

Report of Work Completed – Reclamation Maintenance

ECMC Location Name (ID)	SECORA-633S68W/21SENE (308892)
Operator Name (Operator #)	XTO Energy, Inc (Operator #: 100264)
Operator Location Name	Secora 1
ECMC Well Name	SECORA #1
Legal Description	SENE Section 21 T33S-R68W
Coordinates (Lat/Long)	37.159490 / -104.993060
County	Las Animas County, Colorado

Introduction

Confluence Compliance Companies, LLC (Confluence) prepared this Report of Work Completed (ROWC) for XTO Energy, Inc (XTO) to document maintenance performed at the Secora 1 well pad (Location) July 12 – July 20, 2023 including-stormwater control measure repair, seeding, and weed management. The Location is 1.84 miles east of Stonewall, Colorado in Las Animas County as illustrated in the attached Topographic Location Map. Additional information on the Location is provided in the title block above and attached Maintenance Site Diagram. This ROWC provides background on the Location, methods for maintenance contractor coordination and oversight, the results of maintenance efforts, and site-specific recommendations for future monitoring and/or maintenance efforts.

Background

According to Energy and Carbon Management Commission (ECMC) records, the Secora 1 wellhead was plugged and abandoned (P&A) on March 5, 2012 (Form 6 Document : 400267475). The ECMC approved a 502.b. reclamation variance request (Document: 401998030) on April 8, 2019 documenting the surface owner's desire to retain the location access road and, due to steep grades at the Location, remaining stormwater control features. The Location was reclaimed in 2019 per variance request conditions of approval.

A native timberland seed mix was applied on October 25, 2019, via hydroseed/mulch application. On January 17, 2020, a second, hand sown, seeding effort took place in areas that showed signs of limited germination and/or cover. During the January 17, 2020 seeding effort additional stormwater, control measures were constructed to limit site degradation. Those measures included rock check dams, riprap in areas of channelized surface flows, culverts, and larger riprap. On December 17, 2019, existing stormwater control features were maintained and new features were installed where needed.

XTO documented reclamation completion January 1, 2023 in an ECMC Final Reclamation Completion Notice (Form 4 Document: 403287930). ECMC personnel conducted a reclamation inspection February 21, 2023 (Document: 690203914), identifying insufficient vegetative cover on portions of the reclaimed surface; occurrences of Canada thistle (*Cirsium arvense*), a List B Noxious Weed; and erosive features along the access road (Corrective Action 154927). To address and mitigate compliance concerns, XTO requested Confluence prepare a maintenance plan and provide onsite contractor oversight and support of plan implementation.

Methodology

On May 30, 2023, Confluence and XTO personnel discussed the scope of work associated with development of a maintenance plan to address ECMC inspection findings and issued corrective actions. The maintenance plan was prepared by completing a desktop review of ECMC and XTO historical records and an aerial imagery evaluation. During the desktop evaluation, all portions of the original disturbance, reclaimed surface, features included in the approved variance, and identification of possible undisturbed reference areas to be used when comparing vegetation health and composition of the reclaim were defined. Maintenance areas including stormwater control feature maintenance, seeding, and weed management, were selected based on ECMC inspection findings and XTO historical monitoring records.

To support contractor implementation oversight, stormwater control measure construction and maintenance specifications including check dams, culverts, riprap armoring, and roadside ditches, were reviewed to ensure maintenance activities adhere to national and local implementation standards [2-5]. A custom seed mix and soil amendment were selected based on reference area species composition observations, historical surface owner approved native seed mix, and consultation with the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) office in Trinidad, CO [1], [6-8]. Spot-specific herbicide application was planned for all regions where Listed Noxious and undesirable weeds were observed on Location to minimize damage to existing vegetation.

To document maintenance plan execution, photographs were collected at each maintenance area and coordinates were collected using a Garmin sub-meter accuracy GPS unit. Results of field work were documented in the Maintenance Site Diagram, Maintenance Photo Log, and the results section of this report.

