JGM

Smilodon Oil Company
4485 Big Cut Road
Placerville, CA 95667
(661) 809-7548
Bellison101@aol.com

RECEIVED
JUL 27 2015
FRESNO, CALIF.

California Regional Water Quality Control Board
Central Valley Region
Mr. Joshua Mahoney
1685 E Street
Fresno, CA 93706

July 22, 2015

Re: **Addendum to Technical Report Responding to Section 13267 Order dated April1, 2015**
"Hasting" Lease, Deer Creek Oil Field, Tulare County

Dear Mr. Mahoney:

As you requested, I have changed the "Certification" statement on the title page (see attached).

According to Water Board records, there are four pond on the "Hastings" lease. The technical report previously submitted showed 3 ponds. To explain the difference, I prepares a series of historical aerial photos. I also interviewed Lester Huckabay, lease operator, about the work done in 2012 to remove the fourth pond.

Please contact me if you have questions.

Sincerely,

Burton R. Ellison

Burton R. Ellison, P.G.
On behalf of Don Rogers

Enclosure

TECHNICAL REPORT RESPONDING TO WATER CODE SECTION 13267 ORDER DATED April 1, 2015

Smilodon Oil Company

"Hastings" Lease
Deer Creek Oil Field
Section 27, T27S, R22E
Tulare County

June 5, 2015

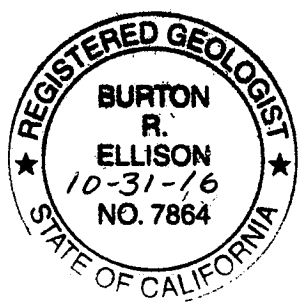
Revised July 12, 2015

(Revisions in red)

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designated to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

Submitted by: Burton R. Ellison

Burton R. Ellison, P.G. #7864



TECHNICAL REPORT RESPONDING TO WATER CODE SECTION 13267 ORDER DATED April 1, 2015

Smilodon Oil Company
"Hastings" Lease

A. Identification of any discharges of oil field produced waters to land, including but not limited to ponds, since April of 2014 that are not listed in Attachment A.

Since April 2014, only oilfield produced water has been discharged into the five ponds identified in Attachment A of the order.

B. Analysis of Oil field produced water

Oilfield produced water was collected at Pond 1 out fall. This sample location was chosen to fully satisfy the order's requirements to collect and analyze a sample from each pond. Ponds 1, 2, and 3 are in series, and as provided in the order, only the upstream pond was sampled at Pond 1 outfall location (see pond location map). All samples collected were tested for the constituents listed in Attachment B.

C. Surface Impoundment(s) Information

Pond Number	Dimension (L x W x D)	Longitude (center of pond)	Latitude (center of pond)	Assessor's Parcel Number	Duration of discharge (months)	Annual discharge volume
Pond 1	55' x 50' x 8'	35.984656	-119.046096	302-340-031-000	12	11,000 barrels
Pond 2	55' x 85' x 8'	35.984403	-119.046109	302-340-031-000	12	In series with pond 1
Pond 3	50' x 54' x 8'	35.984157	-119.046066	302-340-031-000	12	In series with pond 2
Pond 4	**47' x 85' x 5'** (APPROXIMATE DEMMENSIONS)	**35.983783**	**-119.046035**	**302-340-031-000**	**0**	**Dry (Pond walls removed in 2012)**

(Note: see Pond 4 Historical Narrative for work done to remove pond 4 walls)

D. Location map of Ponds, Parcel map, Lease boundary Map

See attached Pond Location Map, Parcel Map/Lease Boundary Map.

Reporting Requirements

Wash Tank and Pond 1 Outfall

The Wash Tank on the "Hastings" lease was sampled on October 16, 2014, by Ron Holcomb and Ryan West of the Central Valley Regional Water Quality Control Board. Sample location was at the wash tank. Moore and Twining analyzed the sample for general minerals, boron, volatile organic compounds, and semi-volatile organic compounds. A copy of the analysis is attached.

On 5/5/2015 at 1405, a sample was collected at the pond 1 outflow by Burton R. Ellison. A sample sufficient in volume to fill the 11 sample containers was obtained. The 11 sample containers were provided by Zalco Labs. The samples were immediately placed on ice and refrigerated overnight prior to delivery to the lab under a chain of custody the next morning. Zalco labs analyzed the samples for Cam 17, Total Petroleum Hydrocarbons, Trace elements, and Radionuclides. A copy of the analysis is attached.

Pond 4 Historical Narrative

Currently, there are 3 ponds on the "Hastings" lease as shown on the pond location map. However, the April 2, 2015 Order lists 4 ponds. The purpose of this section is to describe the historical condition/status of pond 4. To illustrate the status/condition of pond 4, Google Earth was used to prepare four historical images of the ponds. The image dates are listed below:

Exhibit 1 Image Date 4-24-2010
Exhibit 2 Image Date 6-15-2011
Exhibit 3 Image Date 2-20-2014
Exhibit 4 Image Date 6-15-2015

According to Les Huckabay, lease operator, the Hastings lease had 4 ponds, with pond 4 used as an overflow pond. Exhibits 1 and 2 show the location of pond 4. Both images show pond 4 as dry and free of fluids.

Sometime in 2012, Smilodon Oil Company, in response the San Joaquin Valley APCD ruling that oil sumps needed to be less than 5000 square feet to qualify for the air exemption, decided to reduce the size of pond 2 and pond 3 by filling in portions of the ponds. The source of the fill dirt was from the embankment walls of pond 4. Exhibit 3 and 4 show pond 4 walls removed and the location of the fill dirt in ponds 2 and 3. With the removal of the embankment walls on pond 4, the pond was effectively removed.

Conclusion

The analytical results found the oilfield produced water discharged to the ponds to be in compliance with the salinity limits prescribed by the WDRs

Pond 1 Outfall

Analysis

ZALCO LABORATORIES, INC.
Analytical & Consulting Services

4309 Armour Avenue
Bakersfield, California 93308

(661) 395-0539
FAX (661) 395-3069

Smillidon Oil Co.	Project: RWQCB Oilfield Ponds - 2Q2015	Work Order No.: 1505052
P.O. Box 1642	Project #:	Reported: 05/29/2015
Diamond Springs, CA 95619	Attention: Burton Ellison	Received: 05/06/2015 08:10

Lab Sample ID: 1505052-01	Collected By: Burton Ellison
Client Sample ID: S1 Hasting Sump 1 Outfall	Date Collected: 5/5/2015 2:05:00PM

