Enterprise Products

ENTERPRISE PRODUCTS PARTNERS L.P.
ENTERPRISE PRODUCTS HOLDINGS LLC
(General Partner)

ENTERPRISE PRODUCTS OPERATING LLC

July 17, 2017

7015 0640 0005 6971 5684
Return Receipt Requested

Mr. Randolph Bayliss
New Mexico Energy, Minerals & Natural Resources
Department – Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

Re: Supplemental Environmental Site Investigation Work Plan
Trunk K #8 (3/1/2015 Release)
NMOCD RP: 3R-1031
Enterprise Field Services, LLC

Mr. Bayliss,

Enterprise Field Services, LLC (Enterprise) is submitting the work plan referenced above and prepared by Apex TITAN, Inc. (Apex). This work plan is associated with the Trunk K #8 Release Site, referred to herein as the "Site". The attached work plan (*Supplemental Environmental Site Investigation Work Plan,* dated July 3, 2017) provides proposed site groundwater delineation/groundwater monitoring activities to assess the affected groundwater at the location referenced above.

Initial environmental investigations and results from 2015 corrective actions indicate that groundwater is impacted at the Site. The attached work plan provides a groundwater delineation/groundwater monitoring approach based on current site conditions, and recommends the installation of groundwater monitoring wells and groundwater monitoring.

Following New Mexico Oil Conservation Division review, Enterprise recommends proceeding with the site groundwater delineation/groundwater monitoring activities proposed in the attached work plan. Should you have any questions or require additional information, please feel free to contact Thomas Long at 505-599-2286 or me directly at 713-381-6684.

Thank you,

Jon E. Fields
Director, Environmental

/sjn
cc: Mr. Cory Smith – ENMRD Oil Conservation Division, Aztec District Office
1000 Rio Brazos Road, Aztec, New Mexico 87410

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State of New Mexico
Energy, Minerals and Natural Resources Department

02 June 2017

Jon E. Fields
Director, Environmental
Enterprise Products
P.O. Box 4324
Houston, TX 77210-4324

Re:	RP3 #	Site Name
	1033	**Masden Gas Com #1E**
	1026	**Gallegos #2**
	1031	**Trunk K #8**

Dear Mr. Fields

I have reviewed the files on the releases referenced above. Please find comments below.

3RP-1033 Sampling from five monitoring wells (MW) in 2015 showed one benzene concentration of 640 ppb. Enterprise submitted a Supplemental Corrective Action and Groundwater Monitoring Work Plan dated October 3, 2016. OCD approves this Work Plan.

3RP-1026 Sampling from your initial cleanup efforts in 2014 showed ground water with a benzene concentration of 1,400 ppb. OCD received a Corrective Action Report and Site Investigation Work Plan dated 2Dec14. OCD approves this Work Plan.

3RP-1031 Sampling from your initial cleanup efforts in 2015 showed ground water with a benzene concentration of 1,300 ppb. The Closure Report recommended installation and sampling of three monitoring wells. Please submit a Site Investigation Work Plan.

Respectfully,

P.E., Hydrologist, District III

cc: Jim Griswold, Charlie Perrin, Brandon Powell, Cory Smith, Vanessa Fields, Tom Long

SUPPLEMENTAL ENVIRONMENTAL SITE INVESTIGATION WORK PLAN (2017)

Property:

Trunk K #8 Pipeline Release (03/01/15)
SW 1/4, S25 T27N R8W
San Juan County, New Mexico
OCD RP: 3R-1031

July 3, 2017
Apex Project No. 725040112099

Prepared for:

Enterprise Field Services, LLC
614 Reilly Avenue
Farmington, NM 87401
Attn: Mr. Thomas Long

Prepared by:

Ranee Deechilly
Project Scientist

Kyle Summers, CPG
Branch Manager/Senior Geologist

TABLE OF CONTENTS

LIST OF APPENDICES

APEX

SUPPLEMENTAL ENVIRONMENTAL SITE INVESTIGATION WORK PLAN (2017)

Trunk K #8 Pipeline Release (03/01/15)
SW 1/4, S25 T27N R8W
San Juan County, New Mexico
OCD RP: 3R-1031

Apex Project No. 725040112099

1.0 INTRODUCTION

This work plan is being submitted to obtain approval to perform groundwater delineation activities at the Trunk K #8 pipeline release site.

