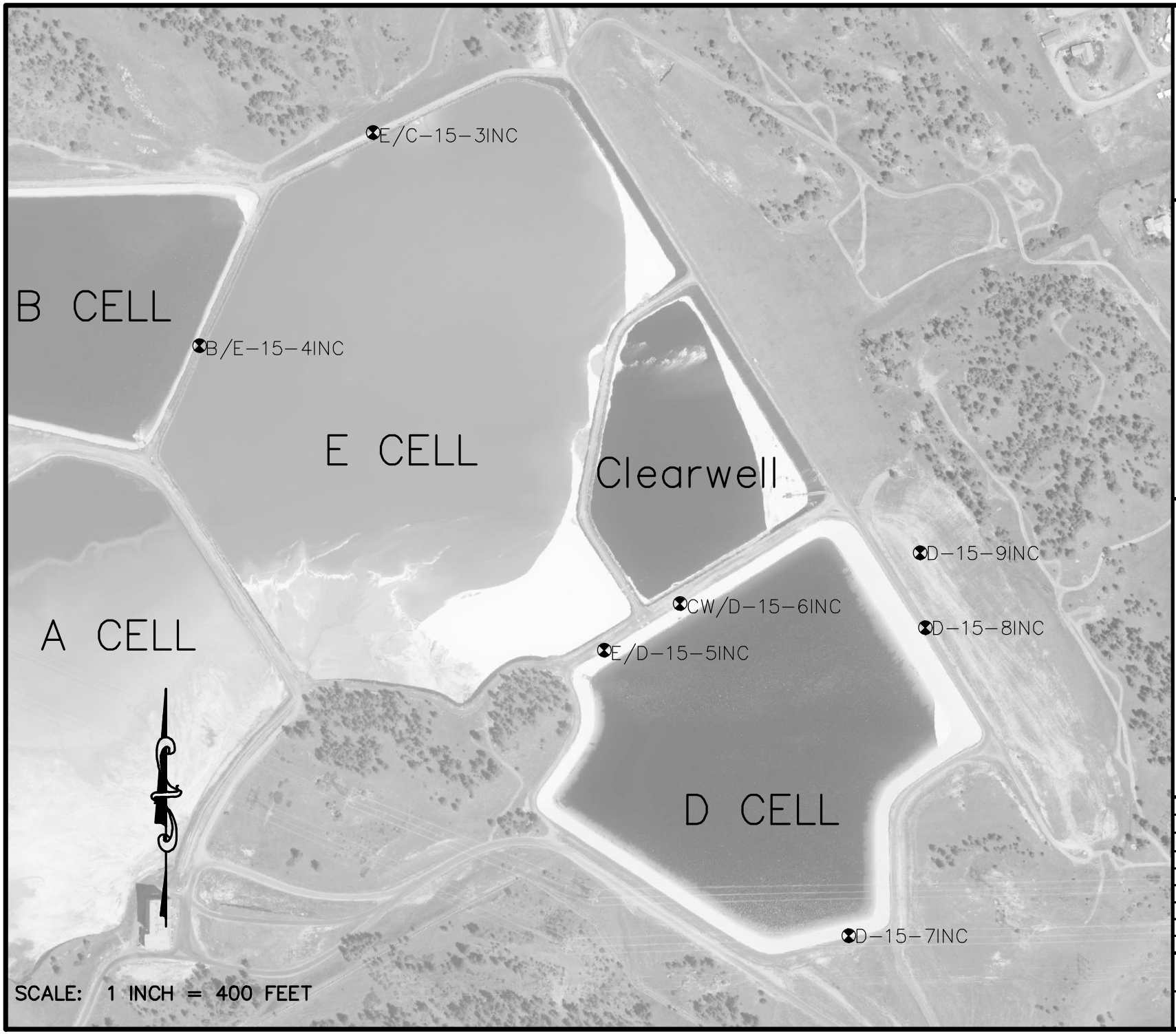


Talen Energy - Inclinometer Monitoring
JORGENSEN GEOTECHNICAL, LLC
Jackson, WY

Location: Units 1&2 STEP
Instrument: STEP-09-2INC

APPENDIX B

Additional Units 1 & 2 STEP Area
Inclinometer Plots



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PROJECT TITLE:
2015 Annual Inspection Report
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Colstrip, Montana

SHEET TITLE:
Units 1 & 2 STEP Area
Additional Inclinometer Location
Map

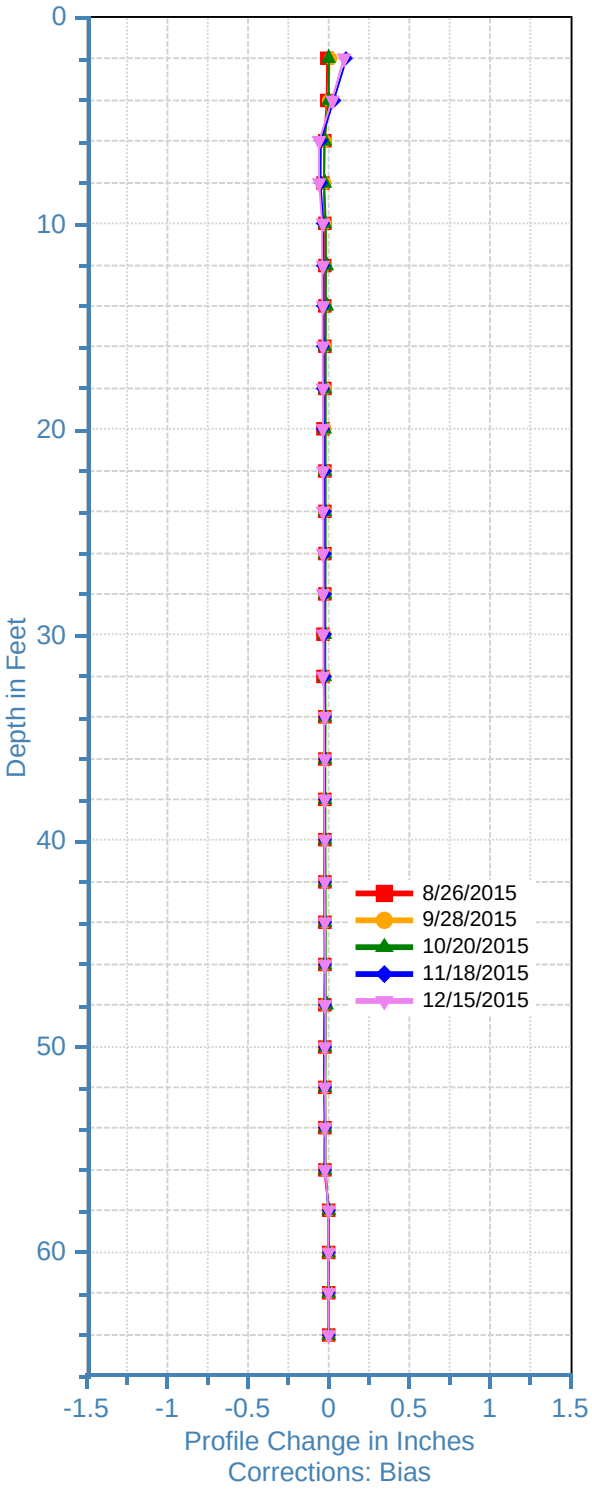
DRAFTED BY:	HC
REVIEWED BY:	
PLAN VERSION	DATE
	1/11/2016

PROJECT NUMBER
15419

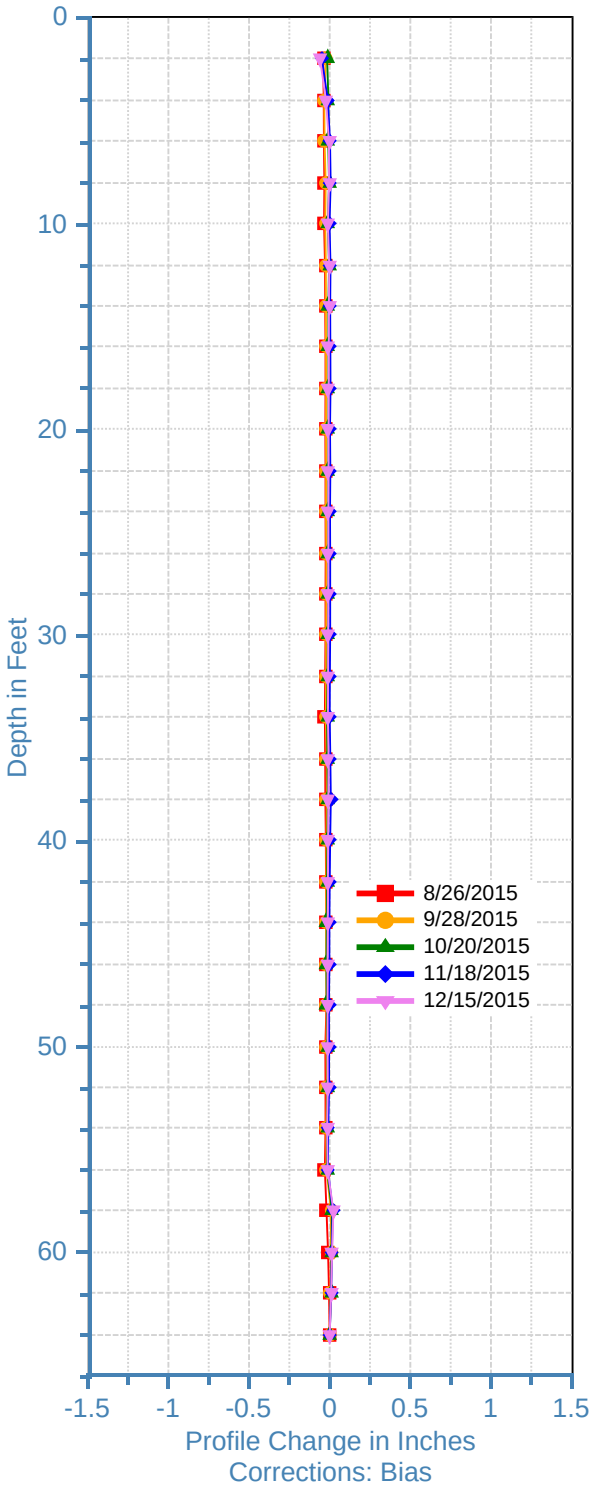
SHEET
B1

Plotted by clane on Jan 17, 2016 - 9:20pm
Ver. 15.1
W:\Clients\ppl\2015 Monitoring\Reporting\Appendices\Maps\STEP.dwg

STEP EC-15-3INC A
Initial: 7/29/2015



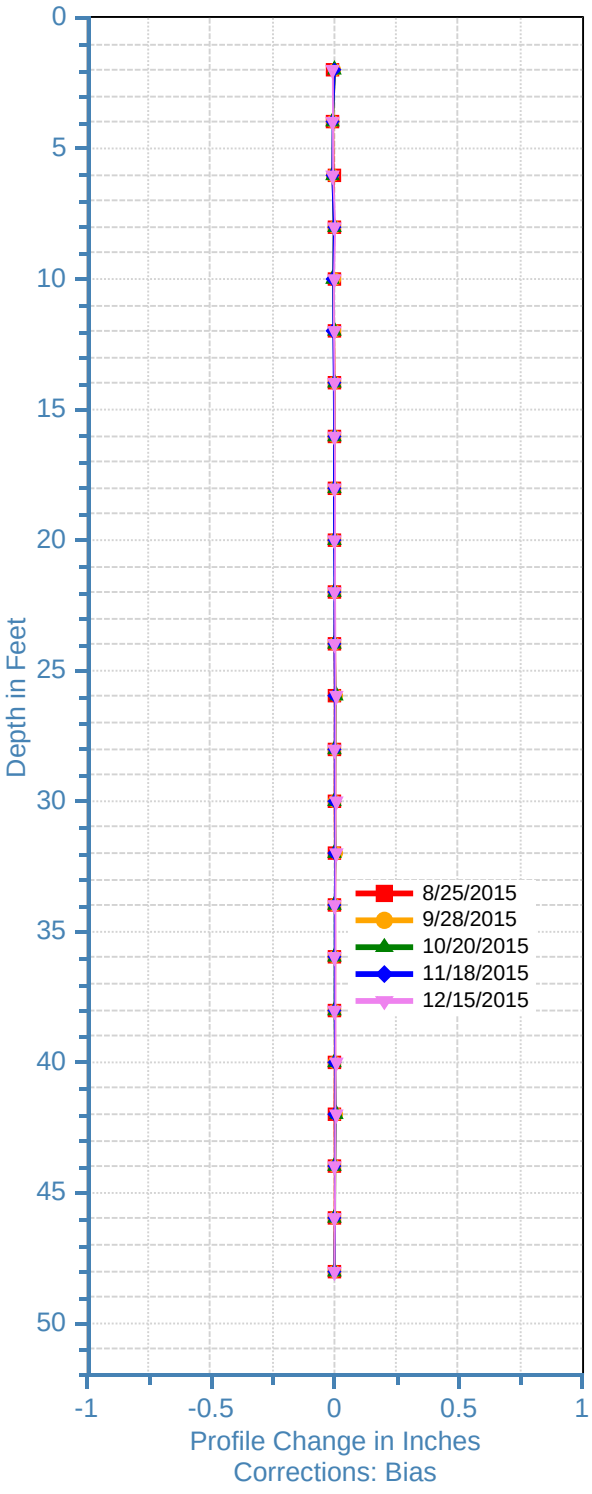
STEP EC-15-3INC B
Initial: 7/29/2015



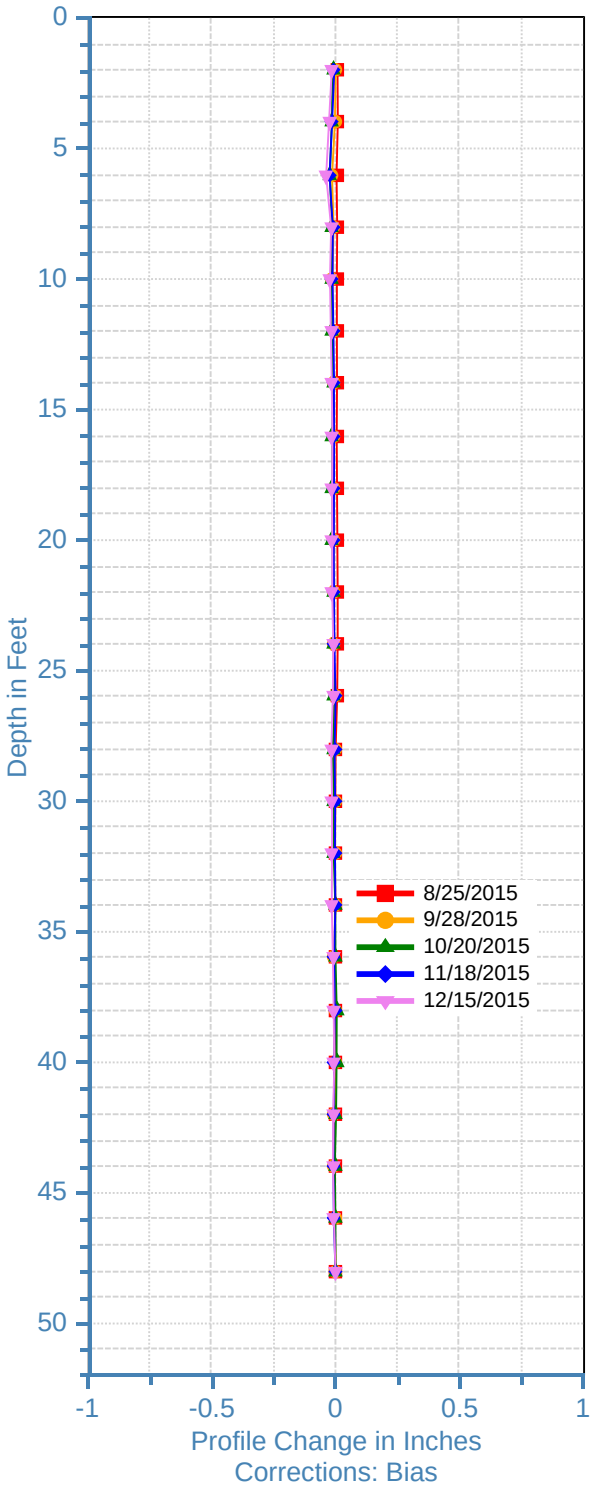
Talen Energy - Inclinometer Monitoring
JORGENSEN GEOTECHNICAL, LLC
Jackson, WY

Location: Units 1&2 STEP
Instrument: E/C-15-3INC

STEP BE-15-4INC A
Initial: 7/29/2015



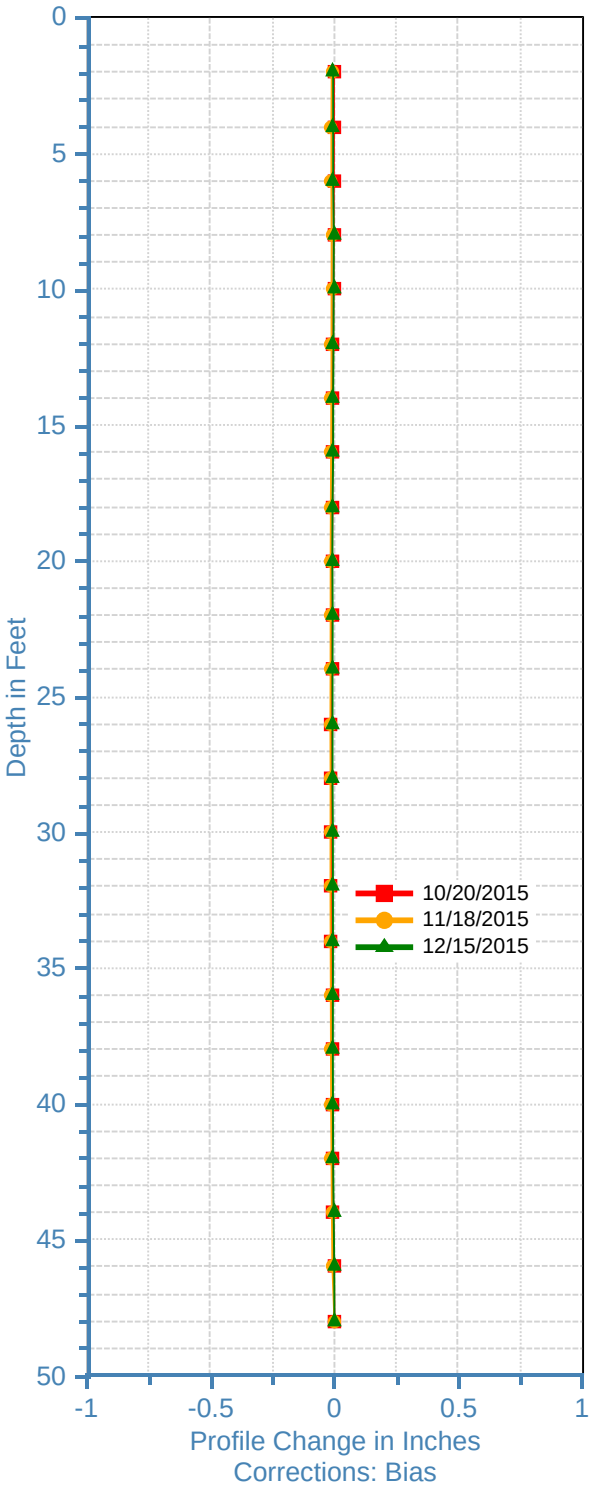
STEP BE-15-4INC B
Initial: 7/29/2015



Talen Energy - Inclinometer Monitoring
JORGENSEN GEOTECHNICAL, LLC
Jackson, WY

Location: Units 1&2 STEP
Instrument: B/E-15-4INC

STEP ED-15-5INC A
Initial: 9/30/2015



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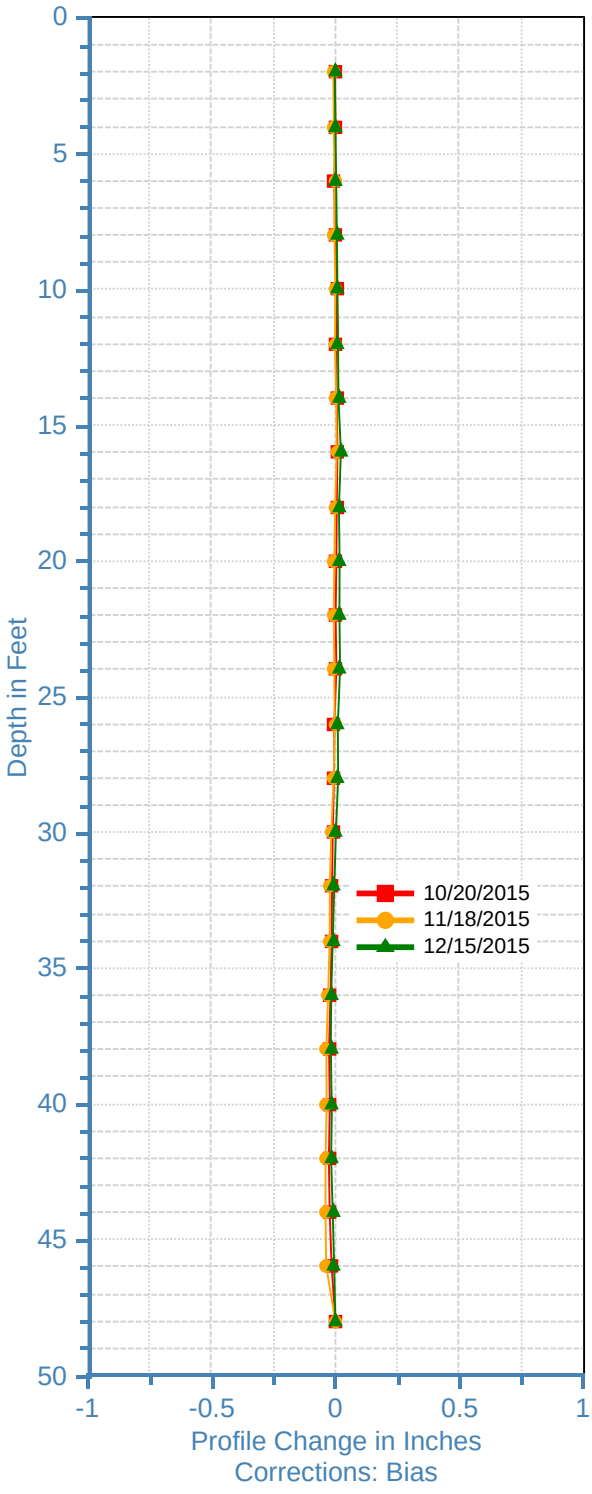
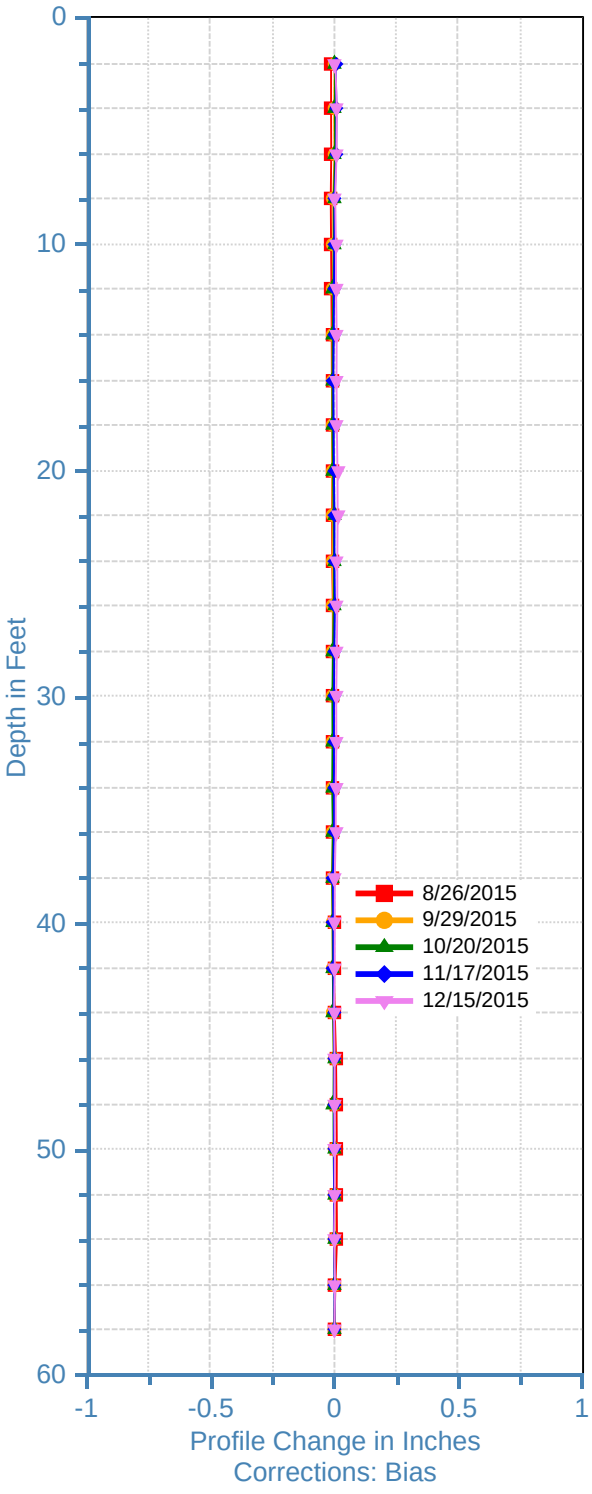