Analyte	Results	PQL		Units	Flag	Method	Date Prepared	Date Analyzed	Init.
Alkalinity									
Total Alkalinity	200	10		mg/L		SM 2320B	5/6/15	5/6/15	SAM
Bicarbonate (HCO3)	200	10		mg/L		SM 2320B	5/6/15	5/6/15	SAM
Carbonate (CO3)	<10	10		mg/L		SM 2320B	5/6/15	5/6/15	SAM
Hydroxide (OH)	<10	10		mg/L		SM 2320B	5/6/15	5/6/15	SAM
CAM, Toxicity (17 Metals)			*TTLC Limits*						
Antimony	<0.20	0.20	*500*	mg/L		SW846 6010B	5/8/15	5/12/15	SS
Arsenic	<0.020	0.020	*500*	mg/L		SW846 6010B	5/8/15	5/12/15	SS
Barium	<0.10	0.10	*10000*	mg/L		SW846 6010B	5/8/15	5/12/15	SS
Beryllium	<0.010	0.010	*75*	mg/L		SW846 6010B	5/8/15	5/12/15	SS
Cadmium	<0.010	0.010	*100*	mg/L		SW846 6010B	5/8/15	5/12/15	SS
Chromium	<0.050	0.050	*2500*	mg/L		SW846 6010B	5/8/15	5/12/15	SS
Cobalt	<0.10	0.10	*8000*	mg/L		SW846 6010B	5/8/15	5/12/15	SS
Copper	<0.050	0.050	*2500*	mg/L		SW846 6010B	5/8/15	5/12/15	SS
Lead	<0.050	0.050	*1000*	mg/L		SW846 6010B	5/8/15	5/12/15	SS
Mercury	<0.0020	0.0020	*20*	mg/L		SW846 7470A	5/7/15	5/7/15	SS
Molybdenum	<0.10	0.10	*3500*	mg/L		SW846 6010B	5/8/15	5/12/15	SS
Nickel	<0.050	0.050	*2000*	mg/L		SW846 6010B	5/8/15	5/12/15	SS
Selenium	<0.05	0.05	*100*	mg/L		SW846 6010B	5/8/15	5/12/15	SS
Silver	<0.020	0.020	*500*	mg/L		SW846 6010B	5/8/15	5/12/15	SS
Thallium	<0.50	0.50	*700*	mg/L		SW846 6010B	5/8/15	5/12/15	SS
Vanadium	<0.10	0.10	*2400*	mg/L		SW846 6010B	5/8/15	5/12/15	SS
Zinc	<0.050	0.050	*5000*	mg/L		SW846 6010B	5/8/15	5/12/15	SS
General Chemistry			*MCL Limits*						
Fluoride	<0.10	0.10	*2*	mg/L		EPA 300.0	5/6/15	5/6/15	MSS
Nitrate as NO3	<2.00	2.00	*45*	mg/L		EPA 300.0	5/6/15	5/6/15	MSS
Electrical Conductivity	0.66	0.010		mmhos/cm		SM 2510B	5/6/15	5/6/15	SAM
Bromide	0.17	0.10		mg/L		EPA 300.0	5/6/15	5/6/15	MSS
Chloride	91	10		mg/L		EPA 300.0	5/6/15	5/6/15	MSS
pH	7.83			pH Units		EPA 150.1	5/6/15	5/6/15	SAM
Sulfate as SO4	5.1	0.50		mg/L		EPA 300.0	5/6/15	5/6/15	MSS
Total Dissolved Solids	480	10		mg/L		SM 2540C	5/6/15	5/6/15	MSS
Hardness									

NSS: Non Sufficient Sample H: Exceeds Analysis Hold Time TTLC: Total Threshold Limit Concentration STLC: Soluble Threshold Limit Concentration TCLP: Toxicity Characteristic Leaching Procedure MCL: Maximum Contaminant Level *: See Case Narrative
The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Note: Samples analyzed for regulatory purposes should be put on ice immediately after sampling and received by the laboratory at temperatures between 0-6°C. Microbiological analysis requires samples to be at least 4-10°C when received at the laboratory. For additional information regarding the limitations of the method(s) referred to, please call us at 661-395-0539.

ZALCO LABORATORIES, INC.
Analytical & Consulting Services

4309 Armour Avenue
Bakersfield, California 93308

(661) 395-0539
FAX (661) 395-3069

Smilidon Oil Co.	Project: RWQCB Oilfield Ponds - 2Q2015	Work Order No.: 1505052
P.O. Box 1642	Project #:	Reported: 05/29/2015
Diamond Springs, CA 95619	Attention: Burton Ellison	Received: 05/06/2015 08:10

Lab Sample ID: 1505052-01	Collected By: Burton Ellison
Client Sample ID: S1 Hasting Sump 1 Outfall	Date Collected: 5/5/2015 2:05:00PM

Analyte	Results	PQL	Units	Flag	Method	Date Prepared	Date Analyzed	Init.
Hardness								
Hardness (as CaCO3)	25	2.0	mg/L		SM 2340B	5/8/15	5/8/15	SS
Metals								
Lithium	<0.10	0.10	mg/L		EPA 200.7	5/8/15	5/8/15	SS
Metals - As Received								
Magnesium	0.93	0.050	mg/L		EPA 200.7	5/8/15	5/8/15	SS
Potassium	1.4	0.50	mg/L		EPA 200.7	5/8/15	5/8/15	SS
Sodium	140	7.0	mg/L		EPA 200.7	5/8/15	5/8/15	SS
Calcium	8.4	0.050	mg/L		EPA 200.7	5/8/15	5/8/15	SS
Iron	<0.10	0.10	mg/L		EPA 200.7	5/8/15	5/8/15	SS
Boron	0.80	0.10	mg/L		EPA 200.7	5/8/15	5/8/15	SS
Barium	<0.10	0.10	mg/L		EPA 200.7	5/8/15	5/8/15	SS
Copper	<0.050	0.050	mg/L		EPA 200.7	5/8/15	5/8/15	SS
Silica (SiO2)	23	4.0	mg/L		EPA 200.7	5/8/15	5/8/15	SS
Strontium	<0.10	0.10	mg/L		EPA 200.7	5/8/15	5/8/15	SS
Manganese	<0.030	0.030	mg/L		EPA 200.7	5/8/15	5/8/15	SS
Petroleum Hydrocarbons								
Diesel Range Hydrocarbons	2.34	0.05	mg/L		SW846 8015B	5/11/15	5/12/15	JMM
Gasoline Range Hydrocarbons	<0.050	0.050	mg/L		SW846 8015B	5/18/15	5/18/15	HLP
Motor Oil Range Hydrocarbons	5.08	0.15	mg/L		SW846 8015B	5/11/15	5/12/15	JMM

Surrogates	% Recovery	Recovery Limits	Flag		
α,α,α-Trifluorotoluene	106	69-125		5/18/15 11:44	
Semivolatile Organic Compounds					
Indeno(1,2,3-cd)pyrene	<10.0	10.0	ug/L	SW846 8270C	5/7/15 5/7/15 JMM
Naphthalene	<10.0	10.0	ug/L	SW846 8270C	5/7/15 5/7/15 JMM
Acenaphthylene	<10.0	10.0	ug/L	SW846 8270C	5/7/15 5/7/15 JMM
Acenaphthene	<10.0	10.0	ug/L	SW846 8270C	5/7/15 5/7/15 JMM
Fluorene	<10.0	10.0	ug/L	SW846 8270C	5/7/15 5/7/15 JMM
Phenanthrene	<10.0	10.0	ug/L	SW846 8270C	5/7/15 5/7/15 JMM
Anthracene	<10.0	10.0	ug/L	SW846 8270C	5/7/15 5/7/15 JMM

