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BIOREMEDIATION CONTRACTORS & CONSULTANTS
BCC, Inc.
Land Reclamation Weed Control

ENVIRONMENTAL RESPECT AWARD
NATIONAL AWARD WINNER

Marshall & Winston, Inc.
Klein 16 State 2H
Sec. 16-T19S-R35E, Lea Co., NM
Affected Surface Area – 6,475 sq. ft. / .15 acre
GPS Coordinates: N32.66568 W103.45459

OCD Case Number 1RP-4680

APPROVED
By Olivia Yu at 12:03 pm, Jun 29, 2017

NMOCD approves of the proposed remediation activities with these conditions:
1) On a scaled map, demarcate the areas considered as BH1 and BH2/3 in terms of excavation depths.
2) Locations of confirmatory bottom and sidewall samples must reflect these differences in excavation depths.

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ENVIRONMENTAL RESPECT
NATIONAL AWARD WINNER

June 9, 2017

Marshall & Winston, Inc.
Klein 16 State 2H
Sec. 16-T19S-R35E, Lea Co., NM
Affected Surface Area – 6,475 sq. ft. / .15 acre
GPS Coordinates: N32.66568 W103.45459

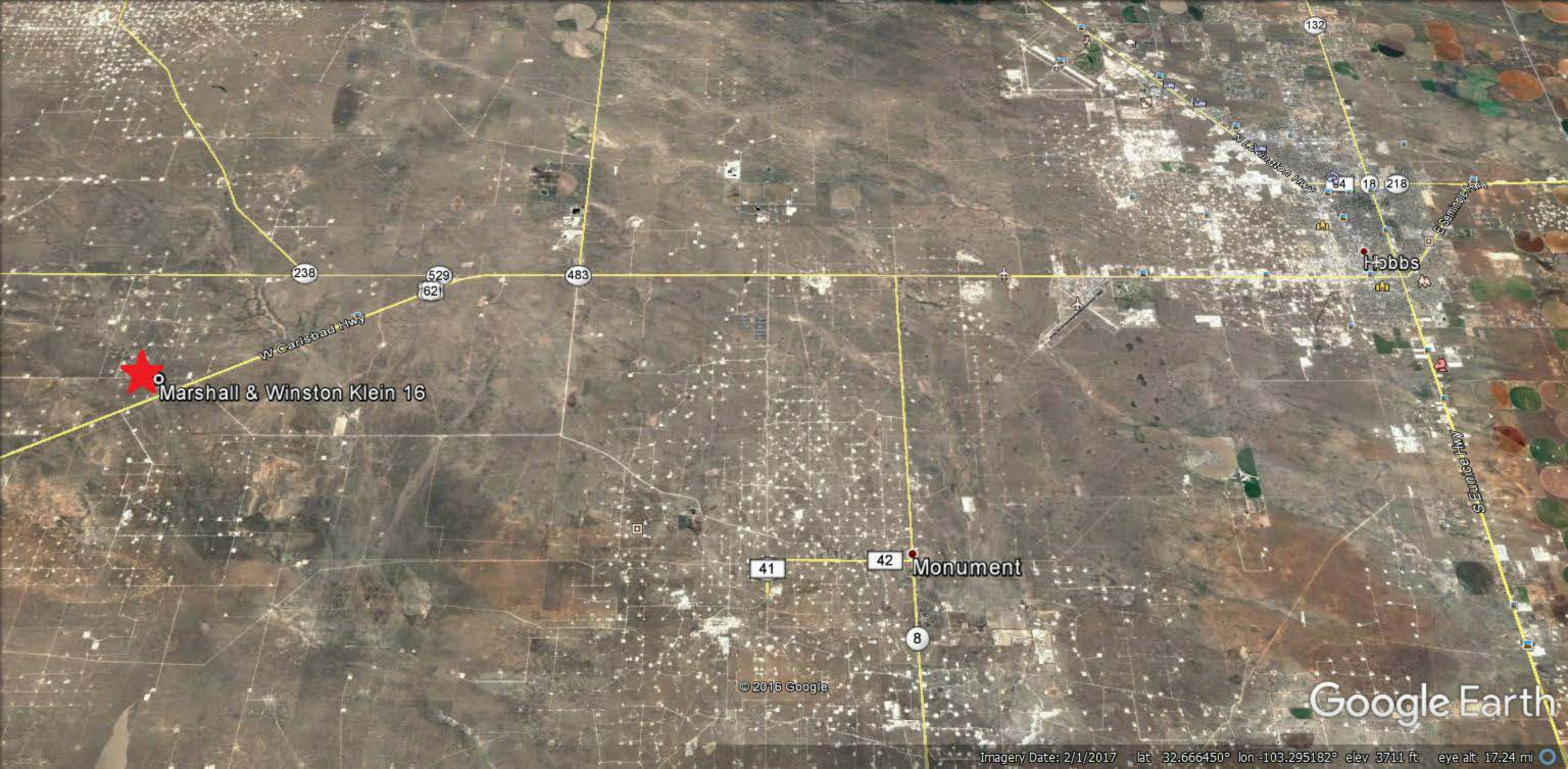
OCD Case Number 1RP-4680

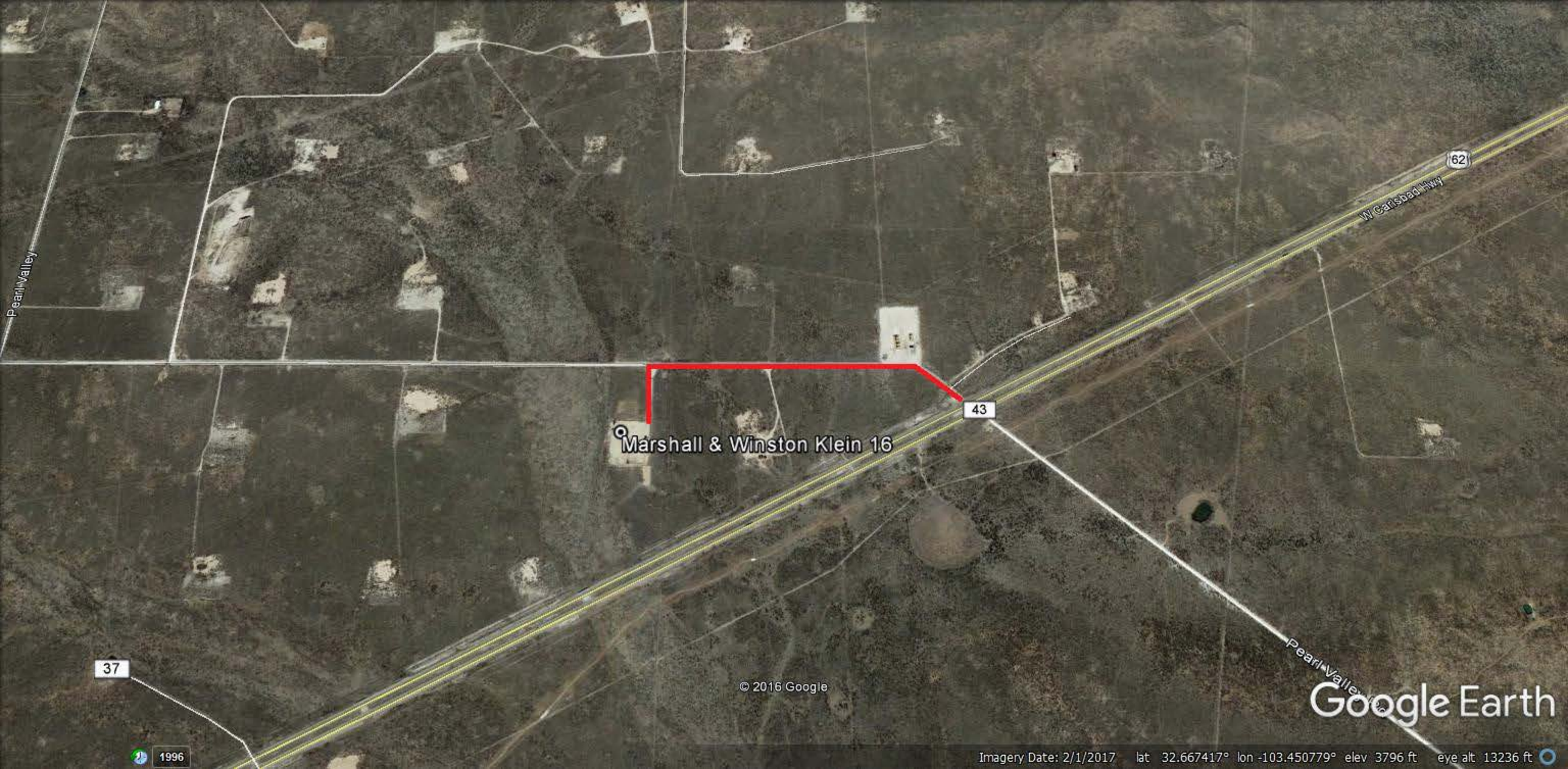
Corrective Action Plan

On April 19, 2017, BCC, Inc. conducted a site assessment of a produced water (some oil) release that originated from a leaking fire tube gasket on Marshall & Winston's Klein 16 State 2H heater treater. The spill was limited to the caliche pad location. All of the affected surface areas were mapped and tracked by GPS with the square footage totaling 6,475 square feet, or .15 acre. The affected soils did not contain any free liquids at this time, but they did exhibit mild staining. According to the New Mexico Office of the State Engineer, the average depth to ground water below land surface at this site is 28 feet. The horizontal distance from the nearest fresh water source or surface water body is >1,000 feet.

Delineation of this site was performed on April 25, 2017 and approved by the NMOCD on June 7th. Soil samples were field tested for chloride content and laboratory tested for TPH, BTEX, and chloride content as well. Laboratory analysis confirmed that the chloride content levels were within the NMOCD permissible levels at 48 inches below ground surface in the Borehole 1 area (map attached) as well as at an average of 30 inches bgs on the remaining affected areas. Laboratory analysis also revealed that all of the soil that was sampled was well below the permissible levels for both TPH and BTEX. Based on this information, the proposed corrective action plan for this release will consist of excavating the affected soils in the Borehole 1 area to 48 inches bgs and to 30 inches bgs on all of the remaining areas and disposing the contaminated soils at an off-site permitted facility. Field testing for chloride content will be performed during excavation to ensure that all of the contaminated soil has been removed. After excavation is complete, bottom and sidewall soil samples will be pulled and laboratory tested to confirm all TPH, BTEX, and chloride content levels. Once this final analysis is approved by the NMOCD, clean soil will be backfilled and capped with a fresh layer of caliche. Due to this entire spill being contained on the caliche pad location, there is no revegetation plan being submitted.

Paul Porter
Vice President
BCC, Inc.

