



March 31, 2015

130-2645

Mr. Celestine Ngam  
New Mexico Environment Department  
Petroleum Storage Tank Bureau  
2905 Rodeo Park Drive East, Building 1  
Santa Fe, NM 87505

**RE: NOTICE OF COMPLETION OF DELIVERABLE 17138-1: SITE ACCESS AGREEMENT AND EXISTING MONITOR WELL PRE-TESTING, LOVINGTON 66 (LUST ID 1182), LOVINGTON, NEW MEXICO**

Dear Mr. Ngam:

On behalf of Walstad Oil Company, transmitted herewith is a copy of the fully-executed site access agreement for the above referenced site, as well as data obtained during pre-testing of existing site groundwater monitoring wells to determine their capability to serve as observation wells for multiple phase vacuum extraction pilot testing that is planned for the site.

The pre-testing of existing site groundwater monitoring wells was performed on March 29, 2015 in accordance with the Golder Workplan dated May 7, 2014 and approved in Agency correspondence dated May 14, 2014. Attached are copies of the pre-test data (Attachment 1), as well as photographs documenting the pretest equipment and setup (Attachment 2). Also attached is a copy of the fully executed site access agreement for testing (Attachment 3). If you have any questions regarding the access agreement, or the well pre-testing, please do not hesitate to contact me.

The pre-test data has been transmitted to Mr. Paul Faucher, AcuVac Remediation, Houston, Texas for analysis and recommendation on the acceptability of the existing site wells for the pilot test observation wells. We will notify the drilling contractor to schedule the multiphase pilot test well installation upon receipt of Mr. Faucher's conclusion and final determination of the required number and locations of the test wells and will advise NMED-PSTB at that time.

Sincerely,

**GOLDER ASSOCIATES INC.**

A handwritten signature in black ink, appearing to read 'Clay Kilmer'.

Clay Kilmer  
Sr. Hydrogeologist

cc: Mr. Bob Murrell, Walstad Oil Company

- Attachments:
1. Pre-test vacuum flow data, wells W-1, W-2 and W-3
  2. Photo Log
  3. Site access agreements, Pierson Oil Company and McDonald's Corporation

p:\abq projects\2013 projects\130-2645 - walstad oil company\deliverables\17138 - pilot test and well install\17138-1 access well pretest report\pretest letter report\walstad pilot well pretests 3-31-2015.docx

**Golder Associates Inc.**  
5200 Pasadena Avenue N.E., Suite C  
Albuquerque, NM 87113 USA  
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**ATTACHMENT 1**  
**PRE-TEST VACUUM FLOW DATA, WELLS W-1, W-2, AND W-3**

## Well W-1 Test

Date: 3/29/2015

Data by: C. Kilmer

Well Screen Interval (ft): 50-70

Depth to NAPL (ft): 57.92

Depth to Water (ft): 64.40

Time	Elapsed Time	Well W-1	Well W-2	Well W-3	Rotameter Flow Rate (SCFCM)	¹Flow Rate Correction Factor	¹Corrected Flow Rate (SCFCM)	PID (ppm)	Temp F	Comments
		Radius to Production Well (ft)								
		R = 0	R = 30	R = 36						
		Induced Vacuum, (Inches H₂O)								
12:29 PM		0.5	0.05	0.010						Pre-test Gauge Reading
12:30 PM	0:00	32	0.05	0.010	2	1.048	2.10	3460	75.2	Start STEP 1
12:35 PM	0:05	35	0.05	0.010	2					
12:39 PM	0:09	35	0.06	0.020	2					
12:40 PM	0:10	45	0.07	0.022	4	1.067	4.27	6620	76.4	Start STEP 2
12:45 PM	0:15	45	0.07	0.022	4					
12:49 PM	0:19	45	0.07	0.022	4					
12:50 PM	0:20	55	0.09	0.030	5	1.082	5.41	8040	76.4	Start STEP 3
12:55 PM	0:25	55	0.08	0.030	5					
12:59 PM	0:29	55	0.08	0.030	5					
1:00 PM	0:30	65	0.09	0.035	5.5	1.101	6.06	8530	79.3	Start STEP 4
1:05 PM	0:35	65	0.09	0.035	6					
1:09 PM	0:39	65	0.09	0.035	6					
1:10 PM	0:40	75	0.08	0.032	7	1.115	7.81	7020	77.3	Start STEP 5
1:15 PM	0:45	75	0.07	0.030	7					
1:19 PM	0:49	75	0.07	0.030	7					
1:20 PM	0:50	86	0.08	0.038	8	1.134	9.07	5020	77.1	Start STEP 6
1:25 PM	0:55	86	0.07	0.037	8.5					
1:29 PM	0:59	86	0.07	0.037	8.5					
1:30 PM	1:00	100	0.07	0.037	10	1.160	11.60	4442	77.7	Start STEP 6
1:35 PM	1:05	100	0.07	0.037	10					
1:39 PM	1:09	100	0.07	0.037	10					
1:40 PM	1:10	Max Vac (>100)	0.08	0.020	33			4250	78.4	Start STEP 7
1:41 PM	1:11	Max Vac (>100)	0.07	0.030	26					
1:45 PM	1:15	Max Vac (>100)	0.08	0.035	23					
1:50 PM	1:20	Max Vac (>100)	0.07	0.030	22					End STEP 7
1:54 PM	1:24	1.1								Residual Vacuum
1:56 PM	1:26	0.75								Residual Vacuum
1:58 PM	1:28	0.45								Residual Vacuum
1:59 PM	1:29	0.3								Residual Vacuum
2:00 PM	1:30	0.25								Residual Vacuum
2:03 PM	1:33	0.15								Residual Vacuum

<sup>1</sup> Flow rate correction factor calculated in accordance with attached document

## Well W-2 Test

Date: 3/29/2015

Data by: C. Kilmer

Well Screen Interval (ft): 50-70

Depth to NAPL (ft): 56.88

Depth to Water (ft): 63.65

Time	Elapsed Time	Well W-2	Well W-1	Well W-3	Flow Rate (SCFCM)	<sup>1</sup> Flow Rate Correction Factor	<sup>1</sup> Corrected Flow Rate (SCFCM)	PID (ppm)	Temp F	Comments
		Radius to Production Well (ft)								
		R = 0	R = 30	R = 43						
Induced Vacuum, (Inches H <sub>2</sub> O)										
2:06 PM		0	0.050	0.000						Pre-test Gauge Reading
2:10 PM	0:00	34	0.050	0.005	5.5	1.038	5.71	4943	62.9	Start STEP 1
2:15 PM	0:05	34	0.070	0.010	5.5					
2:19 PM	0:09	34	0.080	0.015	5.5					
2:20 PM	0:10	44	0.090	0.020	7.5	1.061	7.96	4690	71.2	Start STEP 2
2:25 PM	0:15	44	0.110	0.030	7					
2:29 PM	0:19	44	0.110	0.030	7					
2:30 PM	0:20	55	0.110	0.030	9	1.079	9.72	4328	73.4	Start STEP 3
2:35 PM	0:25	55	0.120	0.033	8.5					
2:39 PM	0:29	55	0.125	0.040	8.5					
2:40 PM	0:30	65	0.120	0.038	10.5	1.095	11.50	3770	73.7	Start STEP 4
2:45 PM	0:35	65	0.125	0.045	10					
2:50 PM	0:40	65	0.130	0.055	10					
2:54 PM	0:44	65	0.125	0.052	10					
2:55 PM	0:45	75	0.130	0.045	11.5	1.113	12.80	3971	74.6	Start STEP 5
3:00 PM	0:50	75	0.130	0.052	11					
3:04 PM	0:54	75	0.125	0.045	10.5					
3:05 PM	0:55	88	0.130	0.048	13	1.134	14.74	3665	73.5	Start STEP 6
3:10 PM	1:00	90	0.130	0.055	12					
3:14 PM	1:04	90	0.120	0.040	12					
3:15 PM	1:05	102	0.110	0.040	15	1.160	17.40	3322	73.7	Start STEP 7
3:20 PM	1:10	102	0.120	0.055	14					
3:24 PM	1:14	102	0.110	0.035	14					
3:25 PM	1:15	Max Vac (>100)	0.100	0.020	35			303	72.8	Start STEP 8
3:30 PM	1:20	Max Vac (>100)	0.090	0.030	25					
3:35 PM	1:25	Max Vac (>100)	0.100	0.040	22					End STEP 8

<sup>1</sup> Flow rate correction factor calculated in accordance with attached document

## Well W-3 Test

Date: 3/29/2015

Data by: C. Kilmer

Well Screen Interval (ft): 50-70

Depth to NAPL (ft): 57.01

Depth to Water (ft): 63.60

Time	Elapsed Time	Well W-3	Well W-1	Well W-2	Flow Rate (SCFCM)	<sup>1</sup> Flow Rate Correction Factor	<sup>1</sup> Corrected Flow Rate (SCFCM)	PID (ppm)	Temp F	Comments
		Radius to Production Well (ft)								
		R = 0	R = 36	R = 43						
Induced Vacuum, (Inches H <sub>2</sub> O)										
10:36 AM		0	0.02	0.07						Pre-test Gauge Reading
10:41 AM	0:00	34	0.00	0.15	4	1.035	4.14	2037	59.7	Start STEP 1
10:44 AM	0:03	34	0.00	0.15	4					
10:50 AM	0:09	34	0.00	0.10	4					
10:55 AM	0:14	34	0.00	0.10	4					
11:00 AM	0:19	45	0.01	0.12	6	1.055	6.33	6100	64.2	Start STEP 2
11:05 AM	0:24	45	0.01	0.12	6					
11:09 AM	0:28	45	0.01	0.12	6					
11:10 AM	0:29	55	0.01	0.12	8	1.074	8.59	7287	68.3	Start STEP 3
11:15 AM	0:34	55	0.01	0.12	8					
11:19 AM	0:38	55	0.01	0.12	8					
11:20 AM	0:39	68	0.01	0.13	10	1.093	10.93	4720	66.5	Start STEP 4
11:25 AM	0:44	67	0.01	0.12	9					
11:29 AM	0:48	67	0.00	0.10	8					
11:30 AM	0:49	80	0.00	0.10	11				73.2	Start STEP 5
11:35 AM	0:54	80	0.00	0.10	10.5					
11:39 AM	0:58	80	0.00	0.10	10					
11:40 AM	0:59	100	0.00	0.10	14	1.157	16.19	4350	74.3	Start STEP 6
11:45 AM	1:04	100	0.00	0.10	13					
11:49 AM	1:08	100	0.00	0.10	12					
11:50 AM	1:09	Max Vac (>100)	0.00	0.10	34			3430	74.8	Start STEP 7
11:51 AM	1:10	Max Vac (>100)	0.00	0.10	30					
11:55 AM	1:14	Max Vac (>100)	0.00	0.10	23					
12:00 PM	1:19	Max Vac (>100)	0.00	0.10	21.5					
12:05 PM	1:24	Max Vac (>100)	0.00	0.10	20					
12:10 PM	1:29	Max Vac (>100)	0.00	0.10	20					End Step 7

<sup>1</sup> Flow rate correction factor calculated in accordance with attached document

Gas Flowmeter Sizing

Variable area flowmeters suitable for liquid service have a capacity rating based on water at 70° Fahrenheit. Flowmeters suitable for gas service have a capacity rating based on air at STP (70°F, 14.7 PSIA) conditions. The correction factors listed below are used to calculate the flow capacity when using a liquid other than water or a gas other than air at STP conditions.