Results

Confluence personnel completed a site visit in support of planned maintenance oversight on July 12, 2023 and executed contractor implementation oversight of subcontractors between July 13 and 20, 2023. These results summarize observations from onsite maintenance efforts. For organizational and presentation purposes, the results summary is divided between stormwater maintenance, seeding, and weed management activities.

Stormwater Feature Maintenance

Stormwater control measures on Location include check dams, culverts, sediment traps, riprap armoring, and roadside ditches. Due to the topography of the location and surrounding area, run-on from areas adjacent to the Location present the largest source of channelized surface water flow. To limit the impact of run on, existing diversion features were inspected and maintained as needed.

Stormwater control feature maintenance was completed between July 13, 2023 and July 19, 2023. Photo points illustrating maintenance areas are provided in Table 1 below and are illustrated in the Maintenance Site Diagram and Maintenance Photo Log attached to this report.



Check Dams

Sixteen check dams installed in roadside ditches of the Location access road were found to be sediment laden and/or required repair. Sediment was removed from each check dam and sediment was hauled offsite by subcontractors. Following sediment removal, check dams were reconstructed per EPA rock check dam or check dam turnout specifications.

Culverts

Four corrugated steel culverts were observed on the Location access road. All culverts were evaluated for sedimentation and other obstructions. One culvert (Photo Point 22) was found to be sediment laden. Sediment was removed and hauled offsite by subcontractors.

Riprap Armoring

Riprap armoring was observed in the roadside ditches at the northern extent of the access road where access road slope is greater than 4:1. Sediment accumulation was observed in both riprap armored ditches. Sediment was removed and hauled off location, riprap was refreshed via removal from the ditch and reinstallation. Repair of riprap armored ditches included sediment removal and distribution of additional rock in areas where aggregate depth or cover was insufficient to stabilize the surface and reduce stormwater velocity.

Roadside Ditches

Location roadside ditches were installed strategically along the access road to convey water from storm runoff to an adequate outlet. Check dam turnouts have been installed intermittently along the access road in regions prone to concentrated flow, per EPA specifications, to deflect flow into naturally occurring drainage features. Roadside ditch repair included erosional feature repair and regrading of ditches to ensure feature bottom is parabolic or flat to decrease stormwater velocity.

Sediment Traps

Seven sediment traps were observed on along the Location access road in areas with the highest erosional potential to divert channelized stormwater flow that could not be managed by check dams and turnouts alone. Sediment trap maintenance included sediment removal and disposal, riprap removal, regrading of trap bottom to optimize feature surface area, and riprap reinstallation.

Stormwater Control Feature	Feature Location / Photo Point
Check Dam	4, 6, 8, 10-13, 15-20, 27-29
Culvert	7, 8, 22, 25-26
Sediment Trap	5, 14, 21, 23-25, 30
Riprap Armoring	2, 3
Roadside Ditch Repair	7, 9

Seeding

Confluence completed broadcast seeding and amendment application at the 0.27 acre former Secora 1 well pad July 13, 2023. Seed and amendments were broadcast onto the reclaimed surface and at least 5 feet into the adjacent landscape using a broadcast seeder designed for native seed dispersal. Broadcast seed was covered to a maximum depth of 0.5 inch by hand raking seeded areas. Soil amendment was applied at a rate of 500 lbs. per acre of Richlawn 3-6-



3 organic fertilizer with mycorrhizae and humates. Seed and soil amendments were not tilled into the soil profile.

Existing vegetation within the reclaimed surface is well established, though vegetative cover was approximately 40% when compared to adjacent reference areas based on ocular assessment. The seeding area is illustrated in Photo Point 1 of the attached Maintenance Site Diagram and Maintenance Photo Log.