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Analyte	Results	PQL	Units	Flag	Method	Date Prepared	Date Analyzed	Init.
Semivolatile Organic Compounds								
Fluoranthene	<10.0	10.0	ug/L		SW846 8270C	5/7/15	5/7/15	JMM
Pyrene	<10.0	10.0	ug/L		SW846 8270C	5/7/15	5/7/15	JMM
Benzo (a) anthracene	<10.0	10.0	ug/L		SW846 8270C	5/7/15	5/7/15	JMM
Chrysene	<10.0	10.0	ug/L		SW846 8270C	5/7/15	5/7/15	JMM
Benzo (b) fluoranthene	<10.0	10.0	ug/L		SW846 8270C	5/7/15	5/7/15	JMM
Benzo (k) fluoranthene	<10.0	10.0	ug/L		SW846 8270C	5/7/15	5/7/15	JMM
Benzo (a) pyrene	<10.0	10.0	ug/L		SW846 8270C	5/7/15	5/7/15	JMM
Dibenz (a,h) anthracene	<10.0	10.0	ug/L		SW846 8270C	5/7/15	5/7/15	JMM
Benzo (g,h,i) perylene	<10.0	10.0	ug/L		SW846 8270C	5/7/15	5/7/15	JMM
Surrogates		**% Recovery**	**Recovery Limits**	**Flag**				
Nitrobenzene-d5		54.2	0-95				5/7/15 11:20	
2-Fluorobiphenyl		58.6	0-92				5/7/15 11:20	
Terphenyl-d14		45.2	0-100				5/7/15 11:20	
Subcontracted Analyses								
Gross Alpha	<15.0	15.0	pCi/L		SM 7110C	5/14/15	5/15/15	JMM
Radium-226	<3.00	3.00	pCi/L		E903.1	5/17/15	5/19/15	JMM
Radium-228	<2.00	2.00	pCi/L		EPA Ra-05	5/17/15	5/26/15	JMM
Uranium (ug/L)	<20.0	20.0	pCi/L		E908	5/21/15	5/22/15	JMM
Volatile Organic Compounds								
m,p-Xylene	7.51	5.00	ug/L		SW846 8260B	5/8/15	5/8/15	HLP
Benzene	<5.00	5.00	ug/L		SW846 8260B	5/8/15	5/8/15	HLP
Xylenes, total	15.9		ug/L		SW846 8260B	5/8/15	5/8/15	HLP
Methyl tert-Butyl Ether	<5.00	5.00	ug/L		SW846 8260B	5/8/15	5/8/15	HLP
Ethylbenzene	<5.00	5.00	ug/L		SW846 8260B	5/8/15	5/8/15	HLP
Toluene	<5.00	5.00	ug/L		SW846 8260B	5/8/15	5/8/15	HLP
o-Xylene	8.40	5.00	ug/L		SW846 8260B	5/8/15	5/8/15	HLP
Surrogates		**% Recovery**	**Recovery Limits**	**Flag**				
1,2-Dichloroethane-d4		107	89-165				5/8/15 9:08	
Toluene-d8		81.6	65-124				5/8/15 9:08	
4-Bromofluorobenzene		83.8*	94-114	S-GC			5/8/15 9:08	

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ZALCO LABORATORIES, INC.

4309 Armour Avenue, Bakersfield, CA 93308 (661) 395-0539 FAX (661) 395-3069 www.zalcolabs.com

CHAIN OF CUSTODY, ID# 1505052

Page _____ of _____

Zalco Lab # _____

Client PO # _____

PROJECT ID: _____

QUOTE ID: _____

REPORT INFO	INVOICE INFO
Client: Smilodon Oil Company	Invoice To: Same as Client ☐ Burton Ellisan
Address: 4485 Big Cat Road	Address: 101 Starmount Lane
City, State, Zip: Placerville, CA 95667	City, State, Zip: Bakersfield, CA 93309
Attention: Burton Ellison	Attention: Burton Ellison
Phone: Results ☐	Phone: 661-809-7548
Fax: Results ☒	Fax: 661-616-6178
Email: Results ☒	Email: bellison101@aol.com

SAMPLED BY: Burton R. Ellison **EMPLOYED BY:** Smilodon Oil Co.

Sample No.	Sample Description	Sample Date	Sample Time	Type*	# OF CONTAINERS	ANALYSIS	TEMPERATURE (C°)
S1	Hastings Sump 1 outfall	5/5/15	1405	WW	11	(See Attachment B from Water Board CI3267 Order)	7.6

COMMENTS:

Turnaround Time:
Routine 10 working days
Rush By _____ working days

Send Copy to State of CA?
Yes ☐ No ☐

Attention To: _____

Send Copy to County?
Yes ☐ No ☐

County _____

RELINQUISHED By: Signature	PRINT	COMPANY	Date	Time	RECEIVED By: Signature	PRINT
Burton K. Ellison	Burton R. Ellison	Smilodon Oil Co.	5/6/15	810		K. Springman

NOTE: Samples are discarded 30 days after results unless other arrangements are made. Hazardous samples will be returned to client or disposed of at the client's expense.

*Sample Type Key: AQ-Aqueous; BS-Biosolid; DW-Drinking Water; GW-Ground Water; G-Gas; LPG-Liquid Petroleum Gas; OL-Oil; O-Other; P-Petroleum; S-Soil/Solid; ST-Storm Water; WW-Wastewater

*Sample No.: FOR OFFICE USE ONLY

Wash Tank

Analysis

MOORE TWINING ASSOCIATES, INC.

2527 Fresno Street
Fresno, CA 93721
(559) 268-7021 Phone
(559) 268-0740 Fax

California ELAP Certificate #1371

RWQCB - Fresno	Project: 13-014-150	
1685 E Street	Project Number: Deer Creek Oil Field - DOGGR Sump List	Reported:
Fresno CA, 93706-2007	Project Manager: Anthony Toto	11/12/2014