GAS CORRECTION FORMULA

Air Equivalent Flow Rate = Customer Gas Flow Rate X Gas Correction Factor

Step 1: Convert Customer Gas Flow Rate unit of measure to a standard unit of measure for air flow (SCFM or SCCM).

Step 2: Calculate Gas Correction Factor from given values.

Step 3: Calculate the product of the Air Equivalent Flow Rate from the Customer Gas Flow Rate and the Gas Correction Factor.

Step 4: Calculate the maximum or minimum flow rate for the customer's conditions.

Step 1: Convert Customer Gas Flow Rate unit of measure to a standard unit of measure for air flow

Customer Gas Flow Rate \_\_\_\_\_  
Converted Gas Flow Rate \_\_\_\_\_ SCFM / SCCM

Gas Flow Rate Conversions			
From	To SCFM	From	To SCCM
SCFH	Divide by 60	SCFM	Multiply by 28,317
SCIM	Divide by 1,728	SCFH	Multiply by 472
SLPM	Divide by 28.317	SCIM	Multiply by 16.39
SM³/MIN	Multiply by 35.31	SLPM	Multiply by 1,000
SM³/HR	Multiply by 0.5885	SLPH	Multiply by 16.67
NM³/MIN	Multiply by 37.99	SM³/MIN	Multiply by 1,000,000
NM³/HR	Multiply by 0.6331	SM³/HR	Multiply by 16,667
SCCM	Divide by 28,317	NM³/MIN	Multiply by 1,075,785
KG/MIN	Multiply by (29.39 ÷ SpGr)	NM³/HR	Multiply by 17,929
KG/HR	Multiply by (0.49 ÷ SpGr)	KG/MIN	Multiply by (832,000 ÷ SpGr)
LBS/MIN	Multiply by (13.33 ÷ SpGr)	KG/HR	Multiply by (13,876 ÷ SpGr)
LBS/HR	Multiply by (0.2222 ÷ SpGr)	LBS/MIN	Multiply by (377,500 ÷ SpGr)
LBS/DAY	Multiply by (0.00926 ÷ SpGr)	LBS/HR	Multiply by (6,292 ÷ SpGr)
ACFM	Multiply by [(Operating PSIG+14.7)(530)] ÷ [(14.7)(Operating °F+460)]		

Step 2: Calculate Gas Correction Factor from given values

This information is required to size for conditions other than air at STP:

- Operating Temperature: \_\_\_\_\_ °F
- Operating Back Pressure: \_\_\_\_\_ PSIG
- Specific Gravity of Gas: \_\_\_\_\_ @STP

Temperature Conversions		Gas Density Conversions	
From	To °Fahrenheit	From	To Specific Gravity
°Centigrade	(°C X 1.8) + 32	LBS/FT³	Divide by 0.075
°Kelvin	(°K – 273.15) 1.8 + 32	KG/M³	Divide by 1.2
°Rankine	°R – 459.67	MolWt	Divide by 29.0
		g/cm³	Divide by 0.0012

Pressure Conversions			
From	To PSIG	From	To PSIG
foot Water	Divide by 2.308	Pa	(Pa÷101,300) X 14.7
Inch Water	Divide by 27.73	PSIA	Minus 14.7
mm Water	Divide by 704	ATM	(ATM X 14.7) – 14.7
inch Hg	Divide by 2.036	Torr	((Torr÷760) X14.7) – 14.7
mm Hg	Divide by 51.7	Bars	((Bars÷1.013) X14.7) – 14.7
kg/cm²	Multiply by 14.228	Millibar	((Millibars÷1013) X 14.7) –14.7
kPa	(kPa÷101.3) X 14.7		

Gas Correction Factor (GCF) formula:

GCF = 
$$\sqrt{\frac{[(\text{Gas Specific Gravity}) \times (\text{Operating Temperature} + 460)]}{[(36) \times (\text{Operating Backpressure} + 14.7)]}}$$

GCF = \_\_\_\_\_

Step 3: Determine the Air Equivalent Flow Rate.

Air Equivalent Flow Rate = Customer Gas Flow Rate x Gas Correction Factor  
Air Equivalent Flow Rate = \_\_\_\_\_

Step 4: Calculate the maximum or minimum flow rate for the customer's conditions (Customer Gas Flow Rate Scale)

Customer Gas Flow Rate Scale = Catalog Flow Rate ÷ Gas Correction Factor  
Customer Gas Flow Rate Scale = \_\_\_\_\_

**ATTACHMENT 2**  
**PHOTO LOG**



**Photo 1: Walstad SVE pretest setup showing rotameter and flow control**



**Photo 2: Walstad SVE pretest showing rotameter flow measurement device**





Photo 3: Walstad SVE pretest production well setup



Photo 4: 100-inch H<sub>2</sub>O Magnahelic gauge for production well vacuum measurement





**Photo 5: Walstad observation well setup with 1-inch Magnahelic gauge**



**Photo 6: Walstad observation well setup with 2-inch Magnahelic gauge**

**ATTACHMENT 3**  
**SITE ACCESS AGREEMENTS:**  
**PIERSON OIL COMPANY AND**  
**MCDONALD'S CORPORATION**



**THIS DOCUMENT MAY NOT BE RECORDED**

City, State: Lovington, NM  
Address: 410 S. Main  
L/C: 030-0087  
RE File # 14922

**LICENSE TO INSTALL MONITORING WELLS**

This License to Install Monitoring Wells ("License") is dated MARCH 10, <sup>2015</sup>~~2014~~, between **McDONALD'S CORPORATION**, a Delaware corporation of One McDonald's Plaza, Oak Brook, IL 60523 ("**McDonald's**"), Golder Associates, Inc., a New Mexico corporation, of 5200 Pasadena N.E., Suite C, Albuquerque, NM 87113 ("**Consultant**"), and Mr. Robert Murrell, Designated Representative of Walstad Oil Company, ("**Licensee**").

**RECITALS**

A. McDonald's leases the real property located at 410 S. Main, Lovington, NM legally described on Exhibit A (the "**Property**") from Pearson Oil Company, which has already granted to Consultant and a Right of Entry dated June 2, 2014, which is attached hereto as Exhibit D;

B. McDonald's leases the Property to Kenneth Fadke ("**Operator**"), who operates a McDonald's restaurant on the Property;

C. Licensee and Consultant desire to enter onto the Property to install up to three groundwater monitoring wells and to perform environmental investigations in connection with Licensee's investigation of the Property; and

D. McDonald's is willing to grant Licensee and Consultant a license for these purposes pursuant to the terms below.

**AGREEMENT**

Now, therefore, in consideration of the terms below and other good and valuable consideration, the receipt and sufficiency of which are acknowledged by the parties, the parties agree as follows:

1. License Grant. Subject to the terms of this License, McDonald's grants to Licensee and Consultant (collectively referred to as "**Licensee Parties**"), a revocable, non-exclusive license to enter upon a portion of the Property as necessary for the purposes of: install up to three groundwater monitoring wells and vacuum extraction wells in the locations shown on the attached Figure 1 ("**Wells**"); conduct a utility mark out in the vicinity of the proposed well locations; conduct a pilot vacuum extraction test; periodically gauge, monitor, survey or sample the Wells; after completion of the work as determined by governmental authorities, plug and abandon the Wells in compliance with all applicable laws; dispose of all samples off-site in accordance with applicable law; and after the completion of the work as determined by governmental authorities, remove any equipment brought onto the Property in connection with

the work, and restore any portion of the Property damaged by the work to as close to its condition existing at the time the work began as is reasonably possible; and access to and from the Property as necessary for purposes of conducting the foregoing activities (collectively the "**Authorized Activities**"), as further described in the Work Plan attached as Exhibit B. Figure 1 and Exhibit B are incorporated into and made a part of this License. The Authorized Activities include only pilot testing for the vacuum extraction contemplated for future remediation of the Property, and specifically does not include any future vacuum extraction activities, which will require a separate agreement.

2. Licensee Parties' Work Under This License. Licensee Parties, at their sole expense, jointly and severally agree as follows:

a) Licensee Parties will perform the Authorized Activities on the Property in a good and workmanlike manner. Licensee Parties will exercise their rights and perform the Authorized Activities under this License in compliance with all applicable laws, rules, regulations, ordinances, and guidance documents of any governmental agency with authority over the Authorized Activities, including the applicable environmental agency ("**Environmental Agency**").

b) Licensee Parties will give written notice to McDonald's and verbal notice to the Regional McDonald's Property Manager for the Property Samantha Metzger Jupe (2140 460 9823 at least 10 days prior to each entry onto the Property for the purpose of conducting the Authorized Activities, which notice will specify the work to be performed, the date(s) when the work will be initiated, and an estimated date of completion. McDonald's will have the right, at its expense, to split samples during any sampling event by Licensee Parties.

c) Immediately upon completion of any Authorized Activities on the Property, Licensee Parties will restore the surface of the areas that were disturbed to the same condition as existed before the work commenced and to a safe condition, and will remove all of their equipment, tools, debris, and investigation-derived waste. Licensee Parties, in the name of Licensee or Consultant, will execute all manifests and other documentation associated with removal of waste residuals generated and removed from the Property and will select the disposal facility for such wastes.

d) Licensee Parties will contact the appropriate authorities in accordance with relevant law prior to commencing any subsurface activity as part of the Authorized Activities under this License. McDonald's makes no representation or warranty regarding the presence or absence of utilities in any given location on the Property, notwithstanding Licensee Parties' selection and identification of the locations for the Wells on Figure 1.

e) The Wells will be installed, maintained, and repaired in a workmanlike condition and in a manner that is reasonably secure from vandalism and any unauthorized use, including, without limitation, the installation of secure locking caps.

f) In connection with installation of the Wells, Licensee Parties will employ such boring and plugging techniques as necessary to protect aquifers from any contamination

and to prevent movement of any contamination from one stratum to another. The Wells will be flush-mounted and installed in conformance with the specifications contained on Figure 2.

g) Licensee Parties will not move, remove or demolish any of McDonald's signs, access drives, curbing or other improvements on the Property. If McDonald's future operational or construction needs require the relocation of one or more of the Wells, Licensee Parties will properly abandon and/or relocate the Wells at a time specified by McDonald's at no expense to McDonald's.

h) Licensee Parties will separate, by use of cones or other construction safety barriers, the areas surrounding the location where Licensee Parties perform any Authorized Activities. Licensee Parties will not park on or store any construction vehicles, equipment or materials on the Property when activity related to the Authorized Activities is not actively in progress.

i) Licensee Parties will not unduly disrupt the operation of the McDonald's restaurant on the Property. While the restaurant is open for business, Licensee Parties will not (1) block more than five parking stalls at any one time; (2) block in any manner more than the drive aisles shown on the drawings attached on Figure 1, which permit closure only of the two curb-cuts in the southeast corner of the Property at any time; or (3) perform any work in or obstruct any drive-thru lane. Licensee Parties will complete all Authorized Activities on three different Sundays, and the location of the areas permitted to be blocked off on each day of work are shown on Figure 1. If possible, Consultant will install the Wells with a hand auger. If that is not possible, then the drilling equipment will be positioned in the locations identified on Figure 1 and will be removed from the Property upon completion of the installation of the Wells and within the time period specified above. Licensee Parties will perform all aspects of the Authorized Activities other than installation of the Wells (such as sample collection) on any days and at any time other than during the following time periods: 7:00 am through 10:00 am; 11:30 am through 1:30 pm; and 5:00 pm through 7:00 pm.

j) Licensee Parties will perform all of the Authorized Activities under this License and any other activity related to this License at their own expense and will not allow any mechanics' or other lien to be placed on the Property with respect to the Authorized Activities. Should any such lien arise due to the acts or omissions of Licensee Parties or subcontractors working on behalf of Licensee Parties, Licensee Parties will, no later than 30 days from the claim of such lien, fully discharge the lien at their expense. McDonald's is not required to perform any activity or incur any expense for any purpose under this License, except as otherwise expressly stated in this License.