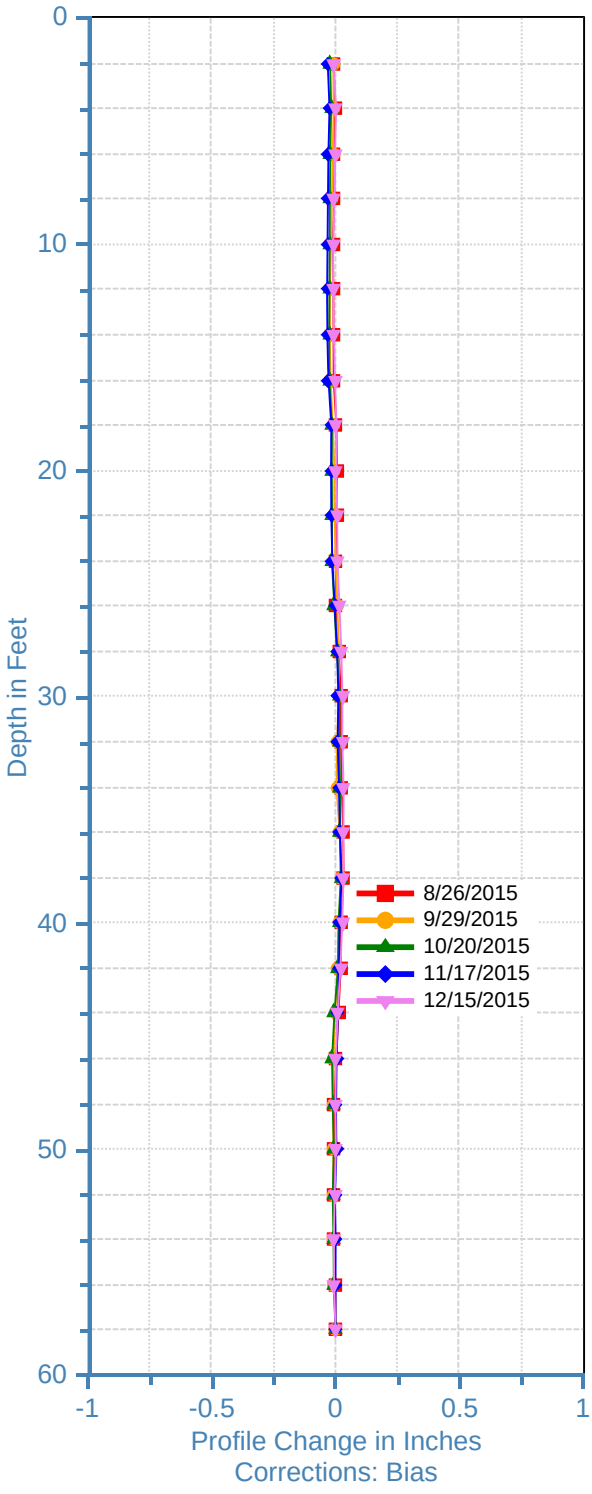
Talen Energy - Inclinometer Monitoring
JORGENSEN GEOTECHNICAL, LLC
Jackson, WY

Location: Units 1&2 STEP
Instrument: E/D-15-5INC

STEP CWD-15-6INC A
Initial: 7/29/2015



STEP CWD-15-6INC B
Initial: 7/29/2015



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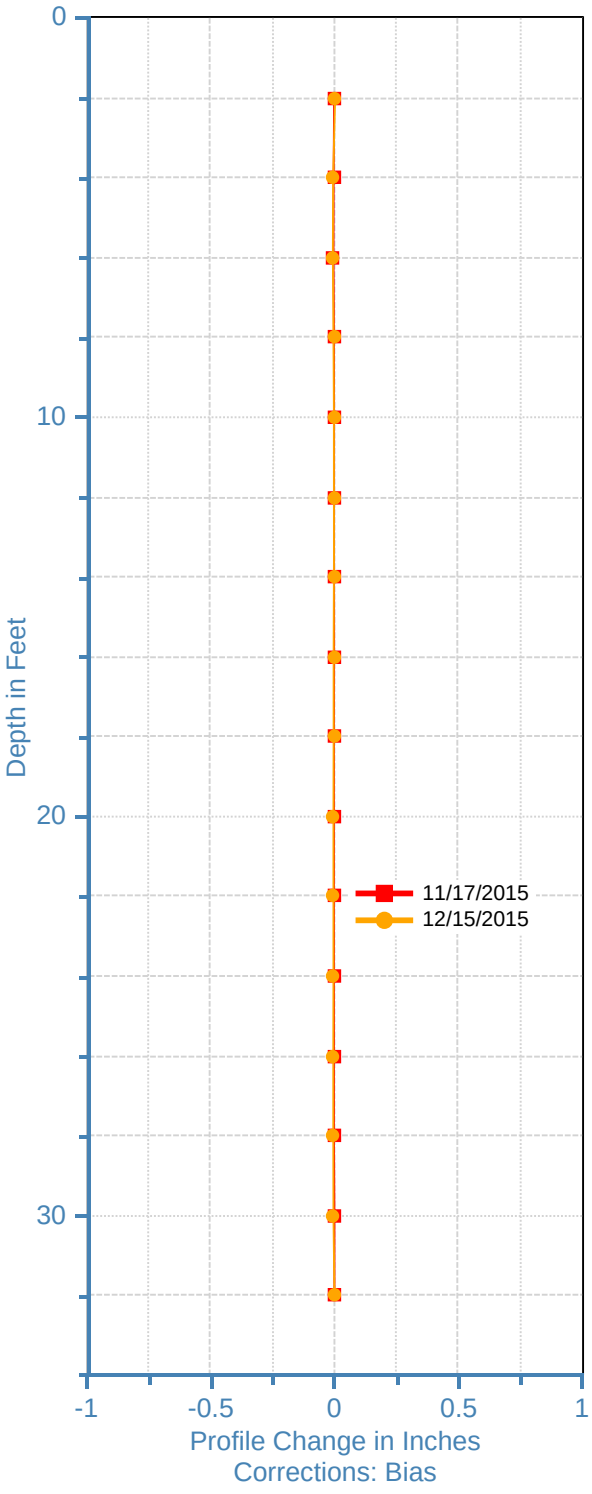
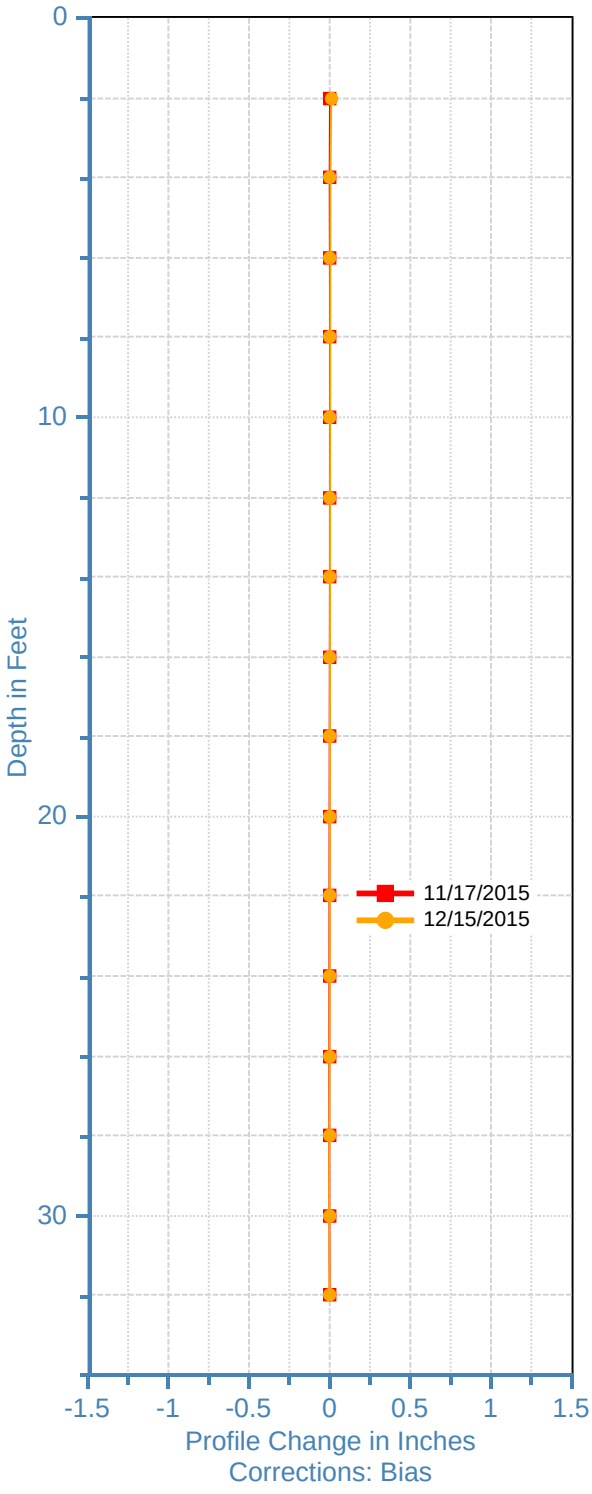
JORGENSEN GEOTECHNICAL, LLC
Jackson, WY

Location: Units 1&2 STEP
Instrument: CW/D-15-6INC

STEP D-15-7INC A
Initial: 10/20/2015



STEP D-15-7INC B
Initial: 10/20/2015



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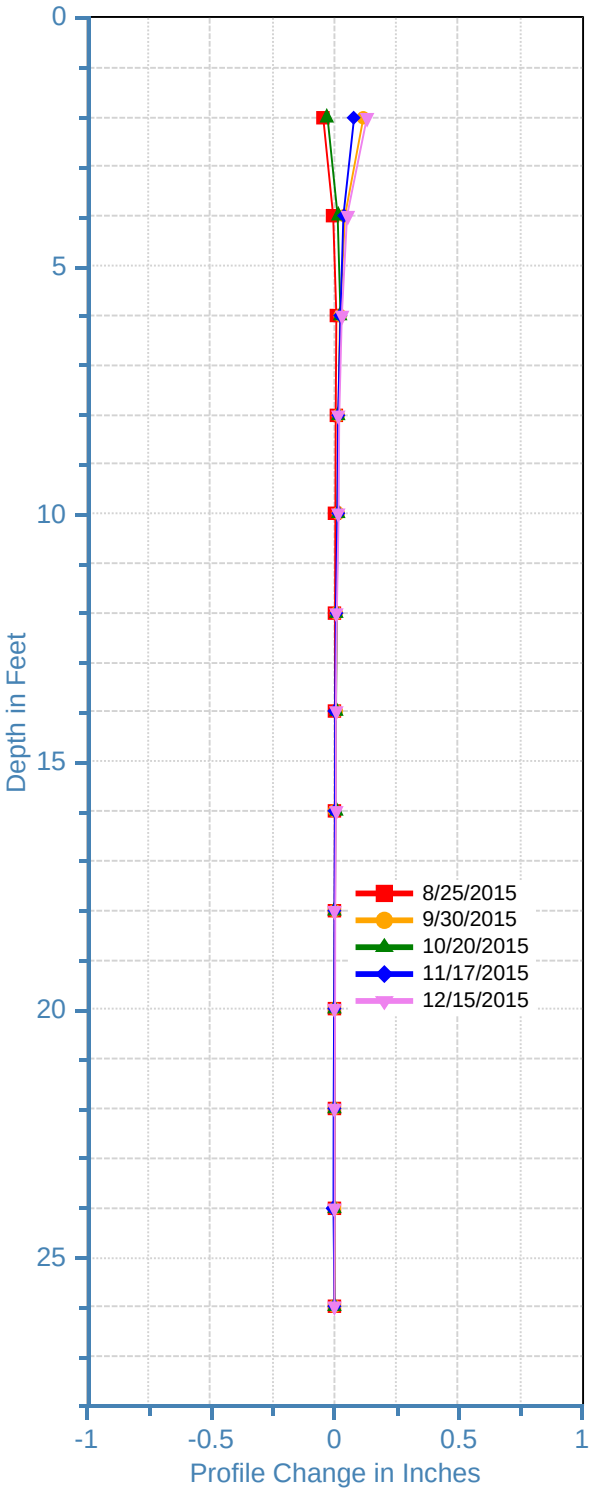
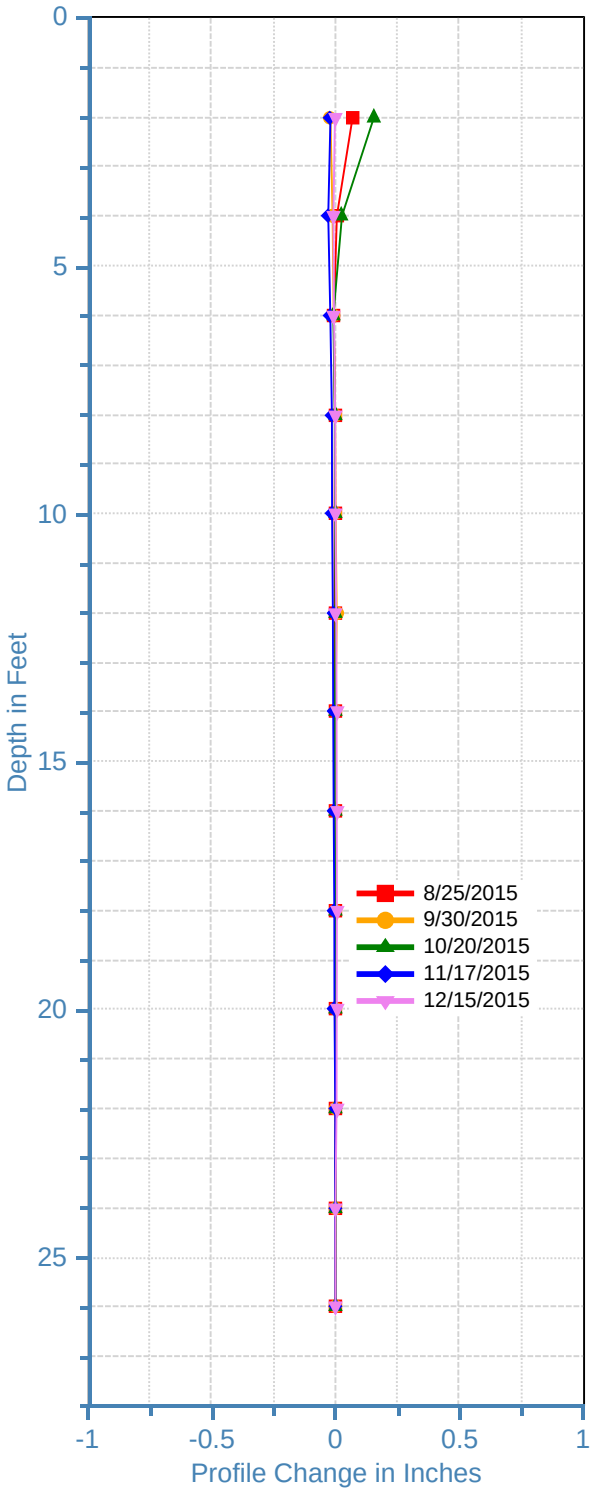
Jackson, WY

Location: Units 1&2 STEP
Instrument: D-15-7INC

STEP D-15-8INC A
Initial: 7/29/2015



STEP D-15-8INC B
Initial: 7/29/2015



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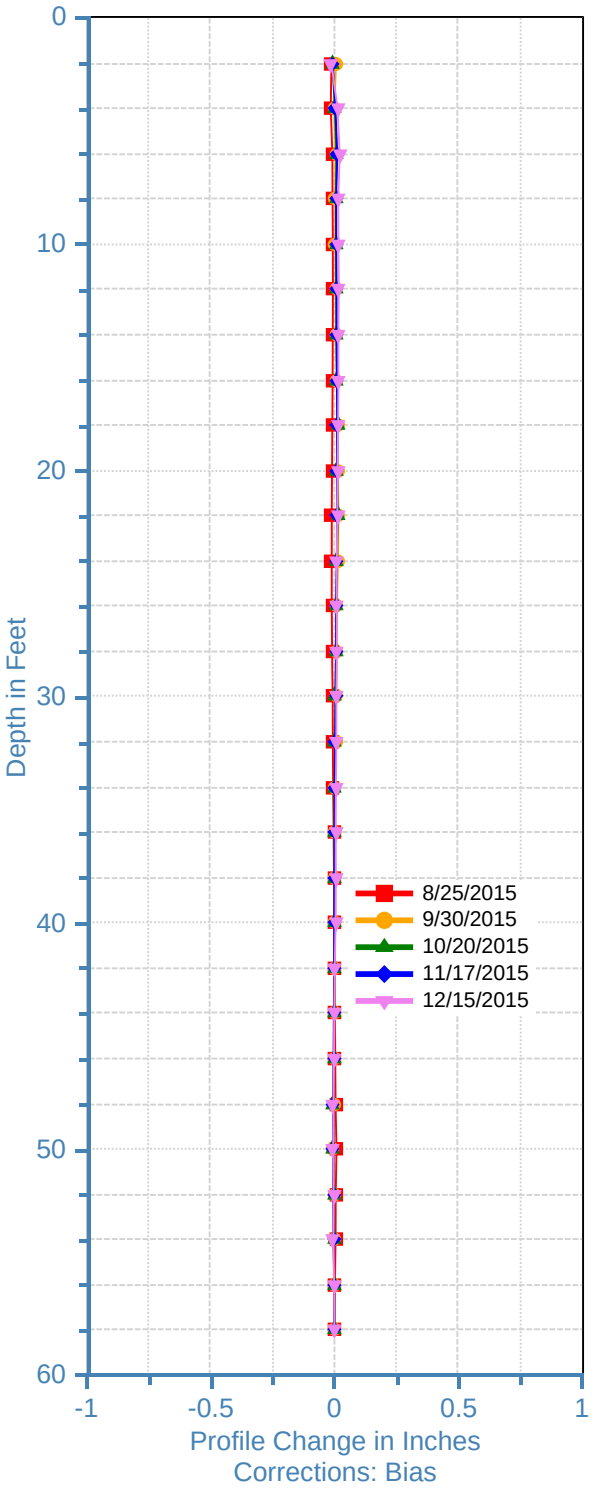
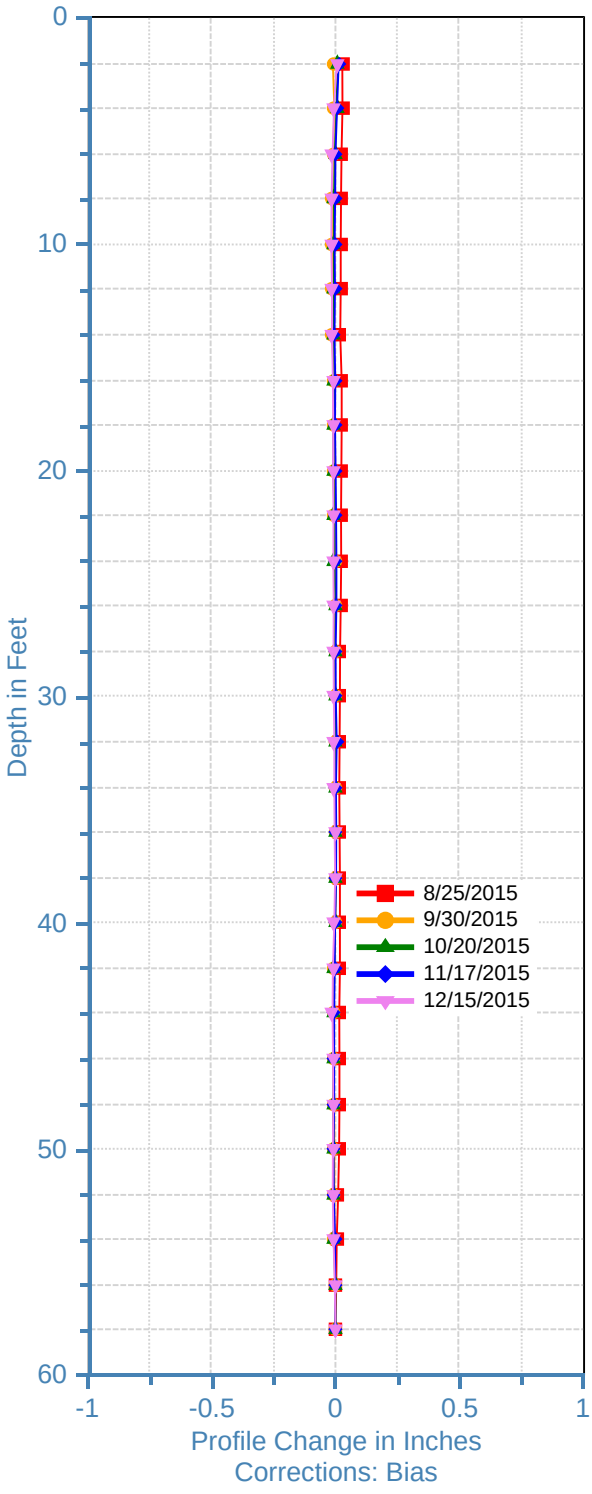
JORGENSEN GEOTECHNICAL, LLC
Jackson, WY