Common Name	Scientific Name	Variety	Pure Seed %
Western Wheatgrass	<i>Pascopyrum smithii</i>	Arriba	31.94%
Mountain brome	<i>Bromus carinatus</i>	Garnet	26.53%
Sideoats grama	<i>Bouteloua curtipendula</i>	Vaughn	12.86%
Littlebluestem	<i>Schizachyrium scoparium</i>	Camper	9.42%
Arizona Fescue	<i>Festuca arizonica</i>	Redondo	5.94%
Blue Grama	<i>Bouteloua gracilis</i>	Hachita	4.93%
Inert Matter	NA	NA	8.38%
Total			100%

Weed Management

Weed management efforts were completed on July 20, 2023. One live colony of Canada thistle (*Cirsium arvense*) was observed at Photo Point 7 as illustrated in the attached Maintenance Site Diagram and Maintenance Photo Log. Approximately 20 individual plants were mechanically removed and plant material was bagged and disposed of offsite. Other weeds observed on location include Common mullein (*Verbascum Thapsus*), Horehound (*Marrubium vulgare*), Prickly lettuce (*Lactuca serriola*), Yellow sweetclover (*Melilotus officinalis*), and Kochia (*Bassia scoparia*). Herbicide was applied to portions of the reclaimed surface and access road easements. Treatment was spot-specific, applied only where listed noxious weeds or undesirable species appeared on Location, to minimize the potential for damage to desirable vegetative cover.

Analysis and Recommendations

Stormwater compliance concerns have been resolved on Location based on observed site conditions and contractor implementation oversight as documented in the attached Maintenance Site Diagram and Maintenance Photo Log. No additional stormwater control feature maintenance is recommended at this time. Vegetation cover at the Location appears to be on a positive trajectory as perennial grasses present are well established. Confluence recommends continued monitoring to evaluate seeding and weed management effectiveness and to ensure prompt identification and correction of potential compliance concerns or other conditions which could negatively affect the reclaim. Since seed was dispersed outside of the optimal seeding season, typically understood to be March – May for spring applications or September – October for fall applications, without adequate precipitation, seed germination and establishment may prove insufficient to resolve vegetative cover targets. Based on seed establishment observations in subsequent monitoring efforts, additional seeding may be necessary.



Confluence is grateful for the opportunity to support you with this project. If you have any questions about the methods, results or recommendations presented here, please do not hesitate to contact us.

Regards,



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Attachments

- Topographic Location Map
- Maintenance Site Diagram
- Maintenance Photo Log

References

- [1] Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. Web Soil Survey. <http://websoilsurvey.sc.egov.usda.gov/>.
- [2] United States Environmental Protection Agency. Stormwater Best Management Practice: Check Dams. Permits for Clean Water: NPDES. EPA-832-F-21-028B. December 2021. <https://www.epa.gov/system/files/documents/2021-11/bmp-check-dams.pdf>.
- [3] United States Environmental Protection Agency. Stormwater Best Management Practice: Riprap. Permits for Clean Water: NPDES. EPA-832-F-21-028H. December 2021. <https://www.epa.gov/system/files/documents/2021-11/bmp-riprap.pdf>.
- [4] United States Environmental Protection Agency. Stormwater Best Management Practice: Sediment Traps. Permits for Clean Water: NPDES. EPA-832-F-21-028FF. December 2021. <https://www.epa.gov/system/files/documents/2021-11/bmp-riprap.pdf>.
- [5] Choctawhatchee, Pea, and Yellow Rivers Watershed Management Authority. Recommended Practices Manual: A Guideline for Maintenance and Service of Unpaved Roads. February 2000. https://www.epa.gov/sites/default/files/2015-10/documents/2003_07_02_nps_unpavedroads_unpavedtxtonly.pdf.
- [6] National Oceanic and Atmospheric Administration. Climate NOW Data: Las Animas County, Colorado. Available online at the following link: <https://www.weather.gov/wrh/climate?wfo=pub>.



- [7] G, Griffith. 2010. Level III North American Terrestrial Ecoregions: United States Descriptions. <https://www.epa.gov/eco-research/ecoregions-north-america>.
- [8] USDA, NRCS. 2021. The PLANTS Database. National Plant Data Team, Greensboro, NC USA. Available online at the following link: <http://plants.usda.gov>.