3. Sampling. Licensee Parties will permit the samples collected as part of the Authorized Activities to be analyzed only for the Volatile Organic Compounds by EPA Method 8260B, as listed on Exhibit C, and no other analytes without the written consent of McDonald's provided in advance of collecting the sample(s). Licensee Parties will provide McDonald's with a copy of all sampling results from samples taken from the Property promptly upon Licensee Parties' receipt of the sampling data. Simultaneously with submittal to the Environmental Agency, Licensee Parties will also provide McDonald's with copies of all correspondence, reports, and submittals

made to the Environmental Agency which include any sample results from the Property or any other data or information generated as part of any of the Authorized Activities. Upon request by McDonald's, Licensee Parties will also provide to McDonald's copies of field notes, boring logs, and other information generated or gathered in the course of executing any of the Authorized Activities.

4. Term. The term of this License will be for three days of work (each, a "Site Visit") over the course of the term of the License, which will commence on the date of this License and terminate on the date that is the earlier of (a) the day after the third Site Visit on which Consultant conducts the Authorized Activities, and (b) December 31, 2014. Licensee Parties will properly abandon the Wells in accordance with all applicable laws, rules and protocol established by the Environmental Agency upon the expiration or earlier termination of this License, unless otherwise agreed in writing by the parties.

5. Indemnity. Licensee Parties, jointly and severally, will indemnify, defend, release and hold harmless McDonald's, Operator, and their subsidiaries and affiliates, from and against any and all claims, losses, causes of action, judgments, settlements, fines, penalties, damages including economic, direct, indirect and consequential damages, injury to persons and damages to property, costs and expenses, including reasonable attorneys' fees and costs (collectively "**Claims**") arising out of, in connection with, resulting from, or incidental to, directly or indirectly: (a) the performance of the Authorized Activities; (b) any acts, errors or omissions by the Consultant and/or its employees, agents, representatives, sub-consultants, or any other person acting directly or indirectly through or under the Consultant, or for subrogation actions initiated by the Consultant or the Consultant's workers' compensation insurance carrier, or for any other matter based on the Consultant's workers' compensation insurance; (c) any actual or alleged violation of any applicable federal, state or local laws, regulations, ordinances, administrative orders or rules; and/or (d) any actual or alleged breach by the Consultant or Licensee of any of their respective representations, warranties and/or obligations in this License. Licensee Parties' obligations under this License will not be negated or reduced by virtue of an insurance carrier's denial of coverage for the occurrence or event which is the subject matter of the claim or refusal to defend. This indemnification will survive the expiration or earlier termination of this License and will apply whether or not arising out of any claim by a third party.

6. Insurance.

a) The Consultant will procure and maintain in effect during the term of this License the insurance coverages described below, which insurance will be placed with insurance companies authorized to do business in the state in which the Property is located, rated A – VIII or better by the current edition of Best's Key Rating Guide and approved in advance in writing by McDonald's.

(1) Professional Liability Errors and Omissions Insurance, which will include contractual liability coverage on a per claim and aggregate limits of not less than \$1,000,000.00 covering the Consultant and the Consultant's employees and anyone, including consultants (who may provide such coverage under their own policy) for whom the Consultant is liable or contracts with to perform any of the Authorized Activities. Consultant will maintain this coverage in effect during the term of the License and for 3 years after the expiration or earlier termination of this License.



Consultant will give prompt written notice to McDonald's of any and all claims made against this policy during the period in which this policy is required to be maintained pursuant to this License.

(2) Commercial General Liability Insurance, which will have coverage and terms comparable to an ISO CG-0001 form including personal injury, products and completed operations liability, with Bodily Injury and Property Damage limits of \$5,000,000.00 per occurrence, and Advertising and Personal Injury limits of \$5,000,000.00 per person or organization. This insurance will include coverage of the tort liability assumed by the Consultant in this License. The completed operations liability coverage will be maintained for 4 years after expiration or earlier termination of this License.

(3) Workers' Compensation Insurance, which will have statutory benefits and limits compliant with applicable state law, and Employer's Liability Insurance with limits of \$1,000,000.00 per accident covering the Consultant and the Consultant's employees.

(4) Business Automobile Liability Insurance, including owned, non-owned, and hired vehicles, which will have coverage of not less than \$1,000,000.00 for bodily injury and property damage for each accident.

(5) Any insurance coverage required by law and/or governmental agency with respect to the performance of Authorized Activities.

b) As to the policies identified in Sections 7(a)(2), 7(a)(4) and 7(a)(5) above, McDonald's and the Operator, will be named as additional insureds. These policies will be primary insurance for all additional insureds. All policies, with the exceptions of Professional Liability Errors and Omissions Insurance will be endorsed to provide a waiver of rights of subrogation in favor of the additional insureds. The Consultant will be required to furnish evidence to McDonald's of insurance in form of certificates of insurance before commencing the Authorized Activities.

c) The Consultant will not make changes in nor allow the required insurance coverages to lapse without McDonald's prior written approval.

d) Consultant will give McDonald's 30 days prior notice of any cancellation of that policy or material change in coverage.

7. Waiver of Claims. Consultant acknowledges that it enters onto the Property and performs the Authorized Activities at its own risk. Licensee, and Consultant, for themselves and their officers, directors, shareholders, members, affiliates, agents, employees and subcontractors, waive any and all Claims arising out of, in connection with, resulting from, or incidental to, directly or indirectly, the conditions of the Property and any improvements on the Property.

8. Default. Any failure of Licensee, Consultant or Licensee Parties to perform any of their respective obligations set forth in this License will constitute a default. In the event of a default,

McDonald's may submit written notice of the default to the defaulting party and, if the default continues for 10 business days after receipt of notice from McDonald's, then McDonald's may terminate the Licensee Parties' right of access to the Property, cure the default and pursue any remedies available under applicable laws. If McDonald's cures the default, then Licensee Parties will reimburse McDonald's for the costs incurred within 30 days after receipt of McDonald's written demand for reimbursement. If Licensee Parties fail to pay any such sum when due, Licensee Parties will pay interest on the amount due at a rate which is the greater of: (1) 15% per year; or (2) the maximum rate allowed by law, from the date due to the date of payment in full. A default by Licensee or Consultant individually of any obligation imposed under this License will be deemed a default by Licensee Parties.

9. Survival of Obligations. Licensee Parties' obligations under this License that do not expressly survive the expiration of the term of this License will not cease until Licensee Parties have (a) removed all of their equipment from the Property in accordance with all applicable laws, regulations and orders of the Environmental Agency, (b) closed and sealed the Wells in such a manner so that they do not present a hazard or nuisance on the Property in the sole opinion of McDonald's, and (c) restored the Property to a state and appearance similar to the balance of the Property.

10. Notices. All notices under this License will be in writing and delivered by U.S. certified mail or overnight courier with proof of receipt, to the Designated Representative of the Licensee at 2317 Tuttington Circle, Oklahoma City, OK 7317, and to Consultant at 5200 Pasadena N.E., Suite C, Albuquerque, NM 87113 and to McDonald's at One McDonald's Plaza, Oak Brook, Illinois 60523, Attn: Director, U.S. Legal Dept. #091, L/C: 030-0087. Any party may lodge a change of address by sending notice of such change under this Section. Each notice will be deemed to have been given at the time it is deposited in the United States Mail, or upon receipt if sent by overnight courier.

12. No Liability. The granting of this License by McDonald's is not an admission of liability on the part of either McDonald's or any of its affiliates, successors or assigns, for any contamination discovered on or from the Property.

13. Assignability. This License may not be transferred or assigned by Licensee without the prior written consent of McDonald's.

14. Governing Law. This License and every term and provision in this License will be construed in accordance with the laws of the State in which the Property is located without giving effect to the principles of conflicts of laws.

15. Miscellaneous. This License is binding upon and inures to the benefit of the successors and assigns of each of the parties. This License contains a complete expression of the agreement between the parties, and there are no other promises, representations or inducements between them concerning the subject matter in this License. Each provision in this License is severable. If any provision of this License is held to be invalid, illegal or unenforceable in any respect, that provision will not affect any other provision or the validity of the remainder of this License. This License may only be modified by the written agreement of the parties to this License.

[SIGNATURE PAGE TO FOLLOW]

In witness whereof, the parties have executed this License on the first date written above.

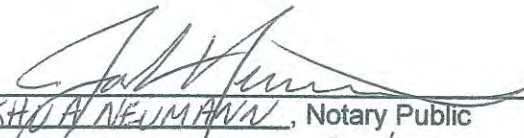
**LICENSEE:**

By: 

Its: Designated Representative of Walstad Oil Company

STATE OF OKLAHOMA )  
COUNTY OF CLEVELAND ) SS.

Acknowledged before me in OKLAHOMA County, OKLAHOMA, on FEB 11, 20 15, by Bob McNeill the D.R. of WALSTAD OIL, a N.M. CORP. on behalf of the CORP.

  
JOSHUA NEUMANN, Notary Public  
My commission expires 06/11/2018



**CONSULTANT:**

By: Robert Newcomer  
Its: Associate

STATE OF New Mexico )  
COUNTY OF Bernalillo ) SS.

Acknowledged before me in Bernalillo County, TM, on August 11,  
20 14, by Robert Newcomer Associate of Golden State Georgia Corporation on behalf  
of the \_\_\_\_\_.

