1R - 173

REPORTS

DATE:

5/3/2002

ARCADIS

Infrastructure, buildings, environment, communications

Mr. William Olson
Oil Conservation Division
State of New Mexico Energy, Minerals, and Natural Resources Department
2040 S. Pacheco
Santa Fe, New Mexico 87505

ARCADIS G&M, Inc.
5100 E Skelly Drive
Suite 1000
Tulsa
Oklahoma 74135
Tel 918 664 9900
Fax 918 664 9925

ENVIRONMENTAL

Subject:
Work Plan for Site Closure Activities
Koch Pipeline Company L.P. Crouch Station
Lea County, New Mexico

Tulsa,
30 April 2002

Contact:
Eric M. Rainey, P.G.

Extension:
918/664-9900

Dear Mr. Olson:

On behalf of Koch Pipeline Company, L.P. (Koch), ARCADIS is submitting to the New Mexico Oil Conservation Division (OCD) a work plan to conduct site closure activities at the former crude oil pipeline pumping station located approximately 18 miles northwest of Hobbs, New Mexico. The site is situated in the SW ¼ of Section 18, Township 18 South, Range 36 East in Lea County, New Mexico (Figure 1). The work plan has been prepared based upon discussions with you and a review of previous reports prepared for the site location.

A subsurface investigation and subsequent remedial activities were conducted at the site following a release of crude oil in 1996 from a 12-inch diameter pipeline located within the bermed area south of the westernmost aboveground storage tank. Site activities performed following the release included the excavation and proper disposal of crude-oil impacted soil within the diked area, and the installation of monitoring wells and soil vapor extraction (SVE) wells. A SVE system was installed at the site in 1997 and operated until 2000. During this time, periodic groundwater monitoring activities were conducted, including the installation of three additional monitoring wells.

Based on the subsurface investigations conducted at the site, and several groundwater-monitoring events between 1996 and 2000, it appears that the crude oil release has not adversely impacted the groundwater underling the site. Depth to groundwater at the site is approximately 60 ft below ground surface, and the groundwater flow direction is to the southeast. One monitoring well (MW-3), located upgradient of the Koch facility, is the only well at the site that contains dissolved hydrocarbon concentrations in the groundwater. The dissolved hydrocarbons detected in this well can be attributed to a hydrocarbon release upgradient of the Koch site currently being assessed and remediated by Texas New Mexico Pipeline Company and Southwestern Public Service. A summary of groundwater quality data collected from site monitoring wells is provided in Table 1. With the exception of Well MW-3, the groundwater quality results indicate that

dissolved hydrocarbon concentrations in the groundwater have been below New Mexico Water Quality Control Commission (WQCC) standards since 1998. Consequently, we believe that the operation of the SVE system has been beneficial in ensuring the protection of the groundwater, and that further monitoring of the groundwater underlying the site is no longer warranted.

Koch is proposing to conduct confirmation soil sampling activities at the release location to assess residual hydrocarbon concentrations in the vadose zone following soil vapor extraction activities. The primary objective of the soil sampling activities is to verify that constituents of concern in vadose zone soils are below acceptable concentrations that will ensure the protection of the underlying groundwater. Towards this end, Koch will install three soil borings in the vicinity of the release to facilitate the collection of soil samples. Soil boring locations are depicted on Figure 2. The soil borings will be installed to a depth of approximately 60 ft below ground surface using hollow-stem auger techniques. Soil samples will be collected with a continuous core barrel and prepared in the field for head-space analysis of volatile organic compounds (VOCs) using a HNu photoionization detector (PID). All soil samples submitted for analyses will be submitted to Pace Analytical Services (Pace) located in Lenexa, Kansas using USEPA-approved methodologies. A total of three soil samples will be collected from each boring for subsequent laboratory analyses as follows:

- One composite soil sample will collected from 0 to 3 ft below ground surface. The soil sample will be analyzed for benzene, toluene, ethylbenzene, xylenes (BTEX), total petroleum hydrocarbons-gasoline range organics (TPH-GRO), total petroleum hydrocarbons-diesel range organics (TPH-DRO), and total lead. (Note: due to the age of the facility, total lead will be analyzed to verify its presence or absence associated with historical site operations.)

- One soil sample exhibiting the highest PID reading above the water table shall be analyzed for BTEX, TPH-GRO, TPH-DRO, and total barium. (Note: barium will be analyzed to document that elevated barium concentrations detected in the groundwater are not related to crude oil release).