Location: Units 1&2 STEP
Instrument: D-15-8INC

STEP D-15-9INC A
Initial: 7/29/2015



STEP D-15-9INC B
Initial: 7/29/2015

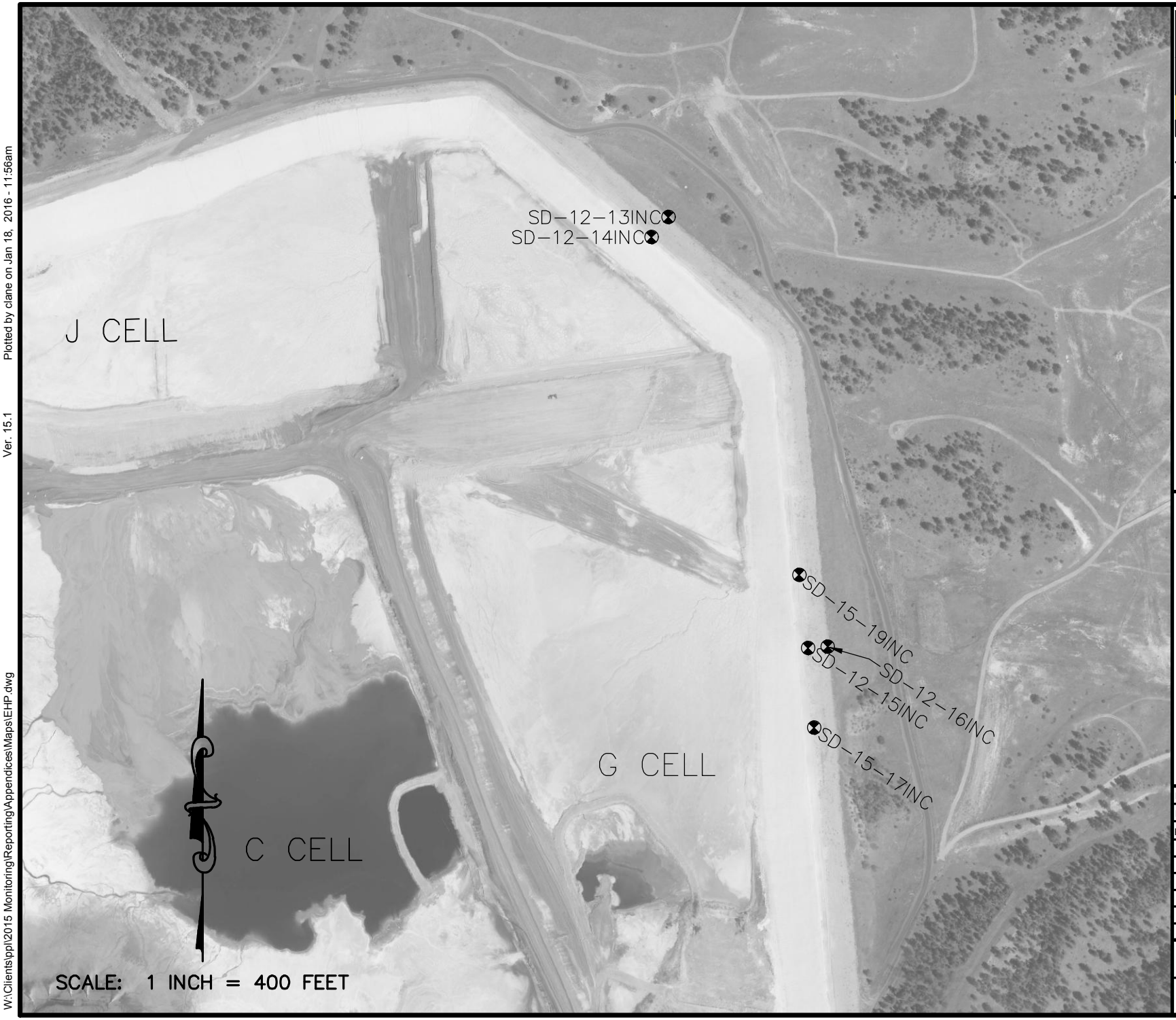


Talen Energy - Inclinometer Monitoring
JORGENSEN GEOTECHNICAL, LLC
Jackson, WY

Location: Units 1&2 STEP
Instrument: D-15-9INC

APPENDIX C

Units 3 & 4 EHP Saddle Dam
Inclinometer Plots



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PROJECT TITLE:
2015 Annual Inspection Report
Talen Energy
Colstrip, Montana

SHEET TITLE:
Units 3 & 4 EHP Saddle Dam
Saddle Dam
Inclinometer Location Map

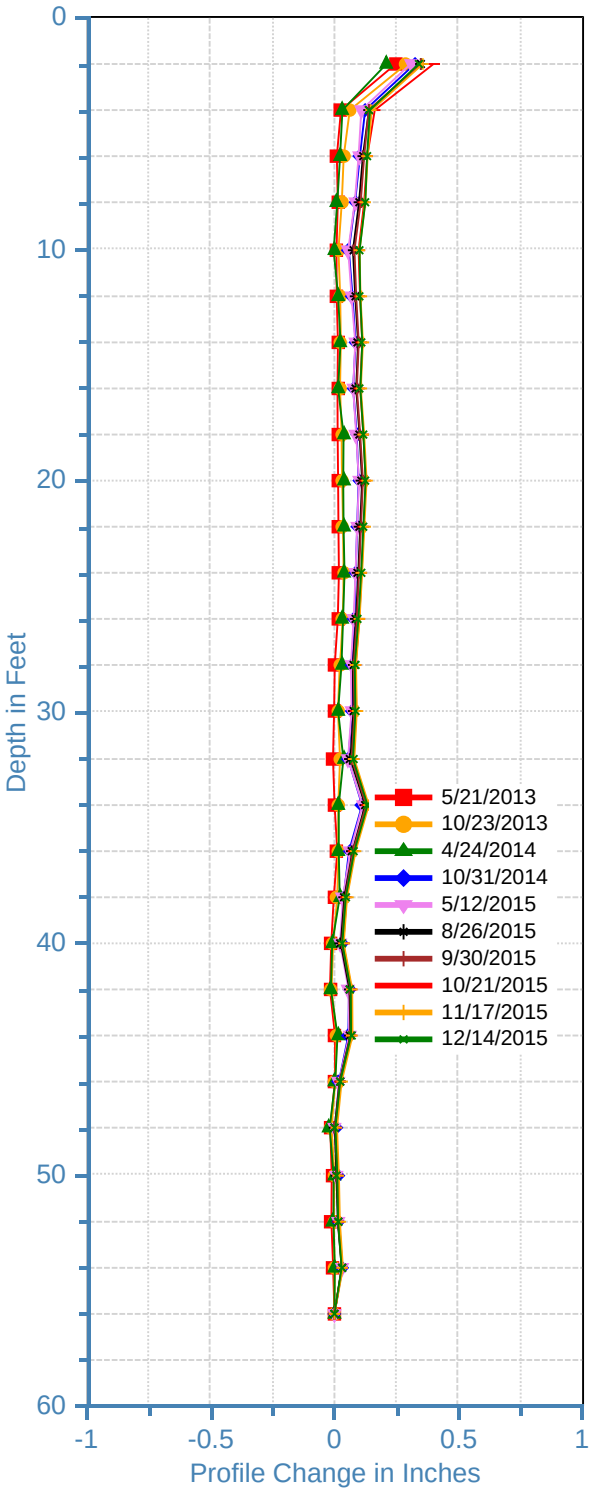
DRAFTED BY:	HC
REVIEWED BY:	

PLAN VERSION	DATE
1/11/2016	

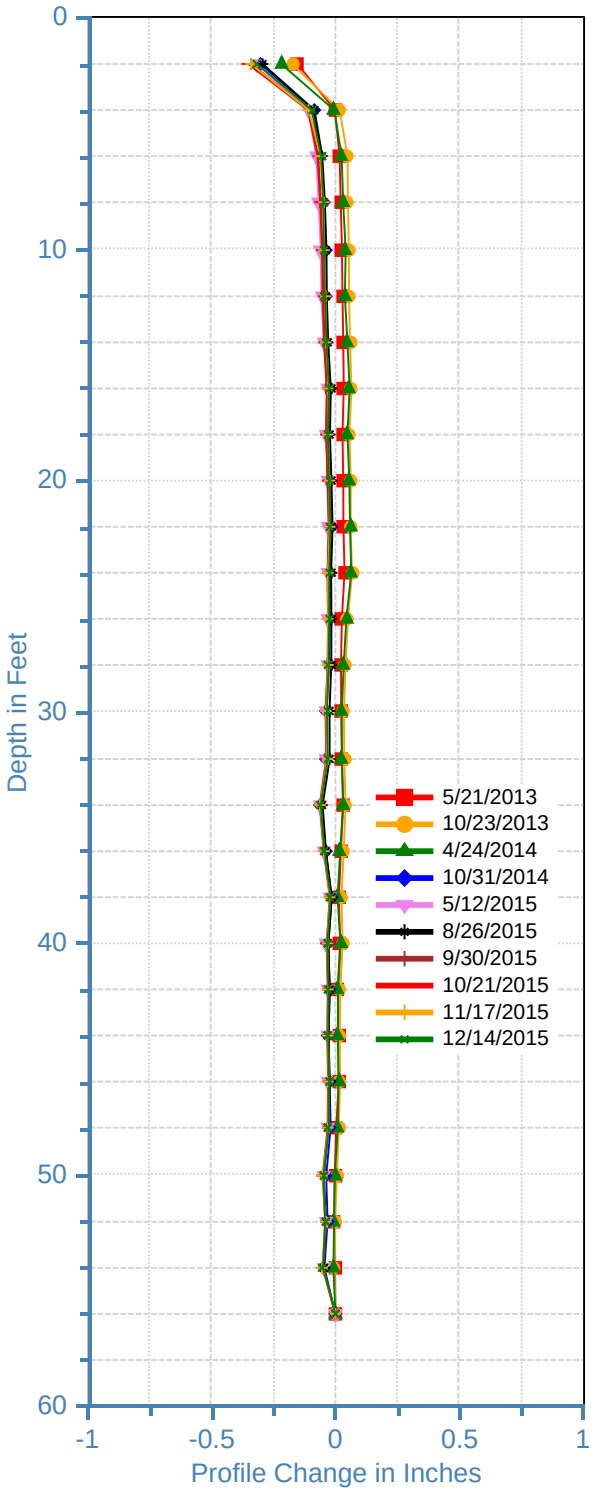
PROJECT NUMBER

SHEET
C1

SD 12-13INC A
Initial: 10/17/2012



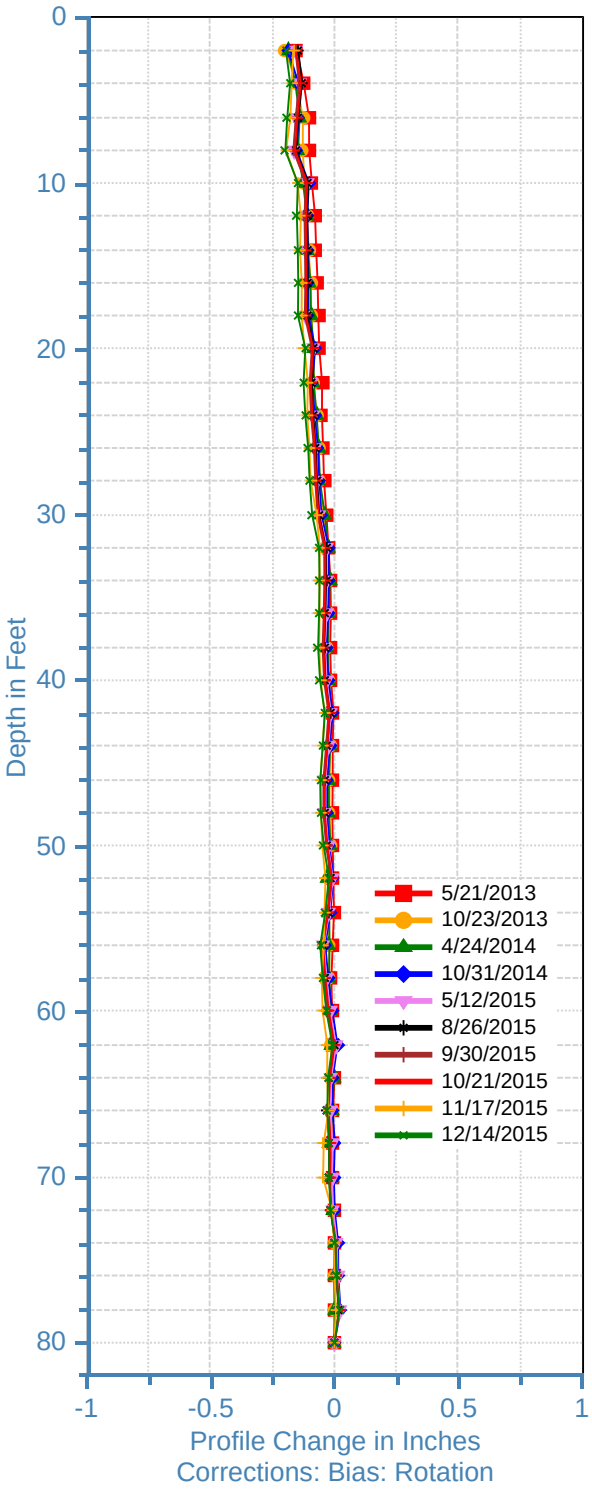
SD 12-13INC B
Initial: 10/17/2012



Talen Energy - Inclinometer Monitoring
JORGENSEN GEOTECHNICAL, LLC
Jackson, WY

Location: Units 3&4 EHP
Instrument: SD-12-13INC

SD 12-14INC A
Initial: 10/16/2012



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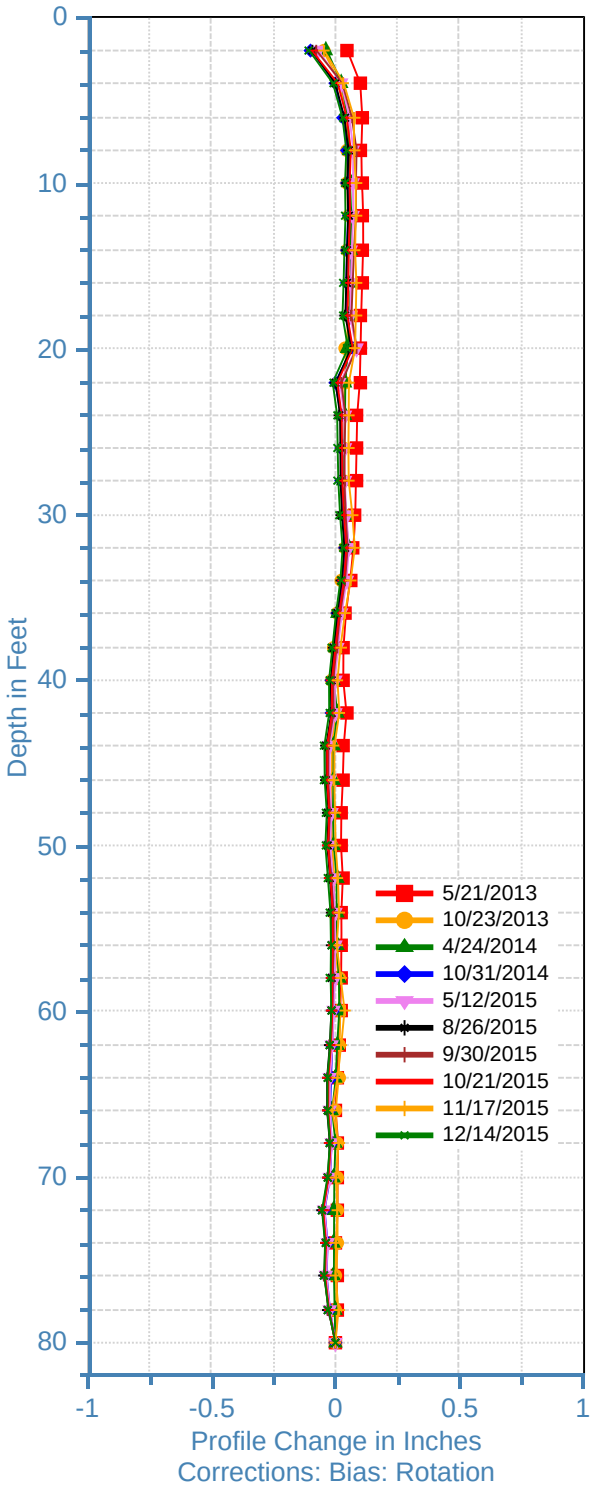
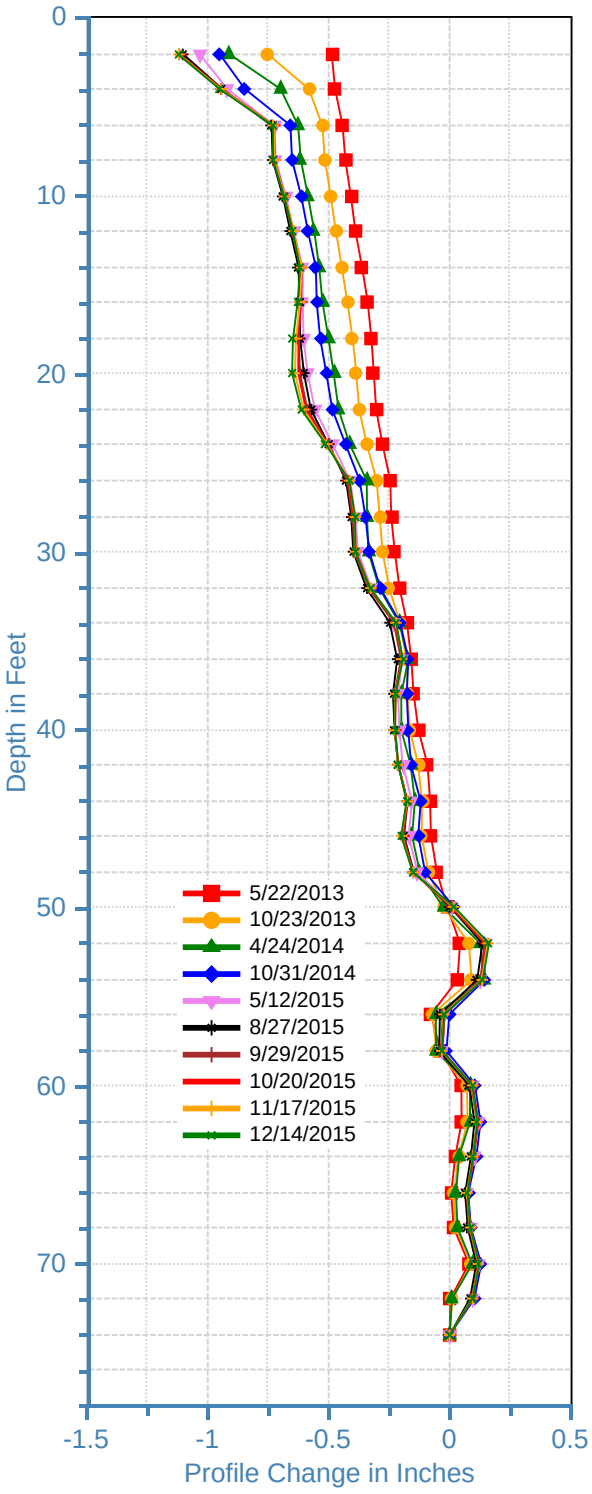
Initial: 10/16/2012



Talen Energy - Inclinometer Monitoring
JORGENSEN GEOTECHNICAL, LLC
Jackson, WY

Location: Units 3&4 EHP
Instrument: SD-12-14INC

SD 12-15INC A
Initial: 10/17/2012



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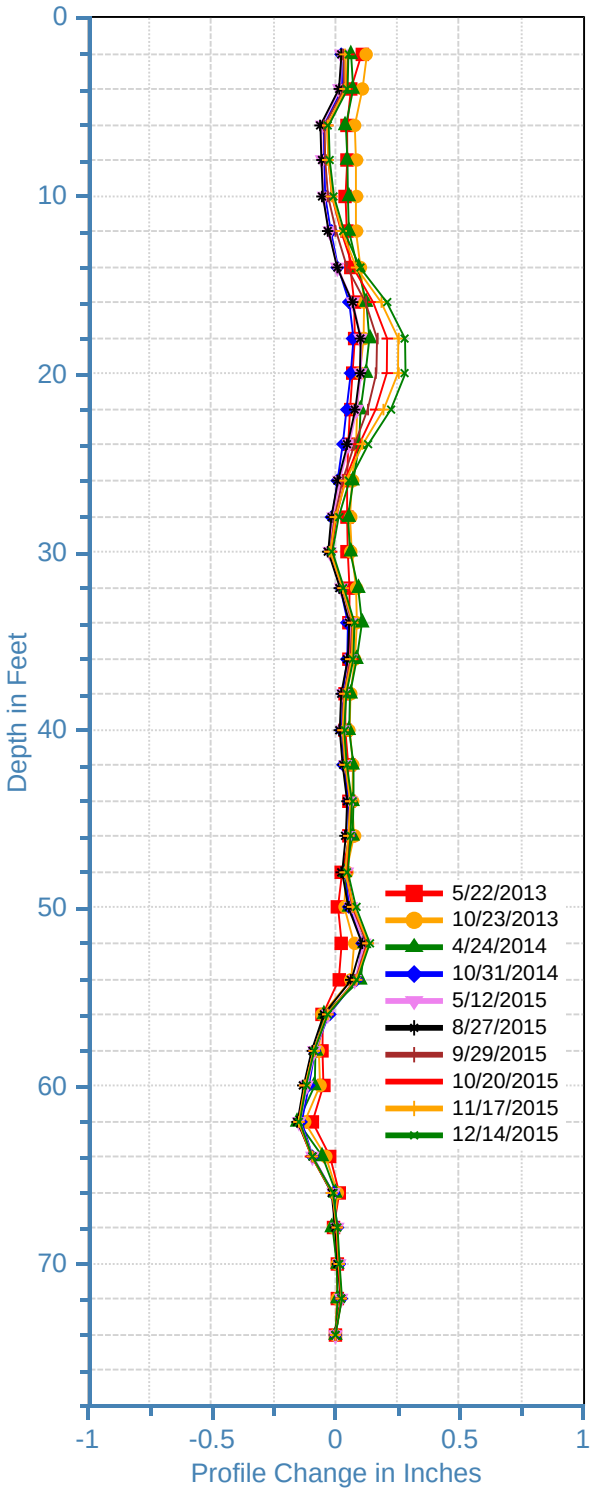
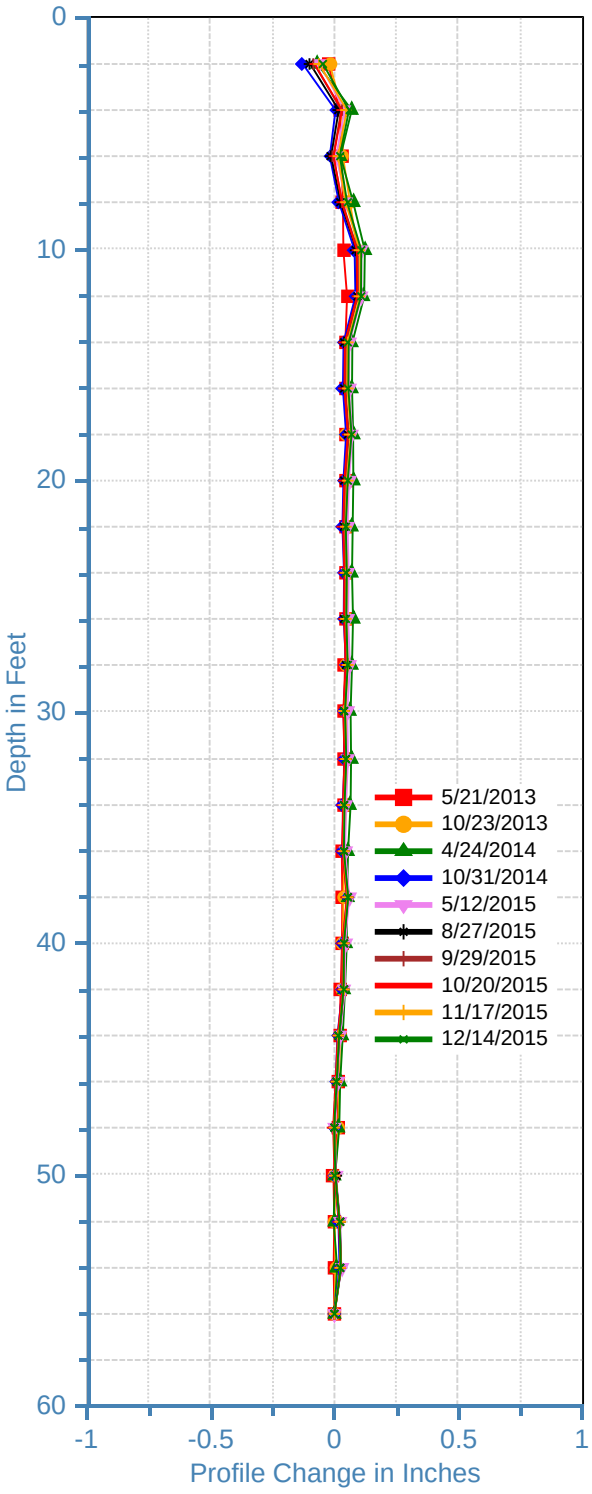