1.1 Site Description & Background

The Trunk K #8 pipeline release site is located within the Enterprise Field Services, LLC (Enterprise) pipeline right-of-way (ROW) in the southwest (SW) 1/4 of Section 25, Township 27 North, Range 8 West, in San Juan County, New Mexico (36.539789N, 107.638800W), referred to hereinafter as the "Site". The Site is located on land managed by the United States Bureau of Land Management (BLM) and is within an archaeologically sensitive area. The Site is surrounded by native vegetation rangeland periodically interrupted by oil and gas production and gathering facilities, including three (3) Enterprise natural gas pipelines which traverse the area from approximately northwest to southeast.

A release of natural gas condensate was discovered at the Site on March 1, 2015. Prior to implementing corrective actions, Enterprise coordinated with the BLM and Western Cultural Resource Management, Inc. (WCRM) to perform an archaeological survey along the pipeline ROW and release area. Three (3) locations were identified by the WCRM survey that required protective measures. On March 7, 2015, Enterprise initiated excavation activities to facilitate the repair of the subsurface leak, and to remediate potential hydrocarbon impact. Souder, Miller & Associates (SMA) collected five (5) composite soil samples from the walls and base of the repair excavation and the resulting soil analytical results identified constituent of concern (COC) concentrations above the New Mexico, Energy, Minerals and Natural Resources Department (EMNRD) OCD *Remediation Action Levels* (*RAL*s) on the floor of the excavation. On March 12, 2015, the Site was over-excavated and SMA collected one (1) soil sample from the base of the excavation, which exhibited COC concentrations above New Mexico EMNRD OCD *RALs* at a depth of 37 feet below grade surface (bgs).

During June 2015, potassium permanganate was applied to the base of the excavation and the excavation was backfilled with clean fill. SMA advanced one (1) soil boring which was completed as a groundwater monitoring well (MW-1) in the former excavation footprint. Based on the results of soil and groundwater sampling activities, COC concentrations were identified in soils (bedrock) above the New Mexico EMNRD OCD *RALs* and in groundwater above the New Mexico Water Quality Control Commission (WQCC) Groundwater Quality Standards (*GQSs*) (*Excavation and Coring Investigation Report*, dated July 31, 2015 – SMA).

There is currently one (1) monitoring well present at the Site. After the proposed monitoring well installations, the monitoring well count will total five (5). A map depicting the location of the proposed monitoring wells is included as **Figure 3** (**Appendix A**).

1.2 Site Ranking & Proposed Cleanup Goals

The Site is under the jurisdiction of the New Mexico ENMRD OCD. Initial Site activities were performed in accordance with the New Mexico ENMRD OCD *Guidelines for Remediation of Leaks, Spills and Releases*, in addition to the New Mexico ENMRD OCD rules, specifically New Mexico Administrative Code (NMAC) 19.15.29 *Release Notification*. This guidance establishes investigation and abatement action requirements for sites subject to reporting and/or corrective action.