REH141610-5

AJ17009-05 (Waste Water) Sampled:10/16/14 15:30

Analyte	Flag	Result	Reporting Limit	MDL	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Method
Inorganics											
Total Alkalinity as CaCO3		190	1.0	0.23	mg/L	1	U4J1721	CMG	10/17/14 16:56	10/17/14 19:22	SM2320B
Bicarbonate Alkalinity as HCO3		240	1.3	0.23	mg/L	1	U4J1721	CMG	10/17/14 16:56	10/17/14 19:22	SM2320B
Carbonate Alkalinity as CO3		ND	1.0	0.23	mg/L	1	U4J1721	CMG	10/17/14 16:56	10/17/14 19:22	SM2320B
Hydroxide Alkalinity as OH		ND	1.0	0.23	mg/L	1	U4J1721	CMG	10/17/14 16:56	10/17/14 19:22	SM2320B
Cation/Anion Balance (% Difference)		1.1			%	1	U4K0311	JAA	11/3/14 15:02	11/3/14 15:04	CALC
Chloride		86	4.0	0.037	mg/L	2	U4J1722	ETH	10/17/14 17:03	10/17/14 21:26	EPA 300.0
Specific Conductance (EC)		660	1.0	0.26	µS/cm	1	U4J1721	CMG	10/17/14 16:56	10/17/14 19:22	SM2510B
Nitrate as NO3	J	0.42	4.0	0.035	mg/L	2	U4J1722	ETH	10/17/14 17:03	10/17/14 21:26	EPA 300.0
Nitrite as N		ND	0.60	0.021	mg/L	2	U4J1722	ETH	10/17/14 17:03	10/17/14 21:26	EPA 300.0
Orthophosphate as P		ND	0.50	0.0056	mg/L	2	U4J1722	ETH	10/17/14 17:03	10/17/14 21:26	EPA 300.0
Sulfate as SO4	J	3.9	4.0	0.019	mg/L	2	U4J1722	ETH	10/17/14 17:03	10/17/14 21:26	EPA 300.0
Total Dissolved Solids		400	10	8.1	mg/L	1	U4J2107	MVY	10/21/14 12:08	10/22/14 15:10	SM 2540C
Metals - Totals											
Boron		0.68	0.10	0.0017	mg/L	1	U4J2016	DAR	10/23/14 11:15	10/27/14 22:34	EPA 200.7
Calcium		8.0	0.20	0.015	mg/L	1	U4J2016	DAR	10/23/14 11:15	10/27/14 22:34	EPA 200.7
Hardness		24	1.3		mg equiv. CaCO3/L	1	[CALC]	DAR	10/23/14 11:15	10/27/14 22:34	[CALC]
Iron	J	0.13	0.20	0.034	mg/L	1	U4J2016	DAR	10/23/14 11:15	10/27/14 22:34	EPA 200.7
Magnesium		0.90	0.20	0.018	mg/L	1	U4J2016	DAR	10/23/14 11:15	10/27/14 22:34	EPA 200.7
Manganese		0.024	0.010	0.00035	mg/L	1	U4J2016	DAR	10/23/14 11:15	10/27/14 22:34	EPA 200.7
Potassium	J	1.1	2.0	0.15	mg/L	1	U4J2016	DAR	10/23/14 11:15	10/27/14 22:34	EPA 200.7
Sodium		140	2.0	0.51	mg/L	1	U4J2016	DAR	10/23/14 11:15	10/27/14 22:34	EPA 200.7
Volatile Organics											
Dichlorodifluoromethane (CFC-12)		ND	0.50	0.19	µg/L	1	U4J2109	GAB	10/21/14 11:00	10/21/14 18:37	EPA 8260B
Chloromethane		ND	0.50	0.16	µg/L	1	U4J2109	GAB	10/21/14 11:00	10/21/14 18:37	EPA 8260B
Vinyl chloride		ND	0.50	0.16	µg/L	1	U4J2109	GAB	10/21/14 11:00	10/21/14 18:37	EPA 8260B
Bromomethane		ND	1.0	0.32	µg/L	1	U4J2109	GAB	10/21/14 11:00	10/21/14 18:37	EPA 8260B
Chloroethane		ND	0.50	0.16	µg/L	1	U4J2109	GAB	10/21/14 11:00	10/21/14 18:37	EPA 8260B
1,1-Dichloroethene		ND	0.50	0.14	µg/L	1	U4J2109	GAB	10/21/14 11:00	10/21/14 18:37	EPA 8260B
Carbon disulfide		ND	0.50	0.14	µg/L	1	U4J2109	GAB	10/21/14 11:00	10/21/14 18:37	EPA 8260B
Acrolein		ND	10	1.5	µg/L	1	U4J2109	GAB	10/21/14 11:00	10/21/14 18:37	EPA 8260B
Methylene chloride		ND	1.0	0.20	µg/L	1	U4J2109	GAB	10/21/14 11:00	10/21/14 18:37	EPA 8260B
trans-1,2-Dichloroethene		ND	0.50	0.11	µg/L	1	U4J2109	GAB	10/21/14 11:00	10/21/14 18:37	EPA 8260B

Moore Twining Associates, Inc.

Juliane Adams, Director of Analytical Chemistry

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MOORE TWINING ASSOCIATES, INC.

2527 Fresno Street
Fresno, CA 93721
(559) 268-7021 Phone
(559) 268-0740 Fax

California ELAP Certificate #1371

RWQCB - Fresno	Project: 13-014-150	
1685 E Street	Project Number: Deer Creek Oil Field - DOGGR Sump List	Reported:
Fresno CA, 93706-2007	Project Manager: Anthony Toto	11/12/2014

REH141610-5

AJ17009-05 (Waste Water) Sampled:10/16/14 15:30

Analyte	Flag	Result	Reporting Limit	MDL	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Method
Volatile Organics											
Methyl tert-Butyl Ether (MTBE)		ND	1.0	0.36	µg/L	1	U4J2109	GAB	10/21/14 11:00	10/21/14 18:37	EPA 8260B
1,1-Dichloroethane		ND	0.50	0.12	µg/L	1	U4J2109	GAB	10/21/14 11:00	10/21/14 18:37	EPA 8260B
Acrylonitrile		ND	5.0	2.9	µg/L	1	U4J2109	GAB	10/21/14 11:00	10/21/14 18:37	EPA 8260B
cis-1,2-Dichloroethene		ND	0.50	0.15	µg/L	1	U4J2109	GAB	10/21/14 11:00	10/21/14 18:37	EPA 8260B
2,2-Dichloropropane		ND	1.0	0.24	µg/L	1	U4J2109	GAB	10/21/14 11:00	10/21/14 18:37	EPA 8260B
Bromochloromethane		ND	0.50	0.20	µg/L	1	U4J2109	GAB	10/21/14 11:00	10/21/14 18:37	EPA 8260B
Chloroform		ND	0.50	0.14	µg/L	1	U4J2109	GAB	10/21/14 11:00	10/21/14 18:37	EPA 8260B
Carbon tetrachloride		ND	0.50	0.16	µg/L	1	U4J2109	GAB	10/21/14 11:00	10/21/14 18:37	EPA 8260B
1,1,1-Trichloroethane (TCA)		ND	0.50	0.16	µg/L	1	U4J2109	GAB	10/21/14 11:00	10/21/14 18:37	EPA 8260B
1,1-Dichloropropene		ND	0.50	0.12	µg/L	1	U4J2109	GAB	10/21/14 11:00	10/21/14 18:37	EPA 8260B
Benzene		ND	0.50	0.10	µg/L	1	U4J2109	GAB	10/21/14 11:00	10/21/14 18:37	EPA 8260B
1,2-Dichloroethane (1,2-DCA)		ND	0.50	0.10	µg/L	1	U4J2109	GAB	10/21/14 11:00	10/21/14 18:37	EPA 8260B
Trichloroethene (TCE)		ND	0.50	0.17	µg/L	1	U4J2109	GAB	10/21/14 11:00	10/21/14 18:37	EPA 8260B
Dibromomethane		ND	0.50	0.14	µg/L	1	U4J2109	GAB	10/21/14 11:00	10/21/14 18:37	EPA 8260B
1,2-Dichloropropane		ND	0.50	0.10	µg/L	1	U4J2109	GAB	10/21/14 11:00	10/21/14 18:37	EPA 8260B
Bromodichloromethane		ND	0.50	0.13	µg/L	1	U4J2109	GAB	10/21/14 11:00	10/21/14 18:37	EPA 8260B
cis-1,3-Dichloropropene		ND	0.50	0.11	µg/L	1	U4J2109	GAB	10/21/14 11:00	10/21/14 18:37	EPA 8260B
Toluene		120	0.50	0.27	µg/L	1	U4J2109	GAB	10/21/14 11:00	10/21/14 18:37	EPA 8260B
trans-1,3-Dichloropropene		ND	0.50	0.14	µg/L	1	U4J2109	GAB	10/21/14 11:00	10/21/14 18:37	EPA 8260B
Tetrachloroethene (PCE)		ND	0.50	0.12	µg/L	1	U4J2109	GAB	10/21/14 11:00	10/21/14 18:37	EPA 8260B
Dibromochloromethane		ND	0.50	0.11	µg/L	1	U4J2109	GAB	10/21/14 11:00	10/21/14 18:37	EPA 8260B
1,3-Dichloropropane		ND	0.50	0.10	µg/L	1	U4J2109	GAB	10/21/14 11:00	10/21/14 18:37	EPA 8260B
1,2-Dibromoethane (EDB)		ND	0.50	0.22	µg/L	1	U4J2109	GAB	10/21/14 11:00	10/21/14 18:37	EPA 8260B
Ethylbenzene		19	0.50	0.10	µg/L	1	U4J2109	GAB	10/21/14 11:00	10/21/14 18:37	EPA 8260B
Chlorobenzene		ND	0.50	0.10	µg/L	1	U4J2109	GAB	10/21/14 11:00	10/21/14 18:37	EPA 8260B
1,1,1,2-Tetrachloroethane		ND	0.50	0.12	µg/L	1	U4J2109	GAB	10/21/14 11:00	10/21/14 18:37	EPA 8260B
m,p-Xylene		80	1.0	0.20	µg/L	1	U4J2109	GAB	10/21/14 11:00	10/21/14 18:37	EPA 8260B
o-Xylene		34	0.50	0.10	µg/L	1	U4J2109	GAB	10/21/14 11:00	10/21/14 18:37	EPA 8260B
Bromoform		ND	1.0	0.12	µg/L	1	U4J2109	GAB	10/21/14 11:00	10/21/14 18:37	EPA 8260B
Isopropylbenzene		ND	1.0	0.10	µg/L	1	U4J2109	GAB	10/21/14 11:00	10/21/14 18:37	EPA 8260B
Bromobenzene		ND	0.50	0.10	µg/L	1	U4J2109	GAB	10/21/14 11:00	10/21/14 18:37	EPA 8260B
n-Propylbenzene		ND	1.0	0.10	µg/L	1	U4J2109	GAB	10/21/14 11:00	10/21/14 18:37	EPA 8260B
1,3,5-Trimethylbenzene		ND	0.50	0.11	µg/L	1	U4J2109	GAB	10/21/14 11:00	10/21/14 18:37	EPA 8260B
2-Chlorotoluene		ND	0.50	0.10	µg/L	1	U4J2109	GAB	10/21/14 11:00	10/21/14 18:37	EPA 8260B