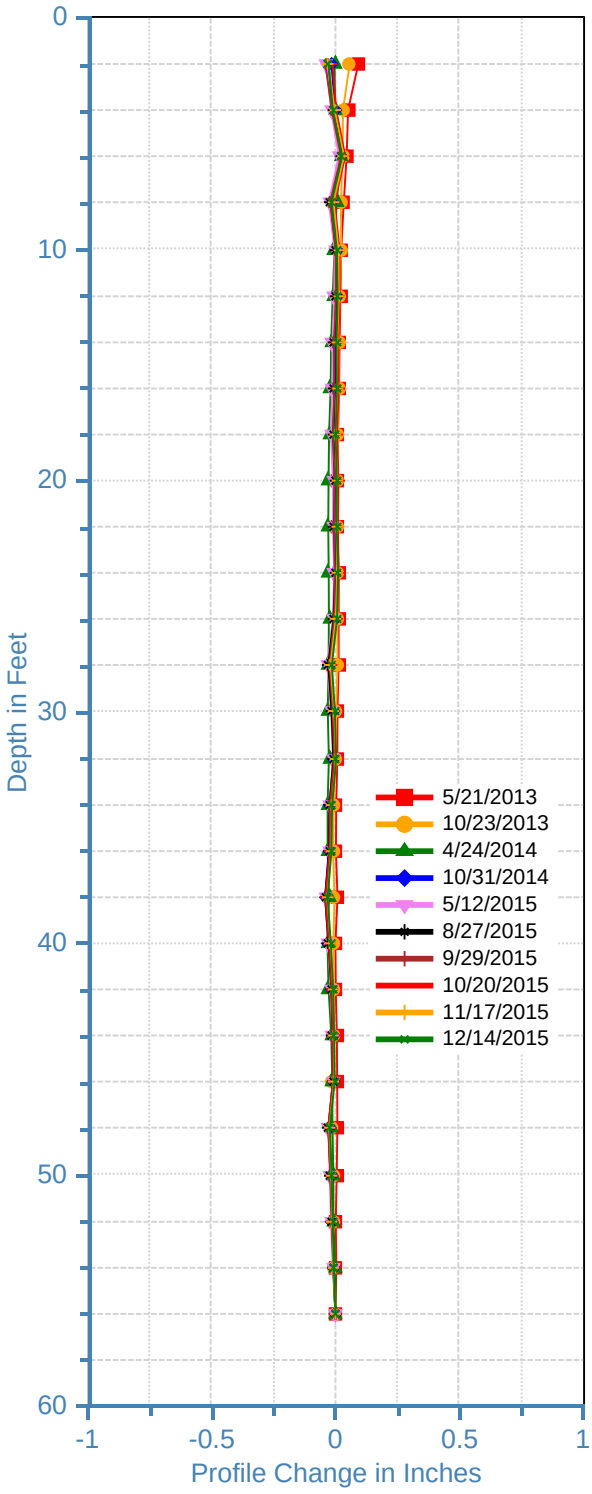
Talen Energy - Inclinometer Monitoring
JORGENSEN GEOTECHNICAL, LLC
Jackson, WY

Location: Units 3 & 4 EHP
Instrument: SD-12-15INC

SD 12-16INC A
Initial: 10/17/2012



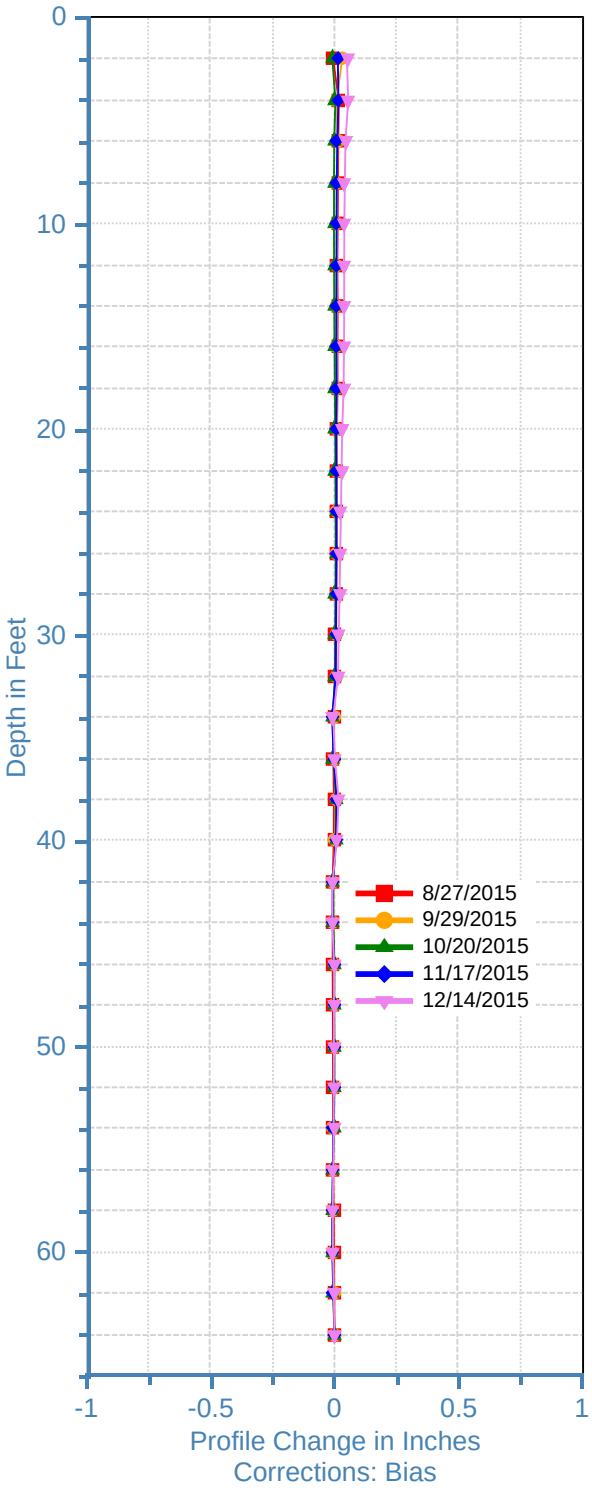
SD 12-16INC B
Initial: 10/17/2012



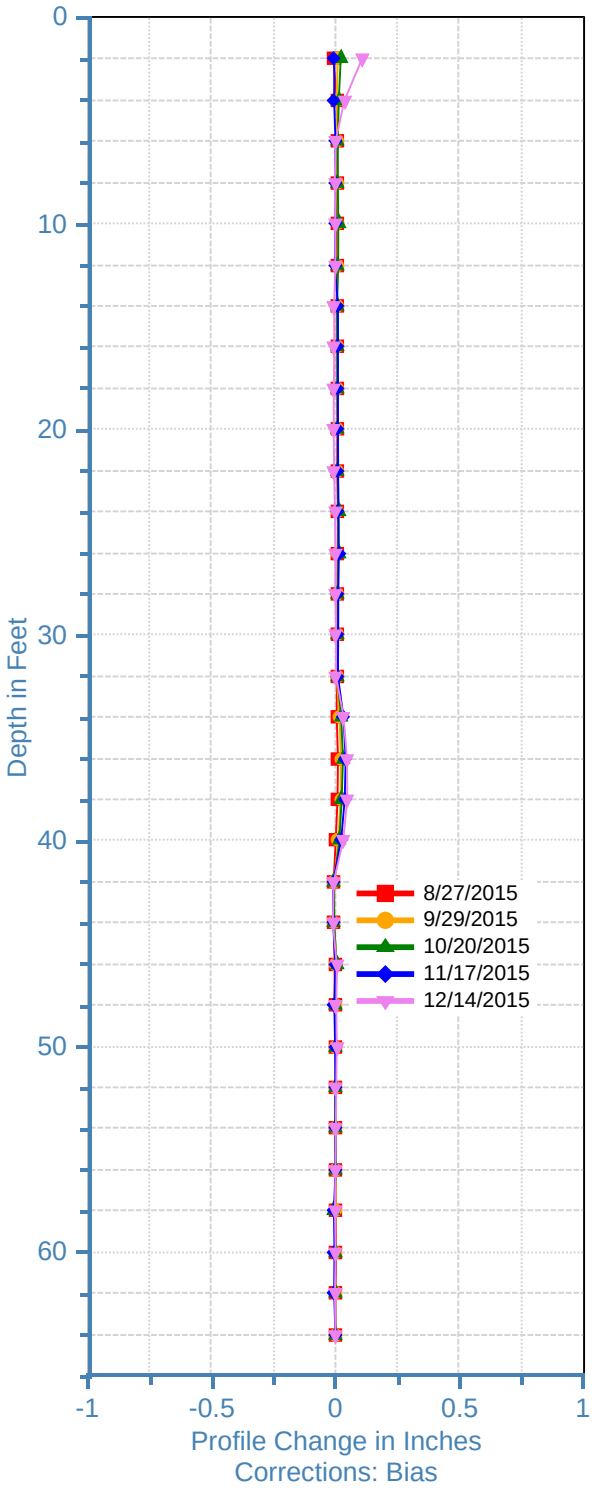
Talen Energy - Inclinometer Monitoring
JORGENSEN GEOTECHNICAL, LLC
Jackson, WY

Location: Units 3 & 4 EHP
Instrument: SD-12-16INC

SD 15-17INC A
Initial: 7/28/2015



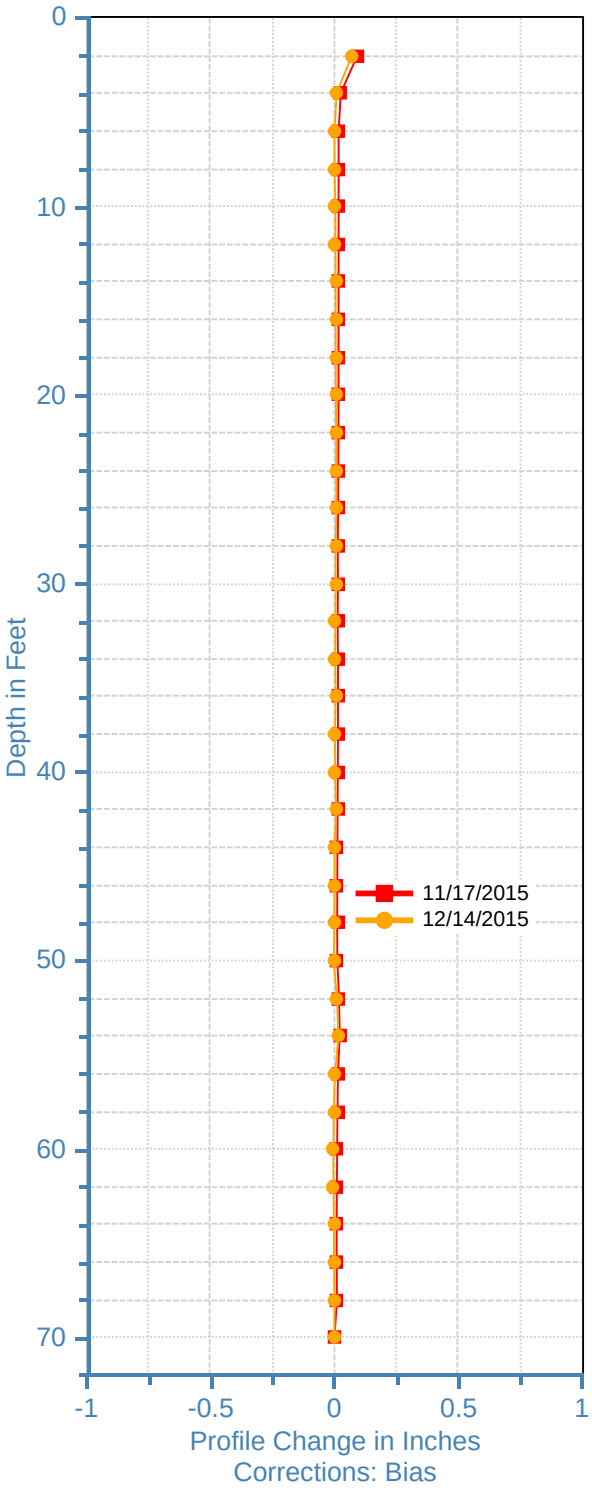
SD 15-17INC B
Initial: 7/28/2015



Talen Energy - Inclinometer Monitoring
JORGENSEN GEOTECHNICAL, LLC
Jackson, WY

Location: Units 3&4 EHP
Instrument: SD-15-17INC

SD 15-19INC A
Initial: 10/21/2015



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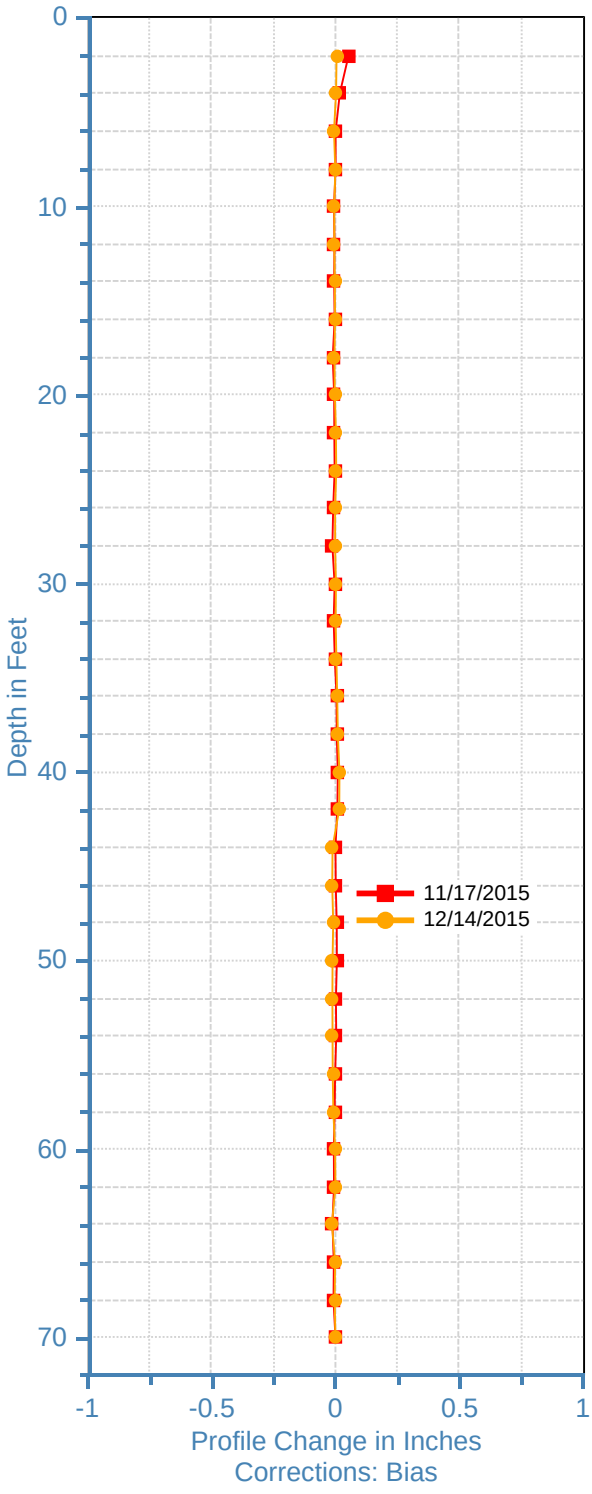

Talen Energy - Inclinometer Monitoring
JORGENSEN GEOTECHNICAL, LLC
Jackson, WY

Location: Units 3&4 EHP
Instrument: SD-15-19INC

APPENDIX D

Units 3 & 4 EHP Main Dam
Inclinometer Plots

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PROJECT TITLE:
2015 Annual Inspection Report
Talen Energy
Colstrip, Montana

SHEET TITLE:
Units 3 & 4 EHP Main Dam
Inclinometer Location Map

DRAFTED BY:	HC
REVIEWED BY:	

PLAN VERSION	DATE
1/11/2016	

PROJECT NUMBER

SHEET
D1

Plotted by clane on Jan 18, 2016 - 12:01pm
Ver. 15.1
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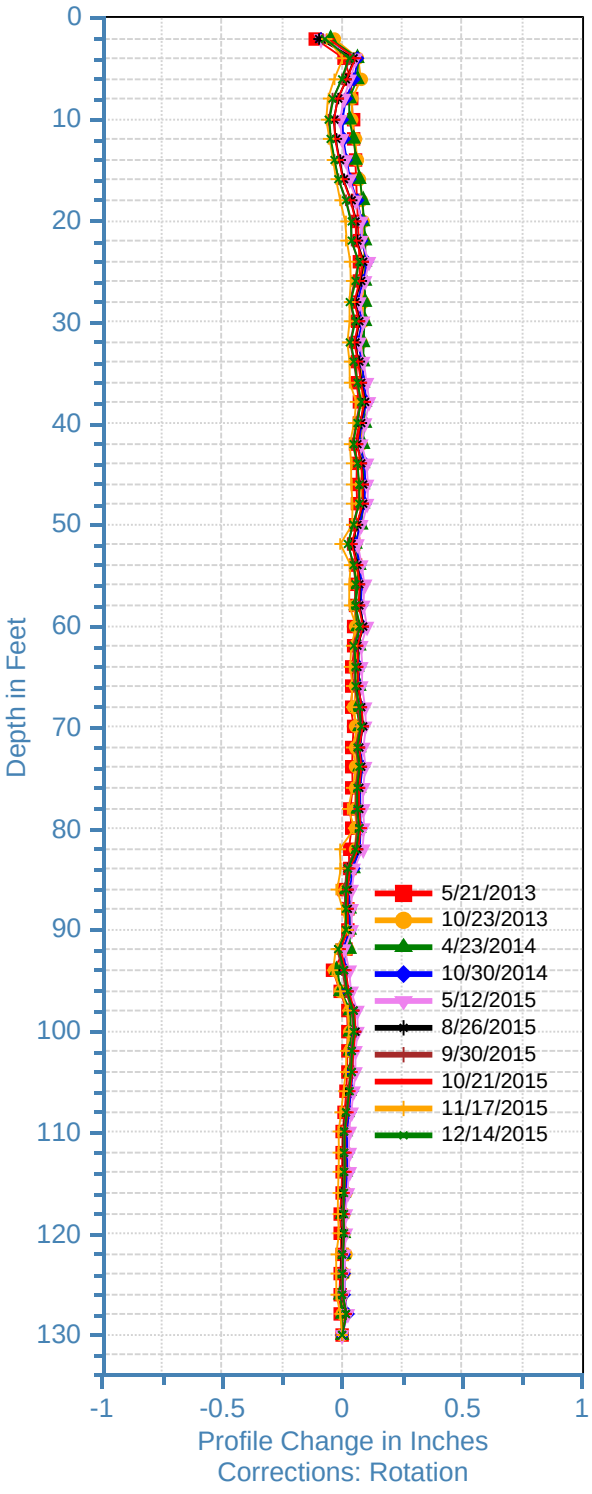
MD 12-3INC A
Initial: 10/17/2012