Marie Sanchez, Notary Public

My commission expires 3/1/2018



**McDONALD'S:**

**McDONALD'S CORPORATION**, a Delaware corporation

By: [Signature]  
Its: CORPORATE ASSISTANT SECRETARY

CM

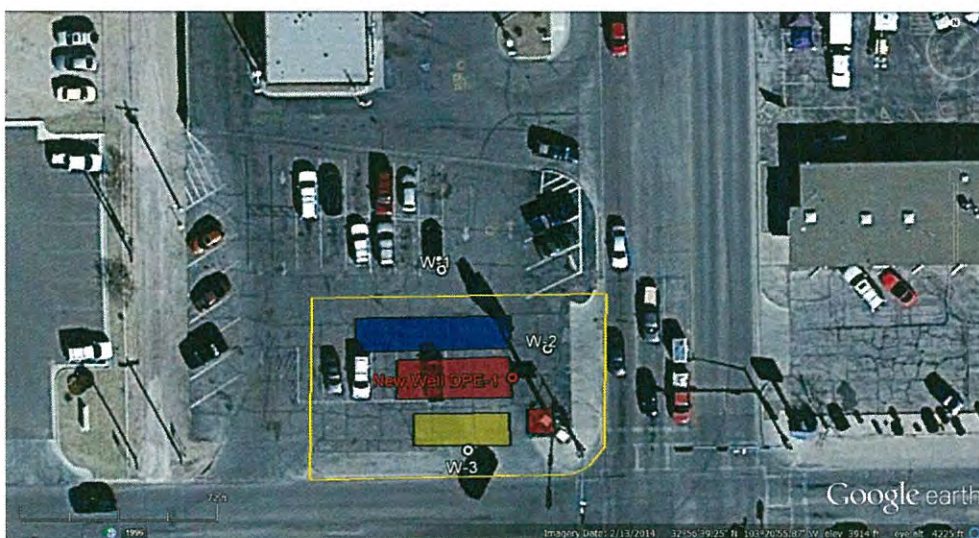
**FIGURE 1**

***[Depict location of wells, as applicable]***





Site work period 1.--working footprints for pre-pilot tests on existing wells.



Site work period 2.--working footprints for pilot test well installation.



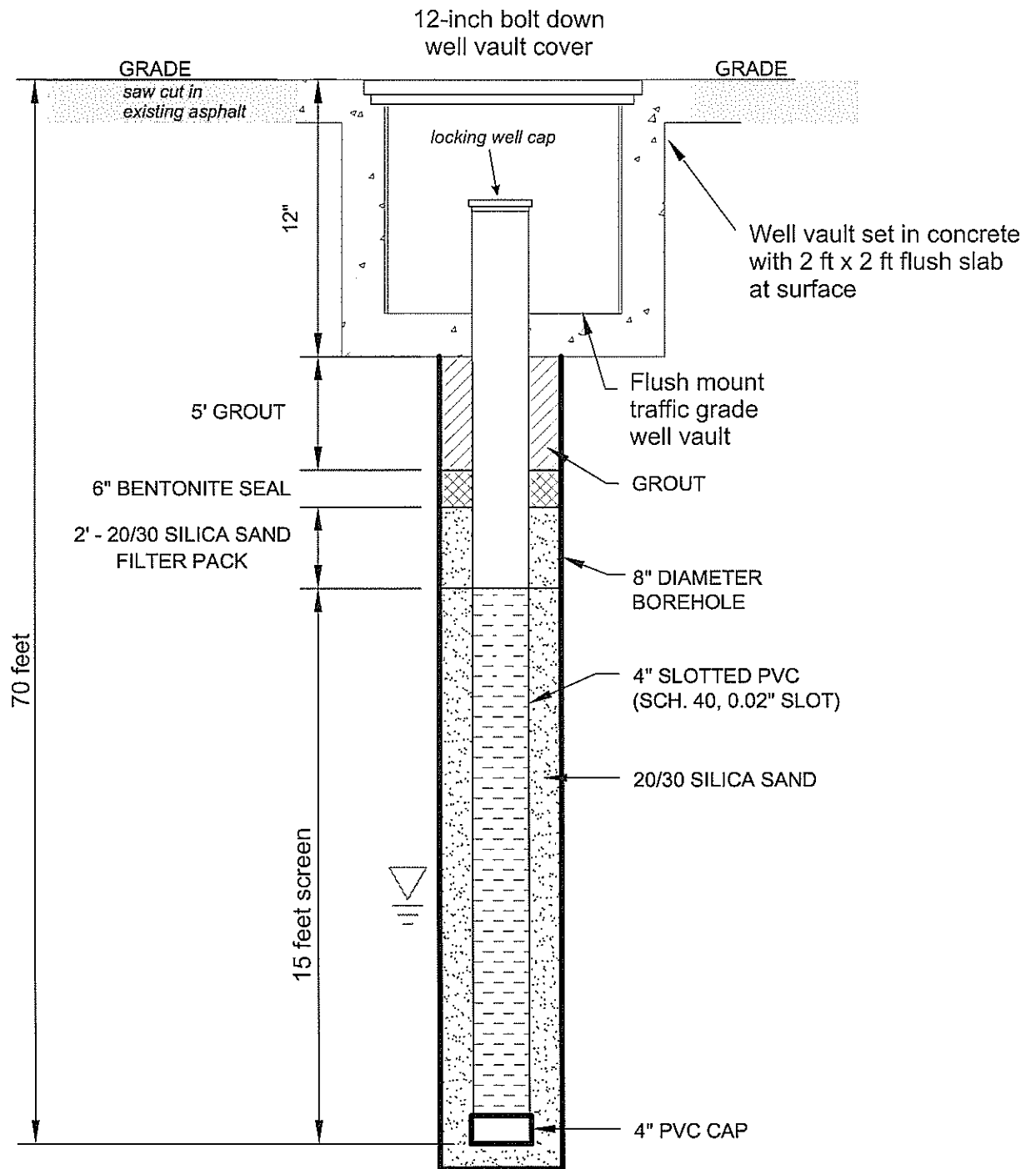
Site work period 3.--working footprint for multiphase extraction pilot test.

Figure 1.--Attachment to McDonald's Lovington NM Site Access Agreement.

**FIGURE 2**

***[Well installation specifications, as applicable]***

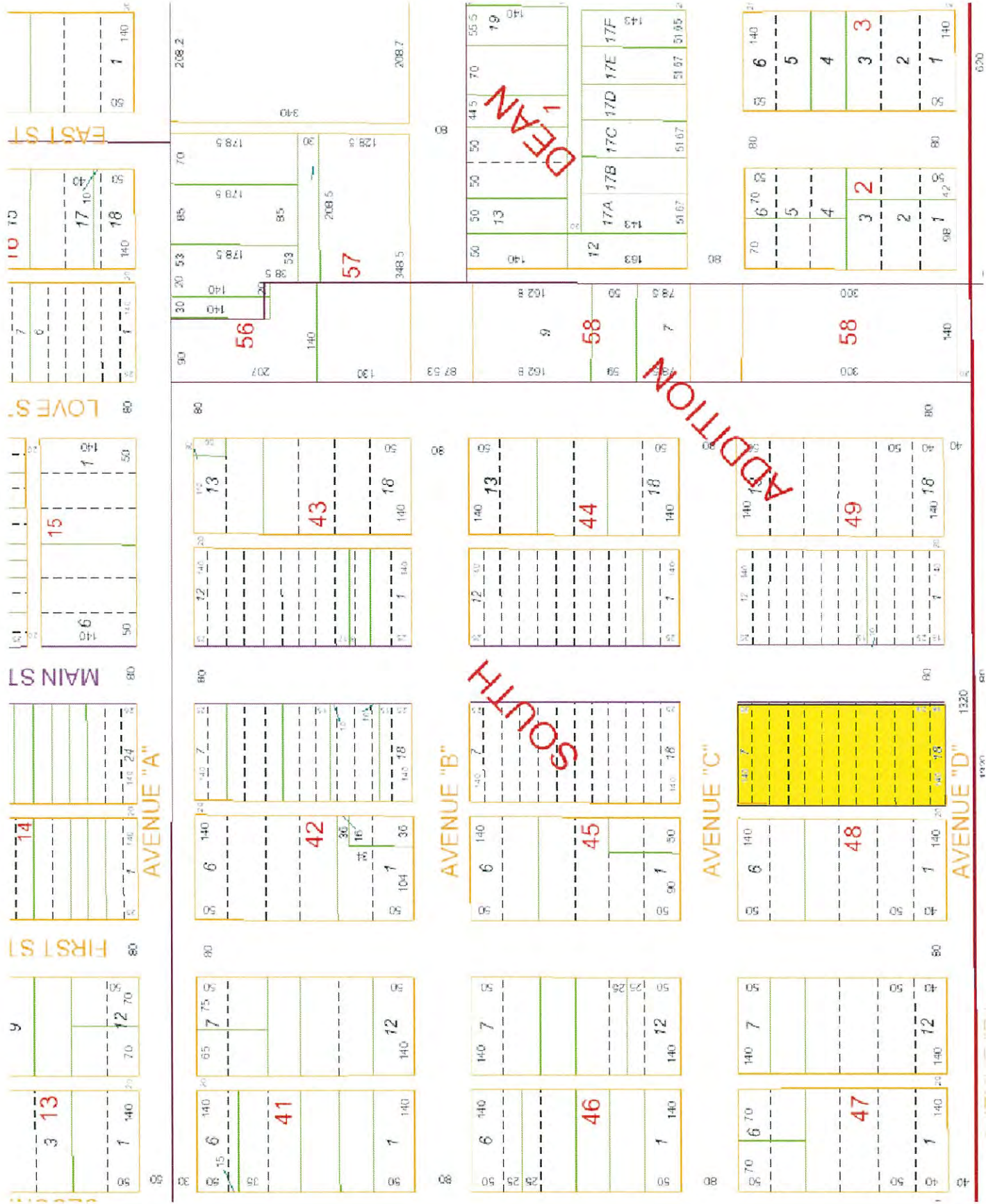
Figure 2.--Well installation specifications



**EXHIBIT A**

**PROPERTY LEGAL DESCRIPTION**





Property described as: Lots 7-18 of Tract 48, South Addition, Lovington New Mexico

**EXHIBIT B**

**PROJECT WORKPLAN**





SUSANA MARTINEZ  
Governor

JOHN A. SANCHEZ  
Lieutenant Governor

NEW MEXICO  
ENVIRONMENT DEPARTMENT

*Petroleum Storage Tank Bureau*

2905 Rodeo Park Drive East  
Building 1  
Santa Fe, New Mexico 87505  
Telephone (505) 476-4397 Fax (505) 476-4374  
[www.nmenv.state.nm.us](http://www.nmenv.state.nm.us)



RYAN FLYNN  
Cabinet Secretary

BUTCH TONGATE  
Deputy Secretary

ERIKA SCHWENDER  
Division Director

May 14, 2014

Jack Walstad Oil Company, Inc.  
Attn: Robert C. Murrell  
2317 Tuttington Circle  
Oklahoma City, OK 73170

Re: Approval of Phase 2 Fixed-Price Workplan for Lovington 66, 424 South Main,  
Lovington, New Mexico

Facility #: 1489

Release ID #: 1182

WPID #: 17138

Dear Mr. Murrell:

The New Mexico Environment Department (Department) approves the fixed-price workplan dated May 7, 2014 which was submitted on your behalf by Golder Associates. This workplan is for Phase 2 corrective action work consisting of a Dual Phase Extraction Pilot Test and associated report at the Lovington 66 site. Work shall be performed in accordance with the workplan and current Contractor Fee Schedule.