Moore Twining Associates, Inc.
Juliane Adams, Director of Analytical Chemistry

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MOORE TWINING ASSOCIATES, INC.

2527 Fresno Street
Fresno, CA 93721
(559) 268-7021 Phone
(559) 268-0740 Fax

California ELAP Certificate #1371

RWQCB - Fresno	Project: 13-014-150	
1685 E Street	Project Number: Deer Creek Oil Field - DOGGR Sump List	Reported:
Fresno CA, 93706-2007	Project Manager: Anthony Toto	11/12/2014

REH141610-5

AJ17009-05 (Waste Water) Sampled:10/16/14 15:30

Analyte	Flag	Result	Reporting Limit	MDL	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Method
Volatile Organics											
1,2,3-Trichloropropane (123TCP)		ND	0.50	0.29	µg/L	1	U4J2109	GAB	10/21/14 11:00	10/21/14 18:37	EPA 8260B
4-Chlorotoluene		ND	0.50	0.10	µg/L	1	U4J2109	GAB	10/21/14 11:00	10/21/14 18:37	EPA 8260B
tert-Butylbenzene		ND	1.0	0.10	µg/L	1	U4J2109	GAB	10/21/14 11:00	10/21/14 18:37	EPA 8260B
1,2,4-Trimethylbenzene		2.2	1.0	0.10	µg/L	1	U4J2109	GAB	10/21/14 11:00	10/21/14 18:37	EPA 8260B
sec-Butylbenzene		ND	0.50	0.10	µg/L	1	U4J2109	GAB	10/21/14 11:00	10/21/14 18:37	EPA 8260B
p-Isopropyltoluene		ND	1.0	0.10	µg/L	1	U4J2109	GAB	10/21/14 11:00	10/21/14 18:37	EPA 8260B
1,3-Dichlorobenzene		ND	0.50	0.040	µg/L	1	U4J2109	GAB	10/21/14 11:00	10/21/14 18:37	EPA 8260B
1,4-Dichlorobenzene		ND	0.50	0.10	µg/L	1	U4J2109	GAB	10/21/14 11:00	10/21/14 18:37	EPA 8260B
n-Butylbenzene		ND	0.50	0.13	µg/L	1	U4J2109	GAB	10/21/14 11:00	10/21/14 18:37	EPA 8260B
1,2-Dichlorobenzene		ND	0.50	0.12	µg/L	1	U4J2109	GAB	10/21/14 11:00	10/21/14 18:37	EPA 8260B
1,2-Dibromo-3-chloropropane (DBCP)		ND	5.0	0.39	µg/L	1	U4J2109	GAB	10/21/14 11:00	10/21/14 18:37	EPA 8260B
1,2,4-Trichlorobenzene		ND	1.0	0.10	µg/L	1	U4J2109	GAB	10/21/14 11:00	10/21/14 18:37	EPA 8260B
Hexachlorobutadiene		ND	1.0	0.10	µg/L	1	U4J2109	GAB	10/21/14 11:00	10/21/14 18:37	EPA 8260B
Naphthalene		2.6	0.50	0.15	µg/L	1	U4J2109	GAB	10/21/14 11:00	10/21/14 18:37	EPA 8260B
1,2,3-Trichlorobenzene		ND	0.50	0.10	µg/L	1	U4J2109	GAB	10/21/14 11:00	10/21/14 18:37	EPA 8260B
Surrogate: 4-Bromofluorobenzene		*101 %*	*70-130*				*U4J2109*		10/21/14 11:00	10/21/14 18:37	*EPA 8260B*
Surrogate: Dibromofluoromethane		*94.0 %*	*70-130*				*U4J2109*		10/21/14 11:00	10/21/14 18:37	*EPA 8260B*
Surrogate: Toluene-d8		*100 %*	*70-130*				*U4J2109*		10/21/14 11:00	10/21/14 18:37	*EPA 8260B*

Notes and Definitions

MS2	Recovery for this analyte was biased high; associated blank spike recoveries are within range.
J	Detected but below the Reporting Limit; therefore, result is an estimated concentration (CLP J-Flag). Same as DNQ - Detected, but Not Quantified.
HT	This result was analyzed outside of the EPA recommended holding time due to laboratory error.
ug/L	micrograms per liter (parts per billion concentration units)
mg/kg	milligrams per kilogram (parts per million concentration units)
mg/L	milligrams per Liter (parts per million concentration units)
ND	Analyte NOT DETECTED at or above the Minimum Detection Limit (MDL)
RPD	Relative Percent Difference

Moore Twining Associates, Inc.
Juliane Adams, Director of Analytical Chemistry

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MOORE TWINING ASSOCIATES, INC.

ANALYTICAL CHEMISTRY DIVISION
CALIFORNIA ELAP CERTIFICATION # 1371

CHAIN OF CUSTODY/ANALYSIS REQUEST

2527 FRESNO STREET • FRESNO, CA 93721 • PHONE (559) 268-7021 • FAX: (559) 268-0740

WORK ORDER #: AJ12009
PAGE 1 **OF** 3

Ronald.Holcomb@waterboards.ca.gov
REPORT TO:

■ INVOICE TO: ☐ REPORT COPY TO: REPORTING:

ATTENTION:	ATTENTION:	☐ STANDARD FORMAT
Ron Holcomb (Ron.Holcomb@waterboards.ca.gov)	Anthony Toto	☐ WRITE-ON (STATE FORM)
NAME: Central Valley Water Board	NAME: Central Valley Water Board	☐ GEOTRACKER/COELT (LUFT)
ADDRESS: 1685 E Street	ADDRESS: 1685 E Street	☒ PDF ☐ SPREADSHEET
Fresno, CA 93706	Fresno, CA 93706	☐ County DHS :
PHONE: 559-445-6050	PHONE: 559-445-6278	☐ Environmental Health Agency :
FAX: 559-445-5910	FAX: 559-445-5910	☐ OTHER:

SAMPLE INFORMATION

SAMPLED BY (PRINT):

SIGNATURE:

