

CLIENT:

CONTRACTOR:

Quantum Geophysical, Inc.  
a Subsidiary of Cookson, Inc.

Permitting, Surveying, Drafting, and GIS done by:

ECS INC.  
ERICKSON CONTRACT SURVEYING

RECEIVER LINE SUMMARY

LINE NO.	B.O.L.	E.O.L.	LINE NO.	B.O.L.	E.O.L.
101	618	670	53	241	1304
108	618	683	66	248	604
115	584	697	114	255	504
122	571	703	135	262	504
129	564	709	146	269	505
136	559	713	155	276	506
143	554	717	174	283	507
150	549	721	173	290	510
157	544	725	182	297	514
164	538	728	189	304	518
171	533	727	195	311	522
177	529	728	200	318	526
185	524	729	206	325	530
192	521	730	210	332	535
199	519	731	213	339	539
206	516	732	217	346	545
213	514	733	220	353	553
220	511	735	225	360	562
227	509	736	228	367	573
234	506	737	232	374	583
SUB TOTAL			1352	3694	
SUB TOTAL				7215	
GRAND TOTAL				7215	

REDWING 3-D POSTPLOT MAP  
MCKENZIE CO., ND

TOWNSHIP 147, 148, NORTH  
RANGE 100, 101, 102 WEST

SOURCE PT INTERVAL: 249.0'  
RECEIVER PT INTERVAL: 176'

DYNAMITE

SHEET 1 OF 1  
DECEMBER 21, 2001

SCALE: 1:24000  
1" = 2000'

NAD27 NORTH DAKOTA STATE PLANE NORTH ZONE

TOTAL SOURCE PTS: 4136  
TOTAL RECEIVER PTS: 7215  
AREA (SQUARE MILES): 65 +/-

SOURCE LINE INTERVAL: 1936'  
RECEIVER LINE INTERVAL: 1232'

SOURCE LINE AZIMUTH: 47-11-17 (dms)  
RECEIVER LINE AZIMUTH: 02-09-57 (dms)

GPS CONTROL POINT SUMMARY

STATION ID	SET	STATIC/RTK	WGS84 LAT	WGS84 LONG	ELLIP. HT	NAD27 (X)	NAD27(Y)	ORTHO HT
BEAR	BRASS CAP	USDB TRI	47-39-04.580N	103-31-24.417W	253.9m	12 15686.32	282178.78	299.021

LEGEND

01001 SOURCE POINTS NUMBERED IN BLACK

01002 RECEIVER POINTS NUMBERED IN BLUE

CREEK / RUN-OFF

RIVER

DAM

FENCE

GATE

O/H POWER

HWAY

ROAD

TRAIL / ACCESS

BRIDGE

RAIL LINE

PIPELINE

RESTRICTED AREA

CAUTION

YARD SITE

OIL / GAS WELL

BUILDING / TANK / BIN

SCHOOL

CHURCH

CEMETARY

IRRIGATION PIVOT

HELIPAD

GRAVEL PIT

WINDMILL

AIRPORT

CONTROL POINT

PREPLOT SOURCE

POSTPLOT SOURCE

PREPLOT RECEIVER

POSTPLOT RECEIVER

ECS, INC. IS NOT LIABLE FOR UNDERGROUND UTILITIES AND ALL TOPOGRAHY ON THIS MAP ARE APPROXIMATE ONLY. IF IT IS ECS, INC. POLICY TO STAY OUT ALL SOURCE POINTS A MINIMUM OF 100 FEET FROM WATERBODIES, POWER LINES AND ANY STRUCTURES. ETC. ANY SOURCE POINTS CLOSER THAN 100 TO WATERBODIES AND STRUCTURES HAVE BEEN UNDER THE DIRECTION OF THE CLIENT. THEREFORE, ECS, INC. ASSUMES NO LIABILITY ON ANY SOURCE POINTS CLOSER THAN 100 TO THE ABOVE MENTIONED ITEMS.