- One soil sample shall be collected immediately above the water table for analyses of BTEX, TPH-GRO, and TPH-DRO. This data will be used to document that crude oil impacts in the shallow subsurface did not migrate vertically downward to the water table.

In the event that additional subsurface evaluation is necessary at the site, an additional soil sample will be collected in the vadose zone for analysis of porosity,

grain size, fraction organic content, moisture content, dry bulk density, and specific gravity. This data may be incorporated into a soil leaching evaluation or other risk-assessed evaluation, if necessary.

Following the collection of soil samples, the borings will be properly abandoned in accordance with state guidelines. Drilling tools and equipment will be decontaminated before use at the first boring and prior to use at the remaining boring locations. All investigative derived wastes generated during the drilling activities (i.e. drill cuttings and decontamination fluids) will be temporarily stored onsite pending waste characterization and subsequent proper disposal at an OCD approved facility.

A Preliminary Site Closure Report will be prepared and submitted to the OCD following the completion of the tasks described above. The report will present the findings of the investigation together with the evaluation of those findings. The report will be submitted to the OCD within 45 days of completing the field activities.

Closure Criteria Evaluation

Following the receipt of soil analytical results, the soil quality data will be compared to the OCD soil remediation action levels. The soil remediation action levels have been developed according to a ranking criteria to determine their relative threat to public health, fresh waters, and the environment. The recommended remediation action levels at the Crouch Station site are as follows:

- Benzene at 10 milligrams per kilogram (mg/kg);
- BTEX at 50 mg/kg; and
- TPH-GRO/TPH-DRO at 1000 mg/kg

If hydrocarbon concentrations in soil samples are below the remediation action levels presented above, and the total metal concentrations for barium and lead are within acceptable WQCC limits, Koch will respectfully request that the OCD issue a closure for the former Crouch Station facility. At that time, we will request that the monitoring wells and SVE wells be properly abandoned in accordance with state guidelines. The SVE remedial system will be decommissioned during the well abandonment activities.

Koch is prepared to proceed with this project immediately upon verbal authorization approving the proposed activities. If you have any questions regarding the information provided herein or need additional information, please contact Mr. Frank VanRyn with Koch at (316) 828-2146 or the undersigned at (918) 664-9900 at your earliest convenience.

Sincerely,

ARCADIS G&M, Inc.

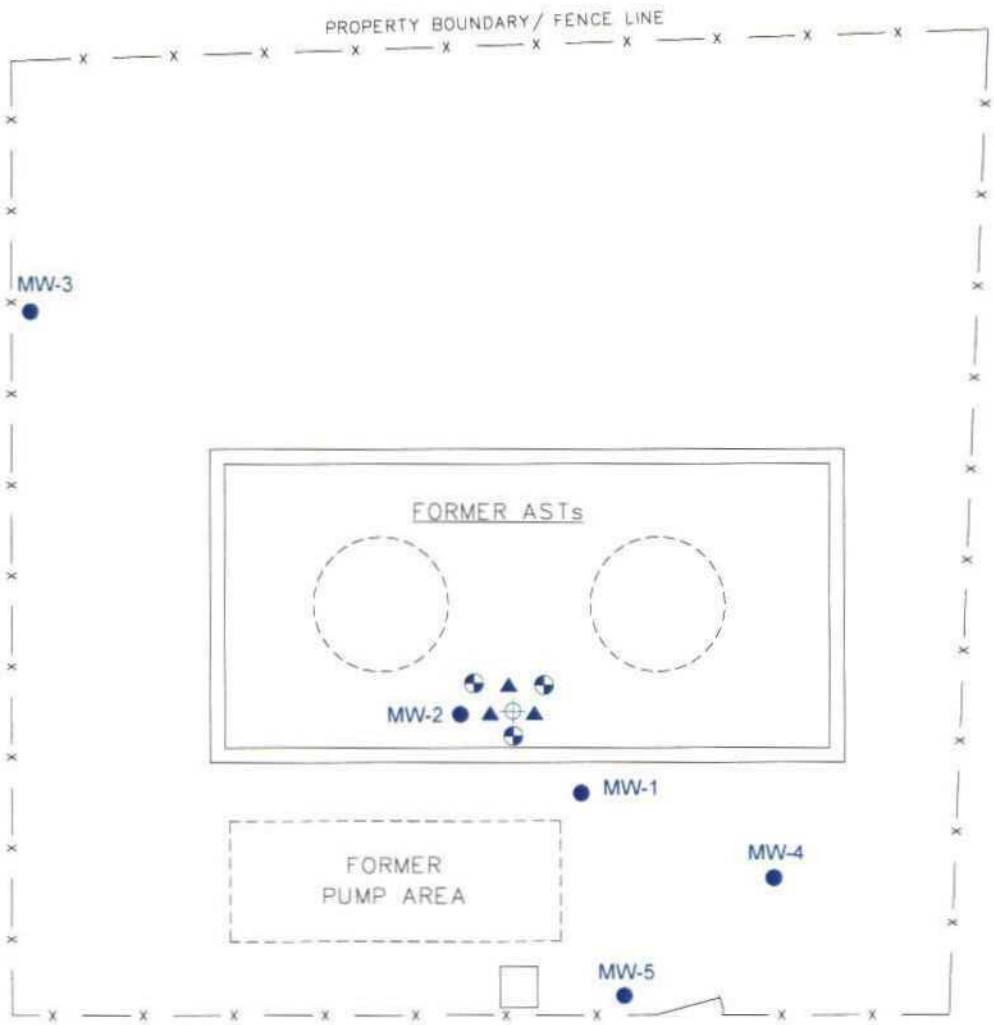
Eric M. Rainey, P.G.
Senior Hydrogeologist