Apex TITAN, Inc. (Apex) utilized the general site characteristics and information available from the New Mexico Office of the State Engineer (OSE) to determine the appropriate OCD "ranking" for the Site. The ranking criteria and associated scoring are provided in the following table:

Ranking Criteria			Ranking Score
Depth to Groundwater	<50 feet	20	**20**
	50 to 99 feet	10	
	>100 feet	0	
Wellhead Protection Area • <1,000 feet from a water source, or; <200 feet from private domestic water source.	Yes	20	**0**
	No	0	
Distance to Surface Water Body	<200 feet	20	**10**
	200 to 1,000 feet	10	
	>1,000 feet	0	
Total Ranking Score			**30**

Based on Apex's evaluation of the scoring criteria, the Site would have a maximum Total Ranking Score of "30". This ranking is based on the following:

- The depth of the initial groundwater-bearing unit is less than 50 feet below grade surface (bgs) as observed in the on-Site groundwater monitoring well, resulting in a ranking score of "20" for depth to groundwater.
- No water sources or domestic water sources were identified near the Site, resulting in a ranking score of "0" for proximity to a wellhead protection area.
- The Site is immediately adjacent to the channel of a small ephemeral wash that drains to the Largo Wash approximately 595 feet northeast of the release location, resulting in a ranking score of "10" for distance to surface water.

Based on a Total Ranking Score of 30, cleanup goals for soil located at the Site include: 10 milligrams per kilogram (mg/kg) for benzene, 50 mg/kg for total benzene, toluene, ethylbenzene, total xylenes (BTEX), and 100 mg/kg for total petroleum hydrocarbons (TPH) gasoline range organic (GRO) diesel range organics (DRO) motor oil/lube oil range organics (MRO).

In addition, cleanup goals for groundwater at the Site were derived from the WQCC *GQSs*, and include: 10 micrograms per liter (µg/L) for benzene, 750 µg/L for toluene, 750 µg/L for ethylbenzene, and 620 µg/L for total xylenes.

2.0 SUPPLEMENTAL ENVIRONMENTAL SITE INVESTIGATION WORK PLAN

2.1 Objectives

The primary objectives of the proposed supplemental environmental site investigation (SESI) are to determine the groundwater flow direction in the immediate vicinity, and further evaluate the COC concentrations in soils and groundwater with respect to the New Mexico EMNRD OCD *RALs* and the WQCC *GQSs*.

The proposed scope of work at the Site includes the advancement of four (4) soil borings which will be completed as monitoring wells and the initiation of semi-annual groundwater monitoring.

2.2 Health and Safety Plan

Apex will develop a site specific Health and Safety Plan (HSP) for the performance of the proposed scope of services described in this work plan. For the purposes of this HSP, it is assumed that the constituents of concern include petroleum hydrocarbons. For the purposes of this work plan, it is assumed that the scope of services can be conducted under modified Level D personal protective equipment (PPE), which will include a hard hat, steel-toed boots, protective eyewear, and gloves. Should the need arise to upgrade PPE (e.g. respiratory protection), the client will be notified, and the HSP will be modified accordingly. Although it is not anticipated at this time, it should be noted that a PPE upgrade will constitute a change in scope of work, requiring a change order.

Apex will clear utilities through the New Mexico One Call System and will coordinate with the utility companies and Enterprise to evaluate the line locations in order to select the exact soil boring locations.

2.3 Soil Boring Installation

Subsequent to "daylighting" the known utilities and initial five (5) to ten (10) feet (unless bedrock is encountered first) of each proposed drilling location utilizing a hydro-excavator, four (4) soil borings will be advanced utilizing a hollow-stem auger drilling rig. The soil borings will be placed in locations to further evaluate potential petroleum hydrocarbon soil and groundwater impacts. The soil borings will be advanced to a depth of approximately 45 to 50 feet bgs, five (5) feet below the initial groundwater table, or auger refusal, whichever is shallower. Proposed soil boring/monitoring well locations are shown on **Figure 3** of **Appendix A**.

Non-disposable sampling and drilling equipment will be decontaminated using an Alconox® wash and potable water rinse prior to commencement of the project and between the advancement of each soil boring.

Soil samples will be collected continuously using core barrels or split spoon samplers to document lithology, color, relative moisture content and visual or olfactory evidence of impairment. In addition, the samples will be scanned with a photoionization detector (PID) to evaluate the presence of volatile organic compounds (VOCs).

Soil boring cuttings will be stored in labeled drums until appropriate disposal measures have been determined.