MD 12-3INC B
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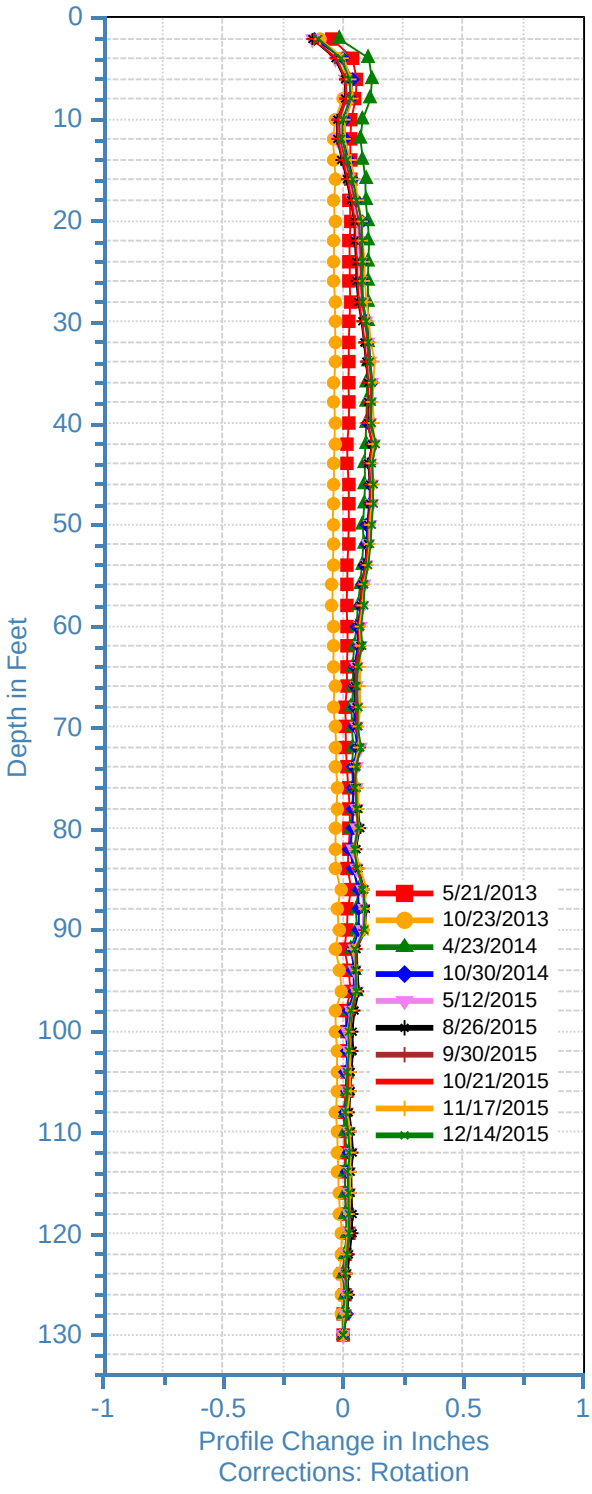
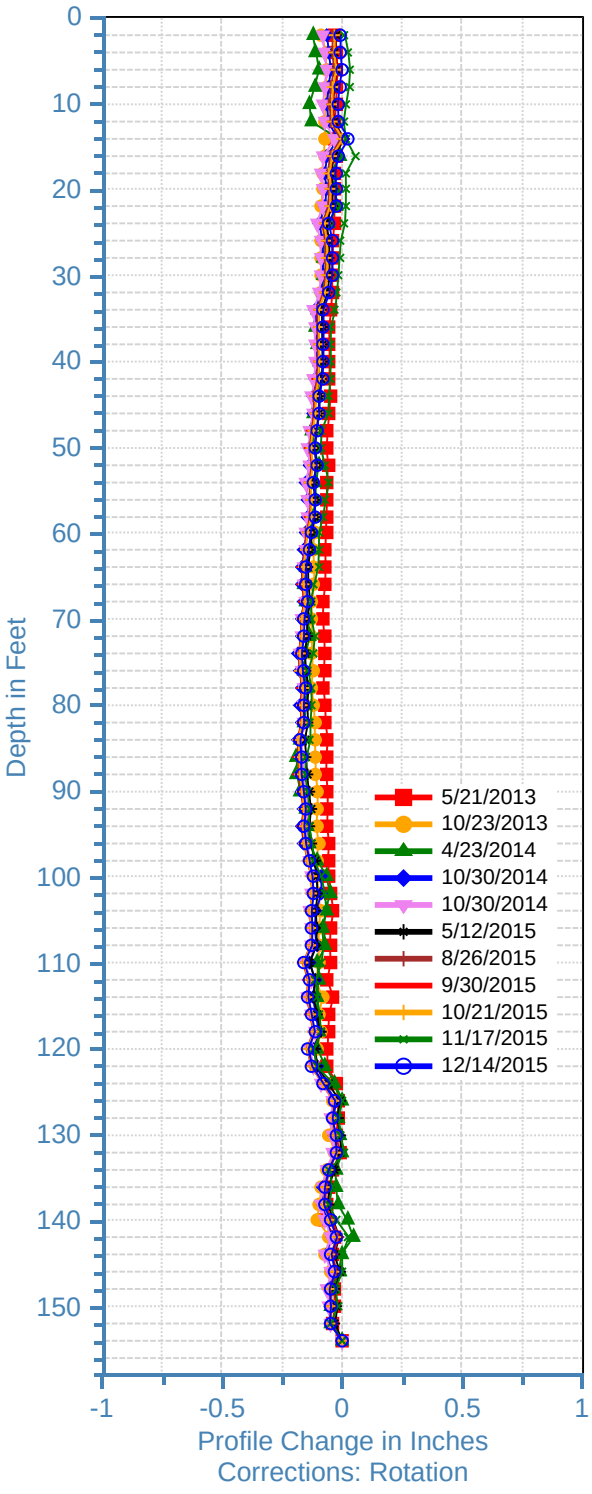


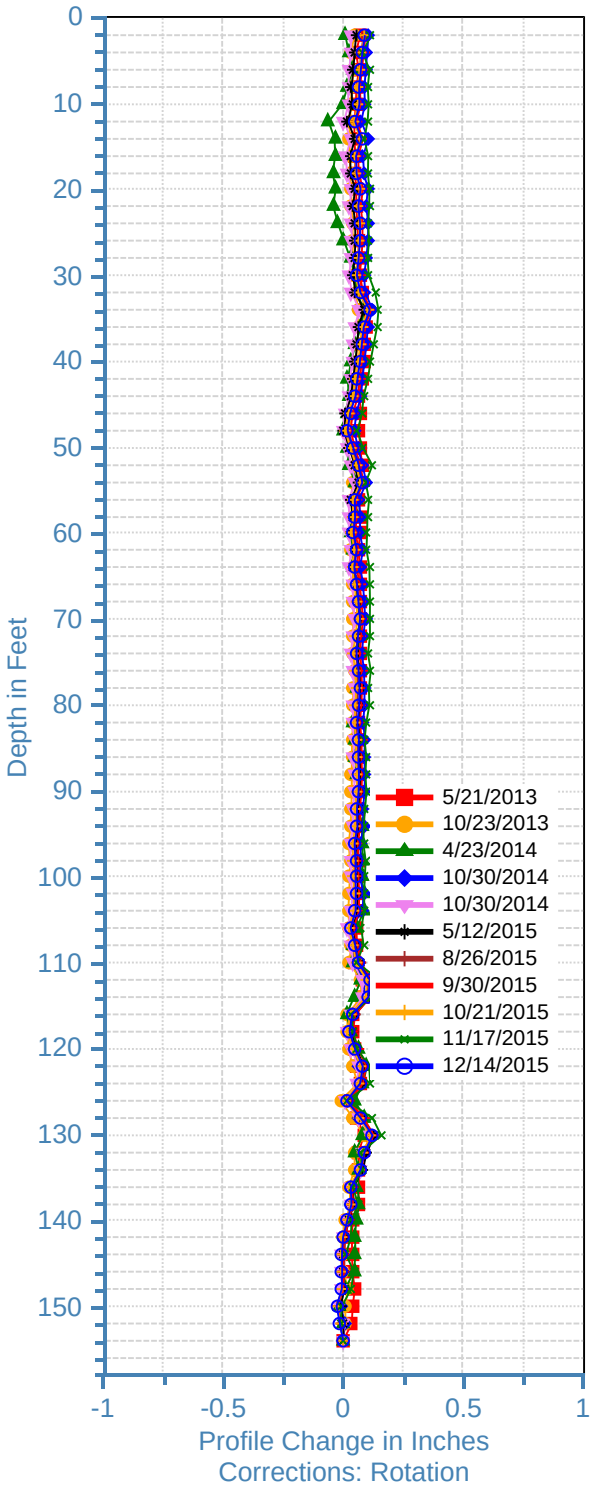
Talen Energy - Inclinometer Monitoring
JORGENSEN GEOTECHNICAL, LLC
Jackson, WY

Location: Units 3&4 EHP
Instrument: MD-12-3INC

MD 12-4INC A
Initial: 10/16/2012



MD 12-4INC B
Initial: 10/16/2012

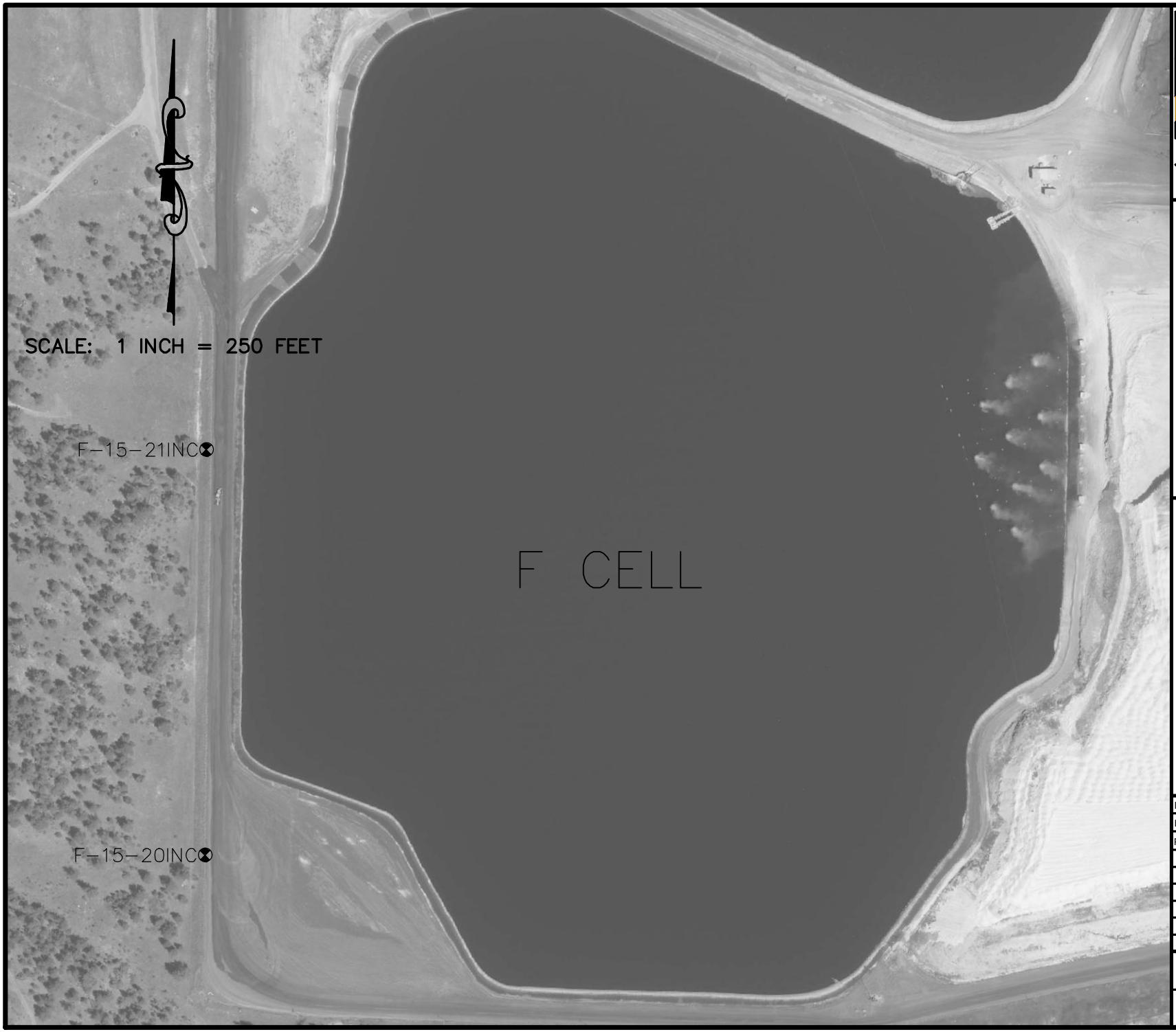


Talen Energy - Inclinometer Monitoring
JORGENSEN GEOTECHNICAL, LLC
Jackson, WY

Location: Units 3&4 EHP
Instrument: MD-12-4INC

APPENDIX E

Additional Units 3 & 4 EHP Area
Inclinometer Plots



Plotted by clane on Jan 18, 2016 - 12:09pm

Ver. 15.1

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PROJECT TITLE:
2015 Annual Inspection Report
Talen Energy
Colstrip, Montana

SHEET TITLE:
Units 3 & 4 EHP F-Cell
Inclinometer Location Map

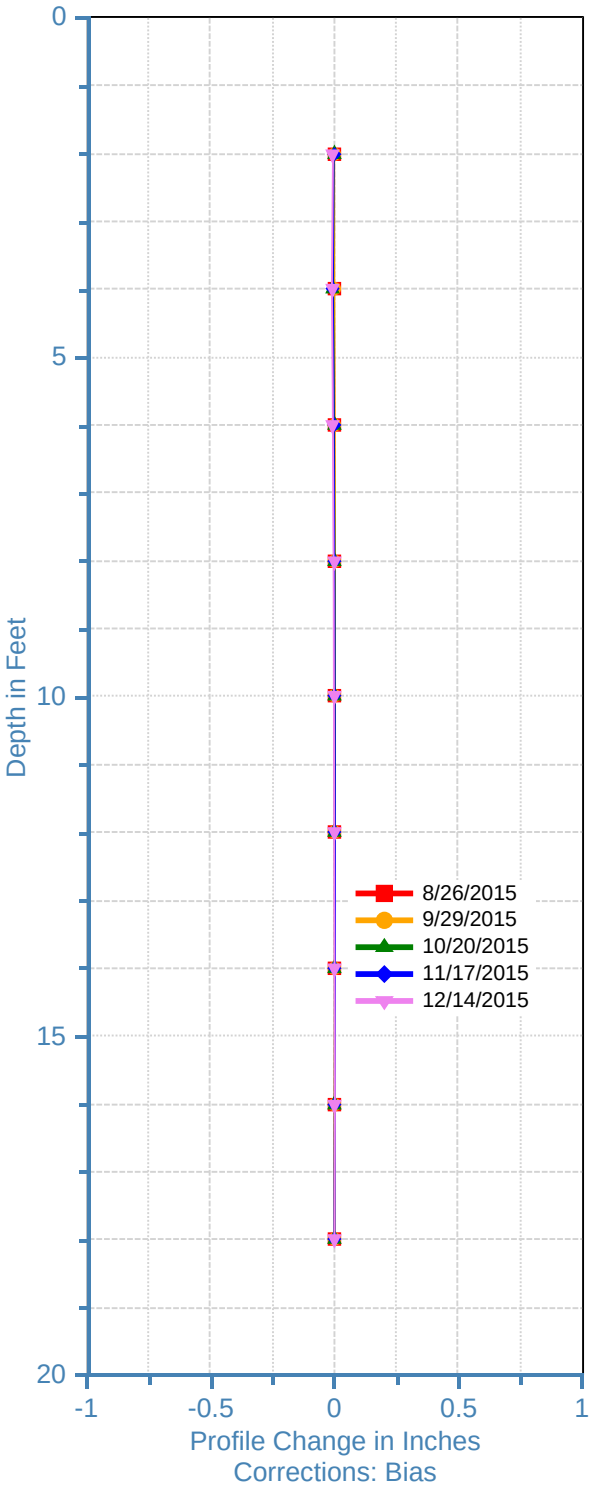
DRAFTED BY:	HC
REVIEWED BY:	

PLAN VERSION	DATE
	1/11/2016

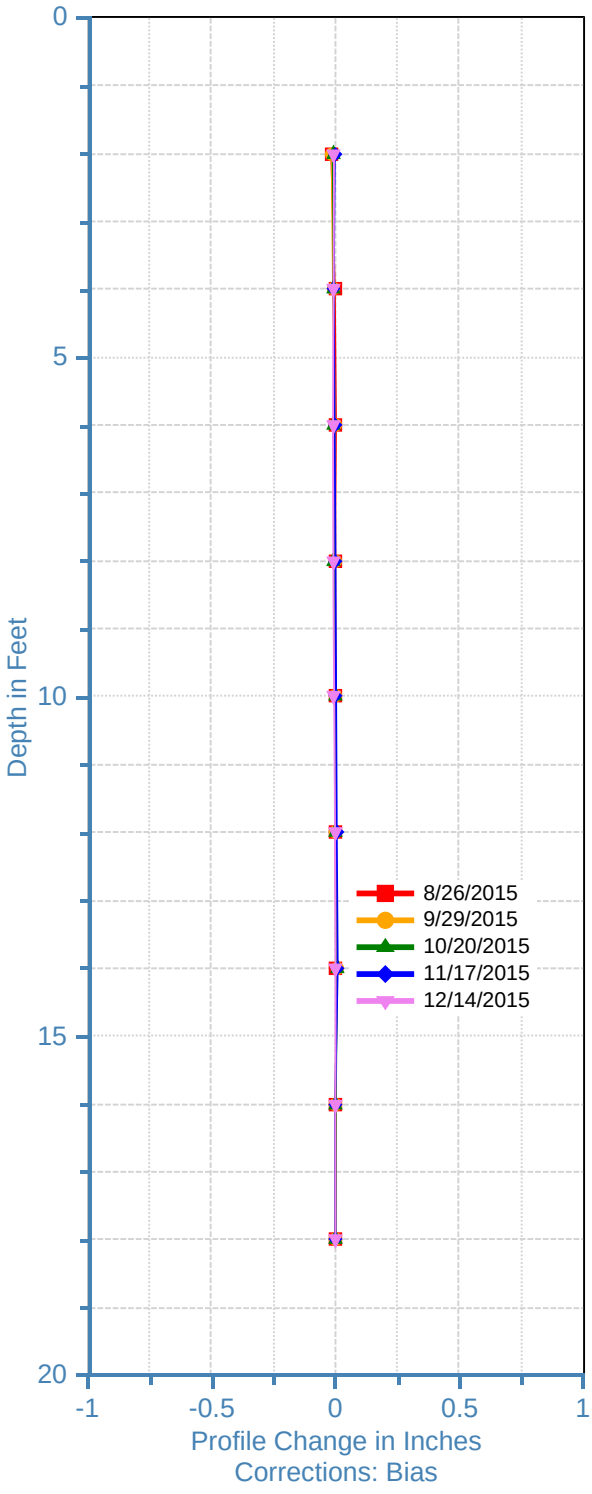
PROJECT NUMBER
15419

SHEET
E1

EHP F-15-20INC A
Initial: 7/28/2015



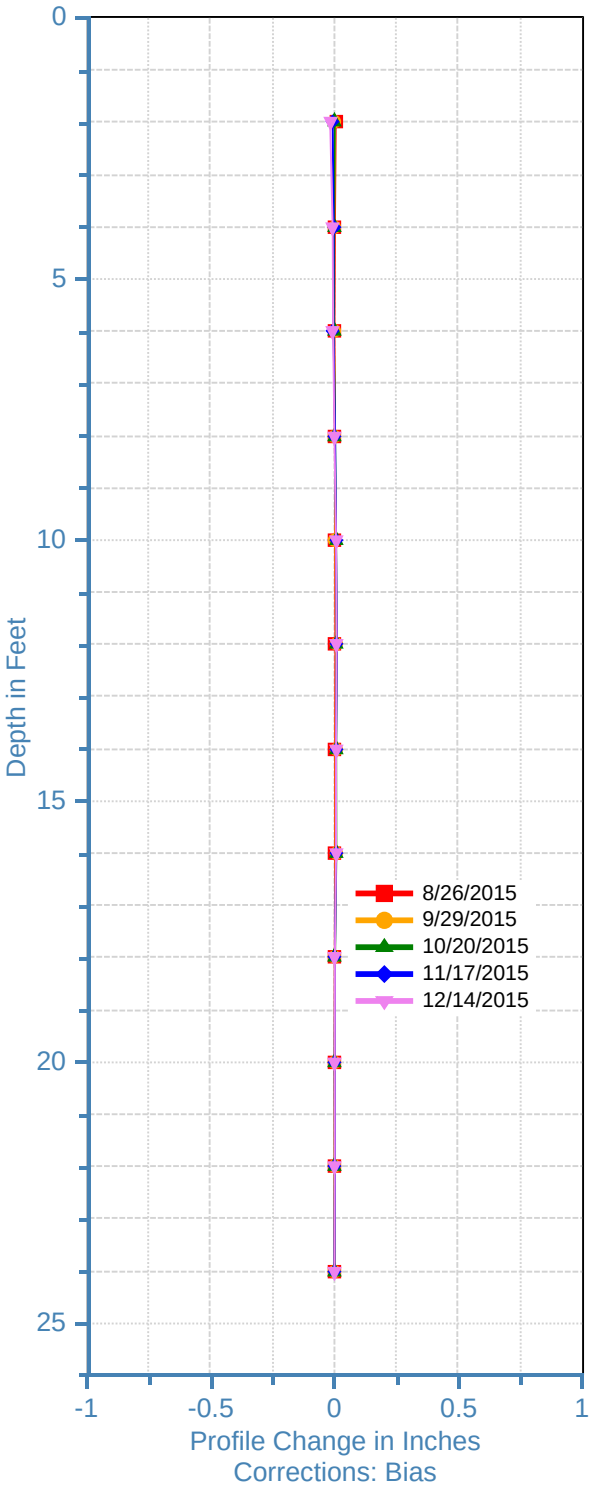
EHP F-15-20INC B
Initial: 7/28/2015



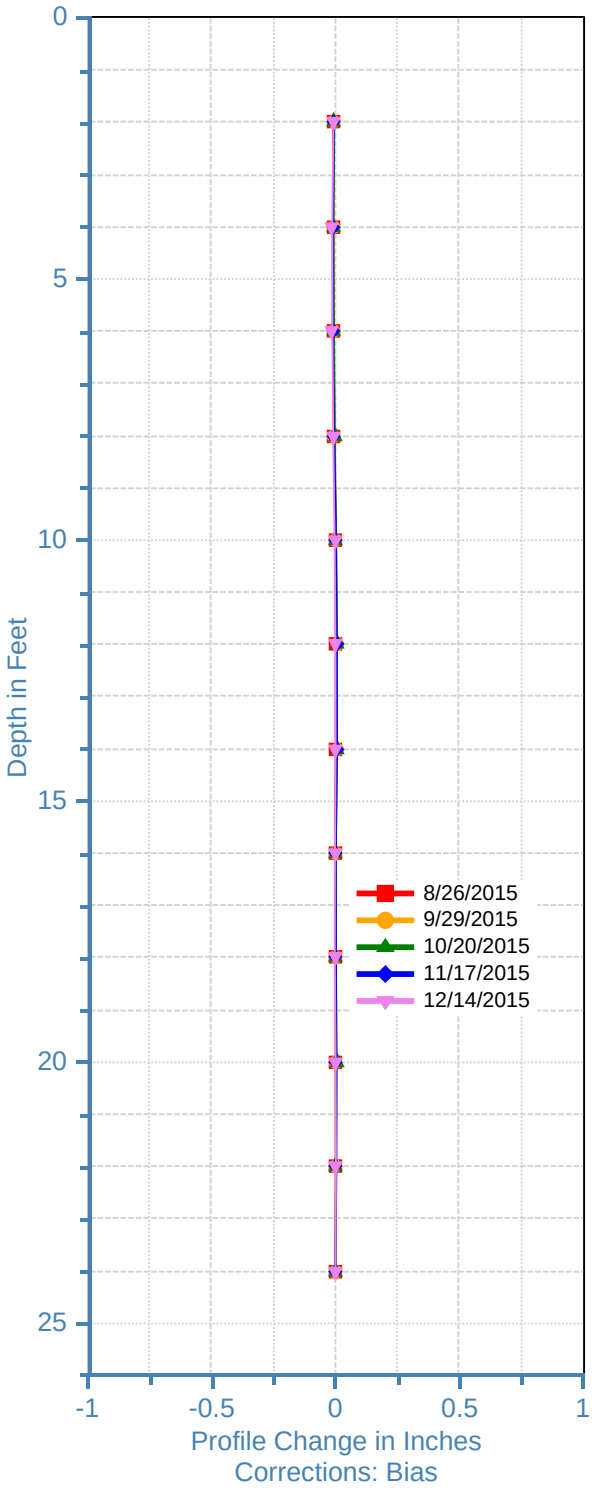
Talen Energy - Inclinometer Monitoring
JORGENSEN GEOTECHNICAL, LLC
Jackson, WY