Brian Guillette, P.G.
Vice President/Area Manager

Copies:
Frank VanRyn, Koch

Attachments
G:\APROJECT\KOCH\OK131701\WORKPLAN.DOC

DWG. DATE: 23APR02 | FILE NAME: PROPBORINGS | COMPILED BY: ERIC RAINEY | PROJECT MANAGER: ERIC RAINEY | DRAWN BY: SHANON WALKER



EXPLANATION

- PROPOSED CONFIRMATION SOIL BORING
- AIR INLET WELL
- SVE WELL (NESTED)
- MONITORING WELL

ARCADIS G&M
5100 EAST SKELLY DRIVE SUITE 1000
TULSA, OKLAHOMA 74135
Tel: (918) 664-9900 Fax: (918) 664-9925

0 100 FT.

SITE MAP WITH PROPOSED CONFIRMATION SOIL BORINGS

KOCH PIPELINE CO. L.P.
CROUCH STATION
LEA COUNTY, NEW MEXICO

PROJECT NUMBER
OK001317.0001

FIGURE NUMBER
2

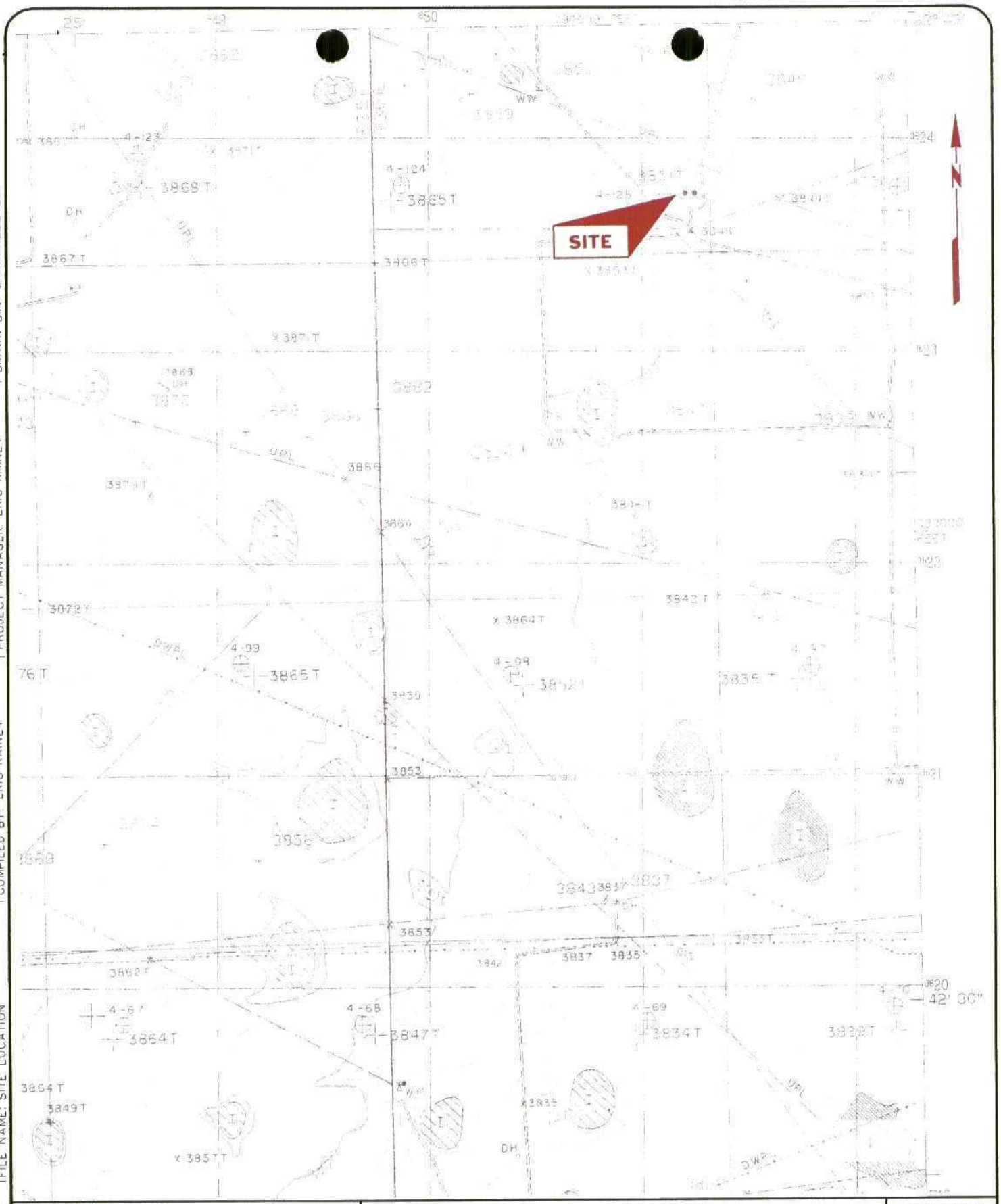
ARCADIS

Table 1. Summary of Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX) and Total Petroleum Hydrocarbons (TPH) in Groundwater, Koch Crouch Station, Lea County, New Mexico.

Sample Number	Date Collected	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)	TPH-GRO (mg/L)	TPH-DRO (mg/L)
MW-1	2/21/00	<0.002	<0.002	<0.002	<0.006	NA	NA
	4/30/98	<0.002	<0.002	<0.002	<0.006	NA	NA
	5/23/97	0.550	<0.001	<0.001	<0.003	1.2	1.1
	4/27/97	0.710	<0.001	<0.001	<0.003	2.2	<2.0