The total budget approved for this workplan shall not exceed \$70,798.69, including New Mexico Gross Receipts Tax. Please refer to the following table for a breakdown of the expected deliverables and dates of completion. The dates listed in the table are the current deadlines in the applicable portion of the corrective action timeline for the subject site. These deliverables document completion of individual performance criteria.

<u>Deliverable Name</u>	<u>\$ Approved</u>	<u>Estimated Date of Deliverable</u>	<u>Deliverable ID</u>
Site Access Agreement & Existing Monitor Well Pre-Testing and Letter Report	\$ 5,677.42	07/07/2014	17138-1
Installation & Oversight of DPE Pilot Test Well and Letter Report	\$20,812.57	07/21/2014	17138-2

<u>Deliverable Name</u>	<u>\$ Approved</u>	<u>Estimated Date of Deliverable</u>	<u>Deliverable ID</u>
Completion & Oversight of DPE Pilot Test and Letter Report	\$26,069.48	08/25/2014	17138-3
Completion of Combined DPE Pilot Test Well As-Built and Pilot Test Well Report	\$ 4,009.29	09/29/2014	17138-4
*Contingency Fund	\$14,229.93	10/27/2014	17138-5

*\*NOTE: Golder Associates shall notify the Department in writing or by electronic mail and receive Department approval prior to expenditure of any contingency set-aside funds. The approved budgets for these deliverables are not-to-exceed amounts for the period covered by the subject workplan.*

Please be reminded that Section 74-6B-7.F (NMSA 1978) of the Ground Water Protection Act does not allow the Department to authorize payments in excess of the funds available. This means that approval of the workplan does not guarantee reimbursement from the Corrective Action Fund (Fund). Furthermore, the Department must receive all claims for reimbursement within 90 days of the date of notice of deliverable approval.

To facilitate reimbursement, if a deliverable represents a reduced scope of work that requires a reduction in the amount to be claimed, the notification of the modified costs must be submitted to the Department with the deliverable.

The Department has reviewed the current statement of qualifications of Golder Associate's authorized representative, and the individual with direct, responsible supervisory control of this workplan. In accordance with 20.5.16.9 NMAC, the Department has determined that Golder Associate is currently a qualified firm to perform the scope of work as described in the approved workplan.

Substantial compliance is required for reimbursement and will be determined on a site-by-site basis prior to disbursement from the Fund. In accordance with 20.5.17.11 NMAC, the owner or operator shall request a compliance determination before submitting the initial request for payment of the costs of corrective action, other than the costs of an MSA. Please submit a request for compliance determination, if you have not already done so, to the Petroleum Storage Tank Bureau, 2905 Rodeo Park Drive East, Building 1, Santa Fe, New Mexico 87505. It is in your best interest to submit your request as soon as possible to ensure that any work that you undertake is reimbursable.

You may begin work immediately. Approval of this workplan is contingent upon all work being performed on this site in accordance with all local, state and federal regulations, including 29 CFR 1910 governing occupation health and safety.

Robert C. Murrell

May 14, 2014

Page 3

The Department expects Golder Associate to complete the work as outlined within the approved budget. All change orders must be approved in writing prior to the work being performed.

If you have any questions, please contact the project manager, Celestine Ngam at (505) 476-4398. Thank you for your continued voluntary cooperation.

Sincerely,



Dana Bahar  
Bureau Chief

DB: CN:tp

cc: Clay Kilmer, Golder Associates  
Lorena Goerger, Manager, Remedial Action Program  
Jim Gibb, Geoscientist Supervisor  
Celestine Ngam, Project Manager

cc w encl: PSTB Master File Santa Fe

May 7, 2014

130-2645

Mr. Celestine Ngam  
New Mexico Environment Department  
Petroleum Storage Tank Bureau  
2905 Rodeo Park Drive East, Building 1  
Santa Fe, NM 87505

**RE: WORK PLAN FOR DUAL PHASE EXTRACTION PILOT TEST, LOVINGTON 66  
(LUST ID 1182), LOVINGTON, NEW MEXICO**

Dear Mr. Ngam:

On behalf of Walstad Oil Company, Golder Associates Inc. (Golder) is submitting this work plan to complete a dual phase extraction (DPE) pilot test at the former Lovington 66 site in Lovington, New Mexico. This work plan has been prepared in accordance with the applicable requirements of New Mexico Administrative Code Title 20, Chapter 5, Section 12 titled "Corrective Action for UST Systems Containing Petroleum Products," and the Petroleum Storage Tank Bureau's (PSTB) "Guidelines for Corrective Action" (GCA) (NMED 2000).

## SCOPE OF WORK

The scope of work presented below is designed to perform pilot test well installation, testing and reporting which will produce information on the hydraulic properties of the saturated and unsaturated subsurface, as well as likely rates of volatile vapor, water and separate phase fuel (NAPL) recovery. The proposed testing is intended to produce information adequate to allow a selection of the most appropriate remedial approach for removing adsorbed, dissolved and separate phase fuel from the subsurface at the site and to formulate a specific design that includes optimal well spacing and depth, as well as proper remediation equipment selection and sizing. A site map showing the locations of the existing wells and proposed pilot test wells is attached as **Figure 1**.

Golder proposes to install a single 4-inch pilot test well (DPE-1) and to monitor fluid and vacuum responses in existing groundwater monitoring wells W-1, W-2 and W-3 during testing; however there is some uncertainty that the existing wells can be successfully used for the pilot testing. The existing wells are completed with 4-inch PVC casing and screened between 50 feet and 70 feet below grade. The January 2014 gauging data indicates that the depth to product in these wells was approximately 56-57 feet below the tops of the well casings; therefore existing wells have screens above fluid levels of no greater than 7 feet. If a significant capillary fringe is present, the existing wells may have very limited hydraulic communication with the vadose zone. Additionally, due to the age of the wells and the presence of fuel contaminants, the well screens above the fluid level may be occluded by heavy bio-fouling and/or NAPL. Therefore, Golder proposes to perform brief vacuum flow and response tests on existing wells W-1, W-2 and W-3 prior to mobilizing a drill rig to install the proposed pilot test well. If the existing wells are determined to be unsatisfactory for use as pilot test observation wells, Golder would propose to include installation of two 2-inch observation wells to the drilling and well installation scope. We have included contingency costs to allow installation of two additional pilot testing wells if necessary.





The following general tasks will be completed:

- Site access for drilling and testing will be obtained from the property owner and lessees
- Preliminary SVE pilot tests will be performed on wells W-1, W-2 and W-3 to ensure that these wells are in hydraulic communication with the saturated and vadose zones at the site
- A single 4-inch pilot test well (DPE-1) will be drilled and completed near the center of the NAPL plume that has been identified at the site (in the area of W-1, W-2 and W-3)
- **CONTINGENCY** – Two 2-inch pilot test observation wells will be completed at optimum distances from the 4-inch pilot test well if existing wells are unsuitable for observation during the pilot test
- Dual Phase Extraction pilot testing and reporting will be performed in three phases as follows:
  - Submersible pump installation and water/NAPL pumping test of DPE-1 to determine pumping rate/response relationship and rate of NAPL production in the DPE pilot test well and water level and NAPL thickness responses in nearby groundwater monitoring wells
  - DPE test of DPE-1 with simultaneous soil vapor extraction through several steps of progressively higher vacuum and flow rates and pumping of water and NAPL sufficient to maintain water level depression and dewatering of well screen; monitoring of vacuum, water level and NAPL thickness responses in nearby groundwater monitoring wells.
  - Preparation of combined report including as-built information on well DPE-1, as well as interpreted results of the DPE pilot tests. Report conclusions would include saturated hydraulic conductivity, radius of influence, production rates of water/NAPL and engineering properties and concentrations of fuel contaminants in soil and groundwater at the test well. Basic data from report will be adequate to complete evaluation of remedial approaches and remediation system design for the site.

The following tasks have been developed to complete the scope of work:

### ***Task 1 – Work Plan and Health and Safety Plan Preparation and Site Access***

This task includes the preparation of the detailed work plan, health and safety plan (HASP) and acquisition of an access agreement with the property owners for the proposed testing. The property is the site of a McDonalds restaurant and is owned by Pierson Oil Company in Hobbs, NM. The property is under lease with McDonalds Corporation, Long Beach, California and is operated by Mr. Ken Fadke, Lovington, NM. It is anticipated that McDonalds Corporation will issue the formal authorization to enter and work on the site and that Golder will need to provide detailed information on equipment, schedule, operational footprint and site control needs to obtain authorization to work on the site. It is also anticipated that Golder risk managers will be required to negotiate with McDonalds Corporation risk managers to prepare an access agreement with Terms and Conditions that are acceptable to McDonalds, Golder, and NMED-PSTB.

Prior to conducting any field work, Golder will complete a site-specific HASP in accordance with the requirements of Title 29, Code of Federal Regulations, and Part 1910.120.

### ***Task 2 – SVE Functionality Testing of Existing GW Monitoring Wells***

This task includes testing of existing groundwater monitoring wells W-1, W-2 and W-3 to determine the feasibility of using these wells for observation wells during pilot testing at the site. Proposed testing includes using a portable 3.0 horsepower Roots positive displacement vacuum blower (URAI-24) capable of producing 70 cubic feet per minute (CFM) under impedance of 100 inches of water to test the wells. The goal of the functionality testing will be to determine the level of impedance to vacuum flow of each



well, initially at low flow with minimal fluid rise in the well (and occlusion of well screens), then at higher flows and vacuums, as possible. The vacuum blower will be connected to each well (W-1, W-2 and W-3) and vacuum will be applied initially at low rate and flow (<5 CFM), then at three successively higher vacuum/flow rates. Vacuum and flow will be monitored during each step rate such that the ability of each well to communicate with the vadose zone will be established. During testing of each well, the other two wells will be monitored for vacuum and responses will be recorded. Results of the functionality tests will be provided to Golder's Pilot Testing Subcontractor, AcuVac, Houston, Texas for evaluation. If AcuVac representatives conclude that existing wells W-1, W-2 and W-3 can be used to provide observation well response data during pilot testing, a single pilot test well will be installed. If it is determined that the existing groundwater monitoring wells are unacceptable, Golder will recommend that two observation wells be installed in addition to a production pilot test well and will request that NMED-PSTB authorize expenditure of contingency funds to complete the additional observation wells.