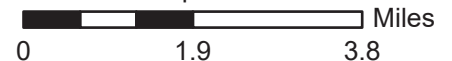


Topographic Location Map

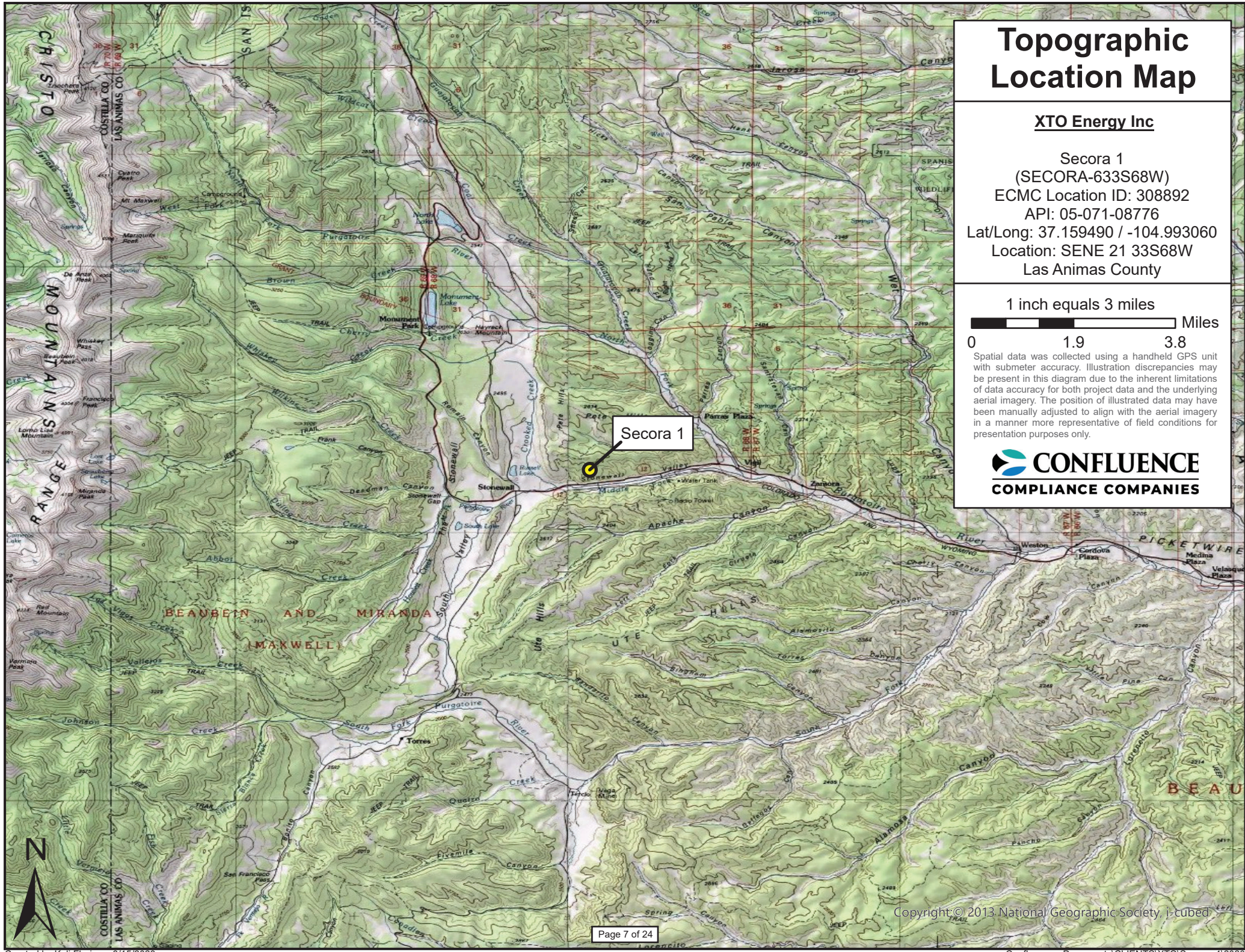
XTO Energy Inc

Secora 1
(SECORA-633S68W)
ECMC Location ID: 308892
API: 05-071-08776
Lat/Long: 37.159490 / -104.993060
Location: SENE 21 33S68W
Las Animas County

1 inch equals 3 miles



Spatial data was collected using a handheld GPS unit with submeter accuracy. Illustration discrepancies may be present in this diagram due to the inherent limitations of data accuracy for both project data and the underlying aerial imagery. The position of illustrated data may have been manually adjusted to align with the aerial imagery in a manner more representative of field conditions for presentation purposes only.