970065

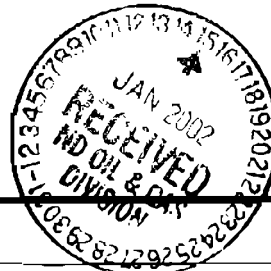






**SEISMIC COMPLETION REPORT**  
**INDUSTRIAL COMMISSION OF NORTH DAKOTA**  
**OIL AND GAS DIVISION**  
 SFN 51456 (11-97)

600 E BOULEVARD AVE  
 BISMARCK, ND 58505



PERMIT NO.:	970065
SHOT HOLE OPERATIONS:	XX
*NON-EXPLOSIVE OPERATIONS:	

**SECTION 1**

GEOPHYSICAL CONTRACTOR:		Quantum Geophysical, Inc.	
PROJECT NAME AND NUMBER:	Red Wing	COUNTY(S):	McKenzie
TOWNSHIP(S):	T 147/148 North	RANGE(S):	R 100/101/102 West
PERMITTED BY:			
Monte Erickson			
DATE COMMENCED:	09-17-01	DATE COMPLETED:	12-01-01

**SECTION 2**

FIRST S.P. #:											LAST S.P. #:		
LOADED HOLES (UNDETONATED SHOT POINTS)													
S.P. #'s:	522152	522174	523183	523190	524141	524147	524166	524285	526121				
CHARGE SIZE::	10	10	10	10	10	10	10	10	10				
DEPTH:	60	60	60	60	60	60	60	60	60				
REASONS HOLES WERE NOT SHOT:													
Bad Caps													
Blowouts: 512164, 512165, 517220, 518234, 519199, 521255, 522151, 526149, 526156, 526163, 526166, 527114, 527153, 528140, 533183, 521144, 517163, 511133, 510114, 510124, 516129, 516131, 516134													

**SECTION 3**

FLOWING HOLES	
S.P.#'s	None
PROCEDURE FOR PLUGGING FLOWING HOLES:	N/A

Include a 7.5 minute USGS topographic quadrangle map or a computer generated post-plot facsimile of the approximate scale displaying each individual shot hole, SP #, line #, and legal location.

\*Non-Explosive Operations - Complete Section 1 and Affidavit.

### AFFIDAVIT OF COMPLETION (GEOPHYSICAL CONTRACTOR)

STATE OF ~~NORTH DAKOTA~~ TEXAS

COUNTY OF Harris

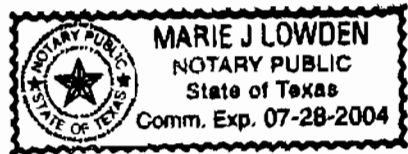
Before me, Marie Lowden, a Notary Public in and for the said County and State, this day personally appeared Bruce Fulker who being first duly sworn, deposes and says that (s)he is employed by Quantum Geophysical, Inc., that (s)he has read North Dakota Century Code Section 38-08.1, that the foregoing seismic project has been completed in accordance with North Dakota Administrative Code Rule 43-02-12 and that the statements on the reverse side of this document are true.

BW [Signature]  
Geophysical Contractor Representative

Subscribed in my presence and sworn before me this 18 day of December, 2001.

Notary Public Marie Lowden

My Commission Expires 7/28/04



### AFFIDAVIT OF PLUGGING (HOLE PLUGGER)

STATE OF OKLAHOMA

COUNTY OF ROGERS

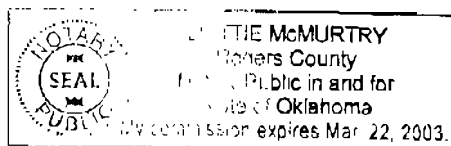
Before me, Dottie McMurtry, a Notary Public in and for the said County and State, this day personally appeared David Little, who being first duly sworn, deposes and says that he is employed by Seismic Drilling Services, that he has read North Dakota Century Code Section 38-08.1 and that the foregoing seismic project has been plugged in accordance with North Dakota Administrative Code Rule 43-02-12 and that the statements on the attached documents are true.