### ***Task 3 – Installation of Pilot Test Well(s)***

Golder proposes to install a pilot test well (DPE-1) at the location shown on the site map in **Figure 1**. Proposed well DPE-1 would be positioned approximately 15 feet from well W-2, 30 feet from well W-3 and 45 feet from Well W-1 with the intent of observing water level, NAPL thickness and vacuum responses in these wells during pilot well testing at the site.

Wells W-1, W-2 and W-3 penetrate approximately 70 feet of caliche, semiconsolidated sandstone and unconsolidated sand and silty sand; depth to fluid (NAPL) on the site was approximately 56 feet during the most recent groundwater monitoring event conducted January 21, 2014. Wells W-1, W-2 and W-3 are completed with 4-inch PVC casing with screened intervals set from 50 to 70 feet using 0.010 slot well screens. If proposed functionality testing for existing wells W-1, W-2 and W-3 indicates that these wells are unsuitable for use as observation wells during pilot testing, Golder will notify NMED-PSTB and provide a proposal for expenditure of contingency budget to install two additional wells at the site.

### ***Well Permitting and Underground Utility Location***

Golder will provide the drilling contractor with adequate information and documentation to allow the driller to acquire a permit to drill the well from the Office of the New Mexico State Engineer's Roswell office. Prior to drilling, the site will be cleared for drilling to eliminate the possibility of damaging underground utilities. The New Mexico 811 agency, as well as the City of Lovington Public Works Department will be notified not more than one week prior to drilling; a Golder representative will visit the site to mark the exact location of the proposed well in white marking paint, as required by New Mexico 811 protocol. All entities operating underground utilities in the area will be notified and will visit the site to inspect the proposed drill location, evaluate risk to underground infrastructure and notify Golder if there is a conflict. In this event, Golder will notify NMED-PSTB and AcuVac to confer on alternate well location(s).

### ***Well Drilling, Completion and Site Restoration***

We propose to utilize Harrison-Cooper Drilling, Lubbock Texas to drill proposed pilot test well DPE-1, as well as to install two additional pilot testing observation wells, if warranted. We propose to drill the wells using air-rotary drilling techniques.

### ***Proposed Dual Phase Extraction Well DPE-1***

Golder proposes to drill well DPE-1 using air rotary methods to advance a 7-7/8-inch hole to a depth of 75 feet and to complete the well using 4-inch schedule 40 PCV flush joint casing with 30 feet of 0.020-slot screen in the interval 40 to 70 feet below grade. A 5-foot section of blank casing would be installed below the screen in the interval between 70 feet and 75 feet. The annular space in the lower hole would be filled with 8/16 grade silica sand to a level of three feet above the well screen, or to approximately 37 feet below grade. A 3/8-inch granular bentonite plug would be installed between 37 and 35 feet below grade and hydrated. The remaining annulus would be grouted using a neat cement mixture to a depth of approximately one foot below grade. The well casing would be cut off approximately six inches below grade and a slip PVC cap would be installed on the well. The remaining hole would be filled with



aggregate and an asphalt cold patch would be installed to protect the well during the interval between drilling and pilot testing and allow the well to be easily accessed for pilot testing.

#### ***Contingency Pilot Test Observation Wells 1 and 2***

Golder proposes to drill pilot test observation wells using air rotary methods to advance a 5-inch hole to depths of 55 feet and to complete the wells using 2-inch schedule 40 PCV flush joint casing with 15 feet of 0.020-slot screen in the interval 40 to 55 feet below grade. The annular space in the lower half would be filled with 8/16 grade silica sand to a level of three feet above the well screens, or to approximately 37 feet below grade. Granular bentonite plugs (3/8-inch) would be installed in each well between 37 and 35 feet below grade and hydrated. The remaining well annuli would be grouted using a neat cement mixture to depths of approximately one foot below grade. The well casings would be cut off approximately six inches below grade and slip PVC caps would be installed on the wells. The remaining holes would be filled with aggregate and asphalt cold patches would be installed to protect the wells during the interval between drilling and pilot testing and allow the wells to be easily accessed for pilot testing.

#### ***Proposed Soil Analytical Testing***

Golder proposes to drill DPE-1 using air rotary drilling methods and to collect depth-referenced samples of circulated drill cuttings produced during the drilling process. Samples will be collected and screened for residual volatile organic compounds (VOCs) using the heated headspace method set forth in the NMED UST Soil/Water Sampling and Disposal Guidelines (1995). Soil samples would be collected from the apparent level of greatest contamination and transmitted to Hall Environmental Analysis Laboratory (HEAL) in Albuquerque for analysis of lead using EPA Method 6010; and for VOCs and total petroleum hydrocarbons using EPA Methods 8260B and 8015 GRO. Proposed samples and analytical work are summarized in **Table 1**. Heated headspace VOC field screening is proposed for samples collected from the pilot test observation wells.

#### ***Well Development and Investigation Derived Waste Management***

Upon completion of DPE-1, a pump will be installed in the well and pumped to develop the well and to remove entrained sand and silt from the well screen, gravel pack and formation. The well will be pumped at a rate of up to 20 gallons per minute for up to two and one-half hours or until produced water is free of turbidity. Gandy Corporation will be retained to place a 5,000 gallon vacuum truck at the site during well development to containerize the produced water and NAPL; upon completion of well development, Gandy Corporation will transport the produced water and NAPL to a permitted facility and will provide documentation of proper handling, transport and disposal of produced water and NAPL. Contingency pilot test observation wells would not penetrate groundwater; therefore no water disposal would be necessary for these wells.

Drill cuttings produced during completion of the wells will be containerized in 55-gallon drums and scheduled for pickup from location on the day the wells are completed, pending completion of analytical lab testing of soil cuttings as necessary. Gandy Marley Inc. would be retained to remove the drums and transport to a permitted petroleum contaminated soil disposal facility and provide documentation of proper collection, transport and disposal. It is anticipated that up to 10 drums of impacted soil may be produced and disposed during installation of well DPE-1. Cuttings from the contingency 2-inch observation wells would require containerization and disposal of up to five 55-gallon drums.

#### ***Task 4 – Pilot Testing***

Golder proposes to utilize AcuVac Remediation, LLC, Houston, Texas to perform dual phase extraction pilot testing at the site. AcuVac has recommended that a period of 30 days be allowed to elapse after drilling the test wells with air rotary before commencing pilot testing to allow the LNAPL to return to its pre-drilling levels. AcuVac understands that NMED-PSTB seeks to perform pilot testing which will yield information adequate to evaluate remedial action alternatives for the site, as well as to complete design of a remediation system for the site.



AcuVac's general approach is to test water-bearing properties of the saturated zone, as well as the radius of influence of the vadose zone and initial fuel vapor load that would be expected from a vapor extraction system operation using separate aquifer and dual phase extraction tests. AcuVac proposes to run an aquifer test by installing a submersible pump in well DPE-1 and pumping the well at a rate adequate to stress the well (produce measureable sustained drawdown in the pumped well, as well as in at least one observation well), observing fluid pumping rates of water and NAPL, and response of oil water contact and NAPL elevation in the observation well network. This test would yield an empirical measurement of the aquifer hydraulic conductance and storativity, as well as expected initial and sustained rate of NAPL recovery.

AcuVac would perform a dual phase extraction test by simultaneously using the submersible pump to control fluid levels down in the production well (DPE-1) and performing a variable rate vacuum extraction test to examine flow vs. impedance relationships throughout a reasonable range of flow rates that could potentially be employed during the site remediation for dual phase extraction, multiphase extraction and simple vacuum extraction scenarios.

### ***Expected SVE Vacuum and Flow Rates During Testing***

Based upon previous SVE pilot testing performed by AcuVac on wells completed in the Ogallala in Lea County, NM, it is anticipated that the initial SVE vacuum and flow rate will be approximately 25 inches of water and 20 cubic feet per minute (CFM) and that the test will include five successively higher vacuum and flow rates going up to approximately 60 inches of water and 45 CFM.

A synopsis of AcuVac's proposed testing approach is presented below.

## **PROJECT OVERVIEW**

### ***Project Scope***

Day One - Complete 8.0 hour Mobile Dual Phase Extraction (MDP) Pilot Test from proposed well DPE-1

Day Two - Complete 8.0 hour Mobile Dual Phase Extraction Event from well DPE-1

### ***MDP Pilot Test Objectives***

- Evaluate the potential for removing liquid and vapor phase PSH (LNAPL) from the GW and soils in the subsurface formations.
- Expose the capillary fringe area and below to the induced vacuum at DPE-1.
- Increase the GW and contaminant specific yields with high induced vacuums.
- Provide an induced hydraulic gradient (IHG) to gain hydraulic control of the area.
- Determine GW depression and pump rates to accomplish the above objectives.
- Provide induced vacuum radius of influence.
- Project the effective hydraulic gradient.

### ***MDP Event Objectives***

- Evaluate the potential for removing liquid and vapor phase PSH (LNAPL) from the GW and soils in the subsurface formations.



- Expose the capillary fringe area and below to the induced vacuum at DPE-1.
- Increase the GW and contaminant specific yields with high induced vacuums.
- Provide an induced hydraulic gradient (IHG) to gain hydraulic control of the area.
- Determine GW depression and pump rates to accomplish the above objectives.

### ***On-site Equipment and Labor***

- All labor- AcuVac personnel with over 14,000 hours of on-site testing and operations will conduct the Pilot Test and Event.
- Provide the ACUVAC MDP SYSTEM consisting of the Internal Combustion Engine, Blowers and Thermal Oxidizer/Catalytic Converters.
- All well connections, manifolds, plugs, hoses and GW/LNAPL pump.
- All instrumentation including well and air flow meters, magnahelic gauges,
- HORIBA Analyzer and Lumidor Analyzer, Solinst Interface Probes.
- In-well Data Logger, as necessary.
- No electrical connections are required.
- Comply with all safety procedures.

### ***Pilot Test Procedures***

- Gauge DPE-1 for depth to LNAPL and DTGW and record static data.
- Calculate the Hydro-Equivalent of the static GW level.
- Determine the proper depth setting of the Total Fluids/GW Pump.
- Record all baseline fluid level and pretest vacuum data.
- Install GW pump and In Situ Data Logger into DPE-1. Set total fluids pump and Data Logger at the selected depth from TOC.
- Install vacuum manifold and hose.
- Connect GW discharge hoses to volume gauge/meter and then connect to standby product collection tank or tank truck.
- Connect the AcuVac MDP System to DPE-1 and then apply vacuum. Record the vacuum and well flow, all System data (including fuel flow of propane), temperature and barometric pressure.
- The MDP Pilot Test procedures are to provide variable rates of vacuum and flow over the Pilot Test period. The GW depression is to remain nearly constant.
- Start DPE-1 induced vacuum and GW pump and set at a selected vapor and GW flow rate to provide an acceptable GW depression, SVE ROI, projected IGH and PSH recovery.
- Record pump flow rate, total liquid volume, and GW depression.
- Seal the outer observation wells with plugs designed to accept a digital manometer to determine if DPE-1 is in vacuum communication with the outer monitoring points or wells.
- Record the data at a selected interval of time.
- Collect non-diluted influent vapor (well gas) samples to provide on-site HORIBA Analyzer and Lumidor analytical data consisting of TPH, ppmv, CO<sub>2</sub>%, CO%, O<sub>2</sub>% and H<sub>2</sub>S ppm.
- Operate the SVE/MDP System in such a manner that all well vapors are passed through the engine and catalytic converters, to destruct the contaminants and exhausted, to meet air emission standards. Comply with all safety and security regulations.
- Gauge DPE-1 for depth to LNAPL and DTGW and record static data at the end of Test.
- Complete the tests by providing a report consisting of operating and analytical data, projection of vacuum radius of influence and induced hydraulic gradient curve.