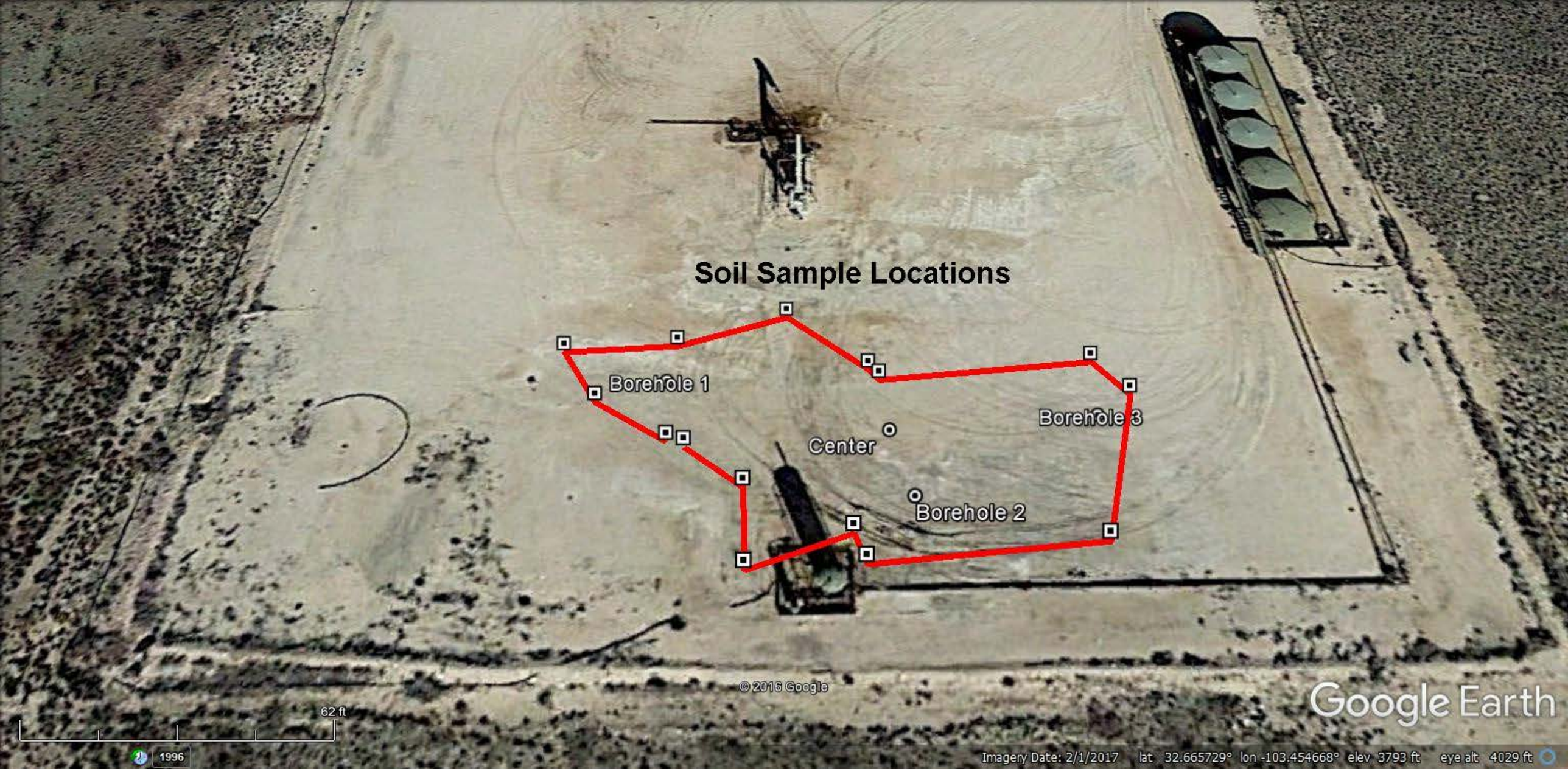

Marshall & Winston Klein 16
W Carlsbad Hwy
238
529
62
483
132
N Lovington Hwy
84
18
218
E Bensing Hwy
Hobbs
S Dunbar Hwy
41
42
Monument
8
© 2016 Google
Google Earth
Imagery Date: 2/1/2017 lat 32.666450° lon -103.295182° elev 3711 ft eye alt 17.24 mi


Pearl Valley
62
W Carlsbad Hwy
43
Marshall & Winston Klein 16
37
Pearl Valley Rd
© 2016 Google
Google Earth
1996
Imagery Date: 2/1/2017 lat 32.667417° lon -103.450779° elev 3796 ft eye alt 13236 ft

Marshall & Winston, Inc.
Klein 16 State 2H
Produced Water Spill (Some Oil)
Affected Surface Area - 6,475 sq. ft. / .15 acre
GPS Coordinates: N32.66568
W103.45459

N

BCC, Inc.
Land Reclamation Weed Control


Soil Sample Locations
Borehole 1
Borehole 3
Center
Borehole 2
© 2016 Google
62 ft
1996
Google Earth
Imagery Date: 2/1/2017 lat 32.665729° lon -103.454668° elev 3793 ft eye alt 4029 ft

Marshall & Winston, Inc.
Klein 16 State 2H
OCD Case Number 1RP-4680

Sample ID	Depth (in. or ft.)	Field or Lab Test	Benzene (mg/kg)	BTEX (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)	GPS Coordinates
