Site Characterization Work Plan

WPX Energy Rocky Mountain, LLC
PA 31-36 Well Pad

Prepared for:

WPX Energy Rocky Mountain, LLC
1058 County Road 215
Parachute, Colorado 81635

Prepared by:
HRL Compliance Solutions, Inc.
2385 F ½ Road
Grand Junction, CO 81505
Phone: 970-243-3271

Prepared: March 2014

Table of Contents

1.0 INTRODUCTION

WPX Energy Rocky Mountain, LLC (WPX) retained HRL Compliance Solutions, Inc. (HCSI) to prepare a Site Characterization Plan (SCP) for the WPX PA 31-36 well pad condensate release which was discovered on February 19, 2014. This SCP will report the background and history of the condensate release and immediate remediation efforts associated with the release. It will also outline the tasks associated with the site characterization, including sampling, analysis and reporting.

2.0 BACKGROUND

The following sections report information regarding the site location and release summary for the PA 31-36 well pad.

2.1 Site Location

The WPX PA 31-36 well pad is located in the South Parachute Field located in Garfield County, Colorado. Specifically, the well pad is located in the NWNE of Section 28, Township 6 South Range 95 West of the 6th Primary Meridian. Topographically the well pad is situated in thick Quaternary age colluvial deposits consisting of loam with interbedded clay loam at the surface to approximately 20 feet and large basalt cobbles and boulders below 20 feet. (See Figure 1 Site Location Map).

2.2 Release Summary

The release was caused by corrosion of a buried condensate dump line. The leak was discovered during a quarterly pressure integrity test of the dump line. The leaking line, buried approximately six (6) feet below the pad surface, allowed the condensate to be released into subsurface soils. The impacted area has currently been excavated to a depth of twenty (20) to twenty-two (22) feet. Very large basaltic boulders (3’ to 4’ diameter) and wet soils were encountered at approximately 20 feet. The large boulders in the bottom of the excavation, and moist, unstable soils on the side walls prevented further excavation. Confirmation samples have been collected from all four (4) walls and the bottom of the excavation. Results indicate compliance with the Colorado Oil and Gas Conservation Commission (COGCC) Table 910-1 standards with the exception of the east wall at approximately fourteen (14) to fifteen (15) below the surface. A site visit with the COGCC was held on February 26, 2014. Issues with further excavation of the east wall and bottom were discussed and it was decided that the excavation will be backfilled with clean fill and the contamination present on the eastern side of the excavation will be further characterized to determine the vertical and lateral extent of any remaining impacts. Remediation of the remaining impacted soils will be discussed in a separate plan.

3.0 WORK PLAN

A majority of the impacted soils have been excavated and remediated to below COGCC Table 910-1 standards. The purpose of this site characterization plan is to outline steps to properly delineate the vertical and lateral extent of remaining soil impacts associated with the east wall of the previously excavated area. To accomplish this task, HCSI will utilize a CME 55 Track Rig to collect soil samples from the impacted area which was not excavated due to conditions outlined in Section 2.2. A split-spoon sampler will be used to collect soil samples for analysis of TPH and other chemical constituents. Data and information collected from the site characterization will be used to prepare a Site Characterization Report and a Remedial Action Plan (if applicable) for the PA 31-36 pad location.

3.1 Petroleum Hydrocarbon Characterization Procedures

HCSI will mobilize a CME 55 Track Rig to the PA 31-36 well pad as previously stated. A series of approximately ten (10) boreholes will be drilled in ten (10) foot increments to a depth of 20 to 22 feet where water and large cobbles were encountered during excavation. The borings will be drilled along the northern and eastern boundaries of the previously excavated and backfilled area (see Figure 2). This will be completed in order to determine the vertical and lateral extent of hydrocarbon impacted soils. If impacts are found along any one of these edges of the backfilled excavation a “step-out” characterization method will be used to determine the boundary of the hydrocarbon release until impacts are no longer identified. A Photo Ionizing Detector (PID) and visual observations will be utilized to determine a point of terminus for the hydrocarbon impacts as PID’s are effective in identifying light-end hydrocarbons such as those associated with natural gas condensate.

A split spoon soil sample will be used to collect vertical soil samples at five (5) foot intervals below ground surface (bgs). The collected soil samples will then be field screened using a PID and/or PetroFlag Hydrocarbon Analyzer (PetroFlag). If PID analysis reveals petroleum hydrocarbons the soil sample will be submitted to the lab to be analyzed for DRO, GRO (EPA Method SW 8015), and BTEX (EPA Method SW 8260). Each borehole will be mapped with a Trimble GeoXT and a GIS map will be created outlining each borehole location. During the characterization process, if it is observed that groundwater has been impacted, notifications will be made to WPX immediately.