Maintenance Site Diagram

XTO Energy Inc

Secora 1
(SECORA-633S68W)
ECMC Location ID: 308892
API: 05-071-08776
Lat/Long: 37.159490 / -104.993060
Location: SENE 21 33S68W
Las Animas County

 Secora 1 Site Location


 Photo Point

 Culvert

 Reclaimed Surface

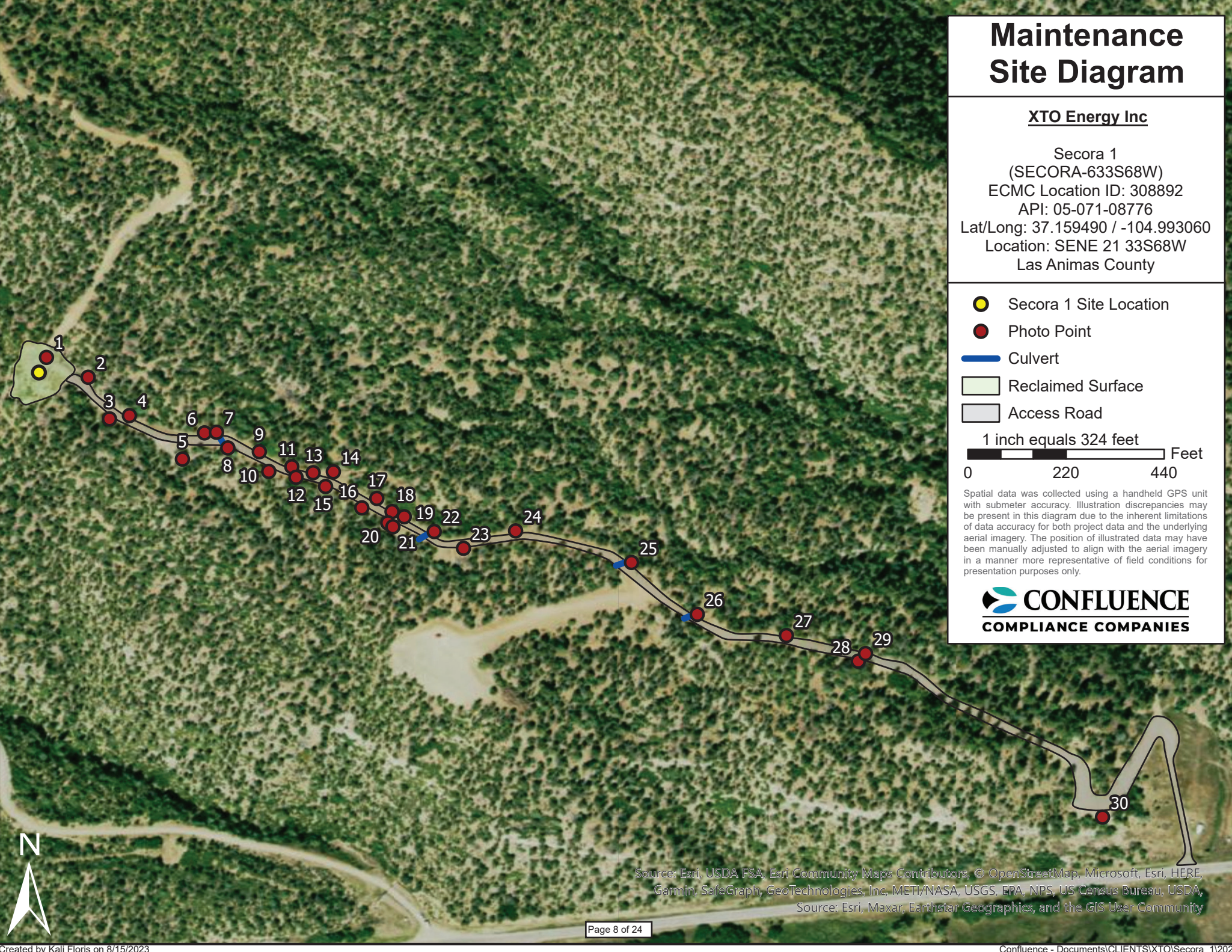
 Access Road

1 inch equals 324 feet

 Feet
0 220 440

Spatial data was collected using a handheld GPS unit with submeter accuracy. Illustration discrepancies may be present in this diagram due to the inherent limitations of data accuracy for both project data and the underlying aerial imagery. The position of illustrated data may have been manually adjusted to align with the aerial imagery in a manner more representative of field conditions for presentation purposes only.

 **CONFLUENCE**
COMPLIANCE COMPANIES



Source: Esri, USDA FSA, Esri Community Maps Contributors, © OpenStreetMap, Microsoft, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA, Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

Maintenance Photo Log

Operator Location Name Secora 1
Location Type Well Site
ECMC ID 308892

Aerial Image – Surface Disturbance Overview



Photo Point 1: Former Pad Seeding Area

Coordinates: 37.159605, -104.993001



NOTE: Geographic coordinate discrepancies result from provided coordinates in the photo caption being collected with a sub-meter accurate GPS unit, while the photo stamp coordinates (white font in-photo) originate with a phone application using native phone coordinate accuracy which may be as large as nine meters.

Maintenance Photo Log

Operator Location Name Secora 1
 Location Type Well Site
 ECMC ID 308892

Photo Point 2: Armored Ditch Repair

Coordinates: 37.159452, -104.992680



Photo Point 3: Armored Ditch Repair

Coordinates: 37.159132, -104.992516



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Maintenance Photo Log

Operator Location Name Secora 1
 Location Type Well Site
 ECMC ID 308892

Photo Point 4: Check Dam Repair

Coordinates: 37.159157, -104.992363



Photo Point 5: Sediment Trap Repair

Coordinates: 37.158823, -104.991955



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Maintenance Photo Log

Operator Location Name Secora 1
 Location Type Well Site
 ECMC ID 308892