☐ PUBLIC SYSTEM ☐ ROUTINE
☐ PRIVATE WELL ☐ REPEAT
☐ OTHER ☐ REPLACEMENT

TURN AROUND TIME: ☐ RUSH, DUE ON:
☒ STANDARD

SAMPLE TYPES:
SOLID:
BS – BIOSOLID
CR – CERAMIC
SL – SOIL/SOLID
LIQUID:
DW – DRINKING WATER
GW – GROUND WATER
OL – OIL
SF – SURFACE WATER
ST – STORM WATER
WW – WASTE WATER

PROJECT INFORMATION

CONTRACT/P.O. NO.: 13-014-150
PROJECT: Deer Creek Oil Field – DOGGR Sump List
PROJECT NUMBER:
PROJECT MANAGER:

ANALYSIS REQUESTED

NOTES ON RECEIVED CONDITION:
☐ CUSTODY SEAL(S) BROKEN ☐ SAMPLE(S) DAMAGED
☐ ON ICE ☐ AMBIENT TEMP. ☐ INCORRECT PRESERVATION

LAB USE	CLIENT SAMPLE ID	DATE	TIME	TYPE	General Minerals	8260B	8270C								
1	REH141610-1	10/16/2014	10:35am	WW	X	X									PENTARCH
2	REH141610-2	10/16/2014	11:30am	WW	X	X	X								B. ELLISON
3	REH141610-3	10/16/2014	1:10pm	WW	X	X									BINION
4	REH141610-4	10/16/2014	2:50pm	WW	X	X	X								MODUS
5	REH141610-5	10/16/2014	3:30pm	WW	X	X									SMILODON

COMMENTS/ADDITIONAL INSTRUCTIONS:

RELINQUISHED BY	COMPANY	DATE	TIME	RECEIVED BY	COMPANY
Ronald E. Holcomb	RWQCB	10/16/14	1120	[illegible]	[illegible]

Smilodon Oil Company
Hastings Lease
Pond Location Map
Deer Creek Oil Field, Tulare County
SW 1/4 Section 27, T27S, R22E MDB&M

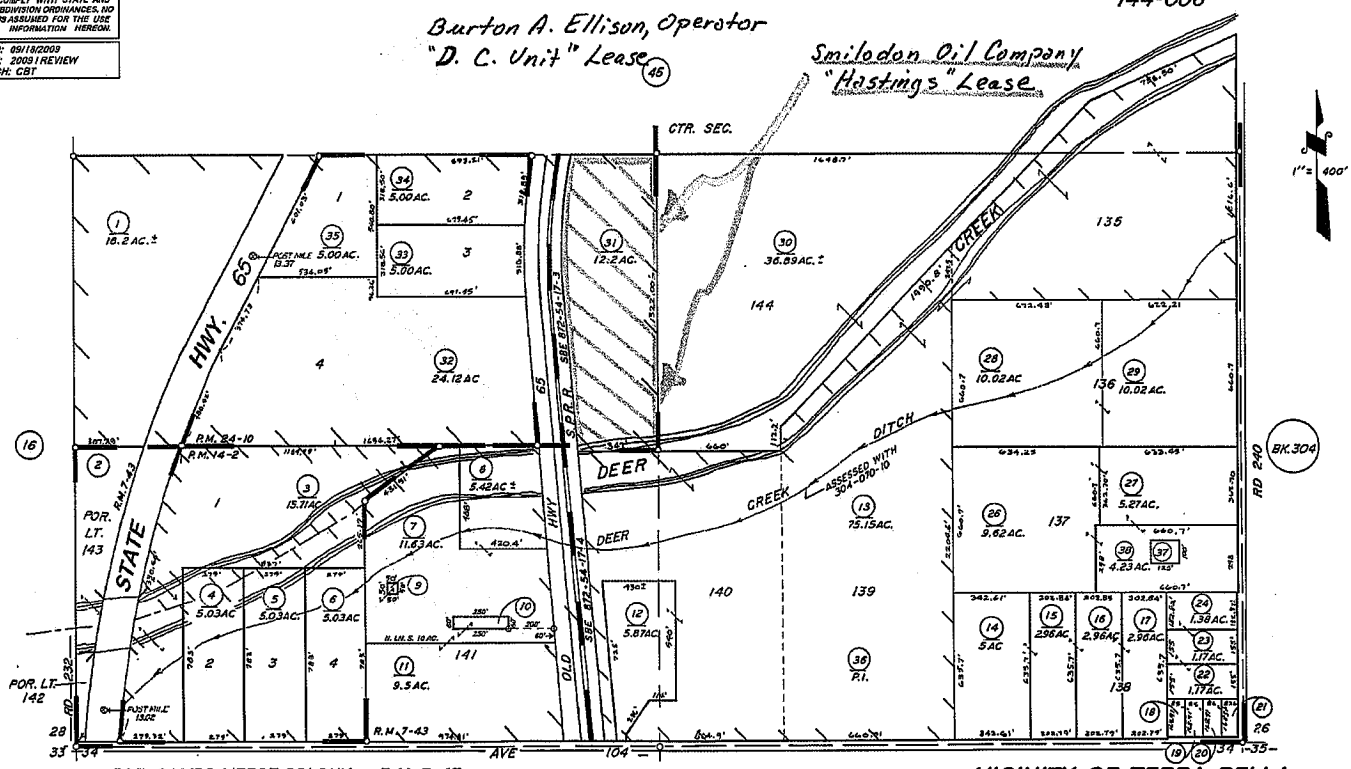
DISCLAIMER

THIS MAP WAS PREPARED FOR LOCAL PROPERTY ASSESSMENT PURPOSES ONLY. THE PARCELS SHOWN HEREON MAY NOT COMPLY WITH STATE AND LOCAL SUBDIVISION ORDINANCES. NO LIABILITY IS ASSUMED FOR THE USE OF THE INFORMATION HEREON.

REVISED: 09/18/2009
REASON: 2009 I REVIEW
CAD TECH: CBT

S½ SEC. 27, T. 22S., R. 27E., M.D.B.& M.

TAX CODE AREA 302-34
094-000
144-001
144-006



POR. CAMPO VERDE COLONY, R.M. 7-43
PARCEL MAP 1301, P.M. 14-2
PARCEL MAP 2309, P.M. 24-10
POR. RECORD OF SURVEY, L.S. 26-26 (STATE HWY. 65)

NOTE— ASSESSOR'S BLOCK NUMBERS SHOWN IN ELLIPSES
ASSESSOR'S PARCEL NUMBERS SHOWN IN CIRCLES

VICINITY OF TERRA BELLA
ASSESSOR'S MAPS BK. 302 PG. 34
COUNTY OF TULARE, CALIF.