3.2 Sampling and Analysis of Soil

All sampling activities will be completed in accordance with the recommended protocol specified by an accredited analytical laboratory, HCSI, WPX and EPA sampling criteria. Field work will be performed in OSHA Level D and fire resistant personal protective clothing. All safety measures will be taken to ensure the work is completed in accordance with safety protocol specified by federal, county, or private requirements. All activities conducted in the field will be documented. Documentation in the field will include written records and photographs describing the activities taking place. GPS mapping will be used when applicable.

4.0 CONCLUSION

HCSI will provide a project summary regarding the findings identified in the site characterization. A status report, project map, and analytical data will be submitted to the COGCC after site characterization is complete. Based on the site characterization results, a Remediation Work Plan may be required. The Remediation Work Plan will identify how soils may possibly be remediated in-situ, depending upon the extent and concentration of the remaining impacted soils as excavation and removal may not be practical due to large boulders, a drainage feature to the east, and instable soils. Consideration will include but is not limited to active or passive (MNA) in-situ treatment.

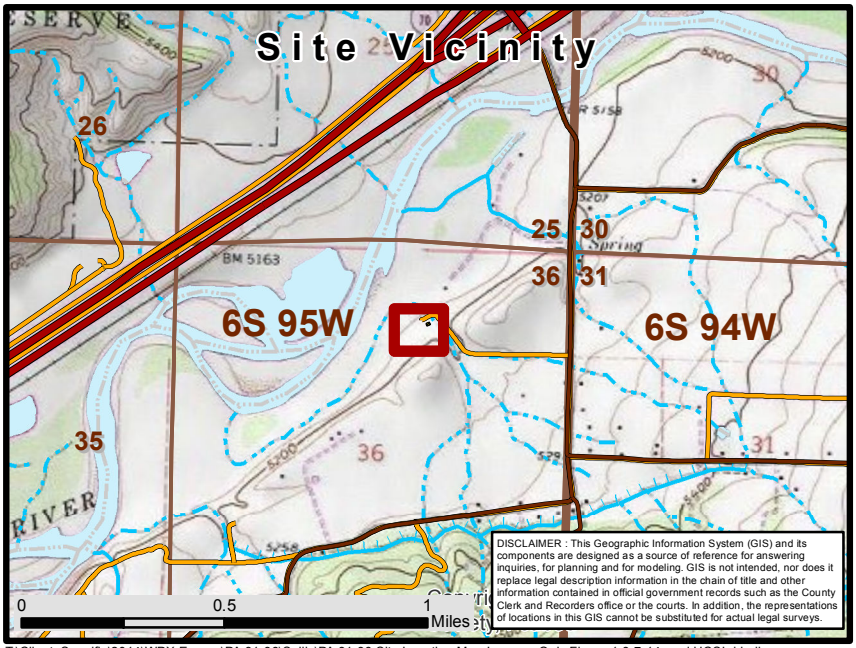


Figure 1
Site Location Map
Location: PA 31-36

39.485792 -107.944906

WPX Energy

PLSS

- Township
- Section

Transportation Features

- Public Roads
- Access Roads

Hydrographic Features

- Perennial Stream
- Intermittent Stream

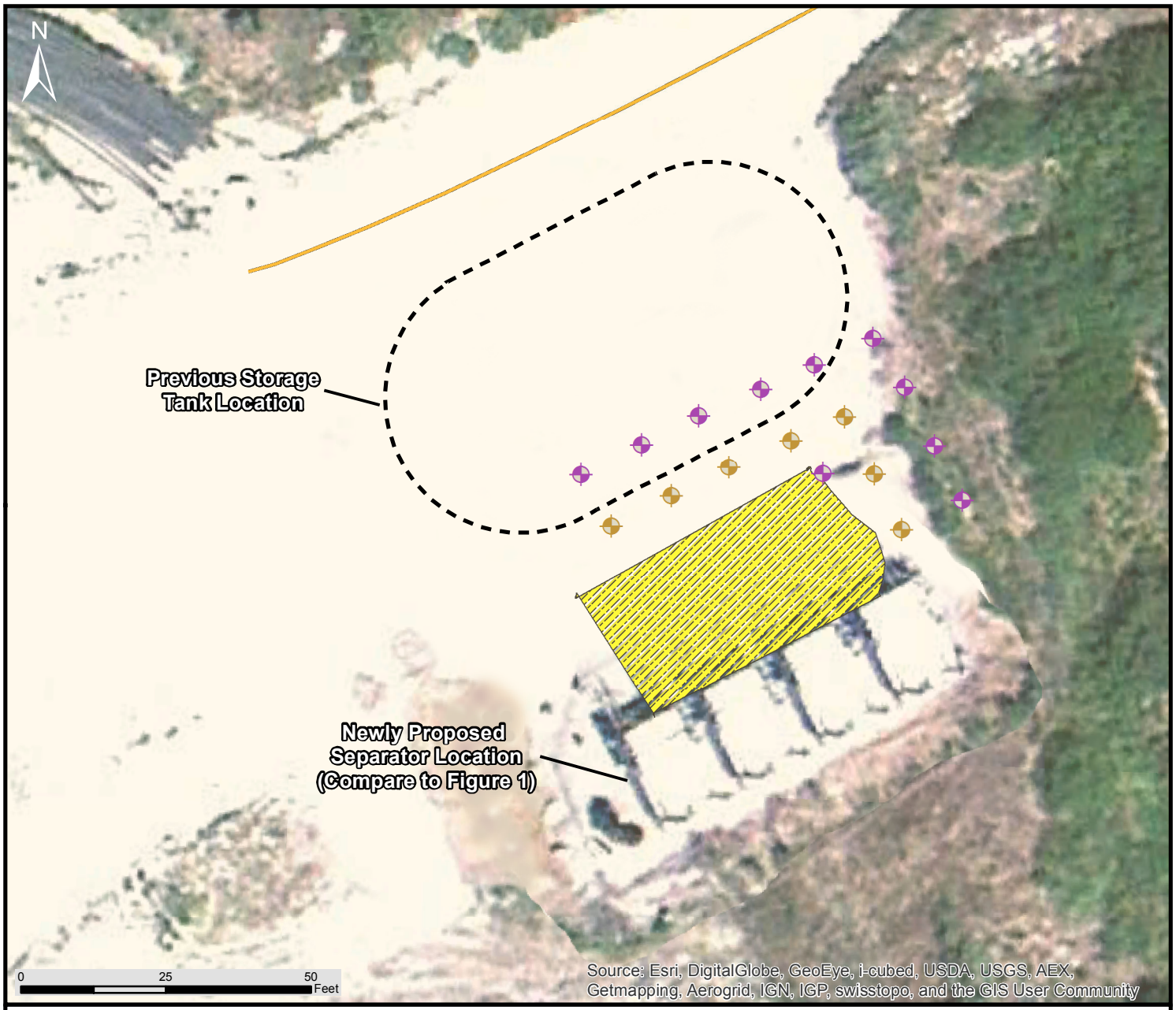
WPXENERGY

HCSI ENVIRONMENTAL CONSULTANTS

HRL COMPLIANCE SOLUTIONS, INC.

T:\Client_Specific\2014\WPX Energy\PA 31-36\Spills\PA 31-36 Site Location Map Imagery Only Figure 1 3-7-14.mxd HCSI_bhall

Revision Date: 3/7/2014 10:18:11 AM



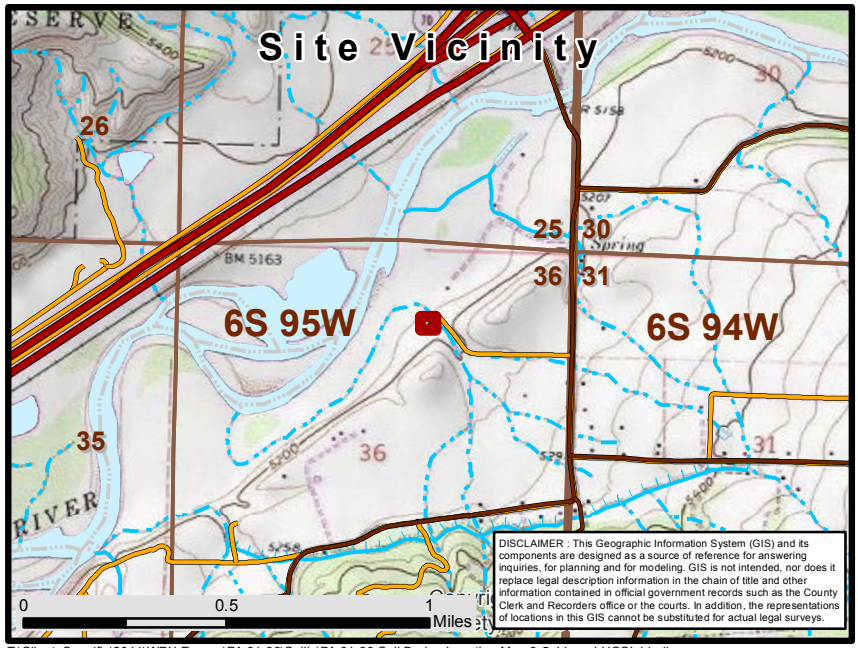


Figure 2
Soil Boring Location Map
Location: PA 31-36

39.485792 -107.944906

WPX Energy

- Possible Borehole Step-out Locations
- Proposed Borehole Locations
- Excavated Area

PLSS

- Township
- Section

Transportation Features

- Public Roads
- Access Roads

Hydrographic Features

- Perennial Stream
- Intermittent Stream

WPXENERGY

HCSI Environmental Consultants
HRL Compliance Solutions, Inc.

T:\Client_Specific\2014\WPX Energy\PA 31-36\Spills\PA 31-36 Soil Boring Location Map 3-5-14.mxd HCSI_bhall

Revision Date: 3/5/2014 4:36:22 PM