## **Data Collection**

### **Essential data recorded every 30 minutes**

- Engine and Blower Data.
- Induced Well Vacuum and Well Vapor Flow.
- Total Fluids Pump Rate and Volume.
- Atmospheric Conditions including relative and absolute barometric pressure. Obtain Influent Well Vapor Samples and perform on-site analysis of TPH up to 100,000 ppmv, CO<sub>2</sub>%, CO%, O<sub>2</sub>% and H<sub>2</sub>S ppm:
- Every 30 minutes for the first two hours of the Test Period.
- Every 60 minutes for the remainder of the Test Period.

### **Observation Well Data**

- Well Vacuums/(Pressures) every 30 minutes for the Pilot Test Period.
- Record DTGW as required during the Pilot Test Period.

### **Report**

Create the Pilot Test Report by providing operating and analytical data. The Report will include SVE Radius of Influence and the Induced Hydraulic Gradient Radius of Influence, and the total liquid and vapor hydrocarbons removed.

### **Analytical Samples and Analyses**

Golder proposes to collect aqueous samples from the DPE pumping discharge and vapor samples from the pre-dilution air stream of the vacuum extraction equipment near the conclusion of the DPE test. Aqueous samples will be transmitted to Hall Laboratory in Albuquerque for analyses of VOCs, TPH and total lead by EPA Methods 8260b, 8015 (GRO) and 6010B, respectively. Vapor samples will be collected in 1 liter Tedlar bags and transmitted to Hall Laboratory for analyses of VOCs and TPH by EPA Methods 8260b and 8015 (GRO), respectively. An additional aqueous sample will be collected and transmitted to Analytix, Houston Texas for complimentary analysis of ionic content. Analytix will use the inorganic water chemistry data to prepare recommendations for chemicals and dosing strategy for scale inhibition in air stripping and water processing remediation equipment.

## **Task 5 – Prepare a Summary Well Completion and Pilot Testing Report**

A combined well installation as-built and pilot testing report will be prepared upon completion of the work. The as-built section will include lithologic logs and completion details for the new wells, as well as summary laboratory test data on soil samples collected during drilling. Lithologic logs will include information on depth, lithology, grain size, sorting, roundness, plasticity, degree of lithification, visual moisture content, qualitative drilling and penetration rate, odor, PID headspace measurements and laboratory TPH measurements. The as-built section will include a tabular summary of analytical laboratory test results on soil samples.

The AcuVac report will be included as an appendix to the Golder combined report. A summary discussion of the AcuVac analytical test results will be included in the Golder combined report, along with recommendations of appropriate remediation approaches for the site prepared by Golder environmental engineers.

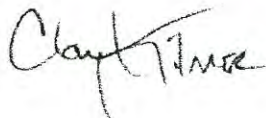
## PROJECT SCHEDULE AND COST PROPOSAL

Golder will accept direct payment from the Corrective Action Fund for reimbursable costs for the proposed scope of work according to the fixed price proposal and schedule presented in **Table 2**.

Please feel free to contact me at 505-821-3043 if you need additional information or have any questions on the proposed work plan and cost.

Sincerely,

**GOLDER ASSOCIATES INC.**



Clay Kilmer  
Sr. Hydrogeologist



Bob Newcomer, CPG, R.G.  
Associate

cc: Mr. Bob Murrell, Walstad Oil Company

Attachments: Table 1 – Proposed Soil and Groundwater Analytical Testing  
Table 2 – Cost and Payment Disbursement Proposal  
Figure 1 – Site Map  
Schematic diagram of AcuVac MDP testing equipment and process flow  
Annotated photo of AcuVac MDP testing equipment

**Table 1: Summary of Proposed Laboratory and Field Analytical Program  
Walstad 66 LUST Site, Lovington, New Mexico**

Sampled Media	VOCs	TPH	Total Lead	Field Headspace PID Measurements
*Soil from DPE Pilot Test Well (75 feet)	1	1	1	15
Vapor from DPE Pilot Test (end of test)	1	1	--	--
Aqueous from DPE Pilot Test (end of test)	1	1	1	--
<b>Total Number</b>	<b>3</b>	<b>3</b>	<b>2</b>	<b>15</b>

**Notes:**

VOCs = Volatile organic compounds by EPA method 8260B (with naphthalenes)

VOCs on soil sample using methanol extraction method

TPH = Total Petroleum Hydrocarbons by EPA Method 8015 (gasoline range)