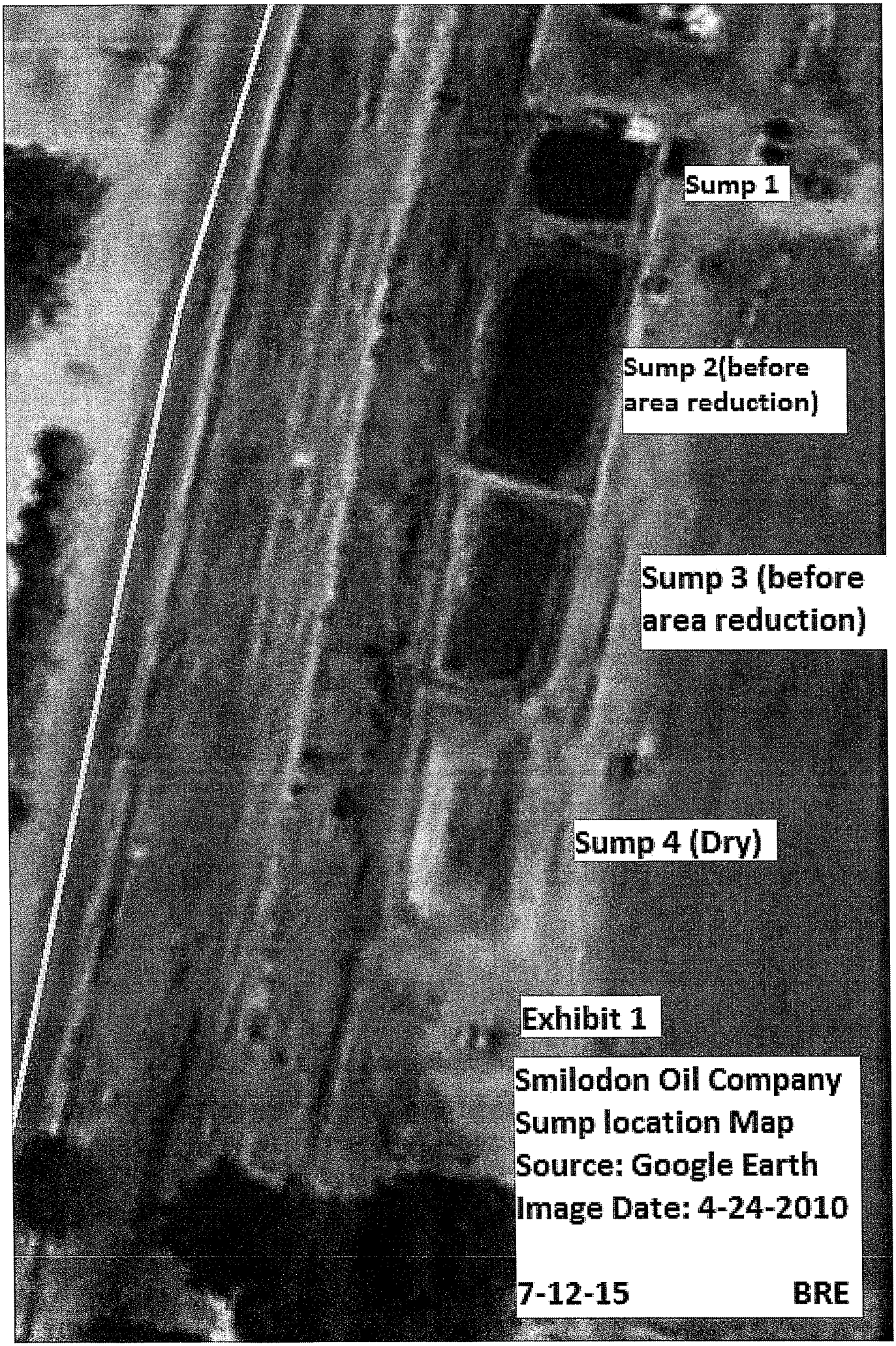


Exhibit 1

Smilodon Oil Company
Sump location Map
Source: Google Earth
Image Date: 4-24-2010

7-12-15 **BRE**

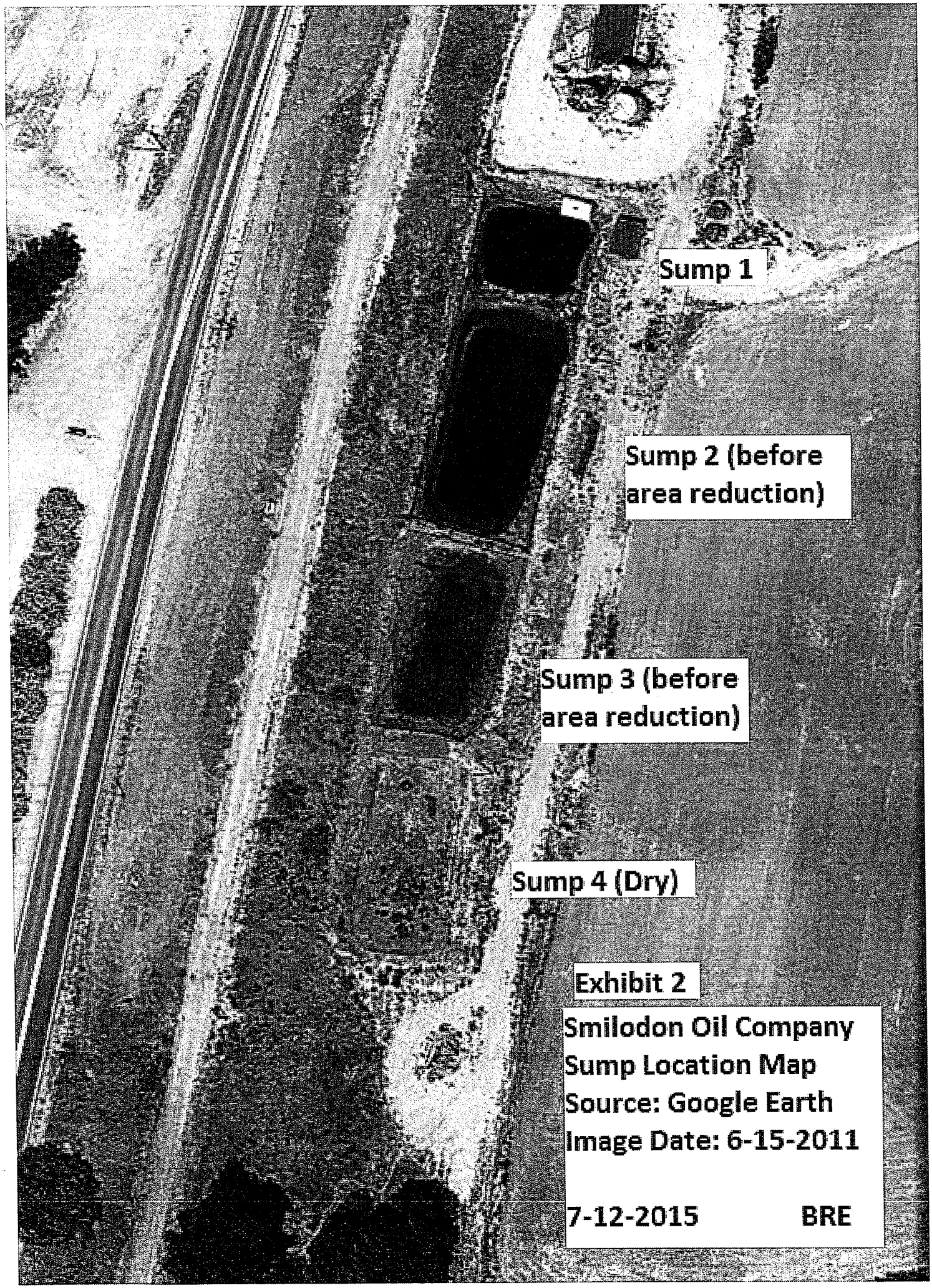


Exhibit 2

Smilodon Oil Company
Sump Location Map
Source: Google Earth
Image Date: 6-15-2011