Location: Units 3&4 EHP
Instrument: F-15-20INC

EHP F-15-21INC A
Initial: 7/28/2015

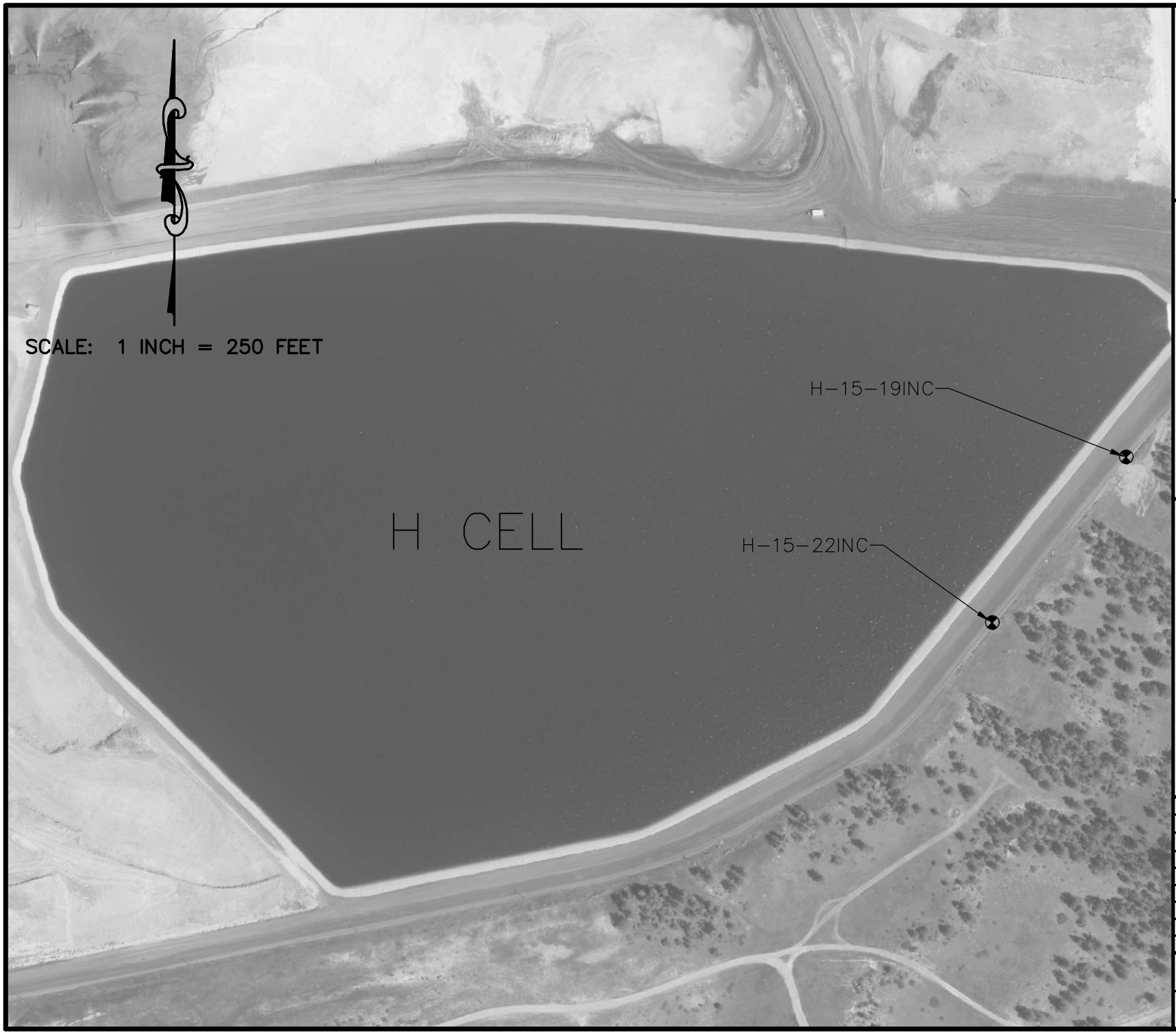


EHP F-15-21INC B
Initial: 7/28/2015



Talen Energy - Inclinometer Monitoring
JORGENSEN GEOTECHNICAL, LLC
Jackson, WY

Location: Units 3&4 EHP
Instrument: F-15-21INC



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PROJECT TITLE:
2015 Annual Inspection Report
Talen Energy
Colstrip, Montana

SHEET TITLE:
Units 3 & 4 EHP H-Cell
Inclinometer Location Map

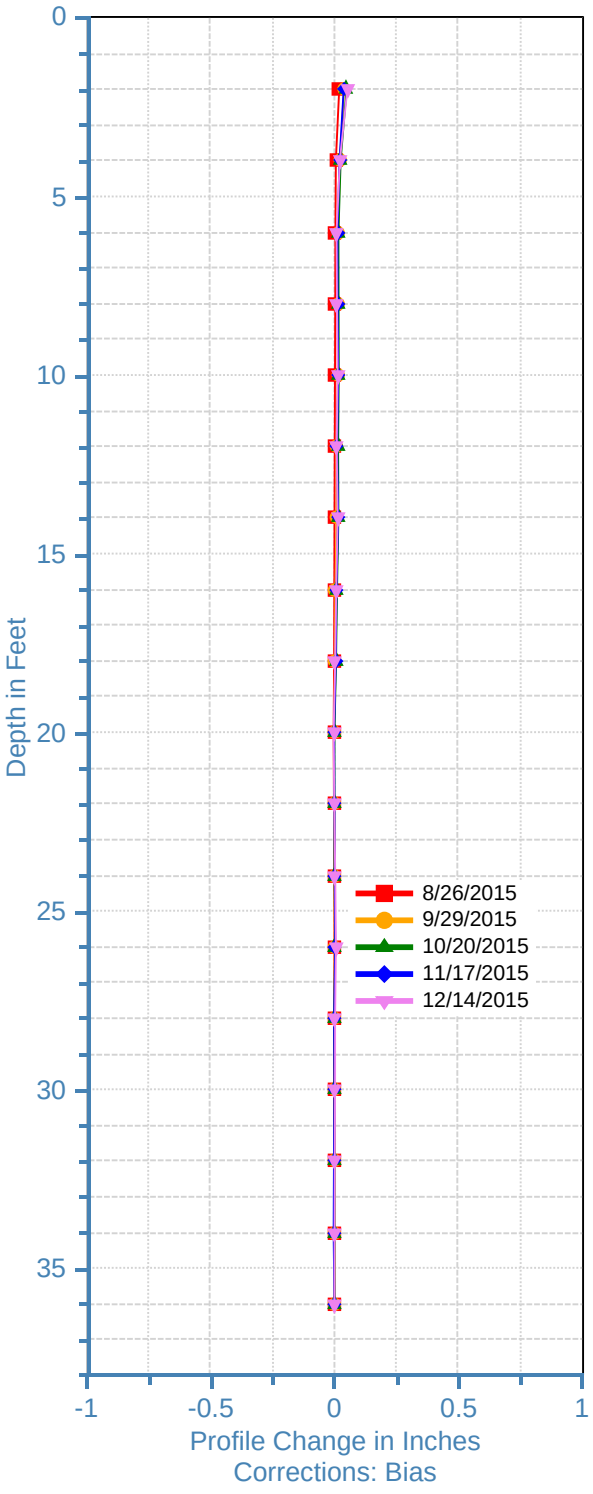
DRAFTED BY:	HC
REVIEWED BY:	

PLAN VERSION	DATE
	1/11/2016

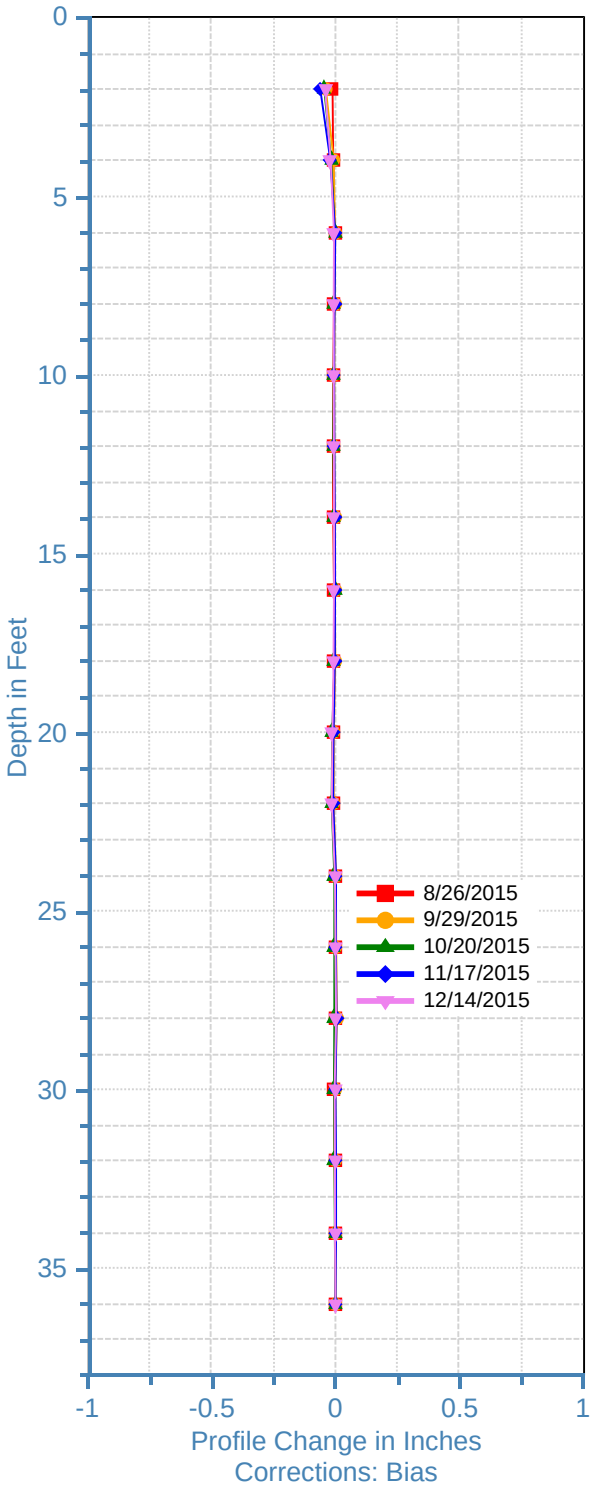
PROJECT NUMBER
15419

SHEET
E2

EHP H-15-19INC A
Initial: 7/28/2015



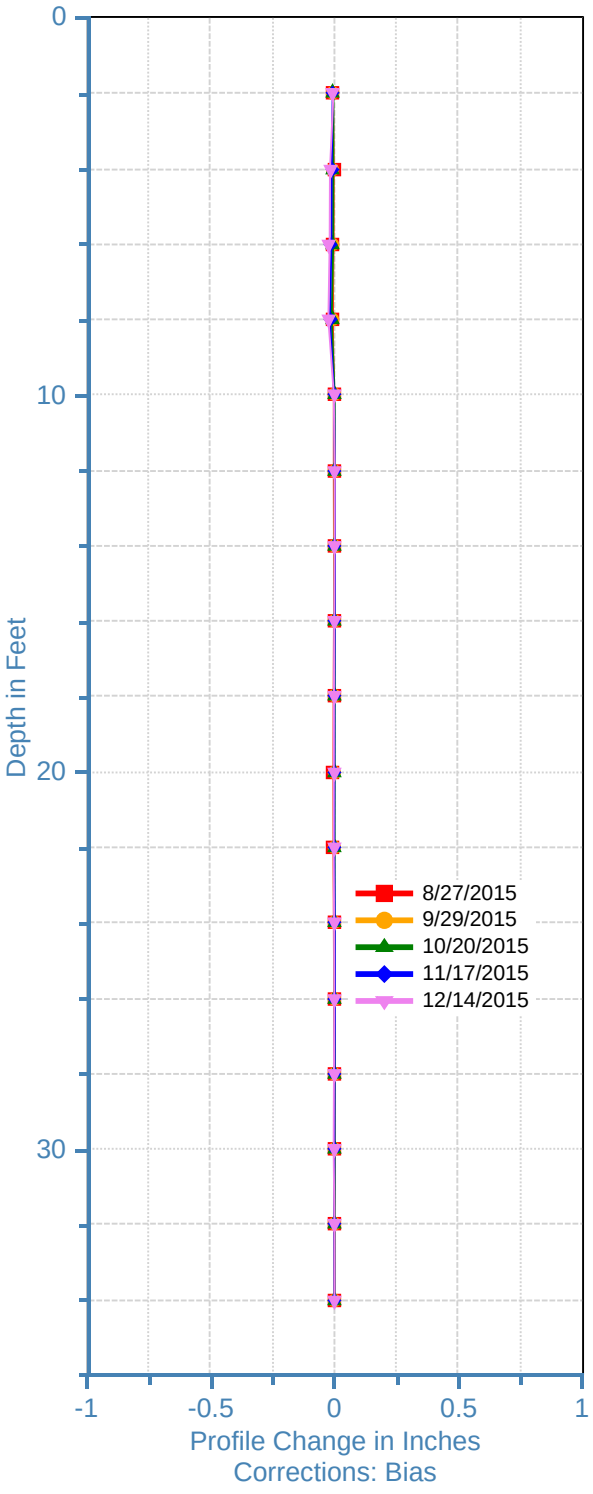
EHP H-15-19INC B
Initial: 7/28/2015



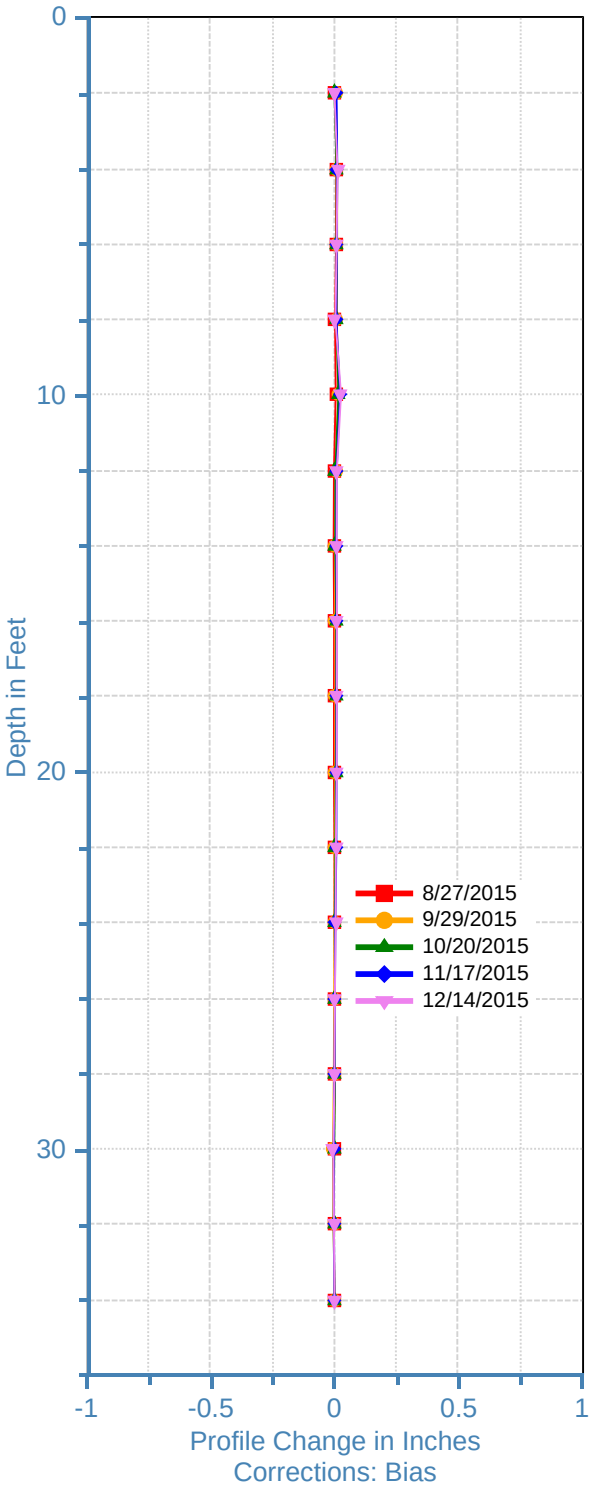
Talen Energy - Inclinometer Monitoring
JORGENSEN GEOTECHNICAL, LLC
Jackson, WY

Location: Units 3&4 EHP
Instrument: H-15-19INC

EHP H-15-22INC A
Initial: 7/28/2015



EHP H-15-22INC B
Initial: 7/28/2015

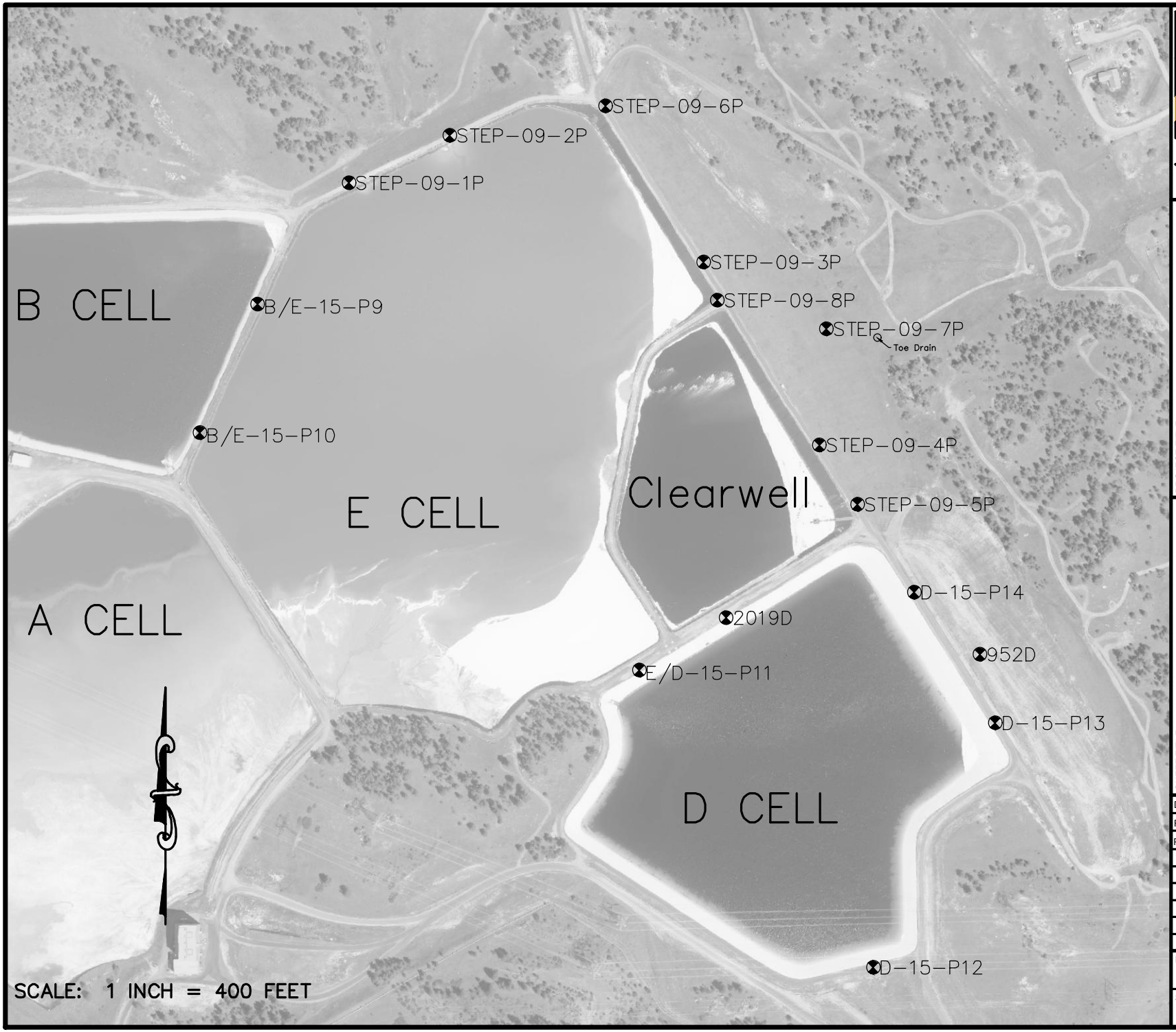


Talen Energy - Inclinometer Monitoring
JORGENSEN GEOTECHNICAL, LLC
Jackson, WY

Location: Units 3&4 EHP
Instrument: H-15-22INC

APPENDIX F

Units 1 & 2 STEP
Piezometer Monitoring Plots



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PROJECT TITLE:
2015 Annual Inspection Report
Talen Energy
Colstrip, Montana

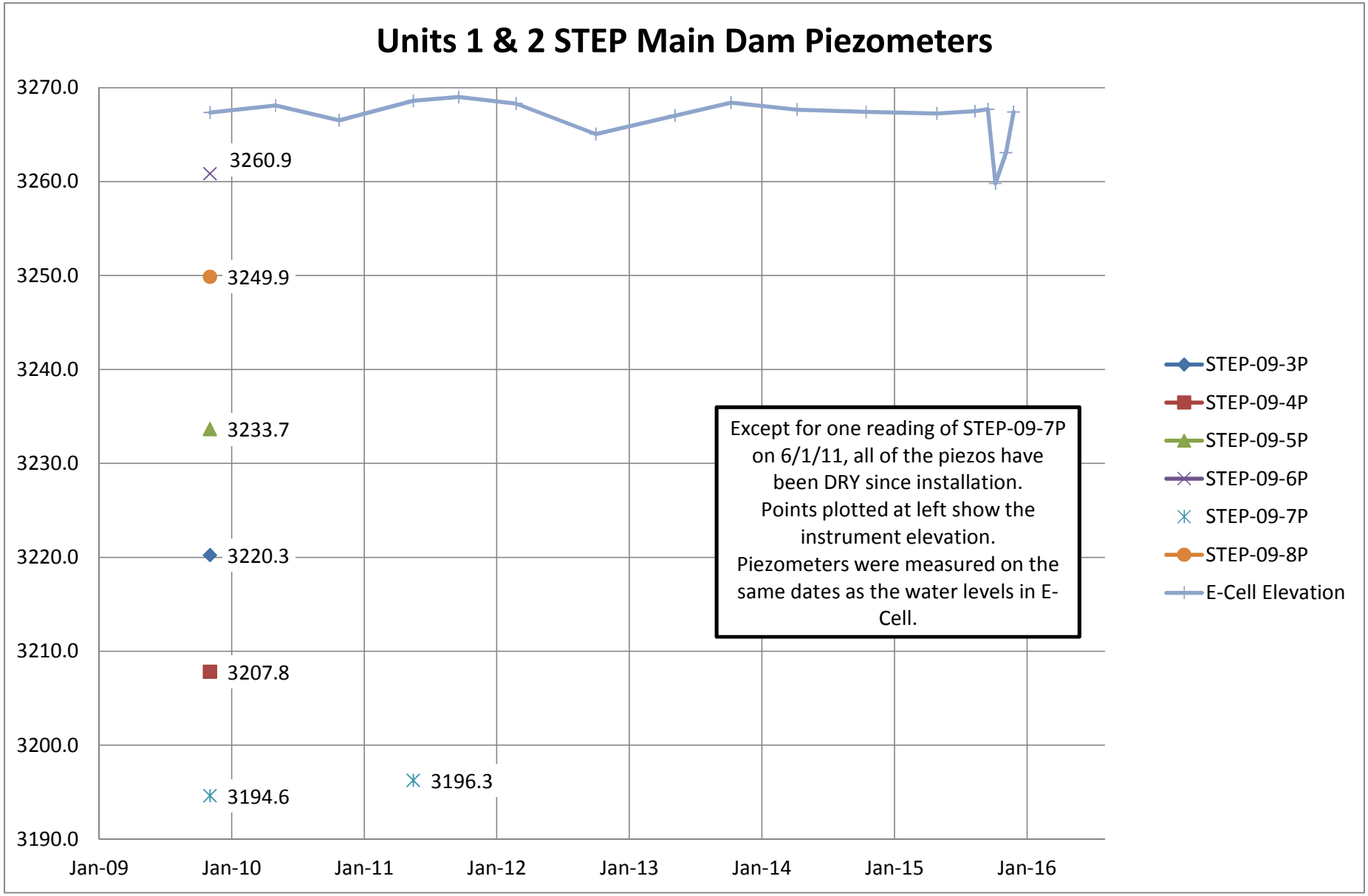
SHEET TITLE:
Units 1 & 2 STEP
Piezometer Location Map