David Little  
Hole Plugger Representative

Subscribed in my presence and sworn before me this 11th day of December, 2001

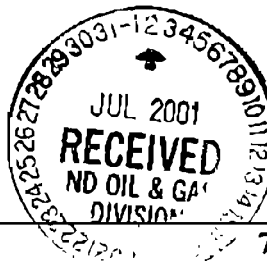
Notary Public Dottie McMurtry

My Commission Expires March 22, 2003





**GEOPHYSICAL EXPLORATION PERMIT**  
 INDUSTRIAL COMMISSION OF NORTH DAKOTA  
 OIL AND GAS DIVISION  
 SFN 51459 (11-97)



600 E BOULEVARD AVE  
 BISMARCK, ND 58505

1) a. Company: <b>Quantum Geophysical, Inc.</b>	Address: <b>8401 Westheimer Ste 150 Houston, TX 77063</b>
Contact: <b>Bruce Fulker</b>	Telephone: <b>(713) 850-9799</b> Fax: <b>(713) 850-7783</b>
Surety Company: <b>Bank of North Dakota</b>	Bond Amount: <b>\$50,000.00</b> Bond Number: <b>GEO300</b>
2) a. Subcontractor(s): <b>Seismic Drilling Services</b>	Address: <b>1437 S Boulder Ste 930 Tulsa, OK 74119</b> Telephone: <b>(918) 587-2225</b>
b. Subcontractor(s):	Address: Telephone:
c. Subcontractor(s):	Address: Telephone:
3) Party Manager: <b>Billy Flipppo</b>	Address: <b>8401 Westheimer Ste 150 Houston, TX 77063</b> Telephone: <b>(713) 824-6256</b>
4) Project Name or Line Numbers: <b>Red Wing Creek 3 D</b>	
5) Exploration Method (Shot Hole, Non-Explosive, 2D, 3D): <b>Shot Hole 3 D</b>	
6) Approximate Drilling Start Date: <b>August 1, 2001</b>	Approximate Completion Date: <b>September 15, 2001</b>

**THE COMMISSION MUST BE NOTIFIED AT LEAST 24 HOURS IN ADVANCE OF COMMENCEMENT OF DRILL/PLUG OPERATIONS**

7) Location of Proposed Project - County <b>McKenzie</b>									
Section(s), Township(s) & Range(s)  <b>** See pre-plot map **</b>	Sec. T <b>147 / 148 N</b> R <b>100 / 101</b>								
	Sec. T R <b>102 West</b>								
	Sec. T R								
	Sec. T R								
8) Size of Hole <b>4"</b>	Armt. of Charge <b>10#</b>	Depth <b>60'</b>	Shots per Mi. (sq.mi.) <b>75.3</b>	No. of Mi. (sq. mi.) <b>56.68</b>	Identifying Marks Used on Nonmetallic Plug				
					Geophysical ID	a. Plugger ID	b. Plugger ID	c. Plugger ID	
					<b>QG</b>				
9) Anticipated special drilling and plugging procedures? <b>None</b>									
10) Enclose a pre-plot map with proposed location of seismic program lines and powder mag.									
Signed: <i>[Signature]</i>			Title: <b>Permit Manager</b>				Date: <b>6-26-01</b>		

(This space for State office use)		Conditions of Approval if any:	
Permit No.: <del>970064</del> <b>970065</b>	Approval Date: <b>7/30/01</b>	<i>That Seismic Drilling Services obtain a surety bond or cash bond prior to any drilling on the prospect. Identify surface plug w/ # and geo. and dip ID. Notify county, surface and field rep. Kim Muntz 701-887-7436 prior to all variances must be furnished upon request and 505-P1 filed w/ complete report.</i>	
Approved By: <i>[Signature]</i>			
Title: <i>Geophysical Regulation Supervisor</i>			
County Approval Sent: <i>McKenzie Co. Auditor - Mr. James Olson</i>			

\*See Instructions On Reverse Side

NORTH DAKOTA INDUSTRIAL COMMISSION

**OIL AND GAS DIVISION**

Lynn D. Helms  
DIRECTOR

<http://explorer.ndic.state.nd.us>

Bruce E. Hicks  
ASSISTANT DIRECTOR

July 30, 2001

Bruce Fulker  
Quantum Geophysical Inc.  
8401 Westheimer, Ste. 150  
Houston, TX 77063

**RE: GEOPHYSICAL EXPLORATION PERMIT NO. 97-000** ~~X~~ 65  
**RED WING CREEK 3 D**

Dear Mr. Fulker:

This letter will verify the approval of the above-captioned Geophysical Permit effective, July 30, 2001.

Please feel free to contact Mr. David Hvinden, Geophysical Regulation Supervisor if you should have any questions.

Sincerely,

  
Marge Rixen  
Legal Assistant

/mr