Photo Point 6: Check Dam Repair

Coordinates: 37.159024, -104.991785



Photo Point 7: Noxious Weed Removal, Ditch Repair, Culvert Inlet Maintenance

Coordinates: 37.159029, -104.991693



NOTE: Geographic coordinate discrepancies result from provided coordinates in the photo caption being collected with a sub-meter accurate GPS unit, while the photo stamp coordinates (white font in-photo) originate with a phone application using native phone coordinate accuracy which may be as large as nine meters.

Maintenance Photo Log

Operator Location Name Secora 1
 Location Type Well Site
 ECMC ID 308892

Photo Point 8: Check Dam Repair, Culvert Outfall Maintenance

Coordinates: 37.158908, -104.991605



Photo Point 9: Ditch Repair

Coordinates: 37.158879, -104.991363



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Maintenance Photo Log

Operator Location Name Secora 1
 Location Type Well Site
 ECMC ID 308892

Photo Point 10: Check Dam Repair

Coordinates: 37.158728, -104.991290



Photo Point 11: Check Dam Repair

Coordinates: 37.158764, -104.991113



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Maintenance Photo Log

Operator Location Name Secora 1
 Location Type Well Site
 ECMC ID 308892

Photo Point 12: Check Dam Repair

Coordinates: 37.158682, -104.991080



Photo Point 13: Check Dam Repair

Coordinates: 37.158718, -104.990949



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Maintenance Photo Log

Operator Location Name Secora 1
 Location Type Well Site
 ECMC ID 308892

Photo Point 14: Sediment Trap Repair

Coordinates: 37.158725, -104.990793



Photo Point 15: Check Dam Repair

Coordinates: 37.158612, -104.990853



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Maintenance Photo Log

Operator Location Name	Secora 1
Location Type	Well Site
ECMC ID	308892

Photo Point 16: Check Dam Repair Coordinates: 37.158447, -104.990574



Photo Point 17: Check Dam Repair Coordinates: 37.158520, -104.990459



NOTE: Geographic coordinate discrepancies result from provided coordinates in the photo caption being collected with a sub-meter accurate GPS unit, while the photo stamp coordinates (white font in-photo) originate with a phone application using native phone coordinate accuracy which may be as large as nine meters.