2.4 Soil Sampling Program

Up to two (2) soil samples will be collected from each soil boring from one or more of the following intervals:

- The depth interval exhibiting the highest concentration of VOCs based on PID evidence;
- An interval exhibiting visual/olfactory evidence of impairment;
- The capillary fringe zone;
- From a change in lithology; or
- From the bottom of the boring.

The soil samples will be collected in laboratory prepared glassware and placed on ice in a cooler, which will be secured with a custody seal. The samples will be transported to Hall Environmental Analysis Laboratory (HEAL) with a completed chain-of-custody form.

2.5 Soil Laboratory Analytical Program

Selected soil samples will be analyzed for TPH GRO/DRO/MRO utilizing Environmental Protection Agency (EPA) SW-846 Method 8015, and BTEX utilizing EPA SW-846 Method 8021.

A summary of the analytes, sample type, and EPA-approved methods is presented in the following table:

Analytes	Sample Type	No. of Samples	EPA Method
TPH GRO/DRO/MRO	Soil	4 to 8	SW-846 8015
BTEX	Soil	4 to 8	SW-846 8021

2.6 Monitoring Well Installation

Subsequent to advancement, each of the four (4) soil borings will be completed as 2-inch diameter groundwater monitoring wells to allow the evaluation of the initial groundwater-bearing unit. The monitoring wells will be completed as follows:

- Installation of 10 to 20 feet of two (2) inch diameter, machine slotted (0.010 inch) schedule 40 polyvinyl chloride (PVC) well screen assembly with a threaded bottom plug;
- Installation of schedule 40 PVC riser pipe to surface;
- Addition of graded silica sand for annular sand pack around the well screen from the bottom of the well to two (2) feet above the top of the screen;
- Placement of two (2) or more feet of hydrated bentonite above the sand;
- Addition of a cement/bentonite slurry to the surface; and
- Installation of a concrete well pad and an above-grade steel riser with an integrated padlock hasp.

The monitoring wells will be developed by surging and removing groundwater until the fluid appears relatively free of fine-grained sediment. Groundwater samples will be collected following development and monitoring well recovery utilizing low-flow sampling or bailer sampling techniques.

2.7 Groundwater Gradient Determination

Following installation, the monitoring wells will be geospatially surveyed to determine the top of casing (TOC) and ground surface elevation for each monitoring well. The TOC elevations will allow the calculation of the groundwater elevations at each well. This information will facilitate the creation of groundwater potentiometric surface maps, which will identify groundwater flow direction and gradient. The relative ground elevations will facilitate the creation of lithologic and/or hydrogeologic cross-sections, if deemed necessary.

2.8 Groundwater Sampling Program

Semi-annual groundwater monitoring will be performed until the groundwater at the Site has achieved cleanup goals. At that point, quarterly groundwater monitoring will begin. When the quarterly groundwater monitoring events have adequately demonstrated that the groundwater has achieved the cleanup goals, closure of the Site will be requested.

During each groundwater sampling event, Apex will collect one (1) groundwater sample from each on-Site monitoring well, utilizing low-flow sampling or bailer sampling methods.

Prior to sampling, fluid levels in each of the monitoring wells will be gauged utilizing an interface probe capable of detecting non-aqueous phase liquid (NAPL).

Low-flow refers to the velocity with which groundwater enters the pump intake and that is imparted to the formation pore water in the immediate vicinity of the well screen. It does not necessarily refer to the flow rate of water discharged at the surface which can be affected by flow regulators or restrictions. Water level drawdown provides the best indication of the stress imparted by a given flow-rate for a given hydrological situation. The objective is to pump in a manner that minimizes stress (drawdown) to the system, to the extent practical, taking into account established Site sampling objectives. Flow rates on the order of 0.1 to 0.5 liters per minute (L/min) are maintained during sampling activities, using dedicated or decontaminated sampling equipment. The water level is checked periodically to monitor drawdown in the well as a guide to flow rate adjustment.