Center Surface	Surface	Field				1,032	N32.66568 W103.45459
Center Surface	Surface	Lab	<0.0196	<0.0196	306	909	N32.66568 W103.45459
Borehole 1	12 in.	Field				1,636	N32.66572 W103.45476
Borehole 1	30 in.	Field				1,804	N32.66572 W103.45476
Borehole 1	48 in.	Field				232	N32.66572 W103.45476
Borehole 1-4	48 in.	Lab	<0.0199	<0.0199	<25.0	216	N32.66572 W103.45476
Borehole 1	96 in.	Field				25	N32.66572 W103.45476
Borehole 1-8	96 in.	Lab	<0.0196	<0.0196	58.5	30	N32.66572 W103.45476
Borehole 2	12 in.	Field				304	N32.66562 W103.45457
Borehole 2-1	12 in.	Lab	<0.0197	<0.0197	223.3	340	N32.66562 W103.45457
Borehole 2	72 in.	Field				268	N32.66562 W103.45457
Borehole 2-6	72 in.	Lab	<0.0196	<0.0196	<25.0	212	N32.66562 W103.45457
Borehole 3	24 in.	Field				285	N32.66569 W103.45443
Borehole 3-2	24 in.	Lab	<0.0195	<0.0195	<25.0	334	N32.66569 W103.45443
Borehole 3	84 in.	Field				108	N32.66569 W103.45443
Borehole 3-7	84 in.	Lab	<0.0196	<0.0196	<25.0	75.8	N32.66569 W103.45443