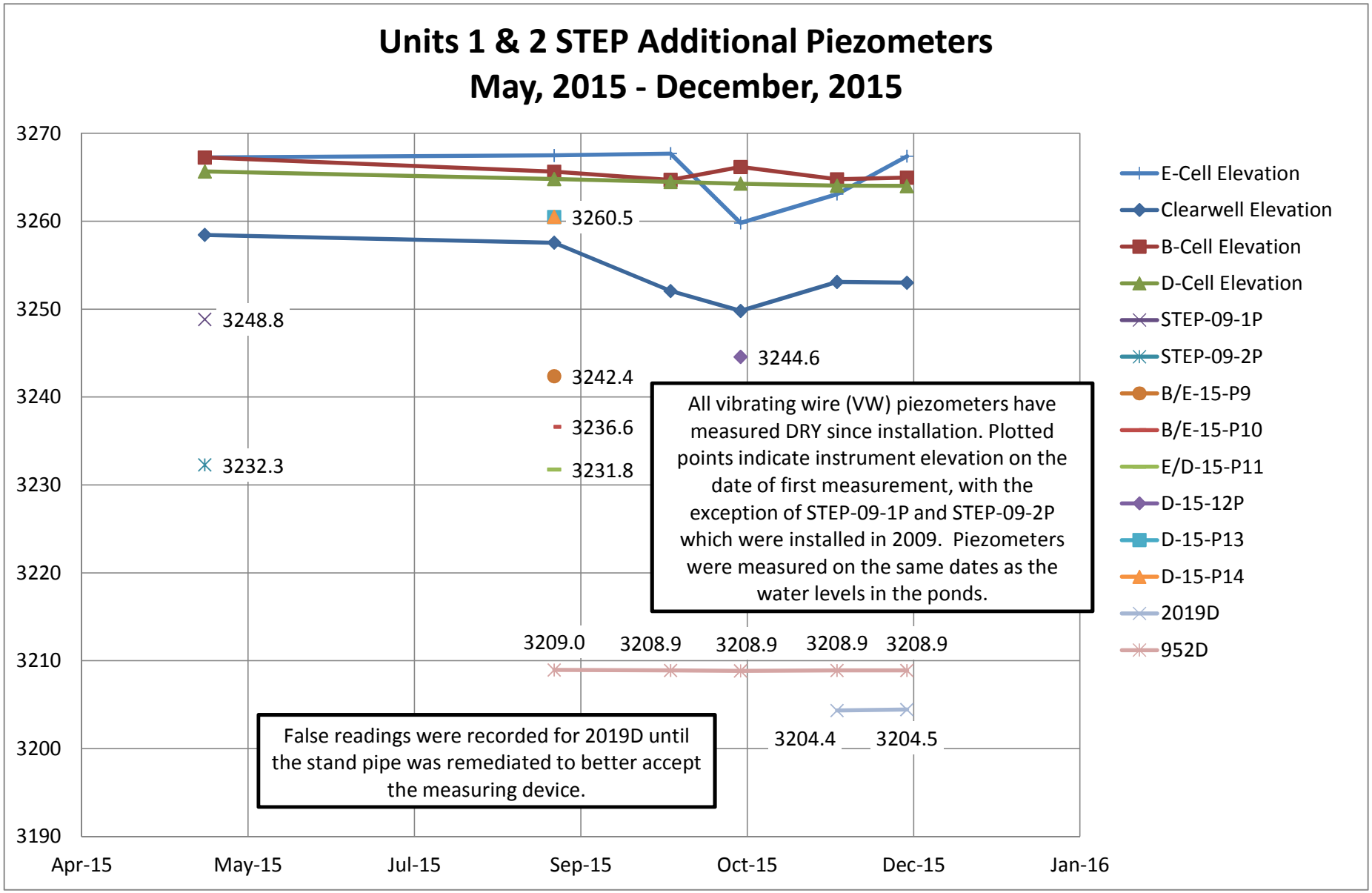
DRAFTED BY:	HC
REVIEWED BY:	

PLAN VERSION	DATE
	1/11/2016

PROJECT NUMBER
15419

SHEET
F1


Units 1 & 2 STEP Main Dam Piezometers
3270.0
3260.0
3250.0
3240.0
3230.0
3220.0
3210.0
3200.0
3190.0
Jan-09
Jan-10
Jan-11
Jan-12
Jan-13
Jan-14
Jan-15
Jan-16
3260.9
3249.9
3233.7
3220.3
3207.8
3194.6
3196.3
Except for one reading of STEP-09-7P on 6/1/11, all of the piezos have been DRY since installation. Points plotted at left show the instrument elevation. Piezometers were measured on the same dates as the water levels in E-Cell.
STEP-09-3P
STEP-09-4P
STEP-09-5P
STEP-09-6P
STEP-09-7P
STEP-09-8P
E-Cell Elevation


Units 1 & 2 STEP Additional Piezometers
May, 2015 - December, 2015
3270
3260
3250
3240
3230
3220
3210
3200
3190
Apr-15
May-15
Jul-15
Sep-15
Oct-15
Dec-15
Jan-16
3260.5
3248.8
3244.6
3242.4
3236.6
3232.3
3231.8
3209.0
3208.9
3208.9
3208.9
3208.9
3204.4
3204.5
All vibrating wire (VW) piezometers have measured DRY since installation. Plotted points indicate instrument elevation on the date of first measurement, with the exception of STEP-09-1P and STEP-09-2P which were installed in 2009. Piezometers were measured on the same dates as the water levels in the ponds.
False readings were recorded for 2019D until the stand pipe was remediated to better accept the measuring device.
E-Cell Elevation
Clearwell Elevation
B-Cell Elevation
D-Cell Elevation
STEP-09-1P
STEP-09-2P
B/E-15-P9
B/E-15-P10
E/D-15-P11
D-15-12P
D-15-P13
D-15-P14
2019D
952D

APPENDIX G

Plantsite Units 1 & 2 Bottom Ash Pond
Piezometer Monitoring Plots

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PROJECT TITLE:
2015 Annual Inspection Report
Talen Energy
Colstrip, Montana

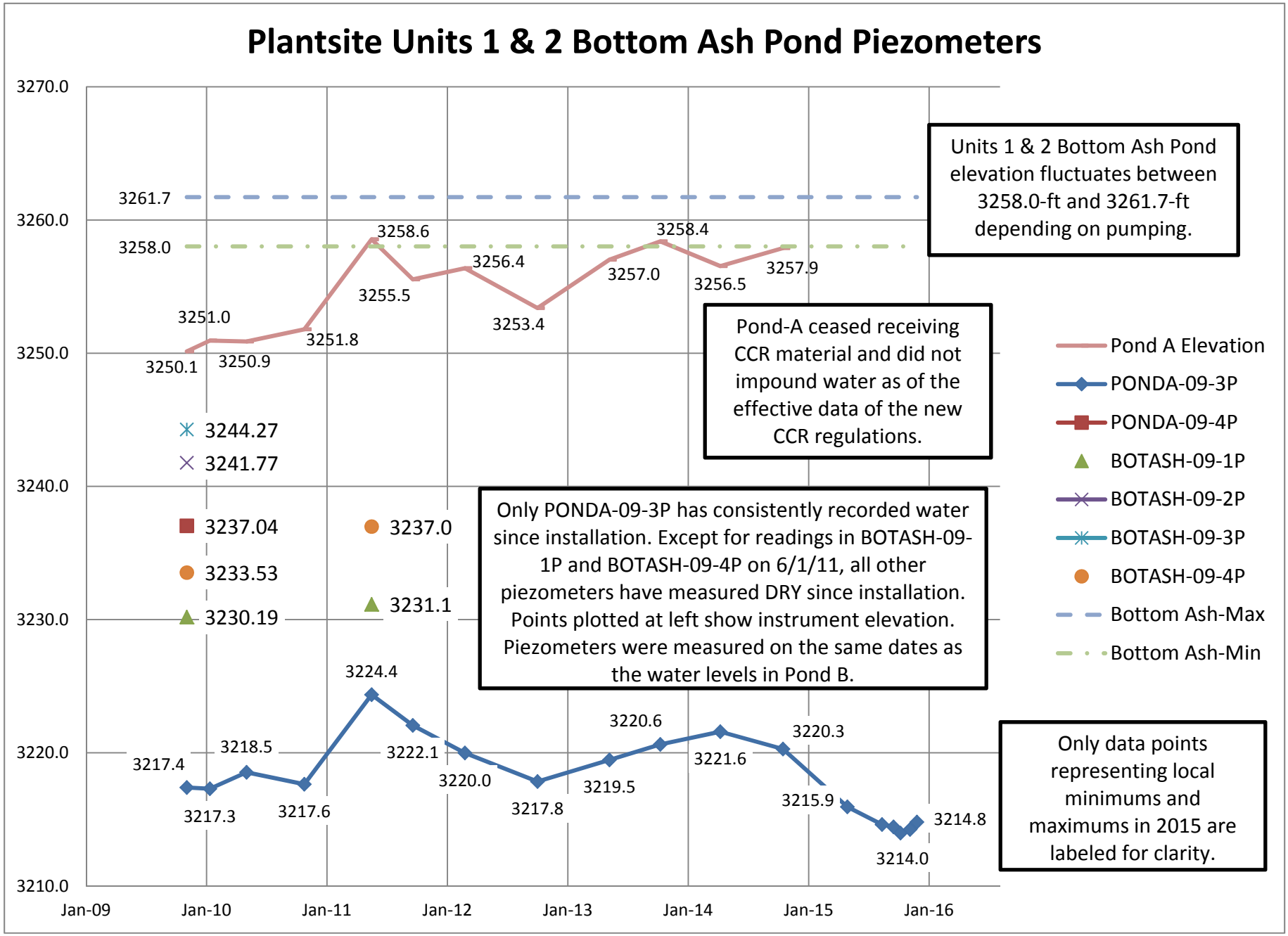
SHEET TITLE:
Plantsite Units 1 & 2
Bottom Ash Pond
Piezometer Location Map

DRAFTED BY:	CHL
REVIEWED BY:	
PLAN VERSION	DATE
	1/13/2016

PROJECT NUMBER
15419

SHEET
G1

Plantsite Units 1 & 2 Bottom Ash Pond Piezometers



APPENDIX H

Units 3 & 4 EHP
Piezometer Monitoring Plots and
Tabulated Data

SCALE: 1 INCH = 200 FEET

SD-12-44SP
SD-12-45SP
SD-12-48P
SD-12-47P
SD-12-46SP
SD-09-P35
SD-12-50P
TOE DRAIN
SD-12-49P
SD-09-P34
SD-12-52P
SD-12-51SP
SD-12-55P
SD-12-54P
SD-12-53SP
SD-12-57P
SD-12-56SP
SD-12-43SP
SD-12-41P
SD-12-42SP
G CELL
J CELL

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PROJECT TITLE:
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SHEET TITLE:
Units 3 & 4 EHP
Saddle Dam
Piezometer Location Map

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PLAN VERSION	DATE
	1/12/2016

PROJECT NUMBER
15419

SHEET
H1

Ver. 15.1 Plotted by clane on Jan 17, 2016 - 8:55pm

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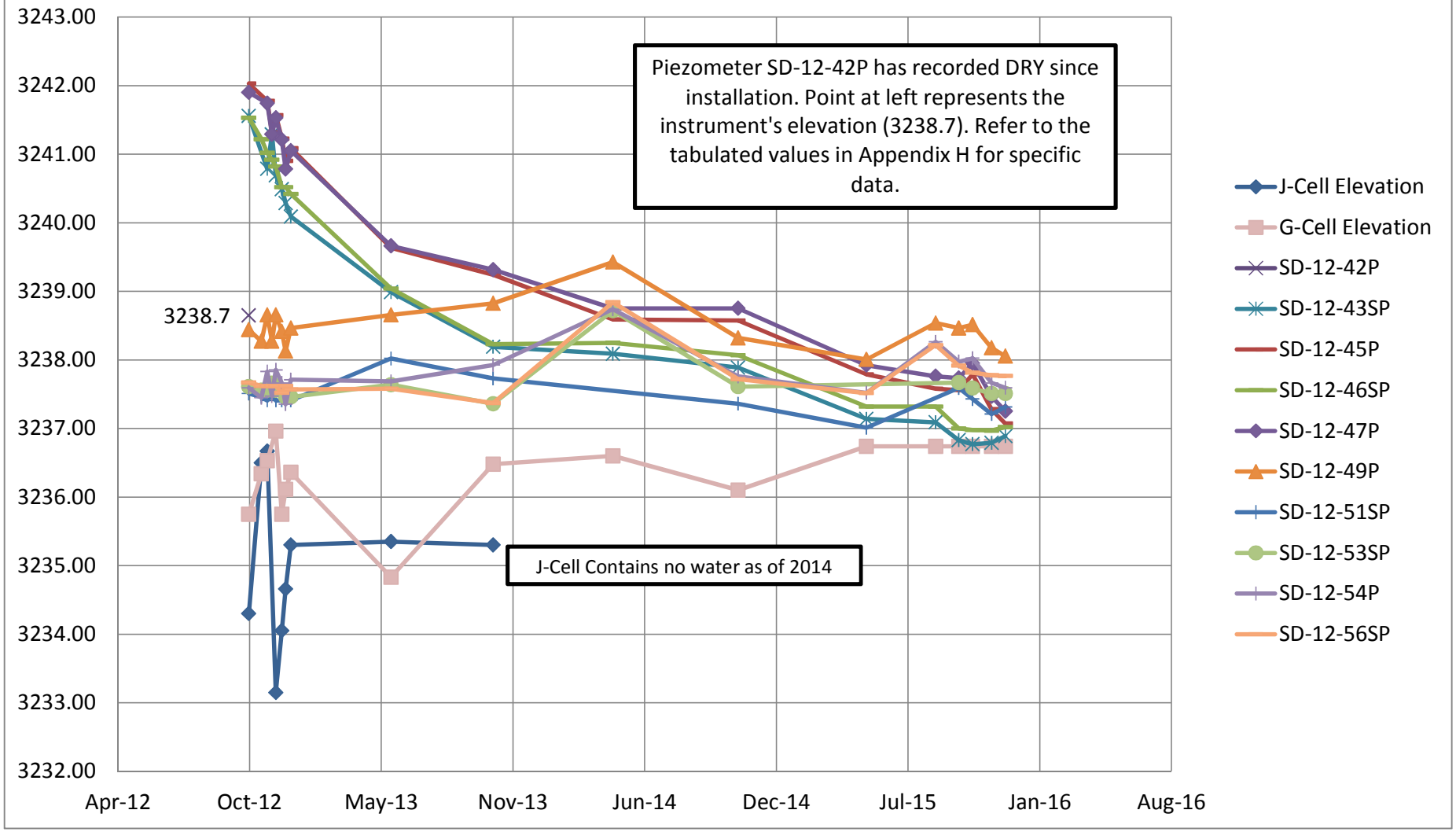
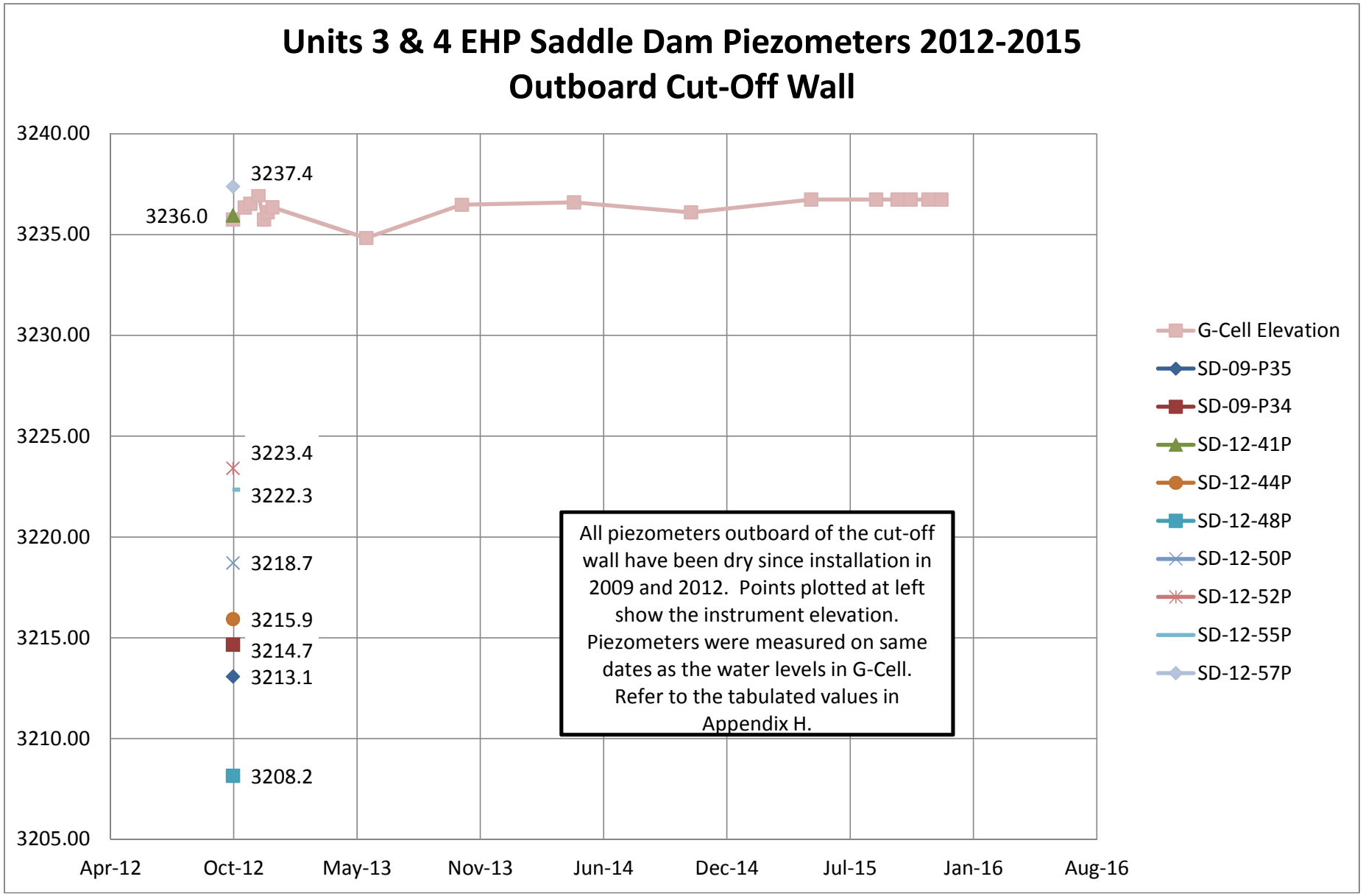
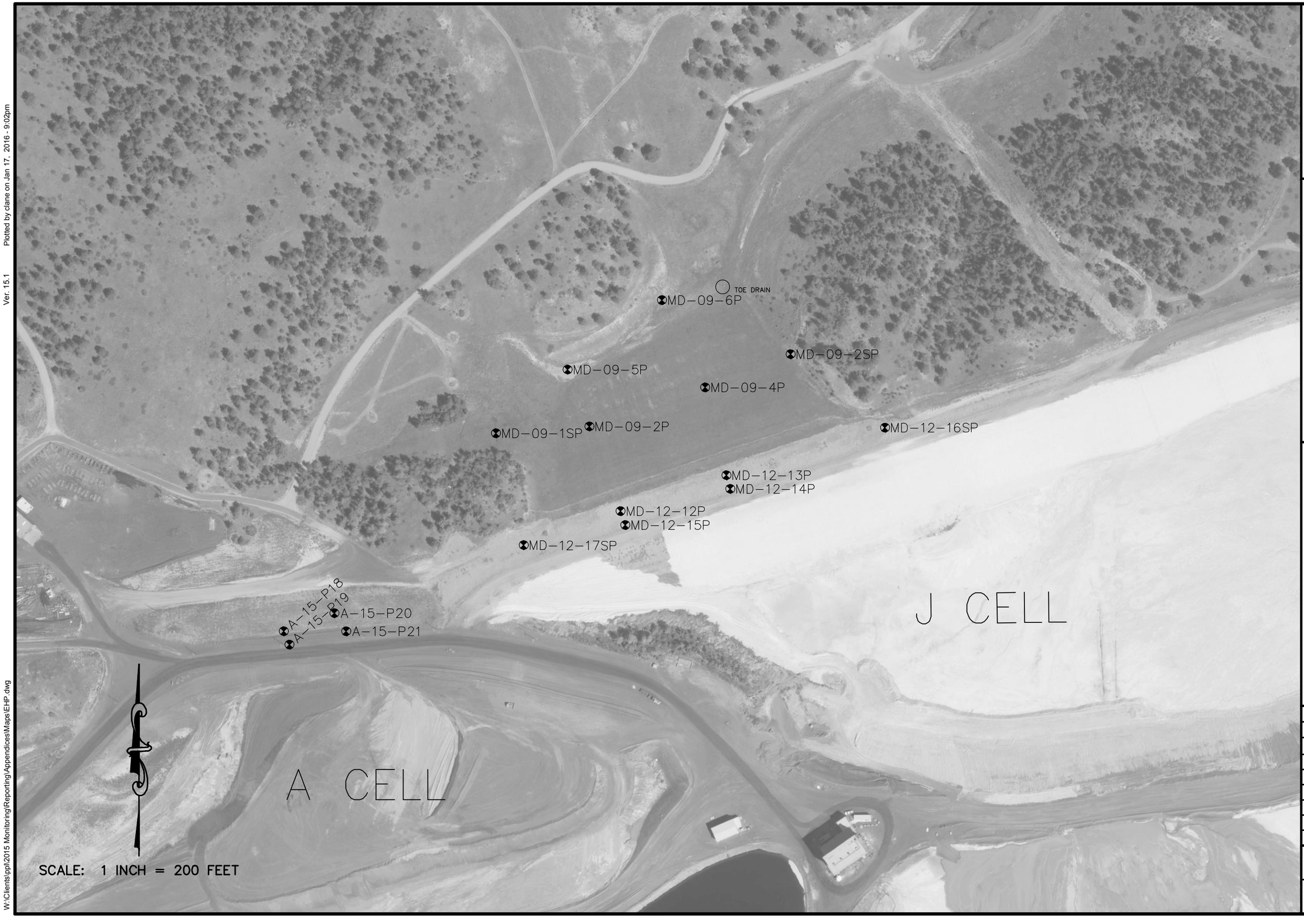
Units 3 & 4 EHP Saddle Dam Piezometers 2012-2015
Inboard Cut-Off Wall