The pump intake is placed within the screened interval such that the groundwater recovered is drawn in directly from the formation with little mixing of casing water or disturbance to the sampling zone.

The groundwater samples are collected from each monitoring well once produced groundwater is consistent in color, clarity, pH, temperature, and conductivity. Measurements are taken every three to five minutes. Stabilization is achieved after key parameters (especially pH and conductivity) have stabilized for three successive readings.

If a disposable bailer is utilized to sample the monitoring well, between three (3) and five (5) casing volumes of water will be purged from the monitoring well prior to sampling. Groundwater parameters will be monitored during the bailer purging process to evaluate pH and conductivity stabilization.

The groundwater samples will be collected in laboratory prepared glassware and placed on ice in a cooler, which will be secured with a custody seal. The samples will be transported to HEAL in Albuquerque, New Mexico, with a completed chain-of-custody form.

2.9 Groundwater Laboratory Analytical Program

The groundwater samples will be analyzed for BTEX utilizing EPA SW-846 Method 8021.

A summary of the analytes, sample type, and EPA-approved method is presented below:

Analytes	Sample Type	No. of Samples	EPA Method
BTEX	Groundwater	5	SW-846 8021

3.0 REPORTING

Upon the completion of SESI activities and receipt of the analytical results, a SESI Report will be prepared that will include documentation of the field activities, tabular data summaries, a site plan detailing pertinent site features, laboratory analytical reports, an evaluation of sampling results and recommendations concerning further action.

An Annual Groundwater Monitoring Report will be prepared for the Site that includes documentation of the field activities, tabular data summaries, a Site Plan detailing pertinent Site features, potentiometric groundwater surface maps, laboratory analytical reports, an evaluation of sampling results, and recommendations concerning further action.