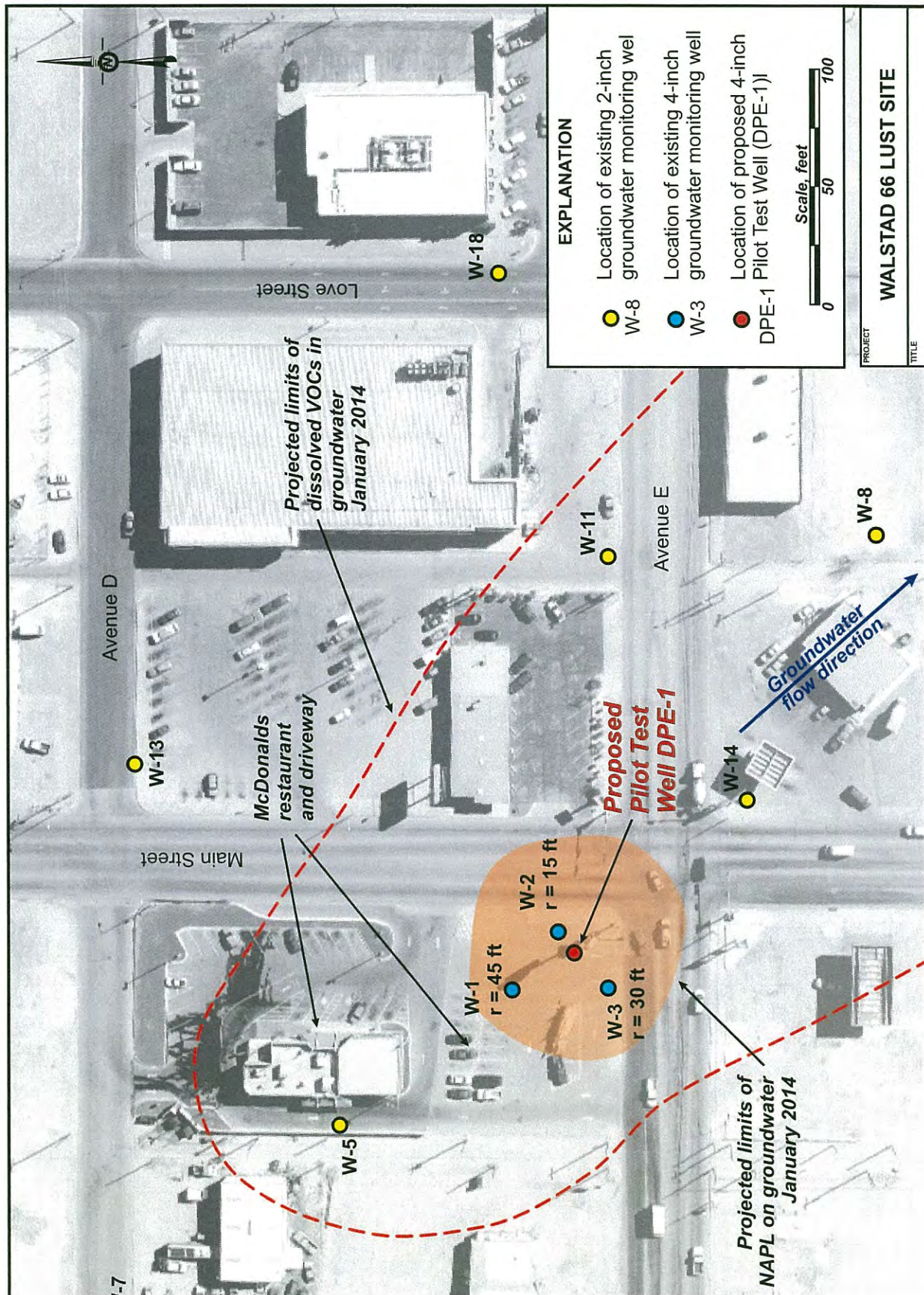
Total Lead by EPA method 6010B



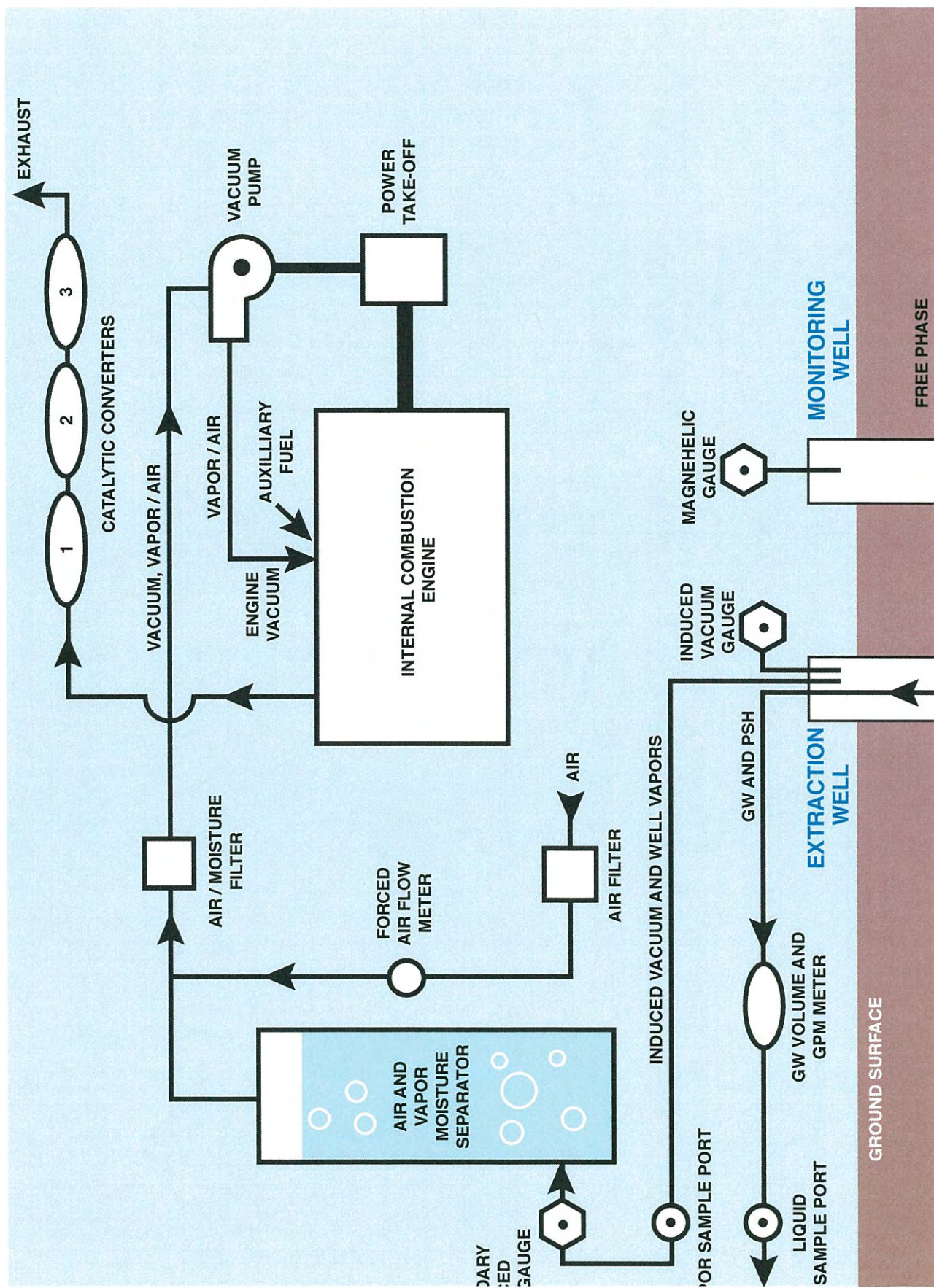
**TABLE 2**  
**COST AND PAYMENT DISBURSEMENT PROPOSAL**  
**LOVINGTON 66 (LUST ID 1182), 424 SOUTH MAIN, LOVINGTON, NEW MEXICO**

Item	Description	Units	Unit cost w/ labor	Number of Units	Deliverable/Payment Trigger	Due Date <sup>1</sup>	Extended Cost
1	Work Plan, Safety Plan Preparation, Site Access Agreement	LS	\$ 2,500	1	Approval of Workplan, Access Agreement	5/21/2014	\$ 2,500
2	Existing Monitor Well Pre-Testing	LS	\$ 2,806	1	Letter Notice of Completion of Existing Well Pre-Testing	6/2/2014	\$ 2,806
3	Installation and Oversight of DPE Pilot Test Well	LS	\$ 19,451	1	Letter Notice of Completion of MPE Pilot Test Well	6/15/2014	\$ 19,451
4	Completion and Oversight of DPE Pilot Test	LS	\$ 24,364	1	Letter Notice of Completion of MPE Pilot Test	7/15/2014	\$ 24,364
5	Completion of Combined DPE Pilot Test Well As-Built and Pilot Test Well Report	LS	\$ 3,747	1	Submission of Completed As- Built and Test Summary Report	8/15/2014	\$ 3,747
6	Contingency (well drilling, access agreement)	TM	\$ 13,299	1	Preapproved out-of-scope costs		\$ 13,299
<b>Notes:</b>							
<sup>1</sup> Assumes work plan approval date of 5/28/2013							
LS - Lump sum							
<b>Subtotal</b>						<b>\$</b>	<b>66,167</b>
NMGRT 7.0%						<b>\$</b>	<b>4,631.67</b>
<b>Project Total</b>						<b>\$</b>	<b>70,798.39</b>











Moisture Knock-out Tank

Propane Tanks

Pump Controller

Catalytic Converters

IC Engine

Vacuum Line





**EXHIBIT C**

**LABORATORY TESTING ANALYTES**



Table 1B. Target Compound List, CAS Numbers, and Contract Required Quantitation Limits for Volatile Organic Compounds by Method 8260

Analyte	CAS Number	CRQL • g/L <sup>a</sup>	CRQL • g/Kg <sup>b</sup>
Benzene	71-43-2	1	5
Bromobenzene	108-86-1	1	5
Bromochloromethane	74-97-5	1	5
Bromodichloromethane	75-27-4	1	5
Bromoform	75-25-2	1	5
Bromomethane	74-83-9	1	5
n-Butylbenzene	104-51-8	1	5
sec-Butylbenzene	135-98-8	1	5
tert-Butylbenzene	98-06-6	1	5
Carbon tetrachloride	56-23-5	1	5
Chlorobenzene	108-90-7	1	5
Chlorodibromomethane	124-48-1	1	5
Chloroethane	75-00-3	1	5
Chloroform	67-66-3	1	5
Chloromethane	74-87-3	1	5
2-Chlorotoluene	95-49-8	1	5
4-Chlorotoluene	106-43-4	1	5
1,2-Dibromo-3-chloropropane	96-12-8	1	5
1,2-Dibromoethane	106-93-4	1	5
Dibromomethane	74-95-3	1	5
1,2-Dichlorobenzene	95-50-1	1	5
1,3-Dichlorobenzene	541-73-1	1	5
1,4-Dichlorobenzene	106-46-7	1	5
Dichlorodifluoromethane	75-71-8	1	5
1,1-Dichloroethane	75-34-3	1	5
1,2-Dichloroethane	107-06-2	1	5
1,1-Dichloroethene	75-35-4	1	5
cis-1,2-Dichloroethene	156-59-2	1	5
trans-1,2-Dichloroethene	156-60-5	1	5

1,2-Dichloropropane	78-87-5	1	5
2,2-Dichloropropane	594-20-7	1	5
1,3-Dichloropropane	142-28-9	1	5
1,1-Dichloropropene	563-58-6	1	5
Ethylbenzene	100-41-4	1	5
Hexachlorobutadiene	87-68-3	1	5
Isopropylbenzene	98-82-8	1	5
p-Isopropyltoluene	99-87-8	1	5
Methylene chloride	75-09-2	1	5
Naphthalene	91-20-3	1	5
n-Propylbenzene	103-65-1	1	5
Styrene	100-42-5	1	5
1,1,1,2-Tetrachloroethane	630-20-6	1	5
1,1,2,2-Tetrachloroethane	79-34-5	1	5
Tetrachloroethene	127-18-4	1	5
Toluene	108-88-3	1	5
1,2,4-Trichlorobenzene	120-82-1	1	5
1,2,3-Trichlorobenzene	87-61-6	1	5
1,1,1-Trichloroethane	71-55-6	1	5
1,1,2-Trichloroethane	79-00-5	1	5
Trichloroethene	79-01-6	1	5
Trichlorofluoromethane	75-69-4	1	5
1,2,3-Trichloropropane	96-18-4	1	5
1,2,4-Trimethylbenzene	95-63-6	1	5
1,3,5-Trimethylbenzene	108-67-8	1	5
Vinyl chloride	75-01-4	1	5
o-Xylene	95-47-6	1	5
m-Xylene	108-38-3	1	5
p-Xylene	106-42-3	1	5
Methyl-t-butyl ether	163-40-44	1	5
Dichlorofluoromethane	75-43-4	1	5

<sup>a</sup> Based on 25 mL water purge. <sup>b</sup> Based on wet weight

**EXHIBIT D**

**PIERSON OIL COMPANY RIGHT OF ENTRY 6/2/14**

**Golder Associates Inc.**

5200 Pasadena Blvd NE, Suite C  
Albuquerque, NM USA 87113  
Telephone: (505) 821 3043  
Fax: (505) 821-5273



May 30, 2014

Our Ref.: 140-1221

Mr. Keith Pearson  
KW Fuels – Pearson Oil Company  
717 Sanger Street  
Hobbs, NM 88240

**RE: ACCESS AGREEMENT FOR ENVIRONMENTAL MONITORING WELL INSTALLATION AND TESTING, FORMER LOVINGTON 66 LUST SITE, 424 SOUTH MAIN ST, LOVINGTON, NM**

Dear Mr. Pearson:

Per our discussion, attached is the right of entry form allowing Golder Associates Inc. access to the above referenced Pearson Oil Company property in the southeast corner of the McDonald's restaurant parking area as indicated on Figure 1. We request authorization to enter the property to install up to two monitor wells, as well as to perform vacuum extraction pilot testing on the site wells. If you consent, please sign and fax or email the agreement to me at your earliest convenience.

Please call me at 505/821-3043 if you need additional information or have any questions regarding the access agreement. Thank you for your consideration and effort in this matter.

Sincerely,

**GOLDER ASSOCIATES INC.**

A handwritten signature in black ink, appearing to read "Clay Kilmer". The signature is written in a cursive, flowing style.

Clay Kilmer  
Sr. Hydrogeologist

Attachments: Right of Entry Form  
Figure 1 – Site Map and Proposed Pilot Test Well Locations

LCK/lck



**Golder Associates Inc.**

5200 Pasadena N.E., Suite C  
Albuquerque, NM USA 87113  
Telephone (505) 821-3043  
Fax (505) 821-5273  
www.golder.com



**RIGHT OF ENTRY FORM  
GOLDER ASSOCIATES INC.**

The undersigned, who is (are) the fee owner(s) of record (hereinafter referred to as Owner) with the sole right to the property in question, does hereby consent and grant Golder Associates Inc., its agents, employees, and assignees the right to enter the property stated below to install monitor wells and perform testing as required by the New Mexico Environment Department, and to conduct other activities as may be required in connection therewith. This Right of Entry is effective upon completion of this document.

**Property Owner:** Keith Pearson, Pearson Oil Company  
**Property Street Address:** 424 South Main Street  
McDonald's Restaurant  
(See attached Figure)  
**City, State:** Lovington, New Mexico

This Right of Entry is granted in consideration of the following Golder Associates Inc. commitments:

1. Golder Associates, Inc. agrees that in consideration of Owners(s) granting this Right of Entry, the affected property will be restored as much as reasonably possible to its condition proceeding our entry. If monitoring wells are developed, these wells will be plugged and abandoned upon project termination in accordance with New Mexico's applicable rules and regulations.
2. Golder Associates Inc. agrees to coordinate with Mr. Ken Fadke (McDonald's franchise owner) to plan and execute the site work to minimize impact to the restaurant business.
3. Golder Associates, Inc. agrees to protect Owner from any and all liability which might arise as a result of the foregoing activities on the described property.
4. Owner(s) retain the discretion to terminate this agreement at any time, after 30 days written notice, if it is in his or his successor's interests.
5. Golder Associates Inc. will provide owner(s) with all analytical results and final investigation reports upon request. Golder Associates, Inc. agrees to provide owner with all future laboratory results and keep the owner informed of all future developments concerning subject property as it pertains to this investigation as requested by owner.

Owner(s) Agent

M. K. Pearson

Date

6-2-14

Golder Associates Inc.

Clay Kilmer

Clay Kilmer  
Project Manager

May 30, 2014

Date