MW-2	2/21/00	<0.002	<0.002	<0.002	<0.006	NA	NA
	5/23/97	0.098	<0.001	<0.001	<0.003	0.19	1.9
MW-3	2/21/00	2.02	<0.002	<0.002	<0.006	NA	NA
	8/31/99	0.628	NA	NA	NA	NA	NA
	2/12/99	126.0	NA	NA	NA	NA	NA
	5/6/98	1.201	<0.001	<0.001	<0.003	NA	NA
	5/1/98	0.160	<0.002	<0.002	<0.006	NA	NA
MW-4	2/21/00	<0.002	<0.002	<0.002	<0.006	NA	NA
	5/6/98	<0.005	<0.001	<0.001	<0.003	NA	NA
	5/1/98	<0.007	<0.002	<0.002	<0.006	NA	NA
MW-5	2/21/00	<0.002	<0.002	<0.002	<0.006	NA	NA
	5/1/98	<0.002	<0.002	<0.002	<0.006	NA	NA

< Less than.
mg/L Milligrams per liter.
TPH-GRO Total petroleum hydrocarbons - Gasoline Range Organics.
TPH-DRO Total petroleum hydrocarbons - Diesel Range Organics.

G:\APROJECT\KOCH\OK131701\TABLES\[S&WBTEX.XLS]WaterQual



DATE: 23APRIL02 | FILE NAME: SITE LOCATION | COMPILED BY: ERIC RAINEY | PROJECT MANAGER: ERIC RAINEY | DRAWN BY: JIM HARBESTON

ARCADIS G&M
5100 EAST SKELLY DRIVE SUITE 1000
TULSA, OKLAHOMA 74135
Tel: (918) 664-9900 Fax: (918) 664-9925

0 2000 FT.

SITE LOCATION MAP

REF. 7.5' USGS QUADRANGLE - HOBBS, NEW MEXICO

KOCH PIPELINE CO. L.P
CROUCH STATION
LEA COUNTY, NEW MEXICO

PROJECT NUMBER
OK001317.0001

FIGURE NUMBER
1