Maintenance Photo Log

Operator Location Name Secora 1
 Location Type Well Site
 ECMC ID 308892

Photo Point 18: Check Dam Repair

Coordinates: 37.158418, -104.990342



Photo Point 19: Check Dam Repair

Coordinates: 37.158379, -104.990248



NOTE: Geographic coordinate discrepancies result from provided coordinates in the photo caption being collected with a sub-meter accurate GPS unit, while the photo stamp coordinates (white font in-photo) originate with a phone application using native phone coordinate accuracy which may be as large as nine meters.

Maintenance Photo Log

Operator Location Name Secora 1
Location Type Well Site
ECMC ID 308892

Photo Point 20: Check Dam Repair

Coordinates: 37.158332, -104.990374



Photo Point 21: Sediment Trap Repair

Coordinates: 37.158302, -104.990335



NOTE: Geographic coordinate discrepancies result from provided coordinates in the photo caption being collected with a sub-meter accurate GPS unit, while the photo stamp coordinates (white font in-photo) originate with a phone application using native phone coordinate accuracy which may be as large as nine meters.

Maintenance Photo Log

Operator Location Name Secora 1
Location Type Well Site
ECMC ID 308892

Photo Point 22: Culvert Maintenance

Coordinates: 37.158265, -104.990017



Photo Point 23: Sediment Trap Maintenance

Coordinates: 37.158136, -104.989792



NOTE: Geographic coordinate discrepancies result from provided coordinates in the photo caption being collected with a sub-meter accurate GPS unit, while the photo stamp coordinates (white font in-photo) originate with a phone application using native phone coordinate accuracy which may be as large as nine meters.

Maintenance Photo Log

Operator Location Name	Secora 1
Location Type	Well Site
ECMC ID	308892

Photo Point 24: Sediment Trap Repair Coordinates: 37.158270, -104.989391



Photo Point 25: Culvert Maintenance, Sediment Trap Repair Coordinates: 37.158027, -104.988499



NOTE: Geographic coordinate discrepancies result from provided coordinates in the photo caption being collected with a sub-meter accurate GPS unit, while the photo stamp coordinates (white font in-photo) originate with a phone application using native phone coordinate accuracy which may be as large as nine meters.

Maintenance Photo Log

Operator Location Name Secora 1
Location Type Well Site
ECMC ID 308892

Photo Point 26: Culvert Maintenance

Coordinates: 37.157628, -104.987993



Photo Point 27: Check Dam Turnout Maintenance

Coordinates: 37.157465, -104.987307



NOTE: Geographic coordinate discrepancies result from provided coordinates in the photo caption being collected with a sub-meter accurate GPS unit, while the photo stamp coordinates (white font in-photo) originate with a phone application using native phone coordinate accuracy which may be as large as nine meters.

Maintenance Photo Log

Operator Location Name Secora 1
Location Type Well Site
ECMC ID 308892

Photo Point 28: Check Dam Repair

Coordinates: 37.157268, -104.986755



Photo Point 29: Check Dam Maintenance

Coordinates: 37.157327, -104.986698



NOTE: Geographic coordinate discrepancies result from provided coordinates in the photo caption being collected with a sub-meter accurate GPS unit, while the photo stamp coordinates (white font in-photo) originate with a phone application using native phone coordinate accuracy which may be as large as nine meters.

Maintenance Photo Log

Operator Location Name Secora 1
Location Type Well Site
ECMC ID 308892

Photo Point 30: Sediment Trap Repair

Coordinates: 37.156068, -104.984875



NOTE: Geographic coordinate discrepancies result from provided coordinates in the photo caption being collected with a sub-meter accurate GPS unit, while the photo stamp coordinates (white font in-photo) originate with a phone application using native phone coordinate accuracy which may be as large as nine meters.