7-12-2015 BRE

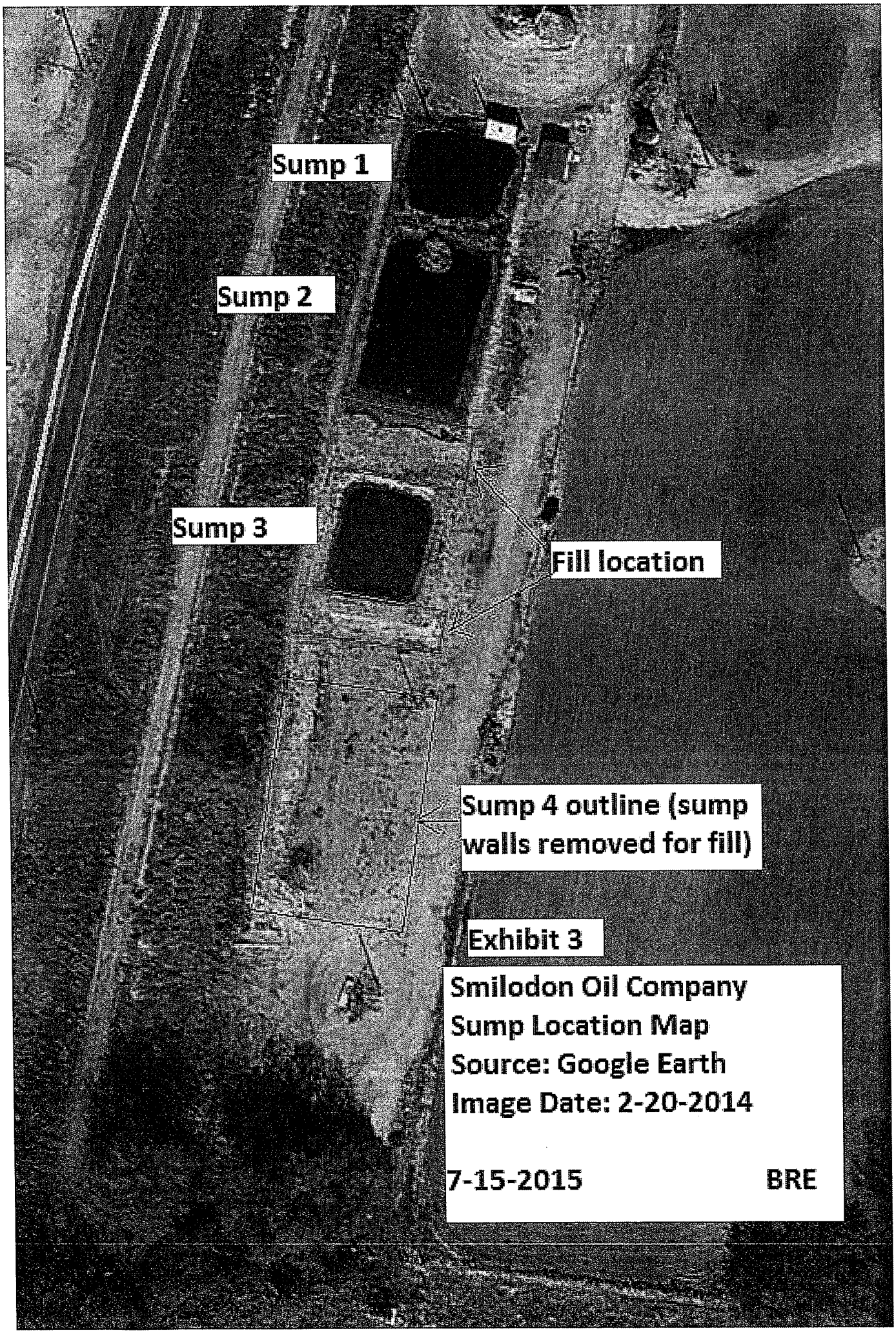


Exhibit 3

Smilodon Oil Company
Sump Location Map
Source: Google Earth
Image Date: 2-20-2014

7-15-2015 BRE

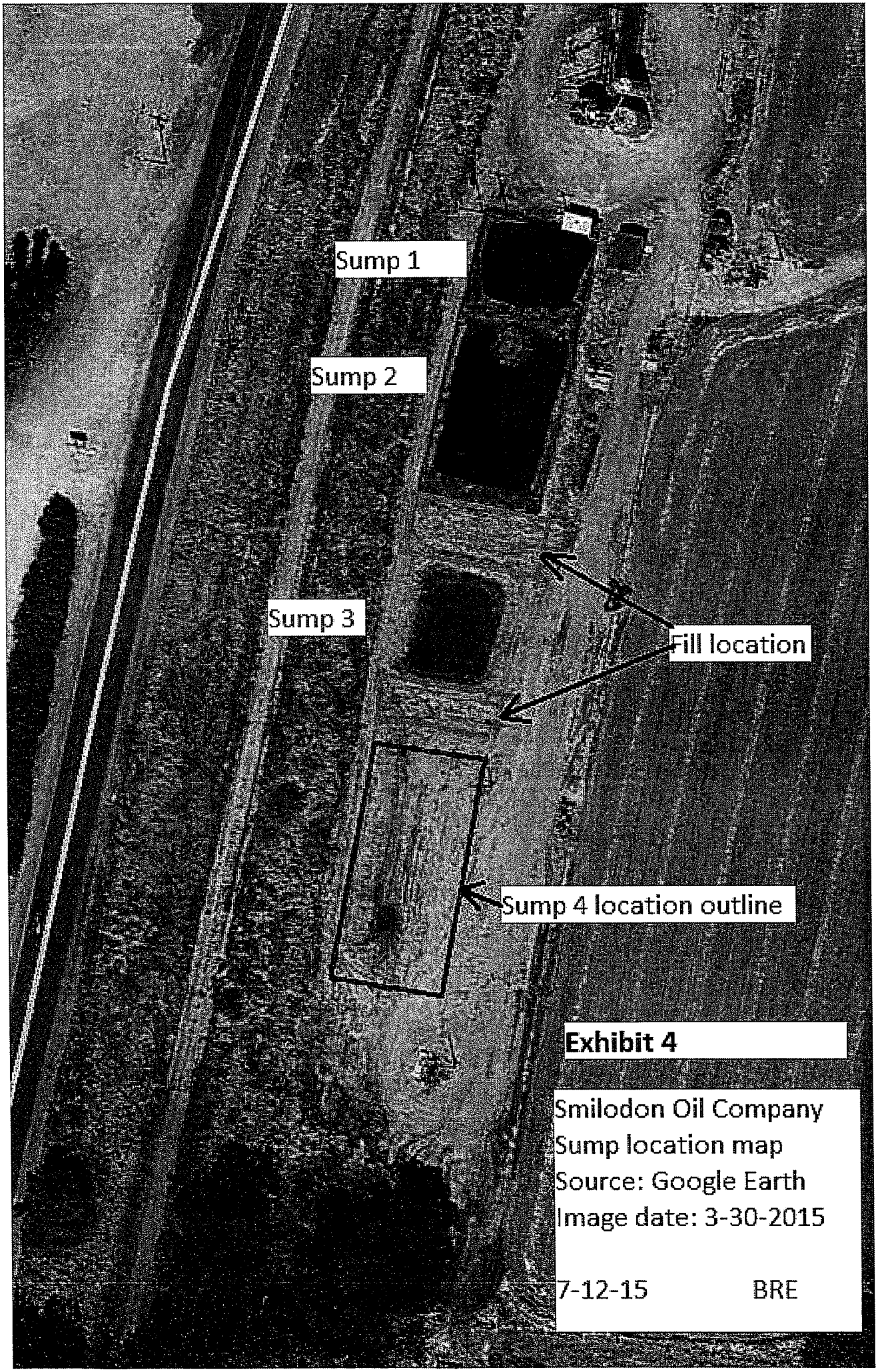


Exhibit 4

Smilodon Oil Company
Sump location map
Source: Google Earth
Image date: 3-30-2015

7-12-15 BRE