Units 3 & 4 EHP Saddle Dam Piezometers 2012-2015
Outboard Cut-Off Wall
3240.00
3235.00
3230.00
3225.00
3220.00
3215.00
3210.00
3205.00
Apr-12
Oct-12
May-13
Nov-13
Jun-14
Dec-14
Jul-15
Jan-16
Aug-16
3237.4
3236.0
3223.4
3222.3
3218.7
3215.9
3214.7
3213.1
3208.2
All piezometers outboard of the cut-off wall have been dry since installation in 2009 and 2012. Points plotted at left show the instrument elevation. Piezometers were measured on same dates as the water levels in G-Cell. Refer to the tabulated values in Appendix H.
G-Cell Elevation
SD-09-P35
SD-09-P34
SD-12-41P
SD-12-44P
SD-12-48P
SD-12-50P
SD-12-52P
SD-12-55P
SD-12-57P



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PROJECT TITLE:
2015 Annual Inspection Report
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SHEET TITLE:
Units 3 & 4 EHP
Main Dam and A-Cell
Piezometer Location Map

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	1/12/2016

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15419

SHEET
H3

Ver. 15.1 Plotted by clane on Jan 17, 2016 - 9:02pm

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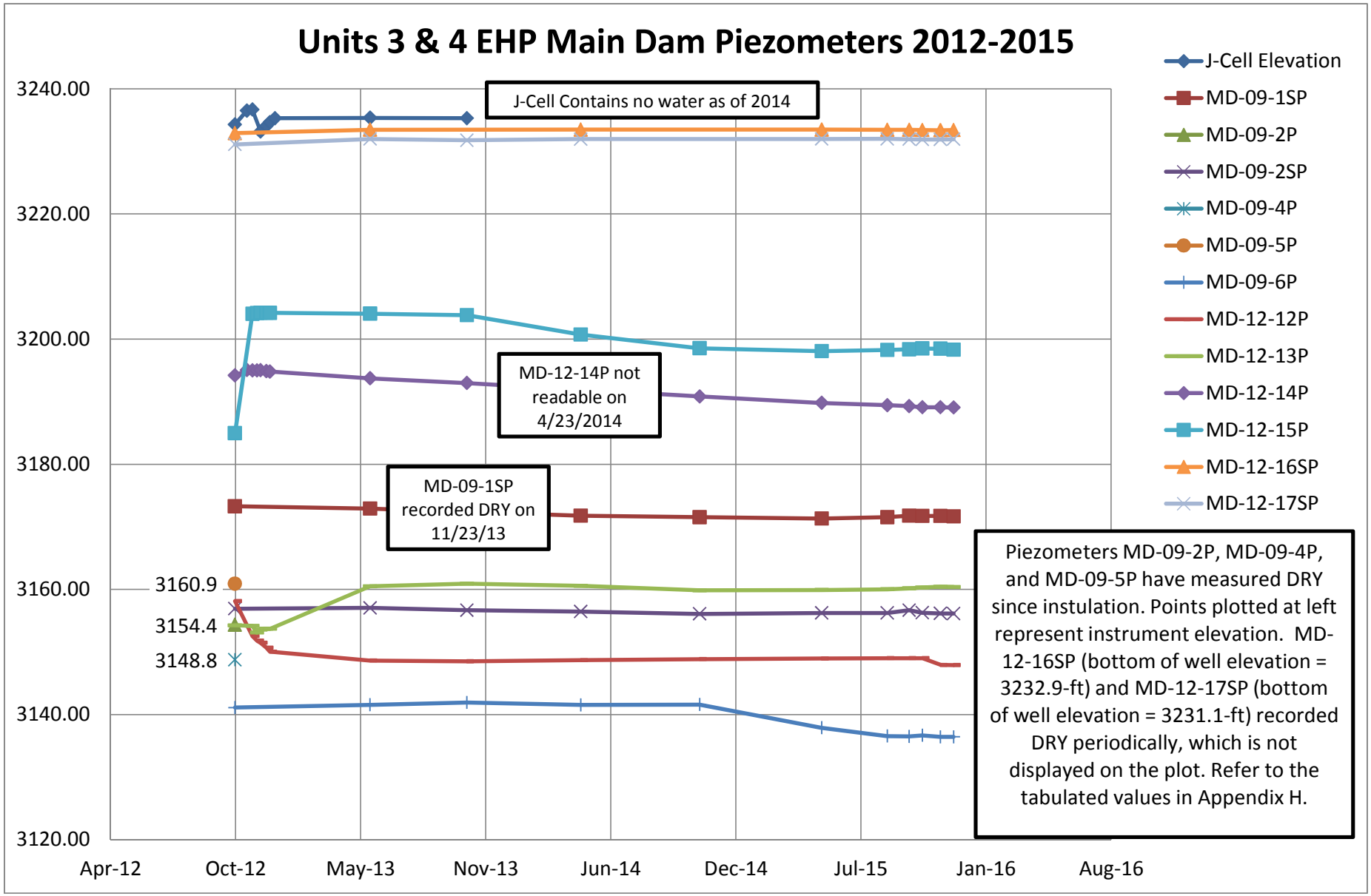
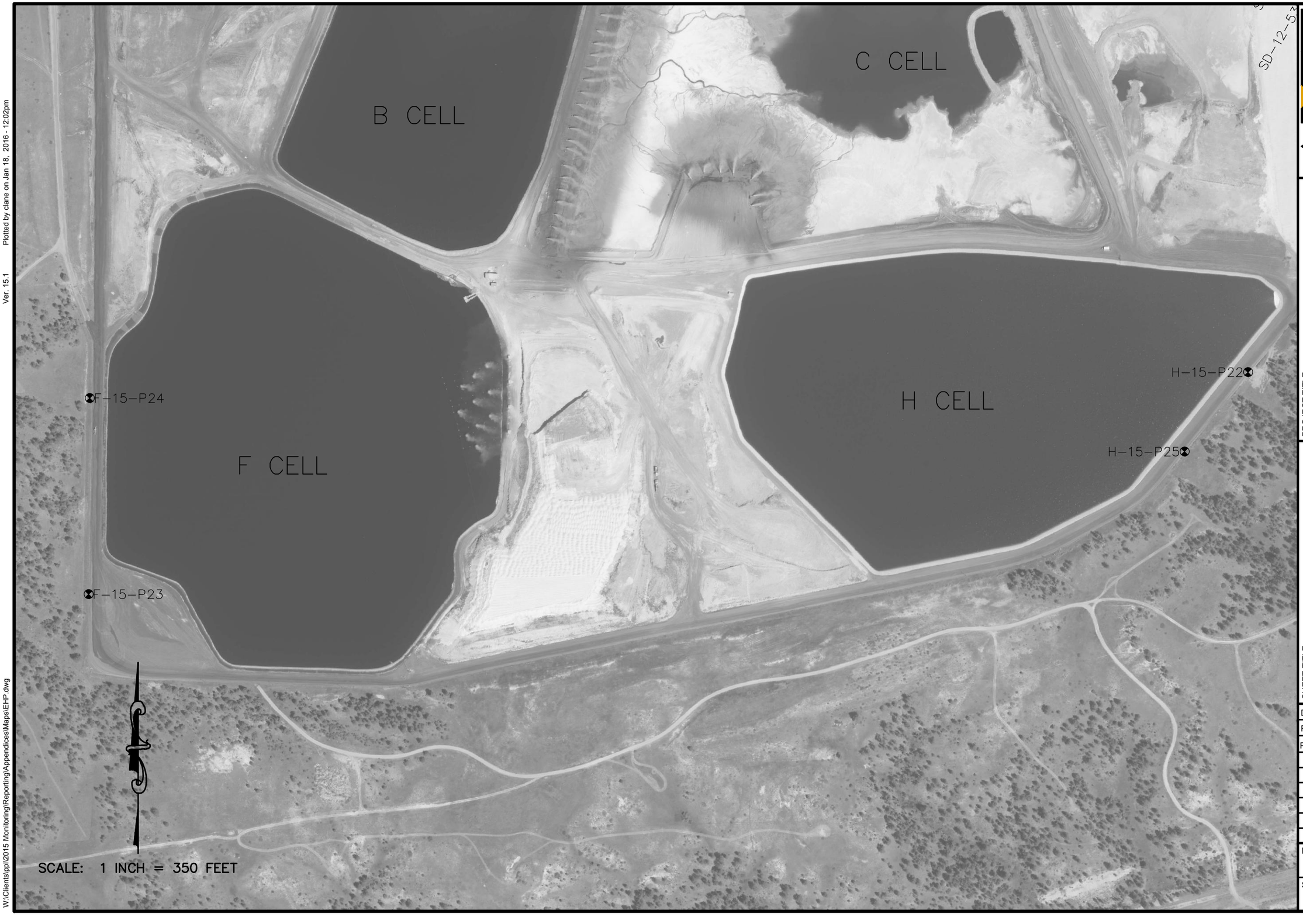

Units 3 & 4 EHP Main Dam Piezometers 2012-2015
3240.00
3220.00
3200.00
3180.00
3160.00
3140.00
3120.00
Apr-12
Oct-12
May-13
Nov-13
Jun-14
Dec-14
Jul-15
Jan-16
Aug-16
J-Cell Contains no water as of 2014
MD-12-14P not readable on 4/23/2014
MD-09-1SP recorded DRY on 11/23/13
3160.9
3154.4
3148.8
J-Cell Elevation
MD-09-1SP
MD-09-2P
MD-09-2SP
MD-09-4P
MD-09-5P
MD-09-6P
MD-12-12P
MD-12-13P
MD-12-14P
MD-12-15P
MD-12-16SP
MD-12-17SP
Piezometers MD-09-2P, MD-09-4P, and MD-09-5P have measured DRY since instulation. Points plotted at left represent instrument elevation. MD-12-16SP (bottom of well elevation = 3232.9-ft) and MD-12-17SP (bottom of well elevation = 3231.1-ft) recorded DRY periodically, which is not displayed on the plot. Refer to the tabulated values in Appendix H.



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PROJECT TITLE:
2015 Annual Inspection Report
Talen Energy
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SHEET TITLE:
Units 3 & 4 EHP
F-Cell and H-Cell
Piezometer Location Map

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PLAN VERSION	DATE
	1/12/2016

PROJECT NUMBER
15419

SHEET
H2

Ver. 15.1 Plotted by clane on Jan 18, 2016 - 12:02pm

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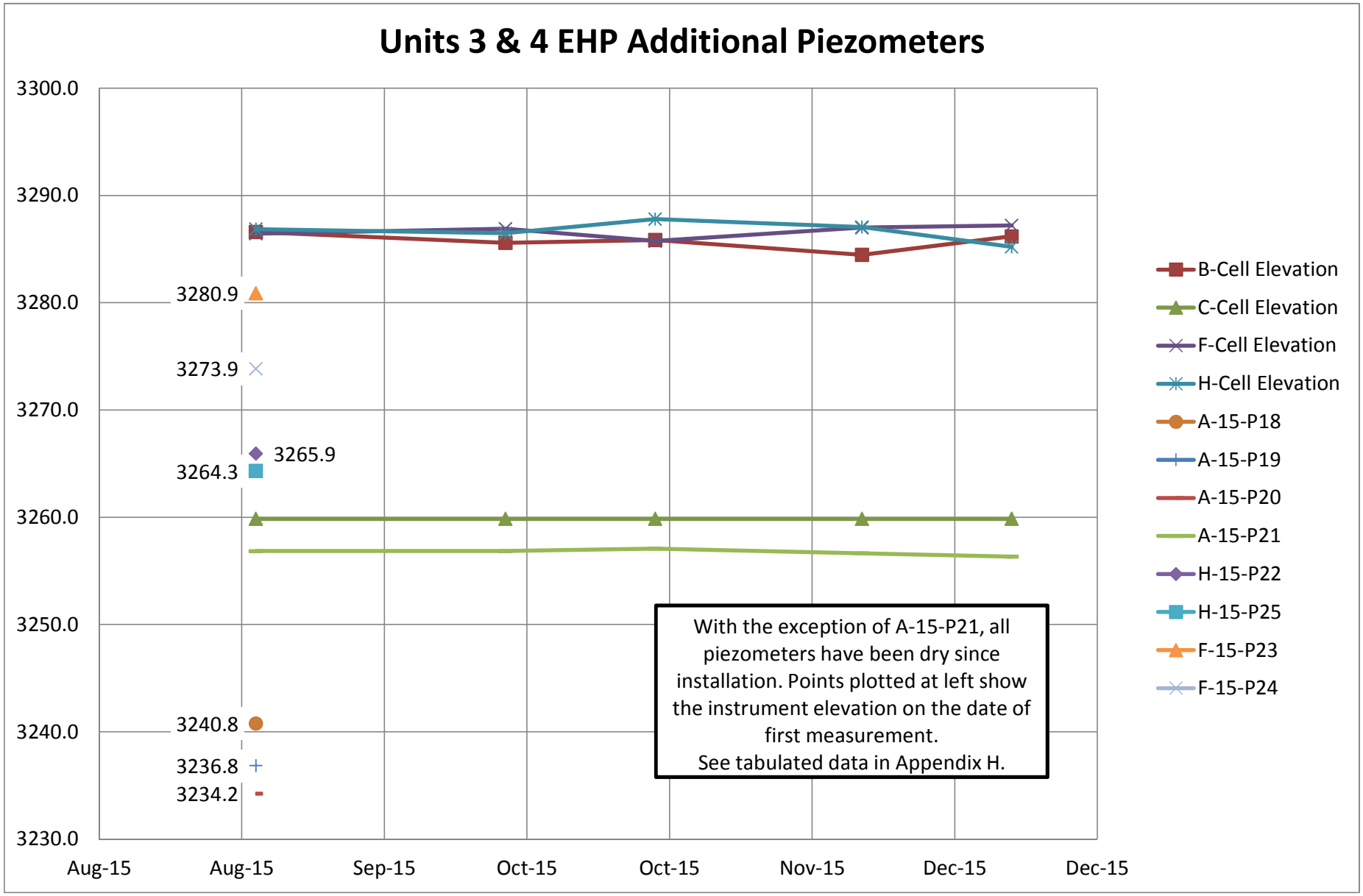
Units 3 & 4 EHP Additional Piezometers
3300.0
3290.0
3280.0
3270.0
3260.0
3250.0
3240.0
3230.0
3280.9
3273.9
3265.9
3264.3
3240.8
3236.8
3234.2
Aug-15
Aug-15
Sep-15
Oct-15
Oct-15
Nov-15
Dec-15
Dec-15
With the exception of A-15-P21, all piezometers have been dry since installation. Points plotted at left show the instrument elevation on the date of first measurement.
See tabulated data in Appendix H.
B-Cell Elevation
C-Cell Elevation
F-Cell Elevation
H-Cell Elevation
A-15-P18
A-15-P19
A-15-P20
A-15-P21
H-15-P22
H-15-P25
F-15-P23
F-15-P24

Table of Measured Piezometer Data - Units 3 & 4 EHP

	Piezo Elevation	10/17/2012	11/5/2012	11/14/2012	11/21/2012	11/27/2012	12/6/2012	12/12/2012	12/20/2012	5/21/2013	10/23/2013	4/23/2014	10/30/2014	5/13/2015	8/26/2015	9/30/2015	10/21/2015	11/19/2015	12/10/2015
Saddle Dam																			
SD-09-P35	3213.1													DRY	DRY	DRY	DRY	DRY	DRY
SD-09-P34	3214.7	DRY		DRY	DRY	DRY	DRY	DRY		DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY
SD-12-41P	3236.0	DRY		DRY	DRY	DRY	DRY	DRY		DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY
SD-12-42P	3238.7	DRY		DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY
SD-12-43SP		3241.6		3240.8	3241.3	3240.7	3240.5	3240.3	3240.1	3239.0	3238.2	3238.1	3237.9	3237.1	3237.1	3236.8	3236.8	3236.8	3236.89
SD-12-44P	3215.9	DRY		DRY	DRY	DRY	DRY	DRY		DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY
SD-12-45P	3227.8	3242.0		3241.8	3241.3	3241.6	3241.2	3240.9	3241.1	3239.6	3239.2	3238.6	3238.6	3237.8	3237.6	3237.6	3237.8	3237.3	3237.07
SD-12-46SP		3241.5	3241.2	3241.0	3240.9	3240.8	3240.5	3240.5	3240.4	3239.0	3238.2	3238.3	3238.1	3237.3	3237.3	3237.0	3237.0	3237.0	3237.02
SD-12-47P	3216.3	3241.9		3241.7	3241.3	3241.5	3241.2	3240.8	3241.1	3239.7	3239.3	3238.8	3238.8	3237.9	3237.8	3237.7	3237.9	3237.5	3237.25
SD-12-48P	3208.2	DRY	DRY	DRY	DRY	DRY	DRY	DRY		DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY
SD-12-49P	3231.0	3238.4	3238.3	3238.7	3238.3	3238.7	3238.4	3238.1	3238.5	3238.7	3238.8	3239.4	3238.3	3238.0	3238.5	3238.5	3238.5	3238.2	3238.06
SD-12-50P	3218.7	DRY	DRY	DRY	DRY	DRY	DRY	DRY		DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY
SD-12-51SP		3237.5	3237.5	3237.4	3237.5	3237.4	3237.4	3237.4	3237.4	3238.0	3237.7		3237.4	3237.0	WELL FAILURE	3237.6	3237.4	3237.2	3237.31
SD-12-52P	3223.4	DRY	DRY	DRY	DRY	DRY	DRY	DRY		DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY
SD-12-53SP		3237.6	3237.6	3237.6	3237.7	3237.6	3237.6	3237.5	3237.5	3237.6	3237.4	3238.7	3237.6	WELL FAILURE	WELL FAILURE	3237.7	3237.6	3237.5	3237.51
SD-12-54P	3228.4	3237.6	3237.4	3237.8	3237.5	3237.9	3237.7	3237.4	3237.7	3237.7	3237.9	3238.7	3237.8	3237.5	3238.3	3238.0	3238.0	3237.7	3237.59
SD-12-55P	3222.3	DRY	DRY	DRY	DRY	DRY	DRY	DRY		DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY
SD-12-56SP		3237.7	3237.6	3237.6	3237.6	3237.6	3237.5	3237.6	3237.6	3237.6	3237.4	3238.8	3237.7	3237.5	3238.2	3237.9	3237.8	3237.8	3237.77
SD-12-57P	3237.4	DRY	DRY	DRY	DRY	DRY	DRY	DRY		DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY

	Piezo Elevation	10/17/2012	11/5/2012	11/14/2012	11/21/2012	11/27/2012	12/6/2012	12/12/2012	12/20/2012	5/21/2013	10/23/2013	4/23/2014	10/30/2014	5/13/2015	8/26/2015	9/30/2015	10/21/2015	11/19/2015	12/10/2015
Main Dam																			
MD-09-1SP		3173.3								3172.9	DRY	3171.8	3171.5	3171.3	3171.5	3171.8	3171.7	3171.7	3171.7
MD-09-2P	3154.4	DRY								DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY
MD-09-2SP		3156.9								3157.0	3156.7	3156.5	3156.1	3156.2	3156.2	3156.7	3156.3	3156.2	3156.1
MD-09-4P	3148.8	DRY								DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY
MD-09-5P	3160.9	DRY								DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY
MD-09-6P	3135.3	3141.1								3141.6	3141.9	3141.5	3141.6	3137.9	3136.6	3136.5	3136.7	3136.4	3136.4
MD-12-12P	3143.1	3158.1		3152.6	3151.8	3151.5	3150.7	3150.1		3148.6	3148.5	3148.7	3148.9	3148.9	3149.0	3149.0	3149.0	3147.9	3147.9
MD-12-13P	3152.2	3154.3		3154.2	3153.1	3153.6	3153.7	3153.7		3160.5	3160.9	3160.6	3159.8	3159.9	3160.0	3160.2	3160.3	3160.4	3160.4
MD-12-14P	3153.6	3194.2	3195.1	3195.0	3195.0	3195.0	3194.9	3194.8		3193.7	3193.0	PIEZO FAILURE	3190.8	3189.8	3189.4	3189.3	3189.1	3189.1	3189.1
MD-12-15P	3148.5	3185.0		3204.0	3204.1	3204.2	3204.2	3204.2		3204.1	3203.8	3200.7	3198.5	3198.1	3198.3	3198.4	3198.5	3198.5	3198.3
MD-12-16SP	3232.9	DRY		DRY	DRY	DRY	DRY	DRY		3233.5	DRY	3233.5	DRY	3233.5	3233.4	3233.4	3233.4	3233.4	3233.4
MD-12-17SP	3231.1	DRY		DRY	DRY	DRY	DRY	DRY		3232.0	3231.8	3232.0	DRY	3232.0	3232.0	3231.9	3231.9	3231.9	3231.9

	Piezo Elevation	10/17/2012	11/5/2012	11/14/2012	11/21/2012	11/27/2012	12/6/2012	12/12/2012	12/20/2012	5/21/2013	10/23/2013	4/23/2014	10/30/2014	5/13/2015	8/26/2015	9/30/2015	10/21/2015	11/19/2015	12/10/2015
Other Area																			
A-15-P18	3240.8													DRY	DRY	DRY	DRY	DRY	
A-15-P19	3236.8													DRY	DRY	DRY	DRY	DRY	
A-15-P20	3234.2													DRY	DRY	DRY	DRY	DRY	
A-15-P21	3234.7													3256.9	3256.9	3257.1	3256.6	3256.3	
H-15-P22	3265.9													DRY	DRY	DRY	DRY	DRY	
H-15-P25	3264.3													DRY	DRY	DRY	DRY	DRY	
F-15-P23	3280.9													DRY	DRY	DRY	DRY	DRY	
F-15-P24	3273.9													DRY	DRY	DRY	DRY	DRY	

	Piezo Elevation	10/17/2012	11/5/2012	11/14/2012	11/21/2012	11/27/2012	12/6/2012	12/12/2012	12/20/2012	5/21/2013	10/23/2013	4/23/2014	10/30/2014	5/13/2015	8/26/2015	9/30/2015	10/21/2015	11/19/2015	12/10/2015
POND ELEVATIONS																			
J-Cell Elevation	-	3234.30	3236.50	3236.67		3233.15	3234.05	3234.66	3235.30	3235.30	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY
C-Cell Elevation	-	3263.90	3263.75	3264.10		3265.84	3265.20	3263.56	3263.71	3261.19	3259.97	3253.20	3259.90	3259.9	3259.9	3259.9	3259.9	3259.9	3259.9
B-Cell Elevation	-	3281.05	3281.00	3282.70		3281.31	3282.03	3283.89	3285.05	3287.97	3286.60	3288.60	3283.00	3288.2	3286.6	3285.6	3285.9	3284.5	3286.2
G-Cell Elevation	-	3235.75	3236.34	3236.53		3236.96	3235.75	3236.11	3236.36	3234.83	3236.48	3236.60	3236.10	3236.7	3236.7	3236.7	3236.7	3236.7	3236.7
F-Cell Elevation	-	3285.68	3287.00	3287.00		3286.50	3287.50	3287.40	3287.15	3287.80	3283.65	3288.40	3287.00	3287.3	3286.4	3286.9	3285.8	3287.0	3287.2
H-Cell Elevation	-													3287.7	3286.9	3286.5	3287.8	3287.1	3285.2

	INDICATES INSTRUMENT DID NOT EXIST ON THE DATE SPECIFIED
	BLANK INDICATES INSTRUMENT NOT MEASURED ON THAT DATE