4.0 STANDARD OF CARE, LIMITATIONS, AND RELIANCE

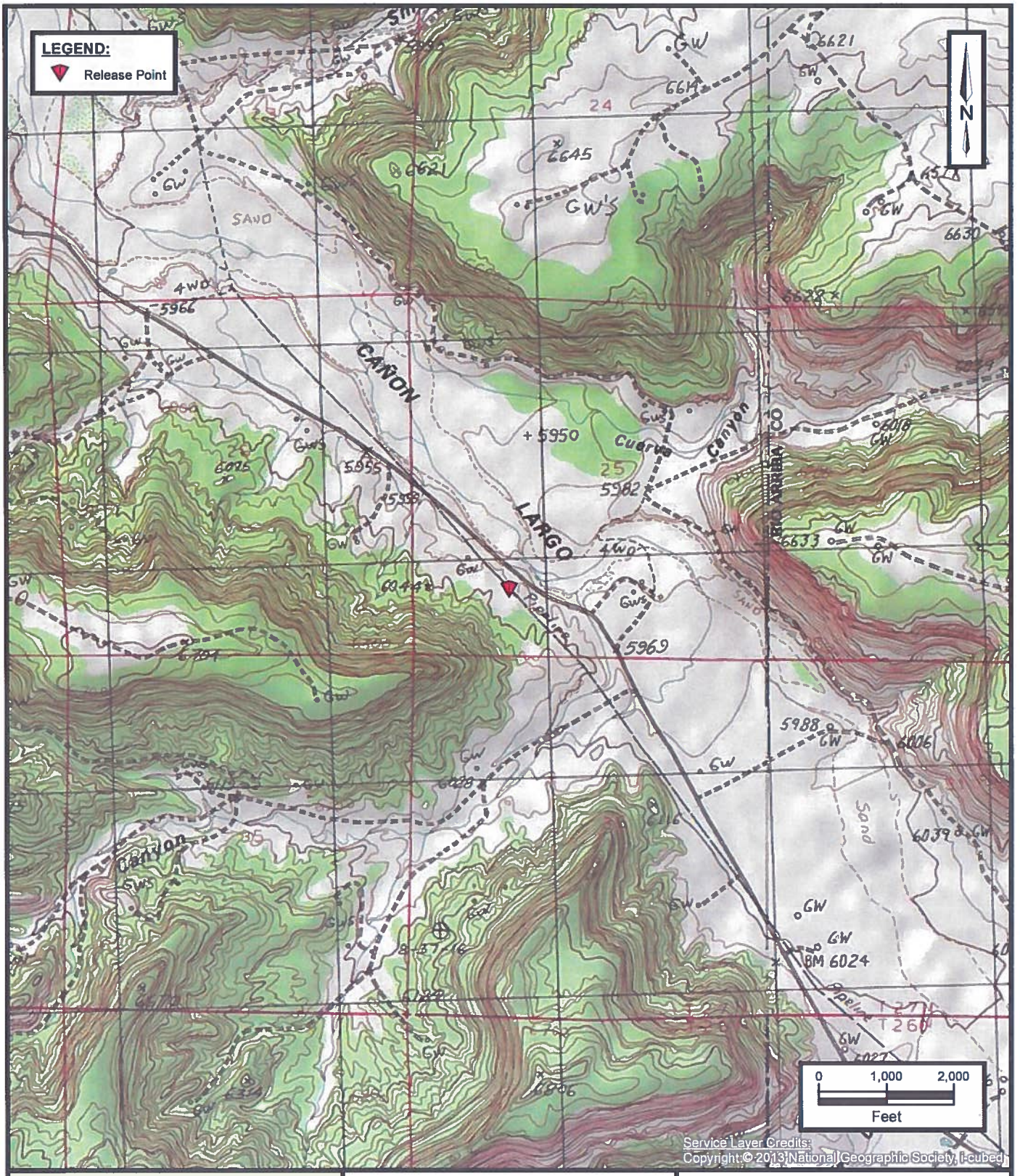
Apex's services will be performed in accordance with standards customarily provided by a firm rendering the same or similar services in the area during the same time period. Apex makes no warranties, expressed or implied, as to the services performed hereunder. Additionally, Apex does not warrant the work of third parties supplying information used in the report (e.g. laboratories, regulatory agencies, or other third parties). This scope of services will be performed in accordance with the scope of work agreed with the client.

Findings, conclusions and recommendations resulting from these services will be based upon information derived from the on-Site activities and other services performed under this scope of work and it should be noted that this information is subject to change over time. Certain indicators of the presence of hazardous substances, petroleum products, or other constituents may have been latent, inaccessible, unobservable, or not present during these services, and Apex cannot represent that the Site contains no hazardous substances, toxic materials, petroleum products, or other latent conditions beyond those identified during this scope of services. Environmental conditions at other areas or portions of the Site may vary from those encountered at actual sample locations. Apex's findings and recommendations will be based solely upon data available to Apex at the time of these services.

This work plan has been prepared for the exclusive use of Enterprise, and any authorization for use or reliance by any other party (except a governmental entity having jurisdiction over the Site) is prohibited without the expressed written authorization of Enterprise and Apex. Any unauthorized distribution or reuse is at the client's sole risk. Notwithstanding the foregoing, reliance by authorized parties will be subject to the terms, conditions and limitations stated in the original proposal, the work plan or report, and Apex's Agreement. The limitation of liability defined in the agreement is the aggregate limit of Apex's liability to the client.

APPENDIX A

Figures



Trunk K #8 Pipeline Release
SW 1/4, S25 T27N R8W
San Juan County, New Mexico
36.539789 N, 107.638800 W

Project No. 725040112099

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FIGURE 1

Topographic Map

Fresno Canyon and Gould Pass
New Mexico Quadrangles
1985

Z:\Dallas South\Drafting\2016\725040112099\Figure 1.mxd Modified 9/26/2016 by JSimpson NAD 1983 2011 StatePlane New Mexico West FIPS 3003 Ft